Memorial Sloan-Kettering Cancer Center Rezoning

Final Environmental Impact Statement

Submitted to:
New York City Department of City Planning

Prepared by:
Allee King Rosen & Fleming, Inc.

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MEMORIAL SLOAN-KETTERING CANCER CENTER REZONING
FINAL ENVIRONMENTAL IMPACT STATEMENT

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Project Location:	Three blocks between First and York Avenues and East 66th and 69th Streets, New York, NY
Lead Agency:	New York City Planning Commission Joseph B. Rose, Chairman
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Date:	November 16, 2001

Foreword

The Draft Environmental Impact Statement (DEIS) for the Memorial Sloan-Kettering Cancer Center (MSKCC) Rezoning project was accepted as complete with respect to scope, content, and adequacy by the New York City Planning Commission (CPC), as lead agency, and published for public review on June 1, 2001. Publication of the DEIS marked the beginning of public review under City Environmental Quality Review (CEQR). This Final Environmental Impact Statement (FEIS) reflects public review and comments, responds to those comments, and reflects ongoing development of the project, its alternatives, and mitigation measures.

A public hearing on the DEIS was held by CPC on October 10, 2001and continued on October 12, 2001, for additional testimony. Comments were accepted at the hearing and throughout the public comment period, which was held open until October 22, 2001.

Subsequent to the public hearing, MSKCC amended its Land Use Application and its application to the Board of Standards and Appeals. MSKCC reduced the height of the proposed research building from 440 feet to 420 feet and removed the south block between East 66th and 67th Streets from the proposed rezoning area. The reduced height of the building would result in reduced shadow lengths and reduced open space and urban design impacts. The elimination of the south block from the proposed rezoning area would reduce the open space user population impacts on open space. It would also reduce trip generation and impacts on the traffic network and on the subway.

This FEIS reflects those changes to the proposed project and all substantive comments made during public review. Substantive revisions between the DEIS and FEIS include:

- Revisions to Chapter 1, "Project Description," to reflect the shorter proposed research building and the reduced rezoning area;
- Additional language to reflect changes and refinements in the anticipated design of the proposed research building;
- Revisions to Chapter 2, "Land Use, Zoning, and Public Policy," Chapter 3, "Socioeconomic Conditions," and Chapter 4, "Community Facilities," to reflect the reduced rezoning area and in Chapter 3 to reflect reduced economic benefits;
- Revisions to Chapter 5, "Open Space," to reflect the reduced early morning shadows in 2007 due to the reduced height of the research building and reduced user population in both 2007 and 2011 due to the reduction of the rezoning area;
- Revisions to Chapter 6, "Shadows," to reflect the reduced height of the research building and the addition of figures and further discussion of shadows on the east windows of St. Catherine's Church;
- Revisions to Chapter 7, "Historic Resources," to reflect the reduced height of the research building and the addition of further discussion of shadows on the east windows of St. Catherine's Church;

- Revisions to Chapter 8, "Urban Design and Visual Resources," to reflect the reduced height of the research building and the reduction in development by the removal of the south block from the rezoning area;
- Amended language in Chapter 9, "Neighborhood Character," to reflect changes in the other relevant portions of the FEIS;
- Amended language in Chapter 10, "Hazardous Materials," and Chapter 11, "Infrastructure, Solid Waste and Sanitation, and Energy," to reflect removal of the south block and its potential development from the rezoning area;
- Revisions to Chapter 12, "Traffic and Parking," and Chapter 13, "Pedestrians and Transit," to reflect the reduced population and trips in 2007 and 2011 without the south block in the rezoning area (i.e., revised impact analyses resulting in fewer impacts) and revisions in response to comments;
- Revisions to Chapter 14, "Air Quality," to reflect the reduction in the height of the stacks of the proposed research building in the laboratory spill analysis and to reflect the reduced traffic (due to the reduced rezoning area) in the mobile source analysis;
- Revisions to Chapter 15, "Noise," to reflect the reduction in the rezoning area;
- Revisions to Chapter 16, "Construction," to reflect the reduction in the rezoning area;
- Revisions to Chapter 17, "Mitigation," to reflect changes in the required mitigation due to the reduction in height of the proposed research building and the reduction in the rezoning area as well as new mitigation developed between the DEIS and the FEIS;
- Additional alternatives added to Chapter 18, "Alternatives," in response to comments during the public review and comments from DCP: an R8 As-of-Right Research Building, an R9 As-of-Right Research Building, the Manhattan Borough President's Alternative, CIVITAS Alternative, Alternative Locations, and a Reduced Development on the Main Campus Block Alternative; and
- A new chapter, Chapter 19, "Unavoidable Adverse Impacts," because no mitigation is available for the adverse impact on passive open space in 2011 (subsequent chapters are renumbered).

In addition to these changes, the FEIS identifies the comments received during the public review period and provides responses in a new chapter, Chapter 22, "Comments and Responses." Written comments received on the document are included in Appendix B. Where appropriate, the text of other chapters of this FEIS was revised in response to public review. Changes and corrections to the FEIS are indicated by double underlining or, in the case of completely new chapters or sections of chapters, by a footnote at the beginning. ❖

Table of Contents

List of Tables

List of Figures

A. PROJECT DESCRIPTION

Memorial Sloan-Kettering Cancer Center (MSKCC) is among the world's foremost medical center devoted to the care of cancer patients and to the advancement of cancer treatment through a comprehensive research program. MSKCC's campus is located on three blocks between First and York Avenues and East 66th and 69th Streets on the Upper East Side of Manhattan.

The proposed actions would support MSKCC's commitment by allowing it to expand its research and diagnostic and treatment facilities, have adequately sized state-of-the-art inpatient rooms, and to provide housing for patients who must be near the hospital for treatment.

The proposed actions include a rezoning from R8 to R9 of the midblocks in two blocks and the designation of the campus as a Large-Scale Community Facility Development (LSCFD).* They also include actions specific to the first phase of anticipated development, a research laboratory building on the north block of the campus, as well as transfer of development rights from the north block to the main campus block.

PROJECT PURPOSE AND NEED

MSKCC's mission to prevent and cure human cancers depends on advances in basic biological and clinical research; the care offered today builds on yesterday's scientific and medical achievements. New cancer therapies and diagnostic approaches—the tools that will alleviate the human suffering that cancer causes—will also depend on how well and how rapidly insights from the laboratory are translated into the clinical, patient-care setting.

Emerging knowledge of the human genome, as well as the technology that allows scientists to better understand the complex interactions among genes, will speed that translational research process in dramatic ways. As the nation's leading cancer center, MSKCC must strengthen its century-long commitment to innovation in research and patient care as well as the collaboration among scientists, physicians and other clinical investigators to retain this leadership role.

RESEARCH

MSKCC has begun a process that would enable it to construct a new research building. To seize new scientific opportunities, MSKCC must expand its research program. While the Kettering Building represented the latest thinking about laboratory design and technology when it opened in 1964, much has changed. Neither the Kettering Building nor the Arnold and Marie Schwartz International Hall of Science for Cancer Research (Schwartz Building) can adequately accommodate a leading-edge program of biological research. The Rockefeller Laboratory

* Since the publication of the Draft Environmental Impact Statement (DEIS), MSKCC has reduced the scale and scope of the proposed project. The height of the proposed research building has been reduced from 440 feet to 420 feet. The south block has also been eliminated from the proposed rezoning area. This Final Environmental Impact Statement (FEIS) reflects those changes.

Building is fully occupied and cannot support MSKCC's future research program. To take advantage of the opportunities made possible through such developments as the sequencing of the human genome, MSKCC must expand its research facilities.

The proposed research building is designed to house a comprehensive laboratory research program, with a particular emphasis on translational research that would bridge MSKCC's programs of patient care and fundamental biological research. Translational research—described by MSKCC as "bench to bed"—takes the findings of basic biological research and applies that understanding toward the development of new therapeutic agents. MSKCC believes that transitional research requires the close and effective interaction among scientists, clinician-scientists, and clinicians. In the view of MSKCC, a vibrant program of translational research must occur in close proximity to Memorial Hospital and foster face-to-face interactions among investigators.

INPATIENT ROOMS

The Memorial Hospital is now 27 years old. Licensed for 565 beds, it only operates 431 beds and provides limited outpatient capacity and space for administrative offices. While a floor-by-floor renovation of all inpatient floors is planned, the lifespan of the present hospital is limited. In-place renovation costs are high, and renovation will not provide the level of amenities that many patients expect. For example, the majority of rooms include two patient beds, whereas most hospitals are now being built with only single rooms. Replacement of the present Memorial Hospital must be a part of any long-range master plan if MSKCC is to continue providing world-class care. With a reasonable worst-case build-out on the main campus block, it is estimated that the number of beds in operation could rise by 130 to 561. The number of licensed beds would remain at 565.

DIAGNOSTIC AND TREATMENT

Diagnostic and treatment facilities are located throughout the main campus buildings and satellite facilities. Programs housed in the Schwartz Building and the Howard Building include radiology and nuclear medicine, clinical laboratories, rehabilitation and speech and hearing, day surgery, pathology, and radiation oncology. A blood donor room and its associated laboratories are also based in the Schwartz Building. Short-term upgrades are now underway to accommodate new technology, but both space and the age of these buildings will be factors that affect future investment. In addition, future refinements in the development of radiation oncology are likely to require significant renovations and/or new construction in the present Radiation Oncology Building, located east of the Schwartz Building.

OFFICE/ADMINISTRATION

Administrative and academic offices, including those for Clinical Laboratories, Pediatrics and Facilities Management, are located throughout the MSKCC campus, within the Schwartz Building, the Howard Building, the Sloan House and the Scholars Residence. Major administrative functions continue to be moved off campus in order to make way for direct clinical care or laboratory research, including clinical trials management. This is not ideal. While some support functions—including human resources, finance, and information systems—have long been located off the main campus, it is essential that new offices be an integral part of long-term campus planning.

PROJECT SITE

REZONING AREA

The rezoning area comprises the midblocks (100 feet west of York Avenue and 100 feet east of First Avenue) of two blocks between East 67th and East 69th Streets on the upper east side of Manhattan. These midblocks total approximately 165,888 square feet, are zoned R8, and may be developed to a floor area ratio (FAR) 6.5 for community facilities.

MSKCC owns or controls approximately 143,294 square feet of the total rezoning area including unused development rights from the St. Catherine's Church property in the north block. The remainder of the rezoning area in the north block is occupied by all of one and part of two other residential buildings that serve as staff housing for New York Hospital-Cornell Medical Center (NYH-CMC).

LARGE SCALE COMMUNITY FACILITY DEVELOPMENT AREA

The boundaries of the proposed LSCFD area would contain the campus of MSKCC including the St. Catherine's Church property. In the north block, it excludes the residential buildings on the eastern end of the block and the properties west of St. Catherine's Church. It includes all of the main campus block from York Avenue to First Avenue. In the block south of the rezoning area (south block) it includes the area within 300 feet of York Avenue. The overall site area for the LSCFD (excluding the streets) would be 243,711 square feet.

PROPOSED ACTIONS

REZONING

MSKCC proposes to rezone the midblocks between East 67th and 69th Streets and York and First Avenues from R8 to R9. The allowable development would increase from 6.5 to 10 FAR for community facility use. The rezoning from an R8 to an R9 zoning district would increase the total permitted floor area in the midblock from 931,405 to 1,432,940 square feet with 603,500 square feet on the north block and 829,440 square feet on the main campus block.

In the northeast corner of the rezoning area there are two non-MSKCC properties that would be affected by the proposed rezoning. These properties have a combined 22,593 square feet of lot area within the rezoning area (one is located entirely within the rezoning area and the other is partially located in the rezoning area). Both lots are controlled by another institution and contain three residential buildings for staff. Accounting for existing buildings, the rezoning would increase the amount of floor area on these properties by approximately 79,075 square feet. Of that, it is assumed that 45,637 square feet could be used for community facility use and 33,438 square feet could be used for apartments. Assuming residential unit sizes of 1,000 square feet, the number of apartments could increase by 33.

LARGE-SCALE COMMUNITY FACILITY DEVELOPMENT

MSKCC proposes that its campus be designated as a LSCFD. The LSCFD designation would allow development planning to encompass the entire campus. More specifically, it would allow, by City Planning Commission (CPC) authorization, transfer of development rights from one portion of the campus to another part of the campus, and waivers of height, setback, and yard requirements. This designation would not affect the remainder of the rezoning area.

OTHER CPC ACTIONS

MSKCC's proposed research building on the north block is anticipated to use up to 100,000 square feet less than would be available on this site. Therefore, MSKCC requests the transfer of up to 100,000 square feet from the north block to the main campus block.

For the proposed research building, MSKCC requests an authorization to modify height and setback requirements on streets internal to the LSCF (ZR Section 79-21), specifically East 68th Street; and a Special Permit to modify height and setback on peripheral streets (ZR Section 79-43), specifically East 69th Street. These would modify the bulk form of the research building.

Also as part of the proposed actions, an (E) designation for noise (window/wall attenuation) would be placed on the lots within the LSCFD area. In order to ensure an acceptable interior noise environment, any buildings constructed in the future must provide a closed-window condition with a minimum window/wall attenuation to maintain interior noise levels of 45 dB(A) or lower.

BOARD OF STANDARDS AND APPEALS ACTIONS

The proposed laboratory building would also require three additional actions from the Board of Standards and Appeals (BSA): a variance (pursuant to ZR Section 72-21) for lot coverage (ZR Section 24-11) and a variance for modification of the rear yard equivalent (ZR Section 24-38). These would allow the proposed foot print and bulk form of the proposed building. In addition, for a brief period during construction of the research laboratory on the north block, a special permit for temporary failure to comply (ZR Section 73-642) would be requested to allow MSKCC to retain the Kettering Building on the site until its functions could be moved into the new laboratory building.

PROPOSED PLANS

With the rezoning and the designation of the LSCFD, MSKCC proposes to build a research building on the north block. In the future it would then redevelop portions of its main campus block (between 67th and 68th Streets). The research building is expected to be completed in 2007. The build-out for the remainder of floor area allowed under the rezoning is assumed to be 2011 for the purposes of performing this environmental review. While the proposed laboratory facility on the north block is now being designed in detail, the development of the main campus block is a hypothetical worst case developed for analysis purposes.

It is possible that in the future, development on the main campus block may not follow the exact pattern described. However, for each change of the LSCFD, MSKCC would be obligated to obtain CPC approval, which would in turn require environmental review prior to approval.

PROPOSED MSKCC RESEARCH BUILDING/NORTH BLOCK

The proposed research building site is L-shaped area in the middle of the north block. It is currently occupied by three buildings: St. Catherine's Church to remain; the Church Rectory to be demolished; and the Kettering Building to be demolished. A portion of the site along 69th Street is vacant.

This proposed research building would have a maximum of approximately 510,400 square feet of zoning floor area. It would include research laboratories, support space, offices, an auditorium, and a replacement space for the Church Rectory.

The height and setback waivers from CPC would allow the envelope of the proposed research building to rise its entire height (including mechanical stacks) of approximately 420 feet without setting back. Programmatic requirements necessitate equally sized laboratory floors.

Because of the need to maintain the existing Kettering Building in use on this site until its activities can be moved into the new facility, construction would be staged to begin with a structure adjacent to the church. This building would primarily provide laboratories, service areas, and offices for the researchers. On its lower levels, it would also provide approximately 19,000 square feet for the Rectory.

As soon as its activities can be moved into the proposed research building, the Kettering Building would be demolished and construction would continue on the low-rise portion of the building which would provide an auditorium at ground level, dry labs above.

MAIN CAMPUS BLOCK

Plans for further development pursuant to the rezoning and LSCFD designation are not definite at this time. MSKCC and its architects and planners have developed a reasonable worst-case scenario development for the main campus block that would represent the full build-out of the floor area allowed by the rezoning and the authorization to move a maximum of 100,000 square feet from the north block to the main campus block. This scenario involves demolition of the Schwartz Building on First Avenue and the Howard Building on 68th Street. Research laboratory space would be replaced in the proposed research building. Other laboratory as well as diagnostic, treatment, and office space in these two buildings would be replaced by space in the potential new hospital building and the renovated Memorial Hospital.

A new hospital building (approximately 613,700 square feet) would be constructed to house inpatient rooms and replace Memorial Hospital. With the new hospital building, it is expected that the number of beds in operation could rise by 130 to 561.

At the east end of the main campus block, part of Memorial Hospital (234,000 square feet) would be renovated to house offices and on-call space.

PROPOSED DESIGN

RESEARCH BUILDING

The taller laboratory portion would be 23 stories—approximately 420 feet tall to the top of the mechanical stacks. Oriented in a north/south direction, it would be perpendicular to 68th and 69th Streets, which is expected to minimize its perceived bulk along these streets. The lower portion of the building, running along 68th Street, would be only seven stories (approximately 140 feet) tall. The facade of the building would be primarily stone, metal, and glass.

The main entrance would be on 68th Street, recognizing the linkage of this building to the main campus block. A through-block lobby with secondary access off 69th Street is being contemplated. Two off-street, enclosed loading docks would also be located on 69th Street.

The replacement space for the rectory would be located on the lower levels of the tower adjacent to St. Catherine's Church for direct access between the church and the rectory. The facade of the building would be designed to acknowledge the presence of the rectory and the adjacency of the church and its windows.

Since publication of the DEIS, the project architects have continued to develop the design elements for the proposed project. As currently contemplated, the proposed research building would present four distinct faces to the community. The south facade on 68th Street would be composed of a vertical face of the tower and a horizontally oriented mid-rise face of the lower wing. The latter would relate directly to the scale of the neighborhood. At the western base of this facade where the new rectory would be located, masonry would be used to relate in scale, color and texture to the brick facade of the church. The north facade on 69th Street would be similarly composed of a high-rise portion and a mid-rise portion. The single-story entrance to the building would be located adjacent to the residential building to the east. On both the north and south facades, the entrances would be transparent glass to link interior lobby and exterior sidewalk. Planting areas would also be provided along the street.

As currently contemplated, the eastern facade of the tower would be transparent glass articulated by a pattern of horizontal shading devices. The western facade would also be glass but would have a vertical composition of patterned fritted and/or textured glass. Both of these facade treatments are intended to reduce the scale of these facades visually.

MAIN CAMPUS BLOCK

For analysis purposes, it is assumed that as-of-right development on the main campus block would occur under the proposed rezoning and transfer of floor area. The new inpatient hospital building on the west part of the main campus block is expected to be 5 stories (approximately 85 feet) tall along First Avenue. Set back 100 feet from First Avenue and approximately 33 feet and 46 feet from 67th and 68th Streets respectively, the building would rise to a total of 28 stories (approximately 448 feet). This building would have its main entrance on First Avenue, providing access to the MSKCC campus from First Avenue for the first time.

On the eastern end of the main campus block all of the inpatient floors in Memorial Hospital would be renovated for office and on-call space. No major changes to the exterior of the building are contemplated.

CHANGES IN POPULATION

Accounting for relocation of existing activities to new and expanded state-of-the-art facilities, MSKCC has estimated the following increases in patients, staff and visitors that would occur as a result of the proposed rezoning and development of the proposed research building and the reasonable worst case development scenario on the main campus and south blocks (see Tables S-1 and S-2).

Table S-1
North Block
Population Estimates for MSKCC

	Workers
Laboratory Tower	612
Demolish Kettering Building	(364)
Multipurpose wing	300
Change	548

Note: Because this phase does not include any work on other parts of the campus, no transfers from other blocks are assumed.

Table S-2
Main Campus Block
Population Estimates for MSKCC

	Research Staff	Office staff	D&T Staff	Inpatient Staff	Inpatients	Inpatient Visitors	D&T Patients	D&T visitors
Demolish Schwartz/Howard	(114)	(582)	(235)				(141)	(277)
New Facility on Schwartz/Howard site			623	457	561	1,683	671	1,677
Renovation of Memorial		882		(377)	(431)	(1,293)		
Change Main Campus Block	(114)	300	388	80	130	390	530	1,400

Notes:
Population of Schwartz and Howard is the entire population shown as "total existing demolished." This accounts for all the staff that currently in these buildings.
Population for the New Facility is the total as the existing staff are netted out as negatives for Schwartz/Howard and Memorial.

ENVIRONMENTAL REVIEW

The CEQR process provides a mechanism for decision makers to understand the environmental consequences, the alternatives, and the need for mitigating significant impacts. CEQR rules guide the environmental review through: establishing a lead agency; determining whether the proposed action may have a significant impact on the environment; scoping; preparing a DEIS; beginning the public review; preparation of an Final Environmental Impact Statement (FEIS) by the lead agency; and the adoption of a formal set of written findings, reflecting its conclusions about the potential significant adverse environmental impacts of the proposed action, potential alternatives, and mitigation measures.

The proposed actions are also subject to ULURP, a city process designed to allow public review of proposed actions by the Community Board, the Borough President, CPC, and the City Council. The procedure sets time limits for review at each stage to ensure a maximum total review period of approximately 7 months.

B. FUTURE WITH THE PROPOSED ACTIONS

LAND USE, ZONING AND PUBLIC POLICY

LAND USE

By 2007, development of the proposed research building would result in an increase in the density of development on that site by replacing the existing 3-story St. Catherine's Church Rectory, the Kettering Building, and vacant land with a new 23-story research building. While the proposed research building would be an expanded, more intensive use of the site, it would be in keeping with existing uses. The existing St. Catherine's Church Rectory would be replaced. Overall, development of the proposed research building would be compatible with the institutional character of the surrounding area.

It is also possible that by 2007 further development could occur as a result of the rezoning on properties not owned by MSKCC on the portion of the rezoning area on the eastern end of the

north block. The increase in allowable floor area on these sites is not expected to result in substantial new development and would not result in significant adverse land use impacts.

Development by 2011 would represent the full build-out of the floor area allowed under the proposed actions. In addition to the research building, this development would include a new inpatient hospital building on the west portion of the main campus block and renovation of portions of Memorial Hospital for office and on-call space. Overall, the proposed buildings would be larger than the buildings currently located on the site, but would involve similar land uses compared to the space that would be demolished.

The proposed MSKCC plans are not likely to change development trends in the surrounding area or induce new development projects that would occur absent the proposed actions. The activity generated by the new facilities is not expected to alter the current balance of residential, institutional, commercial, and industrial uses within the study area.

ZONING AND PUBLIC POLICY

Rezoning the two midblocks from R8 to R9 would increase allowable community facility development from 6.5 to 10 FAR and residential development from 6.02 to 7.52 FAR. The rezoning from an R8 zoning district to an R9 zoning district would increase the total permitted floor area from 1,649,561 to 2,437,108 square feet.

The LSCFD designation would allow development planning to encompass the entire campus. More specifically, it would allow, by CPC authorization, transfer of development rights from one portion of the campus to another part of the campus, and waivers of height and setback requirements. This designation would not affect the remainder of the rezoning area. Pursuant to the LSCFD, MSKCC would request the transfer of up to 100,000 square feet from the north block to the main campus block.

For the proposed research building, MSKCC would also request an authorization to modify height and setback requirements on streets internal to the LSCFD (ZR Section 79-21), a Special Permit to modify height and setback on peripheral streets (ZR Section 79-43). The proposed research building would also require actions by the Board of Standards and Appeals (BSA): variances (pursuant to ZR Section 72-21) for lot coverage (ZR Section 24-11) and a variance for modification of the rear yard equivalent (ZR Section 24-38). In addition, for a brief period during construction of the proposed research building, a special permit for temporary failure to comply (ZR Section 73-642) would be requested.

The proposed R9 residential rezoning would be compatible with other zoning designations nearby. Much of the surrounding area is currently zoned for residential uses, including blocks immediately surrounding the rezoning area. The R9 district would represent a transitional area between existing R8 and R10 districts.

The actions described above would all be implemented by 2007. As the main campus block is developed, further authorizations or special permits from CPC pursuant to the LSCFD or other actions by the BSA may be needed, depending on programmatic requirements and architectural design, which have not yet been developed. Such additional actions would be subject to CEQR as part of their approval process.

Overall, the proposed actions would not have significant adverse impacts in terms of land use, zoning, and public policy.

SOCIOECONOMIC CONDITIONS

Overall, the anticipated development as a result of the proposed actions is not expected to generate any significant adverse socioeconomic effects. The new development would not result in the direct displacement of residential, business, or institutional uses. The actions would not result in development that is markedly different from existing uses, development, and activities within the neighborhood, and would therefore not lead to any indirect displacement. In contrast, the proposed project would create significant new research and patient care facilities and would generate employment and fiscal benefits for New York City and State.

COMMUNITY FACILITIES AND SERVICES

The proposed actions would increase the number of workers, patients and visitors in the area, which would place increased demand on the capacity and performance of community facilities in the area. By 2007, the proposed research building is expected to result in a net increase in workers over those who occupy the existing Kettering Building. Similarly, the number of MSKCC employees, patients and visitors would increase by 2011 as a result of potential development on the main campus block. Although these increases may minimally increase the demands on the Police and Fire Departments, this is not expected to adversely affect their provision of services.

The proposed actions would support MSKCC's role as a significant community facility by allowing it to expand its research, diagnostic, and treatment facilities, and have adequately sized state-of-the-art inpatient rooms. Overall, the proposed actions would not result in any significant adverse impacts related to community facilities.

OPEN SPACE AND RECREATIONAL FACILITIES

Since publication of the DEIS, MSKCC has reduced the height of the envelope of the proposed research building from 440 feet to 420 feet (to the top of the mechanical stacks) and removed the south block from the rezoning area. These changes reduce the effect of the proposed project on open space. Overall, the proposed actions are not anticipated to have significant adverse impacts on open space resources in the area in 2007; however, with the increased population and shadows from development on the main campus block in 2011, the analysis indicates that the proposed actions would have an adverse impact on open space.

The proposed research building, which is expected to be complete by 2007, would add an estimated 548 daytime workers to the area, while potential community facility and residential expansion on other lots in the north block could add up to 97 workers to the area, resulting in a 1.8 percent decrease in the worker open space ratio, or a decrease of less than 0.01 acres of passive open space per 1,000 workers. The residential expansions that could result from the proposed rezoning would add approximately 53 residents to the study area, resulting in a 0.9 percent decrease in the overall passive open space ratio. For users as a whole, the proposed research building is not likely to have a significant effect on passive open space in the study area in 2007.

The remaining anticipated development in the rezoning area expected by 2011 would decrease the worker open space ratio by 3.5 percent, a decrease of less than 0.01 acres of passive open space per 1,000 workers. There would be a 1.7 percent decrease in the overall passive open space ratio, a decrease of less than 0.01 acres per 1,000 residents and workers.

The quantitative analysis indicates that the proposed actions could have a significant adverse impact on daytime workers' use of passive open space in the study area in 2011. The negative effects from this reduction in the passive open space ratio also would be exacerbated by shadows cast on open space resources from the proposed research building and other potential development on the main campus block of the MSKCC campus. There are no available mitigation measures and this results in an unavoidable adverse impact (see below, "Unavoidable Adverse Impacts").

SHADOWS

Since publication of the DEIS, MSKCC has amended the proposed actions to reduce the height of the proposed research building from 440 feet to 420 feet and to remove the south block from the rezoning area. The reduction in the height of the research building has reduced the early morning shadows on St. Catherine's Park.

Due to its height and bulk, the proposed research building would increase the shadows on St. Catherine's Park in the early morning. At their greatest extent, these increases would be substantial; however, at most times they would be less substantial. This increase would be of limited duration and by 9:30 AM Eastern Standard Time (EST) the building's shadow would be off the park. While a large part of the park is in shadow at the beginning of the analysis period on all analysis days (except December when there is no increment) this is very early in the morning when the park is much less likely to be used for passive recreation, for which sunlight would be most appreciated. In warmer months, leaves on the tall trees of the park already cast ample shade.

The incremental increase in shadows on the public plaza on York Avenue between 70th and 71st Streets is not considered significant because it would only fall on a small portion of the plaza for a short time in the spring, fall, and winter.

Since the proposed project would be built adjacent to the east side of St. Catherine's Church, there would also be an increase in shadows on its east facade. Measures to mitigate this impact are discussed below, under "Mitigation."

With full development assumed for 2011, there would also be an increase in shadows from the tower in the main campus block. It would be offset by a decrease in shadows due to the base of the building on First Avenue being shorter than the current building. The increment from the tower would cover large portions of the park in the mid-morning and extend the duration of the shadow increment from the proposed actions to as late as 11:00 AM (12 Noon) in March/ September and May/August. By midday there would be no new shadows from MSKCC buildings on this park in any season.

Overall, there are increases in morning shadows on St. Catherine's Park in the spring, summer, and fall. On cooler days this could lessen the enjoyment of park users, especially passive users of the open space. On the coolest days in the winter when users would most appreciate the sun, the MSKCC development would not increase the shadow on St. Catherine's Park. In terms of vegetation, the trees are unlikely to be affected as they receive ample sunlight over the course of the day. The other plantings, such as daffodils, are seasonal. As the shadow of the project moves quickly across the expanse of the park, it is unlikely that they would be affected by diminished light during in the growing season.

HISTORIC RESOURCES

The FEIS does not include an analysis of archaeological resources. Significant adverse impacts are not anticipated. As noted in a letter dated May 25, 2001, the New York City Landmarks Preservation Commission (LPC) concluded that the development sites have no archaeological significance and that an archaeological analysis was not warranted.

Construction of the proposed research building could potentially cause damage to St. Catherine's Church as it is located immediately west of the project site. To avoid adverse physical impacts on the church, a construction protection plan would be developed and implemented following the guidelines set forth in "The New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark" and "Protection Programs for Landmark Buildings."

The increase in shadows on the stained-glass windows of St. Catherine's Church has the potential to create a significant adverse impact on historic resources. Measures that would mitigate this impact are discussed below, under "Mitigation." Although the proposed research building would be substantially taller and larger-scaled than the church, the difference in height and scale would not constitute a significant adverse impact to the church. As currently contemplated, the architectural design of the proposed building could help minimize the visual differences in height and scale between the proposed research building and the church. The building's height and bulk would not adversely affect architectural resources because the area's architectural resources include a large, bulky resource—the New York Hospital-Cornell Medical Center complex—and because all these resources exist and retain their importance in an area with numerous taller bulkier structures.

URBAN DESIGN AND VISUAL RESOURCES

By 2007, new development on the north block would change the character of the project site by introducing a modern research building and new activity to the site. The proposed research building would be built to the sidewalk and would have a much greater presence at the streetwalls of East 68th and 69th Streets. The main entrance to the proposed research building on East 68th Street would maintain the linkage to the central MSKCC campus block. An additional entrance would be provided on East 69th Street. As currently contemplated, the facade of the proposed research building would be composed of glass and metal with a masonry base, and thus would be quite different from the extant masonry buildings on the project site. However, the masonry base would relate in scale, color, and texture to the adjacent St. Catherine's Church. The currently contemplated design of the building would also acknowledge the adjacency of the church through the use of a linear courtyard separating the two buildings. The transparent, glass-enclosed entrances of the proposed research building would visually link its interior with the exterior, enlivening the adjacent streets by day as well as by night.

At approximately 420 feet, the building to be constructed by the proposed project would be considerably taller than the existing buildings on the site. The north-south orientation of the building would differ from the norm, as midblock sites are typically occupied by tenements or mid-size, east-west oriented apartment buildings, (approximately 104 to 219 feet tall) set back slightly from the streetline. This orientation would serve to minimize the building's appearance along East 68th and 69th Streets, although the long side of the building would be more visible in the distance, particularly from the west. The lower portion of the building on East 68th Street would be shorter than the existing Kettering Building and its scale would be more in keeping

with that of surrounding buildings. As currently contemplated, the architectural design calls for projecting horizontal shading devices on the east side of the tower that would create shadow patterns across this facade, constantly changing the tower's perceived scale and appearance. The western facade would include a vertical composition of fritted and/or textured glass, again to visually reduce the scale of the building. Despite design measures currently contemplated, the new mid-block tower would significantly increase density in the midblock, adversely affecting this component of urban design. However, the reduction in height from 440 feet to 420 feet would partially mitigate the impact.

Full campus development assumed by 2011 would not alter the street pattern or any natural features or block shapes in the study area. The project development would be built to the sidewalk and would maintain a presence at the respective streetwall. The proposed actions would also provide a major new entrance to the campus on a side street where little activity now occurs, and would be expected to enliven nearby streets with greater activity and more pedestrians. The building on the main campus block would be generally larger in scale than what currently exists, with lower floors built to the street and a set-back "tower," similar to some of the institutional and residential buildings in the area. As discussed above, the larger mid-block buildings in the surrounding area are typically much smaller in height and floorplate size than the proposed buildings. In addition, most have an east-west orientation; while the tower of the building on the main campus block shares this orientation, the research building on the north block does not. The lower portions of the buildings at the streetline, rather than the towers, would be most apparent to pedestrians passing by. The buildings would not obstruct any significant views or vistas, or significantly affect the viewing of visual resources in the area.

Overall, the two towers in the mid-blocks in 2011 and the increased density would cause a significant adverse impact. Alternatives that would reduce this impact were considered (see "D. Alternatives," below).

NEIGHBORHOOD CHARACTER

In both 2007 and 2011, the proposed actions would be expected to affect some but not all of the elements contributing to the neighborhood character of this area of Manhattan's Upper East Side. The proposed actions would allow expansion of a traditional land use in the area—medical facilities—and would support the overall utility of the area.

The proposed research building and the potential development on the remainder of the campus would increase densities on the midblocks, contributing to an on-going trend of increasing density in the area. New development would bring a higher level of activity to the area with increases in the workers, patients, and visitors. This increase would result in additional traffic, transit, and pedestrian trips in the study area. Overall, there would be a significant adverse impact on the general character of the area.

The proposed actions would not significantly impact socioeconomic conditions or noise. With a construction protection plan for St. Catherine's Church, construction-related impacts on historic resources would be mitigated. Although no view corridors or visual resources would be affected, views to the east-facing clerestory windows of St. Catherine's Church would be blocked. The architectural design of the proposed research building has been developed to respect the small-scale St. Catherine's Church immediately to its west with a linear courtyard between the two buildings and a masonry facade to complement the brick facade of the church. In addition, to reduce both the midblock density and the impact of the new building, between the

Draft and Final Environmental Impact Statements, the height of the building envelope was reduced from 440 to 420 feet. This would partially mitigate the building's adverse effect on urban design and its corresponding effect on this aspect of neighborhood character.

Overall, a number of factors that create the character of the neighborhood would be supported, while others would not be affected because of mitigation or avoidance measures. The increase in traffic and in urban design density at full build-out would tend to indicate an adverse impact on neighborhood character. However, the impact would be partially mitigated by the reduction in the size of the proposed research building and the elimination of the south block (and resulting development, employees, patients and visitors) from the rezoning area, which also took place after publication of the DEIS. Alternatives that would mitigate or reduce this impact were considered (see "D. Alternatives," below).

HAZARDOUS MATERIALS

MSKCC OPERATIONS

Hazardous materials are used in small quantities by trained professionals within MSKCC. The MSKCC Environmental Health and Safety Director establishes safety procedures and conducts an ongoing program of safety training for staff and employees. The Environmental Health and Safety Director is also responsible for ensuring that MSKCC conforms with all city, state, and federal regulations relating to the use and disposal of hazardous materials. The MSKCC Radiation Safety Officer supervises the use, storage, and disposal of radioactive materials. As it has for MSKCC's existing facilities, the Health and Safety Department would provide plans, training and equipment for cleanup of any hazardous chemical spills. The hazardous materials employed at the proposed development would be similar to those currently in use at MSKCC. Although there would be no significant change to the types of materials used, their quantities would vary under the proposed actions, with increases in the amounts of some hazardous materials. Because the proposed research building and other potential development would adhere to all regulations regarding hazardous materials, no significant adverse impacts are anticipated.

CONSTRUCTION ACTIVITIES

There is a potential for adverse impacts during construction activities resulting from the presence of chemical and radioactive products, hazardous waste, petroleum storage tanks, asbestos-containing materials, PCB-containing materials, and lead-based paint. Construction activities could disturb hazardous materials and increase pathways for human exposure. However, impacts would be avoided by performing construction activities (including identification, handling and disposal of any hazardous materials) in accordance with all applicable local, state and federal guidelines and regulations.

Prior to excavation, a Phase II subsurface investigation of the Kettering Laboratory site and the portion of the main campus block that would be affected by new construction would be conducted to fully characterize the potential contamination at the site. An investigative work plan including a testing protocol and Health and Safety Plan would be submitted to NYCDEP for review and approval before testing is undertaken. The results of the testing program and the remediation plan, if required, would be submitted to NYCDEP for review and approval. Since the Kettering Laboratory must continue to function until the building is demolished, it is impractical to complete a testing program until that time. Therefore, MSKCC has entered into

a restrictive declaration that would ensure that the appropriate characterization and remediation take place before any soil disturbance or construction begins. With this restrictive declaration, the potential for an adverse impact would be avoided.

INFRASTRUCTURE, SOLID WASTE, AND ENERGY

The proposed project would increase demand for water and energy, and would generate additional sewage and solid waste. However, in both 2007 and 2011 these increases would be relatively small and would not result in significant adverse impacts.

There would be no significant effect on the New York City water supply system's ability to deliver water reliably. Additional sanitary sewage resulting from the proposed actions would not cause the Newtown Creek WPCP to exceed its design capacity or State Pollution Discharge Elimination System (SPDES) permit flow limit. Waste from the proposed research building and other potential development on the MSKCC campus would be handled by private carters and would have no effect on the city's municipal waste handling system. Solid waste generated by non-MSKCC properties would be a relatively small amount that is not expected to burden the city's solid waste handling services. Energy consumption is not expected to result in any additional loads that could not be handled by Con Edison or another power company. Overall, the proposed actions would not have significant adverse impacts on infrastructure, solid waste, or energy.

TRAFFIC AND PARKING

Based on the standards of the *CEQR Technical Manual*, the increases in traffic generated by the proposed project would cause significant impacts in both the 2007 and 2011 analysis years. In 2007, there would be impacts at 3 intersections in the AM peak hour and 5 intersections in the PM peak hour. There would not be any impacts in the midday peak hour.

Impacts would occur at the following intersections in 2007:

- York Avenue and East 63rd Street (PM peak);
- York Avenue and East 67th Street (PM peak);
- York Avenue and East 69th Street (AM peak);
- York Avenue and East 71st Street (AM peak);
- York Avenue and East 72nd Street (PM peak);
- First Avenue and East 68th Street (PM peak); and
- Second Avenue and East 68th Street (AM and PM peaks).

In 2011, the increases in traffic generated by the proposed project would cause significant impacts at 9 intersections in the AM peak hour, 8 intersections in the midday peak hour, and 11 intersections in the PM peak hour.

Impacts would occur at the following intersections in 2011:

- York Avenue and East 61st Street (PM peak);
- York Avenue and East 62nd Street (AM and PM peaks);
- York Avenue and East 63rd Street (midday and PM peaks);
- York Avenue and East 66th Street (PM peak);
- York Avenue and East 67th Street (AM, midday, and PM peaks);
- York Avenue and East 69th Street (AM and PM peaks);
- York Avenue and East 71st Street (AM, midday, and PM peaks);

- York Avenue and East 72nd Street (AM, midday, and PM peaks);
- First Avenue and East 67th Street (AM and midday peaks);
- First Avenue and East 68th Street (AM, midday, and PM peaks);
- Second Avenue and East 68th Street (AM, midday, and PM peaks); and
- Second Avenue and East 69th Street (AM, midday, and PM peaks).

For both analysis years, all of the impacted locations could be fully mitigated through signal retiming or changes to parking regulations. These mitigation measures are described below.

Off-street parking facilities within ¼ mile of the project site would continue to operate with available capacity in future conditions with the proposed actions, and no project-related parking impacts are anticipated.

TRANSIT AND PEDESTRIANS

Because no significant impacts to pedestrian conditions would have resulted in either the 2007 or 2011 future analysis years under the larger program analyzed under the DEIS, none are expected under the proposed actions. However, the subway station stairs at the southeast and northeast corners of East 68th Street at Lexington Avenue would be significantly affected during the AM and PM peak periods analyzed. In 2007, there would be a significant impact at the northeast stair, which would operate at LOS F. In 2011, there would be significant impacts at both the southeast and the northeast stairs, which would continue to operate at LOS F. These impacts could be mitigated through stairway widening, as described below. If stair widening is not implemented, the project would result in a significant adverse impact.

AIR QUALITY

The proposed actions would result in increased mobile source emissions in the immediate vicinity of the MSKCC campus. However, the project-generated trips for the full development in 2011 would be below the *CEQR Technical Manual* screening threshold. Therefore, no detailed analysis was undertaken for 2007 or 2011 in the FEIS. As analyzed in the DEIS, no significant air quality impacts would occur at any of the analyzed receptors as a result of the proposed actions. The mobile source analysis indicates that carbon monoxide concentrations would be within the applicable standard of 9 parts per million (ppm) and the incremental impacts would all be less than the de minimis criteria.

An analysis of emissions from the proposed research building's fume hood exhaust system indicates that there would be no predicted significant adverse impacts from the laboratories' exhaust system on any MSKCC campus buildings or the surrounding community.

The effect of the exhaust plumes from the New York Hospital boiler on the proposed development shows that the predicted pollutant concentrations for all of the pollutant time averaging periods are below their respective standards. Therefore, no significant adverse air quality impacts would occur from New York Hospital's boiler exhaust.

NOISE

At full development in 2011, future noise levels would be less than 2.0 A-weighted decibels (dBA) higher than future No Build noise levels. Changes of this magnitude would be insignificant and imperceptible. Thus, the proposed actions would not result in significant noise impacts in either 2007 or 2011.

To ensure interior noise levels of at most 45 dBA, all of the project buildings would have well sealed, double-glazed windows and central air conditioning (i.e., alternative ventilation). These measures would result in interior noise levels of 45 dBA or lower. In addition, mechanical equipment such as HVAC and elevator motors would utilize sufficient noise reduction devices to comply with applicable noise regulations and standards. Overall, the proposed project would not have any significant adverse noise impacts. In addition, an (E) designation would be placed on buildings subject to the rezoning to ensure that CEPO-CEQR requirements are satisfied. The text of the (E) designation is as follows concerning Block 1463, Lots 5, 11, 21, 31:

> In order to ensure an acceptable interior noise environment, at all facades to East 68th and 69th Streets, future uses must provide a closed window condition with a minimum window/wall attenuation of 30 dB(A), in order to maintain an interior noise level of 45 dB(A). In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, central air conditioning or air conditioning sleeves containing air conditioners.

The text of the (E) designation is as follows on Block 1462, Lot 5:

> In order to ensure an acceptable interior noise environment, at all facades to roadways, future uses must provide a closed window condition with a minimum window/wall attenuation of 35 dB(A), in order to maintain an interior noise level of 45 dB(A). In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, central air conditioning or air conditioning sleeves containing air conditioners.

The (E) designation would ensure that there would be no significant adverse noise impacts.

CONSTRUCTION IMPACTS

Proposed and potential development would require the demolition of the existing buildings on the MSKCC campus. Construction of the proposed research building is expected to be completed by 2007, while completion of full development is assumed by 2011. Although some construction impacts would be unavoidable, the duration and severity of these effects would be relatively short-term and would be minimized by implementing measures during scheduling and staging of activities to control intrusive construction-related noise and particulate emissions, as well as minimize disruption to existing traffic and pedestrian circulation.

During periods of intensive excavation activity, such as excavation of bedrock, appropriate measures would be taken to ensure that no structural damage to adjacent structures would occur. The project would implement a program to monitor vibrations to ensure that blasting and excavation activities are done in conformance with applicable building codes. Existing building foundations adjacent to the construction site would be surveyed and structural movement would be monitored to safeguard the integrity of these structures from construction activities.

MSKCC has discussed relocation of Woodward School with the school's leadership and with representatives of New York-Presbyterian Hospital, which owns the school's present location. It is likely that Woodward would be relocated to the ground floor of the present MSKCC library, and have a separate entrance to that space from 1233 York Avenue. A play area would be

provided in a terrace adjacent to the medical library. Preliminary designs are now being developed for review by Woodward.

During construction of the proposed research building a Construction Protection Plan would be implemented to avoid adverse impacts on St. Catherine's Church, a potential historic resource.

Prior to excavation, a Phase II subsurface investigation of the Kettering Laboratory site and the main campus block would be conducted to fully characterize the potential contamination at the site. The results of the testing program and the remediation plan, if required, would be submitted to NYCDEP for review and approval.

C. MITIGATION

HISTORIC RESOURCES

Construction of the proposed research building could potentially affect the Church of St. Catherine of Siena. To mitigate these potential adverse physical impacts, a construction protection plan would be developed and implemented following the guidelines set forth in "The New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark" and "Protection Programs for Landmark Buildings." Since the proposed project would be built adjacent to the east side of the Church of St. Catherine of Siena, between it and the sun, there would be an increase in shadows on the east facade of the church as a result of the proposed project. To mitigate this potential impact, the applicant has included in the project's design exterior illumination for the stained glass windows at this location. This illumination would supplement the natural light on the windows that would be diminished by the proposed project. The illumination would allow the stained glass windows to be seen from within the church in a way that would provide clarity to the artwork. The light sources would be located on the exterior of the church and/or the exterior of the research building, and be directed toward each of the stained glass openings. The selection and direction of the fixtures would be such as to minimize spill onto the adjacent buildings. The exterior light sources would be located after consultation with church officials and be placed in such a manner as to minimize impact on the exterior of the church.

URBAN DESIGN

The two towers in the mid-blocks and the increased density could cause a significant adverse impact to urban design. Since publication of the DEIS, the height of the proposed research building has been reduced from 440 to 420 feet (to the top of the mechanical stacks) to partially mitigate this impact. Alternatives that would reduce or mitigate this impact were considered (see "D. Alternatives," below).

HAZARDOUS MATERIALS

NYCDEP has requested that prior to excavation, a Phase II subsurface investigation would be conducted to fully characterize the potential contamination at the Kettering Laboratory site and portions of the main campus block that would be affected by new construction. An investigative work plan including a testing protocol and Health and Safety Plan would be submitted to NYCDEP for review and approval before testing is undertaken. The results of the testing program and the remediation plan, if required, would be submitted to NYCDEP for review and approval. Since the existing Kettering Laboratory must continue to function until the building is demolished, it is impractical to complete a testing program until that time. Therefore, MSKCC

has entered into a restrictive declaration that would ensure that the appropriate characterization and remediation take place before any soil disturbance or construction begins. With this restrictive declaration, the potential for an adverse impact would be avoided.

TRAFFIC

Mitigation would be required for several intersections. NYCDOT has reviewed these mitigation measures and has agreed to evaluate operating conditions prior to completion of Phase 1 and Phase 2. At that time, appropriate mitigation measures will be implemented. For the 2007 analysis year impacts, modification of the signal timing plan is proposed for the following intersections: York Avenue and East 63rd, East 69th, East 71st, and East 72nd Streets; First Avenue and East 68th Street; and Second Avenue and East 68th Street. The impact at York Avenue and East 67th Street could be mitigated by prohibiting parking (daylighting) along one of the approaches, and creating a lagging northbound phase.

For the 2011 analysis year, modification of the signal timing plan is proposed for the following intersections: York Avenue and East 61st, East 62nd, East 63rd, East 66th, East 67th, and East 69th Streets; First Avenue and East 67th and East 68th Streets; Second Avenue and East 68th and East 69th Streets. The impacts at York Avenue and East 67th, East 71st, and East 72nd Streets could be mitigated by modifying the signal timing plan and prohibiting parking (daylighting) along one of the approaches.

Proposed mitigation measures are detailed below; these measures would mitigate impacts to No Action service conditions or better. If mitigation measures are not implemented, significant adverse impacts would occur.

RECOMMENDED MITIGATION MEASURES—2007

York Avenue and East 63rd Street

The impact at the southbound left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the westbound phase and adding to the southbound lagging phase. With this retiming, delays at the southbound left-turn movement would improve to 63.0 spv (LOS F) with a v/c ratio of 1.056 from a delay of 86.2 spv (LOS F) with a v/c ratio of 1.109 in 2007 with the proposed actions. This measure would mitigate the impact to No Action conditions or better.

York Avenue and East 67th Street

The impact at the northbound approach at this intersection during the PM peak period could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) on the northbound approach and developing an 8-second lagging phase for the northbound through and left-turn. Parking regulations at the northbound approach would be "No Standing from Here to Corner 4 PM to 7 PM." With these measures, delays at the northbound approach would improve to 5.9 spv (LOS B) with a v/c ratio of 0.630 from a delay of 39.6 spv (LOS D) with a v/c of 0.790 at the defacto northbound left-turn movement and 57.3 (LOS E) with a v/c ratio of 1.082 at the northbound left-through movement in 2007 with the proposed actions. This measure would mitigate the impact to No Action conditions or better.

York Avenue and East 69th Street

The impact at the northbound left-through movement at this intersection during the AM peak period could be mitigated by subtracting 1 second of green time from the eastbound/westbound pedestrian phase and adding it to the northbound/southbound phase. With this retiming, delays at the northbound left-through movement would improve to 30.6 spv (LOS D) with a v/c ratio of 1.013 from a delay of 35.0 spv (LOS D) with a v/c ratio of 1.027 in 2007 with the proposed actions. This measure would mitigate the impact back to 32.5 spv or better.

Based on an approximately 60-foot roadbed width on York Avenue, an average pedestrian walking speed of 3 feet per second, and a start-up time of 3 seconds, the minimum time needed for pedestrians crossing York Avenue is 23 seconds. With the proposed retiming, there would be 36 seconds available for pedestrians crossing York Avenue. If this retiming is not implemented, and there is no alternative mitigation measure, there would be a significant impact at this intersection.

York Avenue and East 71st Street

The impact at the northbound approach at this intersection during the AM peak period could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phase. With this retiming, delays at the northbound approach would improve to 75.0 spv (LOS F) with a v/c ratio of 1.113 from a delay of 86.2 spv (LOS F) with a v/c ratio of 1.134 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

York Avenue and East 72nd Street

The impact at the westbound approach at this during the PM peak period could be mitigated by subtracting 1 second of green time from the northbound/southbound phase and adding it to the eastbound/westbound phase. With this retiming, delays at the westbound approach would improve to 99.5 spv (LOS F) with a v/c ratio of 1.081 from a delay of 123.6 spv (LOS F) with a v/c ratio of 1.130 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

First Avenue and East 68th Street

The impact at the eastbound approach at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 73.1 spv (LOS F) with a v/c ratio of 1.069 from a delay of 87.4 (LOS F) with a v/c ratio of 1.102 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

Second Avenue and East 68th Street

The impact at the eastbound approach at this intersection during the AM peak period could be mitigated by subtracting 2 seconds of green time from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 62.3 spv (LOS F) with a v/c ratio of 1.017 from a delay of 84.4 spv (LOS F) with a v/c ratio of 1.075 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

During the PM peak hour, the impact could be mitigated by subtracting 1 second of green time from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 69.7 spv (LOS F) with a v/c ratio of 1.060 from a delay of 82.5 spv (LOS F) with a v/c ratio of 1.091 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

RECOMMENDED MITIGATION MEASURES—2011

York Avenue and East 61st Street

The impact at the northbound defacto left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phase. With this retiming, delays at the northbound defacto left-turn movement would improve to 122.0 spv (LOS F) with a v/c ratio of 1.037 from a delay of 137.4 spv (LOS F) with a v/c ratio of 1.067 in 2011 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

York Avenue and East 62nd Street

The impacts at the northbound approach at this intersection during both the AM and midday peak periods could be mitigated by subtracting 1 second of green time from the southbound lagging phase and adding it to the northbound/southbound phase. With this retiming, delays would improve to 32.1 spv (LOS D) with a v/c ratio of 0.955 from 35.8 spv (LOS E) with a v/c ratio of 0.957 in 2011 with the proposed actions during the AM peak period.

The impact at the southbound approach at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the pedestrian phase and adding it to the southbound lagging phase. With this retiming, delays would improve to 57.5 spv (LOS E) with a v/c ratio of 1.198 from 65.3 spv (LOS F) with a v/c ratio of 1.113 in 2011 with the proposed actions.

With these measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 63rd Street

The impact at the southbound left-turn movement at this intersection during the midday and PM peak periods could be mitigated by subtracting 1 second of green time from the northbound/ southbound phase and adding it to the southbound lagging phase. With these retimings, delays would improve to 71.9 (LOS F) with a v/c ratio of 1.041 from 102.8 spv (LOS F) with a v/c ratio of 1.110 during the PM peak period in 2011 with the proposed actions during the midday peak period, and to 79.1 spv (LOS F) with a v/c ratio of 1.096 from 107.2 spv (LOS F) with a v/c ratio of 1.150 in 2011 with the proposed actions.

With these measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and 66th Street

The impact at the northbound defacto left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 5 seconds of green time from the westbound phase and adding it to the northbound/southbound phase. With this retiming, delays would improve to 37.9 spv (LOS D) with a v/c ratio of 0.809 from a delay of 76.7 (LOS F) with a v/c

ratio of 0.944 in 2011 with the proposed actions. With this measure in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 67th Street

The impact at the northbound left-turn and through movements at this intersection during the AM, midday, and PM peak periods could be mitigated by creating a leading northbound phase with 8 seconds of green time (and 3 seconds of yellow plus all red time). In addition, during the midday and PM peak periods, parking at the southbound approach would be prohibited (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces). Parking regulations would be "No Standing from Here to Corner Noon to 2 PM and 4 PM to 7 PM." With these measures, delays would improve to 4.8 spv (LOS A) with a v/c of 0.479 from delays of 81.7 spv (LOS F) with a v/c ratio of 0.965 at the northbound defacto left-turn movement and 5.0 spv (LOS A) with a v/c ratio of 0.512 at the through movement in 2011 with the proposed actions during the AM peak period, to 10.2 spv (LOS B) with a v/c ratio of 0.870 from a delay of 166.0 spv (LOS F) with a v/c ratio of 1.188 at the defacto left-turn movement and 95.6 (LOS F) with a v/c ratio of 1.163 at the through movement in 2011 with the proposed actions during the midday peak period, and to 7.4 (LOS B) with a v/c ratio of 0.740 from 68.7 spv (LOS F) with a v/c of 0.917 at the defacto left-turn movement and 69.6 spv (LOS F) with a v/c ratio of 1.110 at the through movement in 2011 with the proposed actions during the PM peak period. With these measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 69th Street

The impact at the northbound approach at this intersection during the AM and PM peak periods could be mitigated by creating a leading northbound phase with 8 seconds of green time (and 3 seconds of yellow plus all red time). With this retiming, delays at the northbound approach would improve to 6.8 spv (LOS B) with a v/c ratio of 0.709 from 57.0 spv (LOS F) with a v/c ratio of 1.088 in 2011 with the proposed actions during the AM peak, and to 8.1 spv (LOS B) with a v/c ratio of 0.774 from delays of 49.8 spv (LOS E) with a v/c ratio of 1.068 in 2011 with the proposed actions during the PM peak.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 71st Street

The impact at the northbound approach at this intersection during the AM peak period could be mitigated by prohibiting parking for approximately 150 feet from the intersection (approximately 6 spaces) at the northbound approach. Parking regulations would be "No Standing From Here to Corner 7AM to 10AM." With this measure, delays at the northbound approach would improve to 57.8 spv (LOS F) with a v/c ratio of 1.074 from a delay of 120.2 (LOS F) with a v/c ratio of 1.193 in 2011 with the proposed actions.

During both the midday and PM peak periods, the impacts could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phases. With this retiming, delays at the northbound approach would improve to 78.5 spv (LOS F) with a v/c ratio of 1.129 from a delay of 94.4 (LOS F) with a v/c ratio of 1.157 in 2011 with the proposed actions during the midday peak period, and to 75.2 (LOS F) with a v/c ratio of 1.114 from a delay of 85.9 spv (LOS F) with a v/c of 1.134 in 2011 with the proposed actions during the PM peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 72nd Street

The impacts at the eastbound and westbound approaches during the AM peak period could be mitigated by subtracting 1 second of green time from the northbound and southbound phase and adding it to the eastbound/westbound phase. With this retiming, delays at the eastbound approach would improve to 86.6 spv (LOS F) with a v/c ratio of 1.088 from 103.0 (LOS F) with a v/c ratio of 1.122 in 2011 with the proposed actions. At the westbound approach, delays would improve to 101.3 spv (LOS F) with a v/c ratio of 1.068 from 125.0 (LOS F) with a v/c ratio of 1.118 in 2011 with the proposed actions.

During the midday peak period, the impact at the northbound approach could be mitigated by subtracting 1 second of green time from the eastbound/westbound pedestrian phase and adding it to the northbound/southbound phase. With this retiming, delays at the northbound approach would improve to 89.3 spv (LOS F) with a v/c ratio of 1.147 from a delay of 106.7 (LOS F) with a v/c ratio of 1.176 in 2011 with the proposed actions.

During the PM peak period, the impact at the westbound approach could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) on westbound approach. Parking regulations would be "No Standing From Here to Corner 4PM to 7PM." Parking demand is discussed below. With this measure, delays at the westbound approach would improve to 89.1 (LOS F) with a v/c ratio of 1.059 from a delay of 261.5 spv (LOS F) with a v/c ratio of 1.324 in 2011 with the proposed actions.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

First Avenue at East 67th Street

The impact at the westbound approach at this intersection during the AM and midday peak periods could be mitigated by subtracting 2 seconds of green time from the northbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 53.2 spv (LOS E) with a v/c ratio of 0.976 from a delay of 72.0 spv (LOS F) with a v/c ratio of 1.036 in 2011 with the proposed actions during the AM peak period, and to 75.2 spv (LOS F) with a v/c ratio of 1.051 from a delay of 103.8 spv (LOS F) with a v/c ratio of 1.115 in 2011 with the proposed actions during the midday peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

First Avenue and 68th Street

The impact at the eastbound approach during the AM peak period could be mitigated by subtracting 3 seconds of green time from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 55.2 spv (LOS E) with a v/c ratio of 0.997 from a delay of 88.7 spv (LOS F) with a v/c ratio of 1.087 in 2011 with the proposed actions.

The impact at the eastbound approach at this intersection during the midday and PM peak periods could be mitigated by subtracting 1 and 2 seconds of green time, respectively, from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the

eastbound approach would improve to 82.3 spv (LOS F) with a v/c ratio of 1.086 from a delay of 98.1 spv (LOS F) with a v/c ratio of 1.119 in 2011 with the proposed actions during the midday peak period, and to 78.8 spv (LOS F) with a v/c ratio of 1.086 from a delay of 112.1 spv (LOS F) with a v/c ratio of 1.152 in 2011 with the proposed actions during the PM peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Second Avenue and 68th Street

The impact at the eastbound approach at this intersection during the AM peak period could be mitigated by subtracting 4 seconds of green time from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 66.0 spv (LOS F) with a v/c ratio of 1.035 from a delay of 121.2 spv (LOS F) with a v/c ratio of 1.153 in 2011 with the proposed actions.

During the midday and PM peak periods the impacts at the eastbound approach could be mitigated by subtracting 1 and 2 seconds of green time, respectively, from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 82.5 spv (LOS F) with a v/c ratio of 1.088 from a delay of 97.4 spv (LOS F) with a v/c ratio of 1.119 in 2011 with the proposed actions during the midday peak, and to 74.9 spv (LOS F) with a v/c ratio of 1.076 from a delay of 104.6 spv (LOS F) with a v/c ratio of 1.138 in 2011 with the proposed actions during the PM peak.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Second Avenue and East 69th Street

The impact at the westbound approach at this intersection during the AM peak period could be mitigated by subtracting 2 seconds of green time from the southbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 37.2 spv (LOS D) with a v/c ratio of 0.904 from a delay of 48.4 spv (LOS E) with a v/c ratio of 0.957 in 2011 with the proposed actions.

During the midday peak period, the impact could be mitigated by subtracting 1 and 2 second of green time from the southbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 79.8 spv (LOS F) with a v/c ratio of 1.081 from a delay of 94.6 spv (LOS F) with a v/c ratio of 1.112 in 2011 with the proposed actions.

During the PM peak period the impact could be mitigated by subtracting 1 second of green time from the southbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 43.5 spv (LOS D) with a v/c ratio of 0.937 from a delay of 50.0 spv (LOS E) with a v/c ratio of 0.965 in 2011 with the proposed actions.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

PARKING

It is assumed that the 18 on-street parking spaces lost due to the proposed 2011 mitigation measures would add to the off-street parking demand in the area, increasing the midday off-street parking utilization rate to approximately 94.5 percent. There would be available off-street

parking capacity, and no significant impacts to parking would result from restricting on-street parking as described above.

PEDESTRIANS AND TRANSIT

The proposed actions would result in a significant impact to the subway station stairs at the northeast corner of East 68th Street at Lexington Avenue. In 2007, restoring the service measurement to No Action conditions would require a widening of one inch as recommended by CEQR. In 2011, a widening of two inches at the southeast stair would be required to alleviate crowded stair conditions, and at the northeast stairs a widening of three inches would be necessary.

The Metropolitan Transit Authority (MTA) generally does not disrupt service on a stairway to complete a widening of two inches, but could instead choose to widen the stair by at least six inches to one foot. Therefore, no subway stair mitigation would be undertaken for 2007. Instead, discussions with the MTA have focused on widening the northeast and southeast stairs as part of the Phase 2 development. The MTA has reviewed and approved conceptual improvement plans, as discussed above in, "Mitigation." According to the *CEQR Technical Manual* "the applicant generally identifies the cost associated with the percent of construction required to mitigate the action's significant adverse impacts." The applicant would be responsible for this portion of the improvement. There is no commitment by the MTA regarding funding this mitigation at this time. If mitigation is not implemented, a significant adverse impact would occur.

AIR QUALITY

There would be no adverse impacts on air quality with the proposed traffic mitigation measures in place.

D. ALTERNATIVES

In addition to the No Action Alternative, build alternatives were considered as follows: an R8 Research Building Alternative, with height and setback waivers; an R8 As-of-Right Research Building Alternative; an R8 As-of-Right Mixed-Use Alternative with development on the north block; an R9 As-of-Right Research Building Alternative; an R9 As-of-Right Mixed-Use Alternative; the Manhattan Borough President's Alternative; the CIVITAS Alternative; Alternative Sites; and a Reduced Main Campus Block Development Alternative.

NO ACTION ALTERNATIVE

This alternative is discussed and analyzed as the future without the proposed project in each of the technical areas of the EIS. The No Action Alternative would not involve any major changes to the structures on the project site (construction or demolition). The Church Rectory would remain on site.

LAND USE, ZONING, AND PUBLIC POLICY

The former site of St. Catherine's School would remain a vacant lot, and the Church Rectory and the Kettering Building would remain. There would be no expansion and enhancement of medical facilities. In 2011 there would be no further development on the main campus block.

There would be no rezoning of the midblocks between 67th and 69th Streets and York and First Avenues from R8 to R9 and the allowable density would not be increased. No LSCFD would be designated and planning for the campus would be impeded.

SOCIOECONOMIC CONDITIONS

The existing rectory of St. Catherine's Church would not be removed and then replaced in the base of the new structure adjacent to the church. None of the economic benefits realized during construction and operation of the proposed research building and potential future development on the main campus block would occur.

COMMUNITY FACILITIES

There would be no adverse impacts to New York City Police Department or New York City Fire Department services with or without the proposed actions. The No Action Alternative would not allow MSKCC to build its proposed research building and would significantly diminish MSKCC's ability to plan for future needs on the main campus.

OPEN SPACE AND RECREATIONAL FACILITIES

Without the proposed actions, the associated population would not increase the number of open space users in the study area. Without the proposed research building or any redevelopment in the remainder of the north block rezoning area, there would be 645 fewer workers in 2007. The 1.8 percent decrease in the worker open space ratio would not occur. The 0.9 percent decrease in the overall passive open space ratio would not occur.

Without the proposed actions there would be approximately 1,299 fewer workers in the study area in 2011.The decrease in the worker open space ratio by 3.5 percent (a decrease of less than 0.01 acres of passive space per 1,000 workers) would not occur. The 1.7 percent decrease in the overall passive open space ratio (a decrease of less than 0.01 acres per 1,000 residents and workers) would not occur. Unlike the proposed research building, there would not be an impact on open space due to the combination of increased users and increased shadows.

SHADOWS

Without the proposed research building, there would be no increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall, and there would not be an increase in shadows on the east facade of the Church in 2007. Without the proposed research building and the potential development on the main campus block there would be no major increase in shadows on St. Catherine's Park from the beginning of the analysis period through the morning in 2011.

HISTORIC RESOURCES

Without the proposed research building, there would be no potential for construction-related impacts to St. Catherine's Church and no construction protection plan would be required. There would be no increase in shadows on the stained-glass windows on the east side of St. Catherine's Church and mitigation (lighting of these windows) would not be required. Consequently there would be no potential significant impact on historic resources in the study area.

URBAN DESIGN AND VISUAL RESOURCES

The No Action Alternative would not alter the urban design context in 2007 with the introduction of new activity and more dense development to the project site, in a building reaching to 420 feet in the midblock between East 68th and 69th Streets. In 2011 the density between East 67th and 69th Streets would not be increased by the construction of a new building on the north block and new development on the main campus block reaching to approximately 420 and 448 feet, respectively. The urban design context of the surrounding streets would not be altered. Views of the east windows of St. Catherine's Church would not be blocked. There would be no potential adverse impact on urban design. As with the proposed actions, existing visual resources and view corridors would not be affected by the No Action Alternative in 2007 or 2011.

NEIGHBORHOOD CHARACTER

With the No Action Alternative, there would be no potential significant adverse impact on neighborhood character. Without the proposed research building, there would not be the addition of a tall structure adversely affecting urban design and increasing the density of its midblock location. Views to the east-facing windows of St. Catherine's Church would not be blocked. Further, there would be no additional project-generated traffic.

HAZARDOUS MATERIALS

With the No Action Alternative, as with the proposed actions and resulting development, all hazardous chemicals and other hazardous materials would continue to be handled, stored, and disposed of in accordance with all applicable federal, state, and local regulations. Any asbestos-containing materials and lead paint would remain in place. A Phase II testing program and, if necessary, a remediation program would not be required.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would not increase over the existing conditions, but, even with the proposed actions and anticipated development no adverse impacts are anticipated.

TRAFFIC AND PARKING

Traffic volumes would be expected to increase as a result of planned developments in the study area and general growth in the city, resulting in increased congestion at some locations. This alternative would not result in any new project-generated trips. In 2007 the No Action Alternative would not result in significant impacts at 3, 0, and 5 intersections during the AM, midday, and PM peak periods, respectively, as there would be with the proposed actions. There would be no need for traffic mitigation associated with MSKCC operations, as there would be with the proposed actions. Unlike the proposed project there would be no increase in demand for parking with the No Action Alternative.

In 2011 this alternative would not result in significant impacts at 9, 8, and 11 intersections during the AM, midday, and PM peak periods, respectively, as there would be with the proposed actions. There would be no need for traffic mitigation associated with MSKCC operations, as there would be with the proposed action. Unlike the proposed project there would be no increase in demand for parking with the No Action Alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes as a result of background growth and planned developments. This alternative would not result in any new pedestrian trips and, therefore, there would be no increased demand for pedestrian space in the study area.

Similarly, subway and bus trips would not increase as a result of this alternative, and no additional demand for subway and bus service would occur with this alternative. There would be no potential adverse impacts on two subway stairs at East 68th Street and Lexington Avenue in 2007 or 2011, and no need for mitigation at these stairs in 2011.

AIR QUALITY

No violations of the National Ambient Air Quality Standards (NAAQS) are expected to occur either under the No Action Alternative or with the proposed action and resulting development, and both would be consistent with the State Implementation Plan (SIP). In addition, there would be no potential effects from any research building exhaust system on any MSKCC campus buildings or the surrounding community.

NOISE

Both with the No Action Alternative and the proposed project, in the years 2007 and 2011, noise levels in the project study area will not be significantly increased compared to existing levels. Without the proposed action, there would be no actions to require sound attenuation under an (E) designation.

CONSTRUCTION IMPACTS

The No Action Alternative would avoid the temporary construction impacts associated with proposed and potential development on the MSKCC campus.

R8 RESEARCH BUILDING ALTERNATIVE

This alternative assumes a smaller research building, 18 rather than 23 stories tall (approximately 360 feet—approximately 60 feet shorter than the proposed building). With an allowable FAR of 6.5, it would have 392,275 square feet of floor area. It would provide the same laboratory floor plates in both the tower and the low-rise wing as the proposed project. A portion of the building could be allocated for the Church Rectory. There would be no increase in allowable floor area on the main campus block. Since it is fully built out at R8, it is assumed that there would be no further development on this block. With 11 out of the 16 proposed laboratory floors, this research building would not satisfy MSKCC's program needs. The total population of this building would be 720 as compared to 912 with the proposed actions.

This R8 Research Building Alternative would require the same height and setback modifications and variances for lot coverage and rear yard requirements the proposed research building from both CPC and BSA. This design would allow phasing of the research building so the Kettering Building could be retained until the tower portion is built. Therefore, it would also require the same special permit from BSA for temporary failure to comply. It would also require the (E) designation for noise attenuation.

LAND USE, ZONING, AND PUBLIC POLICY

As with the proposed actions, St. Catherine's Church Rectory and the Kettering Building would be demolished and a proposed research building would be developed by 2007. There would be a lesser expansion and enhancement of medical facilities. In 2011 conditions would be the same as those in 2007 as no further development would take place on the main campus block.

There would be no rezoning of the two midblocks. The allowable density of development for community facilities in the proposed rezoning area would not be increased. No LSCFD would be designated.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of the R8 Research Building Alternative would be substantially less than those anticipated with the proposed research building.

COMMUNITY FACILITIES

The R8 Research Building Alternative would increase the worker population by a much smaller number and it would bring no new patients to the project site. Neither this alternative nor the proposed actions would result in any adverse impacts on the services of the New York City Police Department or the New York City Fire Department.

However, MSKCC would not be able to build the full program of research space that its believes it needs in 2007, and MSKCC believes it would have significantly diminished ability to plan for future needs on the main campus block.

OPEN SPACE AND RECREATIONAL FACILITIES

In 2007 there would be 356 new workers as compared to 645 with the proposed building and other development in the north block. With only 356 workers, this alternative would fall below the threshold for an open space analysis and would not affect open space. While there would be early morning shadows on St. Catherine's Park, they would be less than with the proposed actions; and similar to the proposed project, this alternative would not create an open space impact.

In 2011 there would be no additional development on the main campus block and, as in 2007, the open space analysis would not be warranted.

SHADOWS

With the smaller R8 research building there would be a smaller increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007. The shadows on St. Catherine's Church would be the same as those of the proposed research building. In 2011 without the potential development on the main campus block, the increase in shadows on St. Catherine's Park would be as described above for 2007.

HISTORIC RESOURCES

Similar to conditions with the proposed actions, the R8 research building would have potential construction-related impacts on St. Catherine's Church and require a Construction Protection Plan. The R8 alternative would reduce light to the east windows of the church, similar to the

proposed actions. Mitigation to reduce this impact would be the same as for the proposed project.

URBAN DESIGN AND VISUAL RESOURCES

Due to its lower height, approximately 60 feet shorter than the proposed research building, the R8 research building would not result in the partially mitigated urban design impact that would occur with the proposed actions. As with the proposed actions, the R8 research building would block views of the stained-glass windows on the east side of the Church of St. Catherine of Siena. As with the proposed actions, the design of the research building under this alternative would incorporate a number of design measures to reduce the visual effect of the increased density. In addition to providing a masonry base, they include dividing the tower into slipped forms to diminish its visual presence, horizontal shading fins on the east facade, a composition of fritted or patterned glass on the west facade, and transparent ground-level entrances and plantings to join the interior and exterior. The R8 Research Building Alternative would not develop the main campus block or change the context or density of that block, and thus would have less of an impact than the proposed actions. Overall, the impact on urban design would be less with this alternative than with the proposed actions. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the R8 Research Building Alternative.

NEIGHBORHOOD CHARACTER

The R8 Research Building Alternative would not result in significant adverse neighborhood character impacts related to open space, urban design, and shadows. However, as noted above, MSKCC does not believe that this alternative would meet its stated programmatic needs.

HAZARDOUS MATERIALS

This alternative would have the same effects with respect to hazardous materials as the proposed actions. All hazardous chemicals and other hazardous materials would continue to be handled in accordance with all applicable federal, state, and local regulations. Any asbestos-containing materials and lead paint in the Kettering Building and the rectory would be removed in accordance with all regulations. As with the proposed research building, a Restrictive Declaration would require a Phase II testing program and, if necessary, mitigation prior to any excavation on the Kettering Laboratory site and the main campus block.

INFRASTRUCTURE

With this alternative or with the proposed actions, no adverse impacts are anticipated.

TRAFFIC AND PARKING

Traffic volumes would increase less with this alternative because anticipated development would be much less. In 2007 the R8 Alternative would generate 30, 12, and 32 fewer trips during the AM, midday, and PM peak periods, resulting in lower traffic volumes than with the proposed actions. The need for traffic mitigation measures would be similar to those recommended for 2007 with the proposed actions. The increase in demand for parking would be less than with the proposed actions, and there would be no significant impacts to parking with this alternative.

In 2011, there would be no further MSKCC development, and this alternative would result in 140, 96, and 178 fewer vehicle trips than the proposed actions during the AM, midday, and PM

peak periods, respectively. There would be fewer affected locations than with the proposed actions. The need for traffic mitigation associated with MSKCC operations would be reduced as compared to the proposed actions. Again, the increase in demand for parking would be less than with the proposed actions, and there would be no significant impacts to parking with this alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes as a result of the R8 Research Building Alternative. However, in 2007, this alternative would generate 173, 89, and 182 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011, this alternative would result in 656, 554, and 816 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. Like the proposed action, there would not be any significant adverse impacts to pedestrian conditions with this alternative.

Similarly, subway and bus trips would increase as a result of this alternative, but in 2007, there would be 74, 2, and 77 fewer subway trips, and 27, 2, and 27 fewer bus trips than with the proposed actions during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011, there would be 275, 53, and 313 fewer subway trips, and 101, 45, and 127 fewer bus trips than with the proposed action during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would be no impacts and no need for mitigation at the northeast and southeast subway stairs at the East 68th Street station in 2011.

AIR QUALITY

Increases in 8-hour carbon monoxide concentrations expected from this alternative would be comparable to or lower than those of the proposed actions, none of which are significant. No violations of the National Ambient Air Quality Standards (NAAQS) are expected to occur either under the R8 Research Building Alternative or with the proposed actions and resulting development by 2007 or 2011, and both would be consistent with the State Implementation Plan (SIP). With the R8 Research Building Alternative, due to the shorter research building, additional measures may be required to avoid potential significant adverse impacts from the exhaust system of the laboratories in the proposed research building on any MSKCC campus buildings and the surrounding community. Such measures may include, but would not be limited to, changes in the design of the mechanical systems that would modify exhaust parameters to reduce emissions.

NOISE

With both the R8 Research Building Alternative and the proposed project, no significant adverse noise impacts would result from additional vehicle trips or building mechanical systems. Noise attenuation similar to that for the proposed research would be required.

CONSTRUCTION IMPACTS

As compared to development with the proposed actions, the R8 Research Building Alternative would have smaller temporary construction impacts attributable to construction of the north

block, which is anticipated to be completed by 2007. No further development would be anticipated on the south and main campus blocks.

R8 AS-OF-RIGHT RESEARCH BUILDING ALTERNATIVE*

This alternative assumes that the rezoning does not take place, and that a smaller as-of-right research building would be built under current zoning on the north block. It would have a 38 percent tower, which would not be a suitable form to house a state-of-the-art research building. A portion of the building could be allocated for use as St. Catherine's Church Rectory. It would be approximately 407 feet tall—slightly shorter than the proposed research building. With an allowable FAR of 6.5, it would have 382,451 square feet of floor area, approximately 137,000 square feet smaller than the proposed research building. Without the rezoning, there would be no increase in allowable floor area on the main campus block, and it is assumed that it would remain as it is, with no further changes beyond the current construction program.

MSKCC believes that the R8 As-of-Right Research Building Alternative would not satisfy its stated needs for research space, and construction of the building could not be phased to allow the Kettering Building to remain in place until the tower portion is complete. The total population of this building is assumed to be 720 as compared to 912 with the proposed actions. On the main block of the campus, MSKCC believes that it would be severely constrained in its planning for future development.

The R8 as-of-right research building would not require any of the height and setback modifications and variances for lot coverage and rear yard requirements that are needed for the proposed research building. It would also not require the BSA Special Permit for a temporary failure to comply, as the Kettering Building would have to be demolished before construction could begin.

The Build year is assumed to be 2007 with no further development in 2011.

LAND USE, ZONING, AND PUBLIC POLICY

As with the proposed research building, the St. Catherine's Church Rectory and the Kettering Building would be demolished. The sites of the these two buildings as well as the vacant lot on East 69th Street would be redeveloped with a new research building by 2007. Because the Kettering Laboratory would have to be displaced at the beginning of construction, this would be unacceptable to MSKCC. In 2011 conditions would be the same as those in 2007 as no further development would take place on the main campus block and the R8 as-of-right research building would be the only new building.

Unlike the proposed project, there would be no rezoning of the two midblocks between East 67th and 69th Streets and York and First Avenues from R8 to R9. The allowable density of development for community facilities in the proposed rezoning area would not be increased from 6.5 FAR to 10 FAR. No LSCFD would be designated and in MSKCC's opinion planning for the campus as a whole would be impeded. There would be no shift of additional bulk from the north block to the main campus block. There would be no waivers of height, setback, and lot coverage from CPC and BSA.

* This alternative is new in the FEIS.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of the R8 As-of-Right Research Building Alternative would be substantially less than those anticipated with the proposed actions. In 2007 there would be less direct or generated construction employment and income; and the city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less. In 2011 there would be no additional economic activity.

COMMUNITY FACILITIES

The R8 As-of-Right Research Building Alternative would create a smaller new research building and no new buildings on the main campus block. It would increase the worker population by a much smaller number and it would bring no new patients to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

OPEN SPACE AND RECREATIONAL FACILITIES

Under this alternative, the research building would be smaller than the proposed research building and would add a smaller population to the open space users in the study area. In 2007 there would be 356 new employees as compared to 645 new employees with the proposed actions. There would be no additional residential population due to development (unrelated to MSKCC) permitted by the rezoning. With fewer than 500 new employees, this alternative is below the CEQR threshold for an open space analysis, and would not affect open space. Since the building would be taller but more slender than the proposed research building, it would have longer but narrower shadows. Since they would only fall on St. Catherine's Park in the early morning, they would not significantly affect open space.

While this alternative would not result in any open space impacts, MSKCC believes that this alternative is infeasible as noted above.

SHADOWS

As with the proposed actions, this alternative would not result in significant adverse shadow impacts although its shadows would be somewhat different.

HISTORIC RESOURCES

Potential impacts could occur during construction. However, because the building is as-of-right, a construction protection plan would not be required. Increased shadows on the east-facing stained-glass windows of St. Catherine's Church would be somewhat less, but mitigation would not be required.

URBAN DESIGN AND VISUAL RESOURCES

There would be new, more dense development on the north block. While the R8 as-of-right building would be only approximately 13 feet shorter than the proposed research building, it would be set back 30 feet above the one-story base and would not have an adverse impact on urban design. The R8 As-of-Right Research Building Alternative would not develop the main

campus block or change the context or density of that block, and thus would have less of an impact than the proposed actions. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011.

NEIGHBORHOOD CHARACTER

With the R8 As-of-Right Research Building Alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. However, a construction protection plan would not be required to avoid construction-related impacts to St. Catherine's Church. There would be a new, slightly taller tower adjacent to the small-scale St. Catherine's Church which would block views and sunlight to its east windows. The tall structure would increase density in the midblock location; but because it would be set back 30 feet above its one-story base, it would not have an urban design impact. There would be less new activity in the area in 2007 and much less in 2011. The increase in traffic due to the R8 as-of-right research building would be less than with the proposed research building and much less as compared to conditions in 2011 with the proposed actions. As an as-of-right project, an (E) designation for noise attenuation would not be imposed. Overall, similar to conditions with the proposed actions, this alternative would have an adverse impact on some elements of neighborhood character in 2007, but no additional impacts in the 2011 analysis year.

HAZARDOUS MATERIALS

Asbestos-contaminated materials and lead-based paint believed to be present in the existing buildings to be demolished would be removed in accordance with all applicable local, state and federal regulations.

As with the proposed actions, potential construction-related impacts could occur as a result of development on the Kettering Building site. However, because this alternative is as-of-right, a Phase II subsurface investigation would be not be required.

All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, State and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase in 2007, but would be substantially less than with the proposed actions. The would be no further increase in the demand or usage of infrastructure in 2011 as no further development is anticipated. However, even with the proposed actions and anticipated development, no adverse impacts are anticipated.

TRAFFIC AND PARKING

Traffic volumes would increase less with this alternative because anticipated development would be much less. In 2007 the R8 As-of-Right Research Building Alternative would generate 30, 12, and 32 fewer trips during the AM, midday, and PM peak periods, resulting in lower traffic volumes than with the proposed actions. The need for traffic mitigation measures would be similar to those recommended for 2007 with the proposed actions. The increase in demand for parking would be less than with the proposed actions, and there would be no significant impacts to parking with this alternative.

In 2011, there would be no further MSKCC development, and this alternative would result in 140, 96, and 178 fewer vehicle trips than the proposed actions during the AM, midday, and PM peak periods, respectively. There would be fewer affected locations than with the proposed actions. The need for traffic mitigation associated with MSKCC operations would be reduced as compared to the proposed actions. Again, the increase in demand for parking would be less than with the proposed actions, and there would be no significant impacts to parking with this alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes as a result of the R8 As-of-Right Research Building Alternative. However, in 2007, this alternative would generate 173, 89, and 182 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would not be an impact to the northeast stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011 this alternative would not add any more pedestrian trips. Like the proposed action, there would not be any significant adverse impacts to pedestrian conditions with this alternative.

Similarly, subway and bus trips would increase as a result of this alternative, but in 2007, there would be 74, 2, and 77 fewer subway trips, and 27, 2, and 27 fewer bus trips than with the proposed actions during the AM, midday, and PM peak periods, respectively. Like the proposed actions, there would be no need for subway stair mitigation in 2007. In 2011, there would be 275, 53, and 313 fewer subway trips, and 101, 45, and 127 fewer bus trips than with the proposed action during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would be no impacts and no need for mitigation at the northeast and southeast subway stairs at the East 68th Street station in 2011.

AIR QUALITY

With the R8 As-of-Right Research Building Alternative, in 2007 and 2011 the increases in the 8-hour carbon monoxide concentrations expected from development associated with the proposed actions, none of which are significant, would be comparable or lower, since project-generated traffic volumes would be lower for this alternative. No violations of the National Ambient Air Quality Standards (NAAQS) are predicted to occur either under the R8 As-of-Right Research Building Alternative or with the proposed actions and resulting development, and both would be consistent with the State Implementation Plan (SIP). Due to the shorter research building, additional measures may be required to avoid potential significant adverse impacts from the exhaust system of the laboratories in the proposed research building on any MSKCC campus buildings and the surrounding community. Such measures could include, but would not be limited to, changes to the design of the mechanical systems that would modify exhaust parameters to reduce emissions. However, for an as-of-right project these mitigation measures would not be required.

NOISE

Both with the R8 As-of-Right Research Building Alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area will not be significantly increased compared to existing levels. With both the R8 As-of-Right Research Building Alternative and the proposed project, no significant adverse noise impacts would result from building

mechanical systems. Like the proposed project, this alternative could result in a noise impact by placing a sensitive receptor in a noisy area; however, because there would be no rezoning an (E) designation for noise attenuation could not be placed on the site and the impact would be unmitigated.

CONSTRUCTION IMPACTS

As compared to development with the proposed actions, the R8 As-of-Right Research Building Alternative would have smaller temporary impacts attributable to construction of the north block, which is anticipated to be completed by 2007. Under this alternative, no further development would be anticipated on the main campus block. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts. The R8 As-of-Right Research Building Alternative would reduce the duration of construction-related impacts as compared to the proposed actions but would still entail the same activities and phasing.

R8 AS-OF-RIGHT MIXED-USE ALTERNATIVE

This alternative assumes an R8 mixed-use development on the north block with no additional floor area available on the main campus block of the MSKCC campus. In this alternative, development on the north block would include community facility uses on the first five floors and residential above. The five floors of community facility use would total 137,112 square feet. The residential tower would have 32 floors with 8,400-square-foot floor plates for a gross floor area of 268,800 square feet. Assuming an apartment area of 900 square feet, this would yield approximately 317 apartments. A portion of the building could house the rectory of St. Catherine's Church.

Unlike the R8 as-of-right research building, which had a square tower intended to maximize tower floor plates, this alternative would have a taller more slender tower intended to maximize height and views for residential units. Therefore, it is much taller than the R8 as-of-right research building discussed above.

The overall height to the top of the residential floors would be 481 feet, with an additional 22 feet for the mechanical penthouse. The total floor area would be 405,912 square feet as compared to the proposed research building, which would have a floor area of 510,389 square feet.

This alternative requires no land use actions.

This alternative does not satisfy MSKCC's urgent need for new research laboratory space. It would not provide sufficient community facility space to satisfy the research program, and would not provide the required laboratory floor plate. Further, it would not allow any additional development on the main campus block. Overall, it does not represent an acceptable alternative to MSKCC because it would not satisfy the purpose and need of the proposed actions.

It is assumed that the mixed-use building would be built in 2007 but that there would be no further development in 2011.

LAND USE, ZONING, AND PUBLIC POLICY

With the R8 As-of-Right Mixed-Use Alternative, St. Catherine's Church Rectory and the Kettering Building would be demolished and a new mixed- use building would rise on the north block of the site in 2007. This alternative would provide far less community facility space for hospital use than the proposed research building. The expansion of MSKCC facilities in 2007 would be largely residential.

In 2011 there would be no new development on the main campus block. Overall, land use on the MSKCC campus would become more dense only on the north block where the site is underbuilt in an R8 zone.

There would be no zoning and land use actions. In MSKCC's opinion, planning for the campus as a whole would be impeded.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during construction on the north block and operation of the R8 mixed-use building would be far less than with the proposed R9 research building as it would be over 100,000 square feet smaller, and because a residential tower would cost less to build and provide fewer jobs during operation. The direct or generated construction employment and income, and the expected city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less than with the proposed actions. In 2011, there would be no new economic activity on the main campus block. Overall, the R8 As-of-Right Mixed-Use Alternative would be a far smaller generator of economic activity and of city and state revenues.

COMMUNITY FACILITIES

The R8 As-of Right Mixed-Use Alternative would not only increase the demand for police and fire protection, but its residential component would increase the demand for school seats in neighborhood schools. It would not create the proposed research building, and there would be no expansion of hospital facilities on the main campus block. Therefore, in MSKCC's opinion it would contribute far less to MSKCC's goals, research, and treatment facility.

OPEN SPACE AND RECREATIONAL FACILITIES

With the R8 As-of-Right Mixed-Use Alternative, the residents of the apartments would increase the demand for active open space within a ½-mile radius as well as passive open space within a ¼ mile as compared to development with the proposed actions, which would only increase the demand for passive open space within a ¼-mile radius.

With the R8 mixed-use building, the 300 apartments would be assumed to have 480 residents (based on 1.6 persons per household, U.S. Census 2000). There would be a total of about 264 employees, or a loss of 100 employees, compared to a net gain of 548 new employees in the proposed research building. There could be an adverse impact on open space due to the combination of increased users and increased shadows on St. Catherine's Park. Since the project would be as-of-right, there would be no consideration of mitigation.

With this alternative in 2011 there would be no new employees in the north block, no new employees on the main campus block, and approximately 100 fewer employees overall

compared to existing conditions. The would be a 0.3 percent increase in the worker open space ratio, compared to a 3.5 percent decrease with the proposed actions. The percent decrease in the overall passive open space ratio would be 0.5 as compared to 1.7 with the proposed actions. Compared to the proposed project, impacts would occur sooner (2007 instead of 2011) and would relate to active rather than passive open space.

SHADOWS

In 2007 the tower of the R8 mixed-use building would cast a longer but more slender shadow on St. Catherine's Park compared to the proposed research building. It would also cast shadows on the windows of St. Catherine's Church, similar to the proposed project, but less on the north end of the east facade.

With the R8 As-of-Right Mixed-Use Alternative there would be no new development on the main campus block and the duration of the shadow increment on the park in spring, summer, and fall would be reduced as compared to the proposed actions.

HISTORIC RESOURCES

This alternative could potentially have adverse impacts on St. Catherine's Church during construction, but because it is as-of-right a construction protection plan could not be required. There would be an increase in shadows on the stained-glass windows of St. Catherine's Church as with the proposed project; however, again no mitigation would be required because this alternative is as-of-right.

URBAN DESIGN AND VISUAL RESOURCES

The building would be significantly taller (503 feet) than the proposed research building (420 feet) but less wide in its north-south dimension. While this alternative would increase the density of the mid-block as compared to existing conditions, the setbacks of the tower would avoid urban design impacts.

In 2011 the density of the project site between East 68th and 69th Streets would be increased only by the mixed-use tower described above. There would be no further development on the rest of the campus. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the R8 As-of-Right Mixed-Use Alternative.

NEIGHBORHOOD CHARACTER

Similar to conditions with the proposed actions, the site in the north block which contains the Rectory, the Kettering Building, and a vacant lot would be redeveloped. The mixed-use building would be significantly taller and predominantly residential in use. This would represent a minor increase in medical facilities as compared to the proposed actions. Measures to avoid impacts on St. Catherine's Church, a historic resource, would not be required. Views as well as light to the Church's east windows would be blocked; but no mitigation could be required. The new tower next to St. Catherine's, a small-scale church, would be far taller than the proposed research building. There would be new activity in the area. Traffic generated by the R8 As-of-Right Mixed-Use Alternative would be similar to the proposed actions in 2007, and would decrease compared with the proposed actions in 2011. Similar to conditions with the proposed actions there would be no impact on noise levels. Overall, there would be an adverse impact on neighborhood character due to the height of the building and the traffic it would generate in 2007, but no additional effects in the 2011 analysis year.

HAZARDOUS MATERIALS

This alternative would have the same effects with respect to hazardous materials as the proposed actions. Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished would be removed in accordance with all applicable city, state and federal regulations. During construction a potential impact could occur. However, there is no mechanism to mitigate impacts for as-of-right projects. All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would generally be greater than with the proposed actions; however, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The R8 As-of-Right Mixed-Use Alternative would result in 317 dwelling units and a net loss of 125 employees in 2007. As compared to the proposed actions, vehicular trip generation in 2007 would be expected to decrease by approximately 33 vehicle trips during both the AM and PM peaks. There would be an increase of 14 vehicle trips during the midday peak with the R8 As-of-Right Mixed-Use Alternative. Similar to conditions with the proposed research building there would be traffic impacts; however, as the building would be as-of-right, no mitigation would be required. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking with this alternative.

Under the R8 As-of-Right Mixed-Use Alternative, in 2011 there would be no new trips generated by activities on the main campus block, and new trips generated from the north block would be the same as in 2007. In 2011, the R8 As-of-Right Mixed-Use Alternative would result in 143, 70, and 179 fewer vehicle trips than the proposed actions during the AM, midday, and PM peak periods, respectively. There would be fewer affected locations than with the proposed actions. However, there would be no requirement for mitigation. Again, the increase in demand for parking would be much less than with the proposed actions and, like the proposed actions, there would be no significant adverse impact to parking with this alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes over No Action conditions under the R8 As-of-Right Mixed-Use Alternative. However, in 2007 this alternative would generate 192, 99, and 175 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011, the R8 As-of-Right Mixed-Use Alternative would result in 675, 564, and 809 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. Like the proposed actions, the R8 As-of-Right Mixed-Use Alternative would not result in any significant adverse pedestrian impacts.

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result in 154 and 160 fewer subway trips and 32 and 31 fewer bus trips during the AM and PM peaks, and 16 more subway and 14 more bus trips

during the midday peak period. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011, there would be 355, 35, and 396 fewer subway trips and 106, 29, and 131 fewer bus trips during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would be no impacts and no need for mitigation at the northeast and southeast subway stairs at the East 68th Street Station in either 2007 or 2011.

AIR QUALITY

With the R8 As-of-Right Mixed-Use Alternative, the increases in the 8-hour carbon monoxide concentrations expected from the proposed actions, none of which are significant, would be comparable, since project-generated traffic volumes would be lower with this alternative. No violations of the NAAQS are expected to occur either under the R8 As-of-Right Mixed-Use Alternative or with the proposed actions by 2007, and both would be consistent with the SIP. In 2011 there would be no additional traffic or increases in carbon monoxide concentrations.

In addition, the R8 As-of-Right Mixed-Use Alternative would not have potential effects from laboratory exhaust systems as this alternative would not include laboratories. This alternative also assumes development of a taller residential building on the north block. However, due to the distance from the New York Hospotal boiler stack to the building, it is not expected that any significant stationary source impacts would occur on the proposed development.

NOISE

Both with the R8 As-of-Right Mixed-Use Alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. With both the R8 As-of-Right Mixed-Use Alternative and the proposed project, no significant adverse noise impacts would result from building mechanical systems. There would be a potential adverse impact due to developing a sensitive receptor in a noisy area; however, as there would be no rezoning there would be no (E) designation for noise and the impact would be unmitigated.

CONSTRUCTION IMPACTS

The R8 As-of-Right Mixed-Use Alternative would reduce the duration of the temporary construction impacts attributable to development anticipated pursuant to the proposed actions. Moreover, similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

R9 AS-OF-RIGHT RESEARCH BUILDING ALTERNATIVE*

This alternative assumes that the rezoning takes place, but that there is no transfer of floor area from the north block to the main campus block. It assumes that the full floor area generated on the north block remains on the north block, and that development under the rezoning takes place as-of-right. No LSCFD would be established, no waivers for height and setback or yards would be sought, and no BSA actions would be required. A Restrictive Declaration for hazardous materials similar to that for the proposed project would be placed on the property.

* This section is new to the FEIS.

The research building would be 30 stories (551 feet) tall to the top of the roof enclosure. The tower would be set back 30 feet from both East 68th and 69th Streets. The 1-story (21-foot) base would cover the site. With a floor area of approximately 594,000 square feet, this alternative provides more floor area than MSKCC is requesting. This layout is less efficient and, therefore, the building might accommodate somewhat more program or may only accommodate the proposed program. Further, the configuration of this laboratory floor plate would not allow the Kettering Building to remain in place while the tower is being built. A portion of the building could be allocated for use as St. Catherine's Church Rectory.

On the main campus block, the new building area would be 513,700 square feet as compared to 613,700 as proposed. The new as-of-right building for the inpatient hospital would be five floors shorter than the new building assumed with the proposed actions. This inpatient hospital would have 150 fewer beds. This would reduce the main campus block population as compared to that of the proposed actions by 111 inpatients, 333 inpatient visitors, and 65 inpatient staff.

Overall, MSKCC does not believe that this is a viable alternative; nor would MSKCC pursue such an alternative.

The rezoning would allow the same additional development on the non-MSKCC properties in the north block as the proposed actions would.

LAND USE, ZONING, AND PUBLIC POLICY

With the R9 As-of-Right Research Building Alternative, there would be a larger expansion of an already important land use in the study area. However, the Kettering Laboratory would have to be displaced at the beginning of construction. This would be unacceptable to MSKCC. In the 2011 analysis year the additional development on the main campus block would be less than proposed by 100,000 square feet. Overall the land use on the MSKCC campus would be similar to conditions with the proposed actions.

The allowable density of development for community facilities in the rezoning area would be increased from 6.5 to 10 FAR. However, there would be no authorizations from CPC to transfer floor area from the north block to the main campus block and no modifications of height and setback, no variances for lot coverage and rear yard, and no special permit for temporary failure to comply for the proposed research building.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of the R9 As-of-Right Research Building Alternative would be similar to those anticipated with the proposed actions. A similar number of employees would come to the site upon completion of the project. However, it would be a less efficient working environment. While overall this alternative would be similar in floor area, it would provide what MSKCC believes would be a lesser new hospital than the proposed actions. Overall, this alternative would likely generate less economic benefits.

COMMUNITY FACILITIES

Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area. However, with this alternative, would be less able to perform research and provide treatment and care for its patients than it would with the proposed actions.

OPEN SPACE AND RECREATIONAL FACILITIES

The R9 as-of-right research building would provide more floor area and possibly more staff than the proposed research building. It would be much taller and cast a longer shadow on St. Catherine's Park. Given the potential additional population increase and the longer shadow, this alternative may have an impact on open space in 2007. If impacts were to occur, the impact would be unmitigable.

Considering development on both the north block and the main campus block, the amount of development would be similar to the proposed project and overall the populations would be similar. While there would be an increase in shadow with the taller research building there would be a decrease in shadow with the shorter building on the main block. Overall, similar to the proposed actions, there would be an adverse impact. Since no mitigation is available, this alternative would have an unavoidable adverse impact similar to the proposed actions.

SHADOWS

The R9 as-of-right research building would be 551 feet tall, about 150 feet taller than the proposed research building. The increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007 would be greater but the increment would be gone by mid-morning. In 2011 under this alternative there would be a 65-foot-shorter building in the main campus block. Therefore, the later morning shadow increment would be less than with the proposed actions.

HISTORIC RESOURCES

Similar to conditions with the proposed research building, this alternative research building would require a construction protection plan to avoid construction-related impacts to the Church of St. Catherine of Siena. The new shadows on the church's east-facing, stained-glass windows during the morning would cover most of the windows that are not currently in shadow. To mitigate this impact, lighting could be provided to replace the sunlight lost in the morning. No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

The R9 As-of-Right Research Building Alternative would create less of a streetwall presence on 68th and 69th Streets. The tower would be set back 30 feet on both the north and south before rising to 551 feet (131 feet taller than the proposed building). Its effects on urban design conditions would be somewhat greater than the proposed actions given its additional bulk. Development on the main campus block would be reduced by 100,000 square feet; and the smaller potential building would have less of an urban design impact than the one described with the actions as proposed. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by this alternative.

NEIGHBORHOOD CHARACTER

With this alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. As with the proposed actions, a construction protection plan would be implemented to avoid construction-related impacts to St. Catherine's Church. Morning sunlight to the east-facing windows of the church would be largely

lost. There would be a new and taller tower adjacent to the small-scale St. Catherine's Church. There would more new activity in the area in 2007, but much less in 2011. The increase in traffic would be similar to that in the proposed actions for 2007 and 2011. Similar to conditions with the proposed actions, with an (E) designation there would be no noise impacts on interiors of new construction in the rezoning area. Overall, as compared to conditions with the proposed actions, this alternative would have a lesser impact on elements of neighborhood character in the 2011 analysis year.

HAZARDOUS MATERIALS

Asbestos-containing materials and lead-based paint believed to be present in the existing buildings to be demolished would be removed in accordance with all applicable local, state and federal regulations. As with the proposed actions, an impact related to subsurface excavation could occur, but would be mitigated by a Phase II subsurface investigation and, if necessary, remediation. The protocol and remediation plan would be reviewed and approved by DEP as specified in a Restrictive Declaration on the property. All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations as they would be with the proposed actions.

INFRASTRUCTURE

The increase in demands on local utility systems, including water supply, solid waste and recycling, and energy, would be approximately the same as with the proposed actions. However, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The R9 As-of-Right Research Building Alternative would result in more floor area than the proposed actions in 2007. However, because it could be less efficiently arranged, it might not accommodate more program area or more population. Assuming the same user population on the north block as the proposed actions, development of the north block would result in the same number of vehicle trips as the proposed actions. Traffic impacts and mitigation would be the same as for the proposed actions. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking.

Under this alternative, in 2011 there would be new trips generated from the north block as in 2007, as well as trips to the main campus block. Based on fewer inpatiemts, visitors, and staff in 2001, trips to the main campus block would be fewer than with the proposed project. Assuming there are the same trips to the north block this would result in 9, 9, and 12 fewer vehicle trips than the proposed project in 2011. Impacts and the need for traffic mitigation associated with MSKCC operations would be similar to the proposed actions. The increase in demand for parking would also be similar to proposed conditions, and there would be no significant adverse impact to parking.

PEDESTRIANS AND TRANSIT

In 2007, this alternative would generate the same number of pedestrian trips as the proposed actions. In 2011, it would result in 44, 51, and 62 fewer pedestrian trips than the proposed actions. Like the proposed actions, this alternative would not result in any significant adverse pedestrian impacts.

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result the same number of subway and bus trips as the proposed actions. Like the proposed actions, there would be the same impact at the northeast subway stair that would not require mitigation in 2007. In 2011, there would be 19, 6, and 21 fewer subway trips, and like the proposed actions, mitigation would be required at the northeast and southeast subway stairs at the East 68th Street Station.

AIR QUALITY

With the R9 As-of-Right Research Building Alternative, the increases in the 8-hour carbon monoxide concentrations expected from the proposed actions, none of which are significant, would be comparable in 2007 and 2011. No violations of the NAAQS are expected to occur under this Alternative or with the proposed actions, and both would be consistent with the SIP.

Similar to the development under the proposed actions, there would be no potential significant impacts from the exhaust system of the laboratories in the proposed research building on any MSKCC campus buildings or the surrounding community. This alternative also assumes development of a taller residential building on the north block. However, due to the distance from the New York Hospital boiler stack to the building, it is not expected that any significant stationary source impacts would occur on the proposed development.

NOISE

Both with this alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. No significant adverse noise impacts would result from building mechanical systems. Similar to the proposed actions, this alternative could include an (E) designation for noise attenuation in the rezoning area due to existing conditions.

CONSTRUCTION IMPACTS

The R9 As-of-Right Research Building Alternative would have temporary construction impacts similar to the proposed actions. Any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

R9 AS-OF-RIGHT MIXED-USE ALTERNATIVE

This alternative assumes that the proposed rezoning is approved, and development of a mixed-use building proceeds on an as-of-right basis. There would be no designation of a LSCFD and no transfer of development rights from the north block to the main campus block. Given these parameters, the most likely development on the north block would be a mixed-use building with hospital-related uses on the first 10 floors and staff housing uses above. The total floor area would be 603,500 square feet, with the floor area for the residential uses of 344,599 square feet, and the floor area for community facility use of approximately 258,901 square feet. This amount of space for community facility use would not support the proposed laboratory program, nor would it provide similar laboratory floor plates. In addition, a portion of this community facility space would be expected to be allocated for St. Catherine's Church rectory. The building would have a total of 56 floors including the mechanical penthouse rising to a total height of 704 feet.

The first floor of the mixed-use building would cover the site. The second to fifth floors would be set back 30 feet on the north and south sides. The sixth to the tenth floors would be only on

the through-block portion of the site. The tower would rise of the eastern side of the base. Above two mechanical floors, there would be 43 floors of apartments with approximately 400 units.

On the main campus block development would be as proposed, except that there would be no transfer of up to 100,000 square feet. Therefore, the overall development would be 100,000 square feet less than proposed. The new inpatient tower would be shorter by about 64 feet.

While this alternative shows what could be developed as-of-right with the proposed rezoning, it does not satisfy MSKCC's need for new research laboratory space. Further, it assumes demolition of the Kettering Building, which MSKCC considers unlikely without construction of new research space. On the main campus block the reduction in floor area of 100,000 square feet would reduce either the number of inpatient beds or the diagnostic and treatment space that could be provided. This too would be inconsistent with MSKCC's stated program goals.

Again, it is assumed that the site in the north block would be complete by 2007, and that development on the main campus block would follow with an analysis year of 2011.

Unlike the proposed project, the only action necessary for this alternative is the rezoning of the midblocks from R8 to R9.

LAND USE, ZONING, AND PUBLIC POLICY

St. Catherine's Church Rectory and the Kettering Building would be demolished. A new mixed-use building would rise on the proposed research building site providing space for hospital-related uses as well as staff housing. The expansion of MSKCC facilities in 2007 would be largely residential. As with the proposed actions, there could be the development on two other lots located on the north block not owned by MSKCC.

In 2011, development on the main campus block would be 100,000 square feet smaller, as compared to the proposed actions. Overall, the land use on the MSKCC campus would become more dense.

Similar to the proposed actions, there would be a rezoning from R8 to R9 of the two midblocks, increasing the allowable density of development for community facilities from 6.5 to 10 FAR. However, no LSCFD would be designated and the planning for the campus as a whole would be impeded. There would be no authorization to shift bulk from the north block to the main campus block. None of the actions in relation to height and setback, lot coverage, or rear yards would be required for this alternative.

SOCIOECONOMIC CONDITIONS

The economic benefits (activity, income, and tax revenues) realized during construction on the north block and operation of the mixed-use building would be less than with the proposed research building, as a residential tower would cost less to build. All the new researchers and the increase in research and hospital activity anticipated as a result of the proposed research building would not occur.

Development on the main campus block would also be reduced due to the potential development on the main campus block being smaller by 100,000 square feet. Overall, the R9 As-of-Right Mixed-Use Alternative would be a significantly smaller generator of economic activity and of city and state revenues.

COMMUNITY FACILITIES

Similar to development with the proposed actions, this alternative would increase the demand for police and fire protection. Unlike the proposed project, it would have a residential component which would increase the demand for seats in neighborhood schools.

It would not create the proposed research building and the new construction on the main campus block would be smaller than proposed actions. Therefore, it would contribute far less to MSKCC as a medical, research, and treatment facility.

OPEN SPACE AND RECREATIONAL FACILITIES

With the R9 As-of-Right Mixed-Use Alternative, the residents of the apartments would increase the demand for active open space in a ½-mile radius, as well as passive open space within ¼ mile as compared to development with the proposed actions, which would only increase the demand for passive open space.

With the mixed-use building, the 400 apartments are assumed to have 640 residents. There would be a total of about 489 employees, or an increase of 125 employees compared to a net increase of 548 employees with the proposed research building. The decrease in the overall passive open space ratio would be 1.2 percent as compared to 0.9 percent with the proposed actions. The reduction in the open space ratio is due to the large residential population with the mixed-use building. As with the proposed actions, the worker population is not expected to result in significant adverse impacts to open space under this alternative. However, the additional residents added by this alternative could result in an open space impact by 2007. Shadows from the mixed use building would add to this impact.

With this R9 As-of-Right Alternative in 2011 there would be approximately 423 fewer new employees in the north block and approximately 107 fewer employees in the main campus block in 2011 (based on the employee-per-square-foot ratio for development on the main campus block under the proposed actions). The decrease in the worker open space ratio would be 2.1 percent as compared to 3.5 percent with the proposed actions. The percent decrease in the overall passive open space ratio would be 1.8 as compared to 1.7 with the proposed actions. The potential impact on passive open space would be slightly higher within the ¼-mile study area, and the demand for active open space would be increased with the increase in residential population.

As with the proposed actions, the combination of increased users and increased shadows on St. Catherine's Park would indicate a potential adverse impact on open space by 2011. Like conditions with the proposed actions, the open space impact would be unmitigated.

SHADOWS

In 2007 the tower of the mixed-use building would cast a shadow on St. Catherine's Park longer than that of the proposed research building, as this building would be taller. The tower would also be more slender in its north-south dimension making its shadow somewhat more slender given its angle to the Park. It would also cast less shadow on the windows of St. Catherine's Church.

With the R9 As-of-Right Alternative, development on the main campus block would cast a shorter shadow reducing later morning shadows on the March/September, May/August and June analysis dates.

HISTORIC RESOURCES

Similar to conditions with the proposed actions, the R9 As-of-Right Alternative would result in an impact and would have mitigation in the form of a construction protection plan for St. Catherine's Church to avoid construction-related impacts to that structure. This alternative would increase shadows on the east-facing stained-glass windows of St. Catherine's Church except at its north end. Like the proposed actions, the R9 alternative could provide lighting to the church's east-facing windows.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

The R9 As-of-Right Mixed-Use Alternative would have a significant adverse impact on urban design in 2007 from the introduction of new activity and more dense development to the project site, in a building reaching to 704 feet in the midblock. The mixed-use building would be approximately 284 feet taller than the proposed research building, and thus would be expected to have a much greater presence. The tower of this alternative would be much more slender than the proposed research building. The building would have an FAR of 10 compared to the proposed FAR of approximately 9.0. Its setbacks and more slender tower should be somewhat more compatible with urban design conditions, but overall its impact would be comparable or greater than that of the proposed actions. Unlike the proposed research building, which rises to 420 feet without setbacks, this alternative would have a 21 foot high one-story base with a 30 foot setback. The alternative would also enliven the nearby portions of the study area with greater activity and more pedestrians, but to a different degree given the different uses of the building.

In 2011 the density of the project site between East 67th and 69th Streets would be increased by the mixed-use tower described above, as well as by a tower in the middle of the main campus block. However, as there would be no FAR transfer to the main campus block, the midblock tower would not be as tall as with the proposed actions, and thus would have less of a presence in and effect on the surrounding area. Overall, the increased midblock density could create a significant adverse impact. Mitigation measures developed as part of the design process could avoid impacts; however, if none were identified, an unmitigated adverse impact could result. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the R9 As-of-Right Alternative.

NEIGHBORHOOD CHARACTER

Similar to conditions with the proposed actions, the site in the north block would be redeveloped. However, the development would be much taller and predominantly residential. This would not represent such an important increase in medical facilities as compared to the proposed actions. Similar to conditions with the proposed actions, a construction protection plan would be implemented to avoid construction-related impacts to St. Catherine's Church. Sunlight to its east windows would be blocked except at the north end. There would be a new tower next to St. Catherine's, a small-scale church; and there would be an increase in density in the midblocks. There would be new activity in the area. The increase in traffic due to development generated by this alternative would be greater than the proposed actions in 2007 and less than the proposed actions in 2011. There would be no impact on noise levels with this alternative or

with the proposed project. Overall, there would be an adverse impact on some aspects of neighborhood character similar to the proposed project.

HAZARDOUS MATERIALS

Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished or renovated would be removed in accordance with all applicable city, state and federal regulations. As with the proposed project, prior to excavation a Phase II subsurface investigation would be implemented, and, if necessary, remediation would be undertaken, in accordance with a plan approved by DEP, as specified in a restrictive declaration on the property. All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, State and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase similar to the proposed actions; however, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

As compared to the proposed actions, the R9 As-of-Right Mixed-Use Alternative would be expected to result in an increase of approximately 8, 24, and 8 vehicle trips during the AM, midday, and PM peak hours, respectively, in 2007. This alternative would result in similar impacts to locations as the proposed actions. Similar to 2007 conditions with the proposed actions, there would be a need for traffic mitigation associated with MSKCC operations. There would also be an increase in demand for parking, but like the proposed actions, there would not be significant adverse impacts to parking with this alternative.

In 2011 with the R9 As-of-Right Alternative, there would be fewer trips generated by the main campus block as compared to the proposed actions, and full build-out of the R9 As-of-Right Alternative would result in a decrease of approximately 2 and 3 vehicle trips during the AM and PM peak hours, respectively. There would be an increase of 24 vehicle trips during the midday peak hour. Similar to conditions with the proposed project, there would be need for traffic mitigation associated with MSKCC operations. There would also be an increase in demand for parking, but like the proposed actions, there would not be a significant adverse impact to parking from this alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes above the No Action conditions under the R9 As-of-Right Mixed-Use Alternative. In 2007, this alternative would generate 68, 37, and 111 more pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011, the R9 As-of-Right Mixed-Use Alternative would result in 13, 8, and 53 more fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. Like the proposed actions, no significant adverse impacts to pedestrian conditions are expected with this alternative.

Similarly, subway and bus trips would increase as a result of this alternative. In 2007, there would be 22, 28, and 32 more bus trips than the proposed actions in 2007 during the AM,

midday, and PM peak periods, respectively. In 2007, the R9 As-of-Right Mixed-Use Alternative would result in 63 and 61 fewer subway trips during the AM and PM peak periods, and 20 more subway trips during the midday peak period. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011, this alternative would result in 89 and 88 fewer subway trips during the AM and PM peak periods, respectively, than would the proposed actions. This alternative would result in 20 more subway trips during the midday peak period, and 14, 28, and 22 more bus trips during the AM, midday, and PM peak periods, respectively. Like the proposed project, there would be impacts requiring mitigation at the northeast and southeast stairs in 2011.

AIR QUALITY

With the R9 As-of-Right Mixed-Use Alternative, the increases in the 8-hour carbon monoxide concentrations expected from development associated with the proposed project, none of which are significant, would be comparable or lower, since project-generated traffic volumes would be only slightly higher in 2007 and would be lower in 2011 with this alternative. No violations of the NAAQS are expected to occur either under the R9 As-of-Right Mixed-Use Alternative or with the proposed actions, and both would be consistent with the SIP.

There would be no potential effects from any laboratory exhaust system, since this alternative would not include any research facility development. This alternative also assumes development of a taller residential building on the north block. However, due to the distance from the New York Hospital boiler stack to the building, it is not expected that any significant stationary source impacts would occur on the proposed development.

NOISE

Both with the R9 As-of-Right Mixed-Use Building Alternative and the proposed actions, in the years 2007 and 2011 noise levels in the project study area would not be significantly increased compared to existing levels. With both the R9 As-of-Right Mixed-Use Alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. Similar to the proposed actions, this alternative would require an (E) designation for noise attenuation.

CONSTRUCTION IMPACTS

The R9 As-of-Right Mixed-Use Alternative would have temporary construction impacts similar to the proposed actions. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

MANHATTAN BOROUGH PRESIDENT'S ALTERNATIVE*

The Manhattan Borough President proposed an alternative to strike a balance, reducing the amount of the area to be rezoned and the amount of development that could take place while satisfying MSKCC's research building program. This alternative proposes the following:

- North block—Rezoning only the southern half of the north midblock and limiting the height of the research tower to the top of the stacks to 360 feet.

* This alternative is new to the FEIS.

This rezoning would generate a total of approximately 519,771 square feet of floor area, with 491,465 square feet of that space available for research, as compared to 510,389 square feet in the proposed research building with 491,907 square feet available for research. However, due to the 360-foot height limit, five laboratory floors would not be constructed. This alternative does not discuss inclusion of space for St. Catherine's Church Rectory.

- Main campus block—Eliminating 100,000 square feet of floor area to be transferred to this block for the north block and limiting development to a new hospital (up to 300 feet tall) on First Avenue and development on the midblock to a height of 175 feet.

  Without the transfer of floor area from the north campus block, the increase in zoning floor area on this block would be 290,340 square feet rather than 390,340 square feet. This alternative would require height and setback waivers or variances.

- Elimination of the south block (between 66th and 67th Streets) from the rezoning area.

  Rezoning of this block has been removed from the proposed action in the FEIS.

MSKCC believes that the Manhattan Borough President's (MBP) Alternative would not meet the needs of its proposed research program and would limit its ability to plan for the future and create a new hospital on its main campus block. Overall, MSKCC believes that this alternative does not satisfy its objectives

In addition to the rezoning, the MBP Alternative would require all of the same actions for the research building in the north block as well as height and setback waivers for the potential new hospital building on the main campus block.

LAND USE, ZONING, AND PUBLIC POLICY

The St. Catherine's Church Rectory and the Kettering Building would be demolished. The sites of the these two buildings as well as the vacant lot on East 69th Street that was the site of St. Catherine's School would be redeveloped with a new, smaller research building by 2007. There would be a much smaller expansion and enhancement of medical facilities, as compared to the proposed actions.

In the 2011 analysis year the additional development on the main campus block would be less than proposed by 100,000 square feet. Overall the land use on the MSKCC campus would become somewhat more dense on the north and the main campus blocks.

Unlike the proposed actions, there would be no rezoning of the northern half of the midblock between East 68th and 69th Streets from R8 to R9. Planning for the campus as a whole would be impeded as compared to the proposed actions. There would be no shift of additional bulk from the north block to the main campus block.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of the MBP Alternative Research Building would be less than those anticipated with the proposed research building. Overall, the MBP Alternative would be a smaller source of economic activity and city and state revenues.

COMMUNITY FACILITIES

This alternative would create a smaller new research building and less new construction on the main campus block. It would increase the worker population by a much smaller number and it would bring many fewer new patients and visitors to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

However, with this alternative, MSKCC believes that it would have a much diminished ability to plan for future needs on the main campus and south blocks and it would be less able to perform research and provide treatment and care for its patients.

OPEN SPACE AND RECREATIONAL FACILITIES

Under this alternative, the research building would accommodate a smaller program area and have less staff than the proposed research building. By being substantially shorter, its shadow on St. Catherine's Park would be smaller.

In 2007, the decrease in the worker open space ratio would be 1.0 percent (or a decrease of less than 0.01 acres of passive open space per 1,000 workers). The decrease in the overall passive open space ratio would be 0.5 percent. As compared to the proposed actions, there would be a smaller increase in shadows on St. Catherine's Park. Similar to the proposed project, the MBP Alternative would not have an impact on open space in 2007.

There would be approximately 384 fewer workers at full build-out as compared to conditions with the proposed actions. The decrease in the worker open space ratio would be 2.5 percent rather than 3.5 percent. The decrease in the overall passive open space ratio would be 1.2 rather than 1.7 percent. However, with the potential new hospital along First Avenue in a building 300 feet tall, there would be a greater impact on open space than the proposed actions due to an increase in shadows cast on St. Catherine's Park. Unless mitigation measures could be identified this would result in an unavoidable adverse impact.

SHADOWS

With the MBP Alternative the research building would be 60 feet shorter than the proposed building. The increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007 would be reduced. Shadows would be approximately 14 percent shorter and this difference could be noticeable on sunny days in May to August. Similar to shadows with the proposed research building, the increment would be gone by mid-morning. Neither this alternative nor the proposed actions would result in significant shadow impacts to the park in 2007.

In 2011 with the MBP research building and with a 300-foot-tall hospital along First Avenue on the main campus block, the increase in shadows on St. Catherine's Park would be greater than with the proposed project, which assumed as-of-right development with R9 zoning. The difference would be noticeable on sunny days from March to September. Overall, in 2011, neither this alternative nor the proposed actions would result in significant shadow impacts to the park, although their shadows would be somewhat different.

HISTORIC RESOURCES

Similar to the proposed research building, the MBP research building could result in construction-related impacts to the Church of St. Catherine of Siena. The same mitigation measure—a construction protection plan—would be employed to avoid this impact. The new shadows on the church's east-facing, stained-glass windows during the morning would cover most if not all of the windows that are not currently in shadow. To mitigate this impact, MSKCC would provide lighting to the east-facing windows to replace the sunlight lost in the morning.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

As with the proposed actions, the MBP research building would have a much greater presence at the streetwall of East 68th and 69th Streets, and it would block views of the stained glass windows on the east side of the Church of St. Catherine of Siena. However, with the reduction in height, the MBP Alternative would have less potential to adversely impact urban design.

Development on the main campus block would be reduced by 100,000 square feet. With the new hospital tower along First Avenue and the height of midblock development limited to 175 feet, this alternative would substantially reduce the proposed project's overall impact on density in the midblock. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the Smaller Alternative.

NEIGHBORHOOD CHARACTER

With the MBP Alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. As with the proposed actions, a potential construction impact could occur, but a construction protection plan would be required to avoid construction-related impacts to St. Catherine's Church. There would be a new, but shorter, tower adjacent to the small-scale church. The MBP Alternative would reduce sunlight to the east-facing windows of St. Catherine's Church and lighting would have to be provided for mitigation. There would the somewhat less new activity in the area in 2007, but much less in 2011. The increase in traffic from the smaller research building would be less than that of the proposed research building, and at full build-out there would be much less traffic generated as compared to conditions in 2011 with the proposed actions. Similar to conditions with the proposed actions, with an (E) designation there would be no noise impacts on interiors of new construction in the rezoning area. Overall, as compared to conditions with the proposed actions, this alternative would have a lesser impact or no impact on elements of neighborhood character in the 2011 analysis year.

HAZARDOUS MATERIALS

This alternative would have the same potential for hazardous materials impacts as the proposed project and would require the same mitigation measures and restrictive declaration.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase far less than with the proposed actions, but, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND TRANSPORTATION

The MBP Alternative would result in less development than the proposed actions in 2007. This alternative would result in 17 fewer vehicle trips than the proposed actions during the AM and PM peaks, and the same number of vehicle trips during the midday peak. Similar to conditions with the proposed actions, there would be a need for traffic mitigation associated with MSKCC operations. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking.

In 2011, the MBP Alternative would result in 26, 8, and 29 fewer vehicle trips than the proposed actions during the AM, midday, and PM peak periods, respectively. There would be fewer impacted locations during the AM, midday, and PM peaks, respectively, than with the proposed actions. The need for traffic mitigation associated with MSKCC operations would be reduced as compared to the proposed actions. Again, the increase in demand for parking would be less than with the proposed actions, but like the proposed actions, there would be no significant adverse impact to parking.

PEDESTRIANS AND TRANSIT

In 2007, this alternative would generate 96, 49, and 99 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011, the MBP Alternative would result in 140, 100, and 161 fewer pedestrian trips than the proposed action during the AM, midday, and PM peak periods, respectively. Like the proposed actions, the MBP Alternative would not result in any significant adverse pedestrian impacts.

In 2007, this alternative would result in 44, 0, and 46, fewer subway and 15, 0, and 14 fewer bus trips during the AM, midday, and PM peaks than the proposed actions. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011, there would be 63, 6, and 67 fewer subway trips and 21, 5, and 24 fewer bus trips during the AM, midday, and PM peak periods, respectively. Like the proposed actions, this alternative would result in impacts requiring and mitigation at the northeast and southeast subway stairs at the East 68th Street Station in 2011.

AIR QUALITY

With the MBP Alternative, as with the proposed actions there would be increases in the 8-hour carbon monoxide concentrations in 2007 and 2011. No violations of the NAAQS are expected to occur either under the MBP Alternative or with the proposed actions by 2007, and both would be consistent with the SIP.

In addition, in 2007 and 2011 with the MBP Alternative, due to the shorter research building additional measures may be required to avoid potential significant adverse impacts from the exhaust system of the laboratories in the proposed research building on any MSKCC campus buildings and the surrounding community. Such measures may include, but would not be limited to, changes to the design of mechanical systems that would modify exhaust parameters to reduce emissions.

NOISE

Both with the MBP Alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. With both the Smaller Alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. Similar to the proposed actions, this alternative could include an (E) designation for noise in the rezoning area.

CONSTRUCTION IMPACTS

The MBP Alternative would reduce the duration of construction-related impacts as compared to the proposed actions but would still entail the same activities and phasing (i.e., demolition, excavation and foundation, structure and shell, interior finishing).

CIVITAS ALTERNATIVE*

CIVITAS proposed an alternative research building to be built under existing zoning, but did not consider any further development on the main campus block. The alternative presented below represents CIVITAS' submission dated October 18, 2001.

According to the materials submitted, the CIVITAS Alternative would have 520,000 square feet of floor area, similar to MSKCC's proposed research building. However, its height would be limited to approximately 320 feet on 68th Street facing the main block of the MSKCC campus. On 69th Street it would rise 9 levels or approximately 160 feet.

The intent of the CIVITAS Alternative is to create a research building that is under the existing R8 zoning and also meets the programmatic needs of MSKCC. CIVITAS believes that this alternative would be more in keeping with the lower midblock densities intended by zoning. However, the CIVITAS Alternative would require BSA approvals for major bulk waivers and variances. These would include some form of variance to increase allowable floor area from 6.5 to 8.2 (8.6 with church and rectory), a variance for 100 percent lot coverage, a variance to waive rear yards and rear yard equivalents, and modification of height and setback.

MSKCC believes that this alternative does not meet its objectives. First, there would be no further development allowed on the main campus block, reducing MSKCC's ability to plan for a new hospital once the research building is completed. CIVITAS states that its alternative would only provide 260,000 square feet in the first phase of development of the research building, as compared to MSKCC's proposed first phase which would provide 425,000 square feet. Therefore, in the first phase of construction, the CIVITAS Alternative would not accommodate the program for replacing space in the Kettering Building and Schwartz Buildings, supplementing undersized laboratory facilities in the Rockefeller Research Laboratory, and providing for recruitment or expansion of programs.

Further, the floor areas provided with the CIVITAS Alternative do not appear to provide for any floor area for mechanical space. Therefore, floors could have to be added for mechanical space, or the CIVITAS Alternative would actually provide less floor area than the proposed laboratory building.

MSKCC believes that the laboratory floor plates that would be provided in the completed building would have inefficient layouts and would not serve the intended research programs.

* This section is new to the FEIS.

MSKCC believes that removing six floors from the top of the building and miscellaneously adding the area to lower floors would not produce efficient functional layouts.

Overall, MSKCC does not believe that the CIVITAS Alternative represents a viable alternative.

The CIVITAS Alternative is analyzed below assuming it provides the same program area as the proposed research building.

LAND USE, ZONING, AND PUBLIC POLICY

The St. Catherine's Church Rectory and the Kettering Building would be demolished. The sites of the these two buildings as well as the vacant lot on East 69th Street that was the site of St. Catherine's School would be redeveloped with a new research building by 2007. There would be what MSKCC believes would be a less useful expansion and enhancement of an already important land use in the study area, medical facilities, as compared to the proposed actions.

In the 2011 analysis year there would be no additional development on the main campus block.

There would be no rezoning and no other CPC actions. The BSA actions would include some form of variance to increase allowable floor area from 6.5 to 8.2 (8.6 with church and rectory), a variance for 100 percent lot coverage, a variance for rear yards and rear yard equivalents in their entirety for the entire height of the building, and a modification of height and set back.

SOCIOECONOMIC CONDITIONS

If the CIVITAS Alternative is assumed to provide the same floor area and program area as the proposed research building, the economic benefits realized during the construction and operation of the CIVITAS research building would be similar to those with the proposed research building. The same number of new workers would come to the site.

As there would be no development on the main campus block, the CIVITAS Alternative would not generate any of the economic benefits associated with development in that block. Overall, this alternative would generate substantially less economic activity and city and state revenues.

COMMUNITY FACILITIES

The CIVITAS Alternative would create a new research building but no new development on the main campus block. It would increase the worker population by a much smaller number and it would bring no new patients and visitors to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

However, with this alternative, MSKCC believes that it would have substantially diminished ability to plan for its future needs and that it would be less able to perform research and provide treatment and care for its patients.

OPEN SPACE AND RECREATIONAL FACILITIES

Under this alternative, the research building is assumed to accommodate the same program area and have the same staff as the proposed research building. However, by being substantially shorter its shadow on St. Catherine's Park would be reduced. In 2007 there would be no new residents in the north block or workers not associated with MSKCC because there would be no rezoning to allow further development of non-MSKCC properties.

The decrease in the worker open space ratio would be 1.5 percent (or a decrease of less than 0.01 acres of passive open space per 1,000 workers). The decrease in the overall passive open space ratio would be 0.7 percent. Similar to the proposed actions, there would be no significant impact on open space in 2007.

With the CIVITAS Alternative, there would be no further development beyond 2007. Therefore, open space conditions would be the same as in 2007, and the unmitigated impacts attributed to the proposed action would not occur.

SHADOWS

With the CIVITAS Alternative the research building would be approximately 320 feet tall on 68th Street at its southwest corner, which is nearest St. Catherine's Park. This would be 100 feet lower than the proposed research building. The increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007 would be substantially reduced.

Since there would be no development in the main campus block, there would be no additional shadows later in the morning with the CIVITAS Alternative.

HISTORIC RESOURCES

Similar to conditions with the proposed research building, construction of the CIVITAS research building could impact St. Catherine's Church and would require mitigation—a construction protection plan to avoid construction-related impacts to the church. As with the proposed actions, new shadows on the church's east-facing, stained-glass windows during the morning would cover most if not all of the windows that are not currently in shadow. Also like the proposed project, this impact would be mitigated by providing lighting to the windows.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

The CIVITAS Alternative would have a 140 foot high streetwall along 69th Street and a 322 foot high streetwall along 68th Street. The lower wing along 69th Street may be more in keeping with the heights of typical midblock buildings, but this alternative would not reduce the density of development on the site. Further, the street wall along 68th Street would be 322 feet by 290 feet which would have a significant adverse impact in terms of density.

With no development on the main campus block, the CIVITAS Alternative would reduce the overall impact on density in the midblock compared to the proposed actions. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the CIVITAS Alternative. Although this alternative would have less of an impact on urban design than the proposed actions, MSKCC does not believe that this alternative meets its programmatic needs.

NEIGHBORHOOD CHARACTER

With the CIVITAS Alternative, the north block would be redeveloped to expand and improve medical facilities. As with the proposed actions, a construction protection plan would be required to avoid construction-related impacts to St. Catherine's Church. There would be new, but shorter and wider facades adjacent to the small scale St. Catherine's Church. This alternative would have lesser overall impacts to urban design. Like the proposed actions, this alternative would not result in an open space impact in 2007, but would not have any of the additional

effects associated with the proposed actions in 2011. There would be similar new activity in the area in 2007, but much less in 2011. The increase in traffic from the research building would be the same as that of the proposed research building, but at full build-out there would be much less traffic generated as compared to conditions in 2011 with the proposed actions. An (E) designation would only be applied to the research building site. Overall, as compared to conditions with the proposed actions, this alternative would have a lesser impact on neighborhood character in the 2011 analysis year.

HAZARDOUS MATERIALS

Like the proposed actions, this alternative would have the potential to disturb hazardous materials. Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished would be removed in accordance with all applicable city, state and federal regulations. A Restrictive Declaration could be placed in the site in connection with the BSA actions and, if necessary, a Phase II investigation.

All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations, as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase far less than with the proposed actions. However, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The CIVITAS Alternative would result in the same development as the proposed actions in 2007. Similar to conditions with the proposed actions, there would be a need for traffic mitigation associated with MSKCC operations at 3, 0, and 5 intersections during the AM, midday, and PM peaks, respectively. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking with the CIVITAS Alternative.

Under the CIVITAS Alternative, there would be no new development on the main campus block and therefore no additional changes in study area traffic and parking conditions due to MSKCC activities. Impacts attributed to the proposed actions in 2011 would, therefore, not occur, and mitigation for those impacts would not be needed.

PEDESTRIANS AND TRANSIT

In 2007, this alternative would generate the same pedestrian trips as the proposed actions. However, there would be no additional increase in pedestrians since there would be no further development on the main campus block. Like the proposed actions, the CIVITAS Alternative would not result in any significant adverse pedestrian impacts.

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result in the same subway and bus trips as the proposed actions and the same subway impact that would not require mitigation, as with the proposed actions. Like the proposed actions, this alternative would result in an impact at the northeast stair but would not require mitigation in 2007. However, with no further development,

MSKCC would not add more transit trips in 2011. Therefore, unlike the proposed actions, no mitigation would be required at the northeast and southeast stairs in 2011.

AIR QUALITY

With the CIVITAS Alternative, the increases in the 8-hour carbon monoxide concentrations expected from the proposed actions, none of which are significant, would be the same in 2007, since project-generated traffic volumes would be the same. No violations of the NAAQS are expected to occur either under the CIVITAS Alternative or with the proposed actions by 2007, and both would be consistent with the SIP.

With the shorter CIVITAS research building additional measures may be required to avoid potential significant adverse impacts from the exhaust system of the laboratories on the surrounding community. Such measures may include, but would not be limited to, changes to the design of the mechanical systems that would modify exhaust parameters to reduce emissions.

NOISE

Both with the CIVITAS Alternative and the proposed actions, noise levels in the study area would not be significantly increased compared to existing levels in 2007. With both the CIVITAS Alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. This alternative would require noise attenuation for the research building, which would be similar to the (E) designation for the proposed actions.

CONSTRUCTION IMPACTS

The CIVITAS Alternative would have temporary construction impacts similar to the proposed actions. Construction activities would be comparable to that of the proposed actions on the north block. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

ALTERNATIVE LOCATIONS*

During the public review, several alternative locations were proposed for the research building. As described below, none of the other locations mentioned met MSKCC's goals for the project and none are deemed practicable by MSKCC.

- Avenue sites or other sites owned or controlled by MSKCC in Manhattan.

  Of the properties owned by MSKCC on the upper East Side of Manhattan, the site of the proposed laboratory building is the largest except the main campus block and the south block of MSKCC. MSKCC believes that it is not feasible to demolish a sufficiently large portion of the main campus block to develop the proposed research building. Nor does MSKCC believe that it is feasible to demolish a sufficiently large portion of the south block because the Rockefeller Research Laboratory occupies more than half this site. Given that the constraints of the proposed research building site produce a building of 23 stories, development on any of the smaller sites would produce smaller and what MSKCC believes to be less efficient floor plates.

* This section is new to the FEIS.

If the research facility were to be built on any of the other sites on the Upper East Side, impacts would likely be similar to those with the proposed building. Further, it can be assumed that the site of the proposed research building would be developed for a different use. Development could be for a range of uses from the R8 As-of-Right Mixed Use Alternative or to an ambulatory care facility (outpatient clinic).

- Long Island City.

  A location in Long Island City, even with ferry connections, would be too far away from the main campus block and the inpatient hospital to meet the needs of translational research, which requires a close bench-to-bed relationship. Translational research relies on face-to-face communication and interaction among clinicians, scientists, and patients.

  Long Island City has been considered for the development of commercial biotech laboratories. While biotech laboratories do depend on relatively proximate major teaching hospitals, as commercial operations they do not generally share staff closely.

  Again, if the proposed research building could be developed in Long Island City, the proposed site in the north block would be developed and development could range from a mixed-use building to an ambulatory care facility.

- Roosevelt Island.

  Similar to a location in Long Island City, MSKCC believes that a location on Roosevelt Island would be too distant from the MSKCC campus to serve for translational research. Further, the Roosevelt Island plan does not call for such a use.

  If development of a research facility were to occur on Roosevelt Island, the proposed site of the research facility in the north block would be redeveloped, and a range of uses, described above, would be possible.

REDUCED MAIN CAMPUS BLOCK DEVELOPMENT ALTERNATIVE*

This alternative is the same as the proposed actions except for the amount of new floor area assumed on the main campus block.

While the main campus block would be rezoned to R9, this alternative assumes that only 125,000 square feet of additional floor area is developed without additional review and approval by CPC. This area could be used by MSKCC for one or more small projects similar to the infill/infrastructure project currently under construction on the main campus. However, it would not be sufficient for construction of a new inpatient hospital. It is assumed that this area would be used as diagnostic and treatment space. Based on a population estimate of 388 staff, 530 patients and 1,400 visitors for 161,600 square feet of diagnostic and treatment space with the proposed actions, the potential population of this 125,000 square feet would be 302 staff, 413 patients and 1,092 visitors. (This is a total of 466 fewer staff, 130 fewer inpatients, 117 fewer diagnostic and treatment patients, and 698 fewer visitors than the proposed actions would bring to this block.)

The physical form of this 125,000 square feet is not defined, but it is expected that it could be developed in a form similar to the infill/infrastructure project which is essentially filling voids in the midblock of the main campus block.

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* This section is new to the FEIS.

This alternative would require all the same actions and approvals as the proposed project as well as some form of limitation on development in the main block. Use of the additional floor area generated by the rezoning and the transfer of floor area from the north block would require additional review and approval by CPC.

In 2007 this alternative would be similar to the proposed research building. At full build-out, this alternative would reduce the impacts associated with population. Since it would not create a major new structure, the urban design and shadow effects would be reduced as would the economic benefits.

LAND USE, ZONING, AND PUBLIC POLICY

Land use impacts would be similar and the rezoning would take place as proposed. However, the floor area of the midblock of the main campus block available for use without additional review and approval by CPC would be far less than with the proposed project.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of this alternative would be less than those anticipated with full build-out of the proposed project. There would be less direct or generated construction employment and income; and the city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less.

At full build-out this alternative is estimated to provide 466 fewer jobs than development with the proposed actions. Overall, this alternative would generate fewer economic benefits.

COMMUNITY FACILITIES

This alternative would create the same new research building, but less new construction on the main campus block. It would increase the worker population by a smaller number and it would bring fewer new patients and visitors to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

With this alternative, MSKCC would continue to have the ability to plan for future needs subject to the need to seek additional review and approval by CPC.

OPEN SPACE AND RECREATIONAL FACILITIES

The population associated with this alternative would be the same as with the proposed actions in 2007. This alternative would have the same shadows on St. Catherine's Park as compared to the proposed project. Similar to the proposed actions, this alternative would not have an open space impact in 2007.

In 2011 open space user population on the main campus block would be greatly reduced. There would be no additional new shadow on St. Catherine's Park from the relatively low structure in the midblock. With this alternative, there would be approximately 466 fewer workers in the study area in 2011. There would be a 2.6 percent decrease in the open space ratio, compared to a 3.5 percent decrease with the proposed actions. The percent decrease in the overall passive open space ratio would be 1.3 percent as compared to 2.7 percent with the proposed actions. The

potential impact on open space would be less under this alternative compared to the proposed actions, but would still constitute a significant adverse impact. As with the proposed actions, this impact would be unmitigable.

SHADOWS

In 2007 the shadows would be less than with the proposed building. In 2011 under this alternative there would be no additional increase in shadows on the park.

HISTORIC RESOURCES

This alternative would have the same historic resource impacts and require the same mitigation measures for those impacts as the proposed actions. Similar to conditions with the proposed actions, the research building could have an adverse impact on St. Catherine's Church during construction. As with the proposed actions, mitigation to avoid this impact would be a construction protection plan. New shadows on the church's east-facing, stained-glass windows during the morning would cover most if not all the windows that are not currently in shadow. To mitigate this impact, lighting could be provided to the east-facing windows to replace the sunlight lost in the morning. Similar to the proposed actions, no other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

Since the research building in the Reduced Main Campus Block Development Alternative would be the same as the proposed project, it would have the same adverse impacts on urban design in 2007. As with the proposed actions, this impact would be unmitigable.

In 2011, development on the main campus block would be far less than with the proposed actions. There would be no major new structure of 390,000 square feet, but rather portions of the midblock would be infilled with up to 125,000 square feet, which would be the equivalent of adding less than two floors across the midblock. As compared to the proposed actions, this would not significantly increase the midblock density in this block. Overall this alternative would have less impact on urban design than with the proposed actions. The impact, combined with the impact of the proposed research facility, would constitute a significant adverse impact. As with the proposed actions, the impact would be unmitigable. As with the proposed actions, this alternative would have no impact on visual resources or view corridors.

NEIGHBORHOOD CHARACTER

With this alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. As with the proposed actions, a construction protection plan would be needed to mitigate construction-related impacts to St. Catherine's Church. Morning sunlight to the east-facing stained-glass windows of St. Catherine's Church would be largely lost. Compared to the proposed actions, there would be a new and taller tower adjacent to the small-scale St. Catherine's Church. There would more new activity in the area in 2007, but much less in 2011. The increase in traffic from the research building would be the same as with the proposed project but less at full buildout. Similar to conditions with the proposed actions, with an (E) designation there would be no noise impacts on interiors of new construction in the rezoning area. Overall, as compared to conditions with the proposed actions, this alternative would have a lesser impact on elements of neighborhood character in the

2011 analysis year. As with the proposed actions, the impacts could be considered significant and adverse and would be unmitigable.

HAZARDOUS MATERIALS

Like the proposed actions, this alternative would have the potential to disturb hazardous materials. Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished (St. Catherine's Church Rectory and the Kettering Building) would be removed in accordance with all applicable local, state and federal regulations. As with the proposed project, potential construction related impacts could occur as a result of development of the Kettering site. The impacts could be mitigated by the same mechanism (a Restrictive Declaration on the property) requiring prior to excavation a Phase II subsurface investigation to determine if contamination exists. If necessary, remediation would be undertaken. All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, the increase in demands on local utility systems, including water supply, solid waste and recycling, and energy, would be the same in 2007 and far less in 2011 than with the proposed actions. However, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The Reduced Main Campus Block Development Alternative would result in the same floor area and the same number of vehicle trips as the proposed actions in 2007. Similar to conditions with the proposed actions, there would be the same impacts and a need for traffic mitigation associated with MSKCC operations. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking.

In 2011, trips to the main campus block would be fewer that with the proposed project. Assuming there are more trips to the north block, this alternative would result in 60, 30, and 70 fewer vehicle trips during the AM, midday, and PM peak hours, respectively, than the proposed project in 2011. In 2011, there would be impacts at 7, 7, and 9 intersections with this alternative, as compared to 9, 8, and 11 intersections with the proposed actions during the AM, midday, and PM peaks. Based on standards set forth in the *CEQR Technical Manual*, the increases in traffic generated by this alternative would cause significant impacts in 2011 at the locations listed below:

- York Avenue and East 61st Street (PM peak);
- York Avenue and East 63rd Street (PM peak);
- York Avenue and East 66th Street (PM peak);
- York Avenue and East 67th Street (AM, midday, and PM peaks);
- York Avenue and East 69th Street (AM and PM peaks);
- York Avenue and East 71st Street (AM, midday, and PM peaks);
- York Avenue and East 72nd Street (midday and PM peaks);
- First Avenue and East 67th Street (AM and midday peaks);
- First Avenue and East 68th Street (AM, midday, and PM peaks);

- Second Avenue and East 69th Street (AM and midday peaks).

With this alternative, there would not be impacts at the following locations, as there would be with the proposed actions:

- York Avenue and East 62nd Street (AM and PM peaks);
- York Avenue and East 63rd Street (midday peak);
- York Avenue and East 72nd Street (AM peak); and
- Second Avenue and East 69th Street (PM peak).

Traffic mitigation would be similar to the proposed actions. All of the impacted locations could be fully mitigated through signal retiming or changes to parking regulations. These mitigation measures are described below. The increase in demand for parking would also be less than with the proposed conditions, and like the proposed actions, there would be no significant adverse impact to parking.

Recommended Mitigation Measures

The paragraphs below discuss each affected intersection and its required mitigation. Proposed signal retimings that would mitigate impacts would result in all of the affected intersections being brought back to the same service conditions, or better, than those under No Action conditions. This alternative would result in the need for mitigation measures similar to or lesser than the proposed actions. NYCDOT has reviewed the mitigation measures for the proposed actions, and has agreed to evaluate operating conditions upon to completion of Phase 2. At that time, appropriate mitigation measures would be implemented.

York Avenue and East 61st Street

The impact at the northbound defacto left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phase, as with the proposed actions. With this retiming, delays at the northbound defacto left-turn movement would improve to 120.8 spv (LOS F) with a v/c ratio of 1.035 from a delay of 136.0 spv (LOS F) with a v/c ratio of 1.064 in 2011 with this alternative. This measure would mitigate the impact back to No Action conditions or better.

York Avenue and East 63rd Street

The impact at the southbound left-turn movement at this intersection during the PM peak periods could be mitigated by subtracting 1 second of green time from the northbound/southbound phase and adding it to the southbound lagging phase, as with the proposed actions. With this retiming, delays would improve to 73.5 (LOS F) with a v/c ratio of 1.083 from 100.2 spv (LOS F) with a v/c ratio of 1.137 in 2011 with this alternative during the PM peak period.

With this measure in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and 66th Street

The impact at the northbound defacto left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 3 seconds of green time (as compared to 5 seconds with the proposed actions) from the westbound phase and adding it to the northbound/southbound phase. With this retiming, delays would improve to 39.2 spv (LOS D) with a v/c ratio of 0.806 from a delay of 59.4 spv (LOS E) with a v/c ratio of 0.885 in 2011 with this

alternative. With this measure in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 67th Street

The impact at the northbound left-turn and through movements at this intersection during the AM, midday, and PM peak periods could be mitigated by creating a leading northbound phase with 8 seconds of green time (and 3 seconds of yellow plus all red time). In addition, during the midday and PM peak periods, parking at the southbound approach would be prohibited (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces). Parking regulations would be "No Standing from Here to Corner Noon to 2 PM and 4 PM to 7 PM." These measures would be the same as with the proposed actions. With these measures, delays would improve to 4.7 spv (LOS A) with a v/c of 0.464 from delays of 68.8 spv (LOS F) with a v/c ratio of 0.925 at the northbound defacto left-turn movement and 4.9 spv (LOS A) with a v/c ratio of 0.504 at the through movement in 2011 with this alternative during the AM peak period, to 9.8 spv (LOS B) with a v/c ratio of 0.862 from a delay of 157.1 spv (LOS F) with a v/c ratio of 1.175 at the defacto left-turn movement and 91.6 (LOS F) with a v/c ratio of 1.156 at the through movement in 2011 with this alternative during the midday peak period, and to 7.2 (LOS B) with a v/c ratio of 0.731 from 59.2 spv (LOS F) with a v/c of 0.883 at the defacto left-turn movement and 67.6 spv (LOS F) with a v/c ratio of 1.106 at the through movement in 2011 with this alternative during the PM peak period. With these measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 69th Street

As with the proposed actions, the impact at the northbound approach at this intersection during the AM and PM peak periods could be mitigated by creating a leading northbound phase with 8 seconds of green time (and 3 seconds of yellow plus all red time). With this retiming, delays at the northbound approach would improve to 6.6 spv (LOS B) with a v/c ratio of 0.697 from 48.9 spv (LOS E) with a v/c ratio of 1.068 in 2011 with this alternative during the AM peak, and to 7.5 spv (LOS B) with a v/c ratio of 0.747 from delays of 43.7 spv (LOS E) with a v/c ratio of 1.051 in 2011 with this alternative during the PM peak.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 71st Street

With the proposed actions, the impact at the northbound approach at this intersection during the AM peak period could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) at the northbound approach. Parking regulations would be "No Standing From Here to Corner 7AM to 10AM." With this alternative, the impact at the northbound approach could be mitigated by subtracting 2 seconds of green time from the westbound phase and adding it to the northbound/southbound phase. With this measure, delays at the northbound approach would improve to 84.7 spv (LOS F) with a v/c ratio of 1.134 from a delay of 110.3 (LOS F) with a v/c ratio of 1.177 in 2011 with this alternative.

During both the midday and PM peak periods, the impacts could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phase, as with the proposed actions. With this retiming, delays at the northbound approach would improve to 75.5 spv (LOS F) with a v/c ratio of 1.123 from a delay of 91.0 (LOS F) with a v/c ratio of 1.151 in 2011 with this alternative during the midday peak period, and to 72.3

(LOS F) with a v/c ratio of 1.108 from a delay of 82.8 spv (LOS F) with a v/c of 1.128 in 2011 with this alternative during the PM peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 72nd Street

During the midday peak period, the impact at the northbound approach could be mitigated by subtracting 1 second of green time from the eastbound/westbound pedestrian phase and adding it to the northbound/southbound phase, as with the proposed actions. With this retiming, delays at the northbound approach would improve to 84.5 spv (LOS F) with a v/c ratio of 1.138 from a delay of 101.3 (LOS F) with a v/c ratio of 1.167 in 2011 with this alternative.

With the proposed actions, during the PM peak period, the impact at the westbound approach could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) on westbound approach. Parking regulations would be "No Standing From Here to Corner 4PM to 7PM." With this alternative, the impact at the westbound approach could be mitigated by subtracting 2 seconds of green time fro the northbound/southbound phase and adding it to the eastbound/westbound phase. With this measure, delays at the westbound approach would improve to 126.2 (LOS F) with a v/c ratio of 1.139 from a delay of 193.7 spv (LOS F) with a v/c ratio of 1.242 in 2011 with this alternative.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

First Avenue at East 67th Street

The impact at the westbound approach at this intersection during the AM and midday peak periods could be mitigated by subtracting 1 second of green time (as compared to 2 seconds with the proposed actions) from the northbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 56.2 spv (LOS E) with a v/c ratio of 0.985 from a delay of 65.4 spv (LOS F) with a v/c ratio of 1.015 in 2011 with this alternative during the AM peak period, and to 83.2 spv (LOS F) with a v/c ratio of 1.070 from a delay of 97.9 spv (LOS F) with a v/c ratio of 1.102 in 2011 with this alternative during the midday peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

First Avenue and 68th Street

The impact at the eastbound approach during the AM peak period could be mitigated by subtracting 2 seconds of green time (as compared to 3 seconds with the proposed actions) from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 50.8 spv (LOS E) with a v/c ratio of 0.976 from a delay of 69.2 spv (LOS F) with a v/c ratio of 1.035 in 2011 with this alternative.

The impact at the eastbound approach at this intersection during the midday and PM peak periods could be mitigated by subtracting 1 second of green time (as compared to 1 second in the midday and 2 seconds in the PM, respectively with the proposed actions), from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 80.7 spv (LOS F) with a v/c ratio of 1.082 from a delay

of 96.2 spv (LOS F) with a v/c ratio of 1.115 in 2011 with this alternative during the midday peak period, and to 87.6 spv (LOS F) with a v/c ratio of 1.104 from a delay of 104.7 spv (LOS F) with a v/c ratio of 1.137 in 2011 with this alternative during the PM peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Second Avenue and 68th Street

The impact at the eastbound approach at this intersection during the AM peak period could be mitigated by subtracting 3 seconds of green time (as compared to 4 seconds with the proposed actions) from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 65.1 spv (LOS F) with a v/c ratio of 1.029 from a delay of 103.0 spv (LOS F) with a v/c ratio of 1.117 in 2011 with this alternative.

During the midday and PM peak periods the impacts at the eastbound approach could be mitigated by subtracting 1 second of green time (as compared to 1 second during the midday and 2 seconds during the PM, respectively with the proposed actions), from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 80.5 spv (LOS F) with a v/c ratio of 1.083 from a delay of 95.0 spv (LOS F) with a v/c ratio of 1.114 in 2011 with this alternative during the midday peak, and to 82.4 spv (LOS F) with a v/c ratio of 1.093 from a delay of 97.6 spv (LOS F) with a v/c ratio of 1.124 in 2011 with this alternative during the PM peak.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Second Avenue and East 69th Street

The impact at the westbound approach at this intersection during the AM peak period could be mitigated by subtracting 2 seconds of green time from the southbound phase and adding it to the westbound phase, as with the proposed actions. With this retiming, delays at the westbound approach would improve to 35.2 spv (LOS D) with a v/c ratio of 0.889 from a delay of 45.2 spv (LOS E) with a v/c ratio of 0.941 in 2011 with this alternative.

During the midday peak period, the impact could be mitigated by subtracting 1 second of green time from the southbound phase and adding it to the westbound phase, as compared with the proposed actions. With this retiming, delays at the westbound approach would improve to 79.0 spv (LOS F) with a v/c ratio of 1.079 from a delay of 93.7 spv (LOS F) with a v/c ratio of 1.110 in 2011 with this alternative.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Parking

As with the proposed actions, assuming a background growth rate of 5.0 percent, utilization of the study area's off-street parking facilities was assumed to increase with project-generated demand. As shown in Table 18-9, the projected conditions indicate that the overall utilization rate of the off-street parking facilities would increase to approximately 93 percent (as compared to 94 percent with proposed actions) from a 2011 No Action utilization of 91 percent. It is assumed that the 6 on-street parking spaces (compared with 18 spaces with the proposed action's) lost due to the proposed 2011 mitigation measures would add to the off-street parking

demand in the area, increasing the midday off-street parking utilization rate to approximately 93.3 percent. There would be available off-street parking capacity, and no significant impacts to parking would result from restricting on-street parking as described above.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes over No Action conditions under this alternative. In 2007, this alternative would generate the same number of pedestrian trips than the proposed actions. In 2011, it would result in 270, 213, and 328 fewer pedestrian trips as the proposed actions. Like the proposed actions, this alternative would not result in any significant adverse pedestrian impacts.

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result the same number subway and bus trips than the proposed actions. In 2007, there would be the same impact to the northeast subway stair as the proposed actions, and, as discussed above in "Mitigation," mitigation would not be required. In 2011, there would be 117, 17, and 132 fewer subway trips than the proposed actions, but like the proposed actions, there would be impacts to the northeast and southeast stairs requiring mitigation. A widening of two inches at each of the northeast and southeast stairs would be required, as compared to the proposed actions, which would require a widening of three inches at the northeast stair and two inches at the southeast stair. An engineering feasibility study with conceptual plans has been reviewed and approved by the MTA for the proposed actions; the same improvements would appropriately mitigate this impact. As with the proposed actions, the applicant would be responsible for funding the cost associated with the percent of construction required to mitigate the alternative's impacts. As with the proposed actions, there is no commitment by the MTA regarding funding this mitigation at this time, and if mitigation is not implemented, a significant adverse impact would occur.

AIR QUALITY

With this alternative, the increases in the 8-hour carbon monoxide concentrations expected from the proposed actions would be less. No violations of the NAAQS are expected to occur under this alternative or with the proposed actions by 2007 or 2011, and both would be consistent with the SIP.

In addition, similar to the development under the proposed actions, there would be no potential significant adverse impacts from the exhaust system of the laboratories in the proposed research building on any MSKCC campus buildings or the surrounding community.

NOISE

Both with this alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. With both this alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. Similar to the proposed actions, this alternative would require the same (E) designation for noise in the rezoning area to avoid significant adverse impacts.

CONSTRUCTION IMPACTS

The Reduced Main Campus Block Development Alternative would have temporary construction impacts similar to the proposed actions. The duration and phasing of construction activities would be comparable to that of the proposed actions on the north block. On the main campus block there would be much less construction. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

E. UNAVOIDABLE ADVERSE IMPACTS

As described above, there would be an adverse impact on open space in 2011 due to the increase in open space users and the increase in shadows on St. Catherine's Park from the proposed research building and potential development on the main campus block. Potential improvements are limited, as St. Catherine's Park (the only public space in the immediate area) has been extensively renovated in the past few years and there are no capital improvements that it needs relative to passive open space. There are no potential sites for additional open space in the control of the New York City Department of Parks and Recreation or MSKCC. Therefore, the project would result in an unmitigated significant adverse impact to open space in 2011.

The proposed actions would also result in a significant adverse impact to urban design in 2007 and 2011, due to increased density in the midblocks. This significant adverse impact on urban design would be partially mitigated by reduction in height of the proposed research building envelope from 440 to 420 feet. At full build out the two buildings would have a significant adverse impact on urban design due to increased density.

This impact on urban design would also result in a significant adverse impact to neighborhood character. However, the reduction in the height of the research building's envelope would partially mitigate the building's adverse effect on urban design and its corresponding effect on this aspect of neighborhood character. At full build out in 2011, increases in traffic and in urban design density would cause a significant adverse impact on neighborhood character. This impact was reduced and partially mitigated between DEIS and FEIS by the reduction in the size of the research building and the elimination of the south block (and resulting development, employees, patients and visitors) from the rezoning area. Nonetheless, this impact to neighborhood character would not be fully mitigated. ❖

A PROJECT IDENTIFICATION

Memorial Sloan-Kettering Cancer Center (MSKCC) is the world's foremost medical center devoted to the care of cancer patients. MSKCC's campus is located on three blocks between First and York Avenues and East 66th and 69th Streets on the Upper East Side of Manhattan (see Figure 1-1).

MSKCC's mission to prevent and cure human cancers depends on advances in basic biological and clinical research—the care offered today builds on yesterday's scientific and medical achievements. New cancer therapies and diagnostic approaches—the tools that will alleviate the human suffering that cancer causes—will also depend on how well and how rapidly insights from the laboratory are translated into the clinical, patient-care setting.

Emerging knowledge of the human genome, as well as the technology that allows scientists to better understand the complex interactions among genes, will speed that translational research process in dramatic ways. As the nation's leading cancer center, MSKCC must strengthen its century-long commitment to innovation in research and patient care as well as the collaboration among scientists, physicians and other clinical investigators to retain this leadership role.

The proposed actions would support MSKCC's commitment by allowing it to expand its research and diagnostic and treatment facilities and to have adequately sized state-of-the-art inpatient rooms.

The proposed actions include a rezoning from R8 to R9 of the midblocks in two blocks and the designation of the campus as a Large-Scale Community Facility Development (LSCFD).* They also include actions specific to the first phase of anticipated development, a research laboratory building on the north block of the campus, as well as transfer of development rights from the north block to the main campus block.

B. BACKGROUND HISTORY OF MSKCC

MSKCC traces its history to the New York Cancer Hospital, founded in 1884 as the nation's first cancer hospital. The original structure, which resembles a French chateau, still stands on Central Park West between 105th and 106th Streets. The hospital foundered in its early years due to the stigma associated with cancer and its treatment. The fledgling hospital was forced to begin accepting any and all patients and to adopted a new name, General Memorial Hospital for Cancer and Allied Diseases, in 1899.

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* Since the publication of the DEIS, MSKCC has reduced the scale and scope of the proposed project. The height of the envelope of the proposed research building has been reduced from 440 feet to 420 feet. MSKCC has also eliminated the south block from the proposed rezoning area. This chapter reflects those changes.

The original vision remained in the minds of a few key board members and physicians— particularly William B. Coley, an early pioneer in the field now known as immunotherapy. Through Dr. Coley and his interest in the treatment of sarcoma, the Rockefeller family began more than a century of involvement with Memorial Hospital. But it was mining engineer James Douglas who returned Memorial Hospital to its original mission—the treatment of cancer and research into its cure. Douglas set three conditions for his contribution to the Hospital: that it affiliate with Cornell University, that it appoint the noted pathologist James Ewing as president of the medical staff, and that it drop the word "General" from the name. By 1916, these conditions were met and within a few years the institution's patient care and research programs had been revitalized. In 1927, John D. Rockefeller, Jr. endowed the nation's first fellowship training program there.

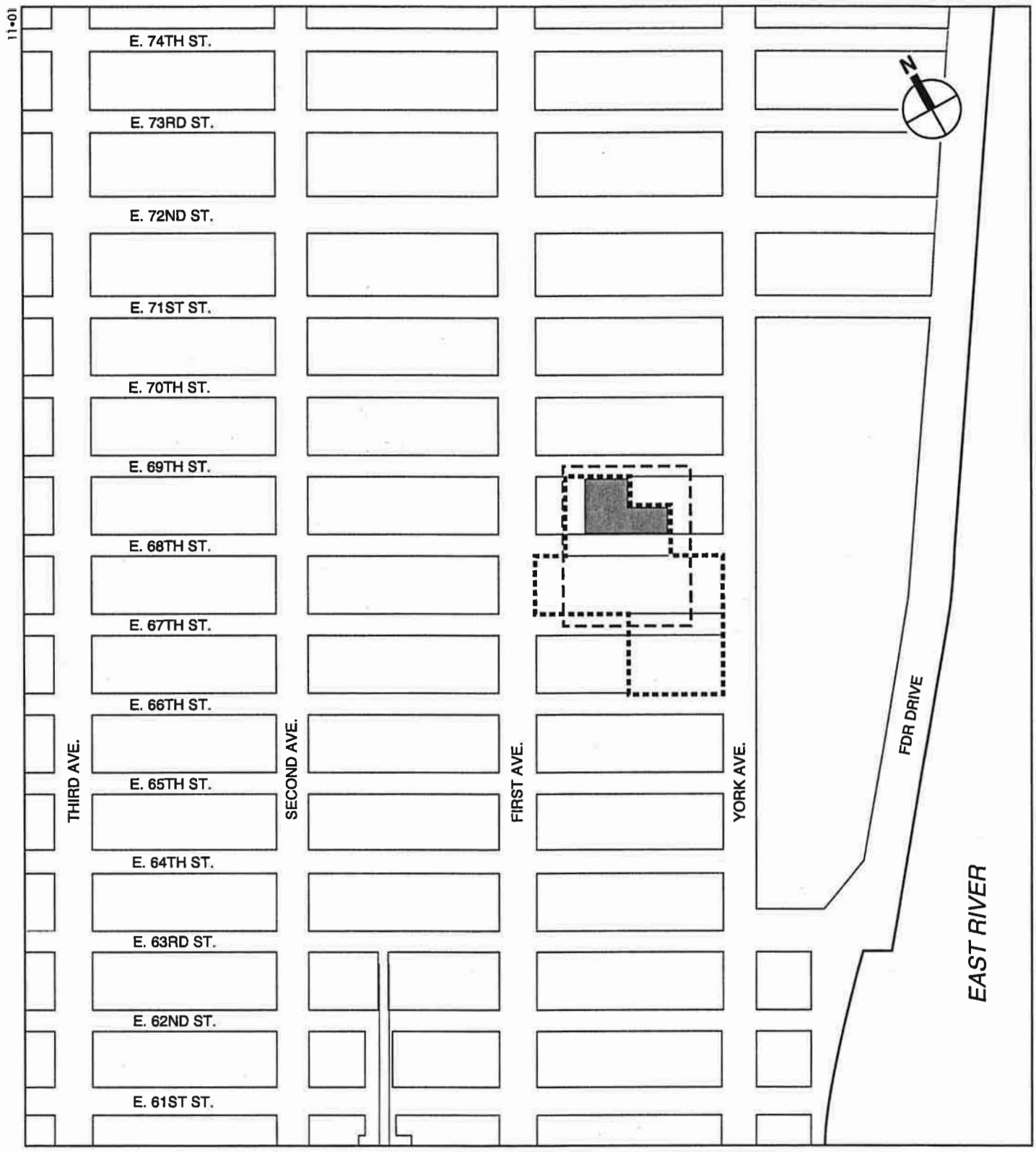
In 1934, Mr. Rockefeller donated the land on which MSKCC now sits. A new hospital at York Avenue and 68th Street that opened in 1939 had operating rooms, a 1 million-volt x-ray machine for treatment, and laboratories.

Over the next six decades, the campus witnessed enormous changes in response to the demands of cancer research and treatment and the need to train new generations of physicians, scientists, and nurses. Buildings were built, renovated, or demolished in accordance with the Hospital's evolving mission: progressive control and cure of cancer through patient care, research and education. A major development occurred in 1945 with the decision to create the Sloan-Kettering Institute (SKI), Its founders believed that the results of laboratory research would cure cancer. As a result, Howard Laboratory was built adjacent to Memorial Hospital and opened in 1948. Dr. Cornelius Rhoads, a pioneer in chemotherapy who exemplified the close ties between basic science research and clinical care, served as the director of the Hospital and SKI.

Other new buildings were added over time: The James Ewing Hospital (1950) along First Avenue, since renamed the Arnold and Marie Schwartz International Hall of Science for Cancer Research (Schwartz Building), and renovated to house laboratories and offices; and the Tower Building (1951) on York Avenue between East 67th and 68th Streets for outpatient services. The next 13 years saw the construction of Sloan House and Winston House for staff, the Kettering Building on 68th Street, and a 21-story hospital building on York Avenue on the site of the Tower Building, as well as ancillary buildings along the north side of East 67th Street housing outpatient services and radiation oncology.

The patchwork of demolition and reconstruction on the MSKCC campus continued well into the 1990's. Winston House gave way to the new Rockefeller Laboratory Building which opened in 1989. The Enid A. Haupt Pavilion on 67th Street, which located outpatient services, physician's offices, radiation oncology, and same-day surgery facilities under one roof, opened in 1991. With the shift toward outpatient cancer treatment, MSKCC looked beyond the immediate campus. The Evelyn H. Lauder Breast Center and its companion Iris Cantor Diagnostic Center opened at 205 East 64th St. in 1992. The Rockefeller Outpatient Pavilion, located at 160 East 53rd Street, opened in 1999, and now meets the needs of more than 70 percent of the Center's outpatients.

Over the years, with its commitment to linking research with clinical care, MSKCC has served as a model of the comprehensive cancer center as envisioned by the National Cancer Act of 1971. Today, on the MSKCC's main campus, a major renovation is underway to create 21 new operating rooms, pathology laboratories and pediatric facilities. An addition to house these



Site Location

FIGURE 1-1

MEMORIAL SLOAN-KETTERING
CANCER CENTER

programs is being erected over the present Winston Pavilion on East 67th Street. An outpatient center for patients with urologic cancers is also now under construction on East 68th Street between First and Second Avenues.

C. PROJECT PURPOSE AND NEED

RESEARCH

While the Kettering Building represented the latest thinking about laboratory design and technology when it opened in 1964, much has changed. Neither the Kettering Building nor the renovated Schwartz Building can adequately accommodate a leading-edge program of biological research. The Rockefeller Laboratory Building is fully occupied and cannot alone support MSKCC's future research program. To take advantage of the opportunities made possible through such developments as the sequencing of the human genome, MSKCC must expand its research facilities.

MSKCC's academic faculty includes the 400 attending physicians of Memorial Hospital and 80 laboratory heads of SKI—nearly half of whom have hospital appointments. Both benefit from the interplay between disciplines. Biomedical research at SKI is wide in scope, with programs in cell biology, molecular biology, immunology, cellular biochemistry, structural biology, and pharmacology. Center staff are currently the recipients of more than $80 million a year in competitive grants and contracts.

In the future, MSKCC believes that the most successful research and education programs will encourage interdisciplinary research, where chemists, biologists and clinical scientists work together. As one measure of the importance of such collaborations, MSKCC will join Rockefeller and Cornell in a $160 million research effort to create joint programs in cancer biology, chemistry and bio-informatics, and to enhance the present MD-Ph.D. program. Other significant research collaborations include MSKCC's participation in the structural biology center being built at City College of New York and a new imaging facility at Cornell.

The proposed research building is designed to house a comprehensive laboratory research program, with a particular emphasis on translational research that would bridge MSKCC's programs of patient care and fundamental biological research. Translational research—described by MSKCC as "bench to bed"—takes the findings of basic biological research and applies that understanding toward the development of new therapeutic agents. Transitional research requires the close and effective interaction among scientists, clinician-scientists, and clinicians. In the view of MSKCC, a vibrant program of translational research must occur in close proximity to Memorial Hospital and foster face-to-face interactions among investigators.

INPATIENT ROOMS

The Memorial Hospital is now 27 years old. Licensed for 565 beds, it only operates 431 beds and provides limited outpatient capacity and space for administrative offices. While a floor-by-floor renovation of all inpatient floors is planned, the lifespan of the present hospital is limited. In-place renovation costs are high, and renovation will not provide the level of amenities that many patients expect. For example, the majority of rooms include two patient beds, whereas most hospitals are now being built with only single rooms. Replacement of the present Memorial Hospital must be a part of any long-range master plan if MSKCC is to continue providing world-class care. With the reasonable build-out on the main campus block, it is estimated

that the number of beds in operation could rise by 130 to 561. The number of licensed beds would remain at 565.

DIAGNOSTIC AND TREATMENT

Diagnostic and treatment facilities are located throughout the main campus buildings and satellite facilities. In particular, the Schwartz Building has 20,000 square feet and the Howard Building has 53,500 square feet. Between the two buildings, these programs include radiology and nuclear medicine, clinical laboratories, rehabilitation and speech and hearing, day surgery, pathology, and radiation oncology. A blood donor room and its associated laboratories—which also support the blood needs of the Hospital for Special Surgery—are based in the Schwartz Building. Short-term upgrades are now underway to accommodate new technology, but both space and the age of these buildings will be factors that affect future investment. In addition, future refinements in the development of radiation oncology are likely to require significant renovations and/or new construction in the present radiation oncology building, located east of the Schwartz Building.

OFFICE/ADMINISTRATION

Administrative and academic offices are also located throughout the MSKCC campus, including the Schwartz Building, the Howard Building, the Sloan House, and the Scholars Residence. These include Clinical Laboratories, Pediatrics and Facilities Management. Major administrative functions continue to be moved off site in order to make way for direct clinical care or laboratory research, including key personnel who support clinical trials management. This is not ideal. While some support functions—including human resources, finance, and information systems—have long been located off the main campus, it is essential that new offices be an important part of long-term planning.

D. PROJECT SITE

The area directly affected by the proposed actions, or "the project site," consists of the proposed rezoning area and the LSCFD area.

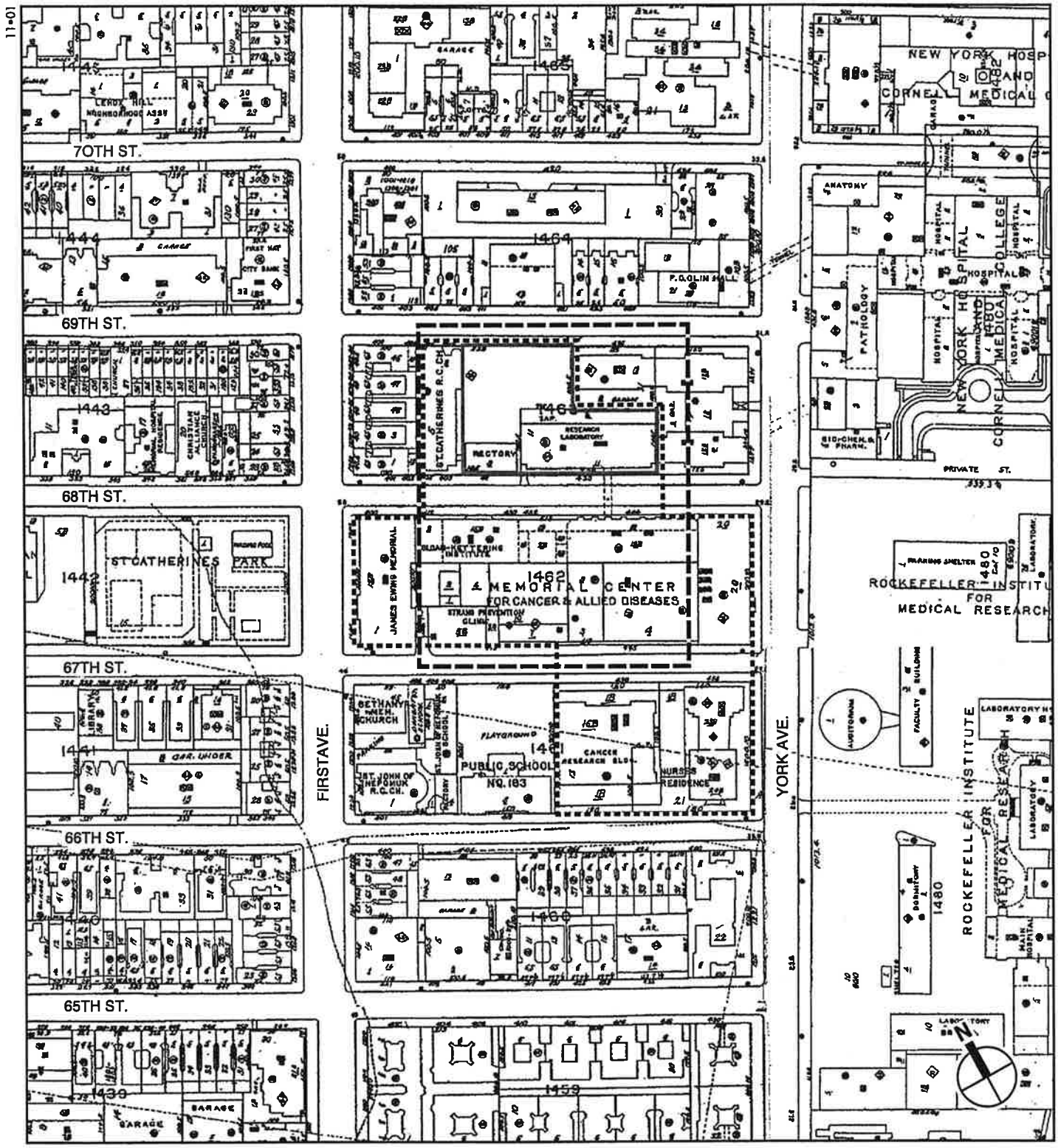
REZONING AREA

The rezoning area comprises the midblocks (100 feet west of York Avenue and 100 feet east of First Avenue) of two blocks between East 67th and East 69th Streets on the upper east side of Manhattan, as shown in Figure 1-2. These midblocks total approximately 165,888 square feet, and are zoned R8 and may be developed to a floor area ratio (FAR) 6.5 for community facilities The tax lots within the rezoning area are shown in Figure 1-3.

MSKCC owns or controls approximately 143,294 square feet of the total rezoning area including the St. Catherine's Church property in the north block. The remainder of the rezoning area in the north block is occupied by all of one and part of two other residential buildings that serve as staff housing for New York Hospital-Cornell Medical Center. MSKCC occupies the whole of the main campus block.

LARGE-SCALE COMMUNITY FACILITY DEVELOPMENT AREA

The boundaries of the proposed LSCFD area would contain the campus of MSKCC including the St. Catherine's Church property. In the north block, it excludes the residential buildings on



Proposed Rezoning Area Boundary

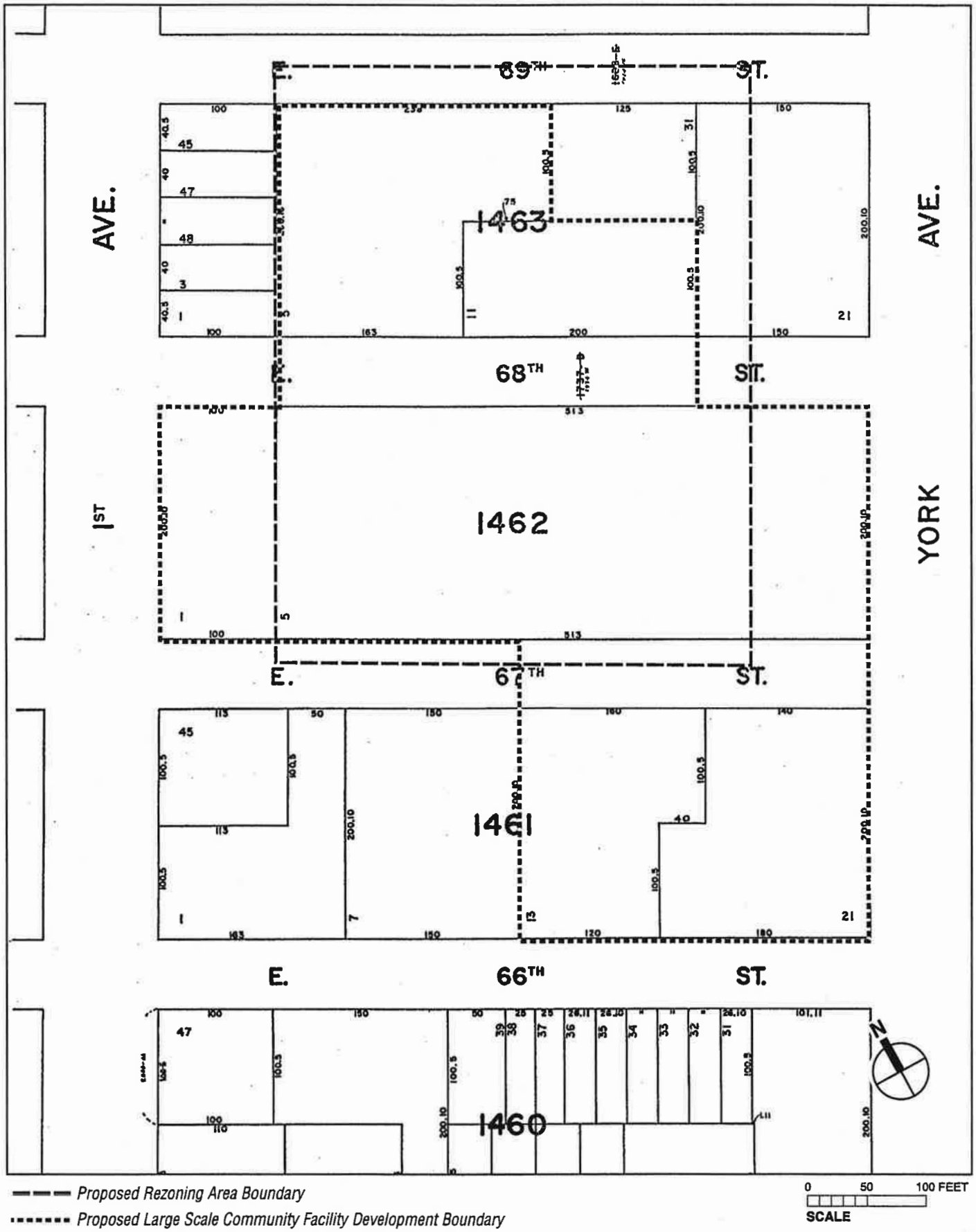
Proposed Large-Scale Community Facility Development Boundary

Phase I Research Building Site Boundary

Project Site: Rezoning Area and Large-Scale Community Facility Development

FIGURE 1-2

MEMORIAL SLOAN-KETTERING CANCER CENTER



Tax Map

FIGURE 1-3

the eastern end of the block and the properties west of St. Catherine's Church. It includes all of the main campus block from York Avenue to First Avenue. In the block south of the rezoning area (south block) it includes the area within 300 feet of York Avenue. The buildings owned by MSKCC are shown on Table 1-1 and mapped on Figure 1-4. The overall site area for the LSCFD (excluding the streets) would be 243,710 square feet.

E. PROPOSED ACTIONS

In addition to the two central land use actions requested, the rezoning and the designation of a LSCFD, other actions are requested in support of MSKCC's proposed plans. All the proposed land use actions are described below.

REZONING

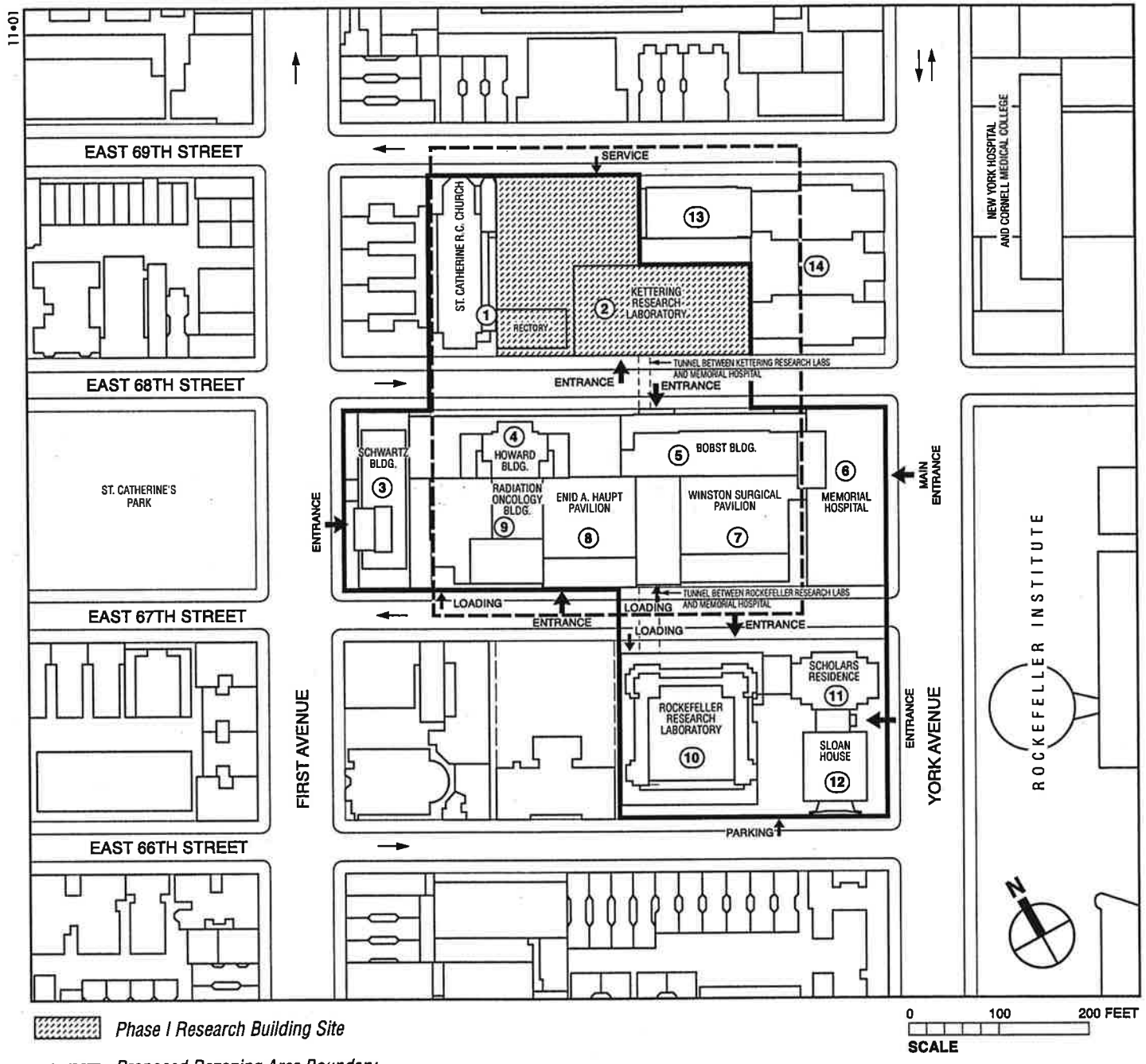
MSKCC proposes to rezone the midblocks between East 67th and 69th Streets and York and First Avenues from R8 to R9. Figure 1-5 illustrates the existing zoning of the project site and its immediate vicinity. Figure 1-6 shows the proposed zoning. Like R8 districts, R9 districts are general residence districts, but R9 districts permit greater densities than R8 districts. R9 districts allow up to 7.52 FAR for residential and up to 10 FAR for community facility uses. R8 districts allow up to 6.02 FAR for residential uses and up to 6.5 FAR for community facility uses. The MSKCC property contains approximately 143,294 square feet of lot area in the current R8 zoning district with 82,944 square feet located in the main campus block and 60,350 square feet in the north block. Under the existing R8 zoning in the rezoning area, 931,411 square feet of floor area is permitted for community facility use and 862,630 square feet is permitted for residential use. Within the Proposed LSCFD area, the existing total floor area is 1,649,561and comprises 205,425 square feet on the north block; 967,378 square feet on the main campus block; and 476,758 square feet on the south block. MSKCC is left with approximately 140,000 square feet of developable floor area on the north block. The rezoning from an R8 zoning district to an R9 zoning district would increase the total permitted floor area to 1,834,610 square feet with 603,500 square feet on the north block and 1,231,110 square feet on the main campus block. The total permitted floor area on the south block would not change, meaning the LSCFD area would have a total permitted floor area of 2,296,525 under the proposed zoning.

In the northeast corner of the rezoning area there are two non-MSKCC properties that would be affected by the proposed rezoning. These properties, located at 436 East 69th Street (Block 1463, Lot 31) and 1291 York Avenue (Block 1463, Lot 21), have a combined 22,593 square feet of lot area within the rezoning area (one is located entirely within the rezoning area and the other is partially located in the rezoning area). 436 East 69th Street is currently overbuilt to an FAR of 7.75. Both lots are controlled by another institution and contain three residential buildings. The rezoning would increase the amount of permitted floor area on these properties (12,563 square feet on Lot 31 and 10,005 square feet on Lot 21) by approximately 79,075 zoning square feet (zsf). Of that, it is assumed that 45,637 zsf could be used for community facility use and 33,438 zsf could be used for residential apartments. With residential unit sizes of 1,000 zsf, the number of apartments could increase by 33. These two lots are not considered soft sites or likely to be redeveloped, but their potential population increases with the rezoning are conservatively included in the open space and traffic and transportation analyses.

Table 1-1
Existing Uses

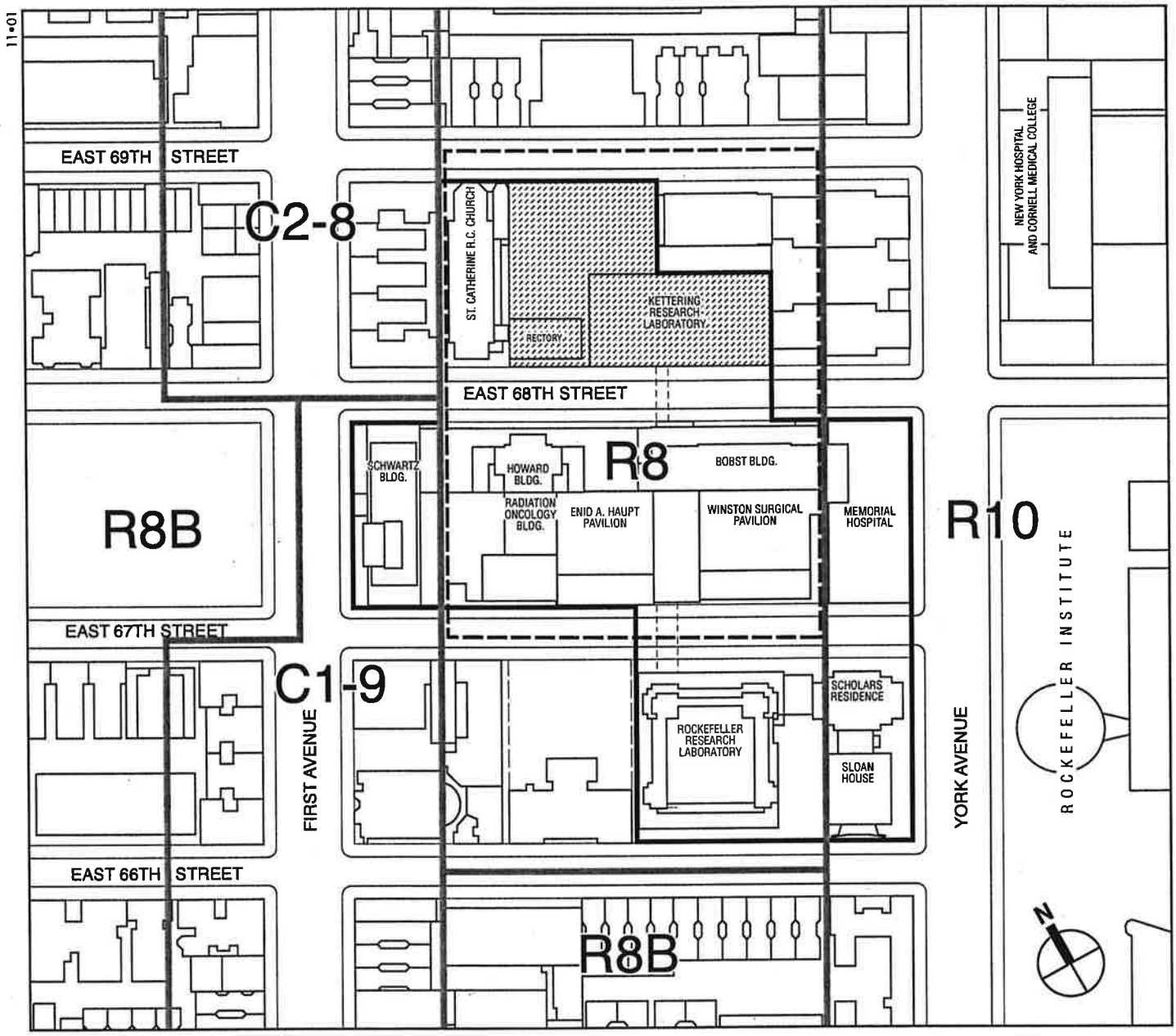
Map Ref. No.*	Building	Address	Estimated GSF	Height (Stories)	Block/ Lot	Use	Estimated No. Of Employees	Estimated No. Of Patients	Estimated No. Of Visitors	Estimated No. Of Residents
SITE OF PROPOSED LABORATORY										
1	St. Catherine's Church and Rectory	405-409 East 68th Street 411 E. 68th Street	22,239	3	1463/5	R.C. church and rectory	8	—	—	4
2	Kettering Research Laboratory	425 E. 68th Street	185,209	13	1463/11	Research laboratory	364	—	—	0
MAIN CAMPUS BLOCK										
3	Schwartz Building	1250 First Avenue	195,175	15	1462/1	Research, diagnostic and treatment, office	514	50	50	0
4	Howard Building	410 E. 68th Street	138,140	15	1462/5	Research, diagnostic and treatment, office	417	91	227	0
5	Bobst Building	444 E. 68th Street	941,351	15	1462/5	Research, diagnostic and treatment, office	745	23	59	0
6,7	Memorial Hospital/ Winston Surgical Pavilion	1275 York Avenue 445 E. 67th Street		22	1462/5	Inpatient—431 beds, offices, ambulatory care	848	406	1,219	0
8	Enid A. Haupt Pavilion	425 E. 67th Street		11	1462/5	Diagnostic and treatment	402	633	1,583	0
9	Radiation Oncology Building	411-419 E. 67th Street		5	1462/5	Diagnostic and treatment	132	412	1,030	0
SOUTH CAMPUS BLOCK										
10	Rockefeller Research Laboratory	430 E. 67th Street	359,696	15	1461/13	Research laboratory	663	0	0	0
11	Scholars Residence	1233 York Avenue	292,837	25	1461/21	Office, residences	62	0	0	512***
12	Sloan House	1233 York Avenue		22	1461/21	Office, residences	7	0	0	
REMAINDER OF REZONING AREA										
13	436 E. 69th Street	436 E. 69th Street	97,396**	13	1463/31	Residential (approximately 130 units**)	6	—	—	195***
14	1277-1291 York Avenue	1277-1291 York Avenue	182,345**	12	1463/21	Residential (approximately 215 units**)	9	—	—	323***

Notes: *See Figure 1-4.
**Source: NYC Real Property Assessment Database (RPAD). Includes all structures on tax lot.
***Based on 1990 Census, average residents per unit for Manhattan Community District 8 is 1.5.



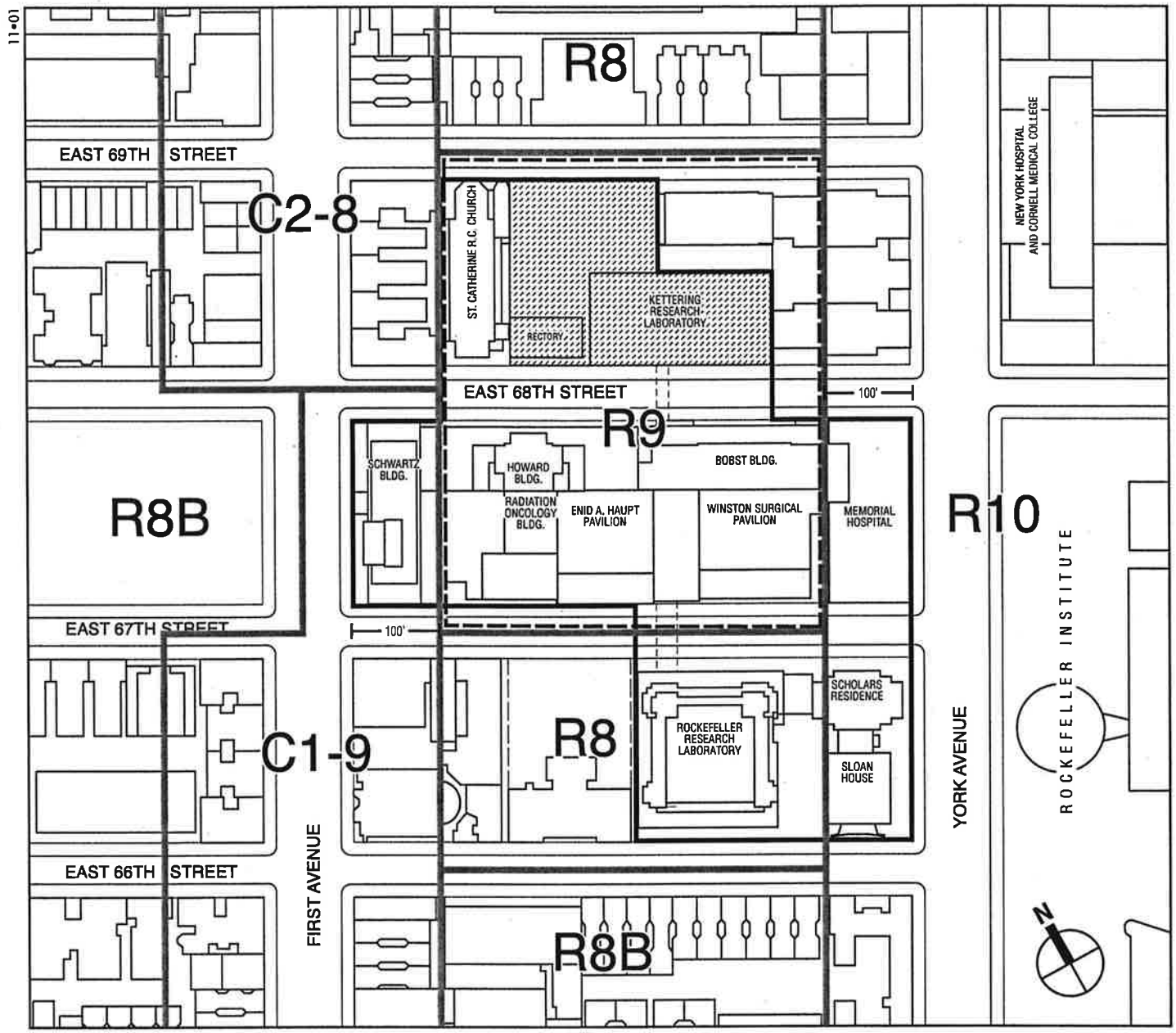
Existing Buildings on Proposed LSCFD Campus

FIGURE 1-4



Existing Zoning

FIGURE 1-5



Phase I Research Building Site

Proposed Rezoning Area Boundary

Proposed Large-Scale Community Facility Development Boundary

Proposed Zoning District Boundary

Proposed Zoning

FIGURE 1-6

LARGE-SCALE COMMUNITY FACILITY DEVELOPMENT

MSKCC proposes that its campus be designated as a LSCFD (see Figure 1-2, above). The LSCFD designation would allow development planning to encompass the entire campus. More specifically, it would allow, by City Planning Commission (CPC) authorization, transfer of development rights from one portion of the campus to another part of the campus, and waivers of height, setback, and yard requirements.

This designation would not affect the remainder of the rezoning area.

The southern block of the LSCFD is fully developed under R8 zoning. Floor area could not be transferred across zoning district boundaries to this block without further review and approval by CPC.

OTHER CPC ACTIONS

MSKCC's proposed research building on the north block together with the existing St. Catherine's Church (which would remain) is anticipated to use up to 100,000 square feet less than would be available on this site under the proposed R9 zoning. Based on a review of potential use of the floor area on the north site, MSKCC and its architects have determined that in their opinion the use of the additional floor area on the north block would produce a building that is of a size and configuration that is inappropriate for its midblock location. Further, the potential uses identified for this floor area would function more appropriately on the main block of the campus. Therefore, pursuant to the LSCFD, MSKCC is requesting the transfer of up to 100,000 square feet from the north block to the main campus block.

For the proposed research building, MSKCC is also requesting an authorization to modify height and setback requirements on streets internal to the LSCFD (East 68th Street) (ZR Section 79-21), and a Special Permit to modify height and setback on peripheral streets (East 69th Street) (ZR Section 79-43). These modifications would achieve a building envelope up to a 420-foot height without setback on both streets (see Figures 1-7 and 1-8). In an R9 district, community facilities are required to rise 85 feet or nine stories (whichever is less) above the street line, then setback by 20 feet along a narrow street, and must be within a sky exposure plane defined by a vertical to horizontal distance of 2.7 to 1. MSKCC requires the maximum number of state-of-the-art wet and dry lab bench modules, which will provide for research and clinical integration within the limited land it has available for development. Programmatic requirements dictate that 16 floors of the proposed research building must provide 18 lab bench modules per floor with the minimum width of 10 feet, 16 inches. These lab bench modules must be situated in close proximity to core labs, lab support spaces, and administrative offices. The required floor-to-floor height for these state-of-the-art lab bench modules is 15 feet (which is the current standard across the United States). A typical floor layout would have the 18 lab bench modules situated along the western end of the building; office space for scientists and administrative staff and conference rooms along the eastern end; and core lab and support spaces in the building's mid-section. As a result of this desired configuration, the typical lab floor plate is 197 feet long and 122 feet wide. Mechanical floors, bulkheads and stacks must also be provided, requiring a 420-foot-high building envelope (the parapet wall only rises to 410 feet with the mechanical stacks, a permitted obstruction, rising above that). If the proposed research building were to be built in compliance with height and setback requirements, the facility could not provide the efficient floor plate described above.

Also as part of the proposed actions, an (E) designation for noise (window/wall attenuation) would be placed on the lots within the LSCFD area. To ensure an acceptable interior noise environment, any new buildings constructed in the future must provide a closed-window condition with a minimum window/wall attenuation of 30 A-weighted decibels [dB(A)] for the midblocks, and 35 dB(A) for the blockfronts along York and First Avenues. These attenuation values would maintain interior noise levels of 45 dB(A) or lower.

BOARD OF STANDARDS AND APPEALS ACTIONS

The proposed research laboratory building would also require three additional actions from the Board of Standards and Appeals (BSA): variances pursuant to ZR Section 72-71 for lot coverage (ZR Section 24-11) and for modification of the rear yard equivalent (ZR Section 24-38). Similar to the height and setback modifications requested from CPC, these would allow the proposed foot print and bulk form of the proposed building.

In addition, for a brief period during construction of the research laboratory on the north block, a special permit for temporary failure to comply (ZR Section 73-642) would be requested. This would allow MSKCC to retain the Kettering Building on the site until its functions could be moved into the new laboratory building as described below. This would only be needed for a brief time and would expire after a maximum of two years.

OTHER ACTIONS

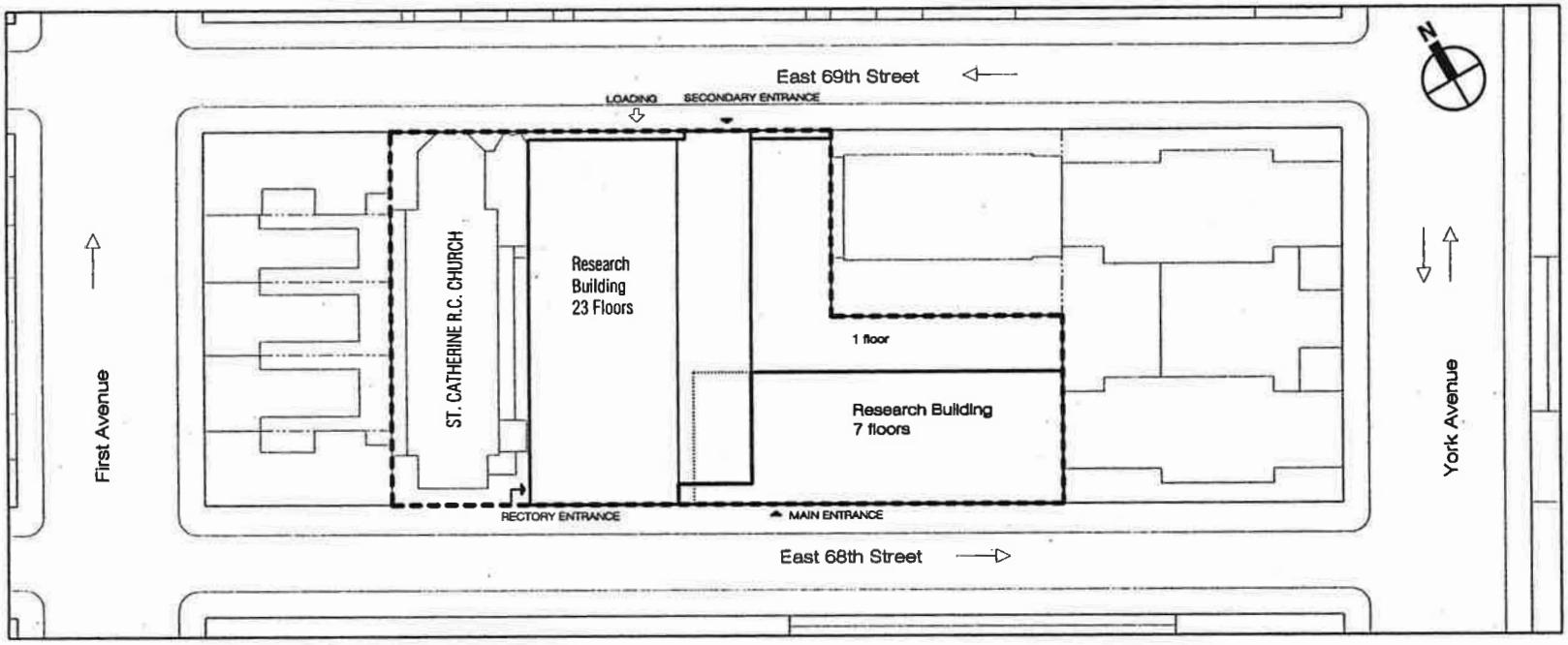
MSKCC may in the future apply to the Dormitory Authority of the State of New York for funding for this project.

F. ANTICIPATED PLANS*

With the rezoning and the designation of the LSCFD, MSKCC proposes to build a new research building on the north block. In the future it would then redevelop portions of its main campus block (between East 67th and 68th Streets). The proposed research building is expected to be completed in 2007. The build-out for the remainder of floor area allowed under the rezoning is assumed to be 2011 for the purposes of performing this environmental review. The development is described in more detail, below.

It is noted, however, that while the proposed laboratory facility on the north block is part of the proposed actions (including its floor area, site plan and building envelope) to be approved by CPC, BSA, and City Council), the development of the main campus block is a hypothetical reasonable worst case developed for analysis purposes. It is based on the following:

* CPC and BSA actions govern floor area, site plan, and building envelope. Descriptions of the architectural design are based on currently contemplated plans and are not part of CPC or BSA approvals.



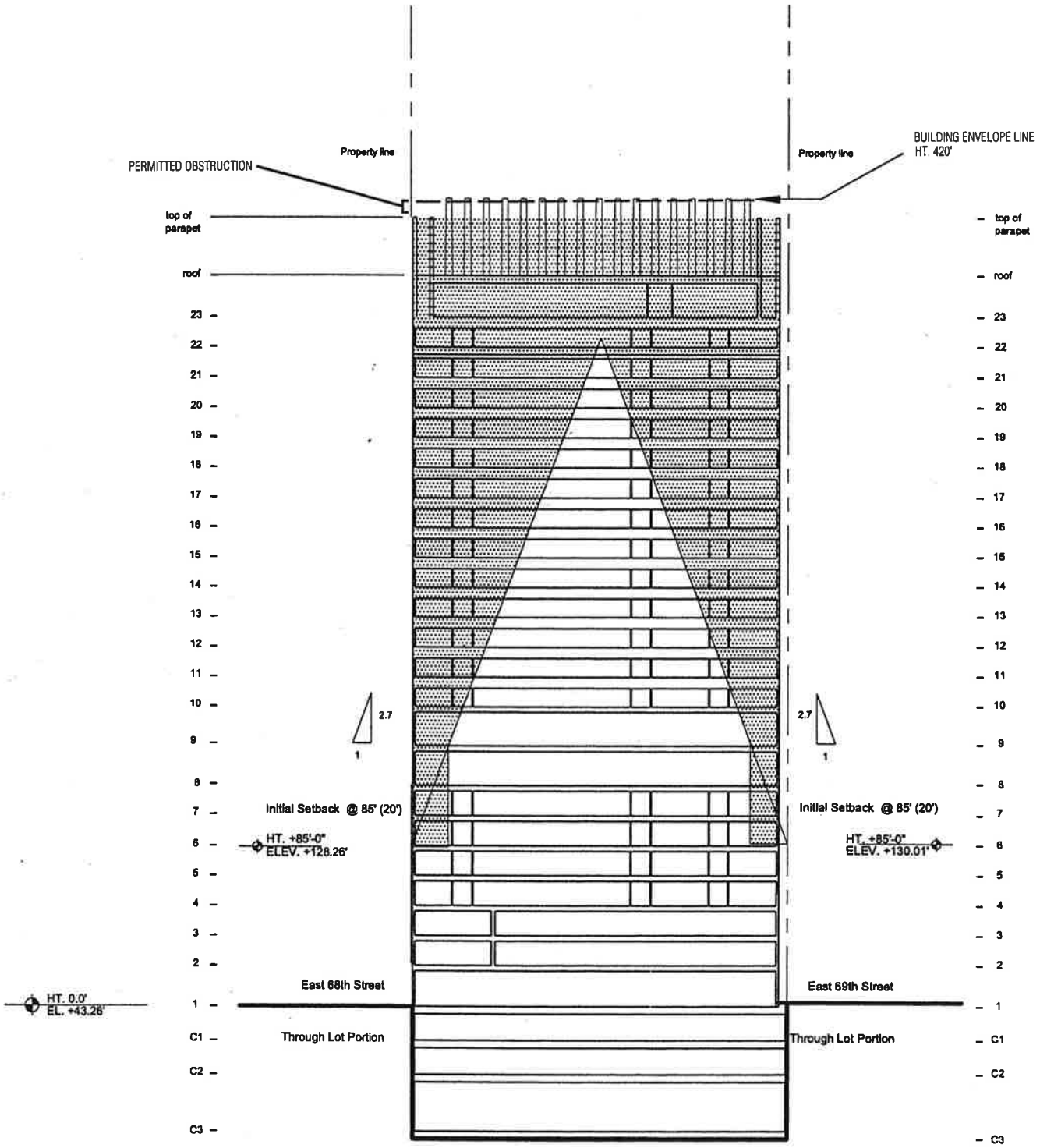
Phase I Research Building Site Boundary

NOTE: THE SITE PLAN OF THE PROPOSED RESEARCH BUILDING IS ESTABLISHED THROUGH DISCRETIONARY APPROVALS AS SET FORTH IN THE ULURP APPLICATION

Proposed Research Building Site Plan

FIGURE 1-7

11•01



NOTE: SHADED AREA IS AREA OF ENCROACHMENT IN SKY EXPOSURE PLANE

Proposed Research Building
North/South Section

FIGURE 1-8

- Reasonable assumptions regarding the existing structures and their ability to be used efficiently for their intended purpose, i.e., having state-of-the art standards;
- Construction or reconstruction needed to provide state-of-the-art facilities to fulfill MSKCC's program goals; and
- The opportunities to shift functions to other locations to allow for construction or reconstruction.

It is possible that in the future, development on the main campus block may not follow the exact pattern described. However, for each major change of the LSCFD, MSKCC would be obligated to obtain CPC approval, which would in turn require environmental review prior to approval.

PROPOSED MSKCC RESEARCH BUILDING/NORTH BLOCK

SITE

The proposed research building site is an L-shaped area in the middle of the north block. It is currently occupied by three buildings: St. Catherine's Church (approximately 9,824 square feet) to remain; the Rectory of the Church (approximately 10,392 square feet) to be demolished; and the Kettering Building (approximately 185,209 square feet) to be demolished. A portion of the site along East 69th Street is vacant. It was formerly occupied by a school associated with St. Catherine's Church.

PROPOSED DEVELOPMENT

This building, anticipated to be complete in 2007, would have a maximum of approximately 510,389 square feet of zoning floor area and a maximum of approximately 733,400 gross square feet (gsf). It is expected to include research laboratories, support space, offices, and an auditorium and a replacement space for the Church Rectory.

Because of the need to maintain the existing Kettering Building in use on this site until its activities can be moved into the new facility, construction would be staged to begin with a laboratory building adjacent to the Church (see Figure 1-5). This building is intended to primarily provide laboratories with adjacent service areas and offices for the researchers. It is also expected to provide shared meeting rooms and "breakout" spaces on each laboratory floor; a vivarium; and receiving, materials handling, and mechanical space. On its lower levels adjacent to the church, approximately 19,000 square feet are planned for the Church Rectory.

As shown in Figure 1-6, above, and described above, the height and setback waivers from CPC are crucial to the construction of this modern laboratory building. The proposed research building would be built to the street line within a building envelope rising to 420 feet on both East 68th and 69th Streets. This configuration is considered essential because of MSKCC's programmatic needs for research facilities.

As soon as its activities can be moved into the new building, the Kettering Building would be demolished and construction would continue on the low-rise portion of the building which would provide an auditorium at ground level, dry labs above, and completion of the vivarium space below.

Overall the proposed laboratory building is anticipated to provide not just for the current researchers who need state-of-the-art facilities, but also for the expansion of MSKCC's research

activities into the future. MSKCC considers this expansion area to be critical in MSKCC's efforts to recruit the best scientists and physicians working to treat and cure cancer.

MAIN CAMPUS BLOCK

Plans for further development pursuant to the rezoning and LSCFD designation are not definite at this time. MSKCC and its architects and planners have developed a reasonable worst case scenario development for the main campus block. This development would represent the full build-out of the floor area allowed by the rezoning (290,000 square feet of floor area* generated by rezoning the midblock of the main campus block from R8 to R9) and the authorization to move a maximum of 100,000 zsf from the north block to the main campus block. On the main campus block, it involves the following (see Figure 1-9):

- Demolition of the Schwartz Building (132,000 zsf) on First Avenue and demolition of the Howard Building (118,000 zsf) on 68th Street. They contain approximately 106,000 zsf of research laboratories which would have been replaced by laboratories in the Phase 1 building on the north block; about 73,500 zsf of treatment and diagnostic (including clinical laboratories) space which would be replaced in the new hospital building, described below; and about 70,500 zsf of office space that would be replaced in the renovations of Memorial Hospital, also described below.
- Construction of a new hospital building (approximately 613,730 zsf). It would house inpatient rooms to replace and expand on the existing inpatient rooms in Memorial Hospital. The new rooms would be singles and would meet current hospital goals for patient-focused care. There would be an increase in the floor area for inpatient rooms from 234,000 zsf to 386,900 zsf. With the new hospital building, it is expected that the number of beds in operation could rise by 130 to 561. The new building would also house diagnostic and treatment facilities (161,600 zsf) that would expand the amount that had been in the Schwartz and Howard Buildings. It would also provide amenities for MSKCC patients, including lobbies, waiting areas, and small retail and food shops.
- Renovation of Memorial Hospital (234,000 zsf) to house offices. This would replace and expand the amount of office space removed with the demolition of the Howard and Schwartz Buildings.

Since publication of the DEIS, the south block has been removed from the proposed rezoning area. It is fully developed and without additional floor area redevelopment is not contemplated at this time. Transfer of floor area from the main campus block is not part of the proposed actions. It would require its own review and approval were it proposed in the future.

G. DESIGN PARAMETERS

The following discussion reflects the design currently contemplated by MSKCC and its architects. The only parts of the design that are part of the CPC and BSA approvals are floor area, site plan, and building envelope.

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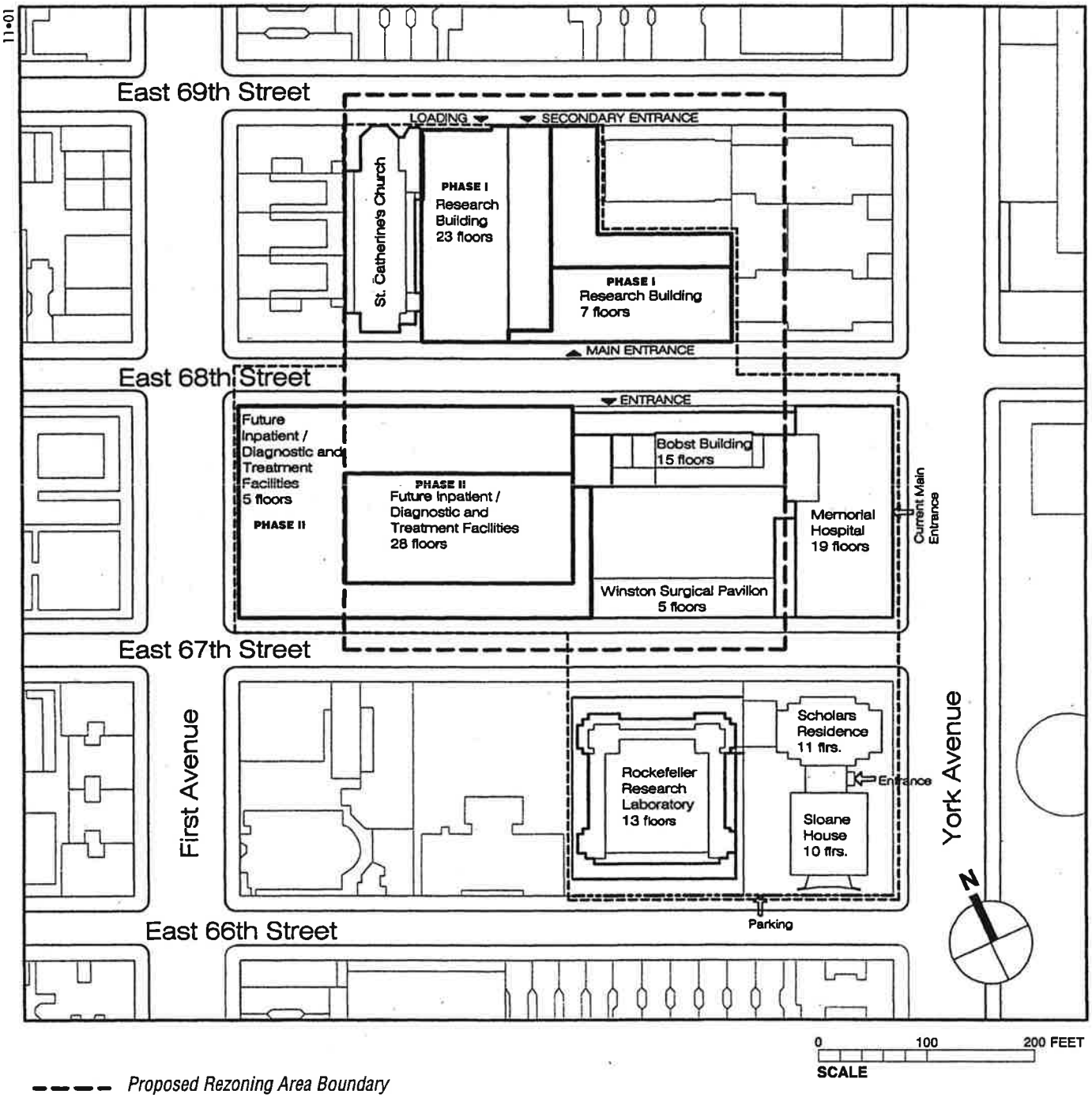
* The midblock area is 82,944 square feet. With an FAR increase of 3.5, the rezoning generates approximately 290,000 square feet of floor area.



Proposed Rezoning Area Boundary

Proposed Large Scale Community Facility Development Boundary

NOTE: THE PROPOSED SITE PLANS AND MAXIMUM BUILDING ENVELOPES ARE ESTABLISHED THROUGH DISCRETIONARY APPROVALS AS SET FORTH IN THE ULURP APPLICATION

Memorial Sloan-Kettering Cancer Center Campus with Proposed Phase 1 Research Building and Potential Future Development

FIGURE 1-9

MEMORIAL SLOAN-KETTERING
CANCER CENTER

DESIGN CONCEPTS

The design team developed the following campus planning goals in response to the purpose and need for the proposed rezoning and campus development:

- Enhance the MSKCC campus by creating a civic image and identity, a strong presence on First Avenue, to bring new activity to the sidewalks and to maximize sunlight to the streets.
- Clarify public entry and circulation sequence by creating a new entry drop-off, a public circulation spine to link the buildings, and to separate the public circulation from patient and service circulation.
- Create a patient friendly environment by providing clear circulation and way-finding, minimizing patient movement, and maximizing patient privacy and dignity.
- Maximize efficiency of operations, infrastructure, and equipment with functional co-location and shared services and staff.
- Maximize flexibility in technology/equipment, health care delivery systems, and programs/bed need.
- Improve patient experience with upgraded inpatient units, accessible outpatient functions and added patient and family amenities.

RESEARCH BUILDING

The taller laboratory portion would be 23 stories—within a building envelope of 420 feet. Oriented in a north/south direction, it would be perpendicular to East 68th and 69th Streets; this is expected to help minimize the perceived bulk of the building along these streets (see Figures 1-10 and 1-11). The office portion of the tower would be on its east facade. The lower portion of the building would run along East 68th Street and be only seven stories (approximately 140 feet) tall. This is intended to minimize the appearance of bulk from neighborhood sidewalks and help better relate the scale of the building to the scale of the adjacent 12- and 13-story neighborhood buildings. As currently contemplated, the facade of the building would be primarily masonry, metal, and glass.

The main entrance would be on East 68th Street, recognizing the linkage of this building to the main campus block. A through-block lobby with secondary access off East 69th Street is being contemplated. Two off-street, enclosed loading docks would also be located on East 69th Street.

The replacement space for the rectory would be located on the lower levels of the tower adjacent to St. Catherine's Church for direct access between the church and the rectory. It would also maintain the adjacency of the church and rectory entrances that exist on East 68th Street now. The facade of the building is expected to acknowledge the presence of the rectory and the adjacency of the church and its windows as follows: As currently planned, a linear courtyard would be provided between the church and the proposed research building. The windows of the new rectory would look into this courtyard to the east facade of the church. MSKCC intends to also provide light to the stained glass windows to replace the morning sunlight on this facade of the church, as explained in Chapter 17, "Mitigation."

Since publication of the DEIS, the project architects have continued to develop the design elements for the proposed project. (These elements are not subject to discretionary approvals. As stated above, only floor area, site plan and building envelope are controlled by CPC and BSA actions.) As currently planned, the proposed research building would present four distinct faces to the community. The south facade on East 68th Street would be composed of a vertical face of the tower and a horizontally oriented mid-rise face of the lower wing. The latter would relate directly to the scale of the neighborhood. At the western base of this facade, where the new rectory would be located, masonry would be used to relate in scale, color, and texture to the brick facade of the church. The north facade on East 69th Street would be similarly composed of a high-rise portion and a mid-rise portion. The single-story entrance to the building would be located adjacent to the residential building to the east. On both the north and south facades, the entrances would be transparent glass to link interior lobby and exterior sidewalk. Planting areas would also be provided along the street.

As currently contemplated, the eastern facade of the tower would be transparent glass articulated by a pattern of horizontal shading devices. The western facade would also be glass, but would have a vertical composition of patterned fritted and/or textures glass. Both of these facade treatments are intended to visually reduce the scale of these facades.

MAIN CAMPUS BLOCK

For analysis purposes, a reasonable worst case bulk diagram has been developed assuming the rezoning and the transfer of floor area (see Figure 1-12). The build out has been assumed to occur by 2011. There would be a new inpatient hospital building on the west part of the main campus block. Along First Avenue it is expected to be 5 stories (approximately 85 feet) tall. Set back 100 feet from First Avenue and approximately 33 feet and 46 feet from East 67th and 68th Streets respectively, the building would rise to a total of 28 stories (448 feet). It would be built partially atop the existing Enid A. Haupt Pavilion on East 67th Street.

This new building would over look St. Catherine's Park across First Avenue. It would have its major entrance on First Avenue providing access to the MSKCC campus from First Avenue for the first time. Following the design guidelines this would provide a MSKCC presence on First Avenue and bring new activity to this block front.

On the eastern end of the same block all of the inpatient floors in Memorial Hospital would be renovated for office and on-call space. No major changes to the exterior of the building are contemplated. However, the York Avenue entrance would be reduced in importance.

As the main campus block is developed, further authorizations or special permits from CPC pursuant to the LSCFD or other actions by the BSA may be needed, depending on programmatic requirements and architectural design, which have not yet been developed. These additional actions, which are not identified at this time, would be subject to CEQR as part of their approval process.

H. CHANGES IN POPULATION

Accounting for relocation of existing activities to new and expanded state-of-the-art facilities, MSKCC has estimated the following increases in patients, staff and visitors that would occur as a result of the proposed rezoning and development of the proposed research building and the

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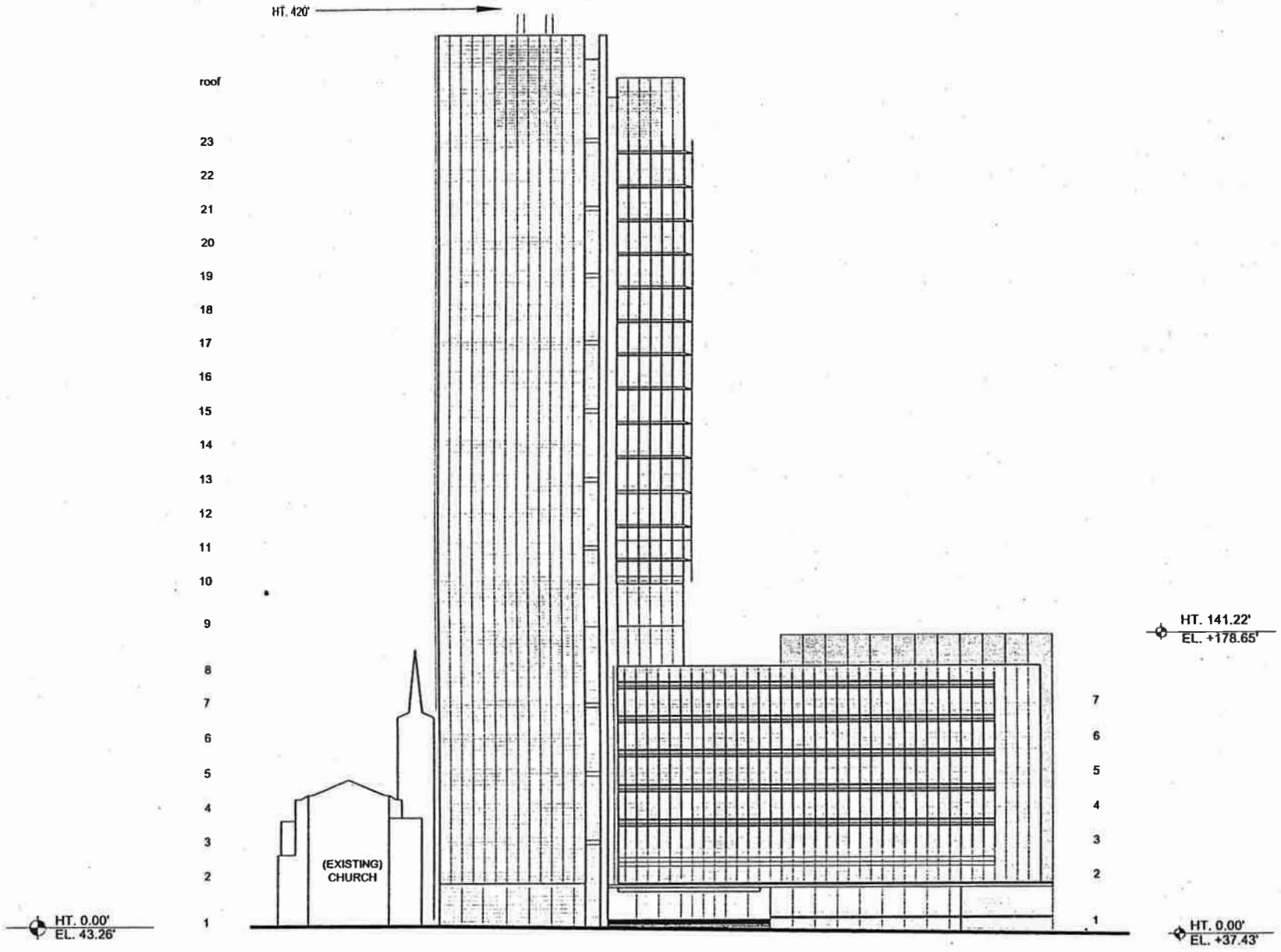


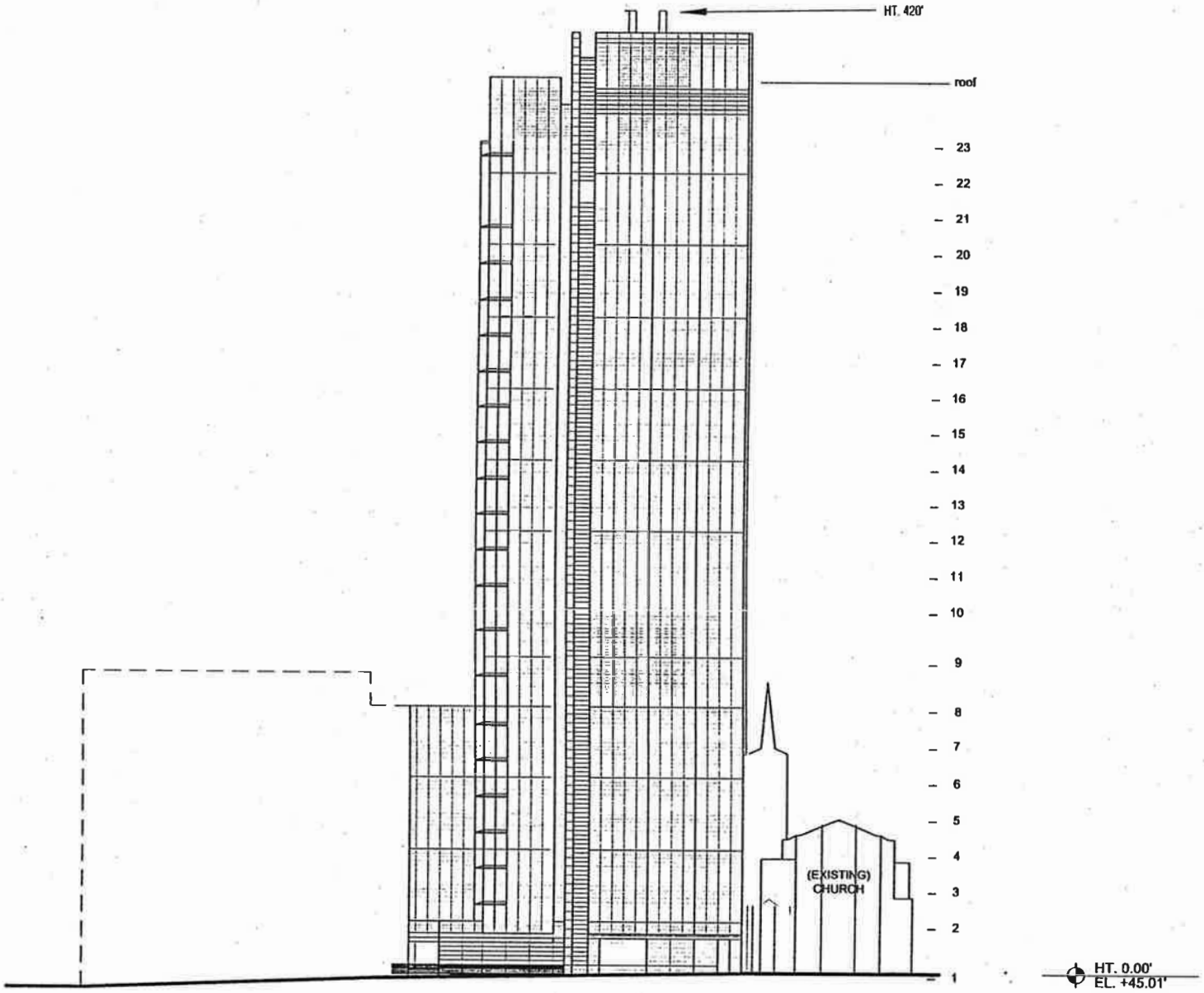
NOTE: MAXIMUM BUILDING ENVELOPE IS ESTABLISHED THROUGH DISCRETIONARY APPROVALS AS SET FOURTH IN THE ULURP APPLICATION.
ARCHITECTURAL ELEMENTS AND FACADE DESIGN SHOWN FOR ILLUSTRATIVE PURPOSES ONLY

Research Building
East 68th Street Elevation

FIGURE 1-10

MEMORIAL SLOAN-KETTERING
CANCER CENTER

11-01



NOTE: MAXIMUM BUILDING ENVELOPE IS ESTABLISHED THROUGH DISCRETIONARY APPROVALS AS SET FOURTH IN THE ULURP APPLICATION.
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Research Building
East 69th Street Elevation

FIGURE 1-11

MEMORIAL SLOAN-KETTERING
CANCER CENTER

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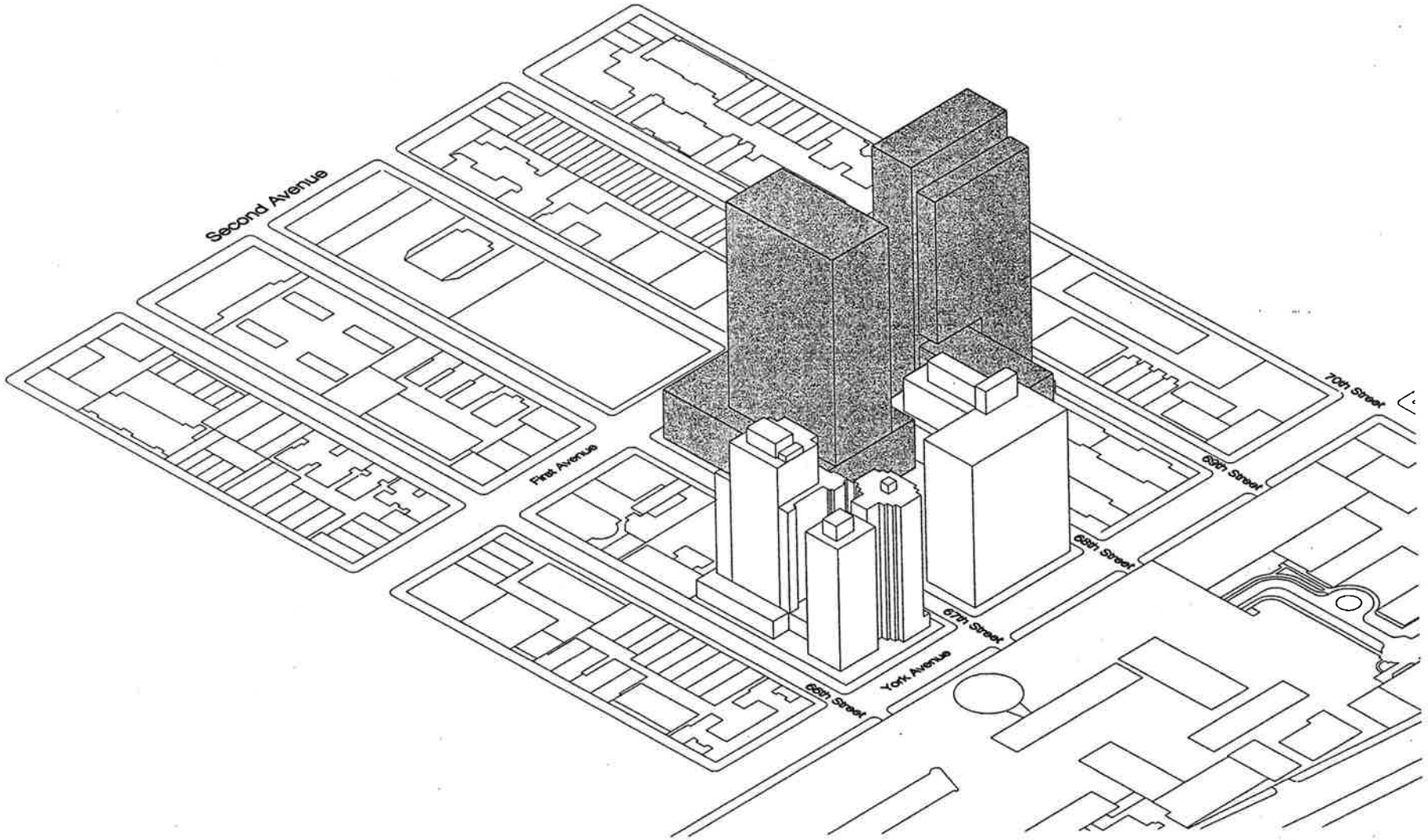


Full Campus Development Bulk Diagram

FIGURE 1-12

reasonable worst case development scenario on the main campus blocks (see Tables 1-2 and 1-3).

Table 1-2
Phase 1—North Block
Population Estimates for MSKCC

	Workers
Laboratory Tower	612
Demolish Kettering Building	(364)
Multipurpose wing	300
Change	548

Note: Because this phase does not include any work on other parts of the campus, no transfers from other blocks are assumed.

Table 1-3
Phase 2—Main Campus Block
Population Estimates for MSKCC

	Research Staff	Office Staff	D&T Staff	Inpatient Staff	Inpatients	Inpatient Visitors	D&T Patients	D&T Visitors
Demolish Schwartz/Howard	(114)	(582)	(235)				(141)	(277)
New Facility on Schwartz/Howard site			623	457	561	1,683	671	1,677
Renovation of Memorial		882		(377)	(431)	(1,293)		
Change Main Campus Block	(114)	300*	388	80	130	390	530	1,400

Notes:
Population of Schwartz and Howard is the entire population shown as "total existing demolished." This accounts for all the staff that is currently in these buildings.
Population for the New Facility is the total as the existing staff are netted out as negatives for Schwartz/Howard and Memorial.

I. ENVIRONMENTAL REVIEW AND PROJECT STATUS

As described above, a rezoning, designation of a LSCFD, transfer of floor area, and modification of height and setback requirements are requested from CPC. The discretionary actions subject being requested for CPC are to the City's ULURP and require CEQR. The BSA actions that are being requested are also subject to CEQR.

The EIS analyzes the proposed research building in 2007, plus the reasonable worst case build-out on the main campus in 2011. The potential development on the non-MSKCC lots in the north block rezoning area was considered in the quantified analyses for open space and traffic and transportation as a conservative assumption. However, since no particular development is

anticipated, its inclusion in chapters relating to built form was considered speculative and impracticable.

UNIFORM LAND USE REVIEW PROCEDURE

ULURP, mandated by Sections 197-c and 197-d of the City Charter, is a city process specifically designed to allow public review of proposed actions at four levels: the Community Board, the Borough President, CPC, and the City Council. The procedure sets time limits for review at each stage to ensure a maximum total review period of approximately 7 months.

The process begins with certification by the CPC that the ULURP application is complete. The application is then forwarded to the appropriate Community Board. The Community Board reviews and discusses the proposal, holds a public hearing, and issues recommendations regarding the project. Once this is complete, the Borough President reviews the application and issues recommendations. CPC then has a period of time for review of the application; during this time, a ULURP public hearing is held. Following the hearing, CPC may approve or disapprove the application. If a DEIS is circulating, its required public hearing (see below) may be held jointly with the ULURP hearing. Comments made at the DEIS public hearing are incorporated into a Final EIS (FEIS).

Upon approval, CPC forwards its resolution to the City Council, which has the option to review the project. Should the City Council elect to review and subsequently vote on the project's requested special permit and the city's acquisition applications, the mayor may approve or veto the Council's action. The City Council may override the mayoral veto.

ENVIRONMENTAL REVIEW

Pursuant to SEQRA and its implementing regulations, New York City has established rules for CEQR. 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, when practicable, mitigate significant adverse environmental effects.

Under CEQR, a lead agency is established and is the public entity responsible for conducting the environmental review that determines whether the proposed project may have a significant impact on the environment. To determine this, the project was the subject of an Environmental Assessment Statement (EAS). CPC, acting as lead agency under CEQR, determined that the proposed action could have the potential for adverse effects in such areas as land use, zoning and public policy, socioeconomic conditions, community facilities, open space, shadows, historic resources, urban design and visual resources, neighborhood character, hazardous materials, traffic and parking, transit and pedestrians, noise, and construction impacts.

The draft scoping document was circulated on March 26, 2001, and set forth the analyses and methodologies proposed for the EIS. The scoping meeting was held on April 27, 2001, in Spector Hall at 22 Reade Street. The public, involved and interested agencies, Manhattan Community Board 8, and elected officials were invited to comment on the scope in writing, and/or orally at a public scoping meeting. The comment period ended on May 7, 2001, and a Final Scope of Work was accepted on May 31, 2001.

In accordance with the final scope of work, a DEIS was prepared. The lead agency reviewed all aspects of the document, calling on other city agencies to participate. When the lead agency is

satisfied that the DEIS is complete, it issues a Notice of Completion and circulates the DEIS for public review. The Notice of Completion for the DEIS was published on June 1, 2001.

Publication of the Notice of Completion of the DEIS starts public review. During this period, which must extend for a minimum of 30 days, the public reviewed and commented on the DEIS either in writing or at a public hearing. When the CEQR process is coordinated with land use review, the hearings are typically held jointly. The lead agency must publish a notice of the hearing at least 14 days before it takes place, and must accept written comments for at least 10 days following the close of the hearing. Due to the events of September 11, the public hearing was postponed from September 12 to October 10 and continued on October 12. The record remained open until October 22. All substantive comments became part of the CEQR record and are summarized and responded to in this FEIS.

After the close of the public comment period for the DEIS, the lead agency prepared this FEIS. The lead agency determined that the FEIS was complete on November 16, 2001, and issued a Notice of Completion and circulated the FEIS.

The lead agency, CPC, and the involved agency, BSA, will adopt a formal set of written findings, reflecting conclusions about the potential for significant adverse environmental impacts of the proposed action, potential alternatives, and mitigation measures. The findings may not be adopted until 10 days after the Notice of Completion has been issued for the FEIS. Once findings are adopted, the lead and involved agencies may take their actions. ❖

A. INTRODUCTION

Memorial Sloan-Kettering Cancer Center (MSKCC) proposes to rezone from R8 to R9 two midblocks on the MSKCC campus on Manhattan's Upper East Side and designate the campus as a Large-Scale Community Facility Development (LSCFD).* The proposal also includes actions specific to the first phase of anticipated development, a research laboratory building on the north block of the campus, as well as transfer of development rights from the north block to the main campus block.

This analysis of land use and zoning characterizes the existing conditions of the study area, anticipates and evaluates those changes in land use and zoning that are expected to occur independently of the proposed actions, and examines the proposed actions' compatibility and consistency with land use and development trends in the area as well as public land use and zoning policies. The land use study area is defined as the area within a ¼-mile radius around the proposed LSCFD area, and is roughly bounded by East 74th Street to the north, East 61st Street to the south, Third Avenue to the west, and the East River to the east (see Figure 2-1). It is within this study area that the proposed actions have the greatest potential to affect land use trends.

Various sources have been used to prepare this chapter, including field surveys and city land use and zoning maps; the New York City Department of City Planning (DCP); Manhattan Community Board No. 8; and publications.

As shown in this chapter, the development that is expected to occur as a result of the proposed actions would be compatible with the uses in the surrounding area, which contains a mix of uses but has a concentration of medical/research and other institutional uses. No significant impacts to land use, zoning, and public policy are anticipated to result from the proposed actions.

B. DEVELOPMENT HISTORY

Development of the study area dates back to the 1880's, when commercial and industrial uses were built along the riverfront and the construction of elevated railways along Second and Third Avenues began to encourage development on the Upper East Side. However, the area east of First Avenue did not grow in the same way. Although a few large brick buildings had been built along York Avenue, wooden buildings, some with stables attached, were still the dominant form of housing in this area. Commercial and industrial establishments, including numerous coal yards, existed alongside the residences in the area.

In 1901 Rockefeller University was founded on a site east of York Avenue, bringing the first major institutional use to the study area. At the same time, the residential character of the Upper

* Since publication of the DEIS, the midblock between East 66th and 67th Streets has been removed from the proposed rezoning area. This would reduce the area to be rezoned by one third.

East Side was becoming more pronounced, as the area saw the development of a multitude of 5- to 6-story walkup tenement buildings, interspersed with loft buildings, iron works, ice plants, and bakeries. The area maintained its strong manufacturing base, as the availability of barge access at East 74th Street brought two major industrial uses to the study area—a power plant for the elevated railways, and a municipal sanitation yard and dumping platform. The sanitation yard was replaced with an incinerator in 1928. The power plant, now owned by Con Edison, has expanded westward to occupy the entire block between East 74th and 75th Streets.

In 1927, New York Hospital and the affiliated Cornell University Medial College began construction of the New York Hospital/Cornell Medical Center on a former brewery site at York Avenue and East 68th Street. In 1939, institutional uses continued to expand in the study area, as MSKCC moved to a site donated by John D. Rockefeller, Jr. between First and York Avenues and East 67th and 68th Streets. Over time, more new buildings were added to the MSKCC campus, including the James Ewing Hospital (now the Schwartz Building) in 1950 and the Tower Building in 1951 (replaced in 1969).

The demolition of the Third Avenue elevated line in 1955 triggered a development boom on the Upper East Side that has continued relatively unabated to this day, as high-rise buildings began to replace tenements and rowhouses on the avenues. Beginning in the 1960's, two notable actions continued the area's trend toward residential development—the Con Edison power plant's conversion from coal to oil, and the closing of the garbage incinerator in 1972. Many tenements and small commercial buildings were replaced with high-rise luxury apartment houses. Among the largest in the area are the two 36-story buildings (the Somerset, built in 1963, and the Stratford, built in 1968) on the west side of York Avenue between East 72nd and 74th Streets. At the same time, the area experienced a growing trend toward the upgrading of manufacturing and warehouse space for use as showrooms, offices, or other commercial uses.

From the mid-1970's through the 1980's, there was a significant increase in cooperative and condominium housing ownership. Many of the market-rate high-rises built in the 1960's and 1970's were rentals, but by the mid-1980's had been converted to cooperatives. Recent housing development activity has been mostly market-rate housing, similar to other residential areas in Manhattan. This includes the 38- and 50-story buildings between East 72nd and 73rd Streets east of York Avenue, as well as the 24-story building opened in 2000 at East 66th Street and First Avenue.

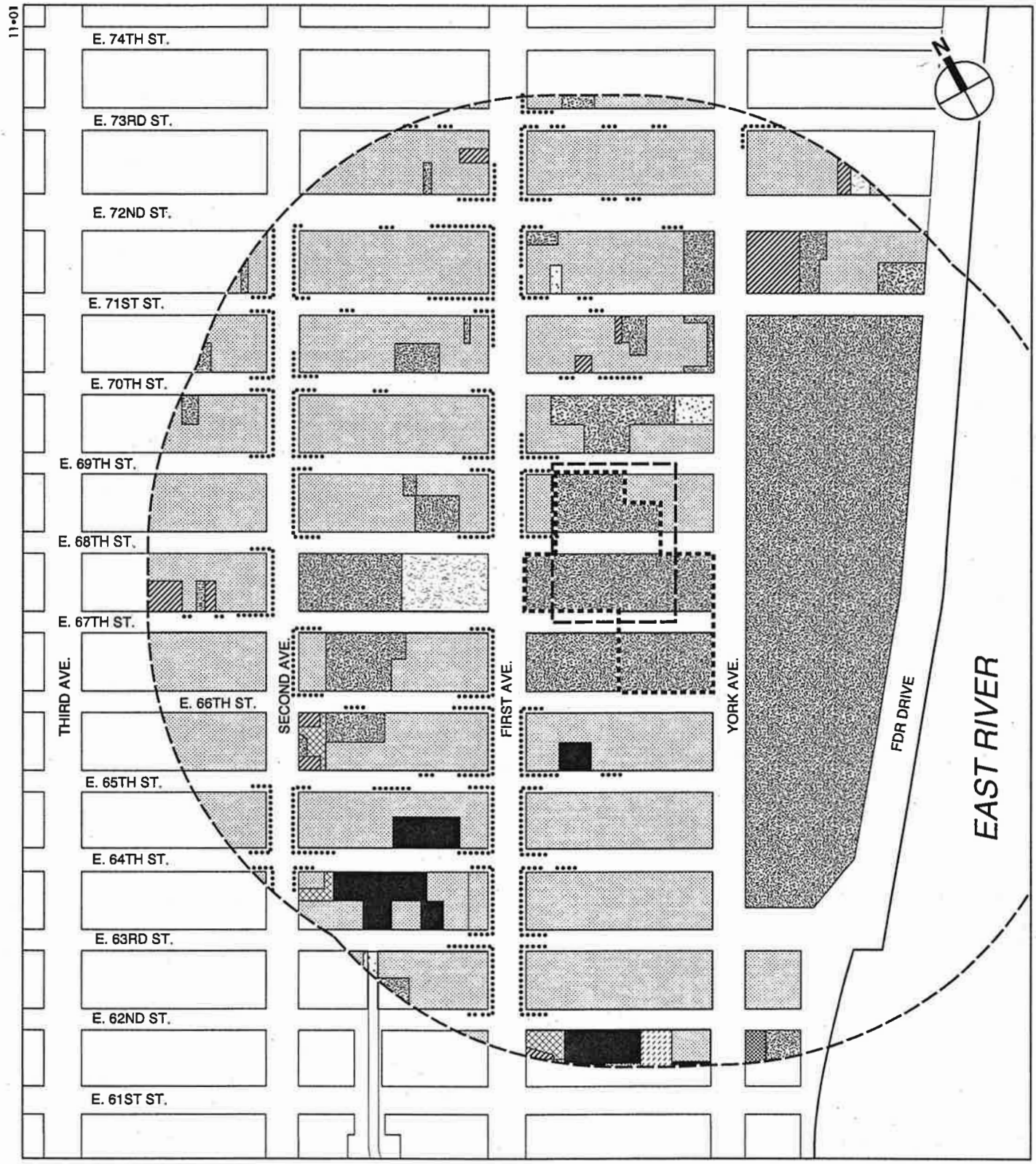
C. LAND USE

EXISTING CONDITIONS

Existing land use patterns and trends are described below for four overlapping areas: the proposed research building site, the rezoning area, the proposed large-scale community facility development area, and the surrounding ¼-mile land use study area.

PROPOSED RESEARCH BUILDING SITE

The proposed research building site is an approximately 36,000-square-foot L-shaped area in the middle of the block bounded by East 68th and 69th Streets and York and First Avenues (see Figure 2-2). The site is currently occupied by: the Kettering Laboratory Building, an 11-story, 185,209-gross-square-foot building that serves as one of the major research facilities on the MSKCC campus; the Rectory of St. Catherine's Church, a 3-story brick building immediately



Proposed Rezoning Area Boundary

Proposed Large-Scale Community Facility Development Boundary

Study Area Boundary (1/4-Mile Perimeter)

Residential

Ground-Floor Retail

Commercial/ Stores

Office

Hotel

Institutional

Entertainment

Industrial, Utlilites, Trans., Public Parking

Open Space/ Recreation

Vacant

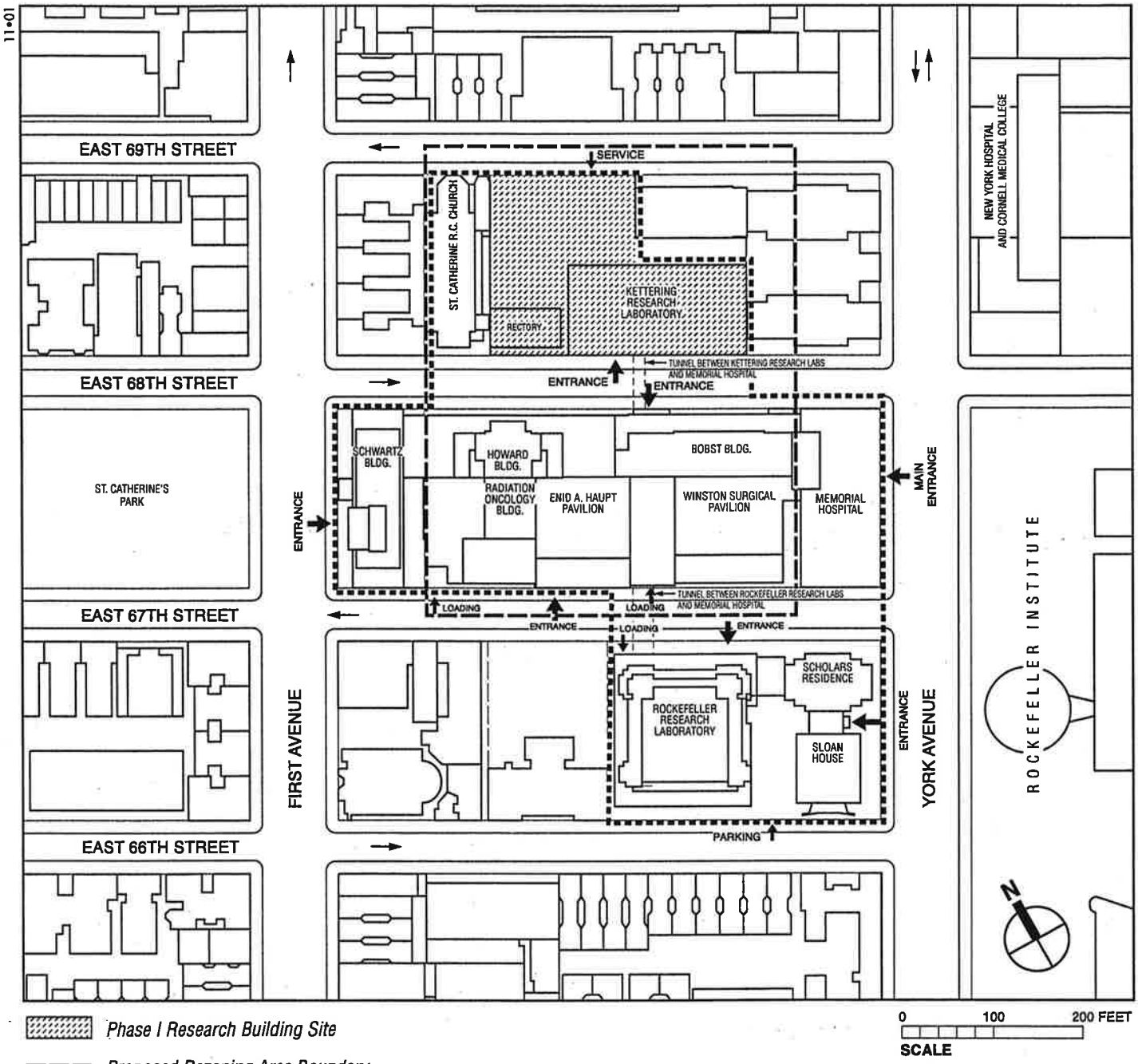
0 400 FEET

SCALE

Land Use

FIGURE 2-1

MEMORIAL SLOAN-KETTERING CANCER CENTER



Existing Uses – Memorial Sloan-Kettering Cancer Center Campus and Rezoning Area

FIGURE 2-2

MEMORIAL SLOAN-KETTERING CANCER CENTER

adjacent to the Kettering Laboratory Building; and vacant land along East 69th Street, which was formerly occupied by a school associated with St. Catherine's Church.

REZONING AREA

The rezoning area comprises the midblocks (from 100 feet west of York Avenue and 100 feet east of First Avenue) of two blocks between East 67th and East 69th Streets, as shown in Figure 2-2. MSKCC owns or controls almost ¾ of the rezoning area (including the St. Catherine's Church property on the north block). The remainder of the rezoning area in the north block not occupied by the proposed research building site is occupied by St. Catherine's Church on the west, and all of one and part of two Cornell University-affiliated residential buildings on the east. The primarily residential building that lies entirely within the rezoning area north of the Kettering Research Laboratory is a 13-story, approximately 130-unit building facing East 69th Street (436 East 69th Street). Also within that building is the William Woodward, Jr. Nursery School. The school serves approximately 90 children between the ages of 2½ and 5; these are primarily children of the staff of New York-Presbyterian Hospital and other York Avenue institutions, including MSKCC. The rear yard of 436 East 69th Street includes an outdoor play area for the Woodward School. The play area includes a sandbox and other playground equipment for sliding, climbing, and other activities. The rezoning area boundary cuts across a 12-story, approximately 215-unit residential complex located on the east side of the block along York Avenue.

MSKCC facilities occupy the whole of the main campus block (including areas of the block outside the rezoning area), creating a heavily institutional presence along East 68th and 67th Streets between York and First Avenues. On East 68th Street facing the site of the proposed laboratory building are the Howard and Bobst Buildings, both 15-story structures that contain research, diagnostic and treatment, and office space. Along East 67th Street within the rezoning area, the facilities on the main campus block include a 5-story radiation/oncology building and the 11-story Enid A. Haupt Pavilion, both of which serve as diagnostic and treatment facilities. East of the Enid A. Haupt Pavilion is the Winston Surgical Pavilion, and Memorial Hospital (located just outside the rezoning boundary), both of which provide inpatient beds, offices, and ambulatory care.

LARGE-SCALE COMMUNITY FACILITY DEVELOPMENT AREA

The boundaries of the proposed large-scale community facility development (LSCFD) are to include the campus of MSKCC and the St. Catherine's Church property. In the north block, it excludes the Cornell University-affiliated residential buildings on the eastern end of the block as well as the properties west of St. Catherine's Church. It includes all of the main campus block from York to First Avenue. In the south block it includes the area within 300 feet of York Avenue, which contains MSKCC's Rockefeller Research Laboratory, and Sloan House/Scholars Residence. The 23-story Scholars Residence and 20-story Sloan House provide office and residential space for MSKCC employees. The overall site area for the LSCFD (excluding the streets) would be approximately 243,700 square feet.

STUDY AREA

The study area is largely residential, and interspersed with institutional, commercial, and industrial uses. Several major institutional concentrations, including MSKCC, Rockefeller University, and New York-Presbyterian and affiliated Weill Cornell Medical Center are major

presences within the study area. Both First and Second Avenues within the study area are lined with ground-floor retail uses, while the residential and institutional uses that dominate York Avenue generally do not contain retail uses.

The study area includes a wide range of building types, heights, and densities. Higher density uses tend to be located along the avenues, as well as East 72nd Street, a wide crosstown street. Midblocks along narrower streets tend to be developed with lower or medium-density uses.

The land uses immediately surrounding the rezoning area are a mix of residential and institutional uses. Facing the Research Building site on East 69th Street is a City of New York Department of Health building, as well as residential and office space for the Cornell Medical College. Along First Avenue west of the rezoning area are residential buildings with ground floor retail and immediately west of the rezoning boundary on the main campus block is the Schwartz building, a 15-story MSKCC facility dedicated to research, diagnostic and treatment, and office uses. Across York Avenue from the Schwartz is St. Catherine's Park, the largest publicly accessible open space in the study area. Across East 67th Street from the rezoning area are P.S. 183, the Church of St. John Nepomucene, and a portion of the Bethany Memorial Church. The block south of that contains a mix of 5-story tenement and high-rise residential buildings, including The Pearl, a 24-story residential building opened in 2000. On the east side of York Avenue are superblocks containing New York-Presbyterian and affiliated Weill Cornell Medical Center north of East 68th Street and Rockefeller University south of East 68th Street.

Rockefeller University stretches uninterrupted from East 68th Street to East 63rd Street between York Avenue and the FDR Drive. A pedestrian bridge over East 63rd Street south to East 62nd Street connects the southernmost portion of the campus to the superblock. The approximately 15-acre campus includes eight research buildings, two student residences, faculty residences, and the domed Caspary Auditorium. In the single block of the study area south of Rockefeller University there is a mix of residential and commercial uses, as well as a gas station and underground parking facility. South of MSKCC, the west side of York Avenue contains mostly high-rise residential buildings with very limited ground floor retail.

Along York Avenue north of the MSKCC campus is a mix of institutional, residential, and commercial land uses. From East 68th Street to East 72nd Street, institutional uses include the New York-Presbyterian Hospital and affiliated Weill Cornell Medical Center located on approximately 7 acres of land, the Hospital for Special Surgery located on approximately 1 acre, and the Mary Manning Walsh Nursing Home, located on less than 1 acre of land between East 71st and 72nd Streets on York Avenue. York Avenue bustles with pedestrian activity due in large part to the high concentration of jobs in these institutions. A notable recent commercial expansion occurred at Sotheby's, which recently added six additional floors to its York Avenue location, consolidating its New York City operations by creating new showroom and office space in the building.

Between York and First Avenues, the side streets north and south of the MSKCC campus are generally less densely developed, with 4- and 5-story residential tenements interspersed with larger luxury apartment complexes. The limited retail space contained in some of the older tenement buildings provide primarily neighborhood services such as dry cleaning or small cafes. North of the MSKCC campus between York and First Avenues, institutional uses include a City of New York Department of Health building and residential and office space for Cornell Medical College on East 69th Street, a Cornell University bookstore on East 70th Street, Sokol Hall on East 71st Street, and a Ronald McDonald House on East 73rd Street.

Along First Avenue within the study area, buildings are mostly residential with a range of heights and density, although they are generally of a larger scale than residential buildings between the avenues. Almost all residential buildings along First Avenue contain ground floor retail and commercial uses that provide neighborhood-oriented convenience shops and services. The southern portion of the study area along First Avenue (roughly from East 61st to East 64th Streets) contains a higher density of 5-story residential tenements and entertainment-oriented retail such as restaurants and night clubs. Area restaurants such as the Manhattan Grille and India Valley complement nearby entertainment facilities such as Chicago City Limits, Dangerfields, and Clearview Cinemas.

North of East 64th Street along First Avenue, residential buildings with ground floor retail and commercial uses continue unabated until 66th Street, where institutional uses and open space become more prominent. The east side of First Avenue between East 66th and 67th Streets is occupied by the Church of St. John Nepomucene and the Bethany Memorial Church. North of these churches along York Avenue is the Schwartz Building, and across from the Schwartz Building is St. Catherine's Park. North of 68th Street, the mix of older tenement and newer high rise residential buildings with ground floor retail continues to the northern border of the study area and beyond.

Between First and Second Avenues, the side streets are lined with a mix of 4- and 5-story residential tenements, larger, more recently built luxury apartment complexes, as well as scattered institutional facilities. The three blocks west of the MSKCC campus (between East 66th and East 69th Streets) contain a high concentration of institutional and recreational uses, including the East 67th Street Public Library, the New York Blood Center adjacent to the library, the Julia Richman High School on Second Avenue between East 67th and 68th Streets and St. Catherine's Park, which abuts Julia Richman and occupies the eastern end of the block facing the main campus block of MSKCC. North of East 69th Street between First and Second Avenues, institutional uses are less prevalent, but include the Lenox Hill Neighborhood House on East 70th Street, the Church of Christ the Savior on East 71st Street, and Theosophy Hall on East 72nd Street. As with other side streets in the study area, there is limited neighborhood-oriented retail space contained in some of the blocks' older tenement buildings.

Second Avenue is lined with mostly residential high-rises, with fewer 4- and 5- story tenement buildings compared to First Avenue. There is a very active retail presence along much of the avenue, providing a mixture of neighborhood services as well as some retail shops and movie theaters, which attract a broader clientele. Further west towards Third Avenue, the study area's side streets are similar in character and land use to those between York and Second Avenues described above. Residential use dominates, with some of the blocks wholly or almost entirely occupied by a single residential complex, such as the blocks along East 66th Street.

THE FUTURE WITHOUT THE PROPOSED ACTIONS—2007

Development in the study area that is expected to occur by 2007 (the build year for the Research Building) independent of the proposed actions includes a number of residential and institutional initiatives (see Table 2-1 and Figure 2-3). MSKCC has two projects planned within the study area; an outpatient facility is under construction just west of the rezoning area on East 68th Street between First and Second Avenues, and a 4-story hospital addition is under construction within the rezoning area above the existing Memorial Hospital/Winston Pavilion. Northeast of the proposed rezoning area on East 71st Street and the FDR Drive, the Hospital for Special Surgery is expanding their Caspary Research Building by 2 stories. East of the proposed rezoning

area at York Avenue and East 68th Street (within the Rockefeller University campus), a 12-story, approximately 390,000-square-foot research lab building is planned for completion by 2004. The building would add to the already-strong medical research presence in the area surrounding the MSKCC campus.

Table 2-1

Development Projects Expected to Occur by 2007

Map Ref No.	Project Name/Address	Type/Size	Anticipated Completion
1	MSKCC Outpatient Facility 353 East 68th Street, First and Second Avenues	Outpatient facility and physician's offices. 6 Stories, approximately 61,000 square feet.	2001
2	MSKCC Infill Project Above Memorial Hospital/Winston Pavilion, between East 67th and 68th Streets and First and Second Avenues	4-story hospital addition over existing development. To include pediatric, operating room, and surgical pathology space, approx. 55,300 square feet.	2004
3	Hospital for Special Surgery Caspary Research Building/East 71st Street at the FDR	2-story expansion of existing facility. Net increase of 4,000 gsf, net increase of 40 employees.	2004
4	Rockefeller University Lab Building 1230 York Avenue at East 68th Street	Research Lab/12 stories, approximately 390,000 gsf (including 88,000 gsf parking), 260 feet in height.	2004
5	1234 First Avenue	Residential (200 units), Community Facility (10,000 gsf), Commercial (5,000 gsf)	2006

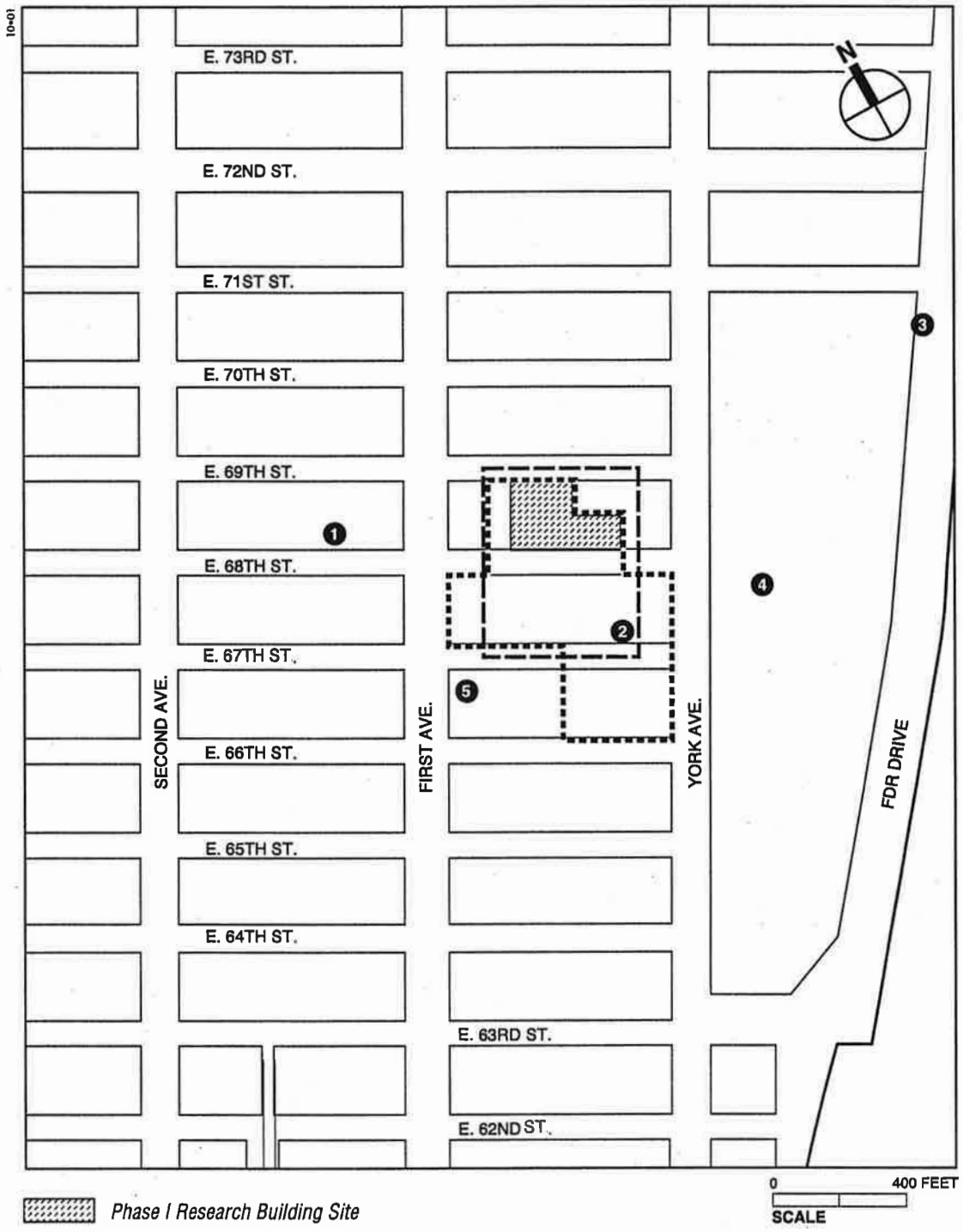
A proposed development project is located just south of the proposed rezoning area, at 1234 First Avenue, between East 66th and 67th Streets. The project would involve demolition of the Bethany Memorial Church and the adjacent Dwight School for the construction of an approximately 29-story mixed-use facility. It is anticipated that the building, to be completed by 2006, would include approximately 200 residential units, about 10,000 square feet of community facility space and 5,000 square feet of retail space.

Outside the land use study area, two sites at 403-407 and 409-415 East 60th Street are planned for approximately 132,000 square feet of residential space.

A site at the southwest corner of York Avenue and East 70th Street, now used as a surface parking lot by Cornell University Medical College, could also be developed by 2007 as a community facility or other use. Planning for this site is in preliminary stages and no architect has been assigned. The project is expected to require land use approvals and/or BSA variances for its implementation, although no application has been filed to date. In addition, this site would not be affected by the proposed actions.

THE FUTURE WITH THE PROPOSED ACTIONS—2007

The proposed actions include a rezoning from R8 to R9 of the midblocks in two of the three MSKCC campus blocks and the designation of the campus as a LSCFD. With the rezoning and the designation of the LSCFD, MSKCC proposes to build a new research building on the north



Development Projects Expect to Occur in the Future Without the Proposed Actions – 2007

FIGURE 2-3

MEMORIAL SLOAN-KETTERING CANCER CENTER

block and transfer development rights from the north block to the main campus block (between East 67th and 68th Streets). The research building is expected to be completed in 2007. The probable impacts of the development in terms of land use, zoning, and public policy are described below.

PROPOSED RESEARCH BUILDING SITE

Development of the proposed research building would result in an increase in the density of development on the site by replacing the existing 3-story St. Catherine's Church Rectory, 11-story Kettering Research Lab (185,209 square feet), and vacant land with a new 23-story research building with a maximum of approximately 733,400 gross square feet. The new building would include research laboratories, support space, offices, and an auditorium. While the new research building would be an expanded, more intensive use of the site, it would generally be in keeping with the existing Kettering Research Laboratory uses now on a portion of the site. The portion of the site that is currently vacant land would be converted from an underutilized lot to an active MSKCC institutional use. The existing St. Catherine's Church Rectory that would be demolished would be replaced with 19,000 square feet of space located on the lower levels of the tower adjacent to St. Catherine's Church, providing direct access between the church and the new rectory. The new space would also maintain the adjacency of the church and rectory entrances currently on East 68th Street.

REMAINDER OF REZONING AREA

While no other development is anticipated for the MSKCC campus, it is possible that further development could occur as a result of the rezoning on properties not owned by MSKCC. Approximately 22,593 square feet of the rezoning area on the eastern end of the north block belongs to another institution and is not on a zoning lot merged with MSKCC property. It is part of a site that contains three residential buildings and has York Avenue frontage. The increase in allowable floor area on this part of the rezoning area would be about 79,075 square feet. The analysis assumes that development on this site would include 33,438 square feet of residential space, or approximately 33 new dwelling units, and approximately 45,637 square feet of community facility use.

STUDY AREA

Development of the proposed research building would be compatible with the institutional character of the surrounding area, particularly along York Avenue within the study area. The MSKCC development plans are part of an historic and continuing expansion of medical research facilities in the area. It is these institutions' commitment to state-of-the art research and unparalleled patient care that help maintain the area's reputation as one of the most advanced concentrations of medical knowledge in the world.

THE FUTURE WITHOUT THE PROPOSED ACTIONS—2011

As described above, there are several residential and institutional development projects planned for the study area that are expected to occur by 2007 independent of the proposed actions. There are no known development projects expected between 2008 and 2011 in the study area.

THE FUTURE WITH THE PROPOSED ACTIONS—2011

As described above, the proposed actions include a rezoning from R8 to R9 of the midblocks in two of the three MSKCC campus blocks and the designation of the campus as a LSCFD. With the rezoning and the designation of the LSCFD, MSKCC proposes to build a new research building on the north block and transfer development rights from the north block to the main campus block (between East 67th and 68th Streets). In the future it could then redevelop portions of the main campus block. The build out for the remainder of floor area allowed under the rezoning is assumed to be 2011 for the purposes of performing this environmental review. The probable impacts of the development in terms of land use are displayed in Figure 2-4 and described below.

REZONING AND LSCFD AREAS

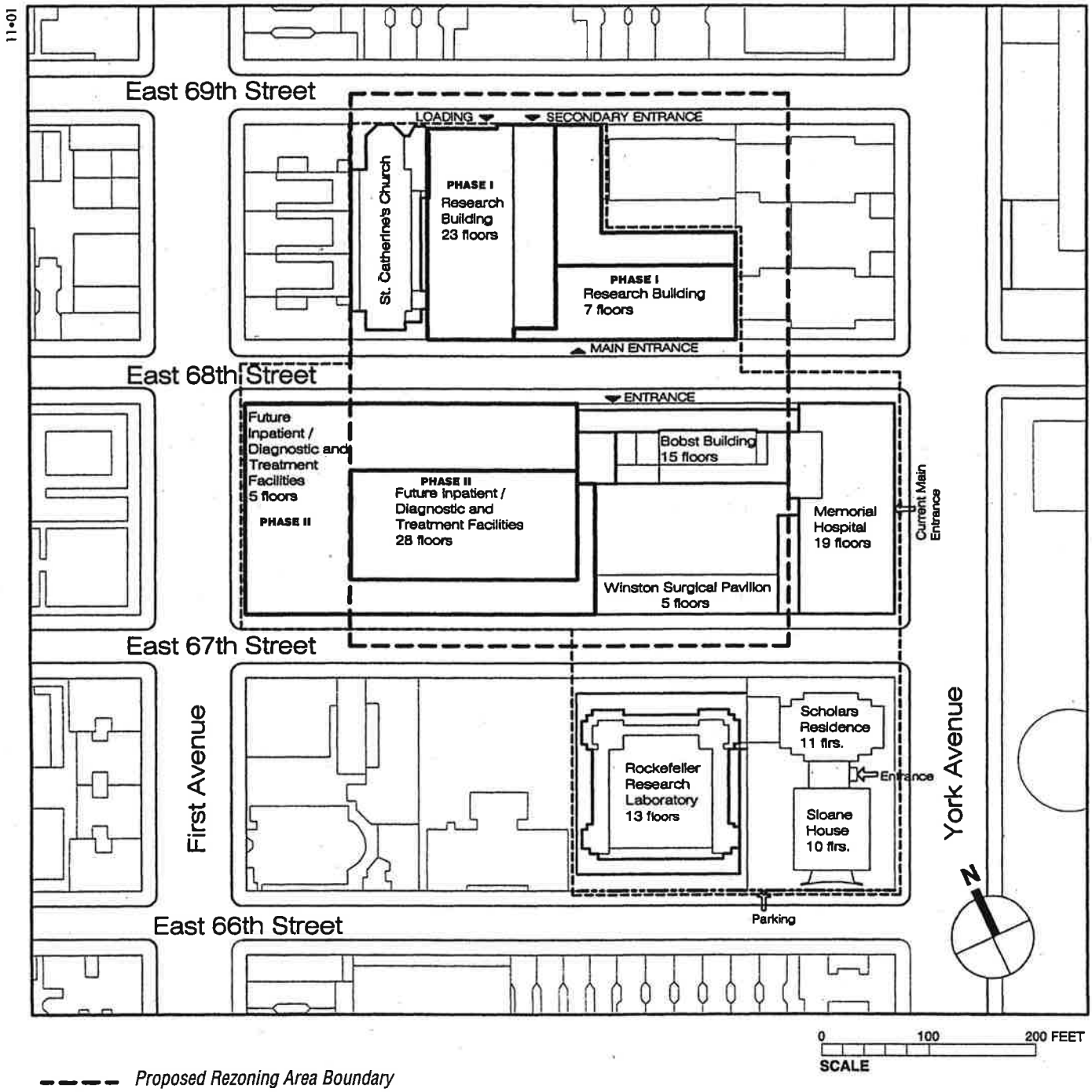
Within the rezoning area, development of the proposed research building is anticipated to be complete by 2007, as described above. While further development pursuant to the rezoning and LSCFD designation are not definite at this time, for analysis purposes, MSKCC and its architects and planners have developed a reasonable worst case development scenario for the main campus block. This development would represent the full build-out of the floor area allowed by the rezoning and the authorization to transfer floor area from the north block to the main campus block. For a detailed description of the development scenario for the main campus block, see Chapter 1, "Project Description."

This development would include a new inpatient hospital building on the west portion of the main campus block. The building would face St. Catherine's Park across First Avenue, and with its major entrance on First Avenue, would generate new pedestrian activity on the avenue along this block front. Like the proposed research building, the new inpatient hospital would be larger in overall bulk than the buildings currently located on the site, but would involve similar land uses compared to the space that would be demolished. On the eastern end of the main campus block, some of the inpatient floors in Memorial Hospital would be renovated for office and on-call space.

As the main campus block is developed, further authorizations or special permits from CPC pursuant to the LSCFD or other actions by the BSA may be needed, depending on programmatic requirements and architectural design, which have not yet been developed. Such additional actions would be subject to the City Environmental Quality Review (CEQR) as part of their approval process. In addition, it is possible that in the future, development on the main campus block may not follow the exact pattern described in this analysis. However, for each change of the LSCFD, MSKCC would be obligated to obtain City Planning Commission approval, which would in turn require environmental review prior to approval.

STUDY AREA

The proposed MSKCC plans are not likely to change development trends in the larger study area or induce new development projects that would occur absent the proposed actions. In total, the new buildings would add an estimated 1,316 workers, 660 patients, and 1,790 visitors to the study area, adding to the activity within the vicinity of the MSKCC campus. However, the activity generated by the new facilities is not expected to alter the current balance of residential, institutional, commercial, and industrial uses within the study area.



Proposed Rezoning Area Boundary

Proposed Large Scale Community Facility Development Boundary

NOTE: THE PROPOSED SITE PLANS AND MAXIMUM BUILDING ENVELOPES ARE ESTABLISHED THROUGH DISCRETIONARY APPROVALS AS SET FORTH IN THE ULURP APPLICATION

Memorial Sloan-Kettering Cancer Center Campus with Proposed Phase 1 Research Building and Potential Future Development

FIGURE 2-4

D. ZONING AND PUBLIC POLICY

EXISTING CONDITIONS

REZONING AREA

The two mid-blocks within the rezoning area, including the proposed research building site, are currently zoned R8 (see Figure 2-5). R8 is a general residence district widely mapped in Manhattan. The maximum floor area ratio (FAR) for an R8 district is 6.50 for community facility use (i.e., a community facility can have a floor area 6.5 times its site area), and residential use has a maximum FAR of 6.02. Industrial and commercial uses are prohibited in residential districts.

STUDY AREA

Zoning in the study area includes R8, R8B, R9, R10, and R10A residential districts; C1-9, C2-8, C5-1, and C8-4 commercial districts; M1-4 and M3-2 manufacturing districts; and a Special Transit Land Use District overlay. Consistent with land use patterns, most of the midblocks in the study area are zoned residential, with either R8 (described above) or R8B designations. R8B is contextual general residence district, designed to be consistent with existing older neighborhoods by requiring high-coverage (i.e., with fewer setbacks or side yards) buildings compatible with existing low-rise buildings on the block. R8B districts permit residential buildings with a maximum FAR of 4.0 and community facilities with a maximum FAR of 5.1 (within Manhattan Community Board 8). In addition, buildings in R8B districts must have a streetwall 50 to 60 feet high and an overall building height of no more than 75 feet. R8B districts were mapped on most of the midblocks on the Upper East Side in the 1980's. The Quality Housing Program is mandatory in R8B districts.

The proposed two-block rezoning area is currently part of a larger R8 district that extends from East 66th Street to East 71st Street. Immediately east of the rezoning area, an R10 district is mapped along York Avenue from East 62nd Street to well beyond the northern boundary of the study area. R10 districts are high-density residential districts that permit a maximum FAR of 10.0 (or 12.0 with inclusionary housing bonuses). The R10 district generally covers the area within 100 feet of York Avenue, the area within 100 feet of East 72nd Street east of York Avenue, and the east end of the block between East 72nd and 73rd Streets. R10 districts require tower-on-a-base building types, and the Quality Housing Program is optional within R10 districts. The areas along East 72nd Street west of York Avenue are mapped R10A rather than R10. R10A districts differ from R10 districts in allowing greater lot coverage and modified height and setback regulations. Buildings in R10A districts must have a streetwall 125 to 150 feet high and an overall building height of no more than 210 feet. The maximum FAR in an R10A district is 10 (12 with inclusionary housing bonus) and the Quality Housing Program is mandatory. The Quality Housing Program is a specific set of standards and requirements established to foster the provision of multi-family housing that is compatible with existing neighborhood scale and character, provides on-site recreation space to meet the needs of its occupants, and is designed to promote the security and safety of the residents. The development, enlargement, extension of, or conversion to any residential use other than single- or 2-family residences must follow the standards set forth by the requirements.

East of York Avenue within the study area, the superblocks that contain Rockefeller University, New York-Presbyterian Hospital and affiliated Weill Cornell Medical Center are zoned R9 in

the midblock and R10 along York Avenue, which permits a maximum FAR of 10.0 for community facilities (7.5 FAR if it includes sleeping facilities), and a maximum FAR of 7.52 for residential buildings. R10 districts are mapped along major avenues and crosstown streets south of 96th Street in Manhattan. The Quality Housing Program is optional in R9 and R10 districts.

The study area also includes several commercial overlays. Commercial overlays are generally mapped as overlays along avenues in residential districts and accommodate the local retail services needed in residential neighborhoods. A C1-5 overlay is mapped along York Avenue in multiple locations: on East 69th Street on the west side of York Avenue (immediately west of the proposed rezoning area), and between East 70th and 73rd Streets on both sides of York Avenue. C1-5 overlays in an R10 district allow for a maximum FAR of 2.0 for commercial development or 10.0 to 12.0 FAR (through inclusionary housing bonus) for residential development. In addition, much of the First and Second Avenue frontages in the study area are mapped C1-9 or C2-8. In C1-9 zones, residential development up to an FAR of 10.0 (12.0 with bonus) is permitted. Commercial use is permitted to a maximum FAR of 2.0. In C2-8 zones, residential development up to an FAR of 10.0 and commercial use up to an FAR of 2.0 is permitted.

There are M3-2 and M1-4 manufacturing districts mapped in the northeast and southeast corners of the study area. The two M3-2 designations, located east of York Avenue at East 62nd and East 73rd Streets, allow heavy industries that generate noise, traffic, and pollutants and permit a maximum FAR of 2.0. East of York Avenue, a portion of the blocks between East 72nd and 74th Streets are zoned M1-4. M1-4 districts permit a maximum FAR of 2.0 for commercial and manufacturing buildings, and a maximum FAR of 6.5 for community facilities.

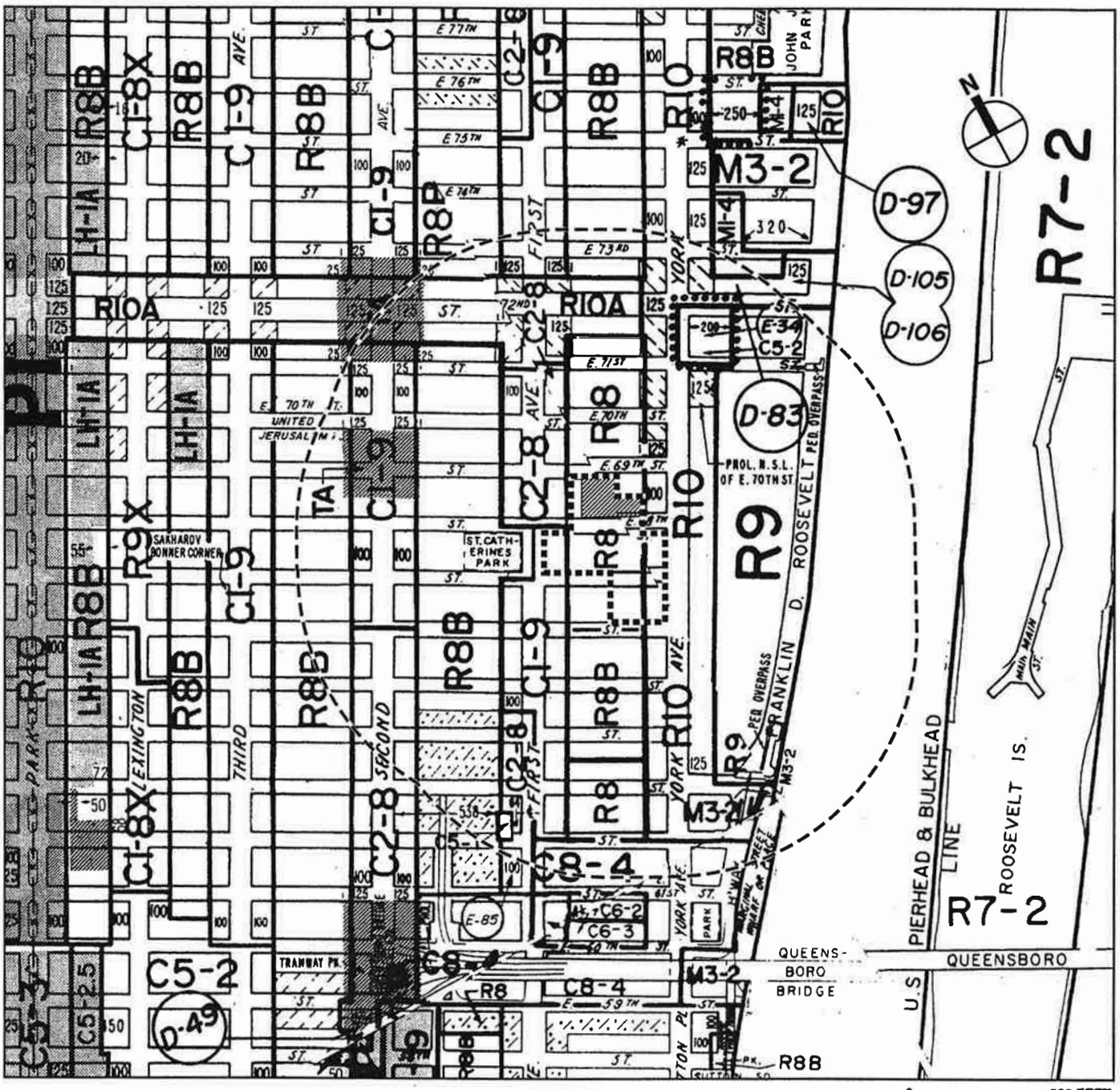
Also within the study area is a Special Transit Land Use District, centered at the intersections of East 69th and 72nd Streets and Second Avenue. The Special Transit Land Use District was designed to provide easements to minimize conflict between pedestrian movement on public sidewalks and access to the Second Avenue subway system. Any new development or enlargement involving ground level construction within the Special Transit Land Use District must provide an easement on the zoning lot for subway-related use and public access to the subway mezzanine or station.

THE FUTURE WITHOUT THE PROPOSED ACTIONS—2007

No changes in zoning or public policy are currently planned within the study area, and without a foreseeable change in these conditions, it is expected that the existing residential, commercial, and manufacturing zoning districts will remain in place.

THE FUTURE WITH THE PROPOSED ACTIONS—2007

The proposed actions include a rezoning from R8 to R9 of the midblocks on two of the three MSKCC campus blocks and the designation of the campus as a LSCFD. With the rezoning and the designation of the LSCFD, MSKCC proposes to build a new research building on the north block and transfer development rights from the north block to the main campus block. The research building is expected to be completed in 2007. The probable impacts of the development in terms of land use, zoning, and public policy are described below.



Phase I Research Building Site

Proposed LSCFD Area Boundary

Study Area Boundary (1/4-Mile Perimeter)

Zoning District Boundary

Special Purpose District

C1-5 Overlay

C2-5 Overlay

Zoning

FIGURE 2-5

REZONING AND LSCFD AREAS

Rezoning the two midblocks from R8 to R9 would increase allowable community facility development from 6.5 to 10 FAR and residential development from 6.02 to 7.52 FAR. The additional floor area available to MSKCC in the rezoning area would be approximately 501,529 square feet. Overall, the allowable floor area for MSKCC would increase from approximately 1,795,058 square feet to 2,296,587 square feet. The effect of the proposed rezoning on non-MSKCC properties in the rezoning area is discussed in the land use section above.

The LSCFD designation would allow development planning to encompass the entire campus. More specifically, it would allow, by City Planning Commission (CPC) authorization, transfer of development rights from one portion of the campus to another part of the campus, and waivers of height and setback requirements. This designation would not affect the remainder of the rezoning area.

MSKCC's proposed research building on the north block together with the existing St. Catherine's Church (which would remain) is anticipated to use up to 100,000 zoning square feet less than would be available on this site. Based on a review of potential use of the floor area on the north site, MSKCC and its architects have determined that in their opinion the use of the additional floor area on the north block would produce a building that is of a size and configuration that is inappropriate for its midblock location. Further, the potential uses identified for this floor area would function more appropriately on the main block of the campus. Therefore, pursuant to the LSCFD, MSKCC would request the transfer of up to 100,000 square feet from the north block to the main campus block.

For the laboratory building, MSKCC would also request an authorization to modify height and setback requirements on streets internal to the LSCFD, and a Special Permit to modify height and setback on peripheral streets. These would modify the bulk form of the research building.

The proposed research building would also require certain additional actions from the Board of Standards and Appeals (BSA): a variance for lot coverage (ZR Section 72-20) and a variance for modification of the rear yard equivalent (ZR Section 72-20). These would allow the proposed foot print and bulk form of the proposed building.

In addition, for a brief period during construction of the research building, a special permit for temporary failure to comply (ZR Section 73-642) would be requested. This would allow MSKCC to retain the Kettering Laboratory building on the site until its functions could be moved into the new laboratory building as described below. This would only be needed for a brief time and would expire after a maximum of two years.

STUDY AREA

The proposed R9 rezoning would be compatible with other zoning designations nearby. As described earlier and shown in Figure 2-3, much of the study area is currently zoned for residential uses, including blocks immediately surrounding the rezoning area. The proposed rezoning would introduce R9 zoning to a midblock portion of the study area. An R10 designation is mapped along York Avenue, permitting an equal maximum FAR in terms of community facility and residential buildings (10.0 FAR as opposed to 7.53 FAR in R9). The R9 therefore would represent a transitional area between the R8 and R10 districts. Overall, the proposed actions would not have a significant adverse impact upon the surrounding area in terms of land use, zoning, and public policy.

THE FUTURE WITHOUT THE PROPOSED ACTIONS—2011

No changes in zoning or public policy are currently planned within the study area, and without a foreseeable change in these conditions, it is expected that the existing residential, commercial, and manufacturing zoning districts will remain in place.

THE FUTURE WITH THE PROPOSED ACTIONS—2011

With the rezoning and the designation of the LSCFD, MSKCC proposes to build a new research building on the north block and transfer development rights from the north block to the main campus block. By 2011 MSKCC would redevelop portions of the main campus block. The probable impacts of the development in terms of zoning and public policy are described below.

The proposed R9 residential rezoning would be compatible with other zoning designations in the surrounding study area. As described earlier and shown in Figure 2-3, much of the study area is currently zoned for residential uses, including blocks immediately surrounding the rezoning area. The proposed rezoning would introduce R9 zoning to a midblock portion of the study area. Within the study area, R9 zoning currently exists on a majority of the Rockefeller University campus. In addition, an R10 designation is mapped along York Avenue, permitting an equal maximum FAR in terms of community facility and residential buildings (10.0 FAR as opposed to 7.53 FAR in R9). The R9 therefore would represent a transitional area between the R8 and R10 districts.

Overall, the proposed actions would not have a significant adverse impact upon the surrounding area in terms of land use, zoning, and public policy. The proposed actions would allow the reallocation of community facility uses within the MSKCC campus area to more effectively serve the needs of patients and MSKCC staff. Development of the project site would reinforce the already strong institutional presence within the rezoning area and LSCFD. ❖

A. INTRODUCTION AND METHODOLOGY

With approval of the proposed actions—including rezoning and designation of a Large Scale Community Facility Development (LSCFD)—Memorial Sloan-Kettering Cancer Center (MSKCC) would construct a research building between 68th and 69th Streets and York and First Avenues, and redevelop portions of its main campus block (between East 67th and 68th Streets and York and First Avenues). The proposed research building is expected to be completed in 2007. The proposed build out for the remainder of the campus is assumed to be 2011 for the purposes of performing this environmental review.

According to the *New York City Environment Quality Review (CEQR) Technical Manual*, a socioeconomic assessment should be conducted if an action may be reasonably expected to create substantial socioeconomic changes within the area affected by the proposed actions that would not be expected to occur absent the actions. This chapter analyzes the potential effects of the proposed actions on city and state economic conditions by examining the potential effects of the project in terms of direct and indirect displacement, employment, wages and salaries, total effect on the local economy, and fiscal conditions. The analysis shows that the anticipated development project would not generate any adverse socioeconomic impacts. The proposed actions would result in substantial new development that would not be markedly different from existing uses, development, and activities within the existing neighborhood. The proposed development would not result in the permanent direct or indirect displacement of any residences, businesses, or institutions. In contrast, the project would result in substantial beneficial economic impacts through the investment of significant capital into the economy and substantial recurring economic activities.

B. CANCER RESEARCH AND PATIENT CARE

MSKCC seeks to refurbish and replace outmoded and underutilized buildings and property on their campus, create significant new research and patient care facilities, and benefit the economy of New York City by promoting the growth of the medical and research industries. The proposed project calls for a complementary set of uses that both fulfills vital expansion needs for MSKCC and fosters the growth of biological and clinical research in New York City. In addition to helping MSKCC meet its own needs into the future, the proposed actions would create state-of-the-art research laboratories to meet the needs of the burgeoning field of biomedical research. The city has acknowledged the importance of the biomedical research community and has encouraged the expansion in the number of facilities, companies, and industry jobs. In addition, several current proposals in Albany would promote biomedical research in New York State. The proposed MSKCC development would therefore reflect the growing importance of biomedical research in the economy and would contribute toward the goal of ensuring New York City's role in the future of the industry.

C. FUTURE WITH THE PROPOSED ACTIONS—2007

The proposed actions include a rezoning from R8 to R9 of the midblocks in two of the three MSKCC campus blocks and the designation of the campus as an LSCFD. With the rezoning and the designation of the LSCFD, MSKCC proposes to build a new research building which is expected to be complete by 2007. This section assesses the potential socioeconomic effects of the proposed research building.

The research building site is an L-shaped area in the middle of the north block currently occupied by the Rectory of St. Catherine's Church, the Kettering Building, and a vacant area formerly occupied by a school associated with St. Catherine's Church. Initial construction of the proposed research building would require demolition of the existing 3-story, approximately 10,932-square-foot St. Catherine's Church Rectory located on the project site. The demolition would not result in a permanent displacement of a residential use. The existing St. Catherine's Church Rectory that would be demolished would be replaced with 19,000 square feet of space located on the lower levels of the new laboratory building, which would be located adjacent to St. Catherine's Church. The new, larger space would provide direct access between the church and the new rectory, and would maintain the adjacency of the church and rectory entrances currently on East 68th Street. Based on an agreement between MSKCC and St. Catherine's Church, those occupying the existing rectory will be relocated to nearby apartments during construction of the new rectory space.

As soon as its activities can be moved into the new building, the Kettering Building would be demolished and construction would continue on the low-rise portion of the building. Overall the proposed laboratory building is anticipated to provide not just for the current researchers who need state-of-the-art facilities, but also for the expansion of MSKCC's research activities into the future.

While no other development is anticipated for the MSKCC campus, it is possible that further development could occur as a result of the rezoning on properties not owned by MSKCC. Approximately 22,593 square feet of the rezoning area on the eastern end of the north block belongs to another institution and is not on a zoning lot merged with MSKCC property. It is part of a site that contains three residential buildings and has York Avenue frontage. The increase in allowable floor area on this part of the rezoning area would be about 79,075 square feet. The analysis assumes that development on this site would include 33,438 square feet of residential space, or approximately 33 additional dwelling units, and approximately 45,637 square feet of community facility use. This use is undefined as there is no known proposal for this potential expansion.

Overall, the anticipated development as a result of the proposed actions by 2007 is not expected to result in any direct or indirect displacement of residences, businesses, or institutions, nor would it result in a significant change in the character of the neighborhood. While the new development would be an expanded, more intensive use of the site, it would generally be in keeping with existing uses. The non-MSKCC development anticipated as a result of the proposed actions would be modest increases to already-existing, or already-planned uses.

ECONOMIC BENEFITS OF CONSTRUCTION

The following section estimates the economic benefits that would be realized through construction as a result of the proposed actions by 2007.*

Development of the proposed research building would be undertaken by the private investment of funds into the area. Based on preliminary estimates, the private investment for construction of the new building is estimated to equal about $490.9 million (in 2001 dollars). This amount includes the demolition of the Kettering Building and St. Catherine's Church Rectory, site preparation and hard costs (actual construction) for the proposed research building, including the main portion of the building and the multipurpose wing, and design, legal, and related costs. The total estimated amount of Amount million reflects the cost of physical improvements to the property, and therefore excludes other values—such as financing, the value of the land, marketing, etc.—not directly a part of the expenditures for construction.

As a result of the $490.9 million in direct expenditures, the direct employment generated by construction is estimated at about 3,384 person-years of employment. (A person-year is the equivalent of one employee working full-time for 1 year.) In addition to direct employment, total employment resulting from construction expenditures would include jobs in business establishments providing goods and services to the contractors and resulting indirect and generated employment. Based on the model's economic multipliers for New York City industrial sectors, the project would generate an additional 1,818 person-years of employment within New York City, bringing the total direct and generated jobs from the construction of the new research building to 5,202 person-years (see Table 3-1). In the larger New York State economy, the model estimates that the proposed project would generate 3,044 person-years of indirect employment, bringing the total direct and generated jobs from construction of the proposed MSKCC research building to 6,428 person-years of employment. Table 3-1 also displays the estimated direct wages and salaries and tax revenues that would be generated during the construction period of the proposed research building.

* The principal model used to estimate the effect of constructing the proposed project on the city's economy is the Regional Input-Output Modeling System (RIMS II), developed by the U.S. Department of Commerce, Bureau of Economic Analysis. The model contains data for New York City on 490 economic sectors, showing how each sector affects every other sector as a result of a change in the quantity of its product or service. A similar RIMS II model for New York State, also developed by the U.S. Department of Commerce, has been used to trace the effects on the state economy. The models have been adjusted to reflect the most recent changes in the New York metropolitan area price levels. Using these models and the specific characteristics of the project, the total effect has been projected for New York City and State.

Table 3-1

Employment and Fiscal Benefits from Construction of the Proposed MSKCC Research Building

	Portion in New York City	Total New York City and State
Employment (Person-years)*		
Direct (Construction)	3,384	3,384
Indirect (Secondary and Induced)	1,818	3,044
Total	5,202	6,428
Wages and Salaries (Millions of constant 2001 dollars)		
Direct (Construction)	$185.25	$185.25
Indirect (Secondary and Induced)	$91.37	$150.89
Total	$276.62	$336.14
Total Economic Output or Demand** (Millions of constant 2001 dollars)		
Direct (Construction)	$490.86	$490.86
Indirect (Secondary and Induced)	$228.84	$450.42
Total	$719.71	$941.28
	Amount	
Tax Revenues, Exclusive of Real Estate*** (Constant 2001 dollars)		
New York City Taxes	$12,259,800	
MTA Taxes	$739,400	
New York State Taxes	$25,835,000	
Total	$38,834,200	

Notes:

* A person-year is the equivalent of one person working full-time for a year.

** The economic output or total effect on the local economy derived from the direct construction spending.

*** Includes personal income taxes, corporate and business taxes, sales tax on indirect activity, and numerous other taxes on construction and secondary expenditures.

Source: The characteristics and construction cost of the proposed development; the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce, Bureau of Economic Analysis; and the tax rates by applicable jurisdiction.

ECONOMIC BENEFITS OF OPERATION

The completion and opening of the proposed research building would provide permanent employment, direct and generated wages and salaries, changes in the city's tax base, as well as taxes to the city and state. The annual operation of the proposed project has been analyzed using the RIMS II model as was done for construction economic impacts.* This section assessed the economic effects of operating the proposed research building, which would open in 2007.

The direct employment in the proposed research building is estimated at approximately 912 full-time equivalent jobs; of this amount, about 548 would be new. In addition to direct employment, total employment resulting from the annual operation of the building would include jobs in business establishments off-site providing goods and services to the occupants of the buildings and resulting in indirect and generated employment. Based on the model's economic multipliers for New York City industrial sectors, the 548 new employees of the project would have associated with them an additional 265 person-years of employment generated within New York City, bringing the total direct and generated new jobs from the annual operation of the proposed research building to 813 full-time equivalent jobs (see Table 3-2). Table 3-2 also shows the indirect employment generated in the larger New York State economy, the additional direct and generated wages and salaries, total economic output, and tax revenues that would result from operations of the proposed research building.

D. FUTURE WITH THE PROPOSED ACTIONS—2011

This section assesses the potential socioeconomic impacts of construction and operation of the Proposed Actions in their entirety, including the proposed research building on the north block, which is expected to be complete by 2007, and the remaining build out on the main campus, which is assumed to be complete in 2011.

Within the proposed rezoning area, development of the proposed research building is anticipated to be complete by 2007, as described above. Further development pursuant to the rezoning and LSCFD designation would include a new inpatient hospital building on the west portion of the main campus block. The building's major entrance would be on First Avenue, generating new pedestrian activity on the avenue along this block front. Like the proposed research building, the new inpatient hospital would be larger than the buildings currently located on the site, but would involve similar land uses compared to the space that would be demolished.

The proposed MSKCC plans are not likely to change development trends in the larger study area or induce new development projects that would occur absent the proposed actions. In total, the new buildings would add an estimated 1,202 workers, 530 patients, and 1,400 visitors to the study area, adding to the activity within the vicinity of the MSKCC campus. However, the activity generated by the new facilities is not expected to alter community character as the current balance of residential, institutional, commercial, and industrial uses within the area would be maintained.

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* Technically, the principal sector of the model used in the analysis for the research building was Sector 73.0112, testing and research lab services; and for the remainder of the proposed project, in addition to Sector 73.0112, Sector 77.0200, hospitals, and Sector 77.0305, and medical and health services, other.

ECONOMIC BENEFITS OF CONSTRUCTION

Similar to the proposed research building on the north block, anticipated development on the main campus would also be undertaken by the investment of private funds into the area. Based on preliminary estimates, the investment for construction of the entire project is estimated to equal about $1.38 billion ($1,380.2 million) in 2001 dollars, representing the direct expenditures during the construction period. As a result of the direct expenditures, the direct employment from constructing the entire project is estimated at about 9,514 person-years of employment, while the project would also generate an additional 5,110 person-years of employment within New York City, bringing the total direct and generated jobs from the construction of the proposed entire project to 14,624 person-years (see Table 3-3). In the larger New York State economy, the model estimates that the proposed entire project would generate 8,559 person-years of indirect employment, bringing the total direct and generated jobs from construction of the proposed entire project to 18,073 person-years of employment.

As shown in Table 3-3, the direct wages and salaries during the construction period are estimated at $520.86 million. Table 3-3 also shows the estimated secondary or induced wages and salaries, total economic output, and tax revenues resulting from construction of the entire project.

ECONOMIC BENEFITS OF OPERATIONS

As shown in Table 3-4, the operation of the completed proposed actions would provide permanent employment, direct and generated wages and salaries, changes in the city's tax base, and corresponding taxes to the city and state. The direct employment in the completed proposed project is estimated at approximately 2,874 full-time equivalent jobs; of this amount, an estimated 1,202 full-time equivalent jobs would be new. The additional direct wages and salaries from the annual operation of the proposed project are estimated at $55.48 million. The direct effect on the local economy from the completed proposed project, measured as increased economic output or demand, is estimated at approximately $96.2 million annually. These amounts reflects solely the effect from the operation of the facilities at the proposed project and do not include the effect of the project in the future in fostering the creation of new biological or medical products here, which would be additional.

Overall, the anticipated development as a result of the proposed actions is not expected to generate any significant adverse socioeconomic effects. The new development would not result in the direct displacement of residential, business, or institutional uses. The actions would not result in development that is markedly different from existing uses, development, and activities within the neighborhood, and would therefore not lead to any indirect displacement. In contrast, the proposed project would create significant new research and patient care facilities and would generate employment and fiscal benefits for New York City and State.

Table 3-2

Employment and Fiscal Benefits from the Annual Operation of the Proposed MSKCC Research Building

	Portion in New York City	Total New York City and State
Employment (Full-Time Equivalent Jobs)*		
Direct (On-site)	548	548
Indirect (Secondary and Induced)	265	406
Total	813	954
Wages and Salaries (Millions of constant 2001 dollars)		
Direct (On-Site)	$25.29	$25.29
Indirect (Secondary and Induced)	$10.50	$15.76
Total	$35.80	$41.05
Total Economic Output or Demand** (Millions of constant 2001 dollars)		
Direct (On-Site)	$43.84	$43.84
Indirect (Secondary and Induced)	$26.14	$42.45
Total	$69.98	$86.29
	Amount	
Tax Revenues*** (Constant 2001 dollars)		
New York City Taxes	$1,272,200	
MTA Taxes	$56,600	
New York State Taxes	$2,647,600	
Total	$3,976,400	

Notes:
The amounts in the table are the projected new amounts and do not include existing amounts transferred into the new building.

* Full-time equivalent jobs express part-time employment, based on hours worked, in terms of its lesser, equivalent amount of full-time employment.

** The economic output or total effect on the local economy derived from the direct spending during operation.

*** Includes personal income taxes, and sales tax, corporate and business taxes, and numerous other taxes on the indirect activity.

Source: The characteristics and expected expenditure patterns of Phase I of the proposed development; the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce, Bureau of Economic Analysis; and the tax rates by applicable jurisdiction.

Table 3-3

Employment and Fiscal Benefits from Construction of the Entire Project

	Portion in New York City	Total New York City and State
Employment (Person-years)*		
Direct (Construction)	9,514	9,514
Indirect (Secondary and Induced)	5,110	8,559
Total	14,624	18,073
Wages and Salaries (Millions of constant 2001 dollars)		
Direct (Construction)	$520.86	$520.86
Indirect (Secondary and Induced)	$256.89	$424.24
Total	$777.75	$945.10
Total Economic Output or Demand** (Millions of constant 2001 dollars)		
Direct (Construction)	$1,380.16	$1,380.16
Indirect (Secondary and Induced)	$643.43	$1,266.44
Total	$2,023.60	$2,646.60
	Amount	
Tax Revenues, Exclusive of Real Estate*** (Constant 2001 dollars)		
New York City Taxes	$34,470,800	
MTA Taxes	$2,078,900	
New York State Taxes	$72,640,200	
Total	$109,189,900	

Notes:

* A person-year is the equivalent of one person working full-time for a year.

** The economic output or total effect on the local economy derived from the direct construction spending.

*** Includes personal income taxes, corporate and business taxes, sales tax from indirect activity, and numerous other taxes on construction and secondary expenditures.

Source: The characteristics and construction cost of the proposed development; the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce, Bureau of Economic Analysis; and the tax rates by applicable jurisdiction.

Table 3-4

Employment and Fiscal Benefits from the Annual Operation of the Completed Entire Project

	Portion in New York City	Total New York City and State
Employment (Full-Time Equivalent Jobs)*		
Direct (On-site)	1,202	1,202
Indirect (Secondary and Induced)	534	858
Total	1,736	2,060
Wages and Salaries (Millions of constant 2001 dollars)		
Direct (On-Site)	$55.48	$55.48
Indirect (Secondary and Induced)	$21.80	$34.28
Total	$77.28	$89.76
Total Economic Output or Demand** (Millions of constant 2001 dollars)		
Direct (On-Site)	$96.16	$96.16
Indirect (Secondary and Induced)	$58.53	$91.80
Total	$154.69	$187.96
	Amount	
Tax Revenues*** (Constant 2001 dollars)		
New York City Taxes	$2,775,900	
MTA Taxes	$123,100	
New York State Taxes	$5,817,000	
Total	$8,716,000	

Notes:
The amounts in the table are the projected new amounts and do not include existing amounts transferred into the new building.

* Full-time equivalent jobs express part-time employment, based on hours worked, in terms of its lesser, equivalent amount of full-time employment.

** The economic output or total effect on the local economy derived from the direct spending during operation.

*** Includes personal income taxes, as well as sales tax, corporate and business taxes, and numerous other taxes from indirect economic activity.

Source: The characteristics and expected expenditure patterns of the completed entire project; the Regional Input-Output Modeling System (RIMS II), U.S. Department of Commerce, Bureau of Economic Analysis; and the tax rates by applicable jurisdiction.

❖

A. INTRODUCTION

The expansion of Memorial Sloan-Kettering Cancer Center (MSKCC) facilities in the blocks between East 67th and East 69th Streets and York and First Avenues would increase the number of medical center staff and patients. The anticipated magnitude of the increase in population and activity may increase the demand for certain community services, notably police and fire protection.* This chapter identifies the existing fire and police services in the area, describes their current service levels, and discusses proposed and anticipated changes in the future, both without and with the proposed actions. The project's effect on MSKCC and the services it provides is also considered in this analysis. Overall, the expansion is not anticipated to have significant impacts on police or fire protection services in the area. The project would enhance MSKCC's ability to provide patient care, cancer diagnosis, and treatment.

B. EXISTING CONDITIONS

POLICE PROTECTION

The MSKCC campus is located within the service area of the New York City Police Department's (NYPD) 19th Precinct, which has its headquarters at 153 East 67th Street, about three blocks west of the project site. The 19th Precinct covers all of the Upper East Side, from East 59th Street to East 96th Street, from Fifth Avenue to the East River. Approximately 200 uniformed staff officers work in the precinct; they primarily conduct vehicular patrols, but occasionally perform foot and bicycle patrols as well.

The 19th Precinct covers a largely residential neighborhood with a population that is one of the densest in the nation, with 210,880 residents at the time of the 1990 Census. According to a community affairs officer at the 19th Precinct, the precinct primarily responds to property-related crimes such as burglary and grand larceny, as opposed to violent crimes. Crime in the precinct has declined significantly in recent years, mirroring an overall decrease in crime rates in the city. Overall, existing levels of police protection are considered adequate.

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* The proposed project would not increase the number of dwelling units served by the local library branch by more than 5 percent, would not introduce more than 600 low-income units requiring subsidized daycare, would not result in greater than 2,500 dwelling units or 600 low- to moderate income dwelling units requiring a detailed analysis of hospital and public health facilities, and would not introduce more than 50 school-age children requiring a detailed analysis of educational facilities. Therefore, in accordance with the *City Environmental Quality Review (CEQR) Technical Manual,* the assessment of the project's effects on community facilities and services is limited to police and fire protection services, as well as MSKCC services.

FIRE PROTECTION

According to the Fire Department's Chief of Operations,* primary response to a fire emergency at MSKCC belongs to Engine Company 39 and Ladder Company 16, located at 157 East 67th Street between Lexington and Third Avenues, approximately three blocks from the MSKCC campus. Backup would be provided by Engine Company 44 and Ladder Company 2, located at 221 East 75th Street between Second and Third Avenues. Engine companies carry hoses, while ladder companies provide search, rescue, and building ventilation functions. In addition, rescue companies are called for fires or emergencies in high-rise buildings.

Normally, a total of three engine companies and two ladder companies respond to each call. Units responding to a site are not limited to the closest companies; the Fire Department can call on companies from other parts of the battalion or units from more distant parts of the city if necessary. The existing level of fire protection in the area is considered adequate.

MSKCC SERVICES

MSKCC is the world's foremost medical center devoted to the care of cancer patients, offering an extraordinary range of patient-care programs on both an inpatient and outpatient basis. In addition to patient care, MSKCC is the largest private institution devoted to research and education in cancer. MSKCC's academic faculty includes the 400 attending physicians of Memorial Hospital and 80 laboratory heads of the Sloan Kettering Institute (SKI). Both benefit from the interplay between disciplines, particularly because laboratory research is shaped by the singular focus on cancer. Biomedical research at SKI is wide in scope, with programs in cell biology, molecular biology, immunology, cellular biochemistry, structural biology, and pharmacology. Center staff are currently the recipients of more than $80 million a year in competitive grants and contracts. To seize new scientific opportunities, MSKCC must expand its research program.

The primary locations for research at MSKCC include the Kettering Building on 68th Street, the Schwartz Building on First Avenue, and the Rockefeller Laboratory Building on 67th Street. When the Kettering Building opened in 1964, it represented the latest thinking about laboratory design and technology. But much has changed, and neither the Kettering Building nor the laboratories in the renovated Schwartz Building can adequately accommodate a leading-edge program of biological research.

Completed in 1973, Memorial Hospital—which houses the inpatient beds for MSKCC— is now 27 years old. It can only provide 434 of the licensed 565 inpatient beds and has limited outpatient capacity and space for administrative offices. The present facility does not provide the level of amenities that many patients expect. For example, the majority of rooms include two patient beds, whereas many hospitals are now being built with only single rooms. While MSKCC plans a floor-by-floor renovation of all inpatient floors, the lifespan of the present hospital is limited and renovation costs are high.

In 1999 there were over 277,600 visits to MSKCC outpatient facilities in Manhattan. These facilities are scattered over various locations, but the majority of outpatient visits occur at the Rockefeller Outpatient Pavilion at 160 East 53rd Street. Opened in 1999, the Rockefeller Pavilion provides a high level of patient amenities in a technologically advanced environment.

* Letter from Chief of Operations Daniel A. Nigro dated March 15, 2001.

However, it is distant from the main campus, and travel between the main campus and the various outpatient facilities consumes valuable staff time.

Diagnostic and treatment facilities are located throughout the main campus buildings and satellite facilities. In particular, both the Schwartz Building and the Howard Building have space devoted to diagnostic and treatment programs including radiology and nuclear medicine, clinical laboratories, rehabilitation and speech and hearing, day surgery, pathology, and radiation oncology. A blood donor room and its associated laboratories—which also support the blood needs of the Hospital for Special Surgery—are based in the Schwartz Building. Short-term upgrades are now underway to accommodate new technology in both buildings.

C. FUTURE WITHOUT THE PROPOSED ACTIONS—2007

POLICE PROTECTION

Future staffing levels of the police precinct serving the project area have not been established. Police staffing levels change over time in response to conditions in individual precincts and increased allocations are considered when increased demand becomes apparent. Increases in worker and residential populations created by new developments proposed for the area are not anticipated to place excessive burdens on police services. Because of the Police Department's commitment to maintaining adequate levels of police protection based on demonstrated need, conditions in the study area in the future without the proposed actions by 2007 are anticipated to remain adequate.

FIRE PROTECTION

Fire protection services are expected to remain adequate in the future without the proposed actions by 2007. Although personnel and resources are allocated based on demonstrated need and are likely to change somewhat in the future, no significant changes in equipment or staffing are foreseen according to the Fire Department's Chief of Operations.

MSKCC SERVICES

Two MSKCC projects are expected to be completed in the future without the proposed actions. A 6-story outpatient facility is already under construction just west of the campus and the rezoning area on 68th Street between First and Second Avenues. The outpatient facility, which would include physicians' offices, is expected to be completed in 2001. MSKCC is also constructing a 4-story hospital addition above the existing Winston Surgical Pavilion, to be completed by 2004. The hospital addition would include pediatric space, operating rooms, and surgical pathology space. While these projects are important steps toward maintaining MSKCC's commitment to excellence in patient care, these projects alone do not fulfill MSKCC's immediate goal to create modern research space, nor do they address the need for future development potential and the ability to plan for that development.

D. FUTURE WITH THE PROPOSED ACTIONS—2007

POLICE PROTECTION

The proposed research building is expected to result in a net increase in workers over those who occupy the existing Kettering Building. This increase in the worker population may minimally increase the demands for police protection. Future allocations of police officers and other police

personnel in the 19th Precinct would depend on the city's overall operating budget and the Police Department's internal distribution of resources. Typically, a commitment of resources would be based on demonstrated need and would not be made until operational statistics became available. Overall, the role of the Police Department in providing effective, efficient service is not expected to be adversely affected by the proposed research building.

In addition to the service offered by the 19th Precinct, MSKCC provides its own private security for MSKCC properties. With the proposed development, MSKCC would continue to provide security for its buildings including the new research laboratory.

FIRE PROTECTION

According to the Fire Department's Bureau of Operations, the Fire Department would have sufficient resources to serve the anticipated increased level of activity around, and number of workers in the proposed research building. Overall, fire protection services are expected to remain adequate to meet the demands of the MSKCC campus and surrounding neighborhoods. Therefore, no adverse impacts to fire protection services are anticipated to result from the proposed research building.

MSKCC SERVICES

The proposed research building would support MSKCC's role as a significant community facility by allowing it to expand and modernize its research capabilities. The larger state-of-the-art facility would allow MSKCC to better promote interdisciplinary research, where chemists, biologists, and clinical scientists work together to advance understanding of cancer and improve patient care. The proposed actions would enable MSKCC to retain its role as the nation's leading cancer treatment center, strengthen its century-long commitment to innovation in research and patient care, and enhance the collaboration among scientists, physicians, and other clinical investigators.

E. FUTURE WITHOUT THE PROPOSED ACTIONS—2011

POLICE PROTECTION

As described above, future staffing levels of the police precinct serving the project area have not been established. Police staffing levels change over time in response to conditions in individual precincts and increased allocations are considered when increased demand becomes apparent. Increases in worker and residential populations created by new developments proposed for the area are not anticipated to place excessive burdens on police services. Because of the Police Department's commitment to maintaining adequate levels of police protection based on demonstrated need, conditions in the study area in the future without the proposed actions are anticipated to remain adequate.

FIRE PROTECTION

Fire protection services are expected to remain adequate in the future without the proposed actions by 2011. Although personnel and resources are allocated based on demonstrated need and are likely to change somewhat in the future, no significant changes in equipment or staffing are foreseen by the 2011 build year, according to the Fire Department's Chief of Operations.

MSKCC SERVICES

Aside from the two development projects involving MSKCC services planned in the future without the proposed actions by 2007 described above, there are no further development plans for the MSKCC campus in the future without the proposed actions by 2011. Without the proposed actions, it is assumed that the campus of MSKCC and the structures on the north block would remain as they are. Therefore, MSKCC would be constrained in its continued development by the limitations of its existing buildings.

F. FUTURE WITH THE PROPOSED ACTIONS—2011

POLICE PROTECTION

The proposed project is expected result in a net increase in workers over those who could occupy the existing buildings on the MSKCC campus in the future without the proposed actions. This increase in the worker population can be expected to minimally increase the demands for police protection. Future allocations of police officers and other police personnel in the 19th Precinct would depend on the city's overall operating budget and the Police Department's internal distribution of resources. Typically, a commitment of resources would be based on demonstrated need and would not be made until operational statistics became available. Overall, the role of the Police Department in providing effective, efficient service is not expected to be adversely affected by the proposed actions.

In addition to the service offered by the 19th Precinct, MSKCC provides its own private security for MSKCC properties. With the proposed development, MSKCC would continue to provide security for all its buildings.

FIRE PROTECTION

According to the Fire Department's Bureau of Operations, the Fire Department would have sufficient resources to serve the anticipated increased level of activity and number of workers in the area. Overall, fire protection services are expected to remain adequate to meet the demands of the MSKCC campus and surrounding neighborhoods. Therefore, no adverse impacts to fire protection services are anticipated to result from the proposed actions.

MSKCC SERVICES

The proposed actions would support MSKCC's role as a significant community facility by allowing it to expand its research and diagnostic and treatment facilities and have adequately sized state-of-the-art inpatient rooms. The new diagnostic and treatment facilities would more than double the size of the current spaces, and would include enlarged clinical laboratories, and radiology facilities. Overall, these improvements to the MSKCC campus would enhance the institution's ability to provide care to its patients and to provide advances in cancer diagnosis and treatment for patients all over the country and the world. ❖

A. INTRODUCTION

This chapter evaluates the effect of the new users generated by the actions proposed by Memorial Sloan-Kettering Cancer Center (MSKCC) on open space resources in the surrounding area. The primary concern for open space is the potential effect of the new workers on passive open space and recreational resources in the surrounding area. This analysis evaluates the potential effect from both the proposed research building scheduled for completion by 2007, and the subsequent development in the rezoning area assumed to occur by 2011. Since publication of the DEIS, MSKCC has reduced the height of the proposed research building from 440 feet to 420 feet and removed the south block from the rezoning area. These changes reduce the effect of the proposed project on open space. In 2007, residents and a single worker associated with a potential expansion of a planned apartment building that would have been partially in the south block rezoning area, have been deducted from the potential open space users. In 2007, the proposed research building would cast shorter shadows. Together, these changes avoided the adverse impact in 2007 identified in the DEIS. At full buildout in 2011, there would be 508 fewer MSKCC employees using open space than were considered in the DEIS. Nevertheless, with the increased population and shadows from development on the main campus block in 2011, the analysis indicates that the proposed actions would have an adverse impact on open space. Those impacts would be unmitigable.

B. METHODOLOGY

The methodology for determining potential impacts on open space resources follows the guidelines in the *New York City Environmental Quality Review (CEQR) Technical Manual*. The first step is to define an appropriate study area in which publicly accessible recreational facilities could potentially be affected by the proposed actions. According to the New York City Department of City Planning (DCP), daytime employees generally use passive open spaces within walking distance, or ¼ mile, while residents will travel farther and use both passive and active open spaces. The proposed actions would increase the number of workers in the area and their demand for passive open space, but would decrease the number of MSKCC residential units and hence the residential population, thereby decreasing their demand for active open space. Therefore, this analysis focuses on passive open space resources within census tracts that fall at least 50 percent within a ¼-mile radius of the site. The study area is roughly bounded by East 74th Street to the north, East 59th Street to the south, Third Avenue to the west and the East River to the east (see Figure 5-1).

All publicly accessible facilities within the study area were inventoried to determine their character, accessibility, and acreage. For each facility, general features were identified as active or passive recreational spaces. Active facilities are open spaces that encourage vigorous activities, such as jogging, baseball, football, soccer basketball, handball, tennis, and children's active play (such as playground equipment). Passive facilities encourage relaxing activities such

as strolling, sitting, reading, sunbathing, and people watching. Some spaces, such as lawns, can be both active and passive recreation areas. The open space inventory also describes any changes planned for existing facilities and whether or not any new space will be added to the area.

Following the inventory of available facilities, potential open space users are identified based on census data. Open space user groups for this analysis include residents living in the area as well as the daytime worker population. Population estimates for this study area are based on census tracts that fall at least 50 percent within a ¼-mile radius of the site as recommended by the *CEQR Technical Manual*. The project-generated increase in the area's daytime population is considered to be the difference between the number of workers with and without the proposed actions.*

Next, the adequacy of open space in the study area is assessed quantitatively. The ratio of open space acreage to the study area population is compared with DCP guidelines. To determine the adequacy of open space resources for the worker (nonresidential daytime) population of a given area, DCP has established as a goal 0.15 acres of passive open space per 1,000 workers, or 0.65 acres of passive open space per 1,000 workers and residents. However, it is recognized that this goal is not feasible in many areas of the city, and does not constitute an impact threshold. Instead, it serves as a benchmark that represents an area well-served by open space.

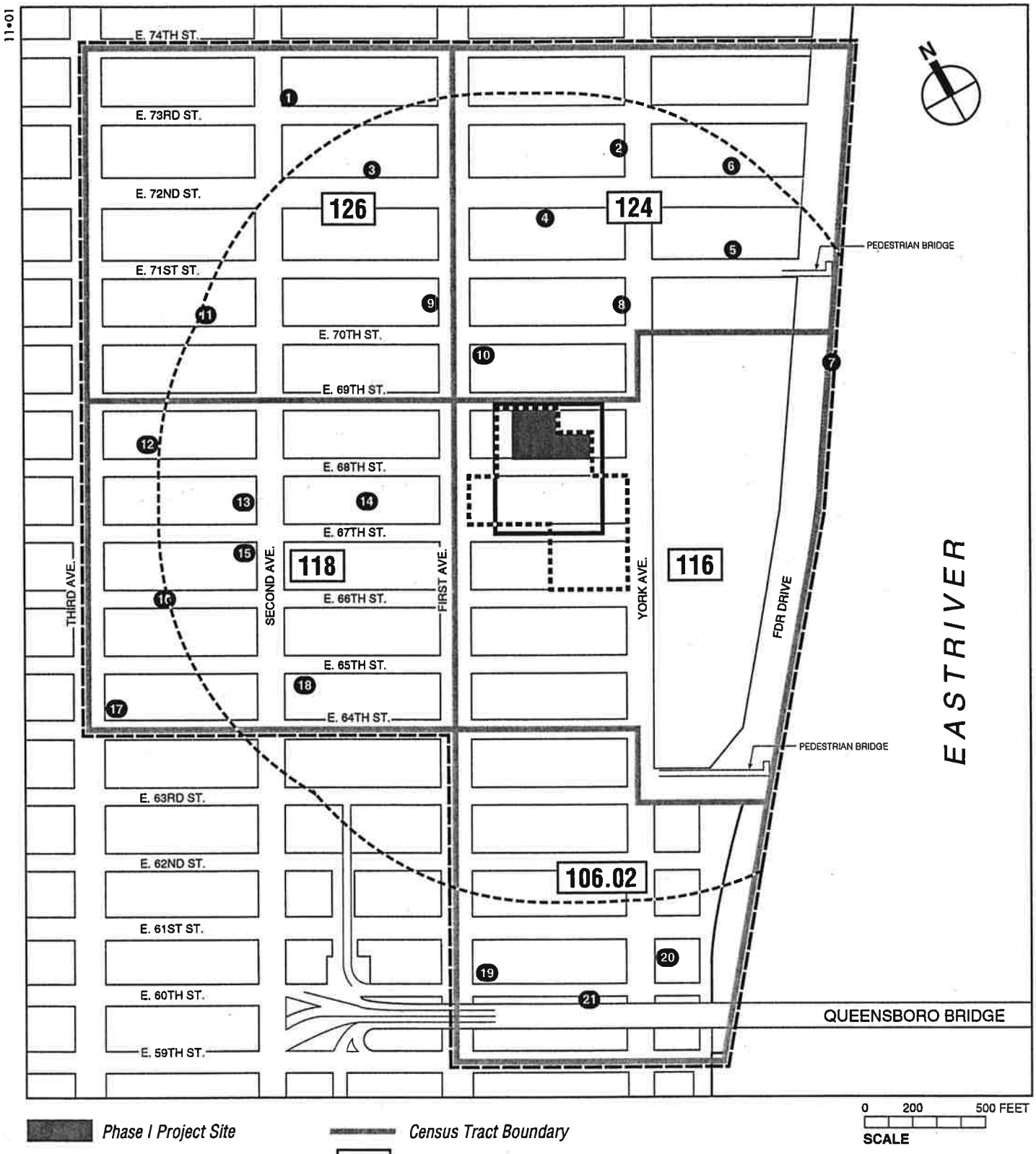
In addition to the quantitative analysis described above, qualitative factors are considered to determine the overall effect of a project on open space resources. Such factors can include a more subjective analysis of how the open space resources in the area meet the needs of a specific population, given its age composition or special needs. In some cases, it is important to examine nearby resources that lie just outside the open space study area.

C. EXISTING CONDITIONS

INVENTORY OF OPEN SPACE RESOURCES

The open space inventory is based on field surveys conducted in February 2001 as well as available data on public plazas. The study area contains 21 publicly accessible open spaces, totaling approximately 7.5 acres, of which 3.0 acres are for active pursuits and 4.4 acres are for passive recreation (see Table 5-1 and Figure 5-1). Sixteen of the 21 open spaces are outdoor plazas or pedestrian arcades, which generally provide passive amenities that include benches or chairs, and landscaped plantings such as trees, shrubs, and flowers. Other features may include sculpture or artwork, fountains, and bicycle racks. Several of the plazas include a public atrium or limited indoor space. The public plazas in the study area range from 0.03 to 0.87 acres in overall size, averaging approximately 0.17 acres and comprising 37.2 percent of the open space

* It is recognized that the MSKCC facilities to be developed would also bring new patients and their visitors to the study area. However, MSKCC patients, similar to those in other tertiary care facilities, are likely to be more seriously ill than patients in other hospital facilities. It is highly unlikely that visitors of inpatients would seek an open space in the area for passive or active recreation in conjunction with a hospital visit, many of which are likely to occur in the evening after daytime hours. Considering the outpatients, outpatients and their visitors are unlikely to use an open space in the area because they are coming for outpatient surgery, treatments, or clinic visits and are unlikely to have the time or the inclination to visit open space.



Phase I Project Site

Proposed LSCFD Area Boundary

1/4-Mile Perimeter

Rezoning Area Boundary

Study Area Boundary

Census Tract Boundary

118 Census Tract Number

7 Open Space Resource (see Table 5-1 for reference)

Open Space Resources

FIGURE 5-1

MEMORIAL SLOAN-KETTERING CANCER CENTER

Table 5-1

Inventory of Open Space and Recreational Facilities in the Study Area

Map Ref. No.	Name/Location	Owner/ Agency	Features	Accessibility	Passive (acres)	Total (acres)
1	300 East 74th Street Plaza	300 East 74 Owners Corp	Seating, landscaping	7:30AM to 7:30PM	0.137	0.137
2	Somerset Plaza/1365 York Avenue	East 72nd Realty LLC	Landscaping	24 hours	0.253	0.253
3	Fontaine Arcade & Plaza/353 East 72nd Street	Fontaine Owners Corp.	Plantings, seating	24 hours	0.055	0.055
4	Oxford Plaza/422 East 72nd Street	Resnik 72nd Street Assoc.	Seating, landscaping, fountain, lights	24 hours	0.109	0.109
5	Belaire Plaza/524 East 72nd Street	Condominium	Fountain, drinking fountain, seating, trees	8AM to 8PM	0.060	0.060
6	One East River Place Park/525 East 72nd Street	One East River Place Realty Co., LLC	Plantings, seating, trees, fountain, benches	7AM to 9PM summer, 7PM all other times	0.113	0.113
7	East River Esplanade	New York City Department of Parks and Recreation (DPR)	Walking/running path, benches, trees	24 hours	0.625	1.250
8	Plaza/York Avenue, between East 70th and 71st Streets	NA	Trees, seating	24 hours	0.092	0.092
9	Ira S. Robbins Plaza/341 East 70th Street	New York City Housing Authority (NYCHA)	Trees, benches	24 hours	0.035	0.035
10	Kingsley Plaza/400 East 70th Street	Condominium	Seating, plantings, trees, drinking fountain, bicycle rack	8AM to 8PM	0.072	0.072
11	211 East 70th Street	211 East 70th Street LP	Benches, trees, landscaping, fountain	9AM to Sunset	0.869	0.869
12	Trump Palace Plaza/200 East 69th Street	Condominium	Landscaping, drinking fountain, seating, bicycle rack, trees	8AM to 8PM	0.191	0.191
13	254 East 68th Street Plaza	254 East 68th Street, Inc.	Seating, plantings	24 hours	0.093	0.185
14	St. Catherine's Park	DPR	Benches, play equipment, swings, trees, landscaping, sculpture, restrooms, chess tables	Closes at dusk	0.692	1.383
15	265 East 66th Street Plaza	Townhouse Company, LLC	Seating, plantings	24 hours	0.173	0.173
16	East 66th Street Greenstreet/East 66th Street between 2nd and 3rd Avenues	DPR	Trees, walkway	24 hours	0.191	0.191
17	Bristol Plaza/304 East 65th Street	Condominium	Benches, landscaping, drinking fountain, bicycle parking, trees	8AM to 8PM (or dark)	0.177	0.177
18	Rio Plaza/304 East 65th Street	Bellmore Realty	Fountain, sculpture, seating, trees, drinking fountain	8AM to 8PM	0.093	0.093
19	Bridge Tower Place/410 East 60th Street	East 60th Street Associates, LP	Seating, landscaping, lighting, drinking fountain	24 hours	0.155	0.155
20	Twenty-Four Sycamores Park/York Avenue between 60th and 61st Streets	DPR	Benches, play equipment, swings, basketball courts, handball courts, trees, landscaping, restrooms, chess tables	Closes at dusk	0.249	0.622
21	Queensboro Oval	DPR	Ballfield May through September, enclosed tennis courts October through April	NA	0	1.239
Total					**4.434**	**7.455**

Note: Map reference numbers correspond to Figure 5-1.
Source: Field survey conducted by Allee King Rosen & Fleming, Inc., February 2001; Kayden, Jerald, "Privately Owned Public Space," John Wiley & Sons, Inc., 2000.

acreage within the study area. Four of the public plazas in the study area (300 East 74th Street Plaza, Somerset Plaza, Fontaine Arcade & Plaza, and 265 East 66th Street) totaling 0.6 acres of passive open space are of marginal value, as they generally lack satisfactory levels of design, amenities, or aesthetic appeal. Altogether, the 16 plazas in the study area have a total of approximately 2.7 acres of passive open space.

The five other open space resources in the study area are St. Catherine's Park, the East River Esplanade, a greenway along East 66th Street, Twenty-Four Sycamores Park, and the Queensboro Oval. St. Catherine's Park is the largest open space resource in the study area, located between East 67th and 68th Streets, across First Avenue from the main campus block of the MSKCC campus. The 1.4-acre park is managed by the New York City Department of Parks and Recreation and contains numerous amenities, including a wide array of play equipment for children, benches, picnic tables, landscaping, and sculptures (see Figure 5-2). About half of the park (or 0.7 acres) is used for passive recreation. The park is heavily used by children, their guardians, and daytime workers enjoying a break or having lunch.

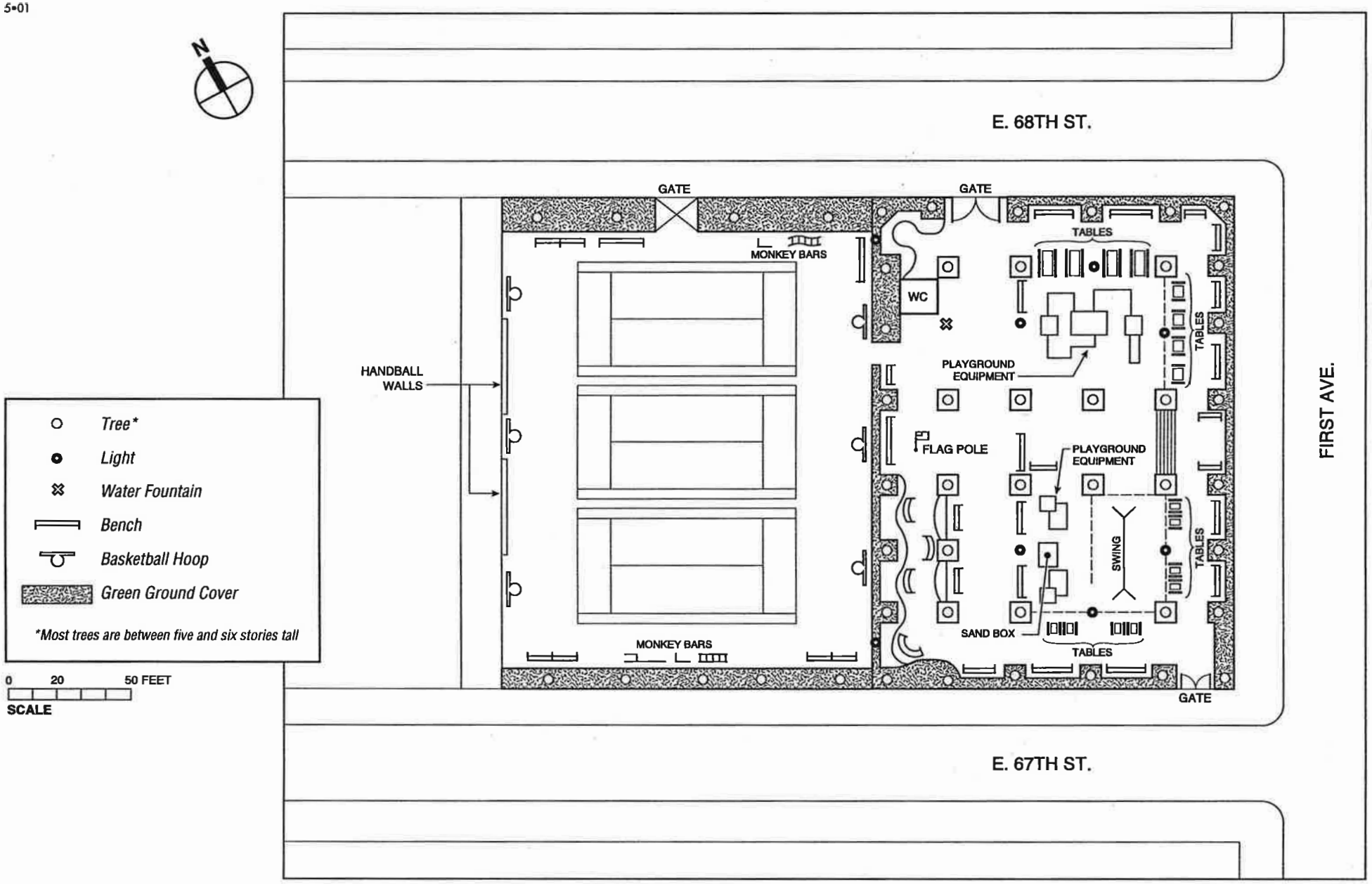
The second-largest open space resource within the study area is the East River Esplanade, located between the Franklin Delano Roosevelt (FDR) Drive and the East River. The esplanade runs north from East 63rd Street through the length of the study area and beyond. It is accessible within the study area via pedestrian bridges over the FDR drive at East 63rd and East 71st Streets. The esplanade provides a walking/jogging path for active recreation, benches, trees, and scenic views of the East River and Roosevelt Island.

OPEN SPACE USER POPULATION

According to 1990 census data, the 1990 daytime worker population (indicating the number of people employed within the five census tracts included in the study area) was 34,396. The study area's residential population was 38,811 (see Table 5-2). However, since 1990 there have been several residential and commercial developments in the study area that have increased both the study area's residential and daytime worker populations. To provide a more accurate estimate of the current populations within the study area, the 1990 census data was updated using recent US Census residential population estimates and New York State Department of Labor employment data. This more recent data captured Manhattan as a whole, and the rates of increase were applied to the 1990 census data to provide an estimate of the study area's current populations. Table 5-2 shows that the residential population in the study area increased by an estimated 2,051 residents, while the daytime worker population increased by approximately 628 workers between 1990 and 2001. Overall, the 2001 total population for workers and residents is estimated at 75,886.

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

Within the study area, with a worker population of 35,024 and 4.4 acres of passive open space, the open space ratio for daytime workers is approximately 0.13 acres per 1,000 workers, below the 0.15 acres per 1,000 workers guideline established by the *CEQR Technical Manual*. With a total combined residential and worker population of 75,886, the study area's passive open space ratio is approximately 0.06 acres per 1,000 workers and residents. This is significantly lower than the DCP goal of 0.65 acres of passive open space per 1,000 workers and residents, and indicates a deficiency in the amount of available passive recreational space for the population currently living and working within the study area.



Sketch Plan: St. Catherine's Park

FIGURE 5-2

Table 5-2
Existing Open Space User Population

Tract	Residential	Daytime Worker
106.02	3,649	2,167
116	3,913	16,047
118	8,379	4,569
124	9,973	6,705
126	12,897	4,908
1990 Total[1]	**38,811**	**34,396**
Estimated 1990-2001 Growth[2]	*2,051*	*628*
Estimated 2001 Total	**40,862**	**35,024**

Sources:
[1] U.S. Department of Commerce, Bureau of the Census, Census of Population and Housing, 1990; Population Division, New York City Department of City Planning. Workers at Place of Work.
[2] Growth estimates for residential population based on U.S. Bureau of the Census, Population Estimates Program's 1999 Manhattan estimates; growth estimates for daytime worker population based on New York State Department of Labor data on insured employment in Manhattan, 2000.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS—2007

OPEN SPACE RESOURCES

No significant changes to open space facilities are anticipated by 2007. Therefore, the overall acreage and condition of open space resources in the study area are expected to remain unchanged.

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

As described in Chapter 2, "Land Use, Zoning, and Public Policy," new developments expected to be completed by 2007 will add residents, workers, and visitors to the study area. Table 5-3 lists the planned development projects within the study area and the estimated increases in resident and daytime worker populations as a result of each planned project.

Altogether, these developments are expected to increase the residential population in the study area by a total of 1,202 residents, and the daytime worker population by 1,080 workers. As mentioned previously, the open space acreage in the study area is not expected to increase before 2007. The additional daytime worker population would decrease the nonresidential daytime passive open space ratio from 0.13 acres per 1,000 workers to 0.12 acres per 1,000 workers, while the overall passive open space ratio for residents and workers combined would decrease by less than 0.01 acres per 1,000 workers and residents. The increased workers and residents combined with a static open space supply will slightly exacerbate the shortage of passive open space within the study area.

Table 5-3
Projects Expected to be Completed by 2007

Project/Address	Project-generated populations	
	Residents	Daytime Workers
MSKCC Outpatient Facility/359 East 68th Street	0	246
MSKCC Infill Project/between East 67th and 68th Streets and York and First Avenues	0	223
Hospital for Special Surgery Expansion/East 71st Street at the FDR Drive	0	40
Rockefeller University Lab Building/1230 York Avenue at East 68th Street	0	460
1234 York Avenue	324	73
420-34 East 61st Street between York and First Avenues	431	20
1117-1125 York Avenue between 60th and 61st Streets	447	18
Total study area	**1,202**	**1,080**

Note: Employment estimates assume 1 worker per 600 square feet of retail space, 1 worker per 250 square feet of commercial and institutional space, and, for building service and maintenance, 1 employee per 15 dwelling units or 30,000 square feet of commercial/institutional space. Residential units assume 1.62 persons per unit. This analysis takes a conservative approach in assuming that all employment generated by MSKCC's planned development projects would be new to the study area. It is likely that many of the employees within these facilities would be located from other MSKCC buildings in the study area and would, therefore, represent no net gain in employment.

Source: Allee King Rosen & Fleming, Inc., March 2001; employee estimates for Hospital for Special Surgery expansion from Hospital for Special Surgery, April 2001; employee estimates for Rockefeller University Lab Building from Rockefeller University, April 2001.

E. THE FUTURE WITH THE PROPOSED ACTIONS—2007

The proposed research building is expected to be complete by 2007. The following section analyzes its potential impact on passive open space resources in the study area, and any additional residential expansion that could occur as a result of the proposed actions.

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

The quantitative effects of the proposed research building on open space resources is summarized in Table 5-4. The new building would add an estimated 548 daytime workers to the area, while residential and community facility expansion could add up to 97 workers to the area, bringing the total daytime worker population to about 36,750. Based on the available data, there would be a 1.8 percent decrease in the worker open space ratio, or a decrease of less than 0.01 acres of passive open space per 1,000 workers. The residential expansions that could result from the proposed rezoning would add approximately 53 residents to the study area, bringing the residential population to about 42,117. There would be a 0.9 percent decrease in the overall passive open space ratio, or a decrease of less than 0.01 acres of passive open space per 1,000 workers. The shorter proposed research building (420 feet tall) would cast shorter shadows on St. Catherine's Park (see Chapter 6, "Shadows"). The incremental shadow would be off the park by mid-morning. Therefore, for users as a whole, the proposed actions are not likely to have a significant effect on passive open space in the study area in 2007.

Table 5-4
Passive Open Space Resources:
Summary of Existing, No-Build, and Build Conditions

	Existing Conditions	2007 No Build Conditions	2007 With Phase 1 Development	2011 No Build Conditions	2011 With Full Development
Study Area Population					
Residents	40,862	42,064*	42,117	42,064*	42,117
Workers	35,024	36,104**	36,750	36,104**	37,404
Total Population	75,886	78,168	78,867	78,168	79,521
Passive Open Space Acreage	4.4 acres	4.4 acres	4.4 acres	4.4 acres	4.4 acres
Worker Open Space Ratio (acres/daytime workers)	0.13/1,000	0.12/1,000	0.12/1,000	0.12/1,000	0.12/1,000
Passive Open Space Ratio (acres/residents and workers)	0.06/1,000	0.06/1,000	0.06/1,000	0.06/1,000	0.06/1,000

Notes:
* Includes residents from other projects anticipated by 2007.
** Includes workers from other projects anticipated by 2007.

F. THE FUTURE WITHOUT THE PROPOSED ACTIONS—2011

OPEN SPACE RESOURCES

No significant changes to open space facilities are anticipated by 2011. Therefore, the overall acreage and condition of open space resources in the study area are expected to remain unchanged.

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

As described above, there are several projects expected to be completed by 2007 that will add residents, workers, and visitors to the study area. There are no known development projects expected between 2007 and 2011 in the study area, hence the adequacy of open space resources in the future without the proposed project in 2011 will be the same as that in the future without the proposed project in 2007 (described above and shown in Table 5-4).

G. THE FUTURE WITH THE PROPOSED ACTIONS—2011

The proposed development anticipated as a result of the proposed actions would generate approximately 1,299 new daytime workers in the study area. As described above, the proposed research building scheduled for completion by 2007 would generate an estimated net increase of 548 workers, while possible development on non-MSKCC property could add 97 workers. Development on the main campus block would introduce an estimated 654 new employees. Overall, the estimated 2011 total population for workers and residents is estimated at 79,521.

ANALYSIS OF THE ADEQUACY OF OPEN SPACE RESOURCES

The quantitative effects of the proposed actions on open space resources in 2011 is summarized in Table 5-4. Comparing the effect of the full development with the no-build scenario for 2011, the overall development anticipated as a result of the proposed actions would decrease the worker open space ratio by 3.5 percent, a decrease of less than 0.01 acres of passive open space per 1,000 workers. There would be a 1.7 percent decrease in the overall passive open space ratio, a decrease of less than 0.01 acres per 1,000 residents and workers.

The quantitative analysis indicates that the proposed actions could have a significant adverse effect on daytime workers' use of passive open space in the study area. However, several factors indicate that the passive open space in the study area could adequately serve the needs of the nonresident population in the future with the proposed actions. The quantitative analysis does not factor any indoor private recreation amenities available to MSKCC employees, which would help to offset demand on publicly accessible passive open space resources within the study area. Other major medical institutions in the area also contain private recreation facilities for employees. For example, the Rockefeller University campus provides Rockefeller University students and employees ample private active and passive open space, which decreases their demand on publicly accessible open space in the study area.

The new workers' demand for passive open space also would be mitigated by several attractive open space opportunities that lie just outside the ¼-mile study area. These include John Jay Park, a 3.5-acre DPR property located between East 76th and 78th Streets, York Avenue and the FDR Drive. The park contains approximately 1.2 acres of passive space and 2.3 acres of active space, and includes playground equipment, a swimming pool, courts, and fields. Additional passive open space is provided at a number of public plazas located in the blocks immediately north and east of the study area. In addition, the East River Esplanade (described above) continues north and south of the study area, providing ample space for relaxing and walking for study area employees and residents.

Nevertheless, the decreases in passive open space ratios along with the increased shadows on St. Catherine's Park that would result from the proposed actions indicate an adverse impact on open space resources in the study area. As described in Chapter 6, "Shadows," the proposed actions would increase shadows on St. Catherine's Park through the morning from spring to fall. This could potentially decrease passive open space users' enjoyment of the park. The impact would be unmitigable, as discussed in Chapter 19, "Unavoidable Adverse Impacts." ❖

A. INTRODUCTION

Both the proposed research building and the potential development on the main block of the Memorial Sloan-Kettering Cancer Center (MSKCC) campus would increase building heights and increase shadows on nearby public open spaces. Since publication of the DEIS, MSKCC has amended the proposed actions to reduce the height of the proposed research building to 420 feet to the top of the mechanical parapet (from 440 feet) and to remove the south block from the rezoning area. The reduction in the height of the research building has reduced the early morning shadows on St. Catherine's Park. As the building in the south block assumed in the DEIS when that block was to be rezoned did not create any significant shadow increases, its removal did not affect this analysis. On the main campus block this analysis assumes 290,000 square feet of floor area generated by the rezoning as well as 100,000 square feet generated by rezoning on the north block and transferred to main campus block. This is the same as the DEIS analysis for the main campus block. This chapter considers the potential impact of new shadows from the buildings on the north and main campus blocks.* Potential impacts on open space due to shadows are discussed in Chapter 5, "Open Space and Recreational Resources;" potential impacts on historic resources are discussed in Chapter 7, "Historic Resources."

Following the guidelines of the *City Environmental Quality Review (CEQR) Technical Manual,* this shadow analysis considers shadows for four representative days of the year: March 21/September 21, the equinoxes; May 6, the midpoint between the summer solstice and the equinox (and equivalent to August 6); June 21, the summer solstice and the longest day of the year; and December 21, the winter solstice and shortest day of the year. The shadow diagrams distinguish between No Action shadows (assuming the existing buildings remain in place) and the shadow increment created by the proposed project. In identifying potential effects, CEQR focuses on uses and users of the open space, landscaping and vegetation, and, if there are historic resources, features or details that are both sunlight-dependent and make the resource significant. It should also be noted that since CEQR methodology does not consider shadows and incremental increases in shadows within 1½ hours of sunrise or sunset to be significant, the analysis period is between 1½ hours after sunrise and 1½ hours before sunset. This is reflected in the analysis periods for each season in the presentation.

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* A site on East 69th Street east of the proposed research building would also have additional floor area available as a result of the rezoning. It is an existing residential building, and there are no known plans for the redevelopment of this site. The nearest open space to this site is the plaza at the northwest corner of York Avenue and 70th Street. Immediately south of that plaza across 70th Street and between the plaza and the site on East 69th Street is a large parking lot which is likely to be developed in the future. It is anticipated that any building on the parking lot site would block the shadows from the site on 69th Street should additional floor area be built there. Therefore, it is unlikely that rezoning this lot would have any shadow impacts. Because of this and the highly speculative nature of what might be built on this site an analysis was not undertaken for this site.

As described in the diagrams and description below, there would be an increase in shadows in the spring, summer, and fall on St. Catherine's Park due to the proposed research building and overall development of the campus. The shadow increment from the research building to be completed by 2007 would be on the Park only in the early morning and would be off the Park by 9:30 AM EST (10:30 AM DST) at the latest, which occurs in summer when shade is usually most appreciated. Assuming development on the main campus block in addition to the research building in the 2011 analysis year, there would be additional shadow on the park until 11 AM EST (12 noon DST) in the spring/fall. Shadow increments on other open spaces would be insignificant.

In addition, one potential historic resource, the Church of St. Catherine of Siena, would have less light on its east facade in the morning at all times of the year due to the adjacency of the proposed research building.

B. RESOURCES OF CONCERN

To identify resources of concern, shadow length is first considered. Based on *CEQR Technical Manual* shadow length factors, a building envelope approximately 420 feet tall (the proposed research building) would have a potential maximum shadow length of about 1,794 feet to the west, about 1,759 feet the east, and about 870 feet to the north. However, in such a densely developed area, the length of any new shadow is limited by the structures in its path, some of which may be quite tall.

OPEN SPACES

There are a number of open spaces near the project site. Many would not be affected due to the presence of tall or relatively tall intervening buildings. These include 265 East 66th Street, 254 East 68th Street, 200 East 69th Street (Trump Palace), 211 East 70th Street, 440 East 70th Street (Kingsley), 341 East 70th Street, 400 East 71st Street (Windsor), 353 East 72nd Street (Fontaine), 422 East 72nd Street (Oxford), 1313 York Avenue, 1365 York Avenue (Somerset), 1377 York Avenue, 524 East 72nd Street (Bellaire), and 525 East 72nd Street (One East River Place).

To the west, 265 East 66th Street is on Second Avenue between 66th and 67th Street. Julia Richman High School as well as a 16-story building on the opposite side of Second Avenue, would block the shadow from the proposed research building. 254 East 68th Street is on Second Avenue between 67th and 68th Streets. Julia Richman High School, as well as a 16-story building and a 15-story building on the north side of 68th Street between First and Second Avenues, block the shadow path to this plaza. The shadow path to the plaza at Trump Tower is blocked by the same two buildings on the north side of 68th Street as well as a 19-story building on Second Avenue between 68th and 69th Streets. The path to the plaza at 211 East 70th Street between Second and Third Avenue is blocked by several intervening 16- and 17-story buildings. On the southeast corner of 70th Street and First Avenue, 440 East 70th Street stands between its plaza and the proposed research building. At 40 stories tall, it also stands between the research building and the plazas of 341 East 70th Street and 400 East 71st Street. The shadow path to the plaza at 355 East 72nd street is blocked by a 34-story building on the west side of First Avenue between 71st and 72nd Streets. The plaza at 422 East 72nd Street is on the north side of its own 44-story building. The path to the plaza of the building on York Avenue between 70th and 71st Streets is partially blocked by a 15-story intervening building and by its own building. Although it is likely to be totally blocked by any building that is built on the parking lot to its immediate

south, the effect of the shadow increment due to the research building on this plaza is considered below. A shadow falling toward the plazas on York Avenue between 72nd and 74th Streets would be blocked by intervening 34- and 16-story buildings. The complex of buildings of the New York Hospital-Cornell Medical Center would block the shadow path to plazas at 524 East 72nd Street (actually on 71st Street) and 525 East 72nd Street.

However, there are two large, well-used open spaces in the immediate area of the MSKCC campus: St. Catherine's Park immediately across First Avenue from the center block of the campus, and the playground of P.S. 183 immediately west of the Rockefeller Laboratory Building. The playground is south of the shadow sweep from the potential new building on the main campus block. Therefore, the resource of concern is St. Catherine's Park. Also considered is the southeast corner of the plaza on York Avenue between 70th and 71st Streets, that would also experience some increase in late afternoon shadow due to the proposed research building.

As described in Chapter 5, "Open Space and Recreational Facilities," St. Catherine's Park is a 1.4-acre open space containing a wide array of play equipment for children, benches, picnic tables, landscaping, and sculptures in its eastern half. This part of the park is heavily used by children, their guardians, and daytime workers enjoying a break or having lunch. On the western half of the open space are ball courts used by older children as well as grown-ups. The plaza area on York Avenue surrounds a building that rises to a total of 36 stories. However, the lower wing on the southeast corner of the building is only 3 stories tall. At the southeast corner of this low building there is access to the lower levels of the building via a descending stairway across the plaza area. North of the stair there is a paved area with planters and seating, and north of that is a covered entranceway.

HISTORIC RESOURCES

As described in Chapter 7, "Historic Resources," the area surrounding the project site has a number of historic resources. All of these resources exist in an environment that has become more densely developed over the years. Based on the *CEQR Technical Manual*, resources to be considered would have significant sunlight-dependent features such as stained glass windows or historic landscapes. None of the designated or officially recognized resources contain sunlight-dependent features. Although the First Magyar Reformed Church has windows on its main facade, since this facade faces north, these windows cannot be considered sunlight-dependent.

In addition to officially designated historic resources, the Church of St. Catherine of Sienna which sits on part of the project site on the north block immediately adjacent to the research building, has been identified by the staff of the Landmarks Preservation Commission as being potentially eligible for listing on the State and National Registers of Historic Places. Due to its proximity to the taller portion of the research building, its east facade would be in more shadow in the morning on all days of the year. The Church is located in the midblock with a row of 6-story buildings along its west side, which have always limited light to its western windows. On the east side of the church, the 3-story rectory as well as the existing Kettering Laboratory Building block some light to the southern portion of the east facade. Until it was demolished in recent years, a 5-story church school stood on 69th Street blocking light to the north windows on the east facade.

ASSESSMENT OF SHADOW INCREMENTS—2007

In 2007 the proposed research building on the north block of the MSKCC campus would be built.

MARCH 21/SEPTEMBER 21—ANALYSIS PERIOD: 7:36 AM TO 4:29 PM EST (8:36 AM to 5:29 AM DST)

On the equinoxes (March 21 and September 21), the shadow increment of the proposed research building on the north block would increase the shadow falling on St. Catherine's Park in the early morning. At 7:36 AM on March 21, the beginning of the analysis period, the shadow would cover less than a third of the park (see Figure 6-1). The largest part of this shadow would fall on the ball courts on the western half of the open space. By 8:15 AM, well before mid-morning, the new shadow would move off the park.

There would be a small increase in the shadow on the York Avenue plaza between 2:45 PM and the end of the analysis period at 4:29 PM.

There would be increased shadows on the east windows of St. Catherine's Church from the beginning of the analysis period until 1:15 PM.

MAY 6/AUGUST 6—ANALYSIS PERIOD: 6:27 AM TO 5:18 PM EST (7:24 AM to 6:18 PM DST)

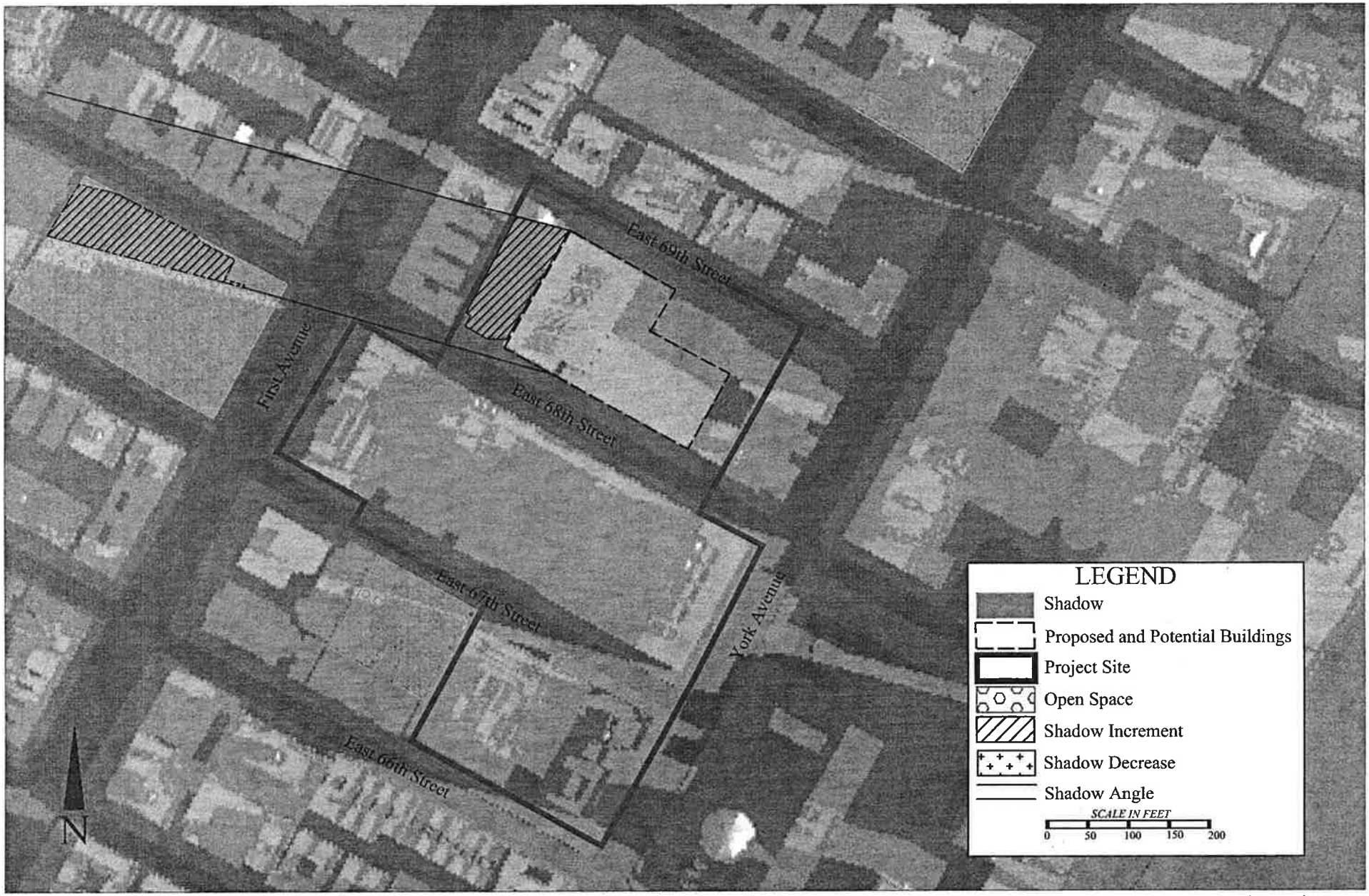
In between the equinoxes and the summer solstice, May 6 or August 6, there would be an increase in shadows on St. Catherine's Park from 6:27 AM to 9:00 AM. At 7:15 AM (8:15 AM Daylight Savings Time [DST]), the shadow would cover a wide swath of the open space (see Figure 6-2). Approximately half the shadow would fall on the ball courts, while the other half would fall on the sitting area and play area for younger children. By 8:45 AM EST (9:45 AM DST) the shadow would cover only a narrow strip of the park along 68th Street (see Figure 6-3). This area along the eastern edge of the park has a flower bed and walkway with benches and tables under tall shade trees that would have leaves in May and August. By 9:00 AM EST (10 AM DST), the shadow of the proposed research building would have left the park, and there would be no new shadow on the park.

There would not be any increase in the shadow on the York Avenue plaza in this season.

There would be increased shadows on the east windows of St. Catherine's Church from the beginning of the analysis period until 1:30 PM EST (2:30 PM DST).

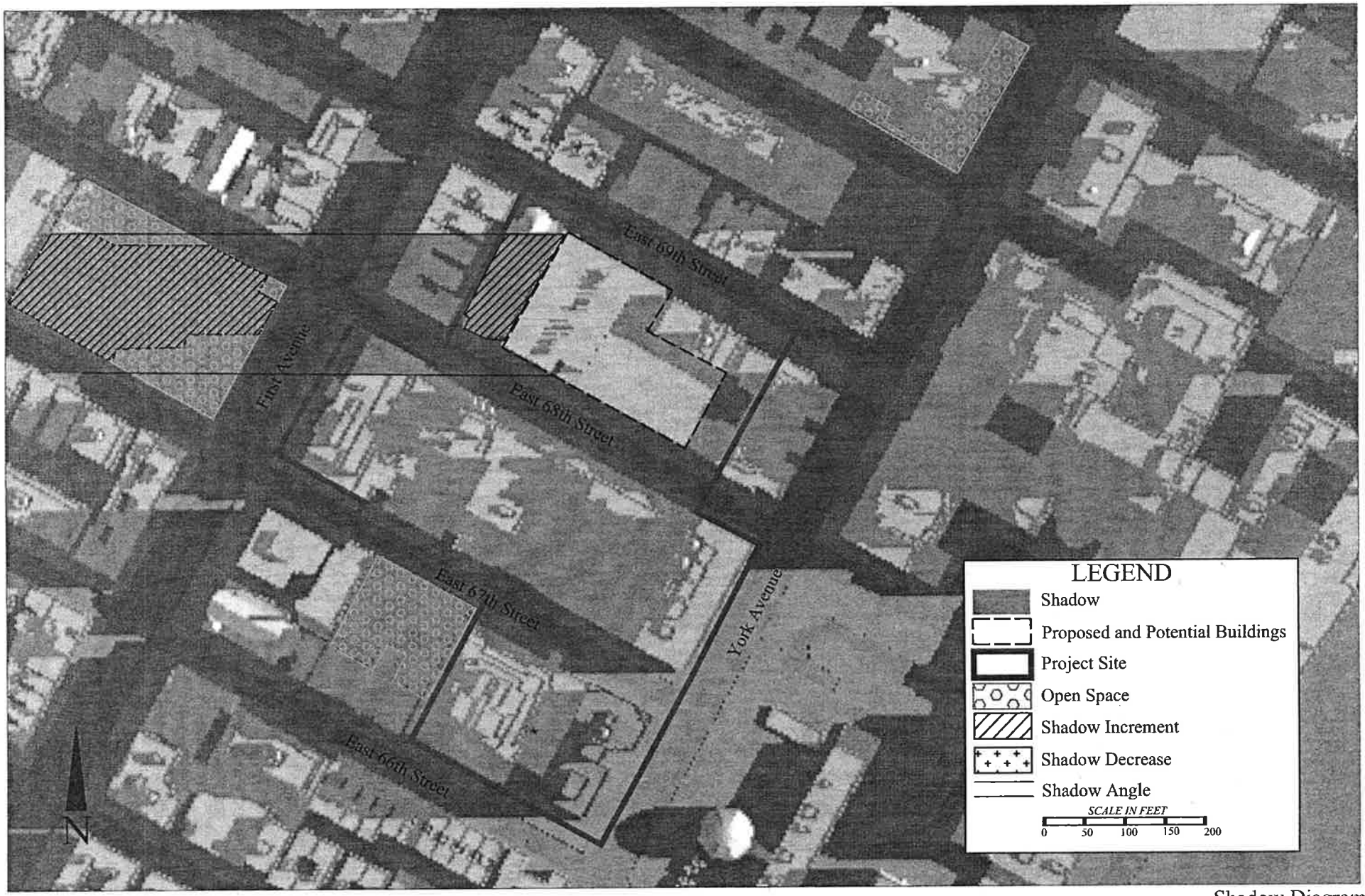
JUNE 21—ANALYSIS PERIOD: 5:57 AM TO 6:01 PM EST (6:57 AM to 7:01 PM DST)

On the summer solstice shadows are shortest, and the proposed research building would increase the shadows falling on St. Catherine's Park from the beginning of the analysis period at 5:57 AM to 9:30 AM EST (6:57 AM to 10:30 AM DST). At 7:45 AM EST (8:45 AM DST) the incremental shadow would cover about half the park (see Figure 6-4), falling largely on the play area for smaller children and the sitting area. However, by 8:30 AM EST (9:30 AM DST) the shadow would only cover a small square at the northeast corner of the park (see Figure 6-5). The shadow would fall on flower beds, the north play area, the water element between the north and south play areas, benches, and tables, all of which would be under leafy, canopy of shade trees. The increment on the park would continue to become smaller and be off the park by mid-morning. There would be no new shadow on the park at midday.



Shadow Diagram
March / September 21 - 7:36 AM EST
Figure 6 - 1

MEMORIAL SLOAN-KETTERING
CANCER CENTER



Shadow Diagram
May / August 6 - 7:15 AM EST (8:15 AM DST)

Figure 6 - 2

MEMORIAL SLOAN-KETTERING
CANCER CENTER

Shadow Diagram
May 6 - 8:45 AM EST (9:45 AM DST)
Figure 6-3

Shadow Diagram
June 21 - 7:45 AM EST (8:45 AM DST)
Figure 6-4

MEMORIAL SLOAN-KETTERING
CANCER CENTER

Shadow Diagram
June 21 - 8:30 AM EST (9:30 AM DST)
Figure 6-5

MEMORIAL SLOAN-KETTERING
CANCER CENTER

There would not be any increase in the shadow on the York Avenue plaza in this season.

There would be increased shadows on the east windows of St. Catherine's Church from the beginning of the analysis period until 1:30 PM EST (2:30 PM DST).

DECEMBER 21—ANALYSIS PERIOD: 8:51 AM TO 2:53 PM EST

On the shortest day of the year when shadows are longest, there would be no increase in shadows on St. Catherine's Park due to the research building because the angle of the research building's shadow would fall too far north even at the beginning of the analysis period to affect the park.

The research building would create a small increase in the shadow on the southeast corner of the York Avenue plaza at the end of the analysis period for 8 minutes before 2:53 PM.

There would be increased shadows on the east windows of St. Catherine's Church from the beginning of the analysis period until early afternoon.

ASSESSMENT OF SHADOW INCREMENTS—2011

In 2011 full development is assumed on the main campus block of MSKCC in addition to the proposed research building on the north block.

MARCH 21/SEPTEMBER 21—ANALYSIS PERIOD: 7:36 AM TO 4:29 PM EST (8:36 AM to 5:29 PM DST)

On March 21 and September 21, the shadow increment of the proposed research building and the potential development on the main campus block of MSKCC would cast shadows on St. Catherine's Park from 7:36 AM EST (8:36 AM DST) to 11:00 AM EST (12 noon DST). In addition to the shadow from the proposed research building, described above, there would be additional shadow from the tower that would rise in the midst of the main campus block. However, there would also be a decrease in the shadow, as the base of the new building fronting on First Avenue would be 5 stories (85 feet) tall, as opposed to the existing structure, which is 12 stories (approximately 187 feet) tall (see Figure 6-6). The decrease would almost be equal to the increase. At 8:45 AM EST the increment would stretch across the ball courts to the school on the west side of the block (see Figure 6-7). At the same time there would be less shadow on the play area and sitting area portion of the park. At 10:30 AM EST the increase would be about the same size as the decrease (see Figure 6-8). By midday there would be no new shadow on this park from MSKCC buildings.

In the afternoon, the research building would cast a shadow on the York Avenue plaza, as described above.

There would be increased shadows on the east windows of St. Catherine's Church as described in 2007.

MAY 6/AUGUST 6—ANALYSIS PERIOD: 6:27 AM TO 5:18 PM EST (7:27 AM to 6:18 PM DST)

On May 6 or August 6, there would be an increase in shadows on St. Catherine's Park and on the east windows of St. Catherine's Church from the research building, as described above. The increase in shadow from the tower on the main campus block would cover a swath of the park

near 67th Street at 8:45 AM EST (9:45 AM DST) (see Figure 6-9). It would fall partially on the ball courts and partially on the play area and sitting area. At 9:30 AM, there would be a new shadow from First Avenue into the middle of the park (see Figure 6-10). It would fall across part of the sitting area, the central water element and part of both the north and the south play areas. In May and August, much of this area would already be in shade from the tall trees in this part of the park. The duration of the increment from the overall project, including proposed and potential buildings, would be about 4 hours, from 6:27 AM to 10:30 AM EST. Before midday there would be no new shadow on this park from MSKCC buildings.

There would be no increase in shadows on the York Avenue Plaza.

JUNE 21—ANALYSIS PERIOD: 5:57 AM TO 6:01 PM EST (6:57 AM to 7:01 PM DST)

On June 21 there would be an increase in shadows on St. Catherine's Park and on the east windows of St. Catherine's Church from the research building in the north block, as described above. At 8:30 AM EST (9:30 AM DST) the increase in shadow on St. Catherine's Park due to the tower on the main campus block would fall on a small portion of the park along 67th Street. There would also be a decrease in shadow due to the shorter base of the building on First Avenue (see Figure 6-11). At 9:15 AM EST (10:15 AM DST) the corner of the park at First Avenue and 67th Street would be in shadow (see Figure 6-12). This area includes seating, tables, swings, and a play area for smaller children. The duration of the overall project increment on the park would be about 4 hours, from 5:57 AM to 10:00 AM EST (6:57 AM to 11:00 AM DST). By 11 AM DST, there would be no new shadows from MSKCC buildings on this park.

There would be no increase in shadows on the York Avenue Plaza.

DECEMBER 21—ANALYSIS PERIOD: 8:51 AM TO 2:53 PM

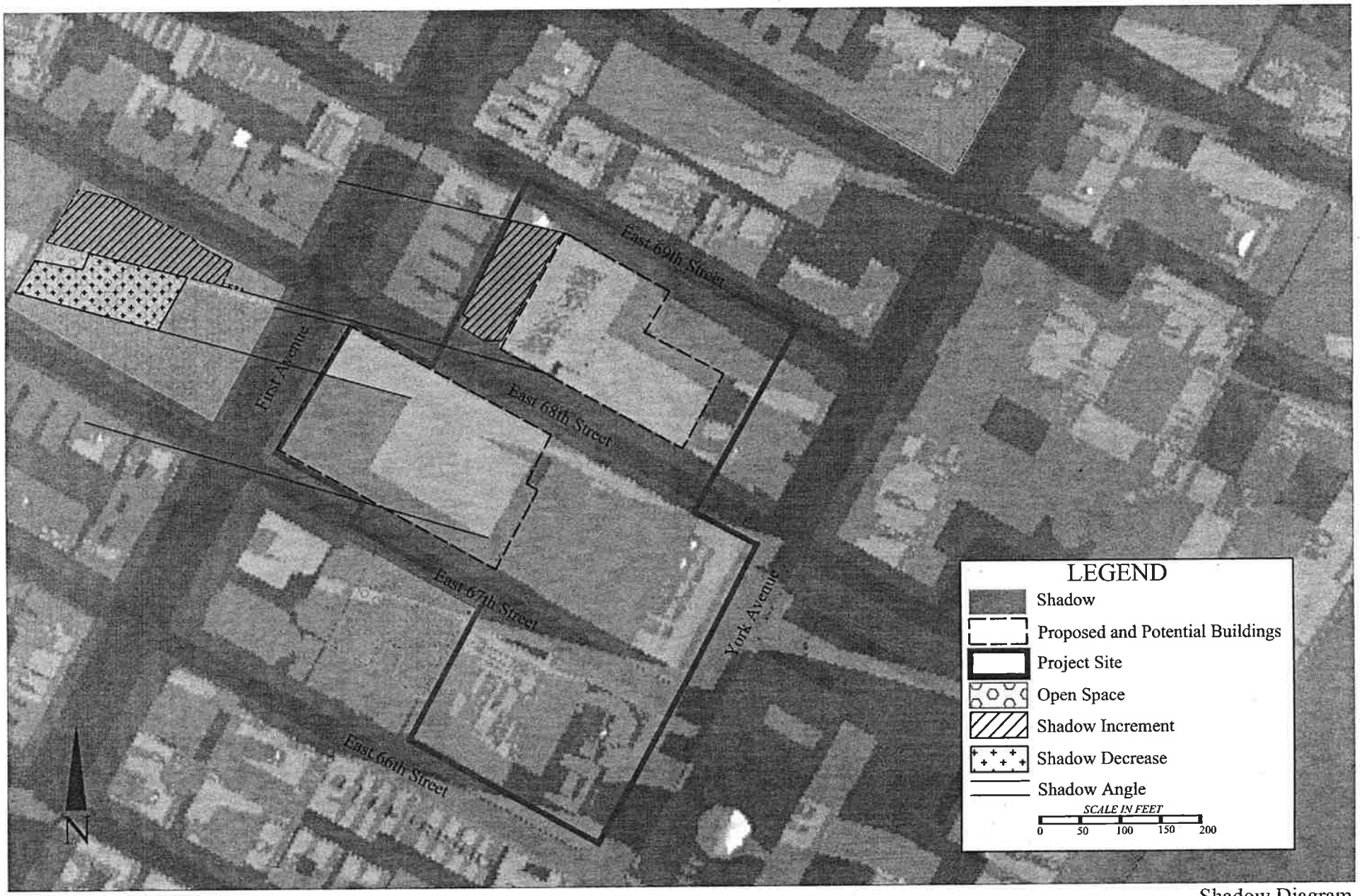
On December 21, there would be no new shadow on this park from MSKCC buildings.

In the afternoon, the research building would cast shadow on the York Avenue plaza for less than 10 minutes at the end of the analysis period, as described above.

CONCLUSION

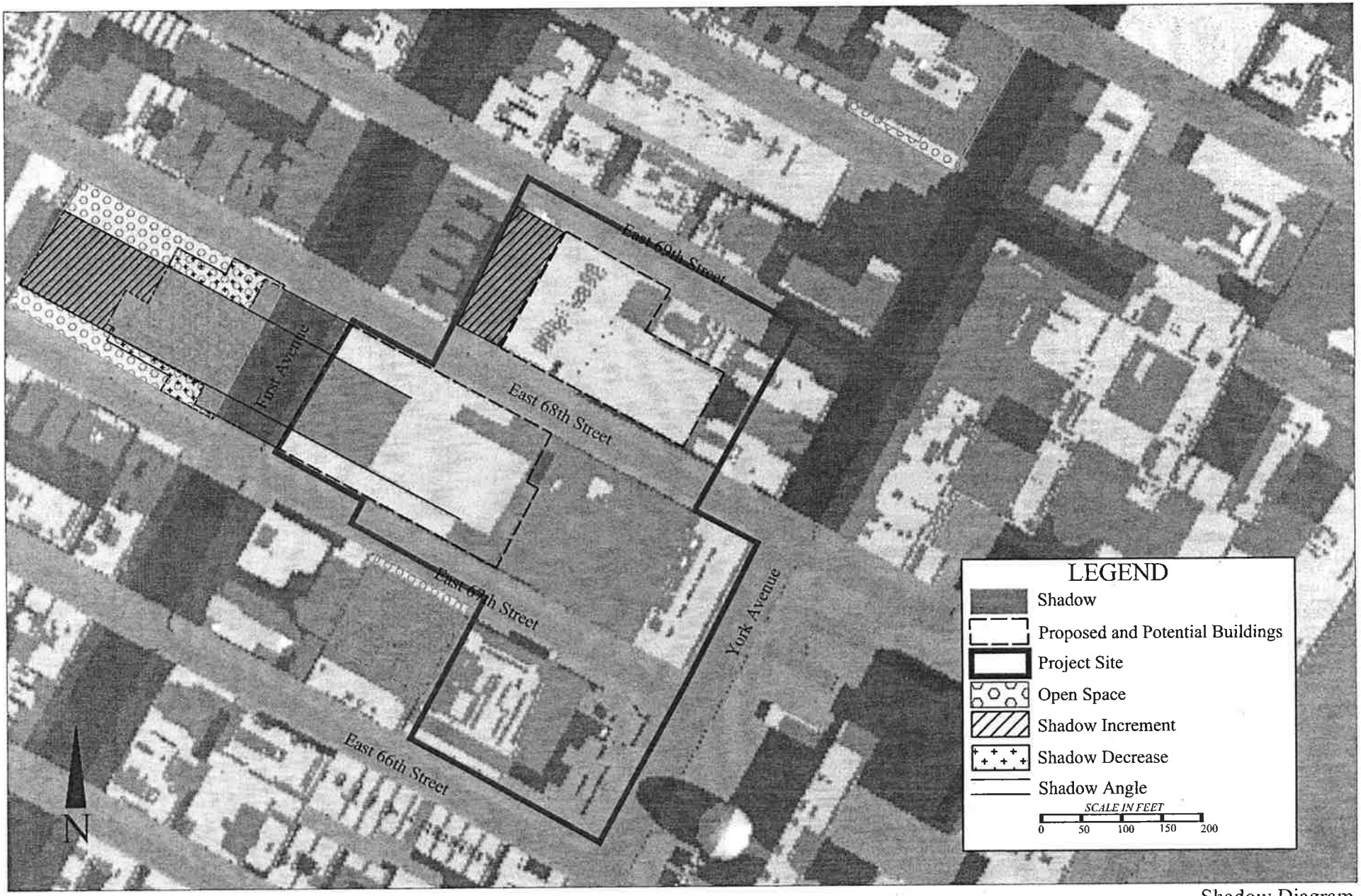
Due to its height (420 feet to the top of the mechanical parapet), the proposed research building would increase the shadows on St. Catherine's Park in the early morning. At their greatest extent these increases would be substantial (see Figures 6-2 and 6-4). However, at most times the increase would be much smaller (see Figures 6-3 and 6-5). Further, the increase would be of limited duration, and by 9:30 AM EST (10:30 AM DST) the shadow would be off the park. While a large part of the park is in shadow at the beginning of the analysis period on all analysis days (except December when there is no increment), this is very early in the morning when the park is much less likely to be used for passive recreation for which sunlight would be most appreciated. Later in the morning, when more visitors would be expected, the shadow increment would be reduced or removed. Further, in warmer months leaves on the tall trees of the park already cast ample shade and under the trees, the increase in shadow would be far less noticeable.

The incremental increase in shadows on the York Avenue plaza is not considered significant because it would only fall on a small portion of the plaza, and would last until the end of the



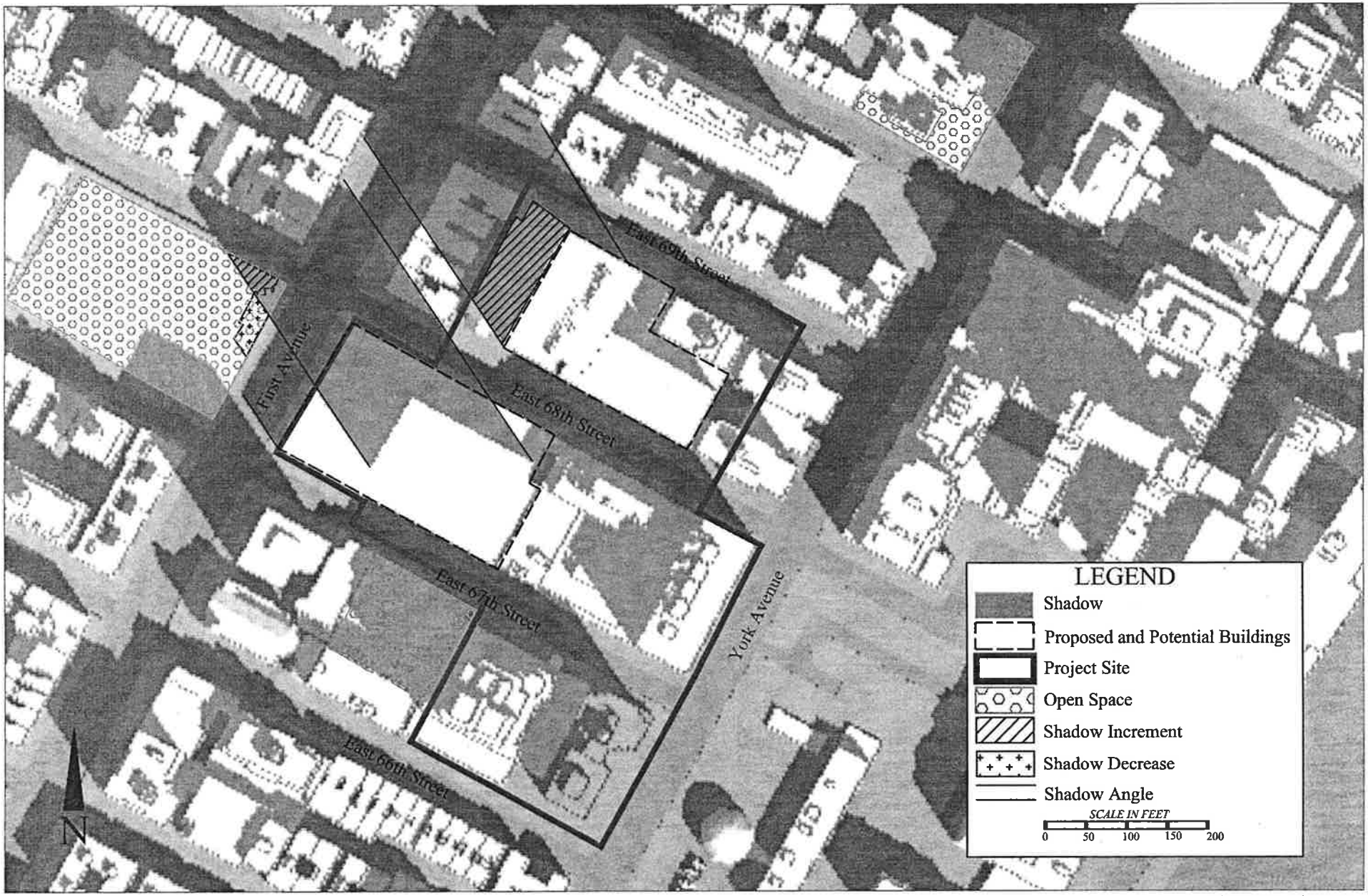
Shadow Diagram
March / September 21 - 7:36 AM EST
Figure 6 - 6

MEMORIAL SLOAN-KETTERING
CANCER CENTER



Shadow Diagram
March / September 21 - 8:45 AM EST
Figure 6 - 7

MEMORIAL SLOAN-KETTERING
CANCER CENTER

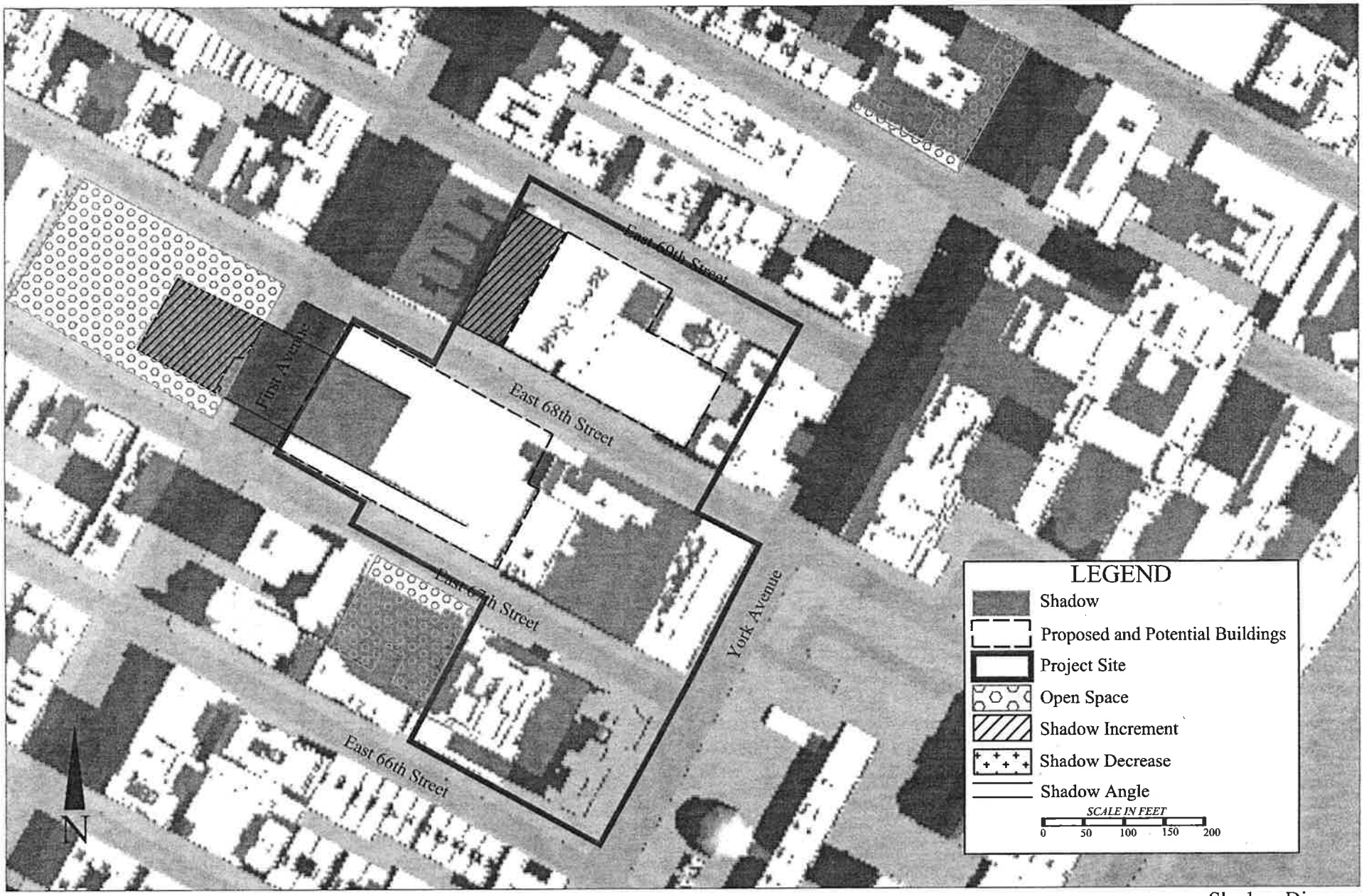


Shadow Diagram
March / September 21 - 10:00 AM EST
Figure 6-8

MEMORIAL SLOAN-KETTERING
CANCER CENTER

Shadow Diagram
May 6 - 8:45 AM EST (9:45 AM DST)
Figure 6-9

MEMORIAL SLOAN-KETTERING
CANCER CENTER



Shadow Diagram
May / August 6 - 9:30 AM EST (10:30 AM DST)
Figure 6 - 10

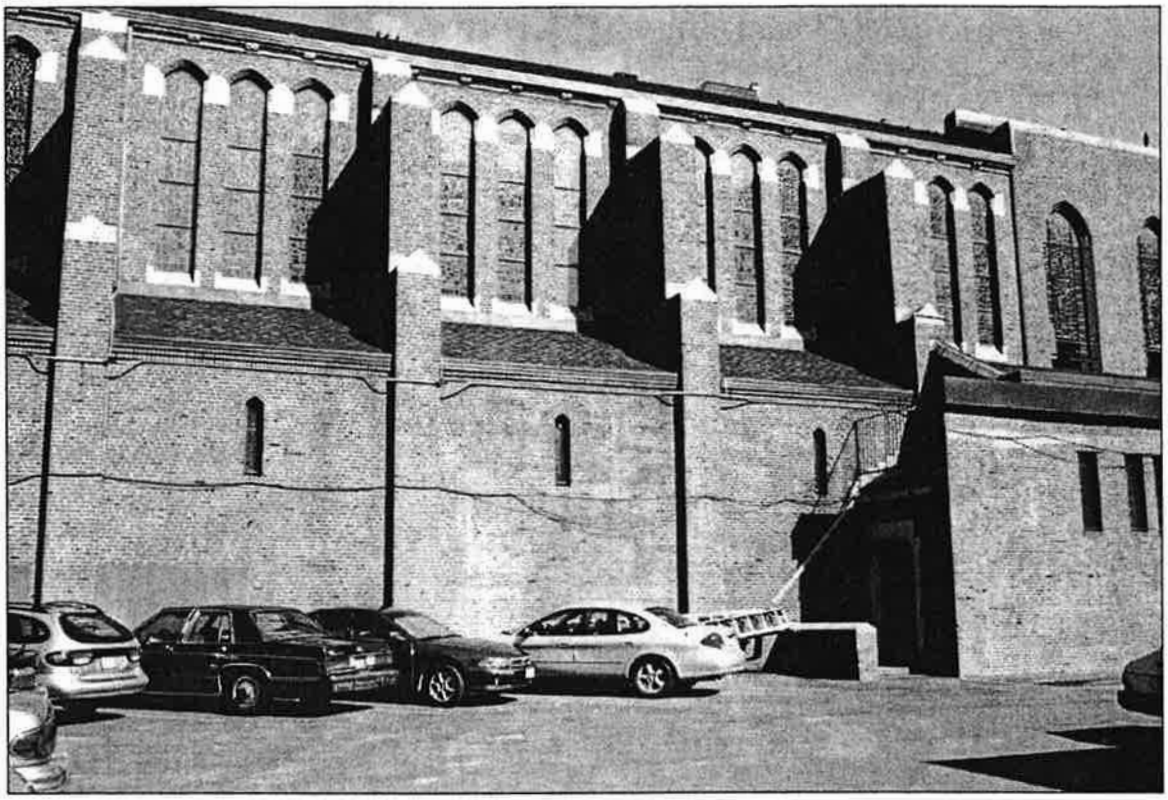
MEMORIAL SLOAN-KETTERING
CANCER CENTER

Shadow Diagram
June 21 - 8:30 AM EST (9:30 AM DST)
Figure 6-11

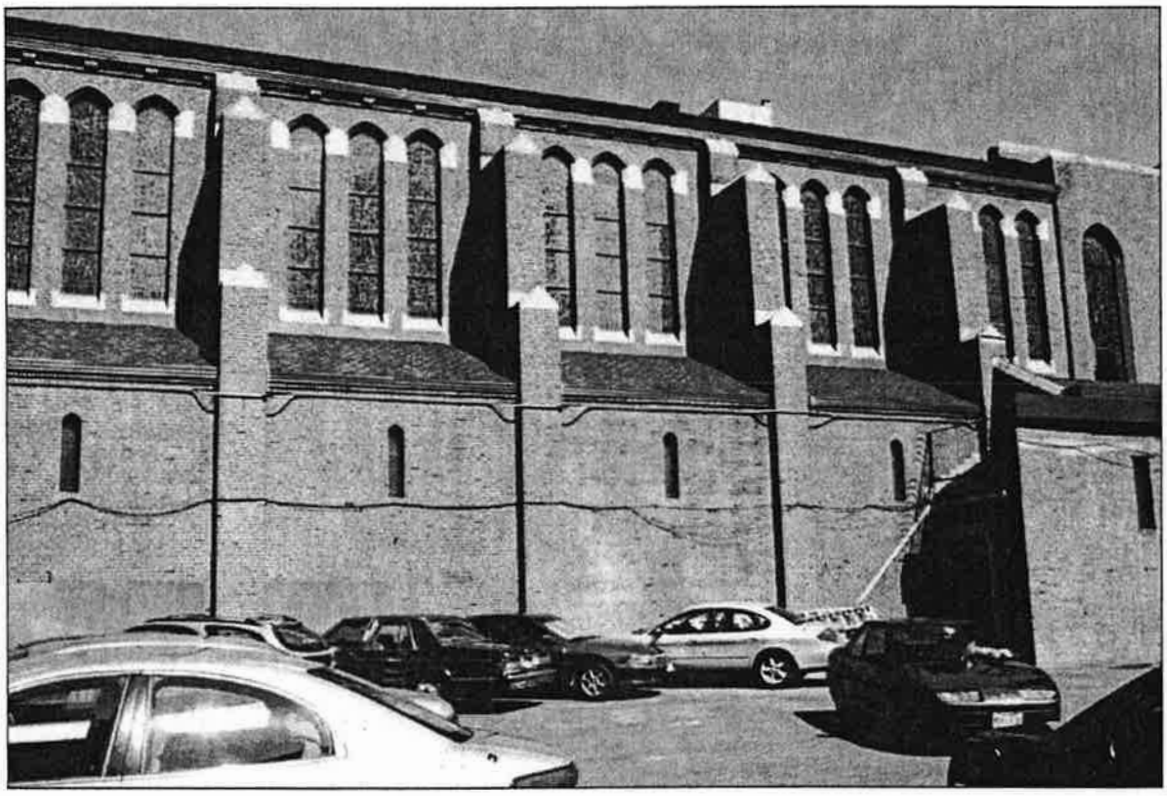
Shadow Diagram
June 21 - 9:15 AM EST (10:15 AM DST)
Figure 6-12

MEMORIAL SLOAN-KETTERING
CANCER CENTER

10•01



Existing shadows on east facade of St. Catherine of Siena. 9:00 am



Existing shadows on east facade of St. Catherine of Siena. 10:00 am

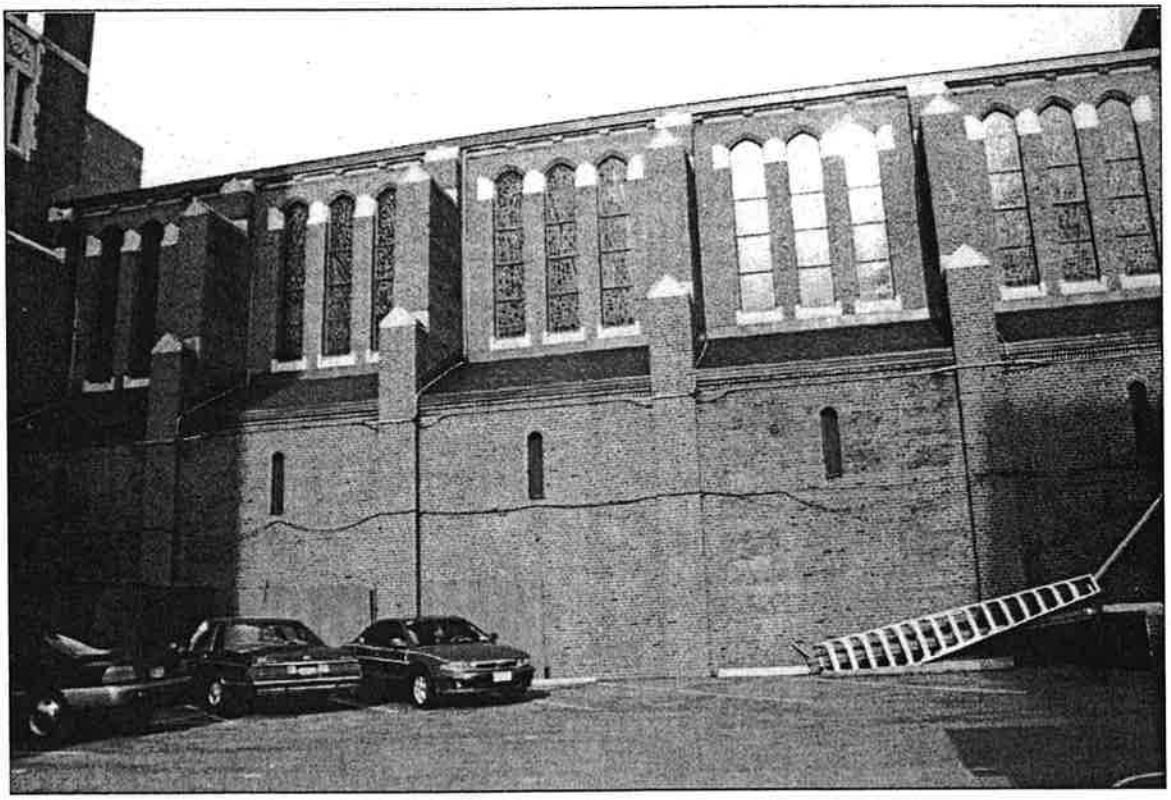
Shadow Photographs

June 25, 2001

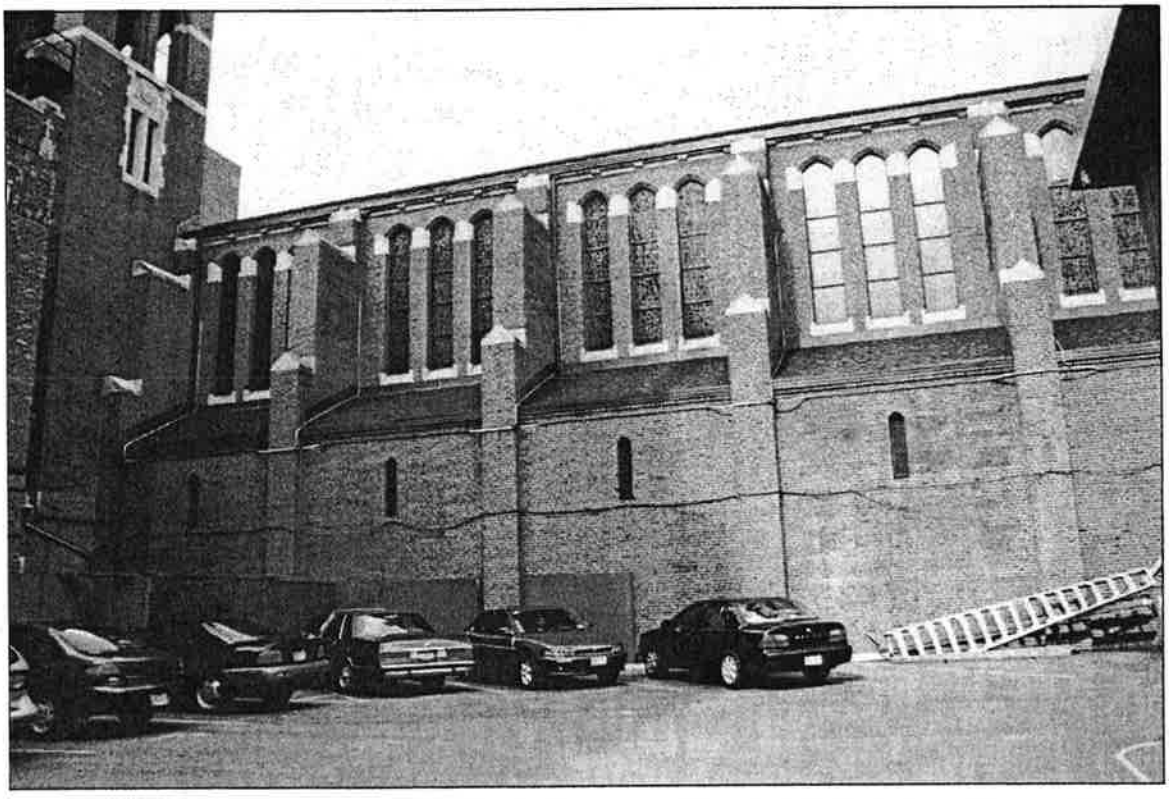
FIGURE 6-13

MEMORIAL SLOAN-KETTERING
CANCER CENTER

10•01



Existing shadows on east facade of St. Catherine of Siena. 9:15 am



Existing shadows on east facade of St. Catherine of Siena. 10:15 am

Shadow Photographs

September 24, 2001

FIGURE 6-14

analysis—less than 1¾ hours in the fall and spring (2:45 PM to 4:29 PM EST) and less than 10 minutes on December 21 (2:45 PM to 2:53 PM EST).

The stained glass windows on the east facade of the church of St. Catherine of Siena currently receive ample sunlight in June but less in September and the winter months (see Figures 6-13 and 6-14). Since the proposed project would be built adjacent to the east side of the church, between it and the sun, there would also be an increase in shadows on the church's east facade resulting in an adverse impact on historic resources as described in Chapter 7, "Historic Resources." To mitigate this impact, the architectural design of the proposed project has been modified to provide lighting to the church's east-facing windows (see Chapter 17, "Mitigation").

With the full development assumed for 2011 (including 290,000 square feet of floor area generated by rezoning the main campus block and 100,000 square feet transferred from the north block), there would also be an increase in shadows from the tower in the main campus block. It would be offset by a decrease in shadows due to the base of the building on First Avenue being shorter than the current building. The increment from the tower would cover large portions of the park in the mid-morning and extend the duration of the shadow increment from the proposed actions to as late as 11:00 AM EST (12 noon DST) in March/September. By midday there would be no new shadows from MSKCC buildings on this park in any season.

Overall there are increases in morning shadows on St. Catherine's Park in the morning in the spring, summer, and fall. In terms of vegetation, large parts of the park, the ball courts, and the play areas, are paved. The trees are unlikely to be affected as they receive ample sunlight over the course of the day. The other plantings, such as daffodils, are seasonal. As the shadow of the project moves quickly across the expanse of the park, it is unlikely that they would be affected by the diminished light in the growing season. On cooler days in the early spring and late fall, the increased shadows could lessen the enjoyment of park users, especially passive users of the open space. On the coolest days in the winter, when users would most appreciate the sun, the MSKCC development would not increase the shadows on the park. On the other hand, on warmer days, the shade is likely to be beneficial. In conjuntion with the increase in passive open space users, this increase in morning shadows would create an adverse impact on open space in 2011 (see Chapter 5, "Open Space and Recreational Facilities"). ❖

A. INTRODUCTION

This section considers the potential of the development on the Memorial Sloan-Kettering Cancer Center (MSKCC) campus as a result of the proposed actions to affect architectural resources on or near the development sites. The FEIS does not include an analysis of archaeological resources. Significant adverse impacts are not anticipated. As noted in a letter dated May 25, 2001, the New York City Landmarks Preservation Commission (LPC) concluded that the development sites have no archeological significance and that an archaeological analysis was not warranted.

The MSKCC campus, located between East 66th and 69th Streets and York and First Avenues on the upper east side of Manhattan is a fully developed urban environment (see Figure 7-1). The north block consists of the 3-story Rectory of St. Catherine's Church, the 11-story Kettering Building, and a paved parking lot. The main campus block on the First Avenue end of the block consists of the 12-story Schwartz Building and the 15-story Howard Building. The main campus block on the York Avenue end of the block consists of the 20-story Memorial Hospital building. The south block consists of the 23-story Scholars Residence and the 20-story Sloan House.

Proposed development within these areas would demolish the St. Catherine's Church Rectory and the Kettering Building, and remove the paved parking lot on the north block and replace them with a 23-story research building, expected to be completed by 2007. By the 2011 Build year it is projected that the Schwartz and Howard Buildings on the west end of the main campus block would be demolished and replaced by a 28-story inpatient building, and the Memorial Hospital building on the east main campus site would be renovated. This scenario assumes that new development on the main campus block would include approximately 290,000 square feet of floor area generated by the rezoning of the block from R8 to R9 and about 100,000 square feet of development rights generated by rezoning of the north block and transferred to the main campus block.

Based on potential impacts that could result where proposed construction activities may be close enough to an architectural resource to potentially cause structural damage, and also to account for visual and contextual effects, the study area for architectural resources is defined as the area within an approximately 400-foot radius of the rezoning and LSCFD areas. Within the architectural resources study area, architectural resources analyzed include properties listed on the State and National Registers of Historic Places (S/NR) or determined eligible for such listing, New York City Landmarks (NYCLs) and Historic Districts, and properties determined eligible for landmark status. In addition, other properties in the study area were evaluated for their potential to be eligible for listing on the Registers or for designation as NYCLs.

Construction of the proposed research building may potentially affect the Church of St. Catherine of Siena, a potential architectural resource located on the north block. To mitigate any adverse physical impacts, a construction protection program would be developed. The proposed project would also increase shadows on the east facade of the church.

B. EXISTING CONDITIONS

DIRECTLY AFFECTED AREA

DESIGNATED ARCHITECTURAL RESOURCES

There are no designated architectural resources located on the north, main campus, or south blocks of the LSCFD, or the rezoning area.

POTENTIAL ARCHITECTURAL RESOURCES

There do not appear to be any potential architectural resources located on the main campus and the south blocks. On the north block, the Church of St. Catherine of Siena is located within the rezoning area. The proposed research building site is immediately adjacent to the church on the east.

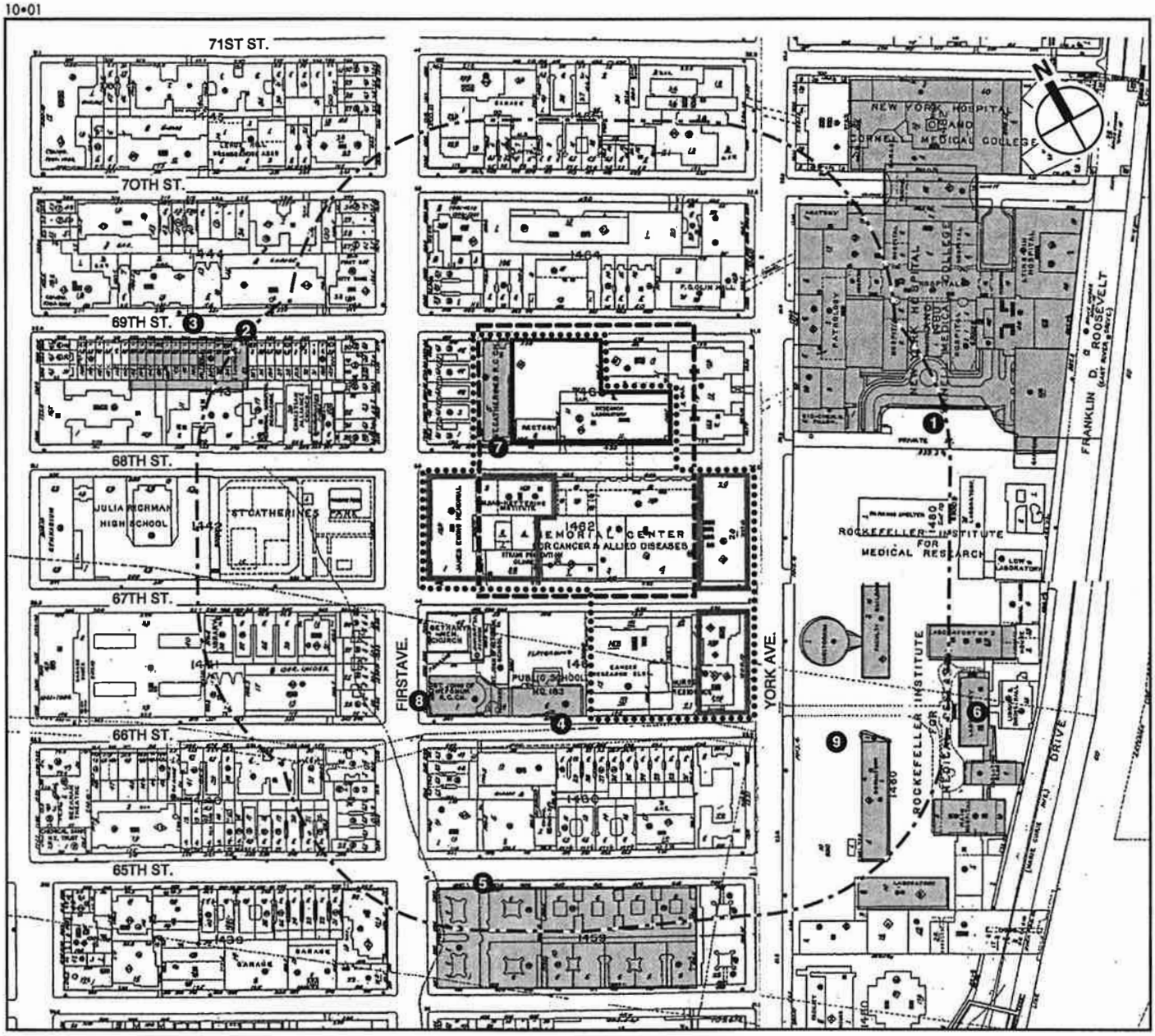
The **Church of St. Catherine of Siena** is located at 405-409 East 68th Street. Designed by Wilfred E. Anthony and built in 1931, the church is a restrained neo-Gothic brick building with minimal detail (see Figure 7-2). In a letter dated May 22, 2001 from LPC, the Church of St. Catherine of Siena was identified as potentially eligible for S/NR listing. *New York 1930*, (Robert A.M. Stern, Gregory Gilmartin, and Thomas Mellins) describes the church as a "refreshing and rare example in New York of the influence of the English Arts and Crafts Movement, particularly that of William Lethaby" (p. 166). The East 68th Street facade of the through-block building consists of a central peaked-roof nave and unfenestrated side aisles. The nave contains two recessed, limestone-framed, arched entrances; a limestone sculpture of a crucifix; small limestone relief panels; and three recessed lancet windows. A tower with a metal spire is set back from the street over the east side aisle. On East 69th Street, stained-glass clerestory windows puncture the chancel and the buttressed side aisles. A 1-story wing runs parallel to the east side aisle. Over the whole of the church, limestone trim is used sparingly as coping stones, sculpture, and window sills.

STUDY AREA

DESIGNATED OR ELIGIBLE ARCHITECTURAL RESOURCES

There are six designated or eligible architectural resources in the historic resources study area (see Table 7-1). The study area is shown in Figure 7-1.

The **New York Hospital-Cornell Medical Center** (S/NR-eligible) occupies a super-block bounded by York Avenue and the FDR Drive between the former East 68th Street and the former East 70th Street. The complex also includes a portion of the block bounded by York Avenue and the FDR Drive between the former East 70th Street and the former East 71st Street. Designed by Coolidge, Shepley, Bullfinch & Abbott, the original complex was completed in 1933. Organized on a grid plan centered around a 27-story tower, the complex consists of buildings of various heights interspersed with courtyards (see Figure 7-3). The central tower faces the demapped East 68th Street. Descending wings flank the tower in all directions. Limestone and grey brick facades, the use of setbacks, and rectilinear massing unify the collection of buildings. The modernist, stylized Gothic exterior design, which is primarily visible in the use of pointed arch windows, is said to reference the Palais des Papes in Avignon, France. A power house occupies the block between the former East 70th and 71st Streets. Since

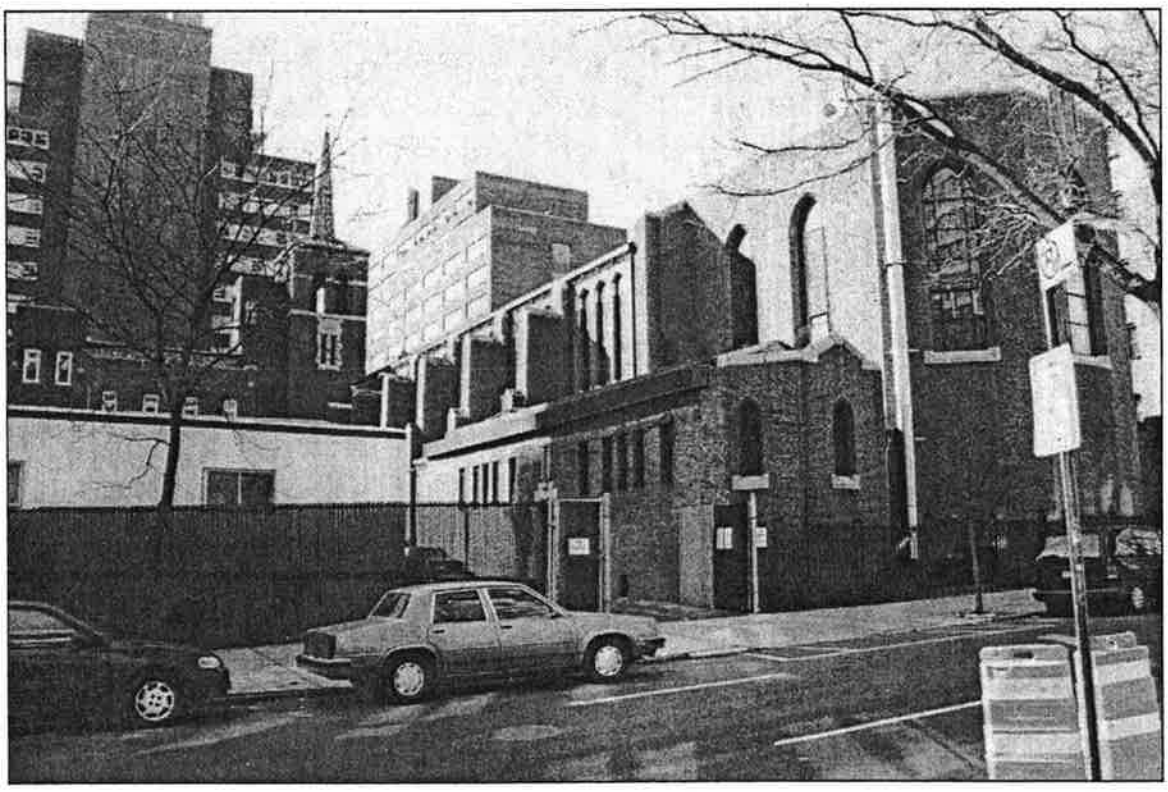


Historic Resources Study Area

FIGURE 7-1

MEMORIAL SLOAN-KETTERING CANCER CENTER

Church of St. Catherine of Siena. View north on East 68th St.

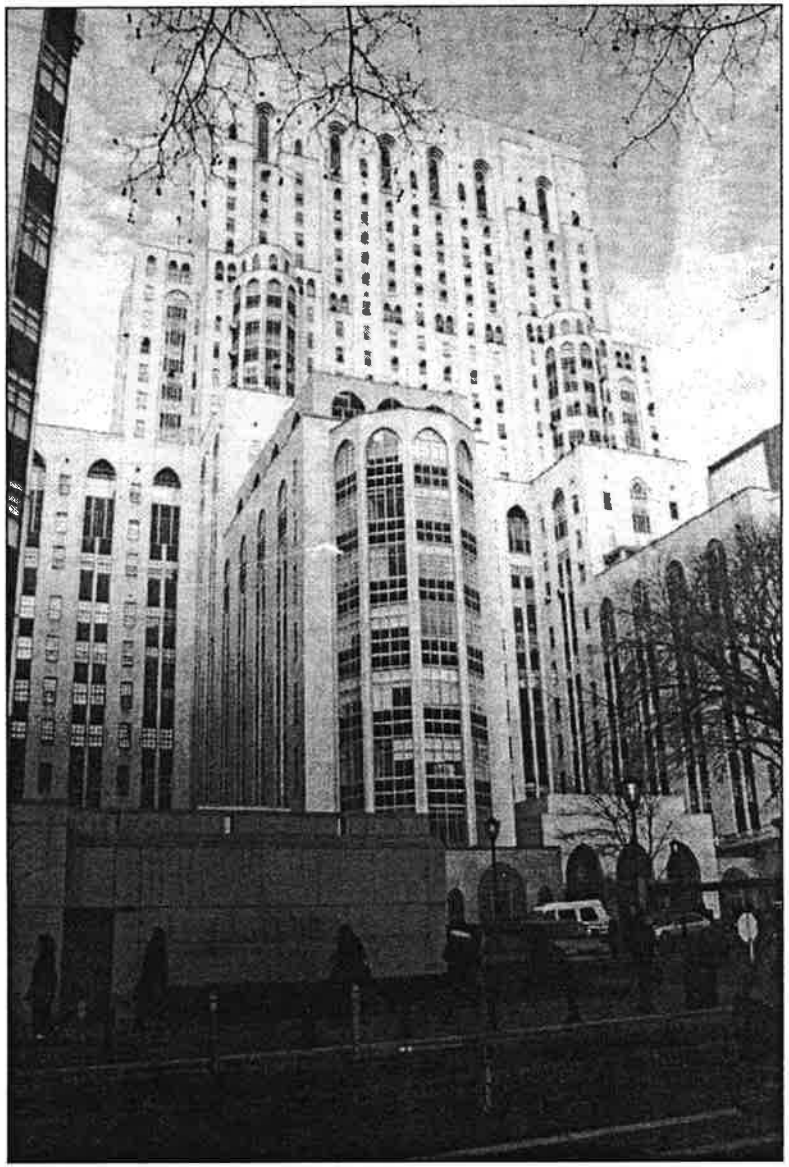


Church of St. Catherine of Siena. View southwest on East 69th St.

Historic Resources

FIGURE 7-2

New York Hospital. View north from demapped East 68th St.



New York Hospital. View southeast from York Avenue and East 70th St.

Historic Resources

FIGURE 7-3

Table 7-1

Architectural Resources Within the Project Study Area*

Ref. No.	Name	Address	NYCL	NHL	S/NR	S/NR-eligible	NYCL-eligible
Designated and Eligible Architectural Resources							
1	New York Hospital-Cornell Medical Center	E. 68th to E. 70th St./York Avenue to FDR Drive				X	
2	First Magyar Reformed Church	346 E. 69th St.			X		
3	East 69th St. Historic District	322-344 E. 69th St.			X		
4	P.S. 183	419 E. 66th St.				X	
5	City & Suburban Homes Co. First Avenue Estate	E. 64th to E. 65th St./First Avenue to York Avenue	X		X		
6	Founder's Hall	Rockefeller University campus on former E.66th St.		X	X		
Potential Architectural Resources							
7	Church of St. Catherine of Siena	405-409 E. 68th St.				**	
8	Church of St. John Nepomucene	1224 First Avenue				**	**
10	Rockefeller University	E. 63rd to E. 68th St./York Avenue to FDR Drive					

Notes:
* See accompanying Figure 7-1.
** Identified as potentially eligible by staff of LPC.
NYCL: New York City Landmark
NHL: National Historic Landmark
S/NR: State/National Registers of Historic Places
S/NR-eligible: Site has been found to be eligible for listing on the New York State and National Registers of Historic Places

the 1950's, multiple building campaigns have introduced new structures into former courtyard spaces, especially along York Avenue, and glazed bays have been added to the southern facade of the central tower. The S/NR eligibility determination only encompasses the 1930's buildings.

Designed by Emery Roth and built in 1916, the **First Magyar Reformed Church of the City of New York** (S/NR) at 346 East 69th Street is a small, Secessionist-style, yellow stucco church (see Figure 7-4). The facade of the narrow, midblock building consists of two, 2-story bays flanking a central, 3-story tower capped with a conical roof. Pilasters provide definition to the bays, the first story, and the upper portion of the tower. An ox-eye window framed with an entablature is placed in the center of the facade, and white faience panels with floral patterns provide further ornamentation. There is a bracketed eave on the first story over the entrance, and the roofs of the side bays have similar bracketed eaves.

The **East 69th Street Historic District** (S/NR) consists of twelve rowhouses located from 322 to 344 East 69th Street, adjacent to the west of the First Magyar Reformed Church. These identical, Italianate brownstone rowhouses date from around the end of the Civil War (see Figure 7-4). Although painted in different colors, each 3-story building has a sheet metal bracketed cornice; a stoop; a heavy stone entablature over the entrance; and windows framed with cornices and bracketed sills.

Built in 1904, **P.S. 183** (S/NR-eligible) is located at 419 East 66th Street. Designed by C.B.J. Snyder, the Superintendent of School Buildings from 1891 to 1923, the school is a 5-story, Renaissance-style brick and limestone structure (see Figure 7-5). Set on a rusticated, buff-colored brick and grey limestone base, the building consists of three bays, with a central recessed bay. A heavy stone arch with a lion-head keystone frames the central entrance. Triangular pediments surmount secondary entrances in the corner bays. Above the base, the red brick facades of the bays are separated with buff-colored brick quoins. The windows on the second and third floors have stone lintels with pronounced keystones, while the windows of the fourth floor lie directly below a lintel course. The rusticated, brick fifth story takes the form of a wall cornice punctured with windows.

The **City and Suburban Homes Company First Avenue Estate** (NYCL, S/NR) comprises the majority of the block bounded by 64th and 65th Streets between First and York Avenues. Constructed between 1898 and 1915, the First Avenue Estate was built by the City and Suburban Homes Company as affordable, model housing for the working poor. Designed by James E. Ware and Philip H. Ohm, City and Suburban's architect, the complex consists of 6-story, light-colored brick tenements of various plans separated by light courts (see Figure 7-5). Ornamentation is minimal and includes copper cornices, and stone stringcourses, entrances, and window lintels. Fire escapes with decorative brackets cover the facades of all the buildings. The two buildings on First Avenue have ground-floor storefronts. The NYCL designation excludes the two buildings on York Avenue, while the S/NR designation only applies to the buildings on First Avenue.

Founder's Hall (NHL), overlooking the East River at the end of the former East 66th Street, was the first building erected for Rockefeller University (see Figure 7-6). Designed by Shepley, Rutan & Coolidge and built in 1906, the building was originally known as the Laboratory Building and housed laboratories, a library, a conference room, and a dining room. John D. Rockefeller founded Rockefeller University (originally Rockefeller Institute for Medical Research) in 1901 as an institute devoted to medical research. Founder's Hall is a 5-story, limestone and buff-colored brick building. A portico with Ionic columns frames the entrance.

POTENTIAL ARCHITECTURAL RESOURCES

Two potential architectural resources in the project study area that may meet the criteria of eligibility for S/NR listing or for NYCL designation have been identified in the field survey conducted for this project (see Table 7-1).

Built in 1925, the **Church of St. John Nepomucene** located at 1224 First Avenue is an elaborate Romanesque-style church (see Figure 7-7). In a letter dated May 22, 2001 from LPC this church was identified as potentially eligible for S/NR listing and NYCL designation. Designed by John Van Pelt in sandstone and various hues of orange brick, the church is oriented east-west, with an attached rectory on East 67th Street. The main facade consists of a central peaked-roof nave and recessed side aisles. The entrance into the nave is through a portico framed with half columns supporting a round compound arch. A rose window surrounded by sculptures of the animal representations of the four apostles lies in the center of the facade. The nave's cornice rests on a blind arcade of slender Ionic columns. A tower with a central copper spire and four smaller copper spires surmounts the south aisle. Half-columns frame the arched louvres in the belfry. The side street facade and the rectory are less elaborate, relying on the use of brick arches and multicolored brick patterning for ornamentation.

First Magyar Reformed Church. View south on East 69th St.

East 69th Street Historic District. View southwest on East 69th St.

Historic Resources

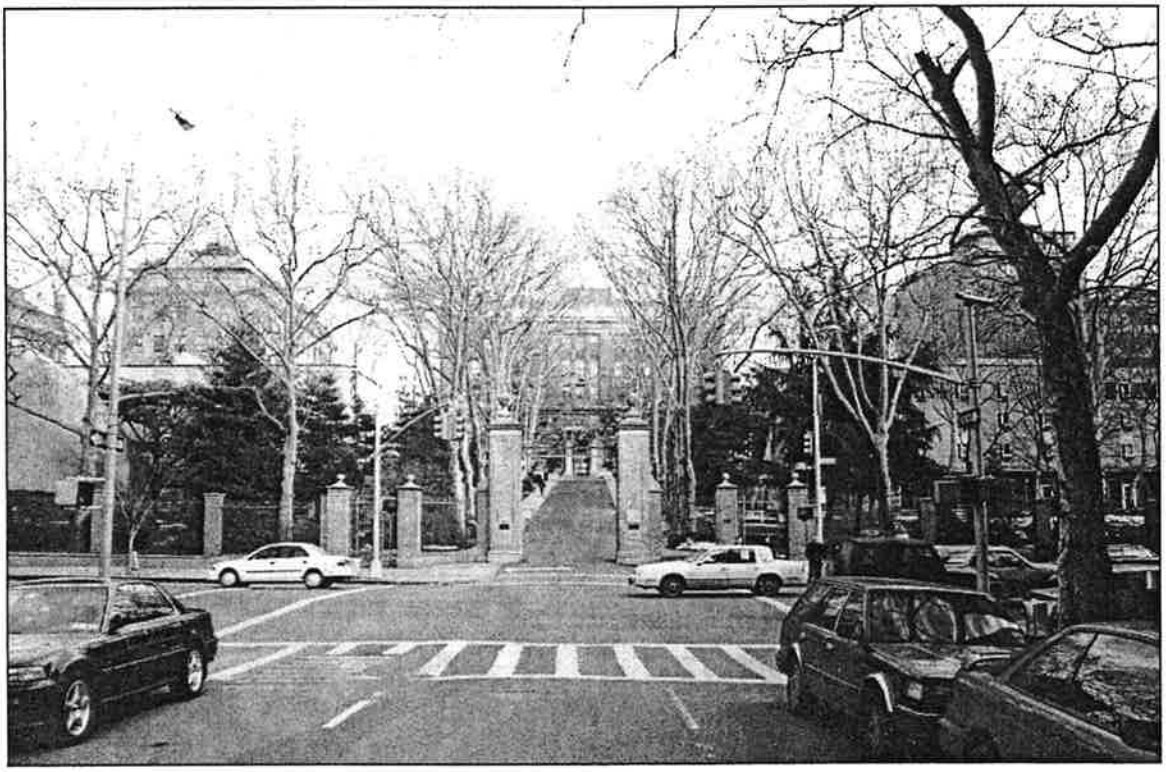
FIGURE 7-4

P.S. 183. View west on East 66th St.

City and Suburban Homes Co. First Avenue Estate. View southeast from First Avenue and East 65th St.

Historic Resources

FIGURE 7-5

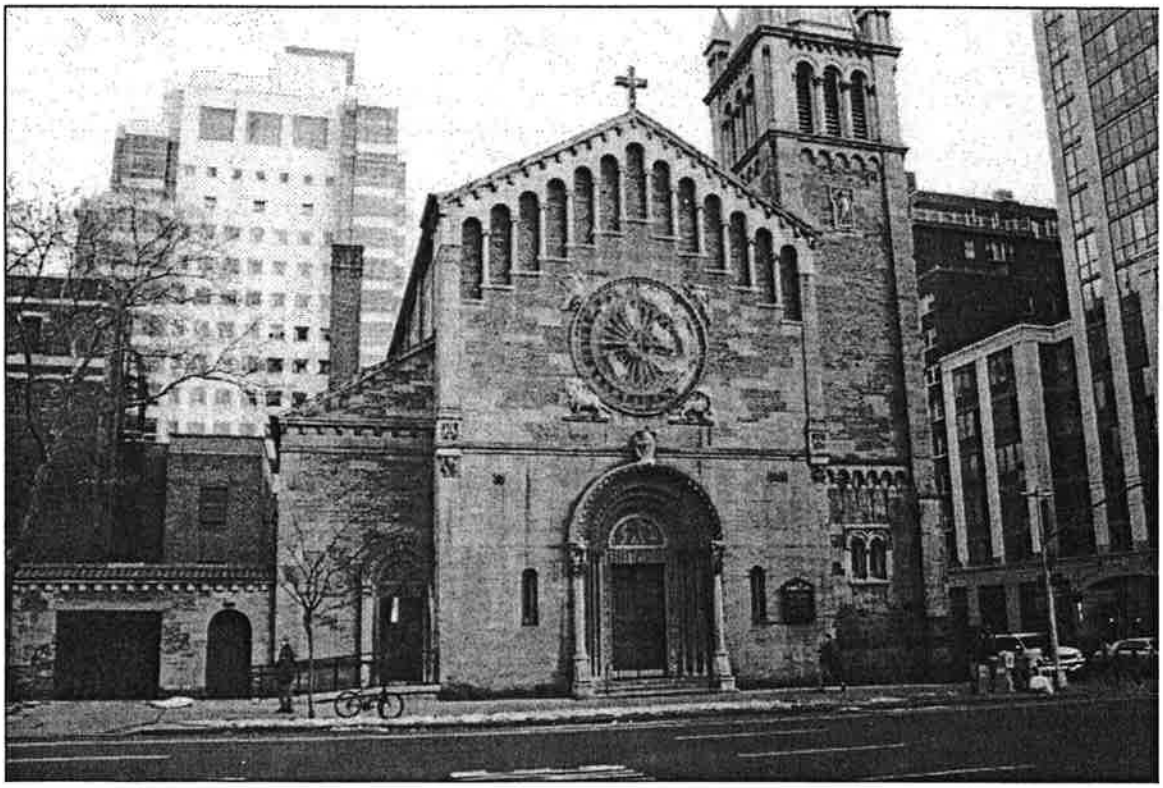


Founder's Hall. View east on East 66th St.

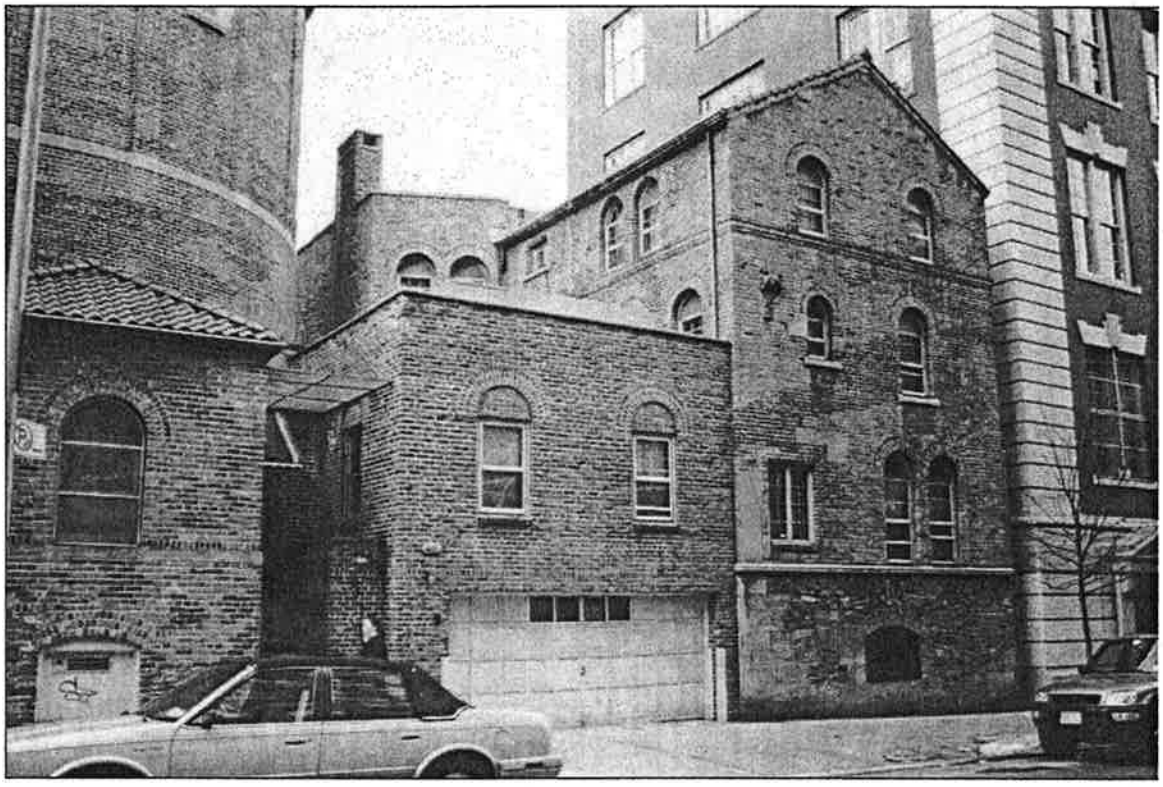
Historic Resources

FIGURE 7-6

2•01



Church of St. John Nepomucene. View east on First Avenue



Church of St. John Nepomucene. View north on East 66th St.

Historic Resources

FIGURE 7-7

John D. Rockefeller founded **Rockefeller University** in 1901 as the Rockefeller Institute for Medical Research. The campus occupies a superblock between East 63rd Street and East 68th Street between York Avenue and the FDR Drive. Initially functioning as a grant-giving institution to support scientific research, it became the nation's fist biological research institute under the leadership of Simon Flexner, the first director. The institution first occupied space at Lexington Avenue and East 50th Street, but moved to its current site in 1906. The first buildings erected on the site—Founder's Hall, described above, a powerhouse (no longer extant), and an animal house (no longer extant)—were all designed by Shepley, Rutan & Coolidge. The entrance into the campus was from York Avenue at East 66th Street. In 1910, a hospital and isolation building/nurses' residence, designed by York and Sawyer, were built to the south of Founder's Hall, and trees were planted along the entrance road and a single cross axis. In 1916, a boiler house and Flexner Hall were constructed. Physical expansion continued during the 1920's and 1930's as the institution broadened its research and scientific scope. After the institution received a new charter and changed its name to Rockefeller University in 1955, the firm of Harrison & Abramovitz, in collaboration with the landscape architect Dan Kiley, was selected to expand the campus. The new expansion structures, built in 1958-1959, consisted of the Graduate Students Residence, Abby Aldrich Rockefeller Hall, Alfred H. Caspary Hall and Auditorium, Detlev W. Bronk Laboratory, and the President's House. Designed in a modern, International Style, these metal, glass, and limestone structures were placed on the campus in a north-south axis perpendicular to the East 66th Street entrance axis, primarily utilizing the unbuilt land between the original buildings near the river and York Avenue. The institution has continued to expand through the 1990's.

C. FUTURE WITHOUT THE PROPOSED ACTIONS—2007

There are four projects planned for or under construction within the project study area with a completion date before the 2007 project build year. A 5-story MSKCC outpatient facility is nearing completion at 359 East 68th Street between First and Second Avenues. It is not anticipated that this building will have adverse visual or contextual effects on any of the architectural resources in the project study area. This low-rise building, which is similar in height to the two buildings contiguous to its east and west facades, will be appropriate to the existing neighborhood context of historic and modern, low- and high-rise institutional, residential, and commercial buildings.

A 4-story addition is under construction over the existing 4-story MSKCC Winston Pavilion at 445 East 67th Street near York Avenue. As this building, enlarged to 8 stories, will be situated across the street from the existing 16-story Rockefeller Research Laboratories and the existing 23-story Scholars Residence, and will be adjacent to the west of the 20-story Memorial Hospital building, it is not expected that this project will have adverse visual or contextual effects on any of the architectural resources located in the project study area.

A 10-story laboratory building is planned for construction on the Rockefeller University campus at the corner of York Avenue and the former East 68th Street. It is anticipated that this building will not have adverse visual or contextual effects on any of the architectural resources in the project study area. Although this building will fill an open area occupied by a paved parking lot with a roof deck, it is expected that this building and its accompanying landscaped grounds will have a beneficial effect on the campus and the York Avenue streetscape by providing a visual and physical anchor to the campus' northwest corner. Similar in height to the tall buildings on the west side of York Avenue and those that constitute the New York Hospital-Cornell Medical

Center complex, this laboratory building will reinforce the York Avenue context of tall, modern institutional buildings.

A 29-story residential building is planned for development at 1234 First Avenue, immediately adjacent to the Church of St. John Nepomucene, at 1224 First Avenue. This project is close enough to potentially cause construction-related damage to the church. Designated NYCLs are protected by New York City Department of Buildings Technical Policy and Procedure Notice No. 10/88 concerning procedures for avoidance of damage to historic structures resulting from adjacent construction. Although this church is not officially designated, it is likely that the construction manager for the new development would seek to avoid damage to adjacent structures. The new building would be similar to other recent buildings in the area and be taller than the Church of St. John Nepomucene as well as P.S. 183 to the east of the church. However, it is not anticipated that 1234 First Avenue would have adverse physical, visual, or contextual effects on any of the other architectural resources in the project study area, since it will not block views to any of these resources, and as it will reinforce the neighborhood character of low- and high-rise residential, commercial, and institutional buildings.

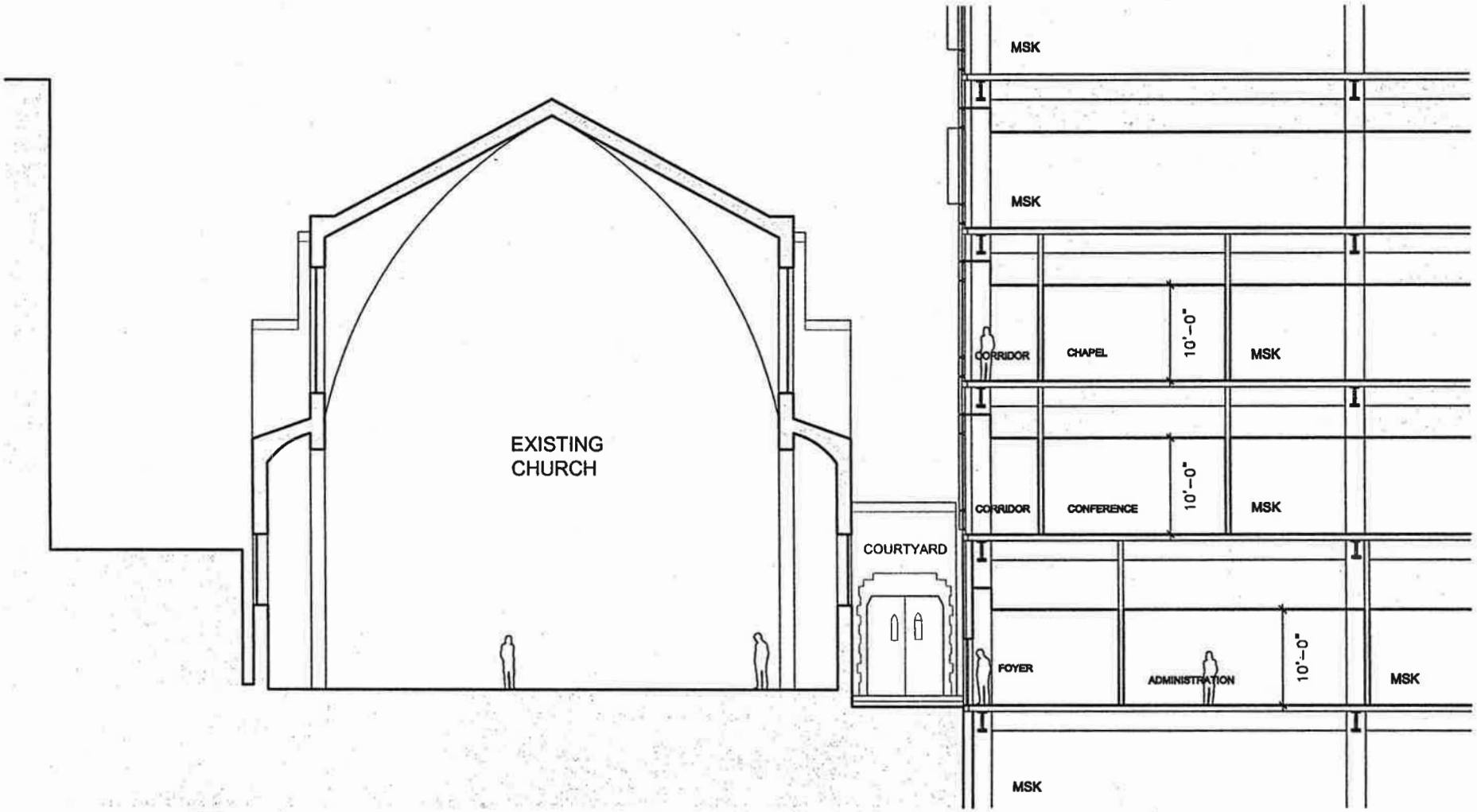
D. FUTURE WITH THE PROPOSED ACTIONS—2007

The proposed research building would remove the 3-story Rectory, the 11-story Kettering Building, and the paved parking lot on the north block, replacing them with a 23-story (within a 420-foot-tall building envelope), research building that would also house replacement space for the St. Catherine's Church Rectory. The ground floor of the proposed project would fill the entirety of the project site. A 7-story wing would occupy the site of the existing Kettering Building, while the taller portion of the building would be located on the site of the existing rectory and would extend north to East 69th Street. Although the west facade of the proposed building would abut the church tower and the 1-story wing on East 69th Street, a linear courtyard would be provided between the church and the proposed project (see Figure 7-8). Above the ground floor, the northeast corner of the building would angle outward from the main body of the tower and would not occupy the full footprint of the northeast portion of the project site.

Construction of the proposed research building could potentially cause damage to the Church of St. Catherine of Siena as it is located immediately west of the project site, resulting in a potential significant adverse impact. Measures that would mitigate this impact are discussed in Chapter 17, "Mitigation."

As described in Chapter 6, "Shadows," the proposed research building would block morning light to the windows along the east side of the church, which currently receive ample sunlight (see Figure 6-15 and Figure 6-16). This would create a condition similar to the west facade of the church which currently faces 6-story buildings (see Figure 7-8).

Although the proposed research building would be substantially taller and larger-scaled than the church, the difference in height and scale would not constitute a significant adverse impact to the church. As currently contemplated the architectural design of the proposed building could help minimize the visual differences in height and scale between the proposed research building and the church. Specifically, the lower portion of the building's south, north, and west facades adjacent to the church are expected to be designed in masonry that would complement the church in scale, color, and texture. Further, the proposed research building would not block views to the church's primary facade on East 68th Street or its apse and side chapel on East 69th



USES WITHIN PROPOSED PROJECT ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY

Proposed Project Section

FIGURE 7-8

Street. In addition, this potential resource exists in a context largely defined by tall, modern buildings. These include the 12-story Schwartz Building, the 15-story Howard Building, and the 12-story Bobst Building on the main campus block across East 68th Street to the south, as well as the 44-story Kingsley to the northwest and an 18-story building at the northwest corner of First Avenue and East 69th Street.

No adverse impacts would be expected on the other architectural resources in the study area, since the proposed research building would not block views to any of these resources, and as it would not significantly alter the mix of short and tall, modern and historic, institutional and residential buildings. Although the proposed research building would result in partially mitigated significant adverse urban design and neighborhood character impacts due to its height and bulk relative to other buildings in the area, the building's height and bulk would not adversely affect architectural resources. This is because the area's architectural resources include a large, bulky resource—the New York Hospital-Cornell Medical Center complex—and because all these resources exist and retain their importance in an area with numerous taller bulkier structures.

E. FUTURE WITHOUT THE PROPOSED ACTIONS—2011

It is assumed that all of the projects planned for development by the 2007 build year will have been completed (see C., "Future Without the Proposed Actions—2007," above). It is further assumed that existing conditions on the north and main campus blocks and in the study area will remain unchanged. Therefore, there will be no effects to architectural resources within the study area in the absence of the proposed actions.

F. FUTURE WITH THE PROPOSED ACTIONS—2011

The new proposed research building on the north block would be constructed as discussed above. Anticipated future development plans as a result of the proposed actions are not definite, but under the reasonable worst-case scenario, it is projected that the Schwartz and Howard Buildings on the west end of the main campus block would be demolished and replaced with a 28-story inpatient building, and the Memorial Hospital on the east end of the main campus block would be renovated. This scenario assumes that new development on the main campus block would include approximately 290,000 square feet of floor area generated by the rezoning of the block from R8 to R9 and about 100,000 square feet of development rights generated by rezoning of the north block and transferred to the main campus block.

For analysis purposes, a schematic design for the potential new hospital building has been developed; the design illustrated assumes an as-of-right building configuration. The base of the building would be built to the sidewalk, maintaining the existing streetwalls, and the tower design would utilize setbacks.

It is not anticipated that development on the main campus block would have adverse effects on any architectural resources in the study area. There would be no construction impacts on the resources listed above because none of them are adjacent to the development sites on the main campus block. In terms of visual or contextual effects, it is not anticipated that the proposed actions would have adverse effects on any of the architectural resources located within the study area. The potential new hospital building would not block views to any architectural resource or significantly alter the context of the architectural resources in the study area. Although full build-out of this reasonable worst case scenario would result in partially mitigated significant

adverse urban design and neighborhood character impacts due to the height and bulk of the proposed research building and the potential inpatient hospital building in relation to other buildings in the area, the height and bulk of the two project buildings would not adversely affect architectural resources. This is because the area's architectural resources include a large, bulky resource—the New York Hospital-Cornell Medical Center complex—and because all these resources exist and retain their importance in an area with numerous taller bulkier structures.

❖

A. INTRODUCTION

This chapter considers the effects of the proposed action on the urban design and visual resources of the study area. Memorial Sloan-Kettering Cancer Center (MSKCC) proposes a rezoning, designation of a Large-Scale Community Facility Development (LSCFD) and several other land use and zoning actions for its campus on the Upper East Side of Manhattan. These actions would allow it to build a proposed 23-story research building (420 feet tall) on a mid-block site between East 68th and 69th Streets and York and First Avenues, to be constructed and occupied by 2007, and to construct by 2001 a 28-story in-patient building (approximately 448 feet tall) on the main campus block to the south. The in-patient building would utilize approximately 100,000 square feet of newly-generated floor area from the north block and approximately 290,000 square feet of floor area from the rezoning of the main campus block. In addition, Memorial Hospital would be renovated by 2011.

Views to the rezoning area and LSCFD are limited primarily to the immediately surrounding streets. Because views of the area are generally not visible beyond 400 feet from the boundaries of the rezoning area, the urban design and visual resources study area has been defined as the area roughly bounded by East 70th and 65th Streets, the FDR Drive, and Second Avenue (see Figure 8-1). (The area of the LSCFD was used as the basis for creating a study area for both levels of analysis.)

As defined in the *New York City Environmental Quality Review (CEQR) Technical Manual*, urban design components and visual resources determine the "look" of a neighborhood—its physical appearance, including the size and shape of buildings, their arrangement on blocks, the street pattern, and noteworthy views that may give an area a distinctive character. The following analysis addresses each of these characteristics for existing conditions and the future without and with the proposed actions for the year 2007, when the first phase of development is expected to be completed, and the year 2011, when a full build-out of the project is considered.

The analysis concludes that the project would not result in any significant adverse impacts to visual resources in the study area. Construction of the proposed project would result in the demolition of the Kettering Building, St. Catherine's Church Rectory, the Arnold and Marie Schwartz International Hall of Science for Cancer Research (Schwartz Building), the Howard Building, Scholars Residence, and Sloan House. However, this would not constitute a significant adverse impact, as these buildings are not considered to be visual resources. In addition, the construction of the 23-story research building (with a 420 foot tall building envelope) and 28-story (448 foot tall) in-patient building would not block significant publicly-accessible views or vistas.

The analysis also concludes that the proposed actions may result in a significant adverse impact on the urban design of the study area. Although the project buildings are expected to be of a similar design and use to other modern high-rise buildings in the area, they are also expected to be taller than most buildings in the midblock, and thus would contribute to an increase in the

height and density of the midblock of the north block and the main campus block. Since the issuance of the DEIS, the maximum height of the research building envelope was reduced from 440 to 420 feet, partially mitigating its effect. However, other elements contributing to the urban design of the area—including its streetscape and street patterns, block shapes, and natural features—as well as visual resources and view corridors would not be adversely affected by the proposed project.

B. EXISTING CONDITIONS

DIRECTLY AFFECTED AREA

The directly affected area is considered to include the area of the proposed rezoning and the proposed LSCFD.

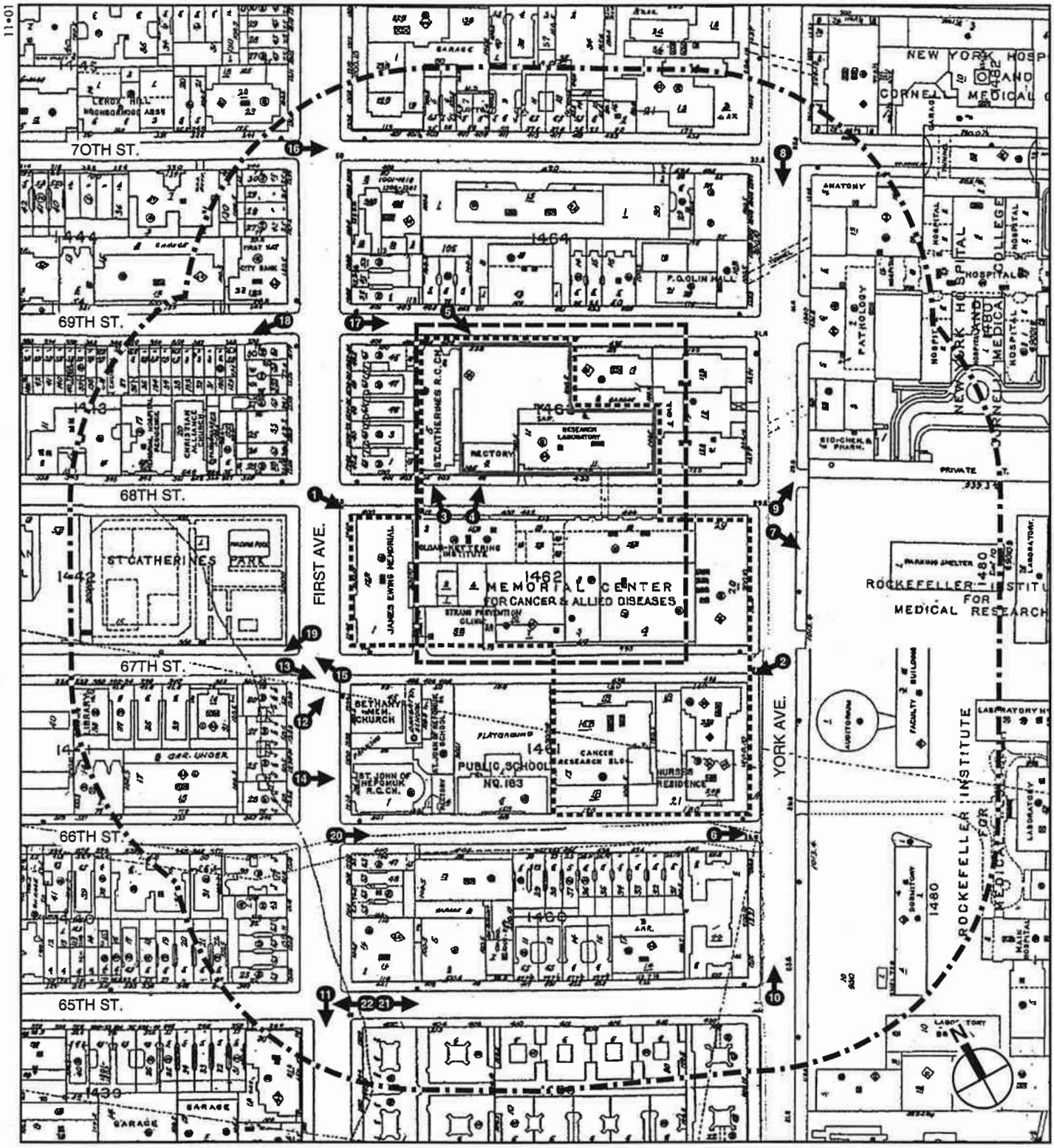
URBAN DESIGN

The LSCFD site occupies most of the area between East 66th and 69th Streets and First and York Avenues. A number of buildings presently occupy most of the project site, most of them MSKCC-related. The main complex of the MSKCC is located between East 67th and 68th Streets. The multiple buildings on the street range in height from 1 to 20 stories, and include the Howard Building, a tall 15-story red brick shaft; the Bobst Building, 13 stories tall and also of red brick; and Memorial Hospital, a 19-story gray brick building facing York Avenue between East 67th and 68th Streets. The 12-story red brick Schwartz Building fronts onto First Avenue between East 67th and 68th Streets (see Photograph 1 of Figure 8-2). The 16-story gray brick and blue glass Rockefeller Laboratory Building, which extends through the block from East 66th to 67th Streets, and the adjoining gray brick Scholars Residence and Sloan House buildings, both tall (23 and 20 stories, respectively) are located between East 66th and 67th Streets on York Avenue (see Photograph 2 of Figure 8-2). Projecting from the streetwall on East 67th Street are cantilevered glass and metal canopies at the entrances to the Enid A. Haupt Pavilion on the north and the Rockefeller Laboratory Building on the south side of the street.

Located between East 68th and 69th Streets are the Church of St. Catherine of Siena, a neo-Gothic structure that extends through the block, with its main entrance on East 68th Street. Its rectory, also constructed of red brick, and the Kettering Laboratory Building, a 11-story red brick building with long vertical ribs of concrete, are on East 68th Street. One portion of the project site is currently undeveloped: the fenced, paved lot to the north of the rectory, facing East 69th Street (see Photographs 3-5 of Figures 8-3 and 8-4). The buildings on the project site are nearly all built to the street wall.

VISUAL RESOURCES

There are no visual resources on the project site. Visual resources that can be seen from portions of the project site include, to the west, St. Catherine's Park, the Church of St. John Nepomucene, and Bethany Memorial Church; to the south, the Queensboro Bridge approach; and to the east, views of Rockefeller University, particularly its open space along York Avenue, and the Art Deco buildings and tower of the New York Hospital-Cornell Medical Center (NYH-CMC).



Proposed Rezoning Area Boundary

Proposed Large-Scale Community Facility Development Boundary

Phase I Research Building Site Boundary

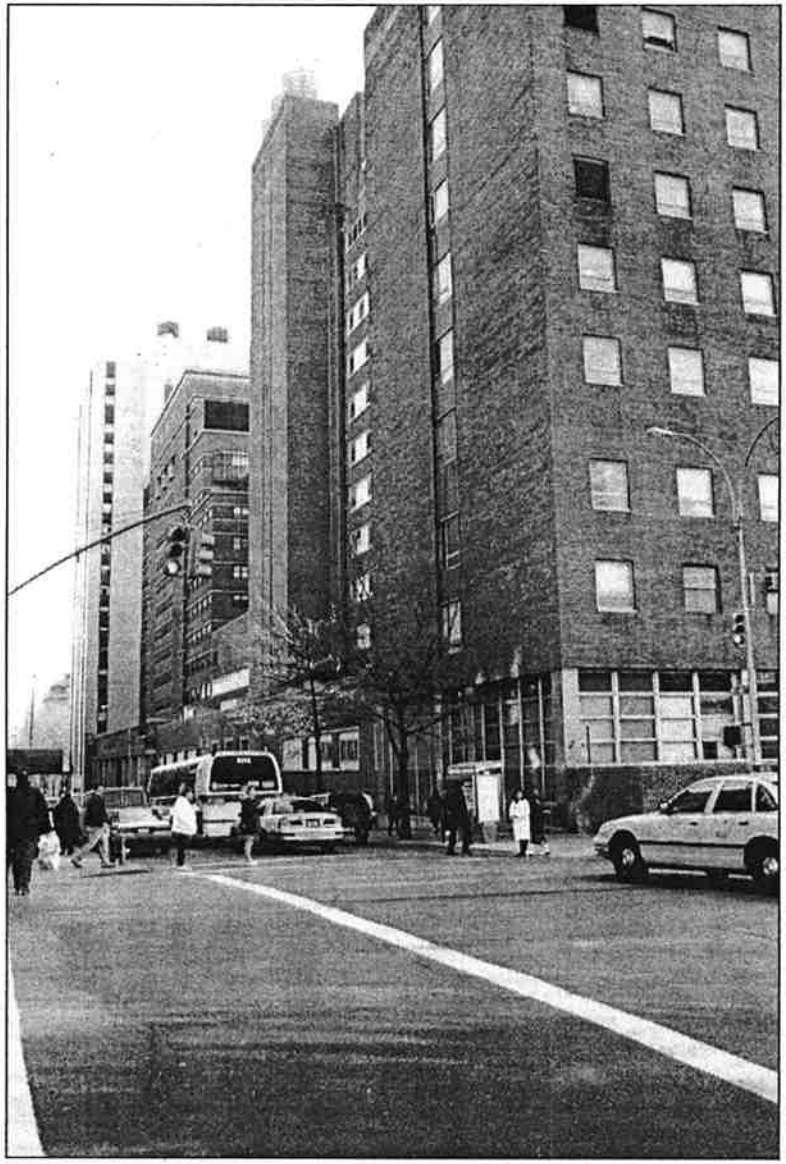
Photo Location

Study Area Boundary (400' Perimeter)

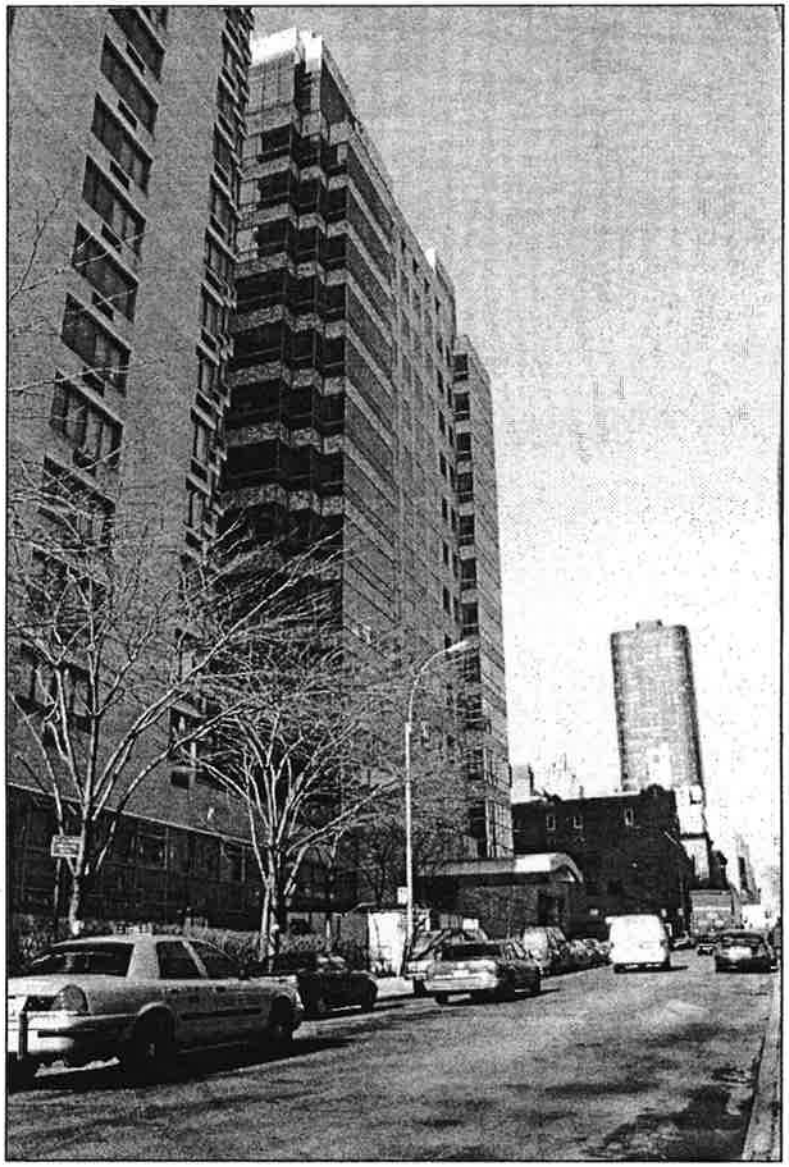
Map of Study Area with Photo Locations

FIGURE 8-1

MEMORIAL SLOAN-KETTERING CANCER CENTER



South side of East 68th Street looking east from First Avenue **1**



South side of East 67th Street looking west from York Avenue **2**

Views of the Project Site

FIGURE 8-2

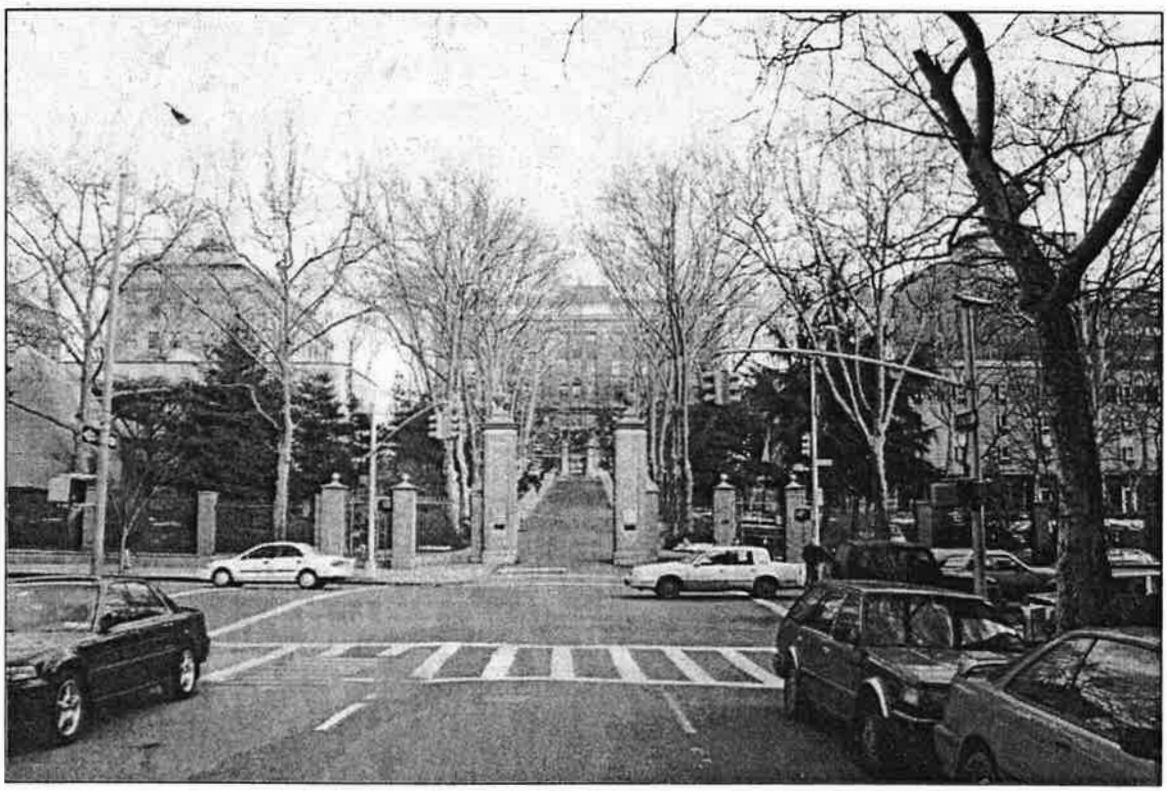
Church of St. Catherine of Siena and Rectory **3**

St. Catherine's Rectory and Kettering Research Laboratory **4**

Views of the Project Site

FIGURE 8-3

Rear view of Kettering Research Laboratory and Church of St. Catherine of Siena and Rectory from East 69th Street **5**



View of East 66th Street entrance to Rockefeller University **6**

Views of Project Site and Study Area

FIGURE 8-4

STUDY AREA

The study area has been developed in a combination of a grid street pattern and large superblocks. The topography of the area has a slight upward slope toward East 70th Street and a downward slope to the Rockefeller University campus, which is on a bluff over the East River. The area is an interesting mix of building types, styles, heights, and uses. The discussion below focuses first on the area's urban design—its basic layout and structures—and then describes its visual resources.

URBAN DESIGN

Natural Features, Street Patterns, and Block Shapes

The majority of the study area is part of the Manhattan grid street pattern, with wide avenues running north-south and narrow streets running east-west, creating short, wide blocks. East of York Avenue, however, Rockefeller University and the NYH-CMC break the grid pattern to create large, multi-block campuses that terminate the east-west streets and their view corridors. The eastern boundary of the neighborhood is defined by the East River and the FDR Drive, a major, north-south highway that extends the length of the east side of Manhattan. Most of the streets in the study area are one-way (York Avenue is an exception), with the majority of vehicular and pedestrian traffic located on the north-south thoroughfares, First and York Avenues. Entrances to Rockefeller University are located at East 66th and 68th Streets, and NYH-CMC has entry points at East 70th and 68th Streets.

Streetscape

The streetscape of the area is urban in character, with streets flanked by concrete sidewalks that are typically wider than usual. Street furniture includes standard metal light posts and a smattering of telephone booths and bus shelters. There are a few historic reproduction lampposts along the entrance to NYH-CMC at East 68th Street and York Avenue. There are a fair number of trees on most streets, with concentrations at St. Catherine's Park, on the west side of First Avenue from East 67th to 68th Street, and on the grounds of Rockefeller University, between East 62nd and 68th Streets on York Avenue. The buildings in the study area almost always maintain the street wall. The exception is Rockefeller University, where the buildings are set back on the campus, but which maintains the streetwall with its fence.

Building Uses, Shapes and Forms

The urban design of the study area is primarily defined by the large scale and institutional nature of the hospitals and related schools and centers in the neighborhood, which contrast with the medium- and high-density residential buildings that represent the other predominant use in the area.

York Avenue is strongly defined by the surrounding medical institutions and Rockefeller University. Rockefeller University extends from East 62nd to 68th Streets, from York Avenue east to the FDR Drive. The older buildings on the campus, mostly of buff-colored brick with red tile roofs, are clustered on the far eastern side of the site on the crest of a bluff. To the west of these buildings and partially obscuring them are the more modern additions to the campus—the long limestone expanses of Caspary Hall, Abby Aldrich Rockefeller Hall, and the Graduate Students Residence. The buildings on the campus range in height from one to eight stories, with several exceptions (247 to 401 feet tall) located outside the study area. The campus is enclosed

by a brown brick, iron, and stone fence that runs along York Avenue. In front of the fence is a small raised platform with plantings (see Photographs 6 and 7 of Figures 8-4 and 8-5).

Except for the university, the buildings along the street are primarily tall, blocky, and constructed of concrete or white or light gray masonry (see Photograph 8 of Figure 8-5). The NYH-CMC campus extends from East 68th to 71st Street on the east side of York Avenue, and is composed of a series of mid-size to tall buildings (mostly 8 to 12 stories, rising as tall as 23 stories) from several different building campaigns, which are visually related by their common use of long vertical columns of pointed arched windows (see Photograph 9 of Figure 8-6). The 265-foot tower, the tallest portion of the complex, is oriented in an east-west direction. Fenced surface parking lots are located at the southwest corner of East 70th Street and York Avenue and the southeast corner of East 68th Street and York Avenue. At the far south corner of the study area on York Avenue is a 6-story brown brick apartment complex with an ornamental arched stone entryway, spanning the full blockfront between East 65th and 66th Streets with an entrance on York Avenue (see Photograph 10 of Figure 8-6).

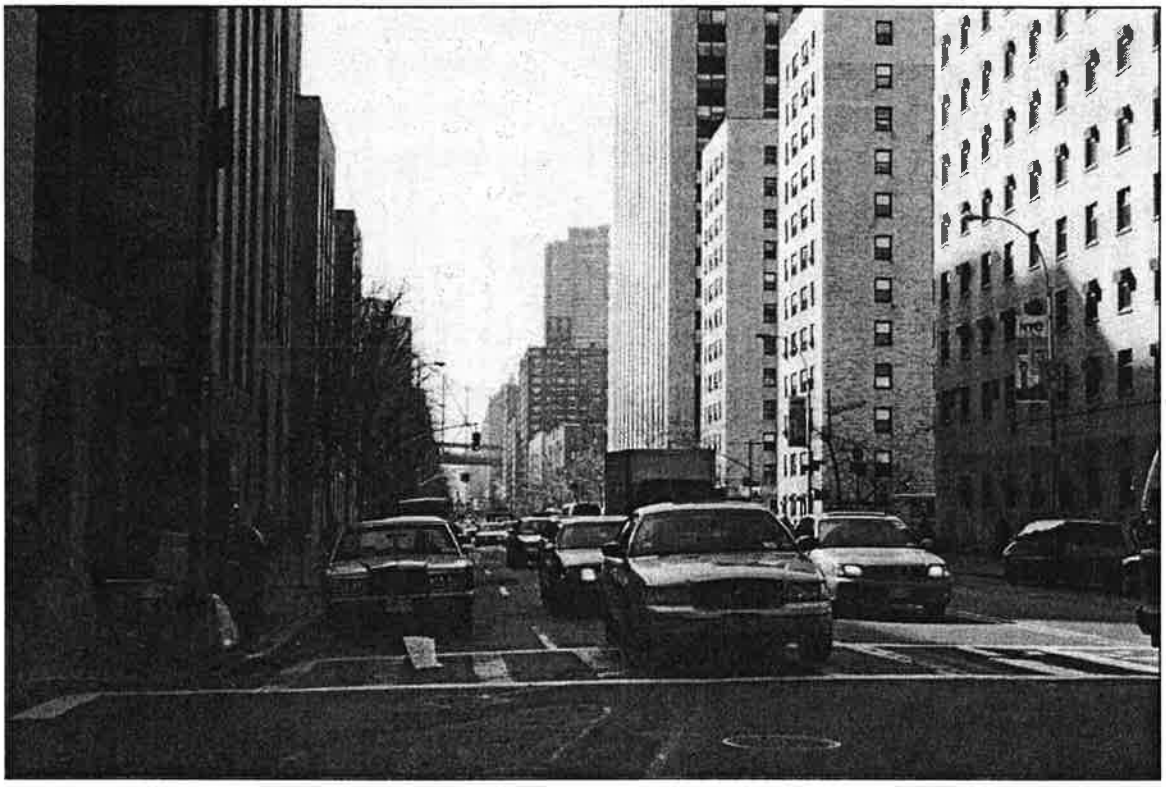
Most of the buildings along First Avenue are of medium to tall height and are residential in use, with retail at the ground floor level. (There are not many retail uses on the side streets or York Avenue.) There are a number of old tenement buildings (usually 4-6 stories), some with nice details and in good repair. These are interspersed with institutional buildings, medium-scale apartment buildings (16-23 stories, or approximately 115 to 220 feet tall), a few large-scale residential towers (as tall as 40 stories, or 416 feet tall), and several churches, including Bethany Memorial Church, built of red brick and stone with elaborate window details and porticoed entrances, and the Church of St. John Nepomucene, a Romanesque style church in red and black brick, with a copper tower and tiled roof, on the east side of First Avenue between East 66th and 67th Streets (see Photographs 11 through 14 of Figures 8-7 and 8-8). The larger buildings are usually set back slightly from the streetwall. Some are stepped back above a larger base, but several rise to their full height without a setback. St. Catherine's Park is a fenced city park spanning the full western blockfront of First Avenue between East 67th and 68th Streets, with many trees, some children's play equipment, and long rows of benches (see Photograph 15 of Figure 8-9).

The southeast corner of East 70th Street and First Avenue is dominated by the Kingsley, a 40-story (416 feet tall) brown brick residential tower with a plaza at street level. Also along East 70th Street east of First Avenue is a 15-story brown brick building oriented in an east-west direction; 5- and 6-story tenements with retail at ground level; and several driveways to below-grade parking lots (see Photograph 16 of Figure 8-9).

Along East 69th Street between First and York Avenues are 5-story tenements and a mid-rise yellow brick institutional building. West of First Avenue is a beautiful, ornamented set of 2- and 3-story rowhouses as well as the small yellow First Magyar Reformed Church of the City of New York, designed in an Secessionist style, and a long 12-story brown brick apartment building oriented in an east-west direction and set back slightly from the streetline (see Photographs 17 and 18 of Figure 8-10).

West of First Avenue on East 68th Street are a new 5-story MSKCC outpatient facility, currently under construction; two attractively detailed red brick apartment building (15 and 16 stories, or 115 and 161 feet tall, respectively); and a more modern 11-story red brick apartment building with cantilevered balconies at the corner. The apartment buildings in the mid-block have courtyards facing the street and are oriented in an east-west direction.

Rockefeller University **7**



York Avenue south from East 70th Street **8**

Views of the Study Area

FIGURE 8-5

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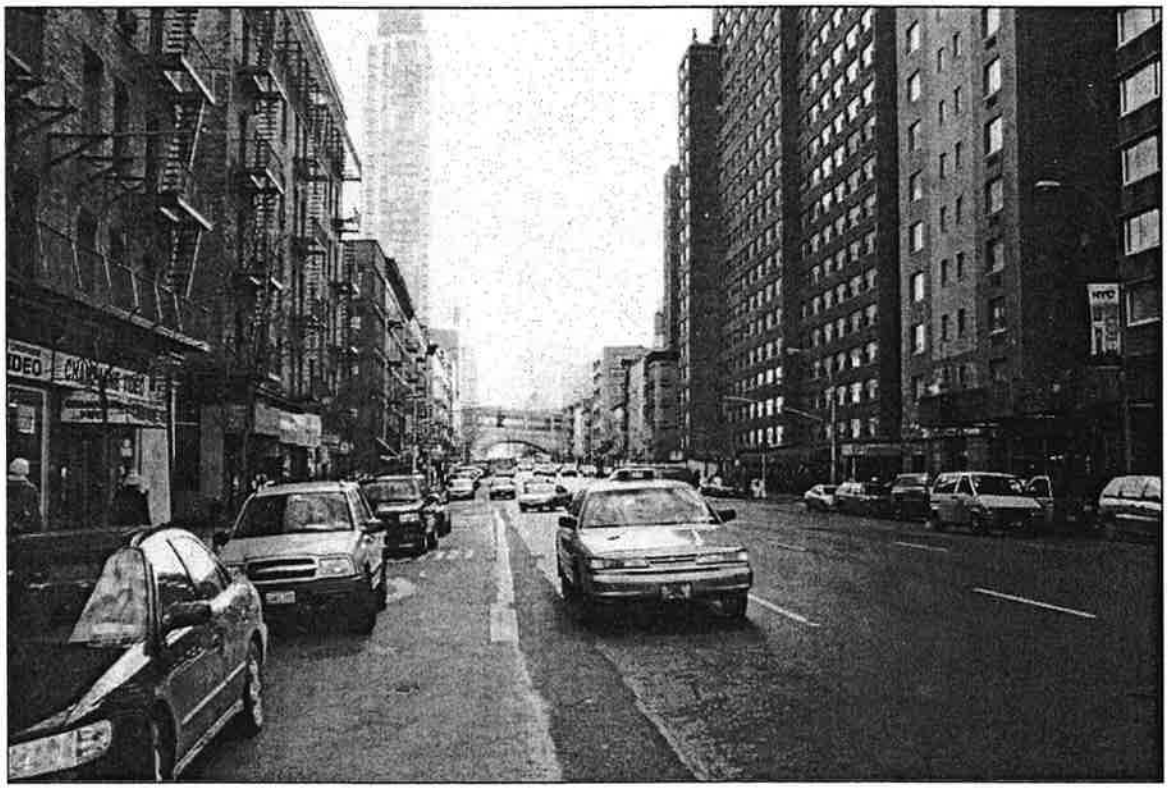
New York Hospital - Cornell Medical Center **9**

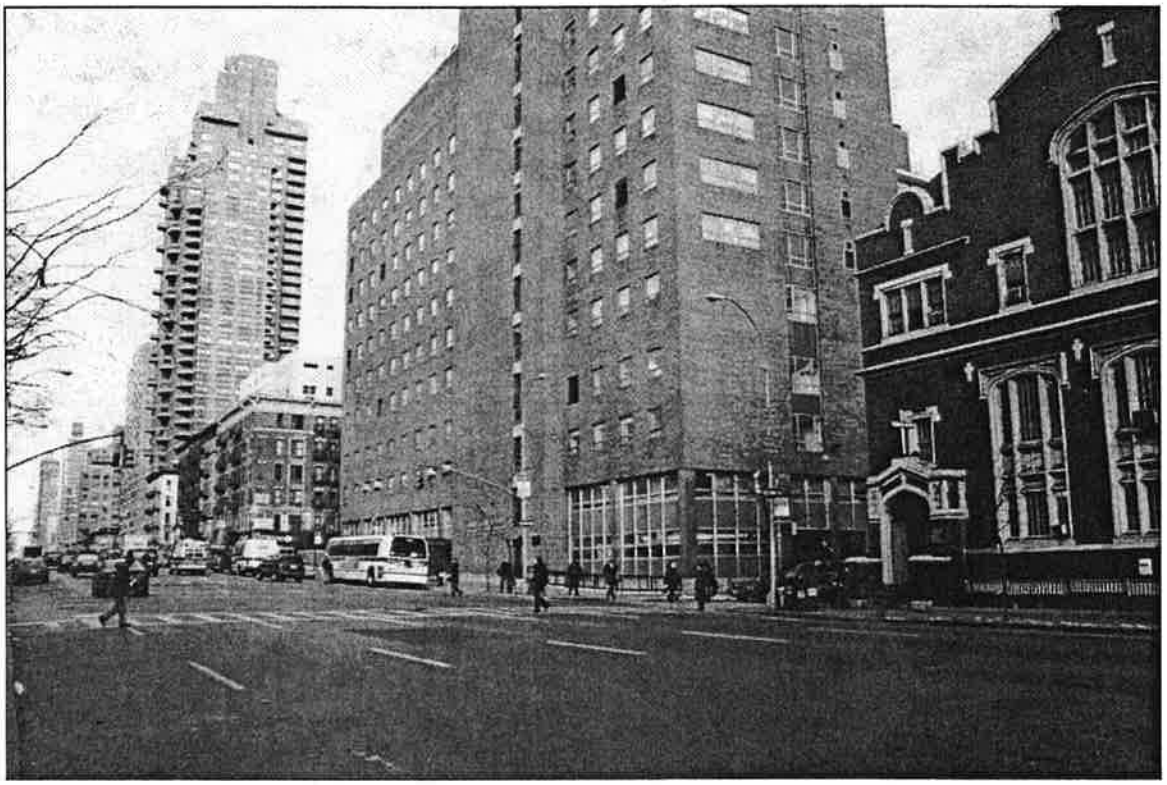
York Avenue north from East 65th Street **10**

Views of the Study Area

FIGURE 8-6



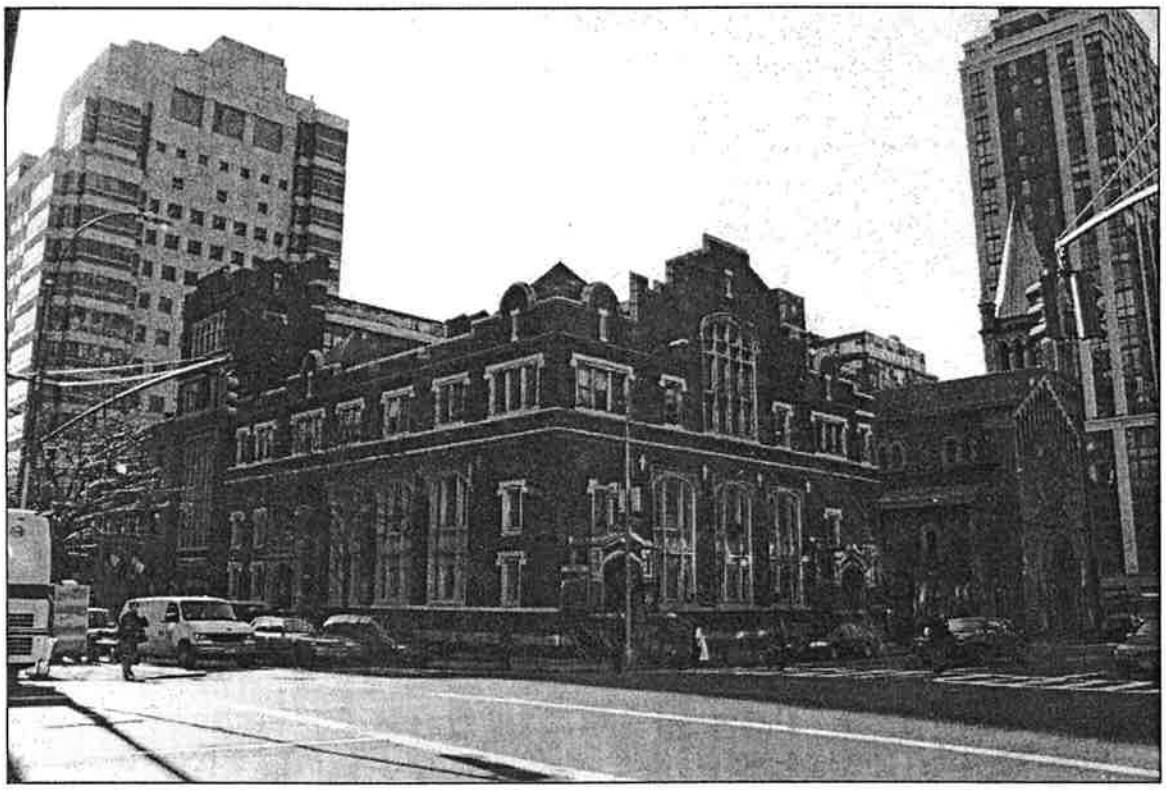
First Avenue south from East 65th Street **11**



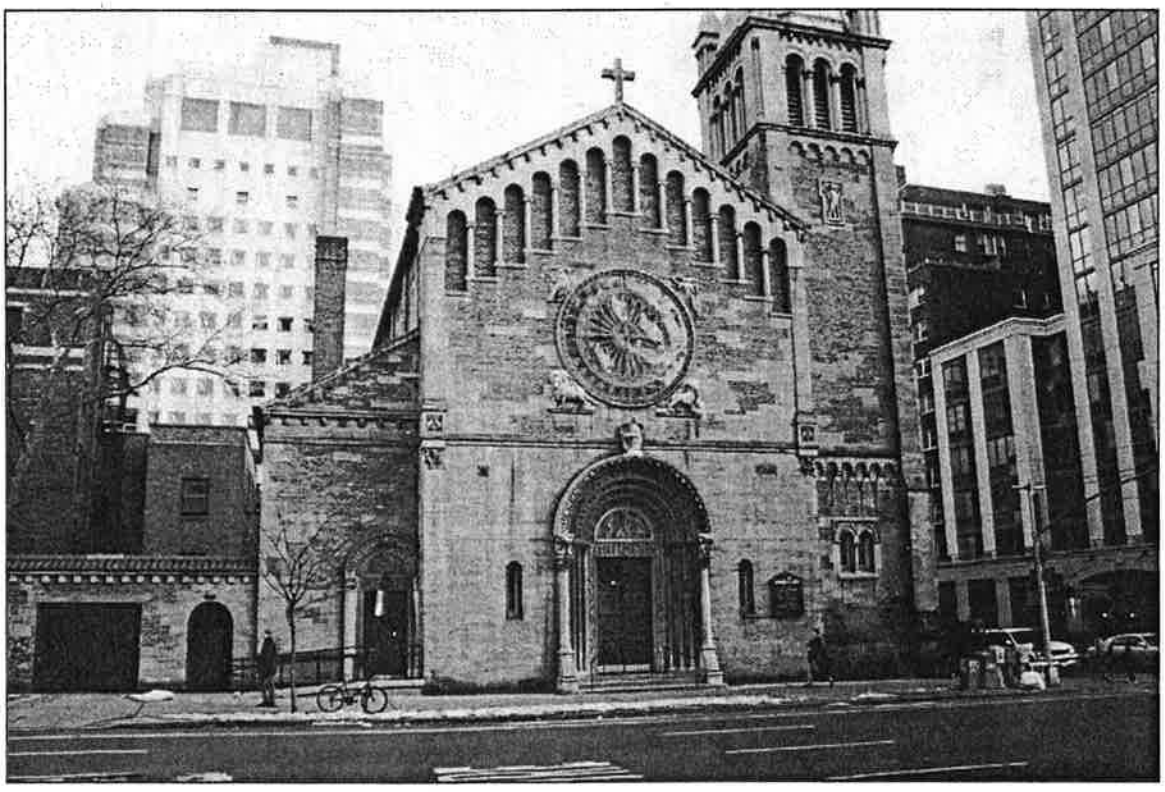
East side of First Avenue north from East 67th Street **12**

Views of the Study Area

FIGURE 8-7



Bethany Memorial Church and related buildings **13**



Church of St. John Nepomucene **14**

Views of the Study Area

FIGURE 8-8

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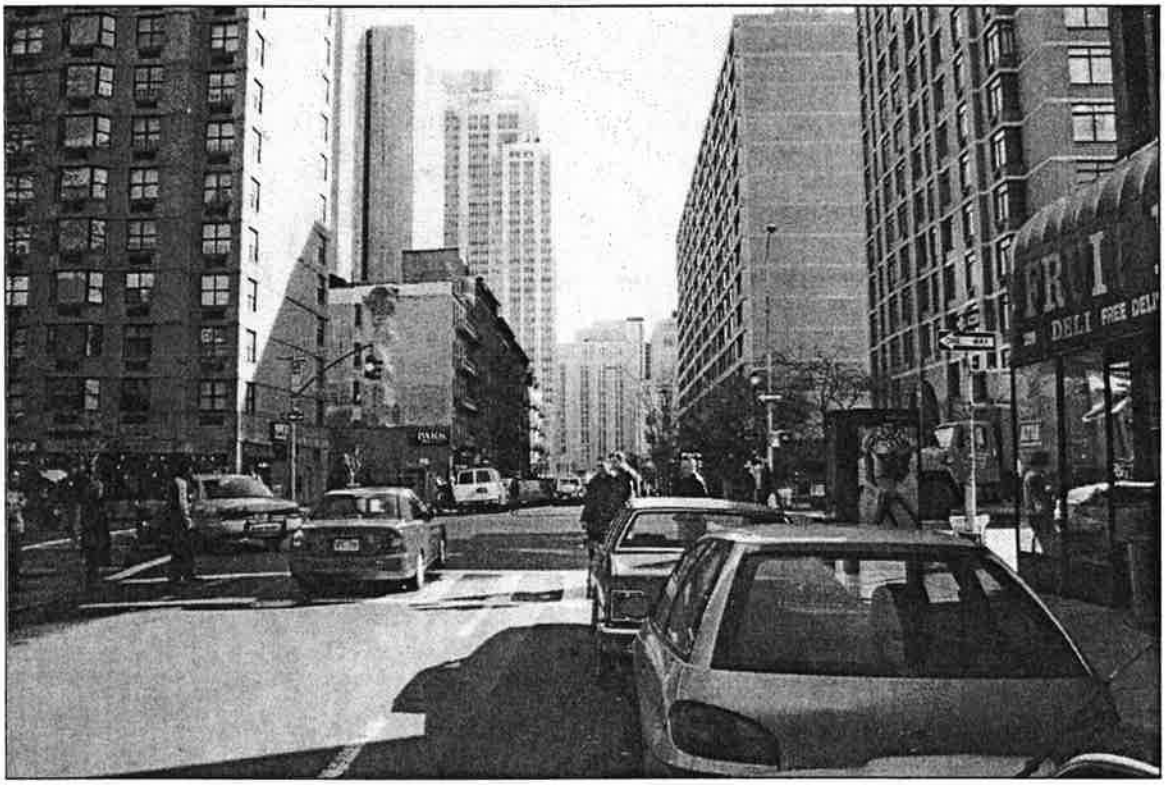
St. Catherine's Park **15**



East 70th Street east from First Avenue **16**

Views of the Study Area

FIGURE 8-9

East 69th Street east from First Avenue **17**

Rowhouses on East 69th Street, west from First Avenue **18**

Views of the Study Area

FIGURE 8-10

West of First Avenue, between East 67th and 68th Streets, is the 3-story Julia Richman High School and its fenced play yard (behind St. Catherine's Park). East 67th Street west of First Avenue are 6-story tenement buildings and a small public library, flanked by a 14-story (138 foot tall) gray brick apartment building, slightly set back from the street, and a low gray brick garage (see Photograph 19 of Figure 8-11).

P.S. 183, a 5-story red brick building with a large arched entryway and strong vertical stone banding, is on East 66th Street to the west of the Rockefeller Laboratory Building. Also on the north side of East 66th Street is the rectory of the Church of St. John Nepomucene. The south side of the street has a row of 5-story tenements with cornices and stoops, a 13-story (116 foot tall) red brick apartment building (oriented in an east-west direction with a slight setback from the streetline), and a new concrete and glass apartment tower (approximately 24 stories, or 220 feet tall) on the corner of First Avenue (see Photograph 20 of Figure 8-11). To the west of First Avenue are 4-, 5-, and 6-story tenements and a long 5-story brick apartment building oriented in an east-west direction with a slight setback from the streetline.

East 65th Street between First and York Avenues consists of the full-block City and Suburban Homes, a series of 6-story walk-up apartments that are the oldest of a series of experimental housing developments for the working poor (see Photograph 21 of Figure 8-12). On the north side of East 65th Street are a long, 14-story mid-century apartment building oriented in an east-west direction with a slight setback from the streetline, 6-story tenements, a 3-story parking garage, and, on the corner of First Avenue, a gray brick 16-story (148 foot tall) apartment tower. West of First Avenue, East 65th Street is primarily made up of 4-, 5-, and 6-story tenements, with 13- and 14-story (116 and 120 foot tall) brick apartment buildings set back slightly from the streetline (see Photograph 22 of Figure 8-12).

In general, the rowhouses and tenements on the mid-blocks have narrow, rectangular footprints and are oriented in a north-south direction. The apartment buildings and non-residential buildings on the midblocks typically have larger footprints and east-west orientations, and are usually set back slightly from the street. A small number of buildings in the study area have a tower set back above a larger base.

VISUAL RESOURCES

The site of the proposed research building can clearly be seen from York and First Avenues, and from East 68th and 69th Streets, but not from elsewhere in the study area. The same is true for the rest of the project site; the tops of the tallest buildings can be seen from farther away, but the buildings themselves are mainly located in the middle of long, narrow blocks and thus are difficult to view (see Photographs 4, 5, 13, 18, 19, and 22 of Figures 8-3, 8-4, 8-8, and 8-10 through 8-12, above). Eastward view corridors in the study area terminate with the NYH-CMC tower and Rockefeller University, which are given a more prominent status by the falling grade, and the university's site at the top of a bluff. Rockefeller University's main entrance at East 66th Street and York Avenue is the focus of the east view corridor of East 66th Street. Views south from First and York Avenues are dominated by the elevated approach to the Queensboro Bridge.

There are no other prominent or significant view corridors or vistas within the study area. Most view corridors are shortened by rising grades or extensive street canopies. The principle facades of churches along First Avenue can be seen fairly well from the avenue as well as from close-by side streets. St. Catherine's Park at East 67th Street is also prominent in the view south along First Avenue. Visual resources on side streets, such as P.S. 183, the rowhouses and the

Hungarian church can only be seen from immediately adjacent streets (see Photographs 6, 8, 10-12, 16, 17, 20 and 21 of Figures 8-4 through 8-7 and 8-9 through 8-12, above).

C. FUTURE WITHOUT THE PROPOSED ACTIONS—2007

URBAN DESIGN AND VISUAL RESOURCES

Without the proposed actions, the project site and its existing buildings are expected to remain in their current condition and use—other than the completion of an infill structure on the main campus block along 67th Street near York Avenue—and, therefore, no major changes would be expected to the urban design of the project site.

Within the study area, there are two projects planned for construction by the year 2007. The first is the Rockefeller University Lab Building, to be located at the southeast corner of York and East 68th Street. The building is proposed to be approximately 230 feet (roughly 12 stories) in height, and would have a large, rectangular floorplate oriented in an east-west direction. The other building to be constructed is a residential tower building on the southeast corner of First Avenue and East 67th Street (currently the site of the Bethany Memorial Church). This building is projected to be approximately 29 stories in height and its design would be a set-back tower over a large, square base, built to the streetline. Given their siting on the avenues, both buildings would be fairly visible within the surrounding area. While the building on the site of the Bethany Memorial Church would be much larger than the church, it would not be out of place in the study area, which is seeing a fair amount of new residential construction of the same type and size, including the new 24-story (220 foot tall) residential structure one block to the south at the southeast corner of First Avenue and 66th Street. The new laboratory building on the Rockefeller University campus, while much lower in height, would change the context of the Rockefeller University campus by adding a new building onto its grounds. The proposed buildings would not obstruct significant, publicly-accessible views or vistas in the study area, as they would be contained within existing block forms.

D. FUTURE WITH THE PROPOSED ACTIONS—2007

DIRECTLY AFFECTED AREA

URBAN DESIGN

The proposed project would rezone the midblocks of the two blocks between East 67th and 69th Streets and York and First Avenues, and create a LSCFD for MSKCC properties on the three blocks between East 66th and 69th Streets. By the year 2007, if the proposed action were approved, MSKCC would construct a new research building on the north block. St. Catherine's Rectory and the Kettering Building would be demolished to allow for construction. This development would change the character of the project site by introducing a 420-foot tall modern building and additional activity to the site.

At approximately 420 feet, the building would be about 290 feet taller than the Kettering Building, about 340 feet taller than the roof of the church, and about 305 feet taller than the peak of its tower (see Figures 8-13 and 8-14). The building would rise to its full height from the streetline, with no setbacks on East 69th Street. On East 68th Street, it would have a 7-story portion at the streetline before setting back. While there are other large-scale tower buildings in the surrounding area (such as the 4-story [estimated at 416 feet tall] Kingsley at First Avenue

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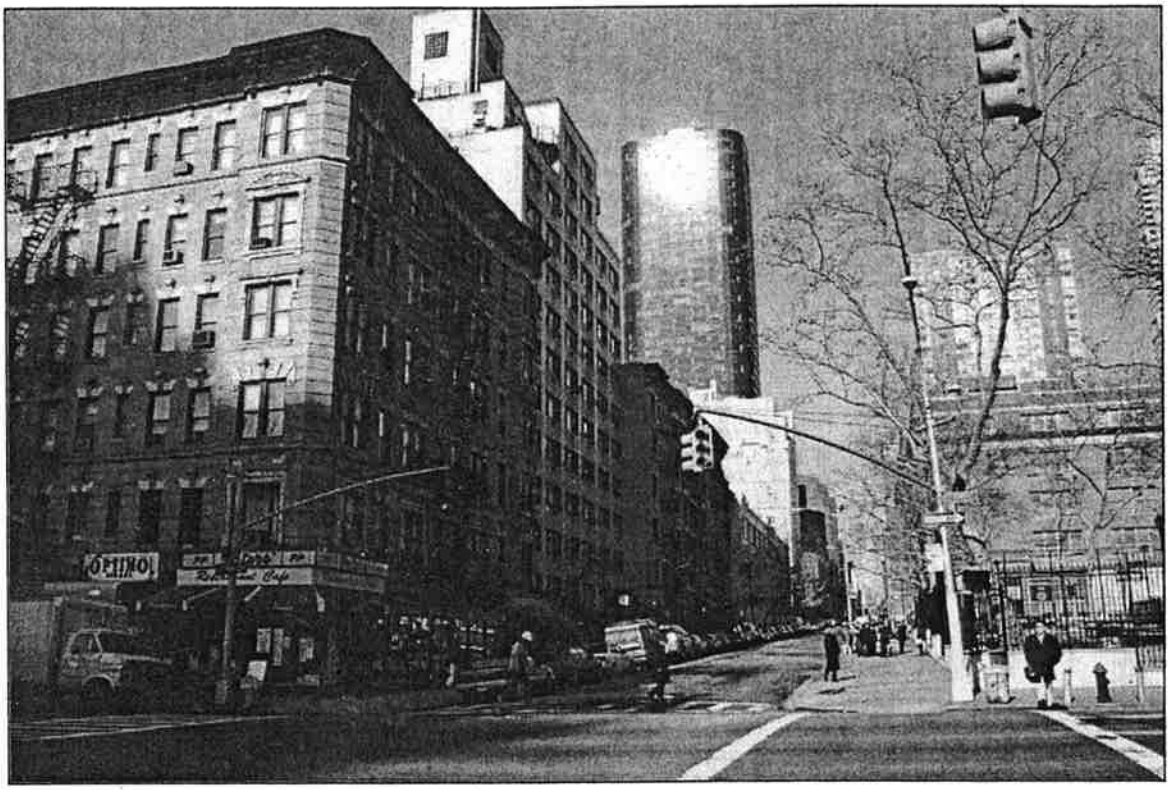


East 67th Street west from First Avenue **19**

East 66th Street east from First Avenue **20**

Views of the Study Area

FIGURE 8-11

4 •01

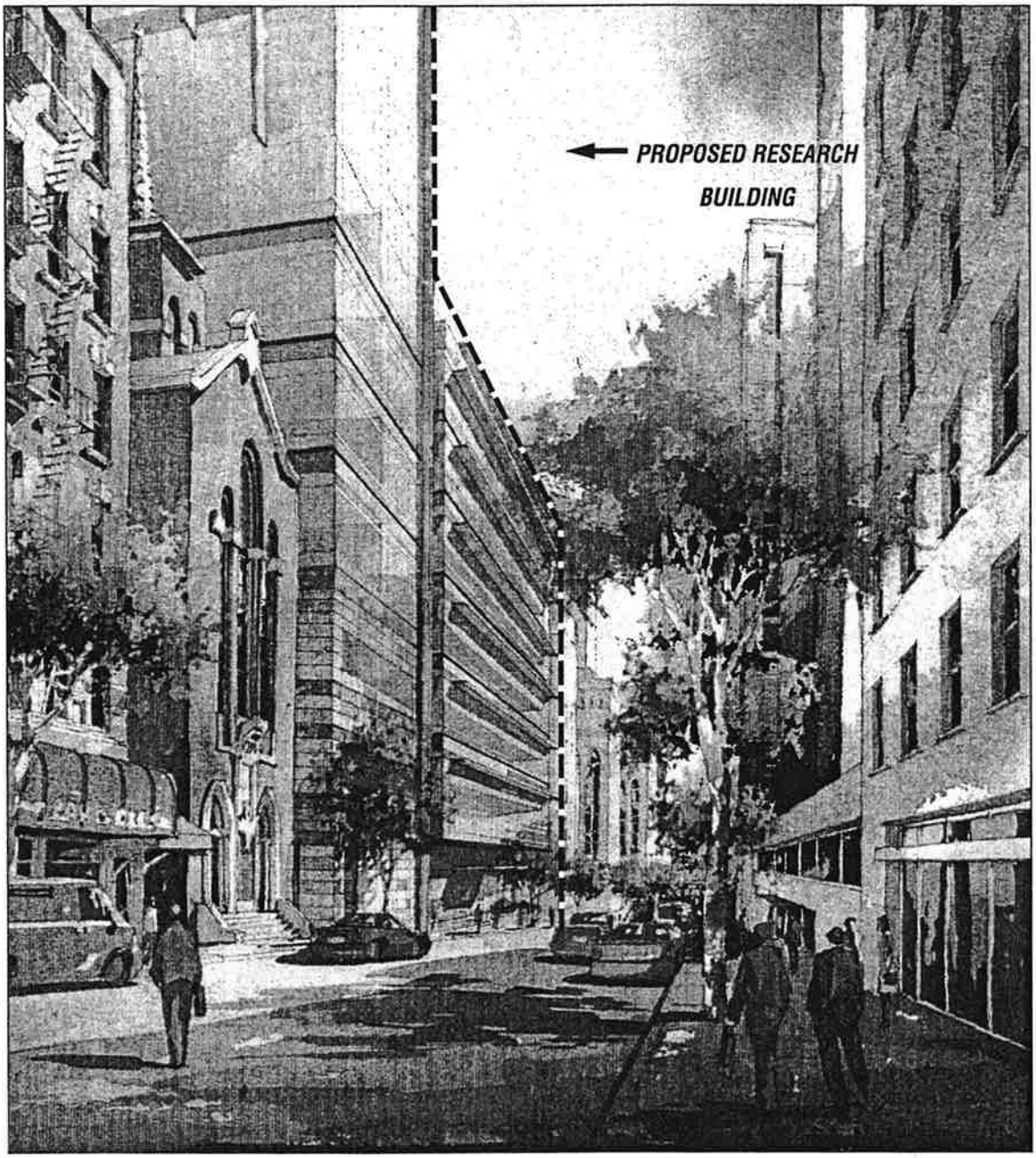
East 65th Street east from First Avenue **21**

East 65th Street west from First Avenue **22**

Views of the Study Area

FIGURE 8-12

11•01



East 68th Street, looking east

Rendering of Streetscape with Proposed Research Building

FIGURE 8-13

East 69th Street, looking west

Rendering of Streetscape with Proposed Research Building

FIGURE 8-14

and East 70th Street and the recently constructed building at the southeast corner of First Avenue and East 66th Street, which is approximately 24 stories [estimated at 220 feet tall]), these are typically residential towers located on wide avenue sites, as opposed to the midblock (See Figure 8-15). The rectangular form of the new building would be oriented north-south, with its narrower end on the street. This orientation would also differ from the norm, as midblock sites are typically occupied by tenements or mid-size, east-west oriented apartment buildings, (approximately 104 to 219 feet tall) set back slightly from the streetline. This orientation, necessary due to the required laboratory floor plan, would serve to minimize the appearance of the building in its immediate context on both East 68th and 69th Streets, although the long side of the building would be more visible in the distance, in particular from the west (see Figure 8-17). The roughly 7-story portion of the building on East 68th Street would be shorter than the existing Kettering Building, and would be shorter than the existing surrounding buildings (see Figures 8-13 and 8-14, above). This portion of the building, rather than the tower, would be most apparent to pedestrians passing by on East 68th Street.

As currently contemplated, the facade of the building would be composed of glass and metal with a masonry base, and thus would be quite different from the extant masonry buildings on the project site. In the currently contemplated design, the masonry base would relate in scale, color, and texture to the adjacent St. Catherine's Church. In addition, the glass and metal facade of the taller portion of the proposed research building would be in keeping with the new infill addition on MSKCC's main campus block. As currently contemplated, the architectural design also calls for projecting horizontal shading devices on the east side of the tower. The shading devices would create shadow patterns across this facade, and are intended to constantly change the tower's perceived scale and appearance. The design of the building would also acknowledge the adjacency of the church through the use of a linear courtyard separating the two buildings. While these elements of the currently contemplated design could help to improve the building's relationship to its context. Many of the elements are subject to change and could evolve during final design.

Locating the main entrance to the new building on East 68th Street (where the entrances to the extant buildings are) would maintain the linkage to the main campus block. An additional entrance would be located on East 69th Street. As currently contemplated, these transparent, glass-enclosed entrances would visually link the interior of the building with the exterior, enlivening the adjacent streets by day as well as by night. The proposed actions would also be expected to enliven the nearby portion of the study area with greater activity and more pedestrians.

VISUAL RESOURCES

The project, as built in the year 2007, would not have any significant adverse impacts on publicly-accessible, significant views or vistas from the project site area, as the views are from the publicly accessible areas of the project site that would not be disturbed or obscured by the new construction.

STUDY AREA

URBAN DESIGN

Natural Features, Street Patterns, and Block Shapes

The proposed project, as built in 2007, would be constructed on an existing block, and would replace two buildings that currently occupy a portion of the project site. Therefore, the proposed actions would not alter any natural features, the street pattern, or block shapes in the study area, and there would be no impacts to these urban design features as a result of the proposed actions.

Streetscape

The proposed research building would be built to the streetline on both East 68th and 69th Streets. On both streets the building, by virtue of its height and location at the streetline, would have a much greater presence than what currently exists. However, the full height and scale of the building would not be perceptible in this immediate context. As discussed above, the 7-story portion of the building on East 68th Street would be most apparent to pedestrians on that street. The major entrance to the new building would remain on East 68th Street, where entrances to the extant buildings are at present; there would also be a secondary entrance on East 69th Street. As noted above, and as currently contemplated, the transparent nature of these entrances, as well as planting areas along the streets, is expected to enliven the adjacent streets. Use of the streets is not expected to change significantly, and the other streets in the project area would not be affected by the new building.

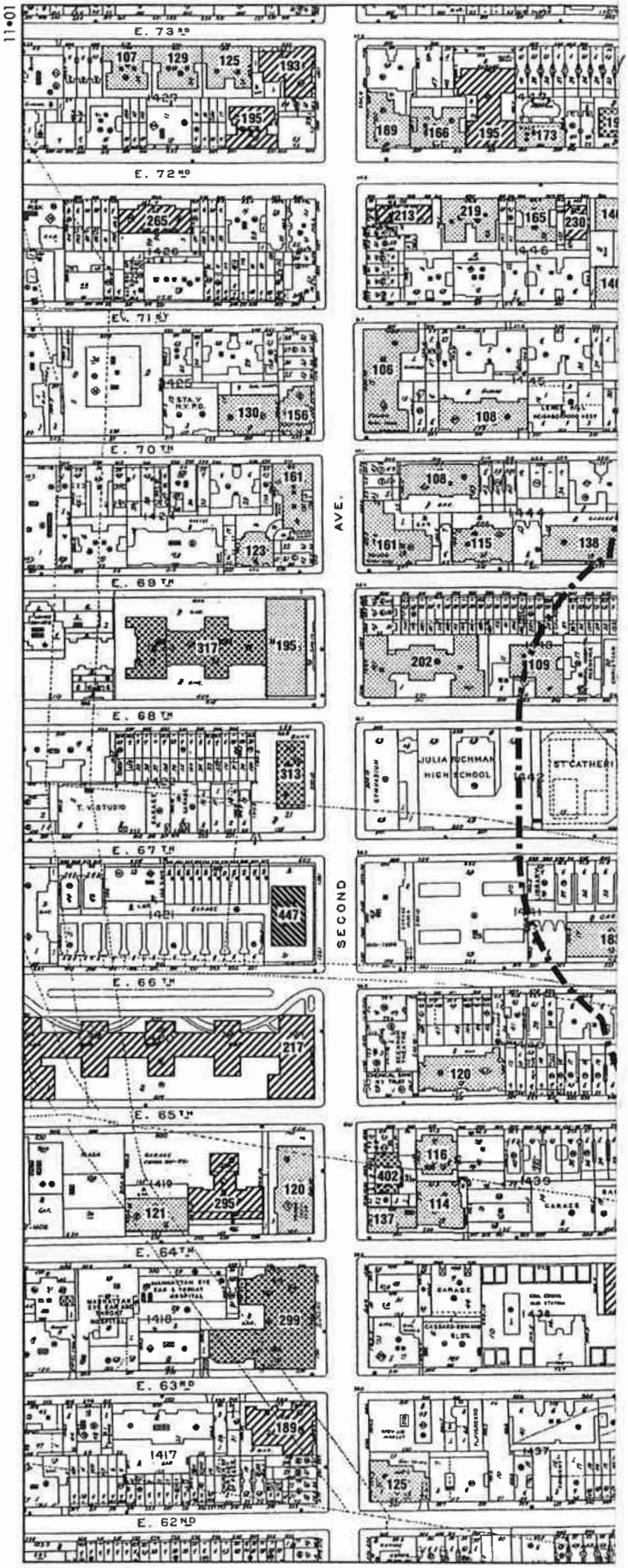
Building Uses, Shapes and Forms

The use of the building would be consistent with one of the predominant uses in the study area. The buildings in the study area have a wide variety of facade materials and styles, and thus the currently contemplated modern design of the new building, to be built of glass and metal, would be similar to a number of examples. The shape of the building would be a low, wide base with a tall, narrow tower above, similar to some of the institutional and residential buildings in the area. The height of the proposed building would be much taller than most large mid-block buildings in the area, which range in height from 104 to 219 feet; therefore, the new, larger-scale building would also increase the density of the study area. However, the transfer of up to 100,000 square feet to the main campus block would serve to reduce the potential density allowed by the rezoning in blocks not wholly occupied by MSKCC, thus reducing the effect of this density.

The north-south orientation of the taller portion of the building would be different than the typical east-west orientation other midblock buildings in the area, which are typically residential. However, this orientation would serve to minimize its appearance along East 68th and 69th Streets. Because of the sloping grade, the building would appear somewhat shorter than it would be from First Avenue and other more elevated locations. However, most pedestrians headed for a specific location are likely to be looking straight ahead and thus would not stop to look up at the top of the building.

Conclusion

Despite design measures currently contemplated, the new mid-block tower would significantly increase density in the midblock, adversely affecting this component of urban design. Other components of urban design character would not be affected. Overall, there would be a



Building Heights Map

FIGURE 8-15

MEMORIAL SLOAN-KETTERING
CANCER CENTER

significant adverse impact on urban design; however, this impact would be partially mitigated by the reduction in height from 440 to 420 feet (see Chapter 17, "Mitigation"). While alternatives to the current design have been contemplated (see Chapter 18, "Alternatives"), the applicant's programmatic requirements for the building involve necessary floor to floor heights, which limits the range of available options.

VISUAL RESOURCES

The proposed research building would be seen along East 68th and 69th Streets, as shown above (see Figure 8-13 and 8-14). It would also be seen in views north up First Avenue (see Figure 8-16). It would be glimpsed across St. Catherine's Park, but the tall trees of the park would generally block this view (see Figure 8-17). In views south on First Avenue, large buildings on the east side of the avenue, including the Kingsley and the Windsor, would block many views to the research building. Further, the proposed research building would not obstruct significant views or vistas in the study area, as it would be contained within existing block forms and the important views are seen from areas that are and would remain publicly accessible (i.e. at street level). It would not significantly affect the visual enjoyment of historic resources in the area, which (as stated above) are typically only visible from a very small area. Views of the east-facing windows of St. Catherine's Church from a limited portion of the East 69th Street sidewalk between York and First Avenue would be eliminated by the proposed building (see Figure 7-2). Given the limited extent of these views, no significant adverse effects to visual resources are expected. Further, the church's school building that formerly occupied a portion of the project site had blocked views of these windows. As currently contemplated, the design of the proposed research building is intended to acknowledge the adjacency of the church with a complementary masonry facade at ground level. Further, the stained glass windows on the north and south ends of the church would not be affected by the proposed research building.

E. FUTURE WITHOUT THE PROPOSED ACTIONS—2011

URBAN DESIGN AND VISUAL RESOURCES

Without the proposed actions, the project site and its existing buildings are expected to remain in their 2007 condition and use, and, therefore, no changes would be expected to the urban design of the project site.

By the year 2007, the Rockefeller University Lab Building and the residential building on the site of the Bethany Memorial Church, discussed above, are projected to be complete. As stated above, both buildings would alter the appearance of the high-traffic streets adjoining the project site (York and First Avenues) and would increase the density of the surrounding area, but not significantly so. Their uses would also be consistent with the predominant uses of the area (residential and institutional).

There are no other defined projects planned for construction within the study area that would be complete by 2011.

F. FUTURE WITH THE PROPOSED ACTIONS—2011

DIRECTLY AFFECTED AREA

URBAN DESIGN

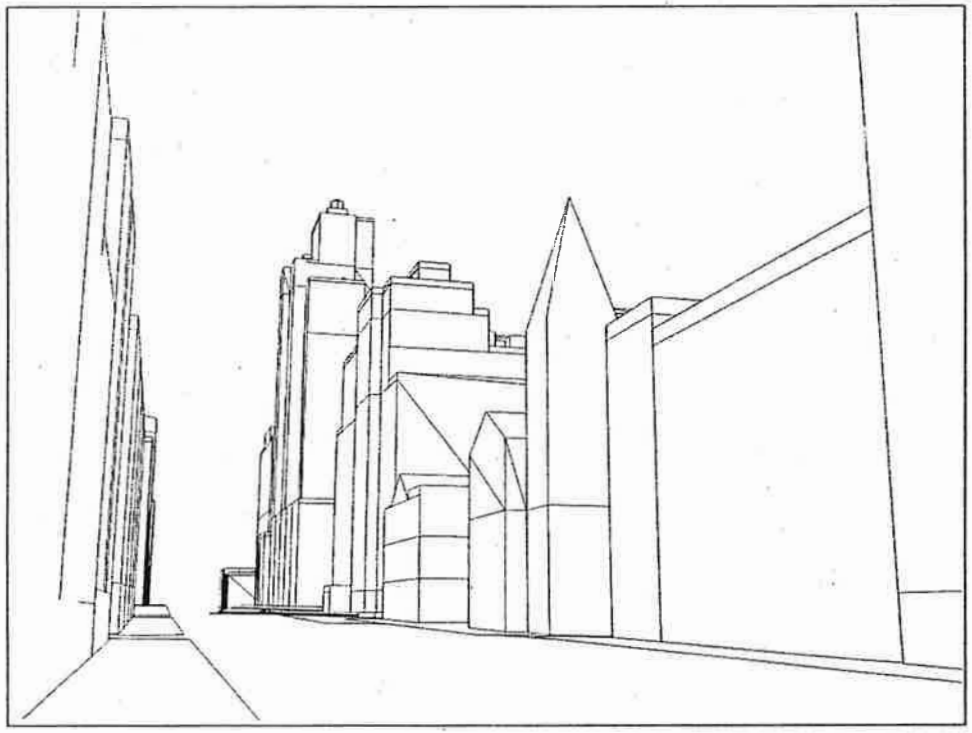
While the proposed laboratory facility on the north block is being designed in detail, plans for the development of the main campus block are not definite at this time. A reasonable worst case scenario of 390,000 zsf for this block was developed for analysis purposes, representing the full build-out of the floor area allowed by the rezoning (290,000 zsf) and authorization to move a maximum of 100,000 zsf from the north block to the main campus block. The configuration analyzed is as-of-right with the R9 rezoning; however, the applicant believes that such a configuration does not represent ideal medical facility planning. It is likely that in the future, development on this block would not follow the exact pattern described. As stated in Chapter 1, "Project Description," the design team developed campus planning goals which included enhancing the MSKCC campus by creating a civic identity and a strong presence on First Avenue, bringing new activity to the sidewalks. For each change of the LSCFD, MSKCC would be obligated to obtain CPC approval, which would in turn require environmental review prior to approval.

The proposed actions, as built by 2011 under the reasonable worst case scenario, would alter the appearance of the MSKCC blockfront on First Avenue. The building facing First Avenue and extending into the midblock between East 67th and 68th Streets would be half as tall as the extant building on First Avenue, and therefore would have a lesser bulk on that sidewalk, although the floorplate of the building would be much larger than that of existing buildings on the block site. The building would provide a major new entrance to the campus where little activity now occurs. The height of the base of the building fronting onto East 68th Street would be less than that of the Howard Building, which currently exists on the site. The set-back tower of the building, at 448 feet, would be considerably taller than the Howard Building and other extant buildings on the site; however, the east-west orientation of the tower would be similar to that of other buildings on the block. Conceptual drawings show that the building would be built to the street, which would create streetwalls consistent with that of the extant buildings on the site (see Figure 1-9 in Chapter 1, "Project Description"). The lower-scale portion of the building at the streetline, rather than the tower, would be most apparent to pedestrians passing by.

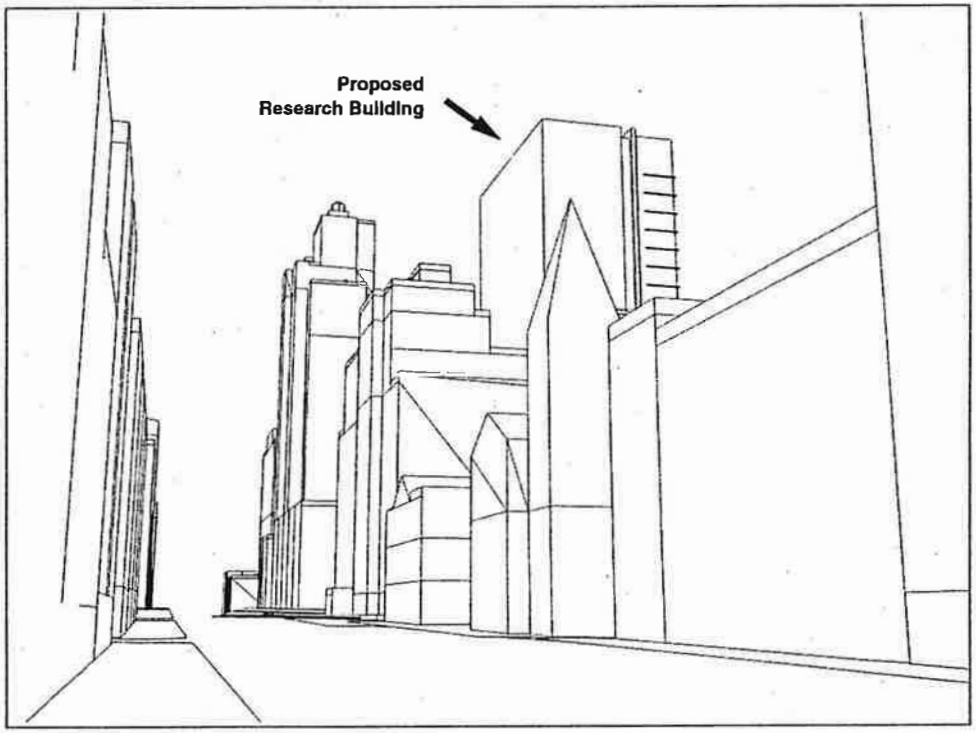
As discussed above, with a building envelope at 420 feet in elevation, the proposed research building between East 68th and 69th Street would be considerably taller than the existing buildings on that portion of the project site, although the 7-story portion of the building would be shorter than the existing Kettering Laboratory Building. Like the existing buildings on the project site, the proposed building would rise to its full height without setbacks on East 69th Street. The rectangular form of the proposed research building and the other new buildings on the project site would also be consistent with that of existing buildings on the project site and in the surrounding area. However, unlike the existing buildings on this portion of the project site, the research building would be oriented in a north-south (rather than east-west) direction and would have a much larger floorplate (see Figure 8-18).

While other elements contributing to the area's urban design would not be affected by the proposed project, cumulatively the two buildings would significantly increase the density and height of the midblocks of the north block and main campus block.

11•01



Existing
First Avenue, looking north from East 65th Street

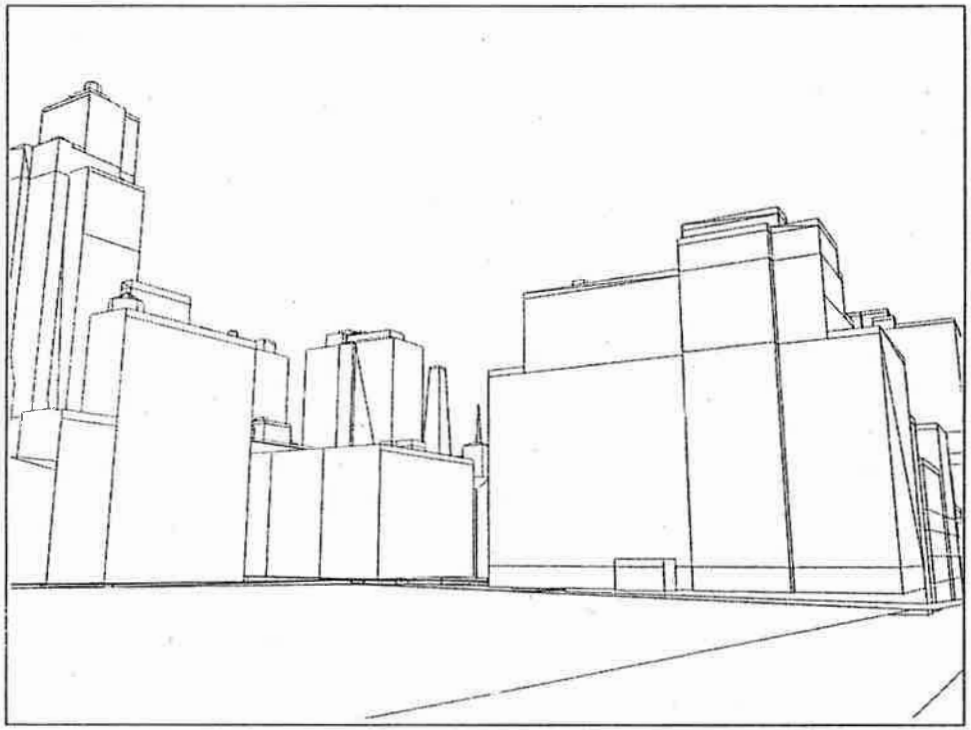


Proposed
First Avenue, looking north from East 65th Street

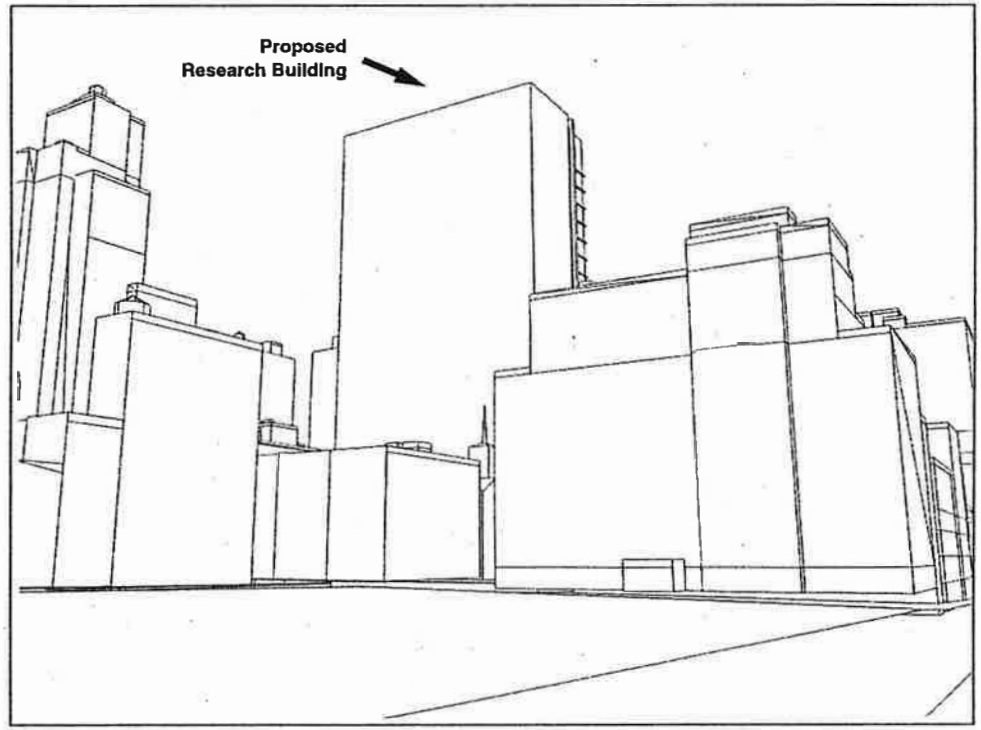
View North on First Avenue (2007)

FIGURE 8-16

11•01



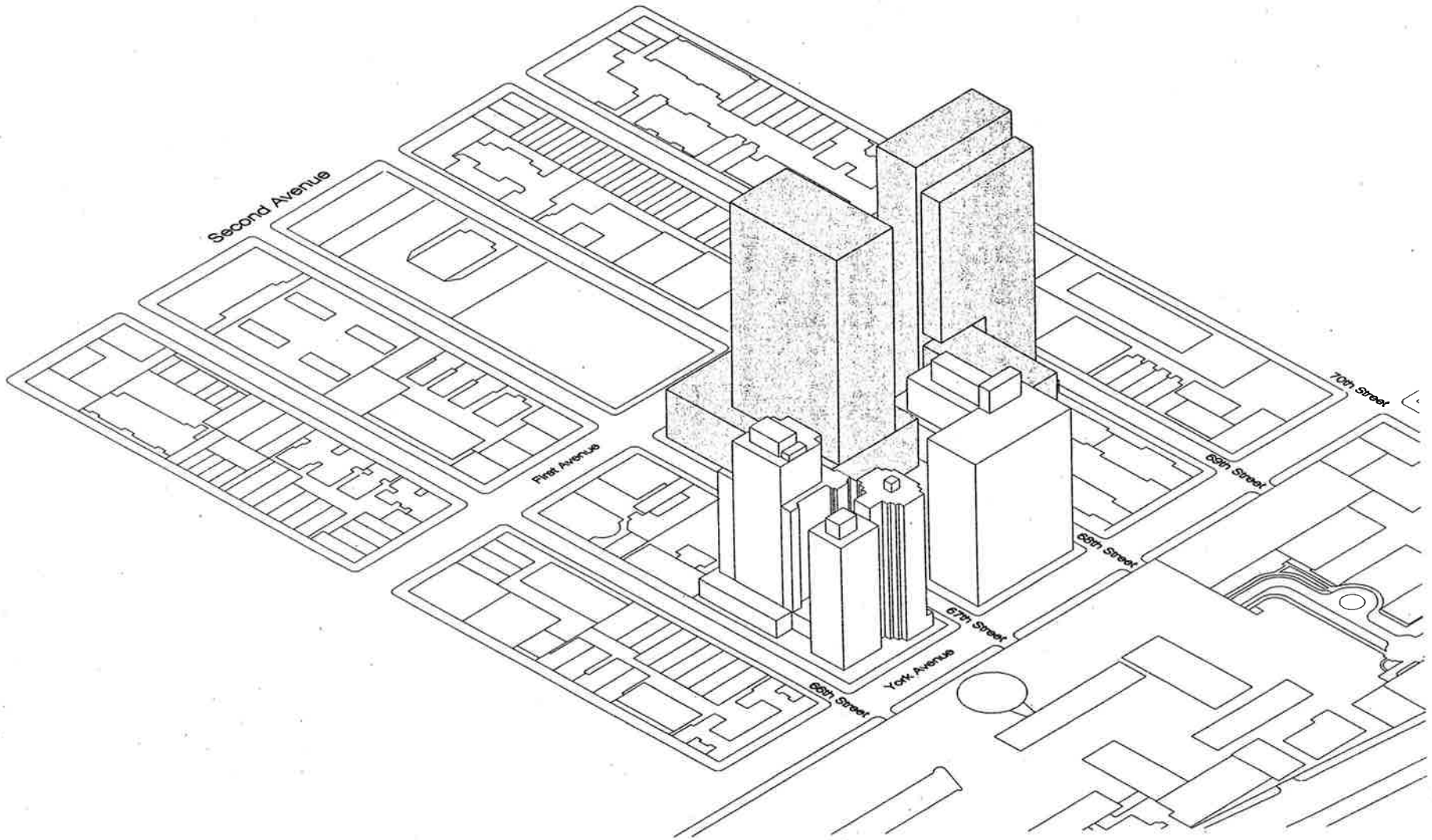
Existing
East 67th Street between First and Second Avenues, looking northeast
(Existing trees would largely block this view)



Proposed
East 67th Street between First and Second Avenues, looking northeast
(Existing trees would largely block this view)

View Northeast Across St. Catherine's Park (2007)

FIGURE 8-17



Full Campus Development Bulk Diagram (2011)

FIGURE 8-18

VISUAL RESOURCES

The new buildings would be contained within existing block forms, and thus would not obstruct any significant views or vistas, or significantly affect the viewing of visual resources in the area.

STUDY AREA

URBAN DESIGN

Natural Features, Street Patterns, and Block Shapes

The proposed actions in 2011 would be built on existing blocks, and would replace existing buildings that currently occupy portions of the main campus block. Therefore, the proposed actions would not alter any natural features, the street pattern, or block shapes in the study area, and there would be no impacts to these urban design features as a result of the proposed actions.

Streetscape

The project development by 2011 would be built to the street and would maintain a presence at the respective streetwall. The proposed actions would also be expected to enliven the nearby streets with greater activity and more pedestrians.

Building Uses, Shapes and Forms

The use of the buildings to be constructed by the year 2011 would be consistent with one of the predominant use in the study area. The shape of the building on the main campus block would be tall, with lower floors built to the street and a set-back "tower," similar to some of the institutional and residential buildings in the area. However, the building would be considerably larger in scale than what currently exists, particularly in the midblocks in the immediately surrounding area. As discussed above, the larger mid-block buildings in the surrounding area are typically much smaller in height (ranging from 104 to 219 feet tall) and floorplate size than the proposed buildings. In addition, most have an east-west orientation; while the tower of the building on the main campus block shares this orientation, the research building on the north block does not.

Conclusion

The two towers as built in 2011 would significantly increase density in the midblocks, adversely affecting this component of urban design. While the effect of the research building would be partially mitigated by its reduction in height in the building envelope from 440 to 420 feet (see Chapter 17, "Mitigation"), cumulatively the two buildings would still have a significant impact. Other aspects of urban design character would not be affected. Alternatives to the proposed project that may have a different impact on density and other components of urban design are discussed in Chapter 18, "Alternatives."

VISUAL RESOURCES

A potentially notable effect of the proposed actions, as built by year 2011, would be the relationships created between the new buildings and nearby visual resources. On First Avenue, the new building would be directly across the street from St. Catherine's Park and adjacent to a new, high-rise residential building and the Church of St. John Nepomucene. While the proposed actions would change the context of the park and the church, it would not adversely effect the visual enjoyment of them.

As described above, the research building would block views to the east windows of St. Catherine's Church. However, given the very limited extent of these views, this would not be considered a significant adverse impact. ❖

A. INTRODUCTION

Memorial Sloan-Kettering Cancer Center (MSKCC) is part of a neighborhood that is largely characterized by major medical institutions. Similar to MSKCC, the other institutions came to the neighborhood in the early part of the 20th century and have been a major influence on its development ever since. The proposed actions would allow development on the MSKCC campus that is in keeping with these traditional uses that have created a world-renowned complex of medical facilities.

This chapter analyzes the extent to which the proposed actions may alter neighborhood character, which is an amalgam of the many factors that combine to give an area its distinctive personality. The components include land use, scale and type of development, historic features, patterns and volumes of traffic, noise levels, and other physical or social characteristics that help define the community. Not all of these elements affect neighborhood character in all cases; a neighborhood usually draws its character from a few determining elements. This chapter draws from the range of assessments presented in the other chapters of this environmental impact statement (EIS).

Since publication of the DEIS, MSKCC has reduced the scale and scope of the proposed project. The height of the building envelope for the proposed research building has been reduced from 440 feet to 420 feet. MSKCC has also eliminated the south block from the proposed rezoning area. Together, these changes would result in less people (and therefore traffic) coming to the area, and a lower building with less urban design density and shorter shadows than the project that was proposed in the DEIS. The overall effects of the proposed project are described in greater detail below.

B. EXISTING CONDITIONS

The project site, MSKCC campus and adjacent portions of blocks to be rezoned (between East 67th and 69th Streets and First and York Avenues), is a fully developed urban environment with only two sites that do not have structures—on East 69th Street, the former site of the school (now demolished) belonging to the Church of St. Catherine of Sienna and on East 67th Street, the play yard of P.S. 183. MSKCC came to this area in 1939 with the construction of Memorial Hospital on York Avenue and 68th Street. In 1945 the Sloan-Kettering Institute (SKI) was created and its first building was opened in 1948 adjacent to Memorial Hospital. In addition to MSKCC buildings in the rezoning area, there are residential structures and a church.

The surrounding area hosts other institutions that also contribute strongly to its character. These institutions include Rockefeller University, which was founded on a site to the east of York Avenue at East 66th Street in 1901. Its campus, which stretches from East 68th Street south to East 63rd Street, comprises numerous buildings in a variety of styles reflecting the development of architecture during the 20th century. North of East 68th Street is the New York Hospital-Cornell Medical Center (NYH-CMC)—a modernist, stylized Gothic complex of buildings of

various heights, organized on a grid plan centered around a 27-story tower. Construction of this complex began in 1927. In addition to their main campuses, the institutions own other buildings in the area for staff housing as well as for clinics and other medical facility uses.

Until the demolition of the Third Avenue elevated transit line in 1955, the neighborhood had a strong manufacturing base, in addition to institutional and residential uses. The demolition of the elevated train line, together with the closing of a garbage incinerator and the conversion of the nearby Con Edison power plant from coal to oil, initiated a development boom on the Upper East Side that has continued relatively unabated to this day, as high-rise buildings replace tenements, row houses, and small commercial buildings, particularly on the avenues. Over the years, the area has also experienced upgrading of former manufacturing and warehouse space for use as showrooms, offices, or other commercial uses. The neighborhood continues to experience change, with expansions planned and underway at the various institutions and a number of high-rise residential developments recently completed or planned, including 38- and 50-story buildings between East 72nd and 73rd Streets east of York Avenue, a 29-story building at East 67th Street and First Avenue, and a 24-story building at East 66th Street and First Avenue.

At ground-level, both First and Second Avenues are lined with retail and commercial uses, usually neighborhood-oriented convenience shops and services. Second Avenue is filled with residential high-rises, with fewer 4- and 5-story tenement buildings compared to First Avenue. The tall, modern residential and institutional buildings that dominate York Avenue generally do not contain retail uses at ground-level. Higher density uses tend to be located along the avenues; the side streets are generally less densely developed, with 4- and 5-story residential tenements interspersed with larger, more recently built, luxury apartment complexes, and scattered institutional facilities. The neighborhood also has a number of schools and churches, including Julia Richman High School on Second Avenue and the First Magyar Reformed Church of the City of New York (on East 69th Street).

The neighborhood does not have many parks. St. Catherine's Park, located on the west side of First Avenue between East 67th and 68th Streets, is the area's main resource. The East River Esplanade is distant from most of the neighborhood and not easily accessible. A number of newer buildings have plazas, some with sitting areas. Other buildings have landscaped flower beds that are visual resources. The campus of Rockefeller University, while private, is a visual amenity along York Avenue. There are also fairly extensive street tree canopies on East 70th and 69th Streets.

Two historic resources of the area reflect the importance of the medical institutions. Founder's Hall on the Rockefeller University campus is a National Historic Landmark and NYH-CMC has been found eligible for listing on the State and National Registers of Historic Places. Other resources include rowhouses, apartments, a public school, and a church that are related to residential uses in the neighborhood.

The topography of the area has a slight upward slope toward East 70th Street and a downward slope to the York Avenue edge of the Rockefeller University campus. Beyond NYH-CMC and Rockefeller University, the neighborhood ends at the FDR Drive along the East River. Between the FDR Drive and York Avenue, Rockefeller University and NYH-CMC have campuses without cross streets from East 70th Street on the north to East 63rd Street on the south. West of York Avenue, the neighborhood is laid out in a grid street pattern. Broad avenues running north-south and narrow streets running east-west create short, wide blocks in the area.

The neighborhood has a wide range of building types, styles, heights, densities and uses. As mentioned above, the large scale and institutional nature of the medical centers and related schools in the area primarily define the neighborhood, and contrast with the medium- and high-density residential buildings that represent the area's other predominant use.

The buildings in the area generally maintain the street wall. However, as mentioned above, a number of the newer buildings are set back with plazas or planted areas between the buildings and the sidewalk.

Most of the streets in the neighborhood are one-way, with the majority of vehicular traffic located on First, Second, and York Avenues. Traffic conditions in the neighborhood are generally busy, with several areas of concentrated activity (see Chapter 12, "Traffic and Parking"), particularly near access points to the FDR Drive. York and First Avenues also have the majority of pedestrian activity in the area, due in large part to the high concentration of jobs in the surrounding institutions.

Because of the heavy traffic volumes, existing noise levels in the project area are generally relatively high (i.e., daytime $L_{eq(1)}$ values range between approximately 65.6 and 75.7 A-weighted decibels [dBA]) and reflect the high traffic volumes along First and York Avenues as well as the side streets.

C. FUTURE WITHOUT THE PROPOSED ACTIONS—2007

In the future without the proposed project, by 2007, conditions on the project site would not be expected to change, and thus not would cause any change in the character of the neighborhood.

As described in Chapter 2, "Land Use, Zoning, and Public Policy," a number of other projects in the area are planned to be completed by 2007. In general, the scale of the buildings and the types of uses proposed (institutional and residential), are similar to existing patterns. The 12-story (approximately 230-foot-tall) laboratory building proposed to be constructed on the campus of Rockefeller University would increase the density of development at East 68th Street and York Avenue and would somewhat obstruct views of historic and visually striking NYH-CMC complex. A 29-story building proposed to be constructed at 1234 First Avenue would replace a low, small-scale church, increasing the density of First Avenue.

These background projects would result in an increased number of vehicle, transit, and pedestrian trips in the area. However, travel patterns are not expected to significantly differ from existing patterns, and there would be no changes large enough to cause significant changes to neighborhood character. Noise is also expected to increase with the increases in traffic; however, the changes would not be significant or perceptible.

Overall these anticipated projects are not be expected to significantly alter the character of the neighborhood.

D. FUTURE WITH THE PROPOSED ACTIONS—2007

The proposed project, as built in 2007, would affect some but not all elements contributing to the neighborhood character of this area of the Upper East Side of Manhattan. It would support and expand a traditional land use in the area, medical facilities, and would support the overall utility of the area. It would not significantly impact socioeconomic conditions. With a construction protection plan for St. Catherine's Church, construction-related impacts on historic resources would be avoided. With an (E) designation there would be no significant noise

No view corridors or visual resources would be affected. However, views to the east-facing clerestory windows of St. Catherine's Church would be blocked. The architectural design of the proposed research building has been developed to respect the small-scale St. Catherine's Church immediately to its west with a linear courtyard between the two buildings and a masonry facade at the lower floors to complement the brick facade of the church. The new midblock tower would significantly increase density in the midblock, adversely affecting this component of urban design. The projected impact on urban design would result in a significant adverse impact to neighborhood character. To reduce both the midblock density and the impact of the new building, between the Draft and Final Environmental Impact Statements, the height of the building was reduced from 440 feet overall to 420 to the top of the mechanical parapet and 430 feet to the top of the building's mechanical stacks. This would partially mitigate the building's adverse effect on urban design and its corresponding effect on this aspect of neighborhood character.

The proposed action would result in a net increase of 548 employees at the MSKCC research building on the north block of the campus. This increase would result in additional traffic, transit, and pedestrian trips in the study area. Overall, there would be an adverse impact on neighborhood character that would be partially mitigated by the reduction in building size.

E. FUTURE WITHOUT THE PROPOSED ACTIONS—2011

In the future without the proposed actions, conditions on the project site is not expected to change, and thus will not alter the character of the neighborhood.

As described in Chapter 2, "Land Use, Zoning, and Public Policy," a number of other planned projects in the area would be completed by 2007, but no specific further developments are yet known for 2008-2011. While these projects will contribute new elements to the character of the neighborhood, they are not expected to significantly alter it. In general, the scale of the buildings and the types of uses proposed (institutional and residential), follow continuing trends in the area.

In the future without the proposed actions, the background projects will result in an increased number of vehicle, transit, and pedestrian trips in the area. However, travel patterns are not expected to significantly differ from existing patterns, and there would be no significant changes to neighborhood character. The increase in traffic will increase noise levels. Noise levels at one receptor location will go from "marginally acceptable" to "marginally unacceptable." However, the increase will not be significant or perceptible.

F. FUTURE WITH THE PROPOSED ACTIONS—2011

The proposed research building on the north block and the potential full development of the increased floor area on the main campus block of the MSKCC campus would again support and expand a traditional land use in the area---medical facilities. Overall, this new development would bring a higher level of activity to the area with increases in the workers, patients, and visitors. The proposed research building and the potential development on the remainder of the campus would increase midblock density on the block between East 68th and 69th Streets. The new construction would contribute to the increasing density of the study area, but this is an on-going trend. There would be no adverse impacts to socioeconomic conditions. With an "e" designation, there would not be a noise impact. A construction protection plan would be

implemented to avoid construction-related impacts to St. Catherine's Church. However, views to its east windows would be blocked.

The increase in people coming to MSKCC would increase vehicular traffic volumes, pedestrian volumes and transit usage. In addition to the 548 employees resulting from the research building, the proposed action would result in development by 2011 that could result in a net increase of 654 employees, 530 outpatients, 30 inpatients, and 1,790 visitors per day on the project site. Due to the removal of the south campus block from the rezoning area since the DEIS, this represents a decrease of 621 employees, 900 outpatients, and 2,180 visitors from levels analyzed in the DEIS (there is no change for inpatients). This increase would result in additional traffic, transit, and pedestrian trips in the study area. However, the proposed project would not result in any unmitigable traffic, transit, or pedestrian impacts at study area locations.

Overall, a number of factors that create the character of the neighborhood would be supported, while others would not be affected with mitigation or avoidance measures. However, the increase in traffic and in urban design density at full build out would cause a significant adverse impact on neighborhood character. This impact was reduced and partially mitigated by the reduction in the size of the research building and the elimination of the south block (and resulting development, employees, interests and visitors) from the rezoning area which occurred between the DEIS and the FEIS (see Chapter 17, "Mitigation"). ❖

A. INTRODUCTION

Both the clinical and research laboratories related to proposed and potential development on the Memorial Sloan Kettering Cancer Center (MSKCC) campus are likely to utilize small amounts of potentially hazardous chemicals, microorganisms, and radioactive materials. Research activities in the proposed development are assumed to be similar in type to the existing research activities at MSKCC.

This chapter assesses two hazardous materials issues related to proposed and potential development on the Memorial Sloan Kettering Cancer Center (MSKCC) campus: (1) use of hazardous materials as part of operations; (2) and the presence of hazardous materials in the soils, groundwater, and the buildings anticipated to be demolished as a result of the proposed actions. The proposed actions include rezoning, designation of the campus as a Large Scale Community Facility Development (LSCFD), and other land use actions identified in Chapter 1, "Project Description." This section also describes the systems used to ensure the safety of both the staff and the surrounding community.

As shown below, the use of potentially hazardous materials is strictly governed by federal and state regulations and is not anticipated to have any adverse impacts. Any hazardous materials in buildings to be demolished would be handled and removed in accordance with all applicable regulations and would thus avoid any significant adverse impacts. Further, prior to excavation on the Kettering Laboratory site and the potential construction sites on the main campus block, a subsurface testing protocol (including a Health and Safety Plan) would be undertaken to characterize potential contamination. It would be submitted to NYCDEP for review and approval. Results of testing and, if necessary, a remediation plan would be submitted to NYCDEP for review and approval. As part of the proposed actions, MSKCC has entered into a restrictive declaration (described in Chapter 17, "Mitigation") that would ensure that the appropriate characterization and remediation take place. This restrictive declaration is summarized in Chapter 17, "Mitigation." The potential for adverse impacts to occur during construction would be avoided by performing construction activities in accordance with protocol outlined in Chapter 17, "Mitigation."

B. HAZARDOUS MATERIALS REGULATIONS

Use and disposal of hazardous chemicals, radioactive materials, and biohazards are subject to a variety of federal, state, and city regulations. These are outlined below.

HAZARDOUS CHEMICALS

NEW YORK CITY FIRE CODE

New York City Fire Directive 1-66 specifies many safety requirements for chemical laboratories. These requirements must be met before the Fire Department will issue an operating

permit for the laboratory. The Fire Department reinspects laboratories annually to ensure that the permit requirements continue to be met. The Fire Code requirements include:

- The person responsible for the laboratory's operations must receive a Certificate of Fitness from the Fire Department.
- Construction design and materials must meet code specifications for laboratories.
- Fume hoods must be tested and certified to meet minimum air flow requirements.
- Storage of flammable materials must not exceed maximum specified quantities for each laboratory room.
- Warning signs must be posted on laboratory doors, and material safety data sheets for all hazardous chemicals on the site must be kept at a specified location in the building.

COMMUNITY RIGHT-TO-KNOW PROVISIONS OF SARA (TITLE III)

Under Title III of the Superfund Amendments and Reauthorization Act (SARA), facilities that contain hazardous chemicals in quantities above specified threshold reporting quantities must file reports with the state and with the local emergency planning agency (New York City Department of Environmental Protection). Any spills or releases of such materials greater than specified reportable quantities must also be reported.

HAZARDOUS WASTE REGULATIONS

Storage, transport, and disposal of hazardous chemical wastes is regulated under the federal Resource Conservation and Recovery Act (RCRA) and New York State hazardous waste regulations (6NYCRR Parts 370-374). All generators of hazardous wastes must register with the Department of Environmental Conservation (DEC) and receive a generator's license number. Generators must file manifest forms with the DEC each time hazardous wastes are picked up from the site, and must also file quarterly and annual reports. Failure to file the required manifests and reports is punishable by fines and other penalties. Large generators of hazardous wastes are subject to additional requirements, including the preparation of a contingency plan for releases of hazardous wastes.

OCCUPATIONAL SAFETY REGULATIONS

The U.S. Occupational Safety and Health Administration (OSHA) has issued regulations intended to protect laboratory workers. The OSHA regulations require that workers using hazardous materials receive training in safety procedures. They also require that laboratories have appropriate safety equipment, including emergency showers, and that material safety data sheets (MSDS) for all hazardous chemicals on the site be available for inspection in the building. Records must be kept of all accidents. Laboratories are subject to inspection by OSHA, and OSHA investigates worker complaints or reports of accidents.

RADIOACTIVE MATERIALS

NEW YORK CITY HEALTH CODE

Title IV, Article 175 of the New York City Health Code regulates any commercial, private or research laboratory handling radioactive materials for medical use. The Health Code stipulates that:

- No person shall transfer, receive, possess or use any radioactive materials except pursuant to a license issued by the Commissioner of Health. A "general" license allows the transfer, receipt, possession, and use of the following:
  - — Any radiation source in quantities that do not exceed either 15 pounds at any one time or 150 pounds in any calendar year;
  - — Certain devices and calibration or reference sources containing radioactive materials, if manufactured, tested, and labeled in accordance with the specifications of the license;
  - — Certain radioactive materials in prepackaged units for *in vitro* clinical or laboratory testing, provided that the director of the clinical laboratory has a certificate of qualification, issued by the Commissioner, to perform *in vitro* radiobioassay procedures and the laboratory does not store or use more than specified quantities of the permitted radioactive materials and stores these radiation sources either in their original containers or in containers providing equivalent radiation protection;

The general license also allows ownership of radioactive materials without regard to quantity. A "specific" license is required for possession of certain radioactive materials in not more than specified quantities and for specified uses—e.g., in the human use of radioactive materials and in the use of radiation equipment.

- There shall be a Radiation Safety Officer who establishes and administers a radiation protection program to maintain radiation exposures and releases of radioactive materials below stipulated limits.
- The radioactive materials shall be handled only by individuals who are adequately instructed and competent to safely use such radiation sources.
- Individuals who enter areas where they are exposed to or likely to be exposed to radiation above certain set limits should be provided with properly calibrated and operable personnel monitoring equipment.
- The radiation symbol and appropriate warning signs have to be posted in areas with radiation levels above specified limits and on containers containing certain radioactive materials above specified quantities.
- No person shall dispose of radioactive materials as waste by either incineration, burial, discharge to surface waters or ground waters without specific prior permission from the Commissioner. Disposal of radioactive materials by releases into a sanitary sewer system is permitted provided that such material is readily soluble or dispersable in water and the total quantity of radioactive material released does not exceed stipulated chemical specific limits on a daily and monthly basis and is less than one curie in a year. Wastes can also be disposed of by transfer to a radioisotope disposal service licensed by the New York State Department of Labor, the U.S. Atomic Energy Commission, or an agreement state.
- The following records have to be maintained:
  - — Each receipt, use, transfer or disposal of radioactive materials (for a period of three years);
  - — Each survey, test, check determination of radiation exposure of personnel and medical evaluation services (for a period of five years).

- The Department of Health must be notified in case of:
  - — Any theft or loss of any radioactive materials;
  - — Any individual being exposed to radiation above certain levels; and
  - — Releases of radioactive materials above certain levels.
- The facility is subject to inspection by the Department of Health at all reasonable times. Such inspection may include but is not restricted to:
  - — Examination of the facility where the radiation source is used;
  - — Review of the records required to be maintained;
  - — Inspection of the radioactive waste disposal facility;
  - — Conduction of tests of the radioactive materials, personnel monitoring equipment, and actual quantities or concentrations being disposed of as waste; and
  - — Consultations with workers on occupational radiation protection.

BIOHAZARDS

THE NEW YORK CITY HEALTH CODE

Articles 13, 15, and 16 of the New York City Health Code regulate clinical laboratories, handling of live pathogenic organisms, and handling of recombinant DNA, respectively.

Article 13. Clinical laboratories

This article requires all clinical laboratories to obtain a permit from the Department of Health. To obtain a permit, all technical personnel must meet prescribed minimum standards of training and certification. Records of all tests performed and reports issued must be maintained for at least two years. Clinical laboratories are subject to inspection by the Department of Health.

Article 15. Handling of live pathogenic organisms

Possession of pathogenic organisms is restricted to permitted clinical microbiology laboratories and to licensed physicians, dentists, and veterinarians, persons working directly under their supervision. All sites where pathogens are handled must be registered with the Department of Health. Records of all receipts and shipments of pathogens must be kept.

Article 16. Handling of recombinant DNA

This article is intended to protect the public health against potential biohazards involved in the handling of recombinant DNA (a genetic material formed by combining DNA molecules of different biological origins for the purpose of yielding new molecules that can be propagated in some host cell).

- All persons engaged in the experimental research, manufacture, use, storage, possession, sale, or transportation of recombinant DNA should be registered with the Commissioner.
- The application for registration shall include information, such as type of activity involved, methods of physical and biological containment employed, type of guidelines followed (National Institutes of Health or other), etc.

- All proprietary information contained in applications or reports to the Department of Health shall be kept confidential.

NIH GUIDELINES

The National Institutes of Health (NIH), in association with the Public Health Service Centers for Disease Control, has issued guidelines specifying appropriate containment procedures for research activities involving recombinant DNA, pathogenic agents, and other biohazards. These guidelines are mandatory for federally funded research projects.

INFECTIOUS WASTE DISPOSAL REGULATIONS

Disposal of potentially infectious waste is regulated by New York State under regulations of the Departments of Health (DOH) and Environmental Conservation (DEC). Two state laws (L 1988 C 654 and C 655) provide for additional enforcement of infectious waste regulations, and civil and criminal penalties for violations.

Infectious waste includes cultures of infectious agents, blood and blood products, tissues and other body parts, contaminated animal carcasses, sharps (needles) used in patient care and research, and other such materials. The DEC regulations require generators, transporters, and disposal facilities to keep records of all shipments. Permitting requirements have been established for transporters of infectious wastes, including minimum liability insurance requirements. The DOH regulations require that infectious wastes be stored and transported in containers that are leak-proof, puncture-resistant, and able to resist ripping, tearing, or bursting. They require conspicuous labeling of all infectious wastes, including the name of the source of the wastes. The regulations also specify approved methods of disposal or treatment.

C. EXISTING CONDITIONS

SITE CONDITIONS

To identify potential sources of hazardous materials, an environmental site assessment was performed on the subject buildings for the north and main campus blocks that could be affected by new construction. This study included the following:

- A visual inspection to identify on-site uses and assess existing conditions;
- An evaluation of the land use history using available historical maps;
- A review of federal and state databases regarding releases or spills of potentially hazardous materials, facilities that emit hazardous materials to the air or the sewer system, and facilities that generate, treat, store or dispose of hazardous wastes; and
- Interviews with Paul Zel, the Safety Director for MSKCC, and Jim Boggi of Empire Environmental, an industrial hygienist.

The results are summarized below by block. In 1907 the project area (generally the area between 67th and 69th Streets and York and First Avenues) was occupied by a mix of uses consisting of a school, light manufacturing buildings, materials storage yards, and residential buildings. The materials storage yards and light manufacturing facilities were replaced with hospitals and residential buildings. The rezoning area is currently occupied by medical facilities, a church, and residential buildings. Within each of the two blocks, the buildings or lots which are considered potential development sites are discussed (the demolition of structures and/or excavation of soils poses the greatest potential exposure pathway) and then the remaining portion of the block is discussed more briefly.

NORTH BLOCK

St. Catherine's Church Rectory and Vacant Lot

This site currently contains a partially paved fenced lot with several trailers, a tent and a three-story rectory. Historical use of the lot include a wagon yard (1907) which was replaced before 1951 by the 3-story rectory before 1951 that is currently on the property. A 2-story Church-affiliated school building occupied the north side of the lot until it was demolished in the last decade. No environmental impacts are likely due to current or past onsite uses.

Kettering Building

Sanborn maps (1907-1951) indicate that 417-419 East 68th Street was occupied by 6-story store-fronted dwellings with interior court yards. 421-425 East 68th Street was occupied by a blue stone yard in 1907 and a 2-story garage that contained two 550-gallon underground gasoline storage tanks in 1951. 433-435 East 68th Street was occupied by 6-story dwellings with interior courtyards (1907-1951). They were demolished before construction of the Kettering Building which was completed in 1964.

The building, constructed of brick and cinder block, was built to house medical research laboratories. It has four cable-driven elevators. A roof top bulkhead contains an elevator mechanical room. Floors two through eleven are primarily occupied by laboratories and animal storage facilities with bio-safety cabinets, fluorescent light fixtures, vinyl floor tiles, and suspended ceiling tiles. Some of the areas of research conducted within this facility include molecular biology, immunology, nuclear medicine, cytogenetics, bone marrow transplantation, brain cancer research, and radiation oncology. While the laboratories vary in function, they generally contain lab tables, chemical sinks, chemical storage cabinets, compressed lab gases, fume hoods, and a variety of technical equipment. The first floor is occupied by locker rooms, offices and a graphics/photography department. The photography department contains photographic chemicals including film developer and fixer (hydroquinone, aluminum sulfate, acetic acid, propylene glycol and gluteraldehyde). Two basement levels contain a mechanical room with suspected asbestos-containing insulation, a cyclotron where some of the facility's radioactive material is generated, a nuclear magnetic resonance laboratory, a storage room for 100-percent alcohol, an x-ray room, a radioactive waste material storage area, and an animal cage washing facility.

A 1-story building is located on the northeast corner of the Kettering Building. It is a waste storage holding area for materials including waste alcohol, empty gas cylinders, light fixture ballasts containing (polychlorinated biphenyls) PCBs, lead waste, batteries, flammable toxic waste, mixed solvents, waste oil, formaldehyde, waste paints, mercury wastes, and other waste. Licensed waste disposal contractors remove waste from this area as required.

A 1-story brick building is located on the northwest corner of the Kettering Building. It is occupied by a diesel emergency generator with two 200-gallon diesel tanks. Five-gallon containers of coolant additive and engine oil were noted during inspection. The Petroleum Bulk Storage regulatory database listed the Kettering Building as having one in-service 5,000-gallon underground diesel storage tank installed in July 1999. No spills were listed in association with this tank.

Chemical storage room floor drains and other chemical sinks located within the laboratories are connected to a dedicated drainage system connected to a lime-chip neutralizing tank where the pH is neutralized prior to discharge to the sanitary sewer. Some chemicals noted within the storage rooms and laboratory storage cabinets include, but are not limited to, the following: toluene, ethyl acetate, xylene, formaldehyde, ammonium acetate, chloroform, mineral oil, alcohol, dioxane, acetonitrile, piperidin, and other chemicals. According to the regulatory database, MSKCC was listed as a Large Quantity Generator of hazardous wastes between 1992 and 1998 for the following wastes: ignitable, corrosive and reactive solid waste; lead; mercury; chloroform; halogenated and non-halogenated solvents; acrylamide, phenol, cadmium, potassium cyanide, formic acid, cyanogen bromide, chromium, silver, benzene, beryllium, sodium azide, osmium tetroxide, selenium, pyridine, barium, cyanides, butadiene, carbon tetrachloride, formaldehyde and naphthalene. In 1985 MSKCC received a Class Two violation (a less serious violation which did not result in any actual release or threat of release of hazardous waste). No other violations have been issued since 1985.

Radioactive materials are shipped to the building and some are made on-site in the cyclotron located in the basement level. Radioactive waste is removed daily to a storage area where it may stay to decay or until it is shipped off-site in accordance with local, state and federal guidelines.

Potential asbestos-containing materials noted during the site visit included some of the insulation material—some of which was fiberglass—within mechanical rooms, vinyl floor tiles, suspended ceiling tiles, linings within chemical storage cabinets/fume hoods and laboratory table tops. According to the Safety Director, the roof setbacks in this building have recently been replaced. However, the main roof may not have been replaced and may contain a layer of asbestos-containing material. Lead paint may be present within this building due to its age; however, painted surfaces are generally in good condition.

Remaining Portion of Block 1463

According to the 1907 Sanborn Map the eastern portion of the block was occupied by a Fire Department storage yard and a 2-story building housing a contracting company. By 1951 the contracting company had been replaced by 2-story apartments and in 1976 the 2-story apartments were replaced with two 12-story buildings with garages in the basement. The area adjacent to the vacant lot contained 6-story residential buildings in 1907. By 1976 they had been replaced by a 13-story building with a basement garage.

The 1907 map indicated that two vacant lots were located west of the current Rectory and vacant lot on the project site. St. Catherine of Siena Church was built on this site in 1931. The portion of the block fronting First Avenue was occupied by five 6-story store-fronted dwellings, as it still is. The regulatory database for petroleum bulk storage tanks listed one of these buildings, 1270 First Avenue, for one active 3,000-gallon aboveground fuel oil tank and another one, 401 East 68th Street, for one active 2,000-gallon aboveground fuel oil tank. No spills were listed for these tanks.

MAIN CAMPUS BLOCK

Arnold And Marie Schwartz International Hall of Science For Cancer Research

The 1907 Sanborn Map indicated that four 1-story buildings labeled the New York Trade School were located on the property. They housed shops involving plaster, tile laying, brick laying, fresco, and painting with a basement blacksmith. A 2-story building contained a first-floor dwelling and office and second-floor library. The current 12-story building with a basement was built in 1948.

The Schwartz Building has four cable-driven elevators. The elevator machine room and the heating, ventilation, and air conditioning (HVAC) system are located in a rooftop bulkhead. The 2nd through 12th floors contain laboratories and offices. Some of the activities and areas of research conducted within these laboratories include medical physics, nuclear medicine, gene transfer products, bone marrow and breast tumor research, microbiology, clinical chemistry and robotics. This building also contains a bio-safety level 3 laboratory. While the laboratories vary in function, they generally contain lab tables, chemical sinks, chemical storage cabinets, compressed lab gases, fume hoods, and a variety of technical equipment.

The third and sixth floors contain clinical chemistry and cytology labs, respectively, and their associated offices. The first floor and basement level are both below ground. The first and second floors are occupied by patient care clinics including nuclear medicine, speech and hearing, and rehabilitation. The first floor contains a medical physics shop and a mechanical engineering department which casts lead/cadmium composite molds for patient radiation shields. The basement level contains a morgue, a mechanical equipment room with suspect asbestos containing-insulation, a bulk carbon dioxide tank, central isotope lab, and emergency generator.

The emergency generator in the basement operates on a 2,500-gallon underground diesel tank with an emergency ventilation shaft in the sidewalk. The petroleum bulk storage regulatory database listed one 2,000-gallon underground diesel storage tank located in the Schwartz Building as closed and removed in April 1999, and the current in-service 2,500-gallon underground diesel storage tank as installed in June 1999.

Chemical storage closets are located on some floors and contain floor drains. These floor drains and the chemical sink drains are connected to a dedicated pipeline which terminates in a water neutralization tank on the ground level where the water is chemically treated prior to discharge to the sewer. Typical chemicals used within laboratories are the same as those listed above for the Kettering Building.

Potential asbestos-containing materials noted during the site visit include some of the insulation material within mechanical rooms, some of which was fiberglass, vinyl floor tiles, suspended ceiling tiles, linings within chemical storage cabinets/fume hoods, and laboratory table tops. According to the Safety Director the roof was replaced several years ago. Lead paint may be present within this building due to its age. However, painted surfaces were generally in good condition.

Howard Building

The Sanborn map from 1907 indicated that this property was occupied by a 5-story cigar factory with a 2-story addition, a 2-story store-fronted dwelling with a 1-story addition and trucking yard. The current Howard Building (built in 1947) was shown to be occupied by a 2- to 15-story building which contained three elevators. From 1976 through the present, the Sanborn map indicated that the 15-story portion of the building remained the same while the lower portion of the building may have been altered.

Currently the 15th floor of this building is occupied by an elevator machine room which contains some suspect asbestos-containing insulation. Floors four, five, and seven through fourteen are occupied by offices. The offices were generally constructed with sheetrock walls, wood flooring with some carpeting and vinyl floor tile, and suspended ceiling tile. The offices contained fluorescent light fixtures.

The sixth floor contained offices and a cytology lab which had an associated chemical storage room. Chemicals contained in the storage rooms are similar to those described for the Kettering Building. The first, second and third floors are occupied by patient care clinics including cytology, chemistry, nuclear medicine, speech and hearing rehabilitation. The basement level is occupied by a paint shop in which non-lead containing and non-combustible latex paints are used, locksmith, mechanical room, and a plumbing and mechanical shop in which some degreasers and lubricants are used. Radioactive material used within the nuclear medicine patient care facility is transported from the Kettering Building cyclotron and other storage areas inside transport machines and through a system of pneumatic transport tubes. A third floor roof setback contains two outdoor sheds housing acetylene and argon gas cylinders for the clinical chemistry lab.

Potential asbestos-containing materials noted during the site visit include some of the insulation material within mechanical rooms, some of which was fiberglass, vinyl floor tiles, suspended ceiling tiles, linings within chemical storage cabinets/fume hoods, and laboratory table tops. According to the Safety Director, the roof was replaced several years ago. Lead paint may be present within this building due to its age. However, painted surfaces were generally in good condition.

Remaining Portion of Block 1462

In 1907 the east end of the block was occupied by light manufacturing facilities including a 6-story cigar manufacturer, a 6-story storage facility, two vacant lots, a wagon yard, a stable, and the New York Trade School. In 1939 the first Memorial Hospital on the East Side was completed and opened at 68th Street and York Avenue. The 1951 Sanborn map indicates the property was occupied by a cluster of 2- to 15-story buildings belonging to the Memorial Hospital for the Treatment of Cancer and Allied Diseases. While the usage has remained the same for the adjacent property from 1951 through the present, the density of buildings has increased. The current Memorial Hospital was built in 1970-73.

Currently the eastern portion of the block contains the 11-story Enid A. Haupt Pavilion, the six-story Winston Surgical Pavilion, the 13-story Bobst Building as well as Memorial Hospital. The Enid A. Haupt Pavilion building was listed within the regulatory bulk petroleum storage database as having one 10,000-gallon diesel storage tank installed in 1994. No spills or violations were listed for the site.

MSKCC OPERATIONS

Hazardous materials are used in small quantities by trained professionals within MSKCC. The MSKCC Environmental Health and Safety Director establishes safety procedures and conducts an ongoing program of safety training for staff and employees. The Environmental Health and Safety Director is also responsible for ensuring that MSKCC conforms with all city, state, and federal regulations relating to the use and disposal of hazardous materials. The MSKCC Radiation Safety Officer supervises the use, storage, and disposal of radioactive materials.

HAZARDOUS CHEMICALS

The clinical laboratories use very few hazardous chemicals, as only small quantities of chemicals are kept in laboratories for immediate use. Supplies of commonly used chemicals are maintained in small quantities within the laboratories and the chemical storage rooms. The maximum quantities of hazardous materials kept in any room are limited by New York City Fire Department regulations in Table 10-1. The actual quantities used are usually much smaller. The largest chemical container size (liquids) is 5 gallons of solvents within the chemistry labs and 1 gallon in all other labs.

Table 10-1

Maximum Permissible Quantities of Hazardous Materials in each Laboratory Unit*

Category	Quantity
Flammable Liquids and Volatile Flammable Oils	25 gallons
Flammable Solids	10 pounds
Oxidizing Materials	40 pounds
Unstable Reactives	3 pounds
Flammable Gases	
Up to 500 square feet laboratory area	9.24 cubic feet
For each additional 100 square feet	1.54 cubic feet
Maximum per laboratory unit	15.4 cubic feet

* Quantities shown are the limits set by New York City Fire Department regulations. Actual quantities used in each laboratory unit are usually much smaller.

Compressed gases are used in biomedical research laboratories primarily to maintain controlled atmospheres for microorganisms or tissue cultures. The gases most commonly used are carbon dioxide and nitrogen. Minimal amounts of toxic or explosive gases are used.

The Health and Safety Department provides plans for cleanup of any hazardous chemical spills. Safety personnel are trained in proper spill response procedures and are equipped with the cleanup materials, such as acid neutralizing kits, spill control pillows, and mercury spill kits.

BIOHAZARDS

All research activities at MSKCC involving the use of biohazardous agents (e.g., infectious microorganisms) follow the research guidelines established by the National Institutes of Health and the Center for Disease Control. Biohazards are classified according to the degree of containment required, from Biohazard Level 1 (BL1), which requires the lowest level of containment, to Biohazard Level 4 (BL4), which requires the highest level.

Biosafety levels 1, 2 and 3 are defined as follows:

- Biosafety Level 1 (51 FR 16978) is suitable for work involving agents of no known or minimal potential hazard to laboratory personnel and the environment. The laboratory is not separated from the general traffic patterns in the building. Work is generally conducted on open bench tops. Special containment equipment is not required or generally used. Laboratory personnel have specific training in the procedures conducted in the laboratory and are supervised by a scientist with general training in microbiology or a related science.
- Biosafety Level 2 (51 FR 16978) is similar to Level 1 and is suitable for work involving agents of moderate potential hazard to personnel and the environment. It differs in that: (1) laboratory personnel have specific training in handling pathogenic agents and are directed by competent scientists; (2) access to the laboratory is limited when work is being conducted; and (3) certain procedures in which infectious aerosols are created are conducted in biological safety cabinets or other physical containment equipment.
- Biosafety Level 3 (according to the CDC Office of Health and Safety) is applicable to clinical, diagnostic, teaching, research, or production facilities in which work is done with indigenous or exotic agents which may cause serious or potentially lethal disease as a result of exposure by the inhalation route. Laboratory personnel have specific training in handling pathogenic and potentially lethal agents, and are supervised by competent scientists who are experienced in working with these agents. All procedures involving the manipulation of infectious materials are conducted within biological safety cabinets or other physical containment devices, or by personnel wearing appropriate personal protective clothing and equipment. The laboratory has special engineering and design features.

Biological safety cabinets are used for most microbiological work to prevent the contamination of cultures. Biological safety cabinets are of various types depending on the degree of containment required, but all filter exhaust air through HEPA (high efficiency particulate air) filters, which remove at least 99.97 percent of particulate matter, including microorganisms.

RADIOACTIVE MATERIALS

Radioactive isotopes are used in biomedical research primarily as a means of labeling compounds to trace their biological activity or to assist in their separation and purification and are also used to for treatment of cancer. Several of the radionuclides most commonly used in biomedical research—sulfur-35 and carbon-14—do not present a significant external exposure hazard because they emit only low-energy beta rays that can barely penetrate the outer layer of the skin. The types and quantities of radioisotopes currently used in MSKCC's research laboratories are listed in Table 10-2.

The prevention and control of environmental pollution by radioactive materials is governed by both Section 117.109 of the New York City Health Code and NYSDEC regulations (6NYCRR Part 380).

LABORATORY FUME HOOD EXHAUSTS

Laboratories in which hazardous chemicals are used at the MSKCC are equipped with fume hoods. Fume hoods are enclosures that are maintained under negative pressure and continuously vented to the outside. Their function is to protect research workers from potentially harmful chemical fumes. By providing a continuous exhaust from laboratory rooms, they also prevent

Table 10-2
Estimated Laboratory Radioisotope Inventory (Millicuries)

Isotope	Quantity
111 In (Indium)	118.0
125 I (Iodine)	168.76
131 I (Iodine)	995.0
14 C (Carbon)	0.422
177 Lu (Lutetium)	100
225 Ac (Actinium)	55
32 P (Phosphorus)	1108.9
33 P (Phosphorus)	83.88
35 S (Sulfur)	2469.75
3 H (Hydrogen)	127.13
51 Cr (Chromium)	488
90 Y (Yttrium)	186
Source: MSKCC, 2000 data.	

any fumes released within the laboratory from escaping into other areas of the building or through windows to the outside.

HAZARDOUS WASTES

Currently, all hazardous wastes from MSKCC are collected and disposed of through centralized systems under the direction of the Health and Safety Office and the Radiation Safety Office. Potentially hazardous chemical wastes are properly containerized and labeled, collected from the laboratories, and held in chemical waste storerooms. The wastes are regularly removed by a licensed contractor for treatment and disposal off-site. The MSKCC is classified by the U.S. EPA as a large generator of hazardous wastes. A summary of the hazardous wastes generated by MSKCC is presented in Table 10-3.

Regulated medical wastes (totaling approximately 837,000 pounds in 2000 for all of MSKCC) are containerized in accordance with all applicable regulations and labeled and taken to a central collection location where they are picked up by a permitted hauler for incineration off-site. Some infectious wastes may be treated on-site by autoclaving or chemical disinfection before disposal.

All radioactive wastes with short half-lives are stored until their radioactivity decays to acceptable levels. Materials that decay slowly, and radioactive animal carcasses that cannot be stored, are properly labeled and containerized and transported for off-site disposal at a permitted radioactive waste disposal site.

Table 10-3
Summary of MSKCC Hazardous Waste Generation

Waste Category	Waste Generated (lbs.)/year			
	1997	1998	1999	2000
Ignitable Spent Solvents	82,821	69,670	56,948	52,246
Waste Still Bottoms	2,474	2,423	2,539	2,552
Ignitable Solvents	90	235	699	5,200
Spent Oxidizers/Corrosive Liquids	200	235	455	360
Waste Formaldehyde	15,990	16,150	7,760	*
Waste Corrosive Liquids, Solids	650	1,166	3,894	1,212
Waste Chemicals w/Acute EPA codes	5,965	7,860	7,000	7,690
Waste Chemicals w/no acute EPA codes	11,490	18,660	15,000	3,080
Waste Mercury (from spill debris)	40	70	930	295
Waste Lead/Acid Batteries	1,060	2,170	1,530	205
Waste Aerosol Cans	20	50	40	80
Spent Fluorescent Light Bulbs	660	12,350	17,030	**
PCB Ballasts	0	3,231	139	2,824
Sludge from Neutralization Tanks	0	0	2,750	0
Sewage/Biological Sludge	0	0	0	3,600
Water reactive Solvents	0	0	0	14

Notes:
* Waste formaldehyde is not regulated by DEC/EPA, and is therefore not documented on hazardous waste manifests.
** Spent fluorescent light bulbs are classified as "universal waste" by DEC/EPA, and are therefore not documented on hazardous waste manifests.

D. THE FUTURE WITHOUT THE PROPOSED ACTIONS—2007

Without the proposed actions, it is assumed that the project site will continue in its current condition. Currently, there are no known significant health risks from exposure to biological, radioactive or hazardous materials.

E. THE FUTURE WITH THE PROPOSED ACTIONS—2007

CONSTRUCTION ACTIVITIES

There is a potential for adverse impacts during construction activities resulting from the presence of chemical and radioactive products, hazardous waste, petroleum storage tanks, asbestos-containing materials, PCB-containing materials, and lead-based paint. Construction activities could disturb hazardous materials and increase pathways for human exposure. Hazardous materials impacts during construction would be avoided by performing construction activities in accordance with the protocol discussed in Chapter 17, "Mitigation." As part of the proposed actions, MSKCC has entered into a restrictive declaration that would ensure that the appropriate characterization and remediation take place.

MSKCC OPERATIONS

HAZARDOUS CHEMICALS

Some hazardous chemicals would be used in the proposed laboratories. As discussed above, only small quantities of chemicals are kept in laboratories for immediate use. Supplies of commonly used chemicals are maintained in small quantities within the laboratories and the chemical storage rooms. Table 10-4 shows the quantities of some of the chemicals which will be most likely to be used within the proposed laboratory.

Table 10-4

Hazardous Chemicals Likely to be Used in the Proposed Laboratory

Chemical Name	Quantity	Chemical Name	Quantity
Acetic acid	301 liters (L)	Hexane	80 L
Acetic anhydride	17 L	Hydrochloric acid	183 L
Acetone	253 L	Isoamyl alcohol	34 L
Acetonitrile	373 L	Isopropyl alcohol	109 L
Acrylamide	26,900 grams (g)	Methyl alcohol	901 L
Acrylamide solution	155 L	Methylene chloride	55 L
Ammonium hydroxide	50 L	Nitric acid	29 L
Argon	402 pounds (lbs.)	Nitrogen	76,036 L
Boric acid	95,274 g	Oxygen	12,520 L
Butyl alcohol	160 L	Phenol solution	28 L
Carbon dioxide	425,740 L	Phosphomolybdic acid	1.5 L
Carbon monoxide	150 L	Phosphoric acid	40 L
Chloroform	383 L	Potassium hydroxide	29,140 g
Chromic acid	66 L	Propanol	348 L
Diethyl ether	66 L	Sodium hydroxide	70,143 g
Dimethyl sulfoxide	27 L	Sodium hydroxide solution	22 L
Dimethylformamide	47 L	Sodium hypochlorite (5%)	240 L
Ethyl acetate	83 L	Sulfuric acid	29 L
Ethyl alcohol	1905 L	Tetrahydrofuran	21 L
Ethylene glycol	34 L	Toluene	41 L
Formaldehyde solution	97 L	Trichloroacetic acid	31,155 g
Formic acid	28 L	Triethyl phosphite	0.5 L
Freon 134A	14,823 lbs.	Xylene	104 L

Compressed gases including carbon dioxide and nitrogen are expected to be used in the proposed research laboratories, primarily to maintain controlled atmospheres for micro-organisms or tissue cultures. Minimal amounts of toxic or explosive gases would be used.

As it has for MSKCC's existing facilities, the Health and Safety Department would provide plans for cleanup of any hazardous chemical spills. Safety personnel at the proposed building would be trained in proper spill response procedures and would be equipped with the necessary cleanup materials, including acid neutralizing kits, spill control pillows, and mercury spill kits.

BIOHAZARDS

All research activities involving the use of biohazardous agents (e.g., infectious micro-organisms) would continue to follow the research guidelines established by the National Institutes of Health and the Center for Disease Control. The proposed research building is not designed for activities involving biohazards greater than BL3 (the same level which is currently located within the existing Schwartz building), and would not contain any agents requiring higher containment levels. Laboratory personnel would have specific training in handling pathogenic and potentially lethal agents, and are supervised by competent scientists who are experienced in working with these agents.

All procedures involving the manipulation of infectious materials would be conducted within biological safety cabinets or other physical containment devices, or by personnel wearing appropriate personal protective clothing and equipment.

RADIOACTIVE MATERIALS

As described above, radioactive isotopes are used in biomedical research and for the treatment of cancer. The types and quantities of radioisotopes expected to be used in MSKCC research laboratories in 2007 are shown in Table 10-5.

Table 10-5

2000 and Estimated 2007 Laboratory Radioisotope Inventory (Millicuries)

Isotope	2000	2007 (estimated)
111 In (Indium)	118.0	114
125 I (Iodine)	168.76	224
131 I (Iodine)	995.0	300
14 C (Carbon)	0.422	0.79
177 Lu (Lutetium)	100	100
225 Ac (Actinium)	55	55
32 P (Phosphorus)	1,108.9	1,465
33 P (Phosphorus)	83.88	130.8
35 S (Sulfur)	2,469.75	3,673
3 H (Hydrogen)	127.13	203.7
51 Cr (Chromium)	488	488
90 Y (Yttrium)	186	186
Source: MSKCC		

The prevention and control of environmental pollution by radioactive materials is governed by both Section 117.109 of the New York City Health Code and NYSDEC regulations (6NYCRR Part 380). Section 10.4 of the NYSDEC regulations requires the licensee to notify NYSDEC at least 30 days prior to vacating premises which may have been contaminated with radioactive materials. The premises would then need to be decontaminated in a manner which NYSDEC would specify. It is anticipated that, in order to obtain clearance from NYSDEC, MSKCC would need to remove and dispose of all sources and any other contaminated materials in accordance with Subpart 4 of the regulations. Surfaces would then need to be decontaminated. Exempt

concentrations for liquids, solids and surfaces and exempt quantities of various isotopes are set out in Section 175.117 of the NYC Health Code. A survey in accordance with Section 6.1 of the regulations would then need to be performed to demonstrate that there are no residual levels which would result in the potential for radiological hazards. Demolition of existing structures would not occur until NYSDEC confirmed that the premises were decontaminated to their satisfaction.

LABORATORY FUME HOOD EXHAUSTS

Laboratories in which hazardous chemicals would be or are used at the MSKCC are equipped with fume hoods. The New York City Fire Code requires that the fume hoods in the proposed building be vented to the building roof through separate ducts for each laboratory unit. Each duct would have a separate fan located in the mechanical penthouse. An assessment of the potential impacts from fume hood releases was prepared and is described in Chapter 14, "Air Quality." That analysis concludes that no significant impacts to air quality would result from fume hood exhausts from the proposed research building.

HAZARDOUS WASTES

Hazardous wastes from the proposed research building would be collected and disposed of through centralized systems under the direction of the Health and Safety Office and the Radiation Safety Office. Potentially hazardous chemical wastes would continue to be properly containerized and labeled, collected from the laboratories, and held in chemical waste storerooms. Wastes would be regularly removed by a licensed contractor for treatment and disposal off-site. A summary of the hazardous wastes generated by MSKCC is presented in Table 10-6.

Table 10-6
Waste Generation (pounds)

Source	2000	2007 (projected)
Hazardous Chemical Waste		
Laboratories	48,485	77,091
Patient care areas	33,623	33,623
TOTAL	**82,108**	**110,714**
Regulated Medical Waste		
Laboratories	385,020	612,181
Patient care areas	451,980	541,980
TOTAL	**837,000**	**1,064,161**

Regulated medical wastes would be containerized in accordance with all applicable regulations and labeled and taken to a central collection location to be picked up by a permitted hauler for incineration off-site. Some infectious wastes may be treated on-site by autoclaving or chemical disinfection before disposal.

All radioactive wastes at the proposed laboratory with short half-lives would be stored until their radioactivity decays to acceptable levels. Materials that decay slowly, and radioactive animal carcasses that cannot be stored, would be properly labeled and containerized and transported for off-site disposal at a permitted radioactive waste disposal site.

F. THE FUTURE WITHOUT THE PROPOSED ACTIONS—2011

Without the proposed actions, it is assumed that the project site will continue in its current condition through 2011. There would continue to be no known significant health risks from exposure to biological, radioactive or hazardous materials.

G. THE FUTURE WITH THE PROPOSED ACTIONS—2011

CONSTRUCTION ACTIVITIES

As described above, construction activities could disturb hazardous materials and increase pathways for human exposure. In addition, there is the potential for adverse impacts during construction activities resulting from the presence of chemical and radioactive products, hazardous waste, petroleum storage tanks, asbestos-containing materials, PCB-containing materials, and lead-based paint. These impacts would be avoided by performing construction activities in accordance with the restrictive declaration that MSKCC has entered into that would ensure that the appropriate characterization and remediation take place.

MSKCC OPERATIONS

HAZARDOUS CHEMICALS

Some hazardous chemicals would be used in the proposed laboratories. As discussed above, only small quantities of chemicals are kept in laboratories for immediate use. Supplies of commonly used chemicals are maintained in small quantities within the laboratories and the chemical storage rooms. The quantities of chemicals which would be most likely to be used within the proposed laboratory are shown above under "Probable Impacts of the Proposed Actions—2007." Overall, by 2011 the hazardous chemicals used by MSKCC would increase in quantity as a result of the proposed actions. However, the types of chemicals and their uses, would be similar to those now at MSKCC. In addition, all regulations and procedures for their use, handling and disposal would continue to be followed.

BIOHAZARDS

All research activities involving the use of biohazardous agents would continue to follow the research guidelines established by the National Institutes of Health and the Center for Disease Control. Relevant MSKCC personnel would have specific training in handling pathogenic and potentially lethal agents, and would continue to be supervised by experienced. All procedures involving the manipulation of infectious materials would be conducted within biological safety cabinets or other physical containment devices, or by personnel wearing appropriate personal protective clothing and equipment.

RADIOACTIVE MATERIALS

Anticipated usage of radioactive material at MSKCC in 2011 is shown in Table 10-7. Title IV, Article 175 of the New York City Health Code regulates any commercial, private or research laboratory handling radioactive materials for medical use.

Table 10-7
2000 and Estimated 2007 and 2011 Laboratory Radioisotope Inventory (Millicuries)

Isotope	2000	2007 and 2011 (estimated)
111 In (Indium)	118.0	114
125 I (Iodine)	168.76	224
131 I (Iodine)	995.0	300
14 C (Carbon)	0.422	0.79
177 Lu (Lutetium)	100	100
225 Ac (Actinium)	55	55
32 P (Phosphorus)	1,108.9	1,465
33 P (Phosphorus)	83.88	130.8
35 S (Sulfur)	2,469.75	3,673
3 H (Hydrogen)	127.13	203.7
51 Cr (Chromium)	488	488
90 Y (Yttrium)	186	186
Source: MSKCC		

Overall, increases in the use of radioactive materials is not expected to have a significant adverse impact on the environment. All regulations regarding the handling, use and disposal of these materials will continue to be strictly adhered to.

LABORATORY FUME HOOD EXHAUSTS

With the proposed actions, laboratory fume hoods (described above) would be in use in 2011. As shown in Chapter 14, "Air Quality," no significant impacts to air quality are expected to result from fume hood exhausts.

HAZARDOUS WASTES

Hazardous wastes from the proposed and potential buildings on the MSKCC campus would be collected and disposed of under the direction of the Health and Safety Office and the Radiation Safety Office. Potentially hazardous chemical wastes would continue to be properly containerized and labeled, collected, and held in chemical waste storerooms. Wastes would be regularly removed by a licensed contractor for treatment and disposal off-site. A summary of the hazardous wastes generated by MSKCC is presented in Table 10-8.

Table 10-8
Waste Generation (pounds)

Source	2000	2007 (projected)	2011 (projected)
Hazardous Chemical Waste			
Laboratories	48,485	77,091	77,091
Patient care areas	33,623	33,623	41,356
TOTAL	**82,108**	**110,714**	**118,447**
Regulated Medical Waste			
Laboratories	385,020	612,181	612,181
Patient care areas	451,980	541,980	555,935
TOTAL	**837,000**	**1,064,161**	**1,168,116**

Regulated medical wastes would be containerized in accordance with all applicable regulations and labeled and taken to a central collection location to be picked up by a permitted hauler for incineration off-site. Some infectious wastes may be treated on-site by autoclaving or chemical disinfection before disposal.

All radioactive wastes at the proposed laboratory with short half-lives would be stored until their radioactivity decays to acceptable levels. Materials that decay slowly, and radioactive animal carcasses that cannot be stored, would be properly labeled and containerized and transported for off-site disposal at a permitted radioactive waste disposal site. ❖

Chapter 11: Infrastructure, Solid Waste and Sanitation, and Energy

A. INTRODUCTION

As described in Chapter 1, "Project Description," the proposed actions include a rezoning from R8 to R9, designation of the campus as a Large-Scale Community Facility Development (LSCFD), and other actions. With the proposed actions in place, Memorial Sloan-Kettering Cancer Center (MSKCC) proposes to build a new research building (expected to be completed in 2007) on the north block of its campus. In the future it would then redevelop portions of its central block (between 67th and 68th Streets). The development of the central campus block is a worst-case developed for analysis purposes. The build year for development on the central block is assumed to be 2011.

The workers, visitors, patients and staff housing residents expected to result from this development would create demands for water, treatment of sewage, disposal of solid waste, and energy. The potential effects on those municipal and private services are discussed in this chapter of the Environmental Impact Statement (EIS). Because there are existing buildings now on the sites of anticipated development, this analysis considers the difference between continued use of those buildings in the future without the proposed actions and development with the proposed actions in place. This analysis also considers effects of the potential development on parcels not controlled by MSKCC. As described in Chapter 1, "Project Description," a total of 33 residential units could be developed on those parcels by 2007.

As the following analysis shows, the proposed actions are expected to result in the following net increases:

- By 2007, the proposed research building would create demand for 41,600 gallons of water per day (gpd), would generate 4,700 gpd of sanitary sewage, and would generate 2,400 pounds per week (or 4.8 tons per month) of solid waste. Also by 2007, development of 33 residential units on non-MSKCC parcels would create additional demand for water of 5,600 gpd, would generate 5,600 gpd of sanitary sewage, and would generate 560 pounds (or 1.1 tons per month) of solid waste. There would also be energy demands associated with this development.
- By 2011, all development expected to result from the proposed actions would create demand for water of 263,490 gpd, would generate 136,790 gpd of sanitary sewage, and would generate 28,960 pounds per week (or 57.92 tons per month) of solid waste. There would also be energy demands associated with this development.

Although the proposed project would create new demand for water, treatment of sewage, disposal of solid waste, and energy, all municipal and private services have adequate capacity to meet the increases in demand. Therefore, no significant adverse impacts are expected to result to these services.

B. EXISTING CONDITIONS

WATER SUPPLY

The New York City water supply system is composed of three watersheds—Croton, Delaware, and Catskill—and extends as far north as the Catskill Mountains, delivering approximately 1.4 billion gallons of water per day to its customers in the five boroughs and Westchester County. From these watersheds, water is carried to the City via a conveyance system composed of reservoirs, aqueducts, and tunnels extending as far as 125 miles north of the City. Within the City, a grid of water pipes distributes water to customers.

Water consumption in the City averages approximately 1.3 to 1.4 billion gallons per day. Average consumption in Manhattan is estimated at 420 million gallons per day (mgd); peak consumption is approximately 500 mgd.

In the vicinity of MSKCC, an interconnected grid of 12-inch water lines run beneath the east-west streets. A 48-inch water main is located under First Avenue. Such a grid system equalizes water pressure in an area and allows a section to be cut off for repair and maintenance without affecting users not directly connected to that section. According to the New York City Department of Environmental Protection (DEP), there are currently no problems with the water distribution or pressure in the area.

The existing water demand at the site of the proposed research building is approximately 24,000 gallons of water use per day (gpd) including the demand for water generated by air conditioning, based on the rates recommended by the *City Environmental Quality Review (CEQR) Technical Manual*, December 1993. For the potential development sites on the main campus block, existing uses (including research and office space and outpatient and visitor users housing) generate demand for approximately 70,800 gpd.

SANITARY SEWAGE AND STORM WATER DISPOSAL

The MSKCC campus is located within the service area of the Newtown Creek Water Pollution Control Plant (WPCP), which discharges treated wastewater flows or "effluent" into the East River. The effluent from this WPCP is regulated by a State Pollutant Discharge Elimination System (SPDES) permit issued by the New York State Department of Environmental Conservation (DEC). The Newtown Creek WPCP is permitted to treat a monthly dry weather flow of 310 mgd. The monthly dry weather flow rates for the latest 12 available months (March 2000 through February 2001) are listed in Table 11-1. The annual dry weather flow (average of previous 12 months' arithmetic mean flows) is 218 mgd, which is well below capacity.

MSKCC and the surrounding area are served by combined sewer pipes that collect stormwater runoff (from roof and street drainage) and sanitary sewage together and carry it to Newtown Creek WPCP. In dry weather, the sewer lines convey only sanitary sewage to the WPCP. During precipitation, the sewer lines convey both sanitary sewage and stormwater. When large volumes of stormwater exceed the capacity of the treatment facilities, it is permitted to overflow into the area's surface waters to prevent flooding.

Table 11-1
Monthly Dry Weather Flows at Newtown Creek WPCP

Year	Month	Flow (mgd)
2000	March	207
	April	206
	May	208
	June	217
	July	213
	August	219
	September	222
	October	226
	November	233
	December	229
2001	January	224
	February	214
12-Month Average		218
Source: NYCDEP.		

Because stormwater flows can exceed the volume of sanitary sewage by tenfold, all stormwater collected in the sewer lines is not transported to the treatment facility, but overflows at controlled points known as regulators. The combined sanitary sewage and stormwater that exceeds the capacity of the interceptor discharges without any treatment into the receiving waters of the East River. The discharge is a combination of untreated sanitary sewage and stormwater.

The collection system in the immediate vicinity of MSKCC consists of combined sewers that collect both sanitary and stormwater flows. Sewer lines running beneath 66th, 67th, 68th and 69th Streets connect with mains running beneath York Avenue. In this area, flows generally run from west to east and north to south.

Given the existing uses on the site of the proposed research building and main campus block, approximately 43,000 gpd of sanitary sewage are currently generated. Of this, the site of the proposed research building generates approximately 9,000 gpd, while the potential development sites on the main campus block generates approximately 34,000 gpd of sanitary sewage.

SOLID WASTE

Since the closure of New York City's Fresh Kills Landfill in Staten Island, all municipal and commercial waste is disposed of outside of the City. Most of these disposal facilities are in Virginia, Ohio and Pennsylvania.

All of MSKCC's general and medical waste is handled by private carting companies. No waste is picked up by the New York City Department of Sanitation.

Currently, it is estimated that existing activities on the research building site generate 4,700 pounds per week (or 9.5 tons per month) of solid waste, while the potential development sites

on the main campus block generate approximately 34,300 pounds per week (or 68.6 tons per month) of solid waste.

ENERGY USE

New York City and almost all of Westchester County is supplied with electricity by Consolidated Edison (Con Ed). Annual electric sales total nearly 50 billion kilowatt hours (kwh) of electricity supplied to Con Ed's service area (New York City and Westchester County). At MSKCC, electricity, natural gas and steam are supplied by Con Ed for heating, cooling, and lighting. In 1998, the winter peak use of steam was 8.5 million pounds per hour, and the total gas use was more than 200 million dekatherms for the entire year. Other energy consumed at MSKCC includes diesel fuel, used only for emergency generators.

The energy currently consumed on the site of the proposed research building is not considered significant.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS—2007

If the proposed actions are not approved, it is assumed that there would be no significant change to the Kettering Research Laboratory, Schwartz, Howard, Sloan or Scholars Buildings. Based on this assumption, there would be no significant change in the demand for water or energy, waste handling and disposal, or sanitary sewage generation.

Other anticipated projects in the vicinity of MSKCC will increase demands for water, sewage, solid waste services, and energy. However, none of these projects will have large infrastructure demands that will significantly burden New York City's infrastructure.

WATER SUPPLY

In the future without the proposed actions, conditions for water supply are not expected to change significantly.

The City has initiated a comprehensive water conservation program that seeks to reduce water use by implementing a metering program and requiring that all new fixtures in the City, including those in existing and new structures, be of low-flow design (Local Law No. 29, 1989). Other measures, including leak detection programs and locking fire hydrant caps, are aimed at further reducing the City's water needs. In addition, the City is close to completing metered water usage in all buildings that will serve to reduce water demand and flows to sewage facilities. DEP projects that over the next decade, the savings from these conservation measures will exceed any increase in water demand from consumers. Future water use for the entire Borough of Manhattan is conservatively projected to remain at or below the current average use of 420 mgd, with peak use of 500 mgd.

SANITARY SEWAGE

There were no requirements for specific levels of wastewater treatment when the Newtown Creek WPCP was built in 1967. The WPCP was constructed with a modified aeration system for wastewater treatment and was designed for 60 percent removal of biological oxygen demand (BOD) and 70 percent removal of total suspended solids (TSS). These treatment levels were chosen based on attaining water quality goals for maintaining fish passage and navigation in the

East River. The Clean Water Act of 1974 requires full secondary wastewater treatment, defined as 85 percent removal of BOD and TSS.

New York City, through DEP, has entered into a Consent Judgement to provide full secondary treatment by December 31, 2007. In the meantime, interim steps are being undertaken to make sure the Newtown Creek WPCP operates properly and achieves the required levels of wastewater treatment until the plant is upgraded to fully secondary treatment.

SOLID WASTE

By 2007, no significant changes to solid waste conditions are anticipated. Municipal waste and privately handled waste will continue to be shipped to licensed landfills outside of New York City.

ENERGY

Con Ed has a program to sell its electrical generating stations as part of preparation for deregulation of energy supply. To meet the future needs of the City, the New York Power Authority has begun work to construct new natural gas turbine combustion generators in the New York City Metropolitan area. In the future without the proposed actions, energy for MSKCC will be provided by either Con Ed or another power provider. No major changes in energy uses in the project area are expected.

D. THE FUTURE WITH THE PROPOSED ACTIONS—2007

Potential demand for water and energy, and the generation of sewage and solid waste resulting from the proposed research building and potential development on non-MSKCC properties are considered below.

WATER SUPPLY

The anticipated water demand from the proposed research building is estimated at 65,600 gpd of water. This amount is based on a commercial rate of 25 gpd/person (for an estimated 548 employees) and 0.10 gpd/sf for air conditioning. Subtracting the amount of water currently consumed by the research building site (24,000 gpd), the net increase in demand anticipated with the proposed actions is 41,600 gpd above existing and 2007 No Build levels.

Water demand for potential residential development on non-MSKCC properties that could result from the proposed actions is estimated to be 5,600 gpd, based on 33 units with a population of 50 and a rate of 112 gpd per person.

These demands would not be significant enough to affect the New York City water supply system's ability to deliver water reliably and project-generated demand for water is not expected to affect local water pressure.

SANITARY SEWAGE AND STORM WATER DISPOSAL

Assuming that the proposed research building's sewage generation would be equivalent to its total water use (without air conditioning), 13,700 gpd of sanitary sewage would be conveyed to the Newtown Creek WPCP. Subtracting the estimated sewage flows currently generated by uses on the site (9,000 gpd), the net increase in sewage that would be conveyed to the Newtown Creek WPCP is 4,700 gpd above existing and 2007 No Build conditions.

Sanitary sewage from potential residential development on non-MSKCC properties that could result from the proposed actions is estimated to be the same as that for water demand—5,600 gpd. Additional sanitary sewage resulting from the proposed actions would not cause the Newtown Creek WPCP to exceed its design capacity or SPDES permit flow limit.

SOLID WASTE

Waste from the proposed research building is estimated to total 7,100 pounds per week (or 14.3 tons per month). This would represent an increase of approximately 2,400 pounds per week (or 4.8 tons per month) above existing and 2007 No Build levels.

Like the rest of MSKCC's properties, waste from the proposed research building would be handled by private carters and transported out of the New York City. Therefore, there would be no effect on the City's municipal waste handling system.

Solid waste generation from potential residential development on non-MSKCC properties is estimated to be 560 pounds per week (or 1.1 tons per month), based on 33 units and a rate of 17 pounds per week per unit. This relatively small amount of waste is not expected to burden the City's solid waste handling services.

ENERGY

The proposed research building would be required to comply with the New York State Conservation Construction Code. This code governs performance requirements of heating, ventilation, and air conditioning systems, as well as the exterior building envelope. The code, promulgated on January 1, 1979, pursuant to Article 11 of the Energy Law of the State of New York, requires that new and recycled buildings (both public and private) be designed to ensure adequate thermal resistance to heat loss and infiltration. In addition, it provides requirements for the design and selection of mechanical, electrical, and illumination systems. In compliance with the code, the basic designs would incorporate all required energy conservation measures, including meeting the code's requirements relating to energy efficiency and combined thermal transmittance.

Electricity, and possibly gas and steam, supplied by Con Ed or another power company, would be used to provide heating, cooling, and lighting to the proposed building. Diesel fuel would be used for emergency backup generators. Con Ed or another company would also supply energy for any new residential units developed on non-MSKCC properties as a result of the proposed actions. Energy consumption from the proposed actions is not expected to result in any significant additional load for Con Ed or another power company.

E. THE FUTURE WITHOUT THE PROPOSED ACTIONS—2011

It is expected that Newtown Creek WPCP will be upgraded to provide full secondary treatment by December 31, 2007. Thus, the interim steps now being employed at the WPCP to operate properly and achieve the required levels of wastewater treatment would no longer be necessary.

No significant changes are expected to water supply, solid waste disposal, or energy.

F. THE FUTURE WITH THE PROPOSED ACTIONS—2011

Potential demand for water and energy, and the generation of sewage and solid waste resulting from both the research building and the redevelopment of portions of the central block of MSKCC's campus ("full build out") are considered below.

WATER SUPPLY

The anticipated water demand from the proposed research building and development on the central block is estimated at 358,300 gpd of water. This includes approximately 65,600 gpd for the proposed research building and 292,700 gpd for the main campus block. Subtracting the amount of water currently consumed by the research building site (24,000 gpd), and existing uses on the main block (70,810 gpd), the net increase in demand anticipated with the proposed actions is 263,490 gpd.

As described above, water demand for potential residential development on non-MSKCC properties that could result from the proposed actions is estimated to be an additional 5,600 gpd.

These demands would not be significant enough to affect the New York City water supply system's ability to deliver water reliably and project-generated demand for water is not expected to affect local water pressure. Overall, the proposed actions are not expected to result in significant adverse impacts to water supply.

SANITARY SEWAGE AND STORM WATER DISPOSAL

Assuming that sewage generation would be equivalent to total water use (without air conditioning), 186,000 gpd of sanitary sewage would be conveyed to the Newtown Creek WPCP. This includes approximately 13,700 gpd for the proposed research building and 172,300 gpd for the central block. Subtracting the sewage flows currently generated by existing uses (9,000 gpd for the north block and 45,810 for the central block), the net increase in sewage that would be conveyed to the Newtown Creek WPCP is 131,190 gpd.

As described above, sanitary sewage resulting from potential residential development on non-MSKCC properties is estimated to be an additional 5,600 gpd.

The addition of sanitary sewage expected to result from the proposed actions would not cause the Newtown Creek WPCP to exceed its design capacity or SPDES permit flow limit. Consequently, sewage generated from the proposed actions would not result in a significant impact.

SOLID WASTE

The proposed actions would generate approximately a total of 62,700 pounds per week (or 125.4 tons per month) of solid waste, based on the anticipated number of employees and assuming the *CEQR Technical Manual* rate of 13 pounds per employee per week for the North block and 51 pounds per week per hospital bed. Subtracting the solid waste currently generated on the site (34,300 pounds per week), the proposed actions would add a net of 28,400 pounds per week (or 56.8 tons per month). This solid waste would be handled by private carting companies and would have no effect on the City's public waste disposal services.

As described above, solid waste generated by potential residential development of 33 units on non-MSKCC properties is estimated to be 560 pounds per week (or 1.1 tons per month). This amount of waste would not have a significant effect on the City's waste handling services.

Overall, the amount of solid waste that would be expected to result from the proposed actions would not overburden the City's solid waste disposal capabilities, and no significant adverse impacts are expected.

ENERGY

Development resulting from the proposed actions would be required to comply with the New York State Conservation Construction Code (described above) that governs performance requirements of heating, ventilation, and air conditioning systems, as well as the exterior building envelope. In compliance with the code, the buildings would incorporate all required energy conservation measures, including meeting the code's requirements relating to energy efficiency and combined thermal transmittance.

Electricity, gas and steam, supplied by Con Ed or another power company, would continue to provide heating, cooling, and lighting to MSKCC and the surrounding area. Energy consumption from the proposed actions is not expected to result in any significant additional load for Con Ed or another power company. Thus, the operational energy impacts from the proposed actions would not be significant. ❖

A. INTRODUCTION

As described in detail in Chapter 1, "Project Description," this EIS considers a two-phase development. In Phase 1, there would be the demolition of the existing Kettering Building located at the north end of the campus, on the block bounded by East 68th and 69th Streets between York and First Avenues. This site would be redeveloped for the same use, and is anticipated to be complete in 2007. Phase 2 of the proposed project, anticipated to be complete by 2011, would also include the demolition of some existing campus buildings on the block bounded by East 67th and East 68th Streets between York and First Avenues. These sites would then be redeveloped with similar uses, including inpatient space, diagnostic and treatment facilities, hospital offices, laboratories, and on-call space. For the purposes of 2011 analysis, full build-out will include both the Phase 1 and Phase 2 project components.

In addition to the proposed actions, the proposed rezoning would permit the development of 68 dwelling units on the north block. These residential uses would likely be developed by 2007, and present the worst case for non-MSKCC related development under the proposed rezoning.

The proposed actions would result in impacts at 3, 0, and 5 intersections during the AM, midday, and PM peak hours, respectively, in 2007; and 9, 8, and 11 intersections during the AM, midday, and PM peak hours, respectively, in 2011. Proposed mitigation measures are presented in Chapter 17, Mitigation."

B. EXISTING CONDITIONS

STUDY AREA

The traffic study area is shown in Figure 12-1. The study area was selected to encompass those roadways most likely to be used by vehicular traffic traveling to and from the site. It is bounded by East 72nd Street to the north, East 61st Street to the south, York Avenue to the east, and Second Avenue to the west. The proposed actions' impact would diminish outside this study area, as project-generated vehicles are distributed throughout the broader street network. Seventeen intersections were analyzed in detail during the weekday AM, midday, and PM peak hours.

INTERSECTION AND ROADWAY CHARACTERISTICS

The traffic study area comprises a portion of the Upper East Side grid, with major north-south one-way flows on First and Second Avenues; major two-way north-south flows on York Avenue; major two-way east-west crosstown movements on East 72nd Street; and local east-west circulation on the one-way side streets west of York Avenue. East 61st and East 62nd Streets provide access and egress to FDR Drive northbound, East 63rd Street provides access and egress to FDR Drive southbound, and East 71st Street provides egress from FDR Drive southbound.

York Avenue is a major two-way north-south roadway with three lanes (including a parking lane) in each direction. First Avenue is a major one-way northbound roadway with seven lanes (including parking lanes and a bicycle lane). Second Avenue is a major one-way southbound roadway with six lanes (including parking lanes and a bus lane). East 72nd Street is a major east-west street with three lanes (including a parking lane) in each direction. The local east-west streets generally provide two to three lanes (including a parking lane). In the study area, avenues range in width from approximately 60 to 70 feet; East 72nd Street ranges in width from approximately 40 to 55 feet; and the local east-west streets are generally between 30 and 40 feet wide. The number of lanes open to moving traffic varies. The one-way avenues generally operate with three to five moving lanes. York Avenue and East 72nd Street generally operate with two moving lanes in each direction. The local east-west streets typically function with one to two moving lanes. However, trucking activity and illegal use of the curbside occasionally limit the number of moving lanes available on the various streets and avenues in the study area during the course of the day.

ANALYSIS METHODOLOGY

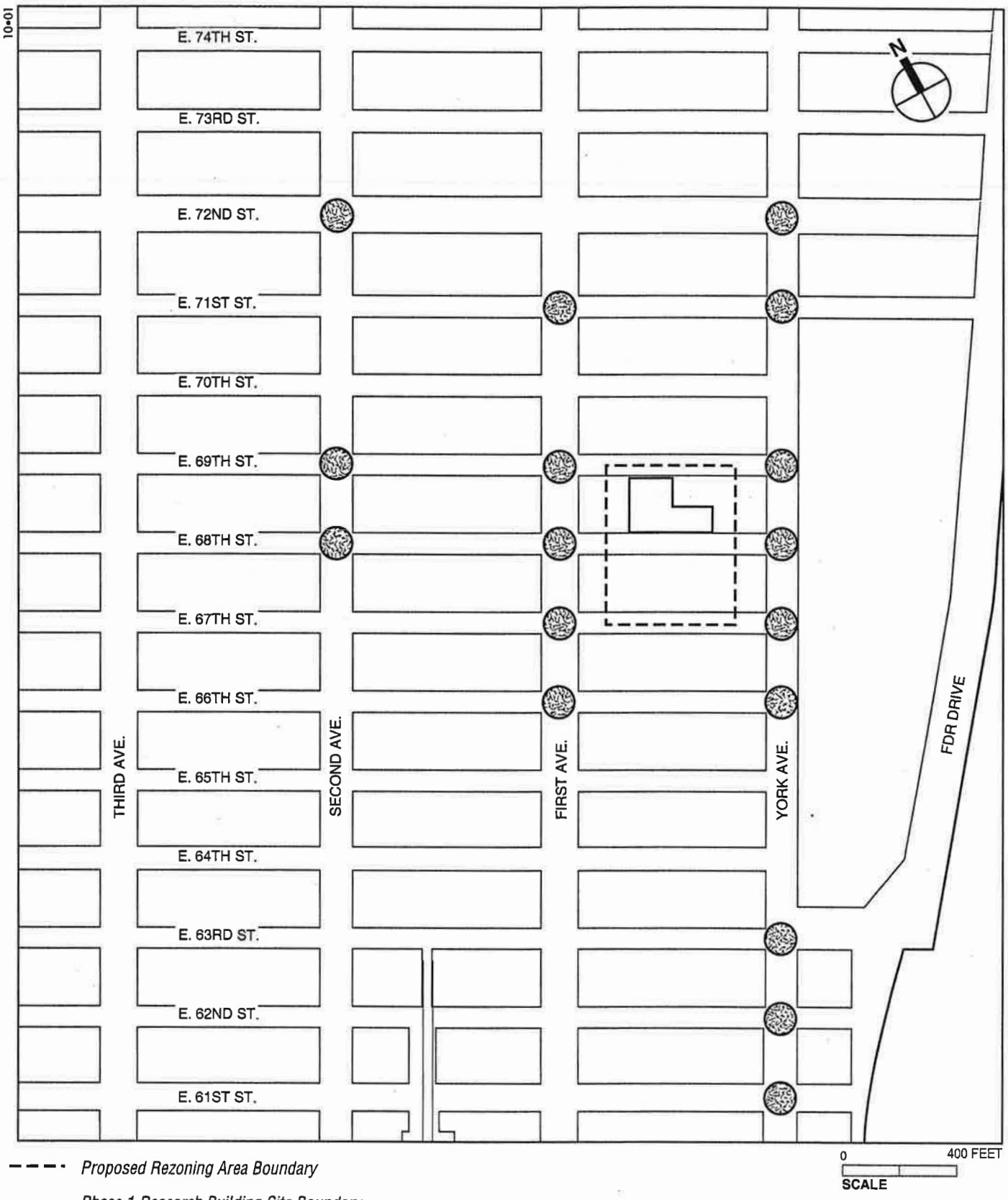
The capacities for the intersections in the study area were calculated using the 1994 *Highway Capacity Manual* (HCM) methodology and Highway Capacity Software (HCS) version 2.4g. The criteria for levels of service (LOS) and the relationship between the volume-to-capacity (v/c) ratio and delay for the 1994 HCM methodology are described below.

The analysis methodology describes intersections in the study area according to their "levels of service," or LOS, based on the average delay experienced by drivers passing through the intersection. The levels of service are defined as follows:

LOS	Average Delay
A	<5.0 seconds
B	5.1-15.0 seconds
C	15.1-25.0 seconds
D	25.1-40.0 seconds
E	40.1-60.0 seconds
F	>60 seconds

LOS A and B indicate good operating conditions with minimal delay. At LOS C, the number of vehicles stopping is higher, but congestion is still fairly light. LOS D describes a condition where congestion levels are more noticeable, and individual cycle failures can occur. Conditions at LOS E and F reflect poor service levels, and stop and go traffic is frequent.

The 1994 HCM methodology also calculates a v/c ratio. Although this ratio is an indicator of the degree to which capacity is being utilized, there is no strict relationship between v/c ratios and LOS as defined in the HCM. A high v/c ratio indicates substantial traffic passing through an intersection. If a high v/c ratio is combined with a low average delay, this indicates an optimization of traffic flow—when an approach, or the whole intersection, processes traffic close to its theoretical maximum with a minimum amount of delay. However, very high v/c ratios—especially those greater than 1.0—are often correlated with a deteriorated LOS. Other important variables affecting delay include cycle length, progression, and green time.



Traffic Study Area

FIGURE 12-1

MEMORIAL SLOAN-KETTERING CANCER CENTER

The 1994 HCM methodology provides for a summary of the total intersection operating conditions. The analysis chooses the two critical movements (the worst case from each roadway) and calculates a summary critical v/c ratio, delay, and LOS. For densely developed areas like Manhattan, LOS D or better indicates acceptable operating conditions.

TRAFFIC

Existing traffic conditions in the study area were established based on field surveys conducted in October 2000 and February and March 2001 during the hours of peak traffic operation. Information collected include peak period manual turning movement counts, one week of 24-hour traffic volume counts from automatic traffic recorders (ATRs), and vehicle classification counts. Information was also collected pertaining to the ability of a given intersection to process traffic, or intersection "capacity." Such items included the number of moving lanes of traffic, roadway widths, traffic signal cycle length, signal progression, and the presence of bus stops and other features that might affect capacity. Official New York City Department of Transportation (NYCDOT) signal timings were used for capacity analysis of all three peak hours analyzed. Based on the data collected, network traffic volumes were estimated for the AM, midday, and PM peak hours as shown in Figures 12-2 through 12-4, respectively.

During the three peak hours analyzed, existing traffic volumes on northbound First Avenue range from 2,200 vehicles per hour (vph) to 2,880 vph; volumes on southbound Second Avenue range from 1,580 vph to 1,885 vph. On York Avenue, northbound volumes range from 670 vph to 910 vph, and southbound volumes range from 775 vph to 1,400 vph. East-west cross streets in the study area carry traffic volumes ranging from 85 vph to 895 vph.

Traffic volumes on the FDR Drive were estimated based on ATR data collected in the vicinity of East 72nd Street. Based on this data, traffic volumes on the FDR Drive range from 3,390 to 4,565 vph during the AM, midday, and PM peak hours, respectively.

LEVELS OF SERVICE

Table 12-1 presents the results of the capacity analysis for the existing traffic conditions for the study area intersections. Locations with notable service problems of LOS E or worse, or v/c ratios greater than 0.9, are listed below.

AM Peak Hour

- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street operates at LOS F (83.9 seconds of delay per vehicle [spv]) with a v/c ratio of 1.051;
- The northbound approach at the intersection of York Avenue and East 69th Street operates at LOS C (17.0 spv) with a v/c ratio of 0.934;
- The northbound approach at the intersection of York Avenue and East 71st Street operates at LOS E (49.0 spv) with a v/c ratio of 1.048;
- The eastbound approach at the intersection of York Avenue and East 72nd Street operates at LOS F (69.6 spv) with a v/c ratio of 1.040;
- The westbound approach at the intersection of York Avenue and East 72nd Street operates at LOS F (66.5 spv) with a v/c ratio of 0.962;

Table 12-1
Signalized Intersections:
2001 Existing Conditions Level of Service Analysis

Intersection	Lane Group	Weekday AM Existing V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET								
Northbound	LT	0.600	11.2	B	11.2	B	12.2	B
Southbound	TR	0.444	9.8	B	9.8	B		
Westbound	L	0.282	17.2	C	17.6	C		
	LTR	0.318	17.5	C				
	R	0.362	18.0	C				
YORK AVENUE & E. 62nd STREET								
Northbound	TR	0.875	26.0	D	24.8	C	19.2	C
	R	0.410	17.3	C				
Southbound	LT	0.752	8.7	B	8.7	B		
Eastbound	LTR	0.505	28.6	D	28.6	D		
YORK AVENUE & E. 63rd STREET								
Northbound	T	0.750	31.0	D	20.2	C	27.6	D
	R	0.654	6.2	B				
Southbound	L	1.051	83.9	F	37.1	D		
	TR	0.584	13.8	B				
Westbound	L	0.466	24.1	C	23.9	C		
	LTR	0.474	23.8	C				
YORK AVENUE & E. 66th STREET								
Northbound	LTR	0.480	4.8	A	4.8	A	5.8	B
Southbound	LTR	0.666	6.3	B	6.3	B		
Westbound	LTR	0.097	21.5	C	21.5	C		
YORK AVENUE & E. 67th STREET								
Northbound	LT	0.503	4.9	A	4.9	A	6.1	B
Southbound	TR	0.733	7.0	B	7.0	B		
YORK AVENUE & E. 68th STREET								
Northbound	TR	0.343	4.2	A	4.2	A	10.3	B
Southbound	LT	0.739	7.3	B	7.3	B		
Eastbound	LTR	0.581	26.6	D	26.6	D		
Westbound	L	0.421	25.0	C	23.7	C		
	R	0.157	21.9	C				
YORK AVENUE & E. 69th STREET								
Northbound	LT	0.934	17.0	C	17.0	C	11.1	B
Southbound	TR	0.618	5.7	B	5.7	B		
YORK AVENUE & E. 71st STREET								
Northbound	LTR	1.048	49.0	E	49.0	E	33.1	D
Southbound	LTR	0.898	19.7	C	19.7	C		
Westbound	LTR	0.693	25.4	D	25.4	D		
YORK AVENUE & E. 72nd STREET								
Northbound	LTR	0.533	5.1	B	5.1	B	26.0	D
Southbound	LTR	0.656	6.2	B	6.2	B		
Eastbound	LTR	1.040	69.6	F	69.6	F		
Westbound	LTR	0.962	66.5	F	66.5	F		
FIRST AVENUE & E. 66th STREET								
Northbound	LT	0.760	7.8	B	7.8	B	8.1	B
Westbound	TR	0.350	16.0	C	16.0	C		
FIRST AVENUE & E. 67th STREET								
Northbound	LT	0.788	8.1	B	8.1	B	11.4	B
Westbound	TR	0.939	46.8	E	46.8	E		
FIRST AVENUE & E. 68th STREET								
Northbound	TR	0.795	8.2	B	8.2	B	11.3	B
Eastbound	LT	0.921	41.5	E	41.5	E		
FIRST AVENUE & E. 69th STREET								
Northbound	LT	0.768	7.9	B	7.9	B	8.5	B
Westbound	TR	0.560	16.9	C	16.9	C		
FIRST AVENUE & E. 71st STREET								
Northbound	LT	0.484	5.8	B	5.8	B	6.6	B
Westbound	TR	0.324	15.7	C	15.7	C		
SECOND AVENUE & E. 68th STREET								
Southbound	LT	0.545	7.1	B	7.1	B	13.6	B
Eastbound	TR	0.989	56.4	E	56.4	E		
SECOND AVENUE & E. 69th STREET								
Southbound	TR	0.563	6.7	B	6.7	B	9.7	B
Westbound	LT	0.857	32.8	D	32.8	D		
SECOND AVENUE & E. 72nd STREET								
Southbound	LTR	0.594	8.9	B	8.9	B	12.1	B
Eastbound	TR	0.602	16.1	C	16.1	C		
Westbound	LT	0.748	19.4	C	19.4	C		

Notes:
L = Left Turn, T = Through, R = Right Turn; LOS = Level of Service.

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Table 12-1 (continued)
Signalized Intersections:
2001 Existing Conditions Level of Service Analysis

Intersection	Lane Group	Weekday Midday Existing V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET								
Northbound	DfL	0.988	90.9	F	18.6	C	14.1	B
	T	0.726	13.0	B				
Southbound	TR	0.631	11.8	B	11.8	B		
Westbound	L	0.199	10.8	B	11.2	B		
	LTR	0.283	11.2	B				
	R	0.318	11.6	B				
YORK AVENUE & E. 62nd STREET								
Northbound	TR	0.947	27.3	D	25.5	D	30.3	D
	R	0.443	14.4	B				
Southbound	LT	1.048	37.6	D	37.6	D		
Eastbound	LTR	0.651	22.6	C	22.6	C		
YORK AVENUE & E. 63rd STREET								
Northbound	T	0.849	26.3	D	20.3	C	24.9	C
	R	0.427	5.7	B				
Southbound	L	1.047	75.4	F	28.7	D		
	TR	0.900	16.4	C				
Westbound	L	0.586	23.6	C	23.2	C		
	LTR	0.620	23.1	C				
YORK AVENUE & E. 66th STREET								
Northbound	LTR	0.853	9.5	B	9.5	B	8.2	B
Southbound	LTR	0.776	8.9	B	8.9	B		
Westbound	LTR	0.068	16.1	C	16.1	C		
YORK AVENUE & E. 67th STREET								
Northbound	LT	0.985	23.6	C	23.6	C	14.3	B
Southbound	TR	0.821	7.6	B	7.6	B		
YORK AVENUE & E. 68th STREET								
Northbound	TR	0.497	4.2	A	4.2	A	8.8	B
Southbound	LT	0.758	6.6	B	6.6	B		
Eastbound	LTR	0.576	20.2	C	20.2	C		
Westbound	L	0.467	19.8	C	18.6	C		
	R	0.189	16.8	C				
YORK AVENUE & E. 69th STREET								
Northbound	LT	0.906	12.9	B	12.9	B	8.6	B
Southbound	TR	0.648	5.1	B	5.1	B		
YORK AVENUE & E. 71st STREET								
Northbound	LTR	1.050	45.4	E	45.4	E	27.7	D
Southbound	LTR	0.794	11.7	B	11.7	B		
Westbound	LTR	0.413	14.7	B	14.7	B		
YORK AVENUE & E. 72nd STREET								
Northbound	LTR	1.048	45.8	E	45.8	E	28.4	D
Southbound	LTR	0.757	11.0	B	11.0	B		
Eastbound	LTR	0.793	21.8	C	21.8	C		
Westbound	LTR	0.686	20.5	C	20.5	C		
FIRST AVENUE & E. 66th STREET								
Northbound	LT	0.682	7.0	B	7.0	B	7.4	B
Westbound	TR	0.326	15.8	C	15.8	C		
FIRST AVENUE & E. 67th STREET								
Northbound	LT	0.660	6.9	B	6.9	B	13.3	B
Westbound	TR	1.020	66.8	F	66.8	F		
FIRST AVENUE & E. 68th STREET								
Northbound	TR	0.640	6.7	B	6.7	B	16.4	C
Eastbound	LT	1.049	69.4	F	69.4	F		
FIRST AVENUE & E. 69th STREET								
Northbound	LT	0.681	7.0	B	7.0	B	8.5	B
Westbound	TR	0.724	23.8	C	23.8	C		
FIRST AVENUE & E. 71st STREET								
Northbound	LT	0.625	6.6	B	6.6	B	7.9	B
Westbound	TR	0.476	17.0	C	17.0	C		
SECOND AVENUE & E. 68th STREET								
Southbound	LT	0.631	7.7	B	7.7	B	19.8	C
Eastbound	TR	1.049	68.5	F	68.5	F		
SECOND AVENUE & E. 69th STREET								
Southbound	TR	0.611	7.1	B	7.1	B	19.1	C
Westbound	LT	1.044	67.2	F	67.2	F		
SECOND AVENUE & E. 72nd STREET								
Southbound	LTR	0.727	10.3	B	10.3	B	14.1	B
Eastbound	TR	0.577	15.7	C	15.7	C		
Westbound	LT	0.853	24.3	C	24.3	C		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.

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Table 12-1 (continued)
Signalized Intersections:
2001 Existing Conditions Level of Service Analysis

Intersection	Lane Group	Weekday PM Existing V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET								
Northbound	LT	0.706	12.8	B	12.8	B	12.8	B
Southbound	TR	0.528	10.5	B	10.5	B		
Westbound	L	0.299	17.4	C	17.5	C		
	LTR	0.303	17.4	C				
	R	0.347	17.9	C				
YORK AVENUE & E. 62nd STREET								
Northbound	TR	0.740	21.5	C	36.7	D	36.9	D
	R	1.050	67.2	F				
Southbound	LT	1.041	36.0	D	36.0	D		
Eastbound	LTR	0.895	38.7	D	38.7	D		
YORK AVENUE & E. 63rd STREET								
Northbound	T	0.585	27.7	D	17.2	C	21.1	C
	R	0.540	5.0	A				
Southbound	L	1.054	83.4	F	19.4	C		
	TR	0.747	1.8	A				
Westbound	L	0.855	27.7	D	27.1	D		
	LTR	0.870	26.8	D				
YORK AVENUE & E. 66th STREET								
Northbound	DfL	0.734	30.7	D	8.3	B	8.8	B
	TR	0.424	4.5	A				
Southbound	LTR	0.835	9.2	B	9.2	B		
Westbound	LTR	0.289	23.1	C	23.1	C		
YORK AVENUE & E. 67th STREET								
Northbound	LT	0.861	11.4	B	11.4	B	9.4	B
Southbound	TR	0.795	8.0	B	8.0	B		
YORK AVENUE & E. 68th STREET								
Northbound	TR	0.488	4.9	A	4.9	A	10.9	B
Southbound	LT	0.750	7.5	B	7.5	B		
Eastbound	LTR	0.567	26.4	D	26.4	D		
Westbound	L	0.507	26.7	D	24.8	C		
	R	0.252	22.7	C				
YORK AVENUE & E. 69th STREET								
Northbound	LT	0.950	19.5	C	19.5	C	12.1	B
Southbound	TR	0.695	6.5	B	6.5	B		
YORK AVENUE & E. 71st STREET								
Northbound	LTR	1.042	46.6	E	46.6	E	31.5	D
Southbound	LTR	0.892	19.1	C	19.1	C		
Westbound	LTR	0.451	19.2	C	19.2	C		
YORK AVENUE & E. 72nd STREET								
Northbound	LTR	0.893	13.8	B	13.8	B	29.6	D
Southbound	LTR	0.730	7.1	B	7.1	B		
Eastbound	DfL	1.041	84.0	F	61.8	F		
	TR	0.817	37.9	D				
Westbound	LTR	1.047	66.9	F	66.9	F		
FIRST AVENUE & E. 66th STREET								
Northbound	LT	0.675	7.0	B	7.0	B	7.3	B
Westbound	TR	0.358	16.1	C	16.1	C		
FIRST AVENUE & E. 67th STREET								
Northbound	LT	0.696	7.1	B	7.1	B	7.8	B
Westbound	TR	0.808	20.0	C	20.0	C		
FIRST AVENUE & E. 68th STREET								
Northbound	TR	0.710	7.2	B	7.2	B	15.2	C
Eastbound	LT	1.050	67.1	F	67.1	F		
FIRST AVENUE & E. 69th STREET								
Northbound	LT	0.697	7.1	B	7.1	B	8.5	B
Westbound	TR	0.777	26.7	D	26.7	D		
FIRST AVENUE & E. 71st STREET								
Northbound	LT	0.525	6.0	B	6.0	B	7.4	B
Westbound	TR	0.532	17.6	C	17.6	C		
SECOND AVENUE & E. 68th STREET								
Southbound	LT	0.452	6.6	B	6.6	B	17.8	C
Eastbound	TR	1.046	65.8	F	65.8	F		
SECOND AVENUE & E. 69th STREET								
Southbound	TR	0.539	6.6	B	6.8	B	10.4	B
Westbound	LT	0.893	37.2	D	37.2	D		
SECOND AVENUE & E. 72nd STREET								
Southbound	LTR	0.573	8.8	B	8.8	B	16.8	C
Eastbound	TR	0.709	17.9	C	17.9	C		
Westbound	LT	0.970	38.9	D	38.9	D		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service

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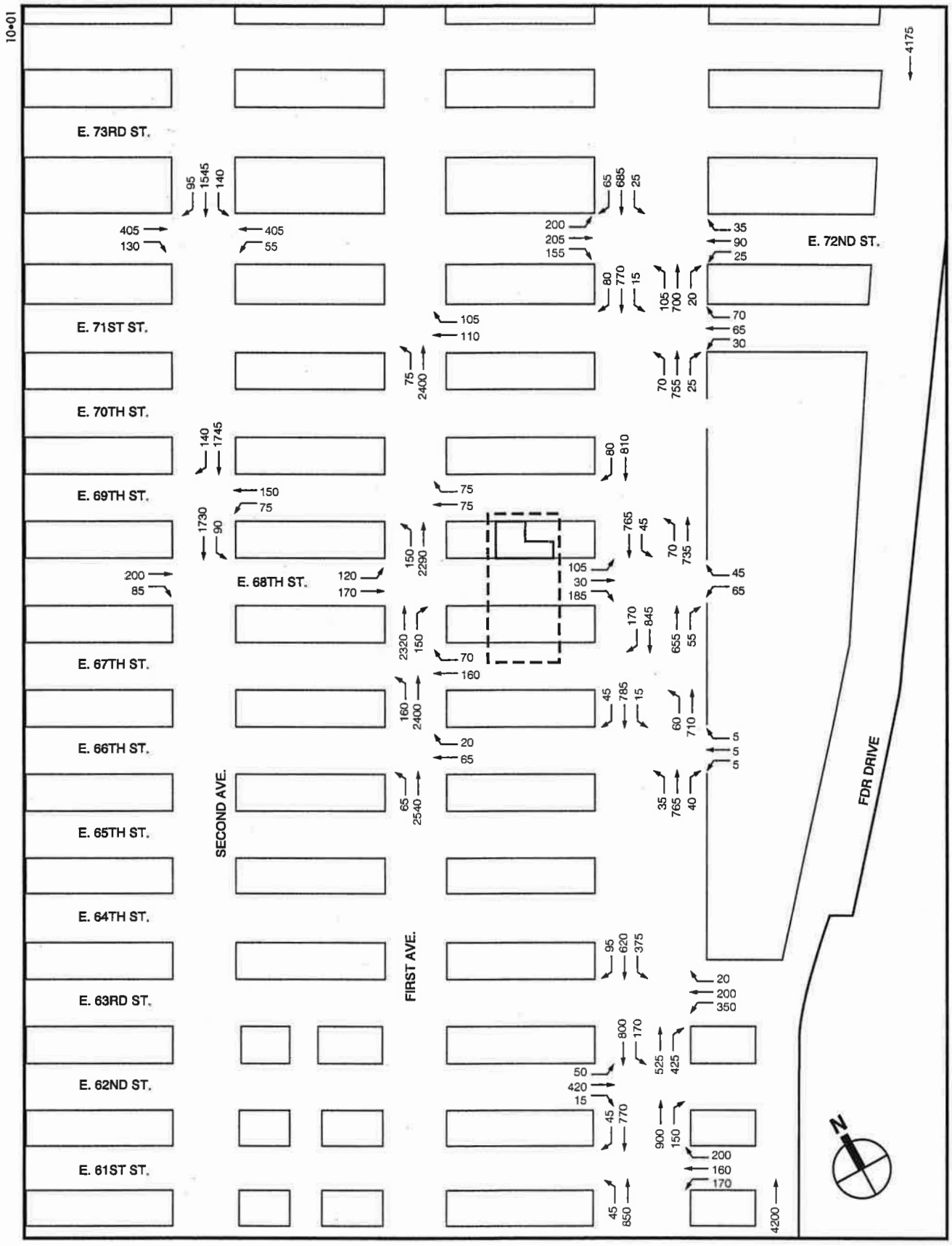
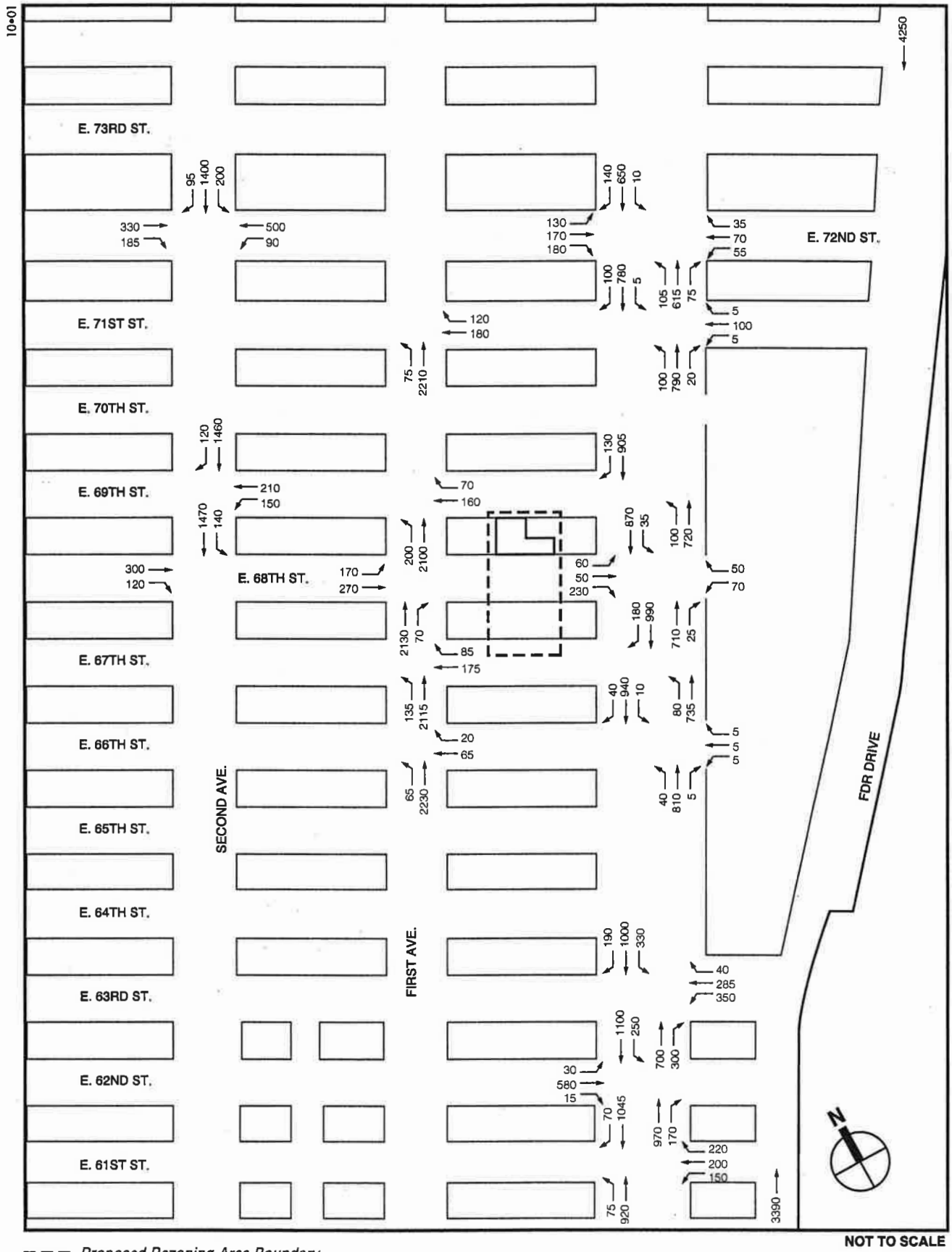


2001 Existing Traffic Volumes • AM Peak Hour

FIGURE 12-2

MEMORIAL SLOAN-KETTERING CANCER CENTER



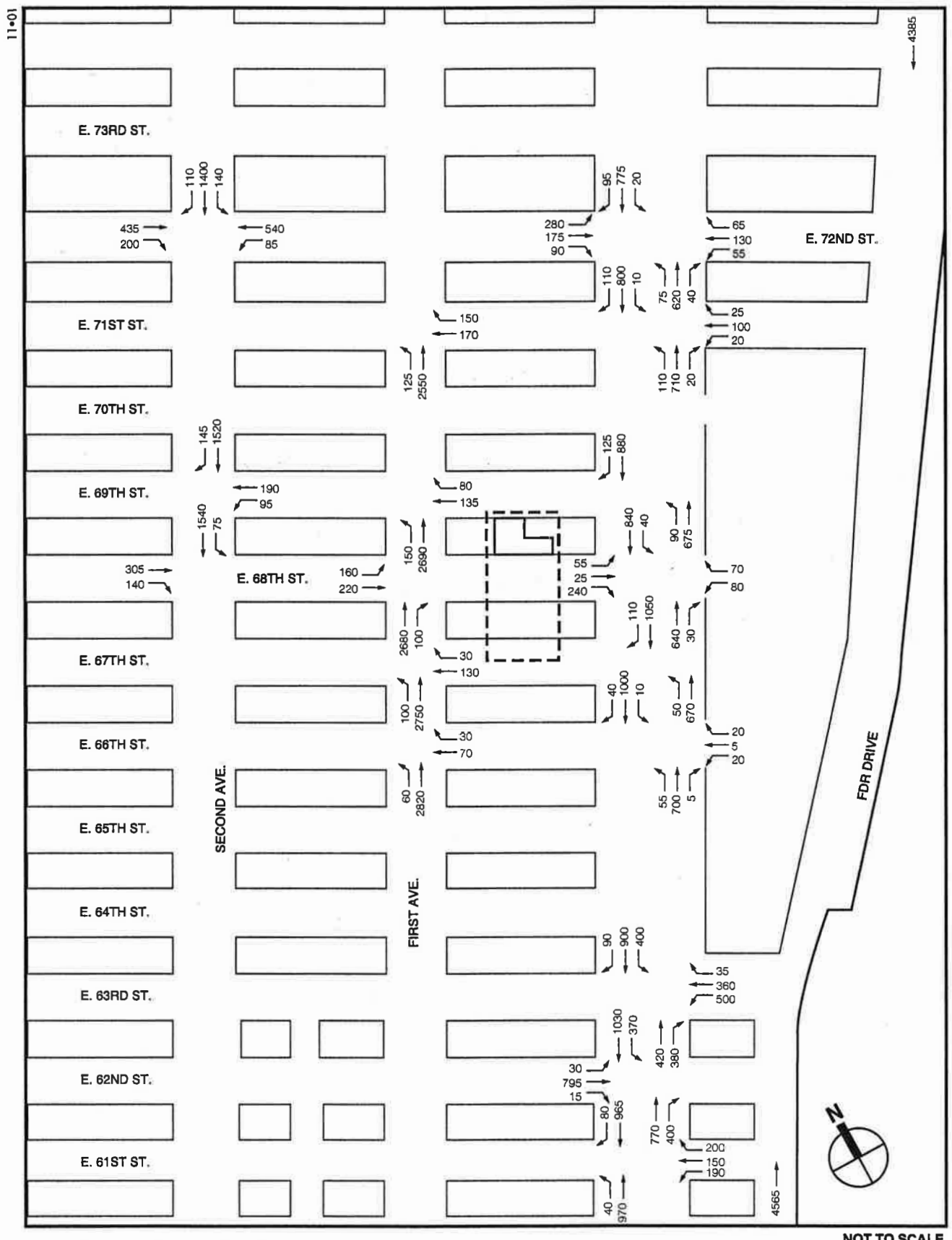
Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

2001 Existing Traffic Volumes • Midday Peak Hour

FIGURE 12-3

MEMORIAL SLOAN-KETTERING CANCER CENTER



Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

2001 Existing Traffic Volumes • PM Peak Hour

FIGURE 12-4

MEMORIAL SLOAN-KETTERING CANCER CENTER

- The westbound approach at the intersection of First Avenue and East 67th Street operates at LOS E (46.8 spv) with a v/c ratio of 0.939;
- The eastbound approach at the intersection of First Avenue at East 68th Street operates at LOS E (41.5 spv) with a v/c ratio of 0.921; and
- The eastbound approach at the intersection of Second Avenue and East 68th Street operates at LOS E (56.4 spv) with a v/c ratio of 0.989.

Midday Peak Hour

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street operates at LOS F (90.9 spv) with a v/c ratio of 0.988;
- The northbound through-right movement at the intersection of York Avenue and East 62nd Street operates at LOS D (27.3 spv) with a v/c ratio of 0.947;
- The southbound approach at the intersection of York Avenue and East 62nd Street operates at LOS D (37.6 spv) with a v/c ratio of 1.048;
- The southbound approach at the intersection of York Avenue and East 63rd Street, where the through-right movement operates at LOS C (16.4 spv) with a v/c ratio of 0.900 and the left-turn movement operates at LOS F (75.4 spv) with a v/c ratio of 1.047;
- The northbound approach at the intersection of York Avenue and East 67th Street operates at LOS C (23.6 spv) with a v/c ratio of 0.985;
- The northbound approach at the intersection of York Avenue and East 69th Street operates at LOS B (12.9 spv) with a v/c ratio of 0.906;
- The northbound approach at the intersection of York Avenue and East 71st Street operates at LOS E (45.4 spv) with a v/c ratio of 1.050;
- The northbound approach at the intersection of York Avenue and East 72nd Street operates at LOS E (45.8 spv) with a v/c ratio of 1.048.
- The westbound approach at the intersection of First Avenue and East 67th Street operates at LOS F (66.8 spv) with a v/c ratio of 1.020;
- The eastbound approach at the intersection of First Avenue at East 68th Street operates at LOS F (69.4 spv) with a v/c ratio of 1.049;
- The eastbound approach at the intersection of Second Avenue and East 68th Street operates at LOS F (68.5) with a v/c ratio of 1.049; and
- The westbound approach at the intersection of Second Avenue and East 69th Street operates at LOS F (67.2 spv) with a v/c ratio of 1.044.

PM Peak Hour

- The northbound right-turn movement at the intersection of York Avenue and East 62nd Street operates at LOS F (67.2 spv) with a v/c ratio of 1.050;
- The southbound approach at the intersection of York Avenue and East 62nd Street operates at LOS D (36.0 spv) with a v/c ratio of 1.041;

- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street operates at LOS F (63.4 spv) with a v/c ratio of 1.054;
- The northbound approach at the intersection of York Avenue and East 69th Street operates at LOS C (19.5 spv) with a v/c ratio of 0.950;
- The northbound approach at the intersection of York Avenue and East 71st Street operates at LOS E (46.6 spv) with a v/c ratio of 1.042;
- The eastbound defacto left-turn movement at the intersection of York Avenue and East 72nd Street operates at LOS F (84.0 spv) with a v/c ratio of 1.041;
- The westbound approach at the intersection of York Avenue and East 72nd Street operates at LOS F (86.9 spv) with a v/c ratio of 1.047;
- The eastbound approach at the intersection of First Avenue at East 68th Street operates at LOS F (67.1 spv) with a v/c ratio of 1.050;
- The eastbound approach at the intersection of Second Avenue and East 68th Street operates at LOS F (65.6 spv) with a v/c ratio of 1.046; and
- The westbound approach at the intersection of Second Avenue and East 72nd Street operates at LOS D (38.9 spv) with a v/c ratio of 0.970.

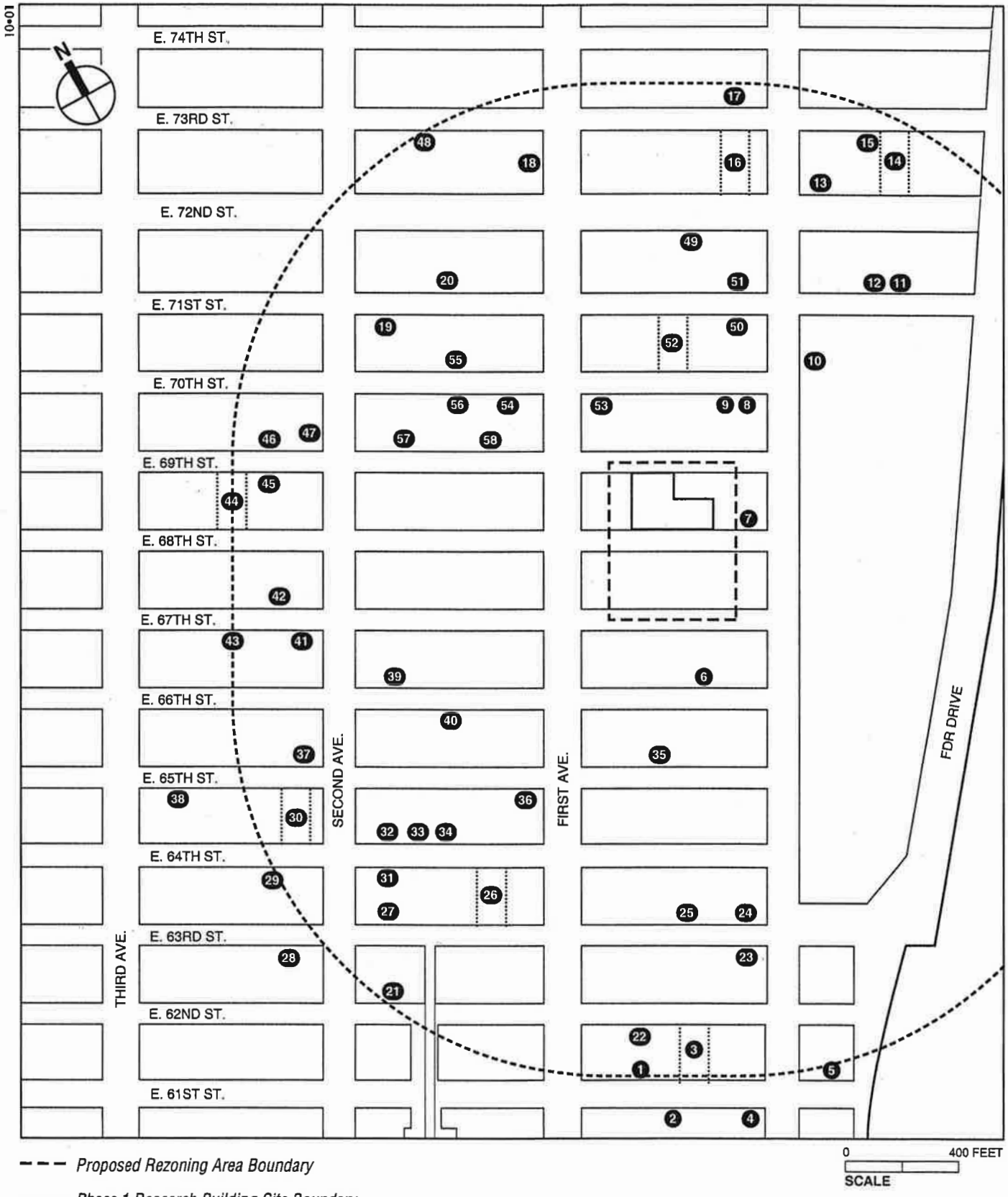
PARKING SUPPLY AND UTILIZATION

Off-street public parking facilities within an approximately ¼-mile radius of the project site were surveyed in March 2001, to assess their capacities and approximate utilization rates (see Table 12-2 and Figure 12-5). Based on this survey, there are 7,384 parking spaces in the study area that are at 83, 84, and 75 percent utilization, with 1,130, 1,033, and 1,677 available spaces during the AM, midday, and PM peak periods, respectively.

An on-street parking survey was conducted to record the on-street parking regulations in the vicinity of the project site from East 64th Street to East 72nd Street between Second and York Avenues. Alternate-side-of-the-street parking regulations are in effect on a majority of the cross streets. There is also a supply of meter parking on avenues, which is in constant demand at close to 100 percent. The on-street parking regulations are presented in Figure 12-6.

C. FUTURE WITHOUT THE PROPOSED ACTIONS—2007

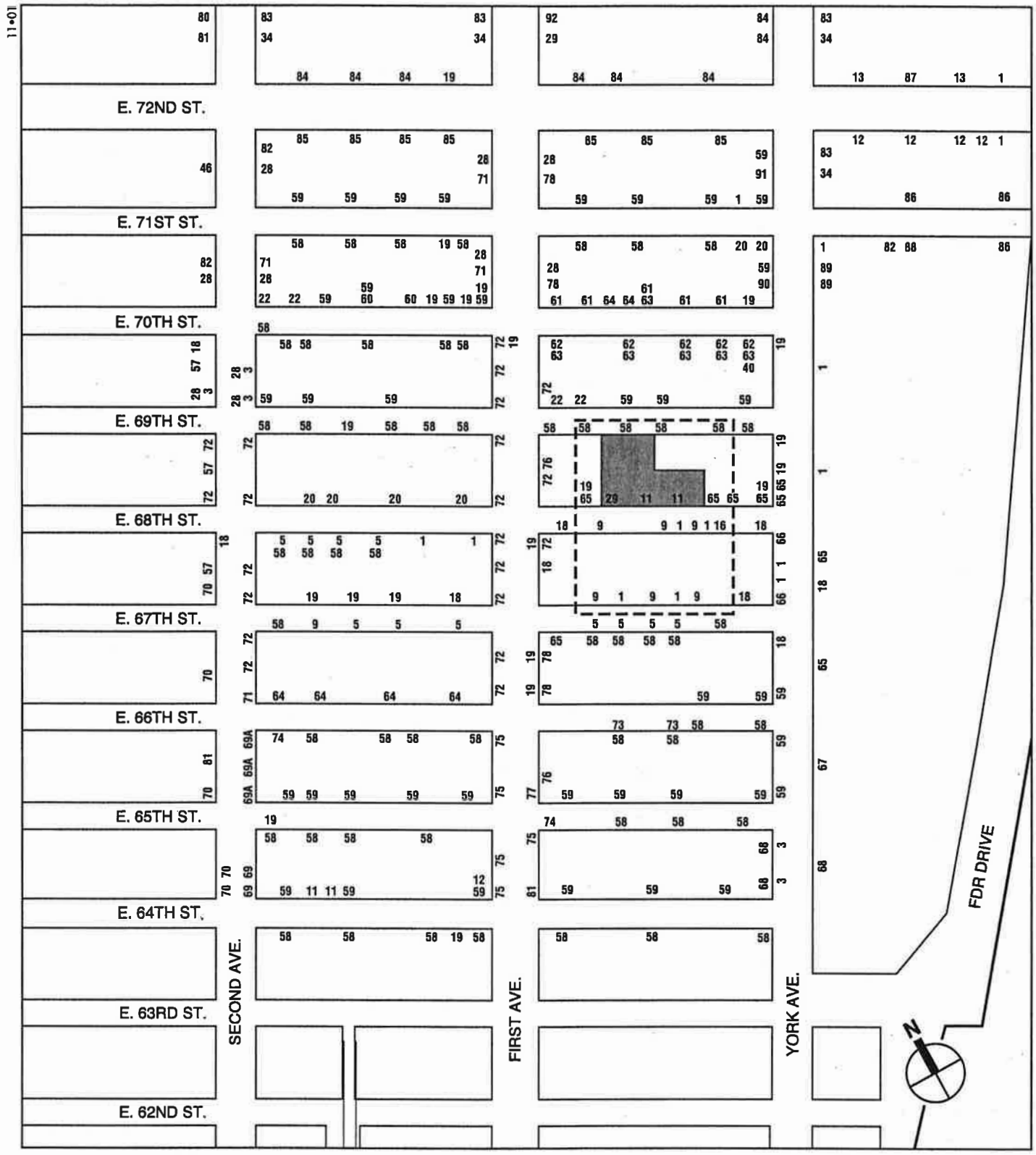
Traffic and parking conditions in the future without the proposed actions were assessed to establish a baseline from which to evaluate the impacts of the actions. This baseline is also known as the "No Action" condition. The first No Action analysis focuses on 2007, the year during which the Phase 1 proposed research building could be completed. The second No Action analysis year is 2011, the anticipated completion year for Phase 2 of the proposed development. In the future No Action scenarios, a number of developments in the larger study area are anticipated, independent of the proposed actions.



Off-Street Parking Facilities

FIGURE 12-5

MEMORIAL SLOAN-KETTERING CANCER CENTER



On-Street Parking Regulations

FIGURE 12-6

MEMORIAL SLOAN-KETTERING CANCER CENTER

MEMORIAL SLOAN-KETTERING
CANCER CENTER

On-Street Parking Regulations

FIGURE 12-6 (cont.)

Key No.	Posted Regulation
1	No Standing Anytime
2	No Standing: 4PM - 7PM Except Sunday
3	No Standing: 7AM - 10AM / 4PM - 7PM Except Sunday
4	No Standing: 7AM - 10AM Except Sunday
5	No Standing: 7AM - 4PM School Days
6	No Standing: 8AM - 6PM Except Sunday
7	No Standing: 8AM - Midnight Except Sunday
8	No Standing Except Authorized Tour Buses: 5 Hour Limit
9	No Standing Except Authorized Vehicles
10	No Standing Except Authorized Vehicles: Fire Department
11	No Standing Except Trucks Loading & Unloading: 7AM - 7PM Except Sunday
12	No Standing Except Trucks Loading & Unloading: 7AM - 7PM Mon. Thru Fri.
13	No Standing Except Trucks Loading & Unloading: 8AM - 6PM Mon. Thru Fri.
14	No Standing Except Trucks Loading & Unloading: 8AM - 7PM Except Sunday
15	No Standing Except Vehicles with NYP License Plates
16	No Standing: Taxi Stand
17	No Standing: Taxi Stand: Relief Stand 1 Hour Limit
18	No Standing: NYC Transit Bus Stop
19	No Parking Anytime
20	No Parking: 7AM - 7PM Except Sunday
21	No Parking: 8AM - 6PM Except Sunday
22	No Parking: 8AM - 6PM Mon. Thru Fri.
23	No Parking: 8AM - 8:30AM Except Sunday
24	No Parking: 8AM - 8:30AM Tues. & Fri.
25	No Parking: 10AM - 4PM Except Sunday
26	No Parking: Except Authorized Tour Buses
27	$^1/_2$ Hour Parking: 8AM - 10PM Except Sunday
28	1 Hour Parking: 10AM - 4PM Except Sunday
29	1 Hour Parking: 9AM - 4PM Except Sunday
30	2 Hour Parking: 10AM - 4PM Except Sunday
31	2 Hour Parking: 8:30AM - 7PM Except Sunday
32	No Standing Except Trucks Loading & Unloading
33	No Standing Hotel Loading Zone
34	1 Hour Parking: 9AM - 7PM Except Sunday
35	No Standing: 8AM - 7PM Except Sunday
36	No Standing: 7AM - 6PM Except Trucks Loading & Unloading, Mon. Thru Fri.
37	No Standing: 12noon - 6PM Wednesday, Saturday & Sunday
38	No Parking: 8:30AM - 9AM Except Sunday 2 Hour Parking: 9AM - 7PM Except Sunday
39	No Parking: 8AM - Midnight Except Sunday
40	No Standing Except Authorized Vehicles: Post Office Vehicles
41	No Standing: 7AM - 7PM Except Sunday
42	No Parking: 7AM - 4PM Mon. Thru Fri. (& #2, #29)
43	No Parking: 10AM - 7PM Mon. Thru Fri. 1 Hour Parking 10AM - 7PM Saturday (& #4)
44	Snow Route: No Standing During Emergency, Vehicles Towed
45	Clear Fire Lane for Emergency Vehicles
46	*Pole with no sign*
47	No Standing: 2PM - 5PM Mon. Thru Fri. No Standing Other Times Except Trucks Loading & Unloading
48	No Parking 7AM - 6PM Mon. Thru Fri: Temporary Construction Regulation
49	No Standing Except City Owned Vehicles 6AM - 6PM Mon. Thru Fri. 6PM - Midnight Mon. Thru Fri. 8AM - Midnight Saturday & Sunday
50	No Parking: 8AM - 10AM Except Sunday 1 Hour Parking: 10AM - 10PM including Sunday
51	No Standing Except Trucks Loading & Unloading 7AM - 4PM Except Sunday No Standing: 4PM - Midnight Except Sunday
52	1 Hour Parking: 10AM - 7PM Saturday
53	No Parking: 10AM - 7PM Mon. Thru Fri.
54	No Parking: 7AM - 4PM Mon. Thru Fri.
55	1 Hour Parking: 9AM - 4PM Saturday
56	Bus Stop
57	Buses & Right Turns Only: 7AM - 10AM, 4PM - 7PM Mon. Thru Fri
58	No Parking: 11AM - 2PM Tue. & Fri.
59	No Parking: 11AM - 2PM Mon. & Thurs.
60	No Parking: 7AM - 7PM Mon. Thru Fri.
61	No Standing: 8AM - 7PM Except Trucks Loading & Unloading, Mon. Thru Fri.
62	No Standing: 8AM - 10AM Mon. Thru Fri.
63	No Standing: 10AM - 7PM Except Trucks Loading & Unloading, Mon. Thru Fri.
64	No Standing: 8AM - 7PM Mon. Thru Fri.
65	No Parking: 8AM - 9AM Except Sunday 1 Hour Parking 9AM - 10AM Including Sunday
65A	No Parking: 8AM - 9AM Except Sunday 1 Hour Parking 9AM - 10AM Except Sunday
66	No Standing: 7AM - 7PM Including Sunday
67	1 Hour Parking: 10AM - 4PM Including Sunday
68	No Parking 7AM - 7PM Except Sunday
69	No Standing: 3PM - 8PM Mon. Thru Fri. 1 Hour Parking 10AM - 3PM Except Sunday
69A	No Standing: 3PM - 8PM Mon. Thru Fri. 1 Hour Parking 9AM - 3PM Except Sunday
70	No Standing: 7AM - 10AM, 3PM - 8PM Mon. Thru Fri. 1 Hour Parking 10AM - 3PM Except Sunday
71	No Parking: 7AM - 10AM, 4PM - 7PM Mon. Thru Fri.
72	No Parking: 7AM - 10AM, 4PM - 7PM Mon. Thru Fri. 1 Hour Parking 10AM - 4PM Except Sunday
73	No Parking: 7AM - 6PM School Days
74	No Standing Except Trucks Loading & Unloading 8AM - 7PM Mon. Thru Fri.
75	No Parking: 4PM - 7PM Mon. Thru Fri. 1 Hour Parking: 9AM - 4PM
76	Bus Lane: Buses & Right Turns Only 4PM - 7PM Mon. Thru Fri.
77	No Standing Except Trucks Loading & Unloading 10AM - 4PM Except Sunday No Stopping: 7AM - 10AM, 4PM - 7PM Mon. Thru Fri.
78	No Stopping: 7AM - 10AM, 4PM - 7PM Mon. Thru Fri.
79	No Parking or Standing
80	No Standing 7AM - 10AM Mon. Thru Fri.
81	1 Hour Parking: 10AM - 10PM Except Sunday
82	No Standing: 7AM - 10AM, 4PM - 7PM Mon. Thru Fri.
83	No Parking: 8AM -9AM Except Sunday
84	No Parking: 8AM - 11AM Mon. & Thurs.
85	No Parking: 8AM - 11AM Tues & Fri.
86	No Stopping Anytime
87	No Standing Except Vehicles with Consul - C Diplomat A&D License Plates
88	No Standing Except Trucks Loading & Unloading 10AM - 4PM Mon. Thru Fri.
89	No Standing Except Taxis 7AM - 10AM Mon. Thru Fri. Other Times No Standing Except Authorized Vehicles Ambulette
90	2 Hour Parking: 9AM - 7PM Except Sunday
91	No Parking: Passenger Loading Zone
92	No Standing: 4PM - 7PM Mon. Thru Fri.

Table 12-2
2001 Existing Conditions Off-Street Parking Utilization

No	Company Name	Address	License No.	Capacity	Utilization Rate (%)			Utilized Spaces			Available Spaces		
					AM	MIDDAY	PM	AM	MIDDAY	PM	AM	MIDDAY	PM
1	GMC	407 East 61st Street	959336	225	100	50	100	225	113	225	0	113	0
2	Bridge Tower Parking LLC	401 East 60th Street	1066015	99	50	100	50	50	99	50	50	0	50
3	Quik Park 61st Garage Corp.	425 East 61st Street	977763	225	80	100	50	180	225	113	45	0	113
4	York Garage - Guardian Tad Corp.	1113-27 York Avenue	902297	578	80	80	80	462	462	462	116	116	116
5	Fortunate Garage Corp.	500 East 62nd Street	979602	120	90	75	50	108	90	60	12	30	60
6	Memorial Sloan Kettering	1231-1241 York Avenue	368585-881098	263	75	100	80	197	263	210	66	0	53
7	The New York Royal Charter Properties - East Side Hospital	1285 York Avenue	957484	77	60	100	80	46	77	62	31	0	15
		525 East 68th Street		300	100	100	80	300	300	240	0	0	60
		426-438 East 71st Street		220	100	100	80	220	220	176	0	0	44
8	Weill Med. Col. of Cornell Univ.	434 East 70th Street	Private	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	Jacob S. Lasden Housing - Citywide Parking Garage	430 East 70th Street	369751	180	100	100	100	180	180	180	0	0	0
10	Royal Charter Property - East Helmsley Tower	505 East 70th Street	831026	175	90	100	70	158	175	123	18	0	53
11	Edison Parking Management	525 East 71st Street	0978127	225	100	50	50	225	113	113	0	113	113
12	Manhattan Parking East 72nd Corp	517 East 71st Street	368877	50	16	100	40	8	50	20	43	0	30
13	East River 72nd Garage Corp.	515 East 72nd Street	813280	130	70	50	70	91	65	91	39	65	39
14	One East River Place / Alright Parking Management	501-525 East 72nd Street	983838	146	75	95	85	110	139	124	37	7	22
15	DLS Management Inc.	524 East 73rd Street	965232	320	75	100	50	240	320	160	80	0	160
16	East 72nd Realty LLC	1353-1367 York Avenue	1070441	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
17	River York Stratford LLC	1377-1391 York Avenue	1070442	150	65	100	50	98	150	75	53	0	75
18	Second Avenue Garage Corp.	355 East 72nd Street	913723	31	100	100	100	31	31	31	0	0	0
19	Rainbow Parking Corp.	300 East 71st Street	367503	75	100	75	100	75	56	75	0	19	0
20	Sylvan 71st Street Garage Corp.	355-361 East 71st Street	888159	268	50	75	75	134	201	201	134	67	67
21	301 East 62nd Garage Corp.	301 East 62nd Street	469935	40	45	60	45	18	24	18	22	16	22
22	Edison NY Parking LLC	406-426 East 62nd Street	0958104	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23	Kinney Systems of Manhattan	450 East 63rd Street	938836	433	95	70	40	411	303	173	22	130	260
24	Kinney York Avenue	445 East 63rd Street	920919	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25	Dasco Parking Corp.	405 East 63rd Street	937032	39	95	NA	80	37	NA	31	2	NA	8
26	Mutual Parking Systems	340 East 64th Street	889934	91	100	100	100	91	91	91	0	0	0
27	Metro Parking Corp.	301 East 63rd Street	469866	39	73	73	73	28	28	28	11	11	11
28	American Garage Corp.	234-240 East 63rd Street	911879	39	NA	NA	50	NA	NA	20	NA	NA	20
29	Regency Garage Corp	239-245 East 63rd Street	368600	300	90	85	90	270	255	270	30	45	30
30	Kinney Systems Inc.	222 East 65th Street	766654	300	87	87	87	261	261	261	39	39	39
31	Avis Rent-a-Car	310 East 64th Street	858980	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
32	301 Park Corp	301 East 64th Street	932155	84	75	50	90	63	42	76	21	42	8
33	Hertz	327 East 64th Street	369606	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
34	GMC	337 East 64th Street	959297	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
35	Guardian Pearl Street Garage Corp	403-411 East 65th Street	427270	180	65	90	NA	117	162	NA	63	18	NA
36	Kinney	360 East 65th Street	967919	69	NA	NA	70	NA	NA	48	NA	NA	21
37	Central Parking System	200 East 66th Street	429438	225	80	80	95	180	180	214	45	45	11
38	Edison Parking Management	200 East 65th Street	978147	153	100	100	100	153	153	153	0	0	0
39	Kinney on 66th	301 East 66th Street	918067	70	98	98	100	69	69	70	1	1	0
40	GMC 315 East 66th Garage Corp.	322 East 66th Street	367990	50	90	90	90	45	45	45	5	5	5
41	Edison Parking Management	250 East 67th Street	978778	197	100	90	90	197	177	177	0	20	20
42	67th Street & 2nd Ave Garage Inc	254 East 68th Street	699352	150	85	100	85	128	150	128	23	0	23
43	Rylin Parking Corp.	220 East 67th Street	937030	27	60	60	70	16	16	19	11	11	8
44	Kingdom Garage Corp	200 East 69th Street	1003085	200	95	75	77	190	150	154	10	50	46
45	222 East 69th Garage Corp	222 East 69th Street	367720	157	90	90	90	141	141	141	16	16	16
46	Manahattan Parking E. 69th St Corp	219 East 69th Street	469278	52	75	75	65	39	39	34	13	13	18
47	Gemat Parking	233 East 69th Street	469348	53	50	100	80	27	53	42	27	0	11
48	Integrity Parking	315 East 72nd Street	469761	60	80	80	100	48	48	60	12	12	0
49	Prevost Garage	420 East 72nd Street	367879	64	85	95	95	54	61	61	10	3	3
50	The New York Hospital Laurence G. Payson	426-438 East 71st Street	369314	174	100	100	100	174	174	174	0	0	0
51	Independent Parking Garage	422 East 72nd Street	897040	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
52	York Avenue Garage	400 East 71st Street	913926	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
53	400 East 70th Garage Corp Kingsley Garage	400 East 70th Street	806790	56	90	95	95	50	53	53	6	3	3
54	Liana Parking Corp	330 East 70th Street	957148	25	75	75	50	19	19	13	6	6	13
55	Jullan Garage Corp	309-319 East 70th Street	367154	49	70	70	70	34	34	34	15	15	15
56	Granite Parking Corp	302-312 East 70th Street	976027	44	100	100	100	44	44	44	0	0	0
57	Kinney-Gunhill	301 East 69th Street	918066	40	95	90	95	38	38	38	2	4	2
58	333 Garage Corp	333 East 69th Street	367866	67	100	100	100	67	67	67	0	0	0
				7,384				6,146	6,204	5,527	1,130	1,033	1,677
								83%	84%	75%			

Note:
N.A. implies that information was unavailable at the time of survey

TRAFFIC

To establish a baseline (the No Action scenario) against which to evaluate the impacts of the proposed action, future year traffic conditions were analyzed for 2007. Future conditions were estimated by applying a background growth factor of 0.50 percent per year (as suggested in the *CEQR Technical Manual*), for a total of 3.0 percent by 2007. Other major development projects planned for the area near the project site are shown in Table 12-3 and on Figure 12-7. Trips generated by these projects were calculated as described in the following section.

TRIP GENERATION

MSKCC Outpatient Facility and MSKCC Infill Project

According to conversations with MSKCC, development of the Outpatient Facility and Infill Project would not result in an increased user population; rather, these users would be relocated from existing locations on the MSKCC campus. This relocation is considered in the pedestrian analysis presented in Chapter 13, "Pedestrians and Transit."

Hospital for Special Surgery Caspary Research Building Expansion

Based on an estimated increase in user population provided by the Hospital for Special Surgery, trips generated by the project's net increase of 40 employees were based on temporal distribution for the MSKCC proposed project. Modal split and average vehicle occupancy rates for this project were based on 1990 Census reverse journey-to-work data and modal split information from the *Rockefeller University Laboratory Facility EIS* and the *Mount Sinai School of Medicine EIS.* The Caspary Research Building expansion would result in 21, 10, and 23 person trips and 3, 0, and 3 vehicle trips during the weekday AM, midday, and PM peak hours, respectively.

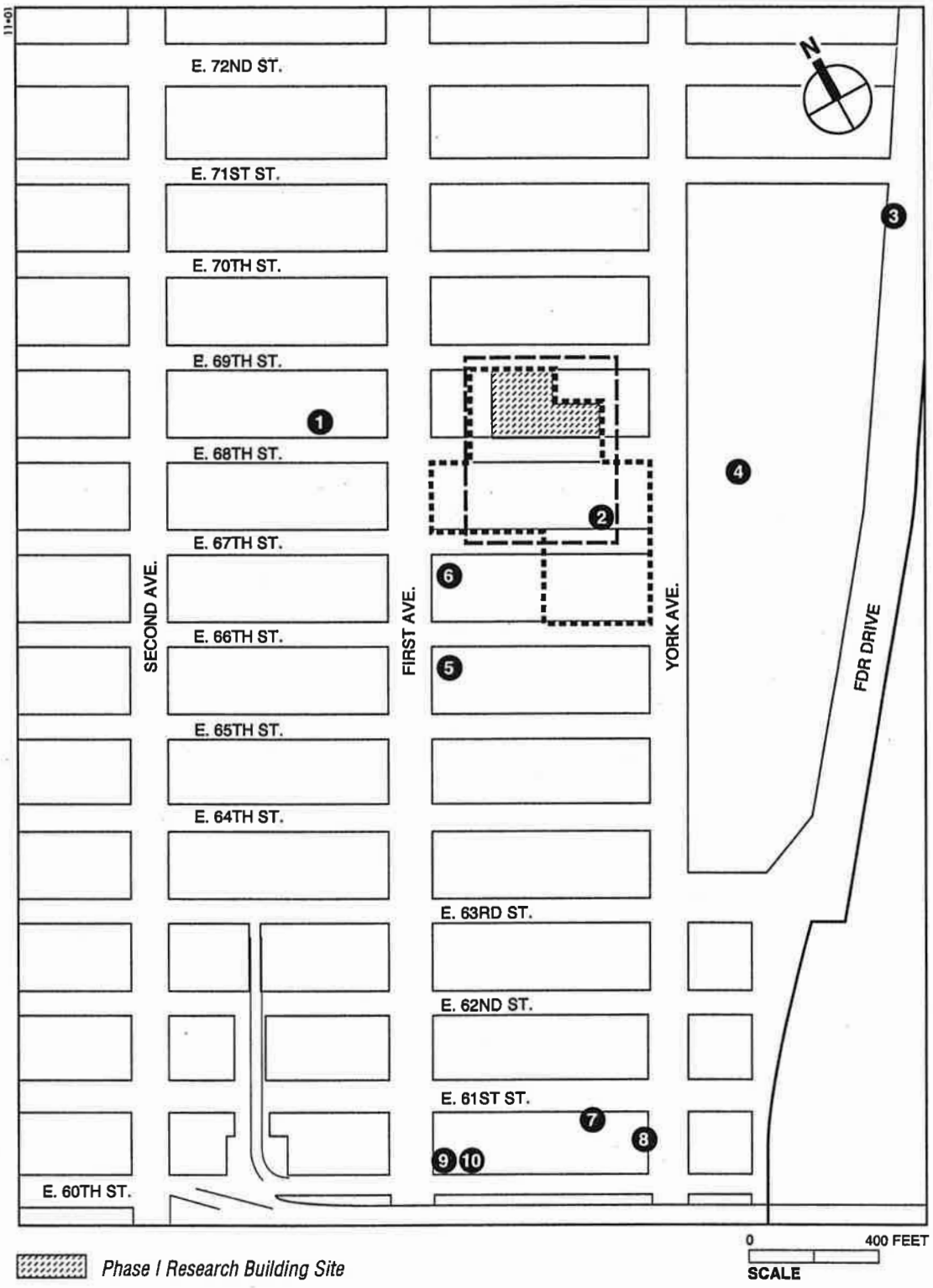
Rockefeller University Lab Building

The Rockefeller University Lab Building would result in a net increase of 439 employees, based on conversations with Rockefeller University. Temporal distribution and modal split characteristics were based on information provided by Rockefeller University. Average vehicle occupancy rates were based on the *Rockefeller University Laboratory Facility EIS* (CEQR No. 87-307M). The Rockefeller University Lab Building is expected to result in 218, 110, and 221 person trips and 29, 6, and 25 vehicle trips during the weekday AM, midday, and PM peak hours, respectively.

Residential Development Projects

Trips generated by anticipated residential projects in the study area (400 East 66th Street, 420-34 East 61st Street, 1117-1125 York Avenue, 1234 First Avenue, 403-407 East 60th Street, and 409-415 East 60th Street) were based on rates presented in Pushkarev and Zupan's *Urban Space for Pedestrians*. Modal split and vehicle occupancy factors were based on 1990 Census data. Trips generated by these projects are shown in Table 12-4.

The 150 square feet at 420-34 East 61st Street and 5,000 square feet at 1234 First Avenue would be local retail uses, and would not result in any new vehicle trips. Any new transit and pedestrian trips resulting from these retail components will be accounted for in the transit and pedestrian analysis.



Development Projects Expected to Occur in the Future Without the Proposed Actions

FIGURE 12-7

Table 12-3
Development Projects Expected to Occur by 2011

Map Ref No.	Project Name/Address	Type/Size	Anticipated Completion
1	MSKCC Outpatient Facility 359 East 68th Street, First and Second Avenues	Outpatient facility and physician's offices. 6 Stories, approximately 61,000 square feet.	2001
2	MSKCC Infill Project Above Memorial Hospital/Winston Pavilion, between East 67th and 68th Streets and First and Second Avenues	4-story hospital addition over existing development. To include pediatric, operating room, and surgical pathology space, approximately 55,300 square feet.	2004
3	Hospital for Special Surgery Caspary Research Building/East 71st Street at the FDR	2-story expansion of existing facility. Net increase of 4,000 gsf, net increase of 40 employees.	2004
4	Rockefeller University Lab Building 1230 York Avenue at East 68th Street	Research Lab, 12 stories, approximately 390,000 gsf (including 88,000 gsf parking), 260 feet in height.	2004
5	The Pearl/400 East 66th Street	24 stories, 126 units	2000
6	1234 First Avenue	Residential, 200 units; Community Facility, 10,000 gsf; Commercial, 5,000 gsf	2006
7	420-34 East 61st Street between York and First Avenues	Residential, 41 stories, approximately 313,000 gsf, 266 units, 150 sf of retail space	2002
8	1117-1125 York Avenue between 60th and 61st Streets	Residential, 40 stories, approximately 325,000 gsf of residential space, approximately 276 units	2004
9	403-407 East 60th Street	Residential, approximately 56,500 sf, approximately 57 units	2007
10	409-415 East 60th Street	Residential, approximately 75,300 sf, approximately 75 units	2007

There would be approximately 10,000 square feet of community facility space in 1234 First Avenue. This space is assumed to be medical office space, and trips generated by this use were based on rates presented in the *400 East 61st Street FEIS* (CEQR No. 85-212M). This use would result in 43, 49, 39 person trips and 20, 19, and 18 vehicle trips during the AM, midday, and PM peak hours, respectively.

TRIP ASSIGNMENT

Directional distribution of project-generated trips are described below. Trip assignments through individual study area intersections and to off-street parking facilities were based on information provided by MSKCC and a survey of off-street parking conducted by Allee King Rosen & Fleming in March 2001.

Table 12-4
Residential Project Trip Generation

Project Name/Address	Person Trips AM/Midday/PM)	Vehicle Trips (AM/Midday/PM)
The Pearl/400 East 66th Street	92/48/108	17/12/16
1234 First Avenue	189/153/236	44/33/45
420-34 East 61st Street between York and First Avenues	193/104/227	41/24/44
1117-1125 York Avenue between 60th and 61st Streets	202/106/238	44/24/44
403-407 East 60th Street	41/22/48	9/6/10
409-415 East 60th Street	55/28/64	10/8/11
Note: Includes trips generated by 10,000 gsf community and 5,000 csf commercial uses at 1234 First Avenue and 150 sf retail at 420-34 East 61st Street.		

Hospital for Special Surgery Caspary Research Building Expansion and Rockefeller University Lab Building

The directional distribution of the auto and taxi trips for these two projects was based on travel patterns presented in the *New York Hospital EIS*. Based on this data, 48 percent of trips would be within Manhattan. The remainder of the trips would originate as follows: 15 percent from Queens, 11 percent from Brooklyn, 7 percent from the Bronx, 2 percent from Staten Island, 4 percent from Long Island, 5 percent from Westchester, 7 percent from New Jersey, and 1 percent from other parts of New York. Auto trips were assigned to parking lots and garages with available capacity (based on data from MSKCC and the off-street parking survey). Taxi trips were assigned to the buildings' access points.

Residential

Auto and taxi trips generated by the residential no build projects were assigned to study area intersections based on existing travel patterns. In addition, auto trips were assigned to study area parking lots and garages with available capacity, and taxi trips were assigned to each building's access points.

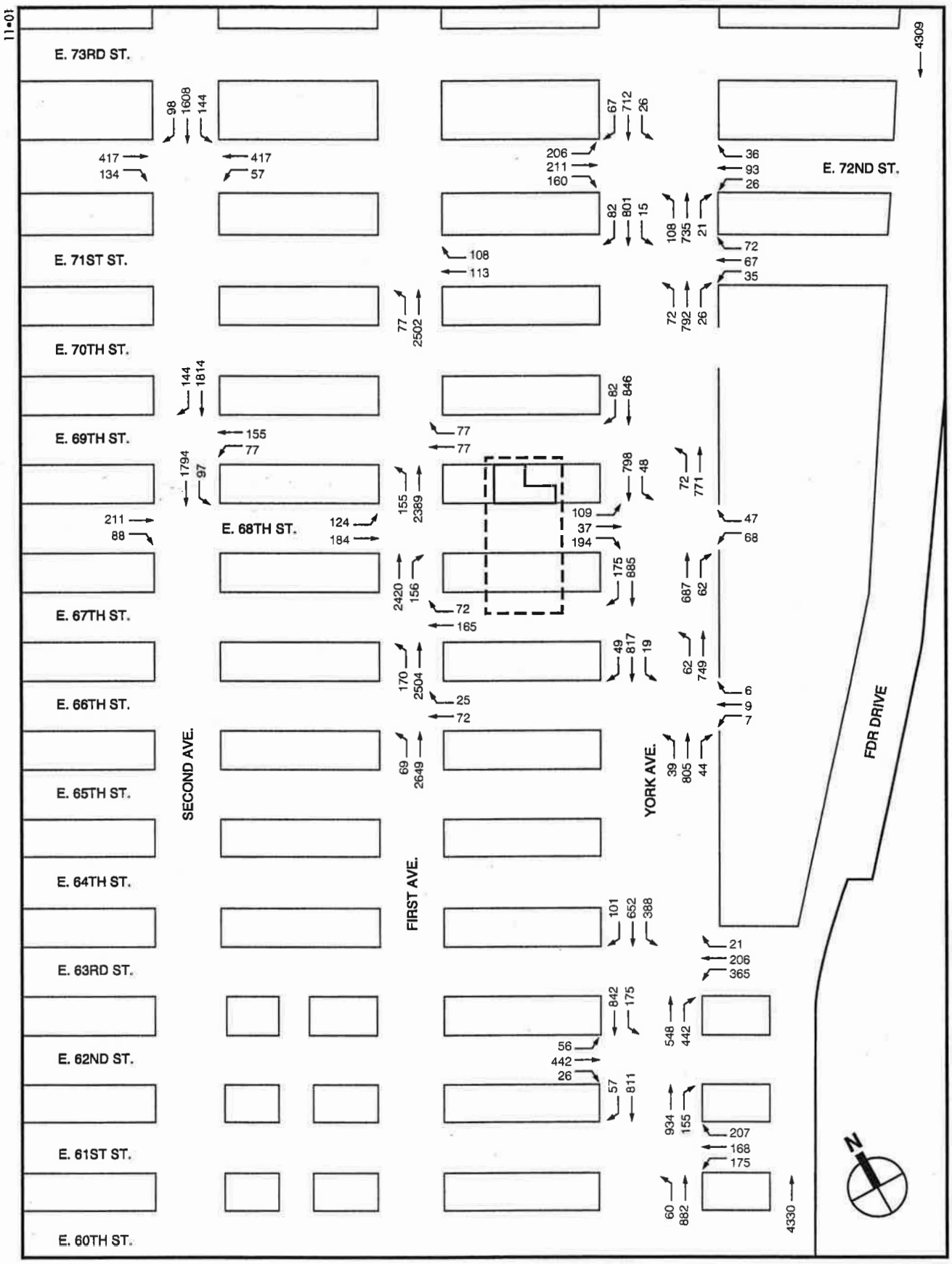
Deliveries

Truck trips for the proposed project were assigned to study area intersections and to the buildings' loading areas based on truck routes designated by the New York City Department of Transportation.

ANALYSIS RESULTS

LEVELS OF SERVICE—FUTURE WITHOUT THE PROPOSED ACTIONS 2007

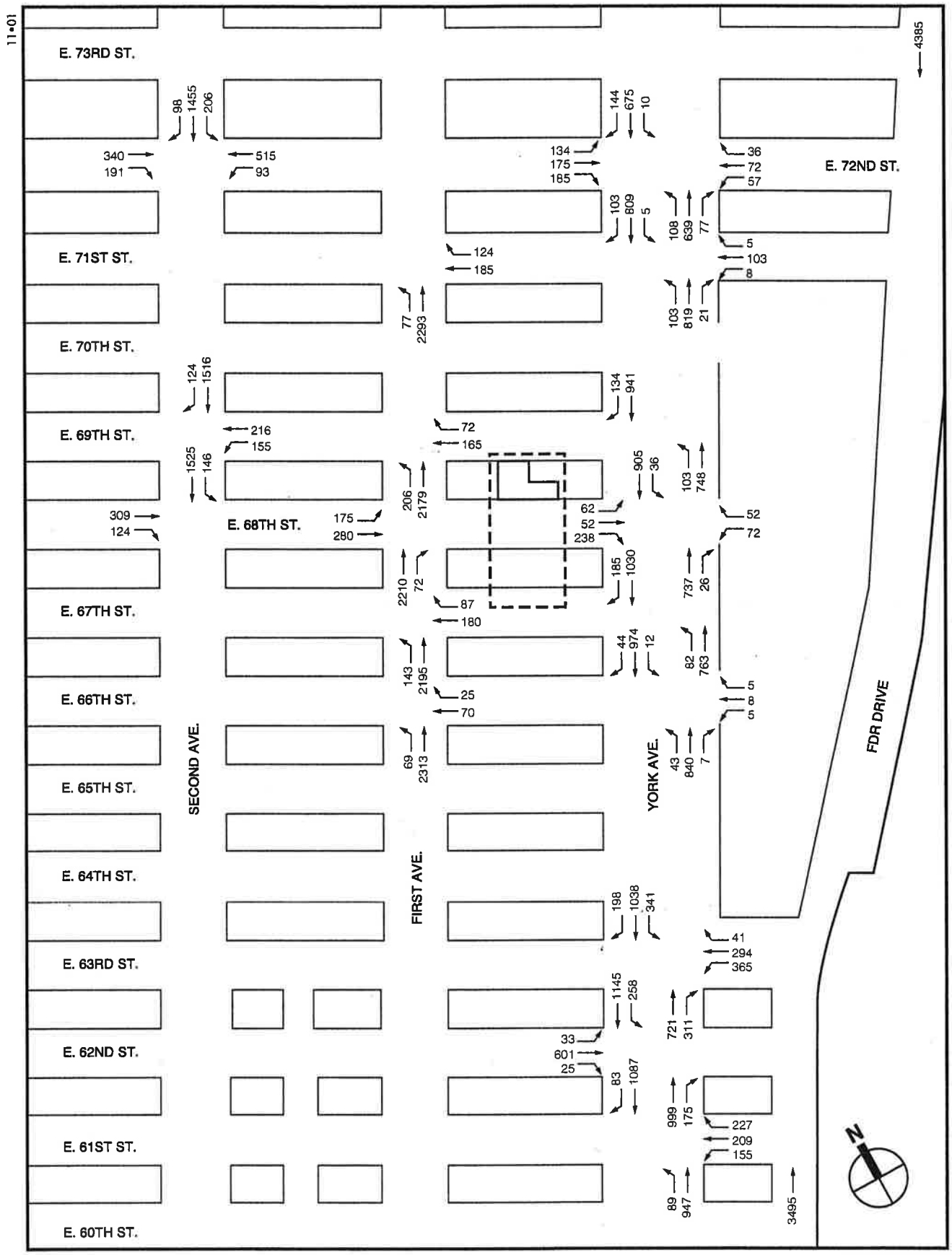
Using the specific traffic generated by each of these developments together with the overall background growth rate of 3.0 percent, traffic volumes were estimated for the 2007 No Action conditions (see Figures 12-8 through 12-10). Levels of service are shown in Table 12-5. Locations that have notable service problems of LOS E or worse or v/c ratios greater than 0.9 are listed below, with the levels of service projected for 2007 No Action conditions.



2007 No Action Traffic Volumes • AM Peak Hour

FIGURE 12-8

MEMORIAL SLOAN-KETTERING CANCER CENTER



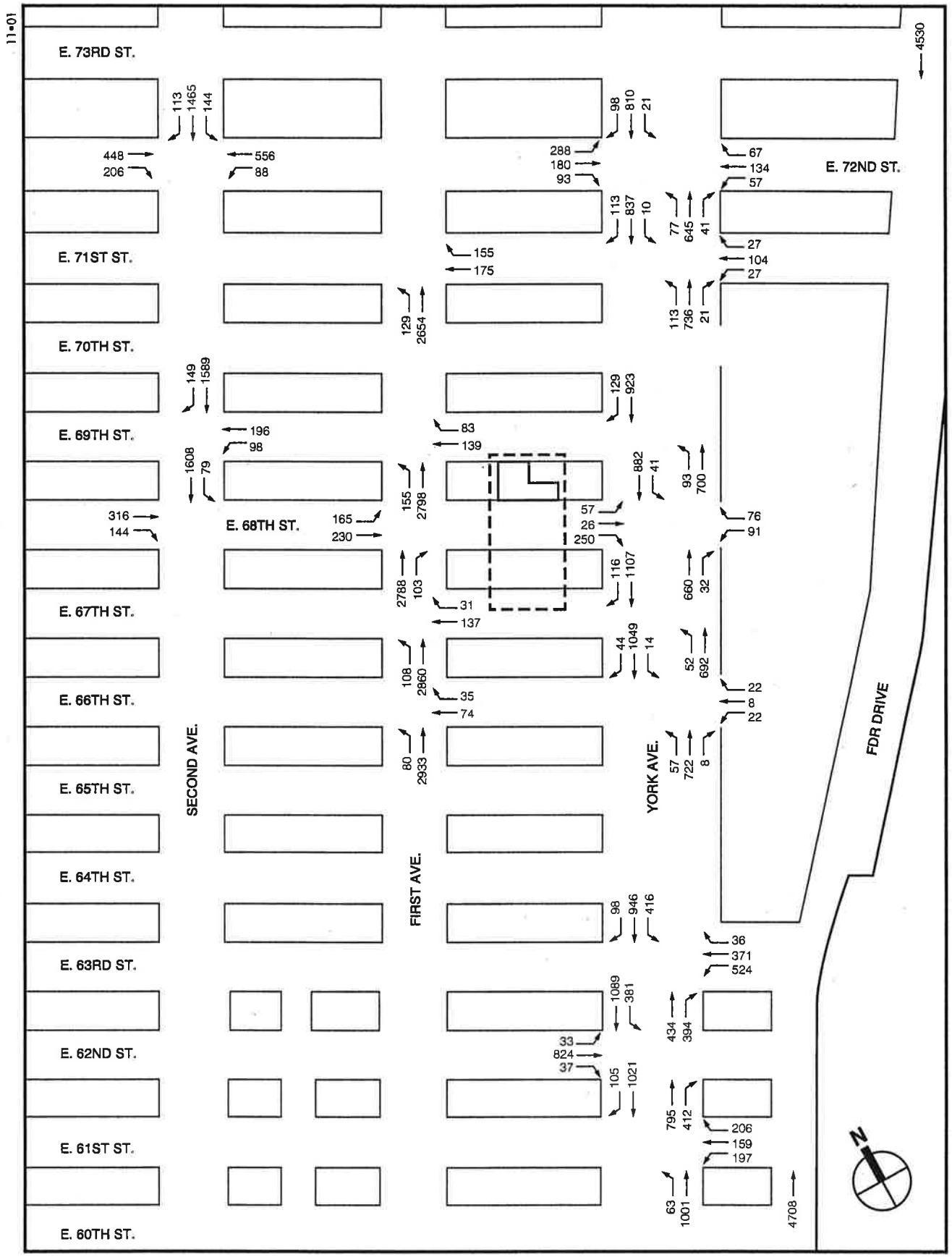
Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

2007 No Action Traffic Volumes • Midday Peak Hour

FIGURE 12-9

MEMORIAL SLOAN-KETTERING CANCER CENTER



Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

2007 No Action Traffic Volumes • PM Peak Hour

FIGURE 12-10

MEMORIAL SLOAN-KETTERING CANCER CENTER

Table 12-5
Signalized Intersections:
2001 Existing and 2007 No Action Conditions Level of Service Analyses

Intersection	Weekday AM															
	Existing								No Action							
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET																
Northbound	LT	0.600	11.2	B	11.2	B	12.2	B	LT	0.677	12.2	B	12.2	B	12.7	B
Southbound	TR	0.444	9.8	B	9.8	B			TR	0.475	10.0	B	10.0	B		
Westbound	L	0.282	17.2	C	17.6	C			L	0.290	17.3	C	17.7	C		
	LTR	0.318	17.5	C					LTR	0.330	17.6	C				
	R	0.362	18.0	C					R	0.376	18.2	C				
YORK AVENUE & E. 62nd STREET																
Northbound	TR	0.675	26.0	D	24.8	C	19.2	C	TR	0.909	28.1	D	26.7	D	20.9	C
	R	0.410	17.3	C					R	0.424	17.4	C				
Southbound	LT	0.752	8.7	B	8.7	B			LT	0.832	10.6	B	10.6	B		
Eastbound	LTR	0.505	28.6	D	28.6	D			LTR	0.551	29.2	D	29.2	D		
YORK AVENUE & E. 63rd STREET																
Northbound	T	0.750	31.0	D	20.2	C	27.6	D	T	0.782	31.8	D	20.8	C	31.1	D
	R	0.654	6.2	B					R	0.681	6.5	B				
Southbound	L	1.051	83.9	F	37.1	D			L	1.086	100.7	F	43.6	E		
	TR	0.584	13.8	B					TR	0.615	14.2	B				
Westbound	L	0.466	24.1	C	23.9	C			L	0.485	24.3	C	24.1	C		
	LTR	0.474	23.8	C					LTR	0.492	24.1	C				
YORK AVENUE & E. 66th STREET																
Northbound	LTR	0.480	4.8	A	4.8	A	5.8	B	LTR	0.519	5.0	A	5.0	A	6.4	B
Southbound	LTR	0.666	6.3	B	6.3	B			LTR	0.738	7.3	B	7.3	B		
Westbound	LTR	0.097	21.5	C	21.5	C			LTR	0.138	21.8	C	21.8	C		
YORK AVENUE & E. 67th STREET																
Northbound	LT	0.503	4.9	A	4.9	A	6.1	B	LT	0.532	5.1	B	5.1	B	6.4	B
Southbound	TR	0.733	7.0	B	7.0	B			TR	0.766	7.6	B	7.6	B		
YORK AVENUE & E. 68th STREET																
Northbound	TR	0.343	4.2	A	4.2	A	10.3	B	TR	0.362	4.3	A	4.3	A	11.0	B
Southbound	LT	0.739	7.3	B	7.3	B			LT	0.794	8.5	B	8.5	B		
Eastbound	LTR	0.581	26.8	D	26.8	D			LTR	0.617	27.2	D	27.2	D		
Westbound	L	0.421	25.0	C	23.7	C			L	0.470	26.1	D	24.4	C		
	R	0.157	21.9	C					R	0.163	22.0	C				
YORK AVENUE & E. 69th STREET																
Northbound	LT	0.934	17.0	C	17.0	C	11.1	B	LT	0.994	26.9	D	26.9	D	16.0	C
Southbound	TR	0.616	5.7	B	5.7	B			TR	0.642	5.9	B	5.9	B		
YORK AVENUE & E. 71st STREET																
Northbound	LTR	1.048	49.0	E	49.0	E	33.1	D	LTR	1.113	75.7	F	75.7	F	48.0	E
Southbound	LTR	0.898	19.7	C	19.7	C			LTR	0.948	24.4	C	24.4	C		
Westbound	LTR	0.893	25.4	D	25.4	D			LTR	0.736	27.4	D	27.4	D		
YORK AVENUE & E. 72nd STREET																
Northbound	LTR	0.533	5.1	B	5.1	B	26.0	D	LTR	0.566	5.3	B	5.3	B	31.4	D
Southbound	LTR	0.656	6.2	B	6.2	B			LTR	0.703	6.8	B	6.8	B		
Eastbound	LTR	1.040	69.6	F	69.6	F			LTR	1.082	84.7	F	84.7	F		
Westbound	LTR	0.962	66.5	F	66.5	F			LTR	1.029	86.9	F	86.9	F		
FIRST AVENUE & E. 66th STREET																
Northbound	LT	0.760	7.8	B	7.8	B	8.1	B	LT	0.793	8.2	B	8.2	B	8.5	B
Westbound	TR	0.350	16.0	C	16.0	C			TR	0.399	16.5	C	16.5	C		
FIRST AVENUE & E. 67th STREET																
Northbound	LT	0.788	8.1	B	8.1	B	11.4	B	LT	0.824	8.6	B	8.6	B	12.4	B
Westbound	TR	0.939	46.8	E	46.8	E			TR	0.969	53.2	E	53.2	E		
FIRST AVENUE & E. 68th STREET																
Northbound	TR	0.795	8.2	B	8.2	B	11.3	B	TR	0.829	8.7	B	8.7	B	12.7	B
Eastbound	LT	0.921	41.5	E	41.5	E			LT	0.971	51.5	E	51.5	E		
FIRST AVENUE & E. 69th STREET																
Northbound	LT	0.768	7.9	B	7.9	B	8.5	B	LT	0.800	8.3	B	8.3	B	8.9	B
Westbound	TR	0.560	18.9	C	18.9	C			TR	0.578	19.3	C	19.3	C		
FIRST AVENUE & E. 71st STREET																
Northbound	LT	0.484	5.8	B	5.8	B	8.6	B	LT	0.504	5.9	B	5.9	B	8.7	B
Westbound	TR	0.324	15.7	C	15.7	C			TR	0.332	15.7	C	15.7	C		
SECOND AVENUE & E. 68th STREET																
Southbound	LT	0.545	7.1	B	7.1	B	13.6	B	LT	0.586	7.2	B	7.2	B	15.5	C
Eastbound	TR	0.989	56.4	E	56.4	E			TR	1.034	69.4	F	69.4	F		
SECOND AVENUE & E. 69th STREET																
Southbound	TR	0.563	6.7	B	6.7	B	9.7	B	TR	0.585	6.8	B	6.6	B	10.2	B
Westbound	LT	0.857	32.8	D	32.8	D			LT	0.888	36.3	D	36.3	D		
SECOND AVENUE & E. 72nd STREET																
Southbound	LTR	0.594	8.9	B	8.9	B	12.1	B	LTR	0.617	9.1	B	9.1	B	12.6	B
Eastbound	TR	0.802	16.1	C	16.1	C			TR	0.820	16.3	C	16.3	C		
Westbound	LT	0.748	19.4	C	19.4	C			LT	0.789	20.9	C	20.9	C		

Notes:
L = Left Turn, T = Through, R = Right Turn; LOS = Level of Service.

Table 12-5 (continued)
Signalized Intersections:
2001 Existing and 2007 No Action Conditions Level of Service Analyses

Intersection	Weekday Midday															
	Existing								No Action							
	Lane	V/C	Delay		Approach		Intersection		Lane	V/C	Delay		Approach		Intersection	
	Group	Ratio	(seconds)	LOS	Delay	LOS	Delay	LOS	Group	Ratio	(seconds)	LOS	Delay	LOS	Delay	LOS
YORK AVENUE & E. 61st STREET																
Northbound	DfL	0.988	90.9	F	18.6	C	14.1	B	DfL	1.175	165.3	F	28.4	D	17.1	C
	T	0.726	13.0	B					T	0.748	13.4	B				
Southbound	TR	0.631	11.6	B	11.6	B			TR	0.663	11.9	B	11.9	B		
Westbound	L	0.199	10.8	B	11.2	B			L	0.205	10.8	B	11.3	B		
	LTR	0.283	11.2	B					LTR	0.293	11.3	B				
	R	0.318	11.6	B					R	0.328	11.6	B				
YORK AVENUE & E. 62nd STREET																
Northbound	TR	0.947	27.3	D	25.5	D	30.3	D	TR	0.975	31.4	D	29.0	D	38.4	D
	R	0.443	14.4	B					R	0.455	14.5	B				
Southbound	LT	1.048	37.6	D	37.6	D			LT	1.087	52.8	E	52.8	E		
Eastbound	LTR	0.651	22.6	C	22.6	C			LTR	0.689	23.2	C	23.2	C		
YORK AVENUE & E. 63rd STREET																
Northbound	T	0.849	26.3	D	20.3	C	24.9	C	T	0.874	27.6	D	21.2	C	28.0	D
	R	0.427	5.7	B					R	0.442	5.8	B				
Southbound	L	1.047	75.4	F	28.7	D			L	1.083	91.0	F	34.5	D		
	TR	0.900	16.4	C					TR	0.934	18.9	C				
Westbound	L	0.586	23.6	C	23.2	C			L	0.608	24.0	C	23.6	C		
	LTR	0.620	23.1	C					LTR	0.641	23.4	C				
YORK AVENUE & E. 66th STREET																
Northbound	LTR	0.853	9.5	B	9.5	B	8.2	B	LTR	0.904	12.3	B	12.3	B	10.1	B
Southbound	LTR	0.776	6.9	B	6.9	B			LTR	0.827	8.1	B	8.1	B		
Westbound	LTR	0.068	16.1	C	16.1	C			LTR	0.078	16.1	C	16.1	C		
YORK AVENUE & E. 67th STREET																
Northbound	LT	0.985	23.6	C	23.6	C	14.3	B	LT	1.036	36.7	D	36.7	D	20.1	C
Southbound	TR	0.821	7.6	B	7.6	B			TR	0.853	8.5	B	8.5	B		
YORK AVENUE & E. 68th STREET																
Northbound	TR	0.497	4.2	A	4.2	A	8.8	B	TR	0.516	4.3	A	4.3	A	9.3	B
Southbound	LT	0.758	6.6	B	6.6	B			LT	0.811	7.8	B	7.8	B		
Eastbound	LTR	0.576	20.2	C	20.2	C			LTR	0.598	20.6	C	20.6	C		
Westbound	L	0.467	19.8	C	18.6	C			L	0.493	20.4	C	18.9	C		
	R	0.189	16.8	C					R	0.198	16.8	C				
YORK AVENUE & E. 69th STREET																
Northbound	LT	0.906	12.9	B	12.9	B	8.6	B	LT	0.951	17.6	C	17.6	C	10.8	B
Southbound	TR	0.648	5.1	B	5.1	B			TR	0.674	5.4	B	5.4	B		
YORK AVENUE & E. 71st STREET																
Northbound	LTR	1.050	45.4	E	45.4	E	27.7	D	LTR	1.106	68.1	F	68.1	F	39.2	D
Southbound	LTR	0.794	11.7	B	11.7	B			LTR	0.822	12.5	B	12.5	B		
Westbound	LTR	0.413	14.7	B	14.7	B			LTR	0.442	15.0	B	15.0	B		
YORK AVENUE & E. 72nd STREET																
Northbound	LTR	1.048	45.8	E	45.8	E	26.4	D	LTR	1.116	74.1	F	74.1	F	37.2	D
Southbound	LTR	0.757	11.0	B	11.0	B			LTR	0.792	11.8	B	11.8	B		
Eastbound	LTR	0.793	21.8	C	21.8	C			LTR	0.823	23.3	C	23.3	C		
Westbound	LTR	0.666	20.5	C	20.5	C			LTR	0.698	21.8	C	21.8	C		
FIRST AVENUE & E. 66th STREET																
Northbound	LT	0.682	7.0	B	7.0	B	7.4	B	LT	0.707	7.3	B	7.3	B	7.6	B
Westbound	TR	0.326	15.8	C	15.8	C			TR	0.368	16.2	C	16.2	C		
FIRST AVENUE & E. 67th STREET																
Northbound	LT	0.660	6.9	B	6.9	B	13.3	B	LT	0.687	7.1	B	7.1	B	14.5	B
Westbound	TR	1.020	66.8	F	66.8	F			TR	1.049	76.5	F	76.5	F		
FIRST AVENUE & E. 68th STREET																
Northbound	TR	0.640	6.7	B	6.7	B	16.4	C	TR	0.664	6.9	B	6.9	B	19.5	C
Eastbound	LT	1.049	69.4	F	69.4	F			LT	1.085	82.9	F	82.9	F		
FIRST AVENUE & E. 69th STREET																
Northbound	LT	0.681	7.0	B	7.0	B	8.5	B	LT	0.706	7.3	B	7.3	B	8.7	B
Westbound	TR	0.724	23.8	C	23.8	C			TR	0.745	24.7	C	24.7	C		
FIRST AVENUE & E. 71st STREET																
Northbound	LT	0.625	6.6	B	6.6	B	7.9	B	LT	0.649	6.8	B	6.8	B	8.1	B
Westbound	TR	0.476	17.0	C	17.0	C			TR	0.491	17.1	C	17.1	C		
SECOND AVENUE & E. 68th STREET																
Southbound	LT	0.631	7.7	B	7.7	B	19.8	C	LT	0.655	7.9	B	7.9	B	22.2	C
Eastbound	TR	1.049	68.5	F	68.5	F			TR	1.081	80.4	F	80.4	F		
SECOND AVENUE & E. 69th STREET																
Southbound	TR	0.611	7.1	B	7.1	B	19.1	C	TR	0.635	7.2	B	7.2	B	21.7	C
Westbound	LT	1.044	67.2	F	67.2	F			LT	1.079	79.9	F	79.9	F		
SECOND AVENUE & E. 72nd STREET																
Southbound	LTR	0.727	10.3	B	10.3	B	14.1	B	LTR	0.754	10.6	B	10.6	B	15.0	B
Eastbound	TR	0.577	15.7	C	15.7	C			TR	0.595	16.0	C	16.0	C		
Westbound	LT	0.853	24.3	C	24.3	C			LT	0.893	27.5	D	27.5	D		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.

Table 12-5 (continued)
Signalized Intersections:
2001 Existing and 2007 No Action Conditions Level of Service Analyses

Intersection	Weekday PM															
	Existing								No Action							
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET																
Northbound	LT	0.706	12.6	B	12.6	B	12.6	B	DfL	1.036	122.5	F	19.1	C	15.4	C
									T	0.722	12.9	B				
Southbound	TR	0.528	10.5	B	10.5	B			TR	0.572	10.9	B	10.9	B		
Westbound	L	0.299	17.4	C	17.5	C			L	0.310	17.5	C	17.6	C		
	LTR	0.303	17.4	C					LTR	0.317	17.5	C				
	R	0.347	17.9	C					R	0.358	18.0	C				
YORK AVENUE & E. 62nd STREET																
Northbound	TR	0.740	21.5	C	36.7	D	36.9	D	TR	0.764	22.1	C	40.7	E	46.5	E
	R	1.050	67.2	F					R	1.080	78.4	F				
Southbound	LT	1.041	36.0	D	36.0	D			LT	1.083	51.6	E	51.6	E		
Eastbound	LTR	0.895	38.7	D	38.7	D			LTR	0.959	45.7	E	45.7	E		
YORK AVENUE & E. 63rd STREET																
Northbound	T	0.565	27.7	D	17.2	C	21.1	C	T	0.584	27.9	D	17.4	C	23.4	C
	R	0.540	5.0	A					R	0.560	5.1	B				
Southbound	L	1.054	83.4	F	19.4	C			L	1.098	80.2	F	24.1	C		
	TR	0.747	1.6	A					TR	0.789	1.8	A				
Westbound	L	0.655	27.7	D	27.1	D			L	0.680	28.5	D	27.7	D		
	LTR	0.670	26.8	D					LTR	0.696	27.3	D				
YORK AVENUE & E. 66th STREET																
Northbound	DfL	0.734	30.7	D	6.3	B	8.6	B	DfL	0.776	36.9	D	6.8	B	10.6	B
	TR	0.424	4.5	A					TR	0.439	4.6	A				
Southbound	LTR	0.835	9.2	B	9.2	B			LTR	0.904	12.2	B	12.2	B		
Westbound	LTR	0.289	23.1	C	23.1	C			LTR	0.333	23.6	C	23.6	C		
YORK AVENUE & E. 67th STREET																
Northbound	LT	0.861	11.4	B	11.4	B	9.4	B	LT	0.909	14.7	B	14.7	B	11.3	B
Southbound	TR	0.795	8.0	B	8.0	B			TR	0.838	9.1	B	9.1	B		
YORK AVENUE & E. 68th STREET																
Northbound	TR	0.488	4.9	A	4.9	A	10.9	B	TR	0.504	4.9	A	4.9	A	11.8	B
Southbound	LT	0.750	7.5	B	7.5	B			LT	0.810	8.8	B	8.8	B		
Eastbound	LTR	0.567	26.4	D	26.4	D			LTR	0.591	26.8	D	26.8	D		
Westbound	L	0.507	26.7	D	24.8	C			L	0.594	29.3	D	26.4	D		
	R	0.252	22.7	C					R	0.276	22.9	C				
YORK AVENUE & E. 69th STREET																
Northbound	LT	0.950	19.5	C	19.5	C	12.1	B	LT	0.998	28.6	D	28.6	D	16.2	C
Southbound	TR	0.695	6.5	B	6.5	B			TR	0.727	6.9	B	6.9	B		
YORK AVENUE & E. 71st STREET																
Northbound	LTR	1.042	46.6	E	46.6	E	31.5	D	LTR	1.090	64.8	F	64.8	F	41.4	E
Southbound	LTR	0.892	19.1	C	19.1	C			LTR	0.937	23.1	C	23.1	C		
Westbound	LTR	0.451	19.2	C	19.2	C			LTR	0.496	20.0	C	20.0	C		
YORK AVENUE & E. 72nd STREET																
Northbound	LTR	0.893	13.6	B	13.6	B	29.6	D	LTR	0.938	17.7	C	17.7	C	36.0	D
Southbound	LTR	0.730	7.1	B	7.1	B			LTR	0.780	8.0	B	8.0	B		
Eastbound	DfL	1.041	84.0	F	61.6	F			DfL	1.072	95.5	F	66.6	F		
	TR	0.817	37.9	D					TR	0.843	40.3	E				
Westbound	LTR	1.047	86.9	F	86.9	F			LTR	1.119	117.8	F	117.8	F		
FIRST AVENUE & E. 66th STREET																
Northbound	LT	0.678	7.0	B	7.0	B	7.3	B	LT	0.710	7.2	B	7.2	B	7.5	B
Westbound	TR	0.358	16.1	C	16.1	C			TR	0.392	16.5	C	16.5	C		
FIRST AVENUE & E. 67th STREET																
Northbound	LT	0.696	7.1	B	7.1	B	7.8	B	LT	0.725	7.4	B	7.4	B	8.1	B
Westbound	TR	0.808	20.0	C	20.0	C			TR	0.835	20.8	C	20.8	C		
FIRST AVENUE & E. 68th STREET																
Northbound	TR	0.710	7.2	B	7.2	B	15.2	C	TR	0.738	7.5	B	7.5	B	17.5	C
Eastbound	LT	1.050	67.1	F	67.1	F			LT	1.090	82.4	F	82.4	F		
FIRST AVENUE & E. 69th STREET																
Northbound	LT	0.697	7.1	B	7.1	B	8.5	B	LT	0.725	7.4	B	7.4	B	8.8	B
Westbound	TR	0.777	26.7	D	26.7	D			TR	0.803	28.5	D	28.5	D		
FIRST AVENUE & E. 71st STREET																
Northbound	LT	0.525	6.0	B	6.0	B	7.4	B	LT	0.547	6.1	B	6.1	B	7.5	B
Westbound	TR	0.532	17.8	C	17.8	C			TR	0.551	17.8	C	17.8	C		
SECOND AVENUE & E. 66th STREET																
Southbound	LT	0.452	6.6	B	6.6	B	17.8	C	LT	0.473	6.7	B	6.7	B	20.0	C
Eastbound	TR	1.046	65.6	F	65.6	F			TR	1.078	77.2	F	77.2	F		
SECOND AVENUE & E. 69th STREET																
Southbound	TR	0.539	6.6	B	6.6	B	10.4	B	TR	0.563	6.7	B	6.7	B	11.0	B
Westbound	LT	0.893	37.2	D	37.2	D			LT	0.919	41.3	E	41.3	E		
SECOND AVENUE & E. 72nd STREET																
Southbound	LTR	0.573	8.6	B	8.6	B	16.8	C	LTR	0.597	9.0	B	9.0	B	19.8	C
Eastbound	TR	0.709	17.9	C	17.9	C			TR	0.730	18.4	C	18.4	C		
Westbound	LT	0.970	38.9	D	38.9	D			LT	1.026	53.0	E	53.0	E		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.

AM Peak Hour

- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (100.7 spv) with a v/c ratio of 1.088;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS D (26.9 spv) with a v/c ratio of 0.994;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (75.7 spv) with a v/c ratio of 1.113;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS D (24.4 spv) with a v/c ratio of 0.946.
- The eastbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (84.7 spv) with a v/c ratio of 1.082;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (86.9 spv) with a v/c ratio of 1.029;
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS E (53.2 spv) with a v/c ratio of 0.969;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS E (51.5 spv) with a v/c ratio of 0.971;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (69.4 spv) with a v/c ratio of 1.034; and
- The northbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS D (28.1 spv) with a v/c ratio at the through-right movement of 0.909.

Midday Peak Hour

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street would operate at LOS F (165.3 spv) with a v/c ratio of 1.175;
- The northbound through-right movement at the intersection of York Avenue and East 62nd Street would operate at LOS D (31.4 spv) with a v/c ratio of 0.975;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (52.8 spv) with a v/c ratio of 1.087;
- The southbound approach at the intersection of York Avenue and East 63rd Street, where the through-right movement would operate at LOS C (18.9 spv) with a v/c ratio of 0.934 and the left-turn movement operates at LOS F (91.0 spv) with a v/c ratio of 1.083;
- The northbound approach at the intersection of York Avenue and East 66th Street would operate at LOS B (12.3 spv) with a v/c ratio of 0.904 in 2007 No Action conditions.
- The northbound approach at the intersection of York Avenue and East 67th Street would operate at LOS D (36.7 spv) with a v/c ratio of 1.036;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS C (17.6 spv) with a v/c ratio of 0.951;

- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (68.1 spv) with a v/c ratio of 1.106;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (74.1 spv) with a v/c ratio of 1.116;
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS F (76.5 spv) with a v/c ratio of 1.049;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (82.9 spv) with a v/c ratio of 1.085;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (80.4 spv) with a v/c ratio of 1.081; and
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS F (79.9 spv) with a v/c ratio of 1.079.

PM Peak Hour

- The northbound right-turn movement at the intersection of York Avenue and East 62nd Street would operate at LOS F (78.4 spv) with a v/c ratio of 1.080;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (51.6 spv) with a v/c ratio of 1.083;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (80.2 spv) with a v/c ratio of 1.096;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS D (28.6 spv) with a v/c ratio of 0.998;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (64.8 spv) with a v/c ratio of 1.090;
- The eastbound defacto left-turn movement at the intersection of York Avenue and East 72nd Street would operate at LOS F (95.5 spv) with a v/c ratio of 1.072;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (117.6 spv) with a v/c ratio of 1.119;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (82.4 spv) with a v/c ratio of 1.090;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (77.2 spv) with a v/c ratio of 1.078; and
- The westbound approach at the intersection of Second Avenue and East 72nd Street operates at LOS E (53.0 spv) with a v/c ratio of 1.026.

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street would operate at LOS F (122.5 spv) with a v/c ratio at the left-turn movement of 1.036;
- The eastbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (45.7 spv) with a v/c ratio 0.959;
- The southbound approach at the intersection of York Avenue and East 66th Street would operate at LOS B (12.2 spv) with a v/c ratio of 0.904;
- The northbound approach at the intersection of York Avenue and East 67th Street would operate at LOS B (14.7 spv) with a v/c ratio of 0.909;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS C (23.1 spv) with a v/c ratio of 0.937;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS C (17.7 spv) with a v/c ratio of 0.938;
- The eastbound through-right movement at the intersection of York Avenue and East 72nd Street would operate at LOS E (40.3 spv) with a v/c ratio of 0.843; and
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS E (41.3 spv) with a v/c ratio of 0.919.

PARKING SUPPLY AND UTILIZATION

The utilization of the study area's off-street parking facilities was assumed to increase by the same growth rates of 3.0 percent by 2007 (see Table 12-6). The projected conditions indicate that the average overall utilization rate of the off-street parking facilities would increase to approximately 90 percent with 770 available spaces during the midday peak period in 2007.

D. FUTURE WITH THE PROPOSED ACTIONS—2007

The analysis of impacts associated with the proposed action on traffic and parking in the study area begins with and builds upon the No Action condition described in the preceding section. As with the No Action evaluation, 2007 is used as the analysis year. To this future baseline, changes resulting from the proposed action are added.

The proposed project consists of a two-phase development. In Phase 1, there would be the demolition of the existing Kettering Building located at the north end of the campus, on the block bounded by East 68th and 69th Streets between York and First Avenues. This site would be redeveloped for the same use, with an estimated net difference of 548 employees. The employment estimates used for trip generation estimates have been provided by MSKCC. This building is anticipated to be complete in 2007. With the proposed actions, there could also be the development of residential units and community facility space on lots in the rezoning area that are not owned by MSKCC. Phase 2 of the proposed project is discussed later in the chapter. The trip generation characteristics for Phase 1 development are discussed below.

Table 12-6
2007 No-Action Weekday Midday Off-Street Parking Utilization

2001 Existing Conditions

Capacity (spaces)	7,384
Demand (spaces)*	6,204
Available Spaces*	1,033
Utilization	84%

2007 No-Action Conditions

Capacity (spaces)	7,384
2001 Existing	6,204
0.5 % per year growth	186
Parking Demand	
No Build Site 1: MSKCC Outpatient Facility	0
No Build Site 2: MSKCC Infill Project	0
No Build Site 3: Caspary-Hospital for Special Surgery	4
No Build Site 4: The Pearl/400 East 61st Street	17
No Build Site 5: 1234 First Avenue	36
No Build Site 6: 420-34 East 61st Street	66
No Build Site 7: 1117-1125 York Avenue	69
No Build Site 8: 403-407 East 61st Street	13
No Build Site 9: 409-415 East 61st Street	19
No Build Site 10: Rockefeller University Lab Building	0
Total Demand	6,614
Available Spaces	770
Utilization	90%

Note:
* Does not include utilization/availability information for parking facilities 25, 28, and 36, since the information for midday peak period was unavailable

TRIP-MAKING CHARACTERISTICS FOR THE PROPOSED PROJECT

PROPOSED RESEARCH BUILDING

Employees

Temporal distribution for employees was based on shift information provided by MSKCC. No new employee trips were assumed for the midday peak hour because all of these trips would be internal. However, employees at this building would comprise walk trips during the midday peak hour; these trips are accounted for in the pedestrian analysis presented in Chapter 13, "Transit and Pedestrians." These trips were estimated based on temporal distribution for employee trips from the *Rockefeller University Laboratory Facility EIS*, and were assumed to be 100-percent walk only trips. Modal split data for the AM and PM peak hours were based on an average of reverse journey-to-work information from the 1990 *Census of Population and Housing* for the project census tract (116.00), and modal split information from the *Rockefeller University Laboratory Facility EIS* and the *Mount Sinai School of Medicine EIS*. Also based on this data, the average vehicle occupancy is assumed to be 1.27 for autos and 1.35 for taxis. The application of these rates to the net increase of 548 employees in Phase 1 yields 287, 148, and 301 person trips and 60, 0, and 60 vehicle trips during the AM, midday, and PM peak hours, respectively (see Table 12-7).

Deliveries

A rate of 0.20 truck trips per 1,000 square feet was based on U.S. Department of Transportation (DOT) data for office use, which was also used for the *New York Hospital FEIS* (see Table 12-8). Temporal distribution was also taken from these sources. The proposed project would result in 10, 10, and 6 truck trips in Phase 1 during the AM, midday, and PM peak hours, respectively.

POTENTIAL DEVELOPMENT ON NON-MSKCC-OWNED SITES

With the proposed actions, there could be additional residential development within the rezoning area on lots that are not owned by MSKCC. On the north block, there could be 33 dwelling units and approximately 45,650 square feet of community facility space.

Residential

Trips generated by the potential development of 33 dwelling units on the north block were estimated based on trip rates and temporal distribution factors presented in Pushkarev and Zupan's *Urban Space for Pedestrians*. Modal split percentages were based on 1990 Census data for tract 116.00. Trips resulting from this use are presented in Table 12-9.

Community Facility Use

With the proposed actions, there could be the potential development of 45,650 square feet of community facility space on the north block. This use is assumed to operate as institutional/ administrative support space. Based on 1 employee per 500 square feet, this development would result in 92 employees. Trips generated by this use were based on factors discussed above, under "Employees," and are presented in Table 12-9.

Table 12-7
Phase 1 - Employees

Total Employees: 548

Temporal Distribution

Weekday AM Peak Hour (1)	52.0%
Weekday MD Peak Hour (2)	27.0%
Weekday PM Peak Hour (1)	55.0%

Modal Split Estimates & Vehicle Occupancy

Mode	Weekday AM/PM (3)	Weekday MD (4)
Auto	18.0%	0.0%
Taxi	3.0%	0.0%
Subway	46.0%	0.0%
Bus	15.0%	0.0%
Walk/Other	18.0%	100.0%
Total	100.0%	100.0%
Auto Occupancy	1.27	
Taxi Occupancy	1.35	

Hourly In & Out Distribution

	In	Out
Weekday AM Peak Hour (5)	95.0%	5.0%
Weekday MD Peak Hour (2)	35.0%	65.0%
Weekday PM Peak Hour (5)	15.0%	85.0%

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	49	3	8	0	125	7	41	2	49	3	272	15	287
Weekday MD Peak Hour	0	0	0	0	0	0	0	0	52	96	52	96	148
Weekday PM Peak Hour	8	46	1	8	21	118	7	38	8	46	45	256	301

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries (6)		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	38	2	6	6	5	5	47	13	60
Weekday PM Peak Hour	6	36	6	6	3	3	15	45	60

Note:

(1) Source: MSKCC 2001 Staffing Plan - Main Campus
(2) Source: Rockefeller University DEIS (CEQR # 87-307M)
(3) Source: Reverse Journey to Work Data (Census Tract 116), Rockefeller University DEIS (CEQR # 87-307M), and Mount Sinai School of Medicine DEIS
(4) Source: Assumed
(5) Source: Urban Space for Pedestrians (Pushkarev & Zupan)
(6) Source: US DOT

Table 12-8
Deliveries

Phase-1:

Incremental Development Program: **537,800** square feet

Delivery Trip Rate (1): **0.2** trips per 1,000 sq. ft.

Temporal Distribution (1)

Weekday AM Peak Hour	10.0%
Weekday MD Peak Hour	9.0%
Weekday PM Peak Hour	5.0%

Hourly In & Out Distribution (1)

	In	Out
Weekday AM Peak Hour	50.0%	50.0%
Weekday MD Peak Hour	50.0%	50.0%
Weekday PM Peak Hour	50.0%	50.0%

Total Deliveries

	In	Out	Total
Weekday AM Peak Hour	5	5	10
Weekday MD Peak Hour	5	5	10
Weekday PM Peak Hour	3	3	6

Note:

(1) Source: US DOT

Table 12-9
Residential Trip Generation - North Block

Residential Use: 33 **dwelling units**

Daily Person Trip Rate (1): 8.0 trips per d.u.

Temporal Distribution (1)

Weekday AM Peak Hour	9.1%
Weekday MD Peak Hour	4.7%
Weekday PM Peak Hour	10.7%

Modal Split Estimates (2) & Vehicle Occupancy (2)

Mode	Weekday
Auto	12.0%
Taxi	3.0%
Bus	14.0%
Subway	19.0%
Walk	52.0%
Total	100.0%
Auto Occupancy	1.08
Taxi Occupancy	1.40

Hourly In & Out Distribution (1)

	In	Out
Weekday AM Peak Hour	15.0%	85.0%
Weekday MD Peak Hour	50.0%	50.0%
Weekday PM Peak Hour	70.0%	30.0%

Peak Hour Person Trips by Mode

	Auto		Taxi		Bus		Subway		Walk		Total	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Weekday AM Peak Hour	0	2	0	1	1	3	1	4	2	11	4	21
Weekday MD Peak Hour	1	1	0	0	1	1	1	1	3	3	6	6
Weekday PM Peak Hour	2	1	1	0	3	1	4	2	10	4	20	8

Peak Hour Vehicle Trips

	Auto		Taxi		Truck(3)		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	0	2	0	0	0	0	0	2	2
Weekday MD Peak Hour	1	1	0	0	0	0	1	1	2
Weekday PM Peak Hour	2	1	0	0	0	0	2	1	3

Note:
(1) Source: Pushkarev & Zupan, Urban Space for Pedestrians
(2) Source: 1990 Census Data
(3) Truck Trip Rate = 0.03/d.u. (from Coliseum Redevelopment FSEIS)

Table 12-9 (continued)
Community Facility Use - North Block

Total Employees: 92

Temporal Distribution

Weekday AM Peak Hour (1)	52.0%
Weekday MD Peak Hour (2)	27.0%
Weekday PM Peak Hour (1)	55.0%

Modal Split Estimates & Vehicle Occupancy

Mode	Weekday AM/PM (3)	Weekday MD (4)
Auto	18.0%	0.0%
Taxi	3.0%	0.0%
Subway	46.0%	0.0%
Bus	15.0%	0.0%
Walk/Other	18.0%	100.0%
Total	100.0%	100.0%
Auto Occupancy	1.27	
Taxi Occupancy	1.35	

Hourly In & Out Distribution

	In	Out
Weekday AM Peak Hour (5)	95.0%	5.0%
Weekday MD Peak Hour (2)	35.0%	65.0%
Weekday PM Peak Hour (5)	15.0%	85.0%

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	8	0	1	0	21	1	7	0	8	0	45	1	46
Weekday MD Peak Hour	0	0	0	0	0	0	0	0	9	16	9	16	25
Weekday PM Peak Hour	1	8	0	1	3	20	1	6	1	8	6	43	49

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries (6)		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	6	0	1	1	0	0	7	1	8
Weekday PM Peak Hour	1	6	1	1	0	0	2	7	9

Note:
(1) Source: MSKCC 2001 Staffing Plan - Main Campus
(2) Source: Rockefeller University DEIS (CEQR # 87-307M)
(3) Source: Reverse Journey to Work Data (Census Tract 116), Rockefeller University DEIS (CEQR # 87-307M), and Mount Sinai School of Medicine DEIS
(4) Source: Assumed
(5) Source: Urban Space for Pedestrians (Pushkarev & Zupan)
(6) Source: US DOT

Total

As shown in Table 12-10, the proposed actions would result in 358, 185, and 378 person trips and 70, 12, and 72 vehicle trips during the AM, midday, and PM peak hours in 2007.

TRIP ASSIGNMENT

Directional distribution of project-generated trips are described below. Trip assignments through individual study area intersections and to off-street parking facilities were based on information provided by MSKCC and the off-street parking survey during any given peak hour. Total project-generated trips are presented on Figures 12-11 through 12-13.

LABORATORY DEVELOPMENT

The directional distribution of the auto and taxi trips was based on travel patterns presented in the *New York Hospital EIS*. Based on this data, 48 percent of trips would be within Manhattan. The remainder of the trips would originate as follows: 15 percent from Queens, 11 percent from Brooklyn, 7 percent from the Bronx, 2 percent from Staten Island, 4 percent from Long Island, 5 percent from Westchester, 7 percent from New Jersey, and 1 percent from other parts of New York. Auto trips were assigned to parking lots and garages with available capacity (based on data from MSKCC and the off-street parking survey). Taxi trips were assigned to the East 68th Street block.

RESIDENTIAL

Vehicle trips generated by the residential uses on the north block were assigned to study area intersections based on existing travel patterns. Auto trips were assigned to parking lots and garages with available capacity. Taxi trips were assigned to each building's access points.

DELIVERIES

Truck trips for the proposed project were assigned to study-area intersections based on truck routes designated by the New York City Department of Transportation. Truck trips were routed to the project's loading areas.

ANALYSIS RESULTS

LEVELS OF SERVICE—2007 FUTURE WITH THE PROPOSED ACTIONS

The proposed development would increase traffic volumes at study area intersections as shown in Figures 12-14 through 12-16. Table 12-11 presents a comparison of 2007 No Action and future conditions with the proposed actions for the weekday AM, midday, and PM peak hours. Locations that have notable service problems of LOS E or worse or v/c ratios greater than 0.9 are listed below, with the levels of service projected for 2007 future conditions with the proposed actions.

AM Peak Hour

- The northbound through-right movement at the intersection of York Avenue and East 62nd Street would operate at LOS D (29.5 spv) with a v/c ratio at the through-right movement of 0.926; and

Table 12-10
Total Trips - Phase 1

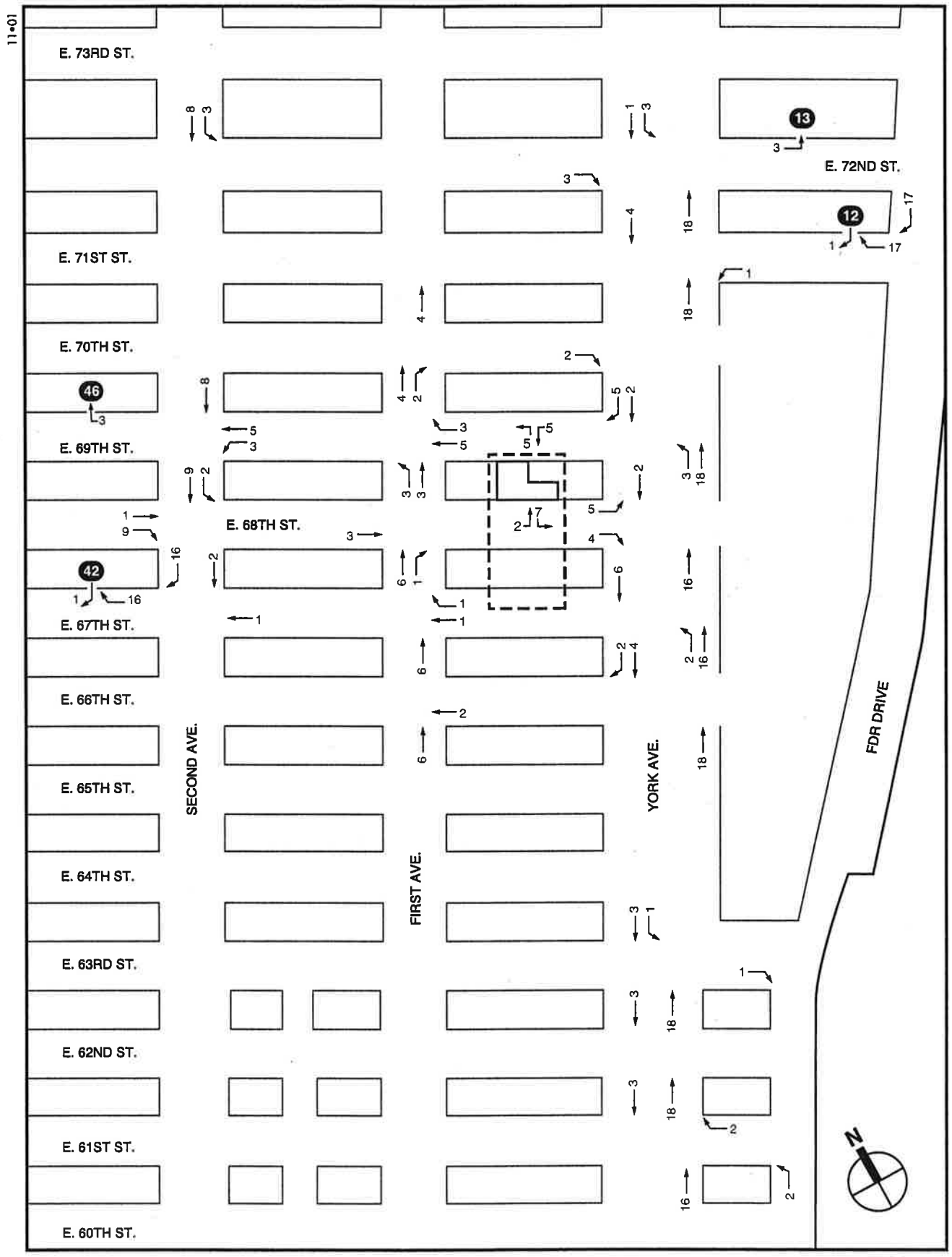
Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
Employees	49	3	8	0	125	7	41	2	49	3	272	15	287
Deliveries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential N Block	0	2	0	1	1	4	1	3	2	11	4	21	25
Community Facility N Block	8	0	1	0	21	1	7	0	8	0	45	1	46
Total	57	5	9	1	147	12	49	5	59	14	321	37	358
Weekday MD Peak Hour													
Employees*	0	0	0	0	0	0	0	0	52	96	52	96	148
Deliveries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential N Block	1	1	0	0	1	1	1	1	3	3	6	6	12
Community Facility N Block*	0	0	0	0	0	0	0	0	9	16	9	16	25
Total	1	1	0	0	1	1	1	1	64	115	67	118	185
Weekday PM Peak Hour													
Employees	8	46	1	8	21	118	7	38	8	46	45	256	301
Deliveries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Residential N Block	2	1	1	0	4	2	3	1	10	4	20	8	28
Community Facility N Block	1	8	0	1	3	20	1	6	1	8	6	43	49
Total	11	55	2	9	28	140	11	45	19	58	71	307	378

Peak Hour Vehicle Trips

	Auto		Taxi		Total		
	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour							
Employees	38	2	6	6	42	8	50
Deliveries	N/A	N/A	N/A	N/A	5	5	10
Residential N Block	0	2	0	0	0	2	2
Community Facility N Block	6	0	1	1	7	1	8
Total	44	4	7	7	54	16	70
Weekday MD Peak Hour							
Employees*	0	0	0	0	0	0	0
Deliveries	N/A	N/A	N/A	N/A	5	5	10
Residential N Block	1	1	0	0	1	1	2
Community Facility N Block*	0	0	0	0	0	0	0
Total	1	1	0	0	6	6	12
Weekday PM Peak Hour							
Employees	6	36	6	6	12	42	54
Deliveries	N/A	N/A	N/A	N/A	3	3	6
Residential N Block	2	1	0	0	2	1	3
Community Facility N Block	1	6	1	1	2	7	9
Total	9	43	7	7	19	53	72

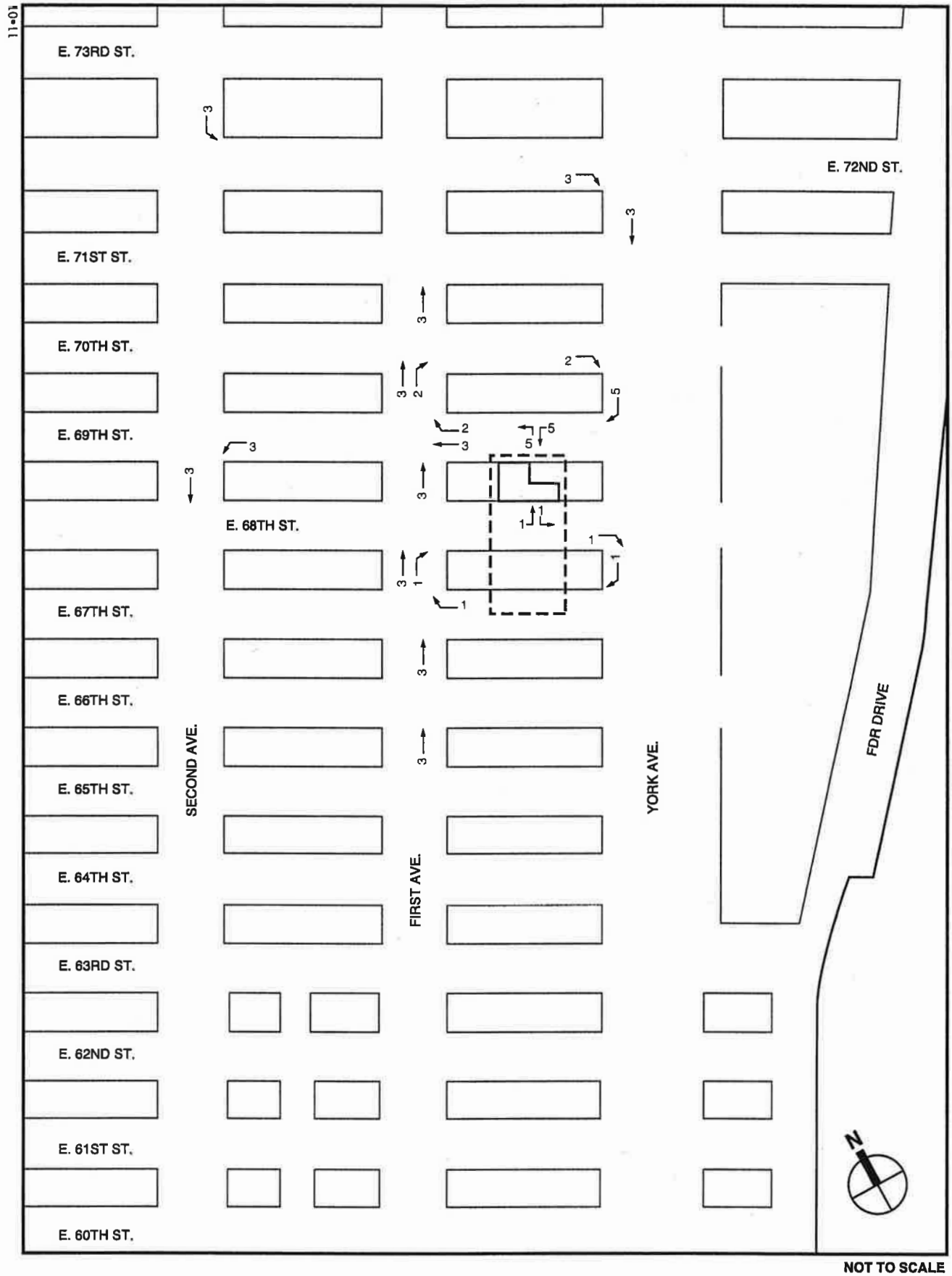
* The project would not result in any new employee vehicle trips during the MD peak hour.



Phase 1 Project Generated Vehicle Trips • AM Peak Hour

FIGURE 12-11

MEMORIAL SLOAN-KETTERING CANCER CENTER



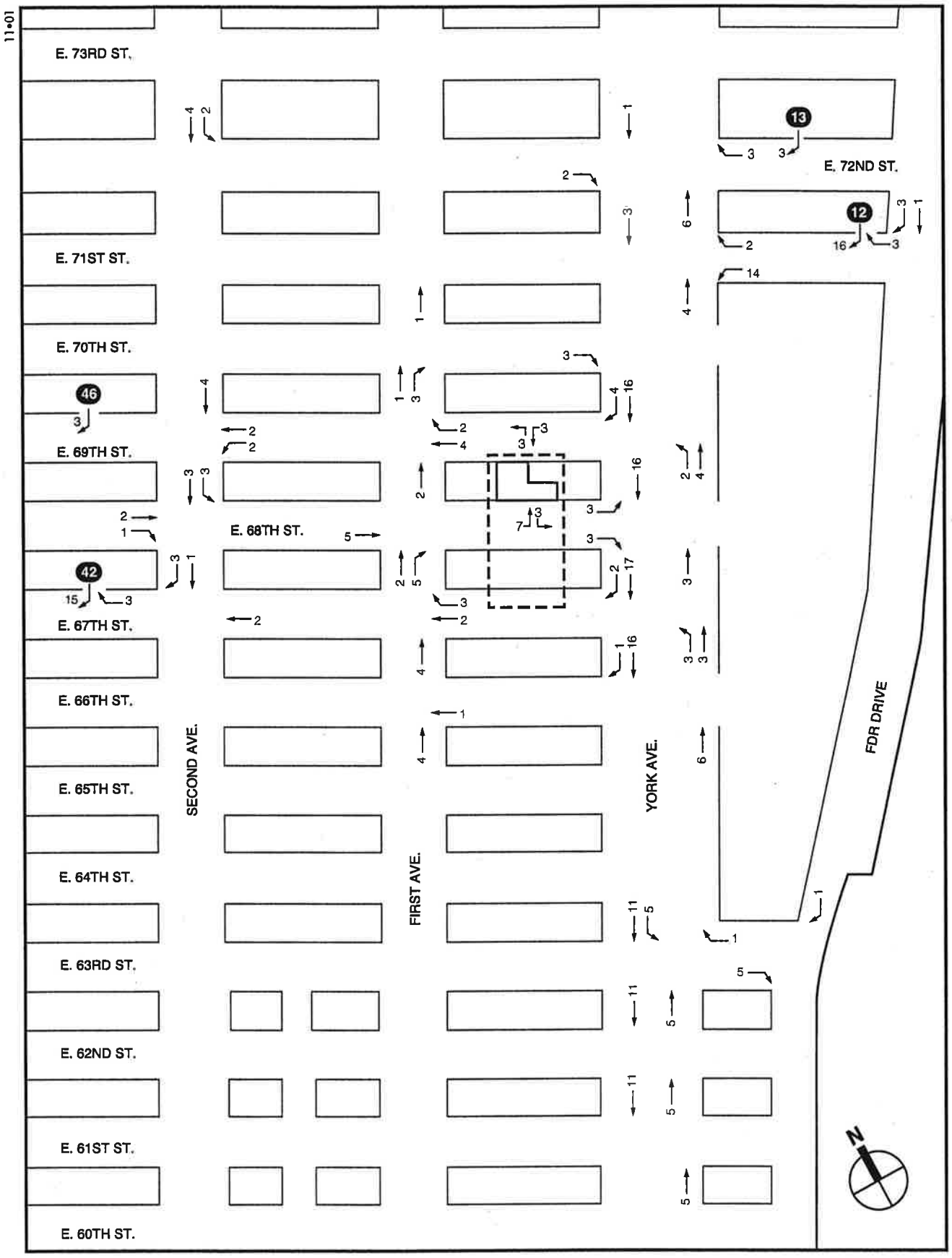
Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

Phase 1 Project Generated Vehicle Trips • Midday Peak Hour

FIGURE 12-12

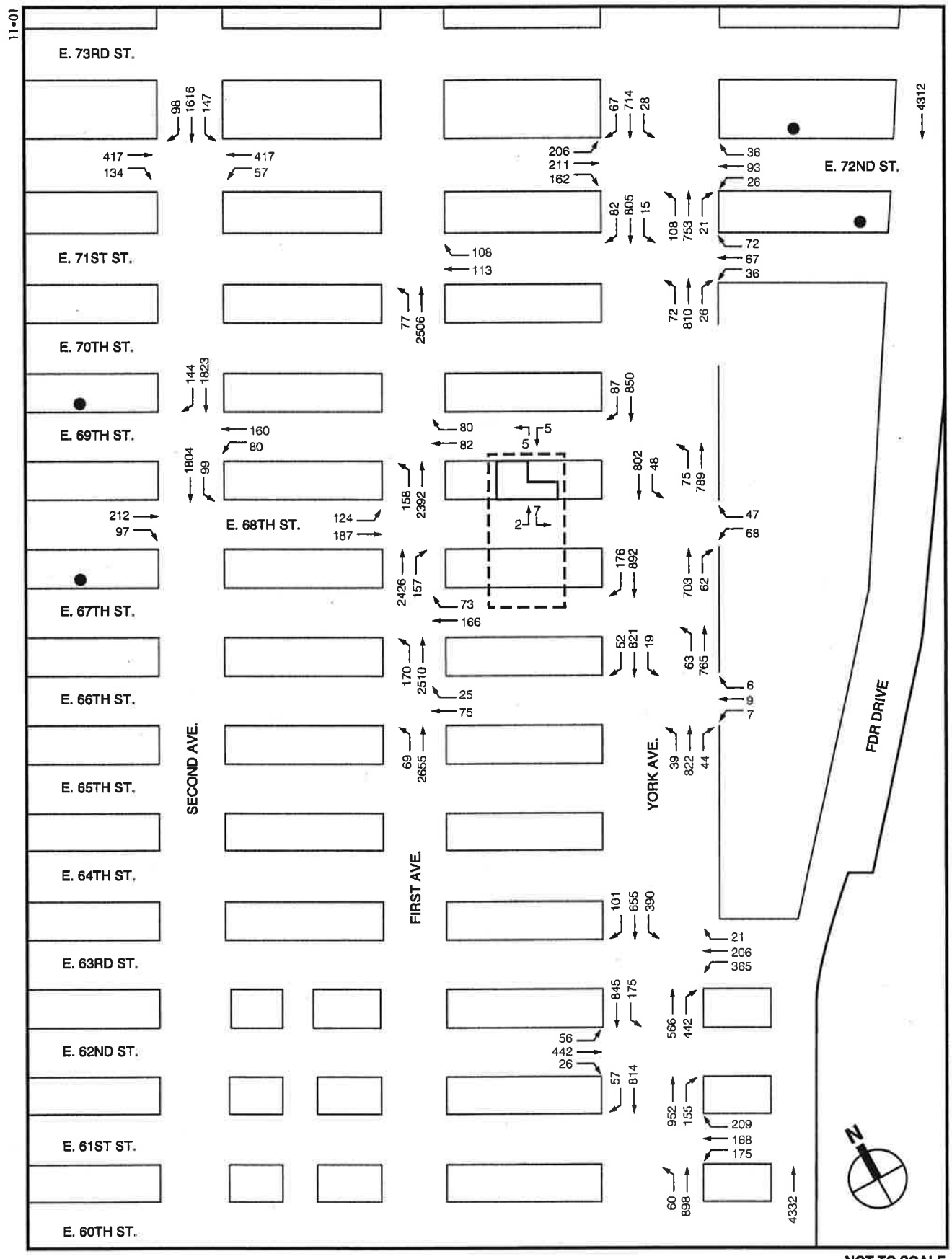
MEMORIAL SLOAN-KETTERING CANCER CENTER



Phase 1 Project Generated Vehicle Trips • PM Peak Hour

FIGURE 12-13

MEMORIAL SLOAN-KETTERING CANCER CENTER



Proposed Rezoning Area Boundary

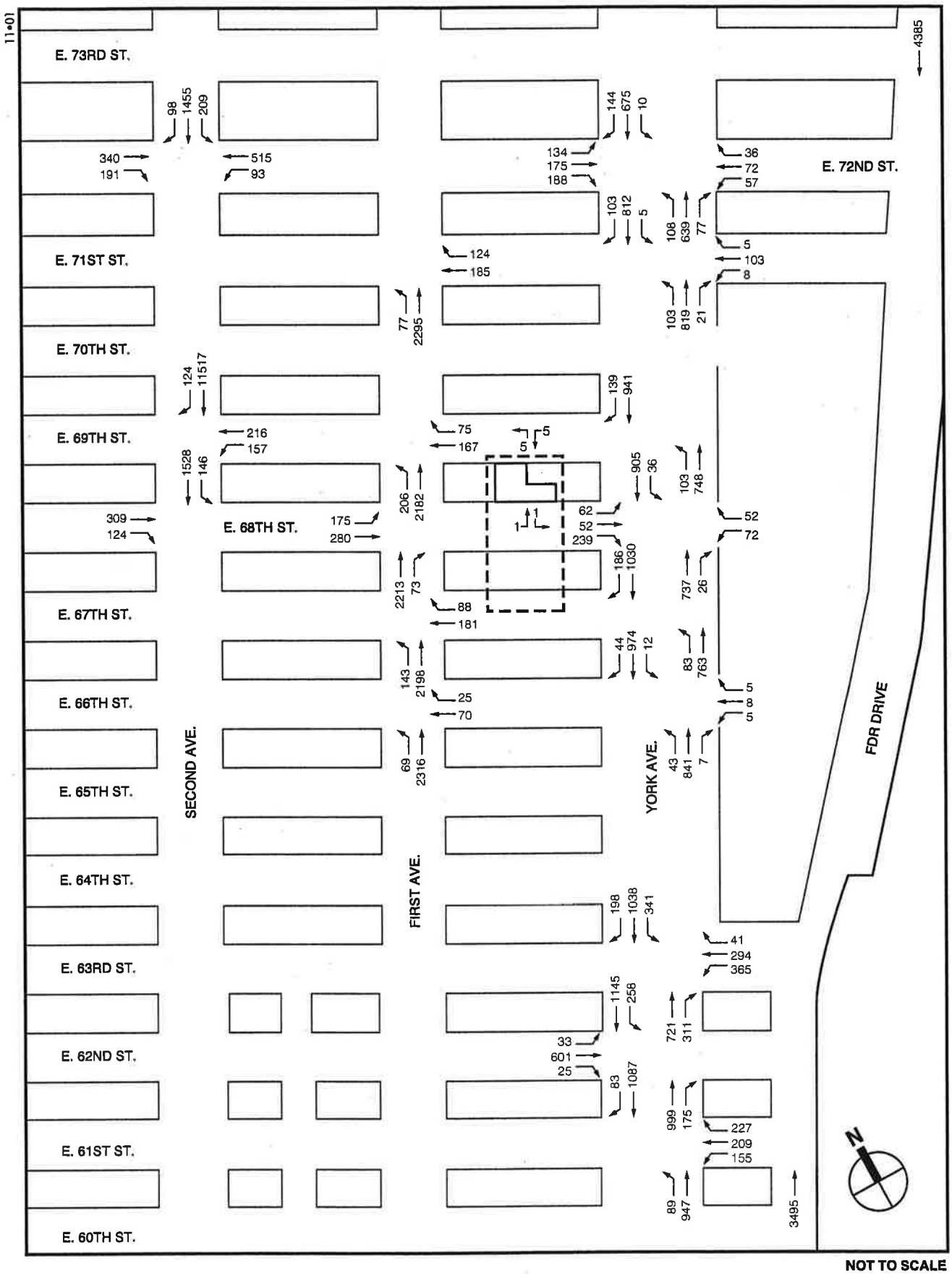
Phase 1 Research Building Site Boundary

Parking Facility

2007 Future with the Proposed Actions
Traffic Volumes • AM Peak Hour

FIGURE 12-14

MEMORIAL SLOAN-KETTERING CANCER CENTER



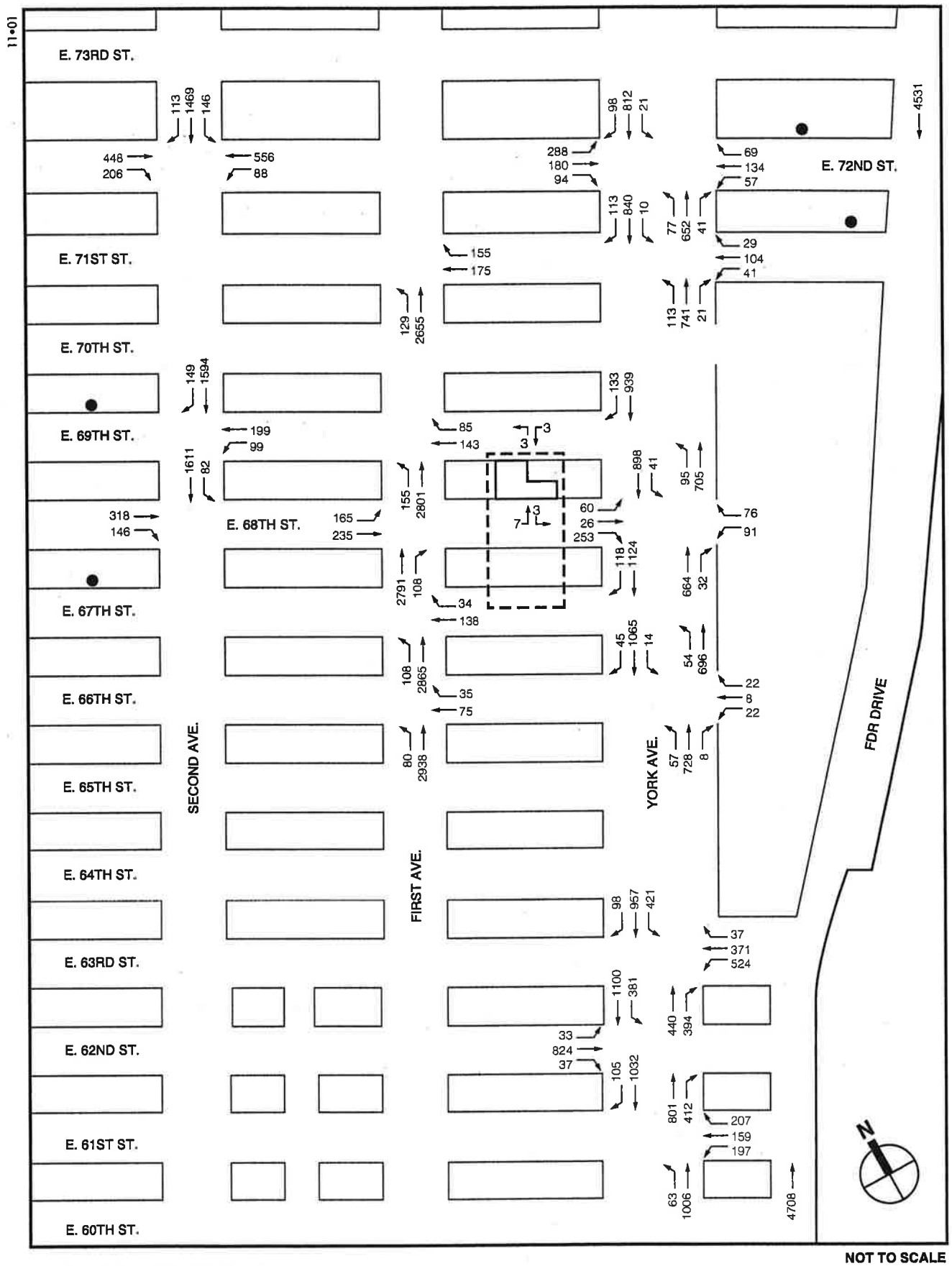
Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

2007 Future with the Proposed Actions
Traffic Volumes • Midday Peak Hour

FIGURE 12-15

MEMORIAL SLOAN-KETTERING CANCER CENTER



Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

Parking Facility

2007 Future with the Proposed Actions
Traffic Volumes • PM Peak Hour

FIGURE 12-16

MEMORIAL SLOAN-KETTERING CANCER CENTER

Table 12-11
Signalized Intersections:
2007 No Action and Future with the Proposed Actions Conditions Level of Service Analyses

Intersection	Weekday AM																	
	No Action								with the Proposed Actions									
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS		Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET																	
Northbound	LT	0.677	12.2	B	12.2	B	12.7	B	LT	0.689	12.4	B		12.4	B	12.8	B
Southbound	TR	0.475	10.0	B	10.0	B			TR	0.477	10.1	B		10.1	B		
Westbound	L	0.290	17.3	C	17.7	C			L	0.290	17.3	C		17.7	C		
	LTR	0.330	17.6	C					LTR	0.331	17.6	C					
	R	0.378	18.2	C					R	0.380	18.2	C					
YORK AVENUE & E. 62nd STREET																	
Northbound	TR	0.909	28.1	D	26.7	D	20.9	C	TR	0.926	29.5	D		27.9	D	21.4	C
	R	0.424	17.4	C					R	0.424	17.4	C					
Southbound	LT	0.832	10.6	B	10.6	B			LT	0.834	10.7	B		10.7	B		
Eastbound	LTR	0.551	29.2	D	29.2	D			LTR	0.551	29.2	D		29.2	D		
YORK AVENUE & E. 63rd STREET																	
Northbound	T	0.782	31.8	D	20.8	C	31.1	D	T	0.808	32.7	D		21.5	C	31.6	D
	R	0.681	6.5	B					R	0.681	6.5	B					
Southbound	L	1.088	100.7	F	43.6	E			L	1.093	102.8	F		44.4	E		
	TR	0.615	14.2	B					TR	0.618	14.2	B					
Westbound	L	0.485	24.3	C	24.1	C			L	0.485	24.3	C		24.1	C		
	LTR	0.492	24.1	C					LTR	0.492	24.1	C					
YORK AVENUE & E. 66th STREET																	
Northbound	LTR	0.519	5.0	A	5.0	A	6.4	B	LTR	0.529	5.1	B		5.1	B	6.6	B
Southbound	LTR	0.738	7.3	B	7.3	B			LTR	0.754	7.5	B		7.5	B		
Westbound	LTR	0.138	21.8	C	21.8	C			LTR	0.138	21.8	C		21.8	C		
YORK AVENUE & E. 67th STREET																	
Northbound	LT	0.532	5.1	B	5.1	B	6.4	B	LT	0.544	5.2	B		5.2	B	6.5	B
Southbound	TR	0.766	7.6	B	7.6	B			TR	0.771	7.7	B		7.7	B		
YORK AVENUE & E. 68th STREET																	
Northbound	TR	0.382	4.3	A	4.3	A	11.0	B	TR	0.370	4.3	A		4.3	A	11.1	B
Southbound	LT	0.794	8.5	B	8.5	B			LT	0.804	8.7	B		8.7	B		
Eastbound	LTR	0.617	27.2	D	27.2	D			LTR	0.631	27.5	D		27.5	D		
Westbound	L	0.470	26.1	D	24.4	C			L	0.482	26.4	D		24.6	C		
	R	0.163	22.0	C					R	0.163	22.0	C					
YORK AVENUE & E. 69th STREET																	
Northbound	LT	0.994	28.9	D	28.9	D	16.0	C	LT	1.027	35.0	D	+	35.0	D	20.0	C
Southbound	TR	0.642	5.9	B	5.9	B			TR	0.649	6.0	B		6.0	B		
YORK AVENUE & E. 71st STREET																	
Northbound	LTR	1.113	75.7	F	75.7	F	48.0	E	LTR	1.134	86.2	F	+	86.2	F	53.5	E
Southbound	LTR	0.946	24.4	C	24.4	C			LTR	0.955	25.6	D		25.6	D		
Westbound	LTR	0.736	27.4	D	27.4	D			LTR	0.739	27.6	D		27.6	D		
YORK AVENUE & E. 72nd STREET																	
Northbound	LTR	0.566	5.3	B	5.3	B	31.4	D	LTR	0.578	5.4	B		5.4	B	31.8	D
Southbound	LTR	0.703	6.8	B	6.8	B			LTR	0.730	7.2	B		7.2	B		
Eastbound	LTR	1.082	84.7	F	84.7	F			LTR	1.085	86.1	F		86.1	F		
Westbound	LTR	1.029	86.9	F	86.9	F			LTR	1.032	88.1	F		88.1	F		
FIRST AVENUE & E. 66th STREET																	
Northbound	LT	0.793	8.2	B	8.2	B	8.5	B	LT	0.795	8.2	B		8.2	B	8.6	B
Westbound	TR	0.399	16.5	C	16.5	C			TR	0.410	16.6	C		16.6	C		
FIRST AVENUE & E. 67th STREET																	
Northbound	LT	0.824	8.6	B	8.6	B	12.4	B	LT	0.825	8.7	B		8.7	B	12.6	B
Westbound	TR	0.969	53.2	E	53.2	E			TR	0.976	54.9	E		54.9	E		
FIRST AVENUE & E. 68th STREET																	
Northbound	TR	0.829	8.7	B	8.7	B	12.7	B	TR	0.831	8.8	B		8.8	B	13.0	B
Eastbound	LT	0.971	51.5	E	51.5	E			LT	0.979	53.2	E		53.2	E		
FIRST AVENUE & E. 69th STREET																	
Northbound	LT	0.800	8.3	B	8.3	B	8.9	B	LT	0.803	8.3	B		8.3	B	9.0	B
Westbound	TR	0.578	19.3	C	19.3	C			TR	0.605	20.0	C		20.0	C		
FIRST AVENUE & E. 71st STREET																	
Northbound	LT	0.504	5.9	B	5.9	B	6.7	B	LT	0.505	5.9	B		5.9	B	6.7	B
Westbound	TR	0.332	15.7	C	15.7	C			TR	0.332	15.7	C		15.7	C		
SECOND AVENUE & E. 68th STREET																	
Southbound	LT	0.566	7.2	B	7.2	B	15.5	C	LT	0.570	7.2	B		7.2	B	17.7	C
Eastbound	TR	1.034	69.4	F	69.4	F			TR	1.075	84.4	F	+	84.4	F		
SECOND AVENUE & E. 69th STREET																	
Southbound	TR	0.585	8.8	B	8.8	B	10.2	B	TR	0.587	8.9	B		8.9	B	10.9	B
Westbound	LT	0.886	36.3	D	36.3	D			LT	0.917	40.8	E		40.8	E		
SECOND AVENUE & E. 72nd STREET																	
Southbound	LTR	0.617	9.1	B	9.1	B	12.6	B	LTR	0.621	9.2	B		9.2	B	12.8	B
Eastbound	TR	0.620	16.3	C	16.3	C			TR	0.620	16.3	C		16.3	C		
Westbound	LT	0.789	20.9	C	20.9	C			LT	0.789	20.9	C		20.9	C		

Notes:
L = Left Turn, T = Through, R = Right Turn; LOS = Level of Service.
+ = Significant Project Impact.

Table 12-11 (continued)
Signalized Intersections:
2007 No Action and Future with the Proposed Actions Conditions Level of Service Analyses

Intersection	Weekday Midday															
	No Action								with the Proposed Actions							
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET																
Northbound	D/L	1.175	165.3	F	28.4	D	17.1	C	D/L	1.175	165.3	F	28.4	D	17.1	C
	T	0.748	13.4	B					T	0.748	13.4	B				
Southbound	TR	0.663	11.9	B	11.9	B			TR	0.663	11.9	B	11.9	B		
Westbound	L	0.205	10.8	B	11.3	B			L	0.205	10.8	B	11.3	B		
	LTR	0.293	11.3	B					LTR	0.293	11.3	B				
	R	0.328	11.8	B					R	0.328	11.8	B				
YORK AVENUE & E. 62nd STREET																
Northbound	TR	0.975	31.4	D	29.0	D	38.4	D	TR	0.975	31.4	D	29.0	D	38.4	D
	R	0.455	14.5	B					R	0.455	14.5	B				
Southbound	LT	1.087	52.8	E	52.8	E			LT	1.087	52.8	E	52.8	E		
Eastbound	LTR	0.689	23.2	C	23.2	C			LTR	0.689	23.2	C	23.2	C		
YORK AVENUE & E. 63rd STREET																
Northbound	T	0.874	27.6	D	21.2	C	28.0	D	T	0.874	27.6	D	21.2	C	28.0	D
	R	0.442	5.8	B					R	0.442	5.8	B				
Southbound	L	1.083	91.0	F	34.5	D			L	1.083	91.0	F	34.5	D		
	TR	0.934	18.9	C					TR	0.934	18.9	C				
Westbound	L	0.608	24.0	C	23.6	C			L	0.608	24.0	C	23.6	C		
	LTR	0.641	23.4	C					LTR	0.641	23.4	C				
YORK AVENUE & E. 66th STREET																
Northbound	LTR	0.904	12.3	B	12.3	B	10.1	B	LTR	0.904	12.3	B	12.3	B	10.1	B
Southbound	LTR	0.827	8.1	B	8.1	B			LTR	0.826	8.1	B	8.1	B		
Westbound	LTR	0.078	16.1	C	16.1	C			LTR	0.078	16.1	C	16.1	C		
YORK AVENUE & E. 67th STREET																
Northbound	LT	1.036	36.7	D	36.7	D	20.1	C	LT	1.040	38.0	D	38.0	D	20.7	C
Southbound	TR	0.853	8.5	B	8.5	B			TR	0.854	8.5	B	8.5	B		
YORK AVENUE & E. 68th STREET																
Northbound	TR	0.516	4.3	A	4.3	A	9.3	B	TR	0.516	4.3	A	4.3	A	9.4	B
Southbound	LT	0.811	7.8	B	7.8	B			LT	0.811	7.8	B	7.8	B		
Eastbound	LTR	0.598	20.6	C	20.6	C			LTR	0.599	20.6	C	20.6	C		
Westbound	L	0.493	20.4	C	18.9	C			L	0.494	20.4	C	18.9	C		
	R	0.198	16.8	C					R	0.198	16.8	C				
YORK AVENUE & E. 69th STREET																
Northbound	LT	0.951	17.6	C	17.6	C	10.8	B	LT	0.952	17.7	C	17.7	C	10.8	B
Southbound	TR	0.674	5.4	B	5.4	B			TR	0.677	5.4	B	5.4	B		
YORK AVENUE & E. 71st STREET																
Northbound	LTR	1.106	68.1	F	68.1	F	39.2	D	LTR	1.107	68.5	F	68.5	F	39.4	D
Southbound	LTR	0.822	12.5	B	12.5	B			LTR	0.824	12.5	B	12.5	B		
Westbound	LTR	0.442	15.0	B	15.0	B			LTR	0.442	15.0	B	15.0	B		
YORK AVENUE & E. 72nd STREET																
Northbound	LTR	1.116	74.1	F	74.1	F	37.2	D	LTR	1.116	74.1	F	74.1	F	37.2	D
Southbound	LTR	0.792	11.8	B	11.8	B			LTR	0.792	11.8	B	11.8	B		
Eastbound	LTR	0.823	23.3	C	23.3	C			LTR	0.829	23.6	C	23.6	C		
Westbound	LTR	0.696	21.8	C	21.8	C			LTR	0.697	21.9	C	21.9	C		
FIRST AVENUE & E. 66th STREET																
Northbound	LT	0.707	7.3	B	7.3	B	7.6	B	LT	0.708	7.3	B	7.3	B	7.6	B
Westbound	TR	0.366	16.2	C	16.2	C			TR	0.366	16.2	C	16.2	C		
FIRST AVENUE & E. 67th STREET																
Northbound	LT	0.687	7.1	B	7.1	B	14.5	B	LT	0.688	7.1	B	7.1	B	14.8	B
Westbound	TR	1.049	76.5	F	76.5	F			TR	1.056	79.0	F	79.0	F		
FIRST AVENUE & E. 68th STREET																
Northbound	TR	0.664	6.9	B	6.9	B	19.5	C	TR	0.665	6.9	B	6.9	B	19.5	C
Eastbound	LT	1.085	82.9	F	82.9	F			LT	1.085	82.9	F	82.9	F		
FIRST AVENUE & E. 69th STREET																
Northbound	LT	0.706	7.3	B	7.3	B	8.7	B	LT	0.706	7.3	B	7.3	B	8.9	B
Westbound	TR	0.745	24.7	C	24.7	C			TR	0.767	26.0	D	26.0	D		
FIRST AVENUE & E. 71st STREET																
Northbound	LT	0.649	6.8	B	6.8	B	8.1	B	LT	0.649	6.8	B	6.8	B	8.1	B
Westbound	TR	0.491	17.1	C	17.1	C			TR	0.491	17.1	C	17.1	C		
SECOND AVENUE & E. 68th STREET																
Southbound	LT	0.855	7.9	B	7.9	B	22.2	C	LT	0.856	7.9	B	7.9	B	22.2	C
Eastbound	TR	1.081	80.4	F	80.4	F			TR	1.081	80.4	F	80.4	F		
SECOND AVENUE & E. 69th STREET																
Southbound	TR	0.635	7.2	B	7.2	B	21.7	C	TR	0.635	7.2	B	7.2	B	22.2	C
Westbound	LT	1.079	79.9	F	79.9	F			LT	1.084	82.1	F	82.1	F		
SECOND AVENUE & E. 72nd STREET																
Southbound	LTR	0.754	10.6	B	10.6	B	15.0	B	LTR	0.755	10.6	B	10.6	B	15.1	C
Eastbound	TR	0.595	16.0	C	16.0	C			TR	0.595	16.0	C	16.0	C		
Westbound	LT	0.893	27.5	D	27.5	D			LT	0.893	27.5	D	27.5	D		

Notes:
L = Left Turn, T = Through, R = Right Turn, D/L = Defacto Left Turn; LOS = Level of Service.

Table 12-11 (continued)
Signalized Intersections:
2007 No Action and Future with the Proposed Actions Conditions Level of Service Analyses

Intersection	Weekday PM															
	No Action								with the Proposed Acitons							
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS		Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET																	
Northbound	DfL	1.036	122.5	F	19.1	C	15.4	C	DfL	1.036	123.3	F		19.2	C	15.4	C
	T	0.722	12.9	B					T	0.725	13.0	B					
Southbound	TR	0.572	10.9	B	10.9	B			TR	0.577	10.9	B		10.9	B		
Westbound	L	0.310	17.5	C	17.6	C			L	0.310	17.5	C		17.6	C		
	LTR	0.317	17.5	C					LTR	0.318	17.5	C					
	R	0.358	18.0	C					R	0.358	18.0	C					
YORK AVENUE & E. 62nd STREET																	
Northbound	TR	0.764	22.1	C	40.7	E	46.5	E	TR	0.769	22.2	C		40.7	E	47.2	E
	R	1.060	78.4	F					R	1.060	78.4	F					
Southbound	LT	1.063	51.8	E	51.8	E			LT	1.066	53.1	E		53.1	E		
Eastbound	LTR	0.959	45.7	E	45.7	E			LTR	0.959	45.7	E		45.7	E		
YORK AVENUE & E. 63rd STREET																	
Northbound	T	0.584	27.9	D	17.4	C	23.4	C	T	0.582	28.0	D		17.5	C	24.3	C
	R	0.560	5.1	B					R	0.560	5.1	B					
Southbound	L	1.096	80.2	F	24.1	C			L	1.109	88.2	F	+	25.9	D		
	TR	0.789	1.8	A					TR	0.798	1.9	A					
Westbound	L	0.680	28.5	D	27.7	D			L	0.680	28.5	D		27.7	D		
	LTR	0.696	27.3	D					LTR	0.696	27.4	D					
YORK AVENUE & E. 66th STREET																	
Northbound	DfL	0.776	36.9	D	6.6	B	10.6	B	DfL	0.781	37.9	D		6.9	B	11.3	B
	TR	0.439	4.8	A					TR	0.442	4.8	A					
Southbound	LTR	0.904	12.2	B	12.2	B			LTR	0.920	13.3	B		13.3	B		
Westbound	LTR	0.333	23.6	C	23.6	C			LTR	0.333	23.6	C		23.6	C		
YORK AVENUE & E. 67th STREET																	
Northbound	LT	0.909	14.7	B	14.7	B	11.3	B	DfL	0.790	39.6	D	+	56.0	E	27.1	D
									T	1.082	57.3	E	+				
Southbound	TR	0.638	9.1	B	9.1	B			TR	0.651	9.5	B		9.5	B		
YORK AVENUE & E. 68th STREET																	
Northbound	TR	0.504	4.9	A	4.9	A	11.6	B	TR	0.508	5.0	A		5.0	A	12.0	B
Southbound	LT	0.810	8.6	B	8.6	B			LT	0.827	9.3	B		9.3	B		
Eastbound	LTR	0.591	26.6	D	26.6	D			LTR	0.601	27.0	D		27.0	D		
Westbound	L	0.584	29.3	D	26.4	D			L	0.604	29.7	D		26.6	D		
	R	0.276	22.9	C					R	0.276	22.9	C					
YORK AVENUE & E. 69th STREET																	
Northbound	LT	0.998	26.6	D	26.6	D	16.2	C	LT	1.014	32.5	D		32.5	D	17.9	C
Southbound	TR	0.727	6.9	B	6.9	B			TR	0.741	7.1	B		7.1	B		
YORK AVENUE & E. 71st STREET																	
Northbound	LTR	1.090	64.8	F	64.8	F	41.4	E	LTR	1.095	67.2	F		67.2	F	42.6	E
Southbound	LTR	0.937	23.1	C	23.1	C			LTR	0.940	23.4	C		23.4	C		
Westbound	LTR	0.486	20.0	C	20.0	C			LTR	0.554	21.1	C		21.1	C		
YORK AVENUE & E. 72nd STREET																	
Northbound	LTR	0.938	17.7	C	17.7	C	36.0	D	LTR	0.945	18.6	C		18.6	C	37.0	D
Southbound	LTR	0.780	8.0	B	8.0	B			LTR	0.784	8.1	B		8.1	B		
Eastbound	DfL	1.072	95.5	F	66.6	F			DfL	1.072	95.5	F		66.7	F		
	TR	0.843	40.3	E					TR	0.847	40.6	E					
Westbound	LTR	1.119	117.8	F	117.8	F			LTR	1.130	123.6	F	+	123.6	F		
FIRST AVENUE & E. 66th STREET																	
Northbound	LT	0.710	7.2	B	7.2	B	7.5	B	LT	0.711	7.2	B		7.2	B	7.6	B
Westbound	TR	0.392	16.5	C	16.5	C			TR	0.396	16.5	C		16.5	C		
FIRST AVENUE & E. 67th STREET																	
Northbound	LT	0.725	7.4	B	7.4	B	8.1	B	LT	0.728	7.4	B		7.4	B	8.1	B
Westbound	TR	0.835	20.8	C	20.8	C			TR	0.854	21.4	C		21.4	C		
FIRST AVENUE & E. 68th STREET																	
Northbound	TR	0.736	7.5	B	7.5	B	17.5	C	TR	0.741	7.5	B		7.5	B	18.3	C
Eastbound	LT	1.090	82.4	F	82.4	F			LT	1.102	87.4	F	+	87.4	F		
FIRST AVENUE & E. 69th STREET																	
Northbound	LT	0.725	7.4	B	7.4	B	8.6	B	LT	0.726	7.4	B		7.4	B	9.0	B
Westbound	TR	0.803	28.5	D	28.5	D			TR	0.823	30.1	D		30.1	D		
FIRST AVENUE & E. 71st STREET																	
Northbound	LT	0.547	6.1	B	6.1	B	7.5	B	LT	0.547	6.1	B		6.1	B	7.5	B
Westbound	TR	0.551	17.8	C	17.8	C			TR	0.551	17.8	C		17.8	C		
SECOND AVENUE & E. 66th STREET																	
Southbound	LT	0.473	6.7	B	6.7	B	20.0	C	LT	0.474	6.7	B		6.7	B	21.1	C
Eastbound	TR	1.078	77.2	F	77.2	F			TR	1.091	82.5	F	+	82.5	F		
SECOND AVENUE & E. 68th STREET																	
Southbound	TR	0.563	6.7	B	6.7	B	11.0	B	TR	0.564	6.7	B		6.7	B	11.3	B
Westbound	LT	0.919	41.3	E	41.3	E			LT	0.931	43.3	E		43.3	E		
SECOND AVENUE & E. 72nd STREET																	
Southbound	LTR	0.597	9.0	B	9.0	B	19.6	C	LTR	0.599	9.0	B		9.0	B	19.7	C
Eastbound	TR	0.730	18.4	C	18.4	C			TR	0.730	18.4	C		18.4	C		
Westbound	LT	1.026	53.0	E	53.0	E			LT	1.026	53.0	E		53.0	E		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.
+ = Significant Project Impact.

- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (102.8 spv) with a v/c ratio of 1.093;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS D (35.0 spv) with a v/c ratio of 1.027;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (86.2 spv) with a v/c ratio of 1.134;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS D (25.6 spv) with a v/c ratio of 0.955.
- The eastbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (86.1 spv) with a v/c ratio of 1.085;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (88.1 spv) with a v/c ratio of 1.032;
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS E (54.9 spv) with a v/c ratio of 0.976;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS E (53.2 spv) with a v/c ratio of 0.979; and
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (84.4 spv) with a v/c ratio of 1.075.
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS E (40.8 spv) with a v/c ratio of 0.917;

Midday Peak Hour

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street would operate at LOS F (165.3 spv) with a v/c ratio of 1.175;
- The northbound through-right movement at the intersection of York Avenue and East 62nd Street would operate at LOS D (31.4 spv) with a v/c ratio of 0.975;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (52.8 spv) with a v/c ratio of 1.087;
- The southbound approach at the intersection of York Avenue and East 63rd Street, where the through-right movement would operate at LOS C (18.9 spv) with a v/c ratio of 0.934 and the left-turn movement operates at LOS F (91.0 spv) with a v/c ratio of 1.083;
- The northbound approach at the intersection of York Avenue and East 66th Street would operate at LOS B (12.3 spv) with a v/c ratio of 0.904;
- The northbound approach at the intersection of York Avenue and East 67th Street would operate at LOS D (38.0 spv) with a v/c ratio of 1.040;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS C (17.7 spv) with a v/c ratio of 0.952;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (68.5 spv) with a v/c ratio of 1.107;

- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (74.1 spv) with a v/c ratio of 1.116;
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS F (79.0 spv) with a v/c ratio of 1.056;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (82.9 spv) with a v/c ratio of 1.085;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (80.4 spv) with a v/c ratio of 1.081; and
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS F (82.1 spv) with a v/c ratio of 1.084.

PM Peak Hour

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street would operate at LOS F (123.3 spv) with a v/c ratio at the left-turn movement of 1.038;
- The northbound right-turn movement at the intersection of York Avenue and East 62nd Street would operate at LOS F (78.4 spv) with a v/c ratio of 1.080;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (53.1 spv) with a v/c ratio of 1.086;
- The eastbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (45.7 spv) with a v/c ratio 0.959;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (86.2 spv) with a v/c ratio of 1.109;
- The southbound approach at the intersection of York Avenue and East 66th Street would operate at LOS B (13.3 spv) with a v/c ratio of 0.920;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS D (32.5 spv) with a v/c ratio of 1.014;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (67.1 spv) with a v/c ratio of 1.095;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS C (23.4 spv) with a v/c ratio of 0.940;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS C (18.6 spv) with a v/c ratio of 0.945;
- The eastbound defacto left-turn movement at the intersection of York Avenue and East 72nd Street would operate at LOS F (95.5 spv) with a v/c ratio of 1.072;
- The eastbound through-right movement at the intersection of York Avenue and East 72nd Street would operate at LOS E (40.6 spv) with a v/c ratio of 0.847;

- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (123.6 spv) with a v/c ratio of 1.130;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (87.4 spv) with a v/c ratio of 1.102;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (82.5 spv) with a v/c ratio of 1.091;
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS E (43.3 spv) with a v/c ratio of 0.931;
- The westbound approach at the intersection of Second Avenue and East 72nd Street would operate at LOS E (53.0 spv) with a v/c ratio of 1.026; and
- The northbound through movement at the intersection of York Avenue and East 67th Street would operate at LOS E (57.3 spv) with a v/c ratio of 1.082.

IMPACT CRITERIA FOR SIGNALIZED INTERSECTIONS

Impacts are considered significant (and require examination of mitigation) according to the guidelines presented in the *New York City Environmental Quality Review (CEQR) Technical Manual* if they result in an increase of 5 or more seconds in a lane group if the No Action LOS is D. For No Action LOS E, 4 seconds of delay are considered significant. For No Action LOS F, 3 seconds of delay are considered significant. However, if No Action LOS F condition already has delays in excess of 120 seconds, an increase of more than 1.0 second of delay is considered significant, unless the proposed action generates fewer than five vehicle trips through that intersection in the peak hour. In addition, impacts are also considered significant if levels of service deteriorate from acceptable LOS A, B, or C in the future No Action condition to marginally unacceptable LOS D (a delay in excess of 32.5 seconds, the midpoint of the LOS D range of delay), or unacceptable LOS E or F in the future with the proposed actions. In this instance, mitigation measures sufficient to return LOS to a delay of 32.5 seconds or less would be required.

IMPACTED LOCATIONS—2007 FUTURE WITH THE PROPOSED ACTIONS

Based on standards set forth in the *CEQR Technical Manual*, the increases in traffic generated by the proposed actions would result in significant impacts at the following locations:

AM Peak Period

- The northbound approach at the intersection of York Avenue and East 69th Street, where delay would increase from 26.9 spv (LOS D) with a v/c ratio of 0.994 in 2007 No Action conditions to 35.0 spv (LOS D) with a v/c ratio of 1.027 in 2007 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 75.7 spv (LOS F) with a v/c ratio of 1.113 in 2007 No Action conditions to 86.2 spv (LOS F) with a v/c ratio of 1.134 in 2007 with the proposed actions;
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 69.4 spv (LOS F) with a v/c ratio of 1.034 in 2007 No Action conditions to 84.4 spv (LOS F) with a v/c ratio of 1.075 in 2007 with the proposed actions;

PM Peak Period

- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street, where delay would increase from 80.2 spv (LOS F) with a v/c ratio of 1.096 in 2007 No Action conditions to 86.2 spv (LOS F) with a v/c ratio of 1.109 in 2007 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 67th Street, where delay would increase from 14.7 spv (LOS B) with a v/c ratio at the left-through movements of 0.909 in 2007 No Action conditions to 39.6 spv (LOS D) with a v/c ratio of 0.790 at the defacto left-turn movement and to 57.3 spv (LOS E) with a v/c ratio of 1.082 at the through-movement in 2007 with the proposed actions;
- The westbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 117.8 spv (LOS F) with a v/c ratio of 1.119 in 2007 No Action conditions to 123.6 spv (LOS F) with a v/c ratio of 1.130 in 2007 with the proposed actions;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 82.4 spv (LOS F) with a v/c ratio of 1.090 in 2007 No Action conditions to 87.4 spv (LOS F) with a v/c ratio of 1.102 in 2007 with the proposed actions; and
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 77.2 spv (LOS F) with a v/c ratio of 1.078 in 2007 No Action conditions to 82.5 spv (LOS F) with a v/c ratio of 1.091 in 2007 with the proposed actions.

Recommended mitigation measures for these impacts are presented in Chapter 17, "Mitigation."

PARKING SUPPLY AND UTILIZATION

In addition to the background growth rate of 3.0 percent, utilization of the study area's off-street parking facilities was assumed to increase with project-generated demand. As shown in Table 12-12, the projected conditions indicate that the average overall utilization rate of the off-street parking facilities for 2007 with the proposed actions would remain the same as in 2007 No Action conditions, at 90 percent (with 710 available spaces) during the midday peak period.

E. FUTURE WITHOUT THE PROPOSED ACTIONS—2011

Using the specific traffic generated by each of the developments noted above in Section C, "The Future Without the Proposed Actions—2007," together with the overall yearly background growth rate of 0.50 percent per year, for a total of 5.0 percent by 2011, traffic volumes were estimated for the 2011 No Action conditions (see Figures 12-17 through 12-19).

Table 12-12
2007 Future With Proposed Action
Weekday Midday Off-Street Parking Utilization

2001 Existing Conditions

Capacity (spaces)	7,384
Demand (spaces)*	6,204
Available Spaces*	1,033
Utilization	84%

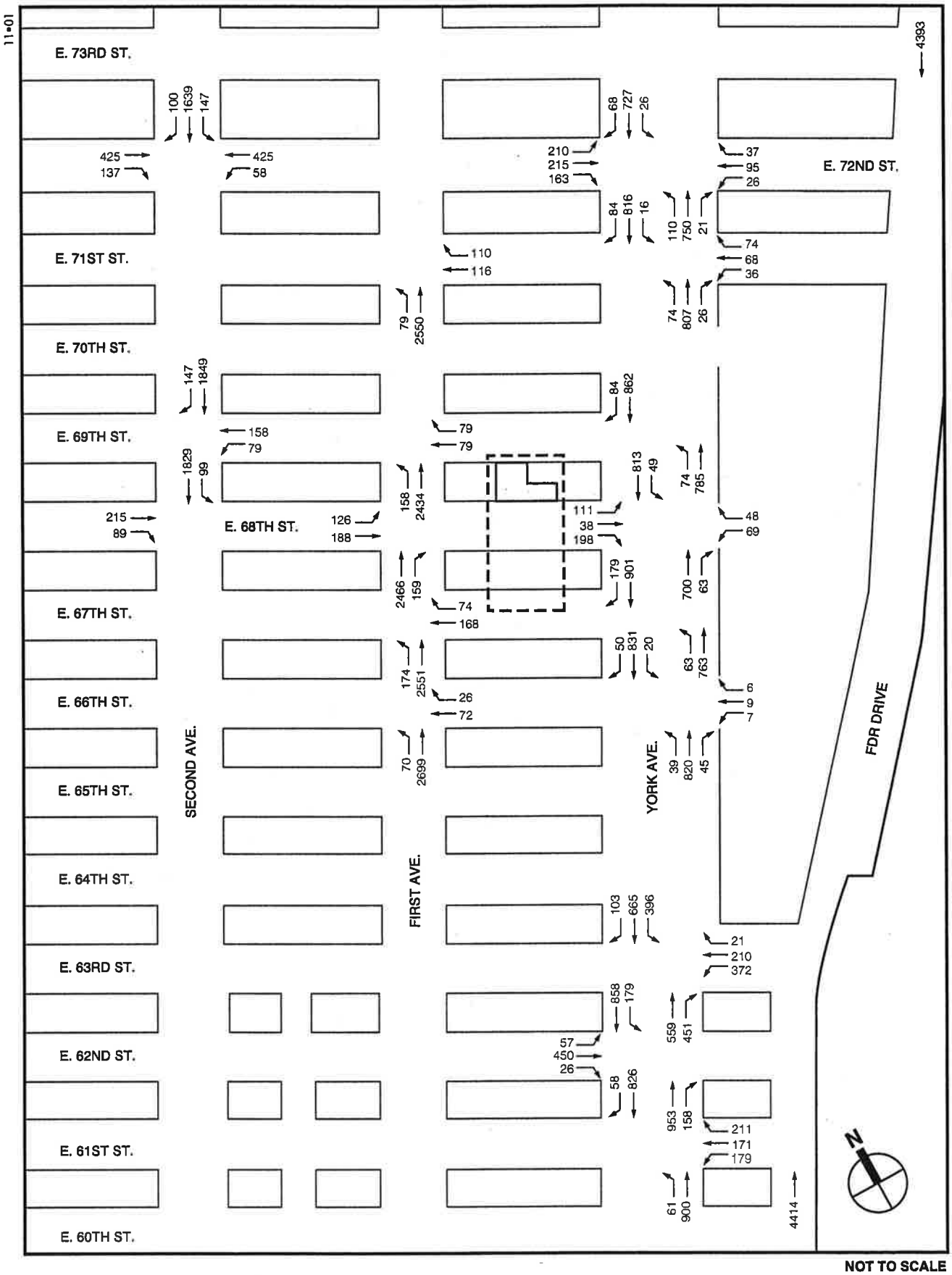
2007 No-Action Conditions

Capacity (spaces)	7,384
2001 Existing	6,204
0.5 % per year growth	186
Parking Demand	
No Build Site 1: MSKCC Outpatient Facility	0
No Build Site 2: MSKCC Infill Project	0
No Build Site 3: Caspary-Hospital for Special Surgery	4
No Build Site 4: The Pearl/400 East 61st Street	17
No Build Site 5: 1234 First Avenue	36
No Build Site 6: 420-34 East 61st Street	66
No Build Site 7: 1117-1125 York Avenue	69
No Build Site 8: 403-407 East 61st Street	13
No Build Site 9: 409-415 East 61st Street	19
No Build Site 10: Rockefeller University Lab Building	0
Total Demand	6,614
Available Spaces	770
Utilization	90%

2007 Future With Proposed Action Conditions

Capacity (spaces)	7,384
2007 No Action Demand	6,614
Parking Demand	
2007 Proposed Action	58
Total Demand	6,672
Available Spaces	712
Utilization	90%

Note:
* Does not include utilization/availability information for parking facilities 25, 28, and 36, since the information for midday peak period was unavailable



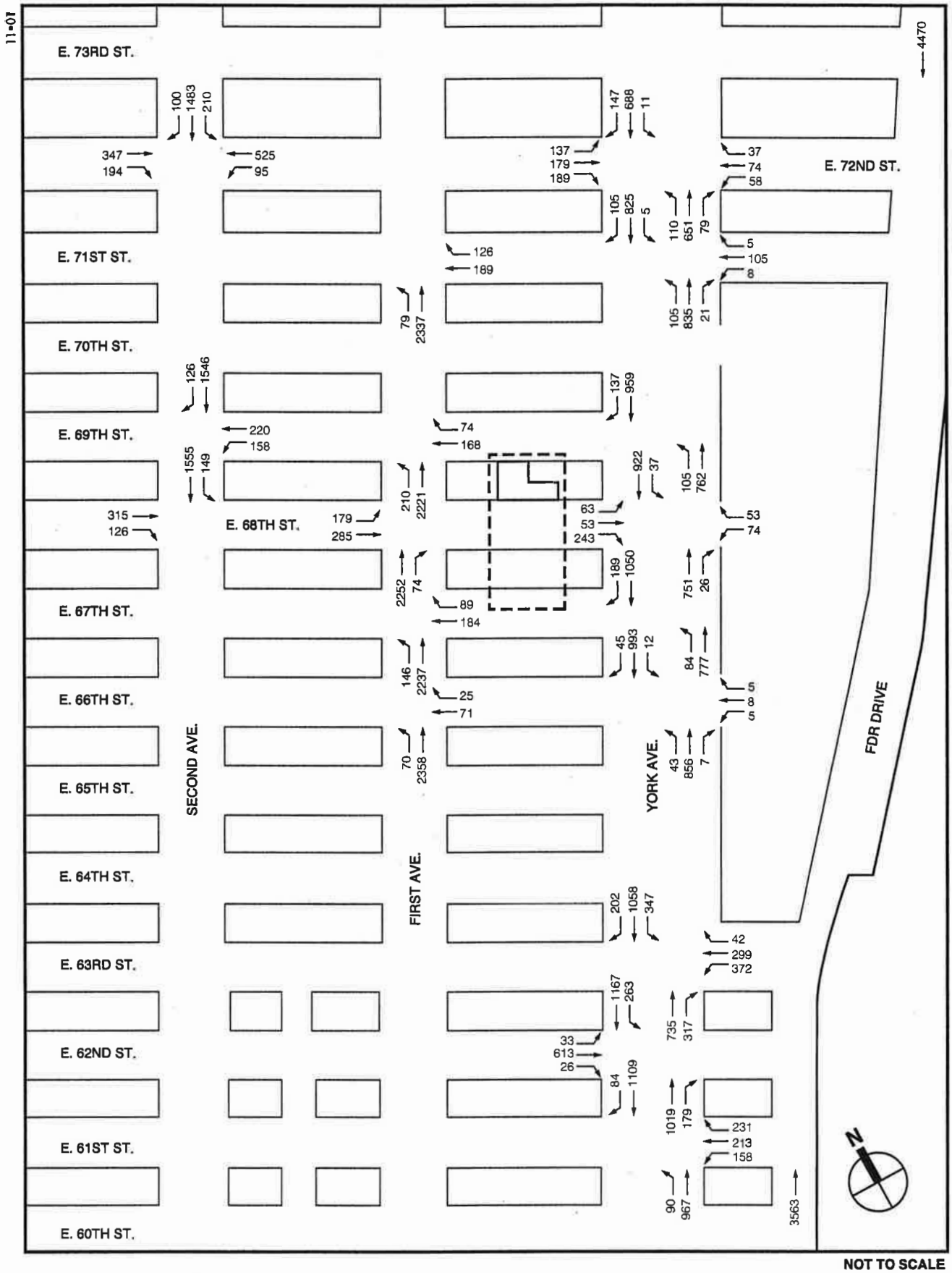
Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

2011 No Action Traffic Volumes • AM Peak Hour

FIGURE 12-17

MEMORIAL SLOAN-KETTERING CANCER CENTER



NOT TO SCALE

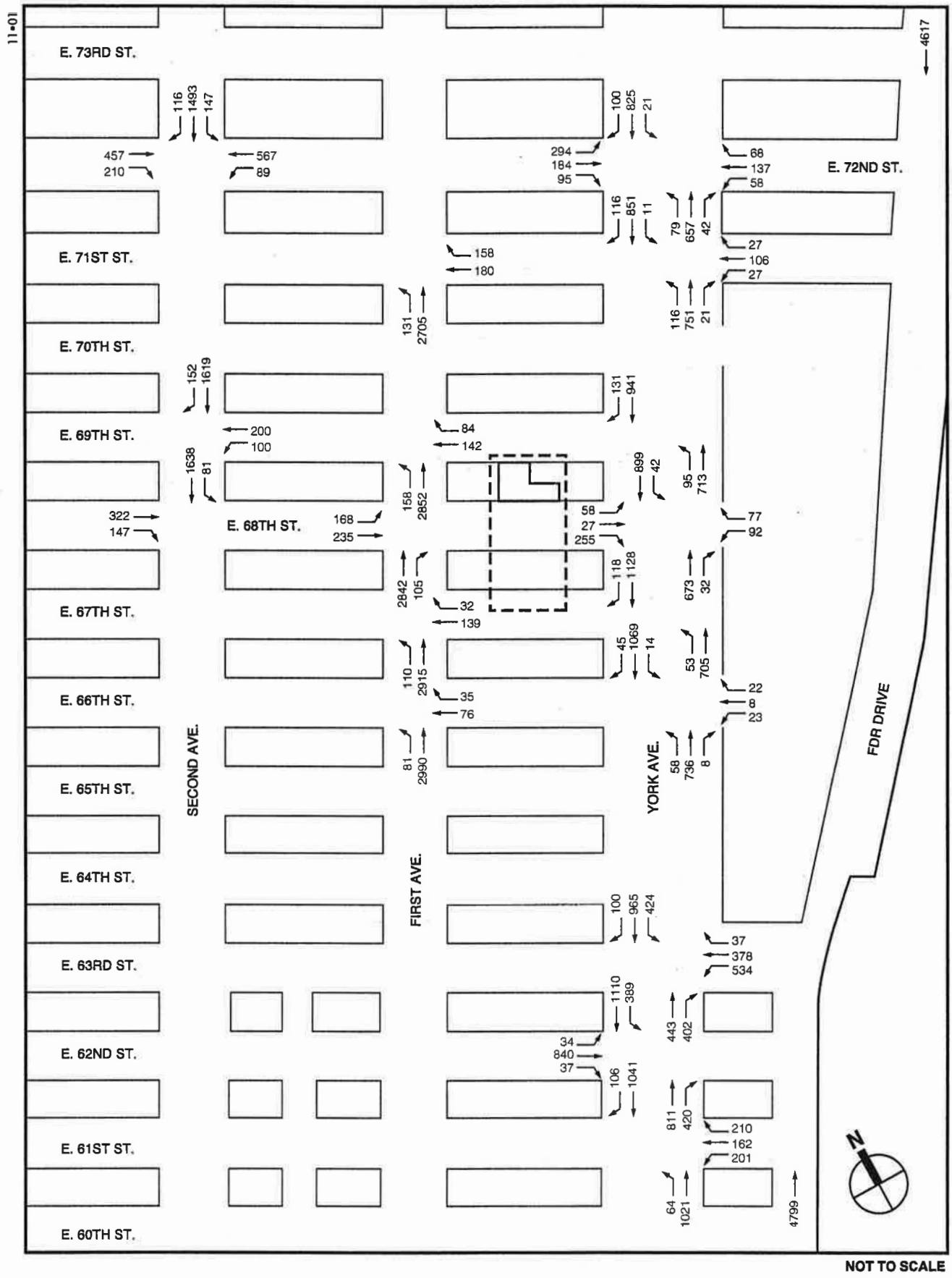
Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

2011 No Action Traffic Volumes • Midday Peak Hour

FIGURE 12-18

MEMORIAL SLOAN-KETTERING CANCER CENTER



2011 No Action Traffic Volumes • PM Peak Hour

FIGURE 12-19

MEMORIAL SLOAN-KETTERING CANCER CENTER

ANALYSIS RESULTS

LEVELS OF SERVICE—2011 FUTURE WITHOUT THE PROPOSED ACTIONS

Levels of service are shown in Table 12-13.Locations that have notable service problems of LOS E or worse or v/c ratios greater than 0.9 are listed below, with the levels of service projected for 2011 No Action conditions.

AM Peak Hour

- The northbound through-right movement at the intersection of York Avenue and East 62nd Street would operate at LOS D (29.6 spv) with a v/c ratio at the through-right movement of 0.926; and
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (110.8 spv) with a v/c ratio of 1.111;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS D (33.3 spv) with a v/c ratio of 1.020;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (91.5 spv) with a v/c ratio of 1.144;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS D (29.2 spv) with a v/c ratio of 0.977.
- The eastbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (98.1 spv) with a v/c ratio of 1.112;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (103.3 spv) with a v/c ratio of 1.071;
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS E (58.2 spv) with a v/c ratio of 0.989;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS E (56.3 spv) with a v/c ratio of 0.991;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (75.4 spv) with a v/c ratio of 1.052; and
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS D (38.9 spv) with a v/c ratio of 0.904.

Midday Peak Hour

- The northbound through-right movement at the intersection of York Avenue and East 62nd Street would operate at LOS D (35.2 spv) with a v/c ratio of 0.995;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS F (61.5 spv) with a v/c ratio of 1.106;
- The southbound approach at the intersection of York Avenue and East 63rd Street, where the through-right movement would operate at LOS C (20.8 spv) with a v/c ratio of 0.952 and the left-turn movement would operate at LOS F (98.7 spv) with a v/c ratio of 1.101;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street would operate at LOS F (121.9 spv) with a v/c ratio of 1.112;

Table 12-13
Signalized Intersections:
2001 Existing and 2011 No Action Conditions Level of Service Analyses

Intersection	Weekday AM															
	Existing								No Action							
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET																
Northbound	LT	0.600	11.2	B	11.2	B	12.2	B	LT	0.697	12.5	B	12.5	B	12.8	B
Southbound	TR	0.444	9.8	B	9.8	B			TR	0.484	10.1	B	10.1	B		
Westbound	L	0.282	17.2	C	17.6	C			L	0.297	17.4	C	17.8	C		
	LTR	0.318	17.5	C					LTR	0.337	17.7	C				
	R	0.362	18.0	C					R	0.382	18.3	C				
YORK AVENUE & E. 62nd STREET																
Northbound	TR	0.875	26.0	D	24.8	C	19.2	C	TR	0.926	29.6	D	28.0	D	21.6	C
	R	0.410	17.3	C					R	0.434	17.5	C				
Southbound	LT	0.752	8.7	B	8.7	B			LT	0.849	11.2	B	11.2	B		
Eastbound	LTR	0.505	28.6	D	28.6	D			LTR	0.561	29.3	D	29.3	D		
YORK AVENUE & E. 63rd STREET																
Northbound	T	0.750	31.0	D	20.2	C	27.6	D	T	0.797	32.3	D	21.2	C	32.7	D
	R	0.654	6.2	B					R	0.694	6.7	B				
Southbound	L	1.051	83.9	F	37.1	D			L	1.111	110.8	F	47.2	E		
	TR	0.584	13.8	B					TR	0.627	14.3	B				
Westbound	L	0.466	24.1	C	23.9	C			L	0.493	24.4	C	24.2	C		
	LTR	0.474	23.8	C					LTR	0.500	24.2	C				
YORK AVENUE & E. 66th STREET																
Northbound	LTR	0.480	4.8	A	4.8	A	5.8	B	LTR	0.530	5.1	B	5.1	B	6.7	B
Southbound	LTR	0.666	6.3	B	6.3	B			LTR	0.765	7.8	B	7.8	B		
Westbound	LTR	0.097	21.5	C	21.5	C			LTR	0.138	21.8	C	21.8	C		
YORK AVENUE & E. 67th STREET																
Northbound	LT	0.503	4.9	A	4.9	A	6.1	B	LT	0.544	5.2	B	5.2	B	6.6	B
Southbound	TR	0.733	7.0	B	7.0	B			TR	0.780	7.8	B	7.8	B		
YORK AVENUE & E. 68th STREET																
Northbound	TR	0.343	4.2	A	4.2	A	10.3	B	TR	0.369	4.3	A	4.3	A	11.2	B
Southbound	LT	0.739	7.3	B	7.3	B			LT	0.815	9.0	B	9.0	B		
Eastbound	LTR	0.581	26.6	D	26.6	D			LTR	0.627	27.4	D	27.4	D		
Westbound	L	0.421	25.0	C	23.7	C			L	0.464	26.4	D	24.6	C		
	R	0.157	21.9	C					R	0.166	22.0	C				
YORK AVENUE & E. 69th STREET																
Northbound	LT	0.934	17.0	C	17.0	C	11.1	B	LT	1.020	33.3	D	33.3	D	19.1	C
Southbound	TR	0.616	5.7	B	5.7	B			TR	0.654	6.1	B	6.1	B		
YORK AVENUE & E. 71st STREET																
Northbound	LTR	1.048	49.0	E	49.0	E	33.1	D	LTR	1.144	91.5	F	91.5	F	57.4	E
Southbound	LTR	0.898	19.7	C	19.7	C			LTR	0.977	29.2	D	29.2	D		
Westbound	LTR	0.693	25.4	D	25.4	D			LTR	0.754	28.4	D	28.4	D		
YORK AVENUE & E. 72nd STREET																
Northbound	LTR	0.533	5.1	B	5.1	B	26.0	D	LTR	0.581	5.4	B	5.4	B	36.1	D
Southbound	LTR	0.656	6.2	B	6.2	B			LTR	0.728	7.2	B	7.2	B		
Eastbound	LTR	1.040	69.6	F	69.6	F			LTR	1.112	98.1	F	98.1	F		
Westbound	LTR	0.962	66.5	F	66.5	F			LTR	1.071	103.3	F	103.3	F		
FIRST AVENUE & E. 66th STREET																
Northbound	LT	0.760	7.8	B	7.8	B	8.1	B	LT	0.808	8.4	B	8.4	B	8.7	B
Westbound	TR	0.350	16.0	C	16.0	C			TR	0.407	16.6	C	16.6	C		
FIRST AVENUE & E. 67th STREET																
Northbound	LT	0.788	8.1	B	8.1	B	11.4	B	LT	0.839	8.9	B	8.9	B	13.0	B
Westbound	TR	0.939	46.8	E	46.8	E			TR	0.989	58.2	E	58.2	E		
FIRST AVENUE & E. 68th STREET																
Northbound	TR	0.795	8.2	B	8.2	B	11.3	B	TR	0.845	9.0	B	9.0	B	13.4	B
Eastbound	LT	0.921	41.5	E	41.5	E			LT	0.991	56.3	E	56.3	E		
FIRST AVENUE & E. 69th STREET																
Northbound	LT	0.768	7.9	B	7.9	B	8.5	B	LT	0.816	8.5	B	8.5	B	9.1	B
Westbound	TR	0.560	16.9	C	16.9	C			TR	0.591	19.6	C	19.6	C		
FIRST AVENUE & E. 71st STREET																
Northbound	LT	0.484	5.8	B	5.8	B	6.6	B	LT	0.514	5.9	B	5.9	B	6.7	B
Westbound	TR	0.324	15.7	C	15.7	C			TR	0.341	15.8	C	15.8	C		
SECOND AVENUE & E. 68th STREET																
Southbound	LT	0.545	7.1	B	7.1	B	13.6	B	LT	0.577	7.3	B	7.3	B	16.3	C
Eastbound	TR	0.989	56.4	E	56.4	E			TR	1.052	75.4	F	75.4	F		
SECOND AVENUE & E. 69th STREET																
Southbound	TR	0.563	6.7	B	6.7	B	9.7	B	TR	0.596	6.9	B	6.9	B	10.6	B
Westbound	LT	0.857	32.6	D	32.6	D			LT	0.904	38.9	D	38.9	D		
SECOND AVENUE & E. 72nd STREET																
Southbound	LTR	0.594	8.9	B	8.9	B	12.1	B	LTR	0.629	9.2	B	9.2	B	12.8	B
Eastbound	TR	0.602	16.1	C	16.1	C			TR	0.632	16.5	C	16.5	C		
Westbound	LT	0.746	19.4	C	19.4	C			LT	0.812	22.0	C	22.0	C		

Notes:
L = Left Turn, T = Through, R = Right Turn; LOS = Level of Service.

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Table 12-13 (continued)
Signalized Intersections:
2001 Existing and 2011 No Action Conditions Level of Service Analyses

	Weekday Midday															
	Existing								No Action							
					Approach		Intersection						Approach		Intersection	
Intersection	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS
YORK AVENUE & E. 61st STREET																
Northbound	DfL	0.986	90.9	F	18.6	C	14.1	B	DfL	1.188	173.6	F	27.3	D	17.8	C
	T	0.726	13.0	B					T	0.784	13.7	B				
Southbound	TR	0.631	11.6	B	11.6	B			TR	0.676	12.1	B	12.1	B		
Westbound	L	0.199	10.8	B	11.2	B			L	0.209	10.8	B	11.3	B		
	LTR	0.283	11.2	B					LTR	0.298	11.3	B				
	R	0.318	11.6	B					R	0.334	11.7	B				
YORK AVENUE & E. 62nd STREET																
Northbound	TR	0.947	27.3	D	25.5	D	30.3	D	TR	0.995	35.2	D	32.2	D	43.4	E
	R	0.443	14.4	B					R	0.466	14.8	B				
Southbound	LT	1.048	37.6	D	37.6	D			LT	1.106	61.5	F	61.5	F		
Eastbound	LTR	0.651	22.6	C	22.6	C			LTR	0.703	23.4	C	23.4	C		
YORK AVENUE & E. 63rd STREET																
Northbound	T	0.849	28.3	D	20.3	C	24.9	C	T	0.891	28.7	D	22.0	C	29.8	D
	R	0.427	5.7	B					R	0.451	5.8	B				
Southbound	L	1.047	75.4	F	28.7	D			L	1.101	98.7	F	37.6	D		
	TR	0.900	16.4	C					TR	0.952	20.8	C				
Westbound	L	0.586	23.6	C	23.2	C			L	0.619	24.2	C	23.8	C		
	LTR	0.620	23.1	C					LTR	0.656	23.8	C				
YORK AVENUE & E. 66th STREET																
Northbound	LTR	0.853	9.5	B	9.5	B	8.2	B	LTR	0.922	13.7	B	13.7	B	11.0	B
Southbound	LTR	0.776	6.9	B	6.9	B			LTR	0.845	8.6	B	8.6	B		
Westbound	LTR	0.068	16.1	C	16.1	C			LTR	0.078	16.1	C	16.1	C		
YORK AVENUE & E. 67th STREET																
Northbound	LT	0.985	23.6	C	23.6	C	14.3	B	DfL	1.112	121.9	F	89.1	F	41.9	E
									T	1.145	85.6	F				
Southbound	TR	0.821	7.6	B	7.6	B			TR	0.869	9.1	B	9.1	B		
YORK AVENUE & E. 68th STREET																
Northbound	TR	0.497	4.2	A	4.2	A	6.8	B	TR	0.526	4.4	A	4.4	A	9.8	B
Southbound	LT	0.758	6.6	B	6.6	B			LT	0.838	8.6	B	8.6	B		
Eastbound	LTR	0.576	20.2	C	20.2	C			LTR	0.608	20.7	C	20.7	C		
Westbound	L	0.467	19.8	C	18.6	C			L	0.517	20.9	C	19.2	C		
	R	0.189	16.8	C					R	0.201	16.8	C				
YORK AVENUE & E. 69th STREET																
Northbound	LT	0.906	12.9	B	12.9	B	6.6	B	LT	0.981	22.5	C	22.5	C	13.0	B
Southbound	TR	0.848	5.1	B	5.1	B			TR	0.888	5.5	B	5.5	B		
YORK AVENUE & E. 71st STREET																
Northbound	LTR	1.050	45.4	E	45.4	E	27.7	D	LTR	1.140	85.1	F	85.1	F	47.5	F
Southbound	LTR	0.794	11.7	B	11.7	B			LTR	0.838	13.0	B	13.0	B		
Westbound	LTR	0.413	14.7	B	14.7	B			LTR	0.450	15.1	C	15.1	C		
YORK AVENUE & E. 72nd STREET																
Northbound	LTR	1.048	45.8	E	45.8	E	26.4	D	LTR	1.154	93.9	F	93.9	F	44.9	E
Southbound	LTR	0.757	11.0	B	11.0	B			LTR	0.818	12.5	B	12.5	B		
Eastbound	LTR	0.793	21.8	C	21.8	C			LTR	0.850	25.0	C	25.0	C		
Westbound	LTR	0.666	20.5	C	20.5	C			LTR	0.723	23.2	C	23.2	C		
FIRST AVENUE & E. 66th STREET																
Northbound	LT	0.682	7.0	B	7.0	B	7.4	B	LT	0.721	7.4	B	7.4	B	7.7	B
Westbound	TR	0.326	15.8	C	15.8	C			TR	0.371	16.2	C	16.2	C		
FIRST AVENUE & E. 67th STREET																
Northbound	LT	0.660	6.9	B	6.9	B	13.3	B	LT	0.700	7.2	B	7.2	B	15.5	C
Westbound	TR	1.020	66.8	F	66.8	F			TR	1.072	84.9	F	84.9	F		
FIRST AVENUE & E. 68th STREET																
Northbound	TR	0.640	6.7	B	6.7	B	16.4	C	TR	0.677	7.0	B	7.0	B	21.1	C
Eastbound	LT	1.049	69.4	F	69.4	F			LT	1.105	91.6	F	91.6	F		
FIRST AVENUE & E. 69th STREET																
Northbound	LT	0.681	7.0	B	7.0	B	8.5	B	LT	0.719	7.4	B	7.4	B	9.0	B
Westbound	TR	0.724	23.8	C	23.8	C			TR	0.766	25.9	D	25.9	D		
FIRST AVENUE & E. 71st STREET																
Northbound	LT	0.625	6.6	B	6.6	B	7.9	B	LT	0.661	6.9	B	6.9	B	8.2	B
Westbound	TR	0.476	17.0	C	17.0	C			TR	0.500	17.2	C	17.2	C		
SECOND AVENUE & E. 68th STREET																
Southbound	LT	0.631	7.7	B	7.7	B	19.8	C	LT	0.668	8.0	B	8.0	B	23.8	C
Eastbound	TR	1.049	68.5	F	68.5	F			TR	1.099	88.0	F	88.0	F		
SECOND AVENUE & E. 69th STREET																
Southbound	TR	0.611	7.1	B	7.1	B	19.1	C	TR	0.647	7.3	B	7.3	B	23.5	C
Westbound	LT	1.044	67.2	F	67.2	F			LT	1.099	88.6	F	88.6	F		
SECOND AVENUE & E. 72nd STREET																
Southbound	LTR	0.727	10.3	B	10.3	B	14.1	B	LTR	0.768	10.8	B	10.8	B	15.8	C
Eastbound	TR	0.577	15.7	C	15.7	C			TR	0.605	16.1	C	16.1	C		
Westbound	LT	0.853	24.3	C	24.3	C			LT	0.919	30.5	D	30.5	D		

Notes:
L = Left Turn, T = Through, R = Right Turn, Dfl. = Defacto Left Turn; LOS = Level of Service.

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Table 12-13 (continued)
Signalized Intersections:
2001 Existing and 2011 No Action Conditions Level of Service Analyses

Intersection	Weekday PM																
	Existing								No Action								
	Lane	V/C	Delay		Approach		Intersection		Lane	V/C	Delay		Approach		Intersection	
	Group	Ratio	(seconds)	LOS	Delay	LOS	Delay	LOS	Group	Ratio	(seconds)	LOS	Delay	LOS	Delay	LOS
YORK AVENUE & E. 61st STREET																
Northbound	LT	0.706	12.8	B	12.6	B	12.8	B	DfL	1.056	133.1	F	19.9	C	15.8	C
									T	0.736	13.2	B				
Southbound	TR	0.528	10.5	B	10.5	B			TR	0.582	11.0	B	11.0	B		
Westbound	L	0.299	17.4	C	17.5	C			L	0.319	17.6	C	17.7	C		
	LTR	0.303	17.4	C					LTR	0.323	17.5	C				
	R	0.347	17.9	C					R	0.362	18.0	C				
YORK AVENUE & E. 62nd STREET																
Northbound	TR	0.740	21.5	C	36.7	D	36.9	D	TR	0.780	22.5	C	43.8	E	52.4	E
	R	1.050	67.2	F					R	1.101	87.2	F				
Southbound	LT	1.041	36.0	D	36.0	D			LT	1.104	61.2	F	61.2	F		
Eastbound	LTR	0.895	38.7	D	38.7	D			LTR	0.979	49.0	E	49.0	E		
YORK AVENUE & E. 63rd STREET																
Northbound	T	0.565	27.7	D	17.2	C	21.1	C	T	0.595	28.1	D	17.5	C	24.8	C
	R	0.540	5.0	A					R	0.571	5.2	B				
Southbound	L	1.054	83.4	F	19.4	C			L	1.117	90.0	F	27.0	D		
	TR	0.747	1.8	A					TR	0.804	1.9	A				
Westbound	L	0.855	27.7	D	27.1	D			L	0.895	26.9	D	26.0	D		
	LTR	0.670	26.8	D					LTR	0.709	27.6	D				
YORK AVENUE & E. 66th STREET																
Northbound	DfL	0.734	30.7	D	6.3	B	8.6	B	DfL	0.796	40.3	E	7.1	B	11.8	B
	TR	0.424	4.5	A					TR	0.447	4.6	A				
Southbound	LTR	0.835	9.2	B	9.2	B			LTR	0.928	14.0	B	14.0	B		
Westbound	LTR	0.289	23.1	C	23.1	C			LTR	0.340	23.6	C	23.8	C		
YORK AVENUE & E. 67th STREET																
Northbound	LT	0.861	11.4	B	11.4	B	9.4	B	DfL	0.778	37.7	D	61.4	F	29.3	D
									T	1.096	63.2	F				
Southbound	TR	0.795	8.0	B	8.0	B			TR	0.854	9.6	B	9.6	B		
YORK AVENUE & E. 68th STREET																
Northbound	TR	0.488	4.9	A	4.9	A	10.9	B	TR	0.514	5.0	A	5.0	A	12.3	B
Southbound	LT	0.750	7.5	B	7.5	B			LT	0.841	9.8	B	9.8	B		
Eastbound	LTR	0.567	26.4	D	26.4	D			LTR	0.602	27.0	D	27.0	D		
Westbound	L	0.507	26.7	D	24.8	C			L	0.609	29.9	D	26.8	D		
	R	0.252	22.7	C					R	0.279	23.0	C				
YORK AVENUE & E. 69th STREET																
Northbound	LT	0.950	19.5	C	19.5	C	12.1	B	LT	1.025	35.4	D	35.4	D	19.3	C
Southbound	TR	0.695	6.5	B	6.5	B			TR	0.741	7.1	B	7.1	B		
YORK AVENUE & E. 71st STREET																
Northbound	LTR	1.042	46.6	E	46.6	E	31.5	D	LTR	1.119	78.3	F	78.3	F	48.7	E
Southbound	LTR	0.892	19.1	C	19.1	C			LTR	0.964	26.6	D	26.6	D		
Westbound	LTR	0.451	19.2	C	19.2	C			LTR	0.503	20.1	C	20.1	C		
YORK AVENUE & E. 72nd STREET																
Northbound	LTR	0.893	13.8	B	13.8	B	29.6	D	LTR	0.962	21.1	C	21.1	C	40.5	E
Southbound	LTR	0.730	7.1	B	7.1	B			LTR	0.800	8.5	B	8.5	B		
Eastbound	DfL	1.041	84.0	F	81.8	F			DfL	1.092	103.9	F	73.8	F		
	TR	0.817	37.9	D					TR	0.860	42.0	E				
Westbound	LTR	1.047	86.9	F	86.9	F			LTR	1.161	140.4	F	140.4	F		
FIRST AVENUE & E. 66th STREET																
Northbound	LT	0.678	7.0	B	7.0	B	7.3	B	LT	0.724	7.3	B	7.3	B	7.7	B
Westbound	TR	0.358	16.1	C	16.1	C			TR	0.398	16.5	C	16.5	C		
FIRST AVENUE & E. 67th STREET																
Northbound	LT	0.698	7.1	B	7.1	B	7.6	B	LT	0.739	7.5	B	7.5	B	8.2	B
Westbound	TR	0.608	20.0	C	20.0	C			TR	0.649	21.2	C	21.2	C		
FIRST AVENUE & E. 68th STREET																
Northbound	TR	0.710	7.2	B	7.2	B	15.2	C	TR	0.753	7.8	B	7.8	B	19.0	C
Eastbound	LT	1.050	67.1	F	67.1	F			LT	1.113	92.8	F	92.8	F		
FIRST AVENUE & E. 69th STREET																
Northbound	LT	0.697	7.1	B	7.1	B	8.5	B	LT	0.739	7.5	B	7.5	B	9.0	B
Westbound	TR	0.777	26.7	D	26.7	D			TR	0.817	29.6	D	29.6	D		
FIRST AVENUE & E. 71st STREET																
Northbound	LT	0.525	6.0	B	6.0	B	7.4	B	LT	0.557	6.2	B	6.2	B	7.6	B
Westbound	TR	0.532	17.8	C	17.8	C			TR	0.562	18.0	C	18.0	C		
SECOND AVENUE & E. 68th STREET																
Southbound	LT	0.452	6.6	B	6.6	B	17.8	C	LT	0.481	6.7	B	6.7	B	21.8	C
Eastbound	TR	1.048	65.6	F	65.6	F			TR	1.100	86.7	F	86.7	F		
SECOND AVENUE & E. 69th STREET																
Southbound	TR	0.539	6.6	B	6.6	B	10.4	B	TR	0.574	6.8	B	6.8	B	11.5	B
Westbound	LT	0.893	37.2	D	37.2	D			LT	0.940	44.9	E	44.9	E		
SECOND AVENUE & E. 72nd STREET																
Southbound	LTR	0.573	8.6	B	8.6	B	16.6	C	LTR	0.609	9.1	B	9.1	B	22.7	C
Eastbound	TR	0.709	17.9	C	17.9	C			TR	0.743	18.8	C	18.8	C		
Westbound	LT	0.970	38.9	D	38.9	D			LT	1.057	63.1	F	63.1	F		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.

- The northbound through-movement at the intersection of York Avenue and East 67th Street would operate at LOS F (85.6 spv) with a v/c ratio of 1.145;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS C (22.5 spv) with a v/c ratio of 0.981;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (85.1 spv) with a v/c ratio of 1.140;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (93.9 spv) with a v/c ratio of 1.154.
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS F (84.9 spv) with a v/c ratio of 1.072;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (91.6 spv) with a v/c ratio of 1.105;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (88.0 spv) with a v/c ratio of 1.099;
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS F (88.6 spv) with a v/c ratio of 1.099;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street would operate at LOS F (173.6 spv) with a v/c ratio of 1.188;
- The northbound approach at the intersection of York Avenue and East 66th Street would operate at LOS B (13.7 spv) with a v/c ratio of 0.922; and
- The westbound approach at the intersection of Second Avenue at East 72nd Street would operate at LOS D (30.5 spv) with a v/c ratio of 0.919.

PM Peak Hour

- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS F (61.2 spv) with a v/c ratio of 1.104;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (90.0 spv) with a v/c ratio of 1.117;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS D (35.4 spv) with a v/c ratio of 1.025;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (78.3 spv) with a v/c ratio of 1.119;
- The eastbound defacto left-turn movement at the intersection of York Avenue and East 72nd Street would operate at LOS F (103.9 spv) with a v/c ratio of 1.092;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (140.4 spv) with a v/c ratio of 1.161;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (92.8 spv) with a v/c ratio of 1.113;

- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (86.7 spv) with a v/c ratio of 1.100; and
- The westbound approach at the intersection of Second Avenue and East 72nd Street would operate at LOS F (63.1 spv) with a v/c ratio of 1.057.
- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street, which would operate at LOS F (133.1 spv) with a v/c ratio of 1.058;
- The northbound through-right movement at the intersection of York Avenue and East 66th Street would operate at LOS E (40.3 spv) with a v/c ratio of 0.796;
- The northbound right-turn movement at the intersection of York Avenue and East 62nd Street would operate at LOS F (87.2 spv) with a v/c ratio of 1.101;
- The eastbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (49.0 spv) with a v/c ratio of 0.979;
- The southbound approach at the intersection of York Avenue and East 66th Street would operate at LOS B (14.0 spv) with a v/c ratio of 0.928;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street would operate at LOS D (37.7 spv) with a v/c ratio of 0.778;
- The northbound through movement at the intersection of York Avenue and East 67th Street would operate at LOS F (63.2 spv) with a v/c ratio of 1.096;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS D (26.6 spv) with a v/c ratio of 0.964;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS C (21.1 spv) with a v/c ratio of 0.962;
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS E (44.9 spv) with a v/c ratio of 0.940; and
- The westbound approach at the intersection of Second Avenue and East 72nd Street would operate at LOS F (63.1 spv) with a v/c ratio of 1.057.

PARKING SUPPLY AND UTILIZATION

The utilization of the study area's off-street parking facilities was assumed to increase by the background growth rates of 5.0 percent by 2011 (see Table 12-14). The projected conditions indicate that the average overall utilization rate of the off-street parking facilities would increase to approximately 91 percent with 646 available spaces during the midday peak period, in 2011.

F. FUTURE WITH THE PROPOSED ACTIONS—2011

TRIP-MAKING CHARACTERISTICS FOR THE PROPOSED DEVELOPMENT

In 2011, the proposed development would include the proposed research building and the redevelopment of existing campus buildings on the campus with impatient space, diagnostic and treatment facilities, hospital offices and laboratories. Therefore, in addition to the 548 net

Table 12-14
2011 No-Action Weekday Midday Off-Street Parking Utilization

2001 Existing Conditions

Capacity (spaces)	7,384
Demand (spaces)*	6,204
Available Spaces*	1,033
Utilization	84%

2011 No-Action Conditions

Capacity (spaces)	7,384
2001 Existing	6,204
0.5 % per year growth	310
Parking Demand	
No Build Site 1: MSKCC Outpatient Facility	0
No Build Site 2: MSKCC Infill Project	0
No Build Site 3: Caspary-Hospital for Special Surgery	4
No Build Site 4: The Pearl/400 East 61st Street	17
No Build Site 5: 1234 First Avenue	36
No Build Site 6: 420-34 East 61st Street	66
No Build Site 7: 1117-1125 York Avenue	69
No Build Site 8: 403-407 East 61st Street	13
No Build Site 9: 409-415 East 61st Street	19
No Build Site 10: Rockefeller University Lab Building	0
Total Demand	6,738
Available Spaces	646
Utilization	91%

Note:
* Does not include utilization/availability information for parking facilities 25, 28, and 36, since the information for midday peak period was unavailable

new employees anticipated with the development of the proposed research building and the residential units that could be developed with the proposed actions, Phase 2 of the proposed development is estimated to result in a net increase of 768 employees, 530 outpatients, 30 inpatients, and 1,720 visitors per day. For the purposes of the 2011 analysis, full build-out includes both the Phase 1 and Phase 2 project components.

EMPLOYEES

As discussed earlier in this chapter, the net increase of 548 employees estimated for the proposed Phase 1 research building yields 287, 148, and 301 person trips, and 60, 0, and 60 vehicle trips during the AM, midday, and PM peak hours, respectively. With the development of Phase 2, there would be an additional net increase of 768 employees. Trips generated by these employees were based on the same rates as the research building employees, outlined above (also see Table 12-15). The 768 employees would result in 399, 207, and 422 person trips, and 73, 0, and 76 vehicle trips during the AM, midday, and PM peak hours, respectively.

OUTPATIENTS AND VISITORS

Temporal distribution, modal split, and vehicle occupancy were based on the rates presented in the *New York Hospital Program and Facility Development Plan FEIS* (CER No. 91-010M), as shown in Table 12-16. The application of these rates to the project's 530 outpatients, 30 inpatients, and 1,720 visitors anticipated in Phase 2 yields 84, 258, and 212 person trips and 29, 78, and 66 vehicle trips during the AM, midday and PM peak hours, respectively.

DELIVERIES

A rate of 0.20 truck trips per 1,000 square feet were based on DOT data for office use, which was also used for the *New York Hospital FEIS*. Temporal distribution was also taken from these sources. As shown in Table 12-8, the proposed actions would result in 10, 10, and 6 truck trips in Phase 1. As shown in Table 12-17, the proposed actions would result in 8, 6, and 4 truck trips in Phase 2, during the AM, midday, and PM peak hours, respectively.

TOTAL

As shown in Table 12-18, the proposed actions would result in 358, 185, and 378 person trips and 70, 12, and 72 vehicle trips during the AM, midday, and PM peak hours in Phase 1. For Phase 2, there would be 483, 465, and 634 person trips, and 110, 84, and 146 vehicle trips during the AM, midday, and PM peak hours, respectively. Full buildout would result in 841, 650, and 1,012 person trips and 180, 96, and 218 vehicle trips during the AM, midday, and PM peak hours, respectively.

TRIP ASSIGNMENT

Directional distribution of project-generated trips are described below. Trip assignments through individual study area intersections and to off-street parking facilities were based on information provided by MSKCC and the off-street parking survey during any given peak hour. Total project-generated trips are presented on Figures 12-20 through 12-22.

Table 12-15
Phase 2 - Employees

Total Employees: 768

Temporal Distribution

Weekday AM Peak Hour (1)	52.0%
Weekday MD Peak Hour (2)	27.0%
Weekday PM Peak Hour (1)	55.0%

Modal Split Estimates & Vehicle Occupancy

Mode	Weekday AM/PM (3)	Weekday MD (4)
Auto	18.0%	0.0%
Taxi	3.0%	0.0%
Subway	46.0%	0.0%
Bus	15.0%	0.0%
Walk/Other	18.0%	100.0%
Total	100.0%	100.0%
Auto Occupancy	1.27	
Taxi Occupancy	1.35	

Hourly In & Out Distribution

	In	Out
Weekday AM Peak Hour (5)	95.0%	5.0%
Weekday MD Peak Hour (2)	35.0%	65.0%
Weekday PM Peak Hour (5)	15.0%	85.0%

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	68	4	11	1	175	9	57	3	68	4	379	20	399
Weekday MD Peak Hour	0	0	0	0	0	0	0	0	73	135	73	135	207
Weekday PM Peak Hour	11	65	2	11	29	165	10	54	11	65	63	359	422

Peak Hour Vehicle Trips

	Auto		Taxi		Total		
	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	54	3	8	8	62	11	73
Weekday PM Peak Hour	9	51	8	8	17	59	76

Note:

(1) Source: MSKCC 2001 Staffing Plan - Main Campus

(2) Source: Rockefeller University DEIS (CEQR # 87-307M)

(3) Source: Reverse Journey to Work Data (Census Tract 116), Rockefeller University DEIS (CEQR # 87-307M), and Mount Sinai School of Medicine DEIS

(4) Source: Assumed

(5) Source: Urban Space for Pedestrians (Pushkarev & Zupan)

Table 12-16
Phase 2 - Outpatients and Visitors

Total Outpatients and Visitors: 2,280

Temporal Distribution (1)

Weekday AM Peak Hour	3.7%
Weekday MD Peak Hour	11.3%
Weekday PM Peak Hour	9.3%

Modal Split Estimates (1) & Vehicle Occupancy (1)

Mode	Weekday
Auto	32.0%
Taxi	11.0%
Subway	20.0%
Bus	17.0%
Walk Only	20.0%
Total	100.0%
Auto Occupancy	1.60
Taxi Occupancy	1.40

Hourly In & Out Distribution (1)

	In	Out
Weekday AM Peak Hour	85.0%	15.0%
Weekday MD Peak Hour	65.0%	35.0%
Weekday PM Peak Hour	60.0%	40.0%

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk Only		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	23	4	8	1	14	3	12	2	14	3	72	13	84
Weekday MD Peak Hour	54	29	18	10	33	18	28	15	33	18	167	90	258
Weekday PM Peak Hour	41	27	14	9	25	17	22	14	25	17	127	85	212

Peak Hour Vehicle Trips

	Auto		Taxi		Total		
	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour	14	3	6	6	20	9	29
Weekday MD Peak Hour	33	18	13	13	47	31	78
Weekday PM Peak Hour	25	17	12	12	37	29	66

Note:
(1) New York Hospital FEIS (CEQR #91-010M), January 1993

Table 12-17
Deliveries

Phase-2:

Incremental Development Program: **363,000** square feet

Delivery Trip Rate (1): **0.2** trips per 1,000 sq. ft.

Temporal Distribution (1)

Weekday AM Peak Hour	10.0%
Weekday MD Peak Hour	9.0%
Weekday PM Peak Hour	5.0%

Hourly In & Out Distribution (1)

	In	Out
Weekday AM Peak Hour	50.0%	50.0%
Weekday MD Peak Hour	50.0%	50.0%
Weekday PM Peak Hour	50.0%	50.0%

Total Deliveries

	In	Out	Total
Weekday AM Peak Hour	4	4	8
Weekday MD Peak Hour	3	3	6
Weekday PM Peak Hour	2	2	4

Note:
(1) Source: US DOT

Table 12-18
Total Trips - Phase 2

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
Employees	66	4	11	1	175	9	57	3	68	4	379	20	399
Deliveries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Outpatients and Visitors	23	4	8	1	14	3	12	2	14	3	72	13	84
Total	89	8	19	2	189	12	69	5	82	7	451	33	483
Weekday MD Peak Hour													
Employees	0	0	0	0	0	0	0	0	73	135	73	135	207
Deliveries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Outpatients and Visitors	54	29	18	10	33	18	28	15	33	18	167	90	258
Total	54	29	18	10	33	18	28	15	106	153	240	225	465
Weekday PM Peak Hour													
Employees	11	65	2	11	29	165	10	54	11	65	63	359	422
Deliveries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Outpatients and Visitors	41	27	14	9	25	17	22	14	25	17	127	85	212
Total	52	92	16	20	54	182	32	68	36	82	190	444	634

Peak Hour Vehicle Trips

	Auto		Taxi		Total		
	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour							
Employees	54	3	8	8	62	11	73
Outpatients and Visitors	14	3	6	6	20	9	29
Deliveries	N/A	N/A	N/A	N/A	4	4	8
Total	68	6	14	14	86	24	110
Weekday MD Peak Hour							
Employees	0	0	0	0	0	0	0
Outpatients and Visitors	33	18	13	13	47	31	78
Deliveries	N/A	N/A	N/A	N/A	3	3	6
Total	33	18	13	13	50	34	84
Weekday PM Peak Hour							
Employees	9	51	8	8	17	59	76
Visitors	25	17	12	12	37	29	66
Deliveries	N/A	N/A	N/A	N/A	2	2	4
Total	34	68	20	20	56	90	146

Table 12-18 (continued)
2011 Full Buildout

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
Phase 1 Total	57	5	9	1	147	12	49	5	59	14	321	37	358
Phase 2 Total	89	8	19	2	189	12	69	5	82	7	451	33	483
Full Buildout Total	146	13	28	3	336	24	118	10	141	21	772	70	841
Weekday MD Peak Hour													
Phase 1 Total	1	1	0	0	1	1	1	1	64	115	67	118	185
Phase 2 Total	54	29	18	10	33	18	28	15	106	153	240	225	465
Full Buildout Total	55	30	18	10	34	19	29	16	170	268	307	343	650
Weekday PM Peak Hour													
Phase 1 Total	11	55	2	9	28	140	11	45	19	58	71	307	378
Phase 2 Total	52	92	16	20	54	182	32	68	36	82	190	444	634
Full Buildout Total	63	147	18	29	82	322	43	113	55	140	261	751	1012

Peak Hour Vehicle Trips

	Auto		Taxi		Total		
	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour							
Phase 1 Total	44	4	7	7	54	16	70
Phase 2 Total	68	6	14	14	86	24	110
Full Buildout Total	112	10	21	21	140	40	180
Weekday MD Peak Hour							
Phase 1 Total	1	1	0	0	6	6	12
Phase 2 Total	33	18	13	13	50	34	84
Full Buildout Total	34	19	13	13	56	40	96
Weekday PM Peak Hour							
Phase 1 Total	9	43	7	7	19	53	72
Phase 2 Total	34	68	20	20	56	90	146
Full Buildout Total	43	111	27	27	75	143	218

EMPLOYEES

The directional distribution of the auto and taxi trips was based on travel patterns presented in the *New York Hospital EIS*. Based on this data, 48 percent of trips would be within Manhattan. The remainder of the trips would originate as follows: 15 percent from Queens, 11 percent from Brooklyn, 7 percent from Westchester, 7 percent from New Jersey, and 1 percent from other parts of New York. Auto trips were assigned to parking lots and garages with available capacity (based on data from MSKCC and the off-street parking survey). Taxi trips were assigned to the buildings' entrances.

OUTPATIENTS AND VISITORS

The directional distribution of the auto and taxi trips generated by outpatients and visitors were based on the data presented in the *New York Hospital EIS*. Auto trips were assigned to the MSKCC campus garage located on East 66th Street and other garages and lots with available capacity (based on data from MSKCC and the off-street parking survey). Taxi trips were assigned to the East 67th and East 68th Street and First and York Avenue blockfaces.

DELIVERIES

Truck trips for the proposed project were assigned to study-area intersections based on truck routes designated by the New York City Department of Transportation. Truck trips were routed to the project's loading areas.

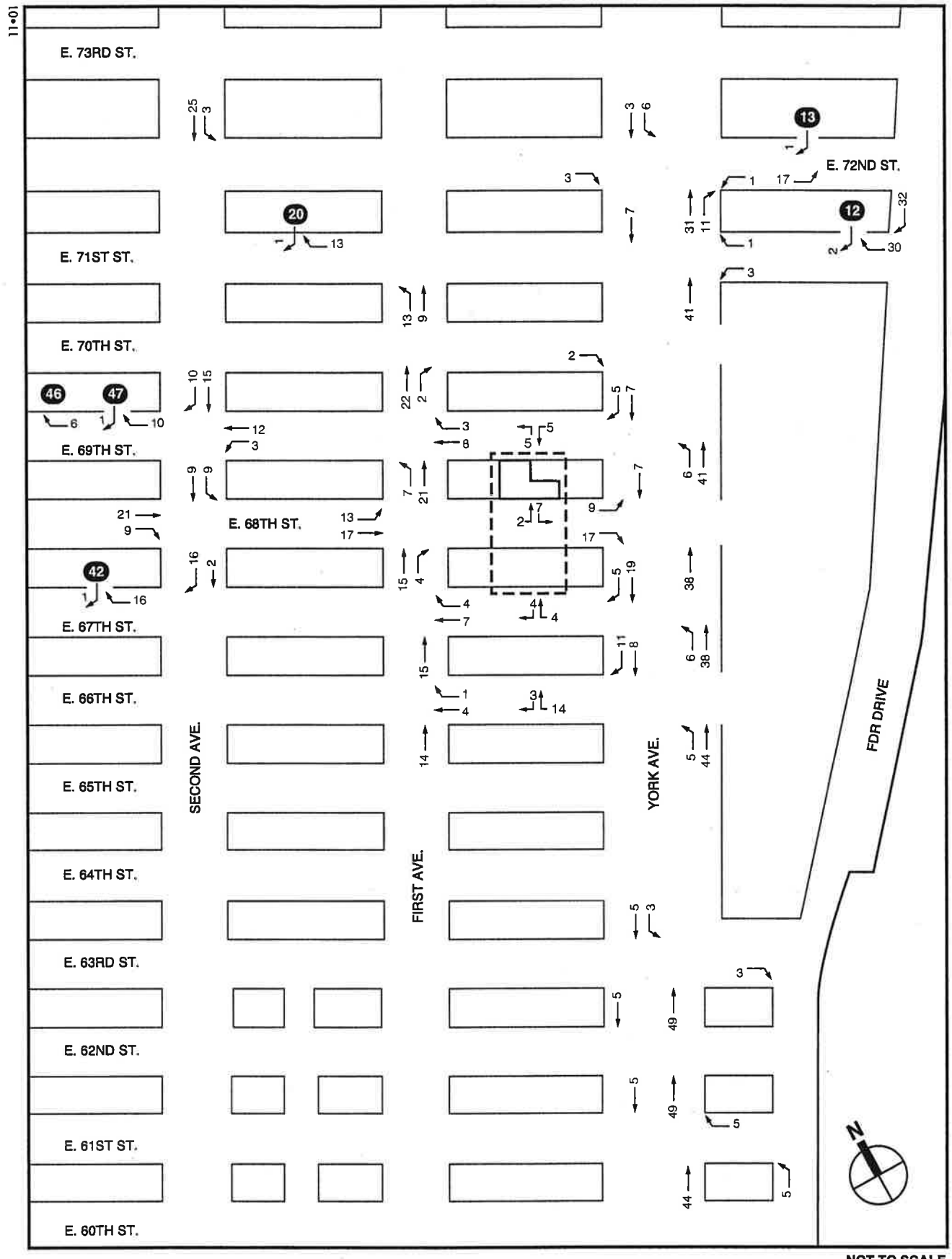
ANALYSIS RESULTS

LEVELS OF SERVICE—2011 FUTURE WITH THE PROPOSED ACTIONS

The proposed development would increase traffic volumes at study area intersections as shown in Figures 12-23 through 12-25. Table 12-19 presents a comparison of 2011 No Action and future conditions with the proposed actions for the weekday AM, midday, and PM peak hours. Locations that have notable service problems of LOS E or worse or v/c ratios greater than 0.9 are listed below, with the levels of service projected for 2011 future with the proposed actions conditions.

AM Peak Hour

- The northbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (35.8 spv) with a v/c ratio at the through-right movement of 0.975;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (113.6 spv) with a v/c ratio of 1.117;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street would operate at LOS F (81.7 spv) with a v/c ratio of 0.965; and
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS F (57.0 spv) with a v/c ratio of 1.088;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (120.2 spv) with a v/c ratio of 1.193;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS D (31.5 spv) with a v/c ratio of 0.989;



Proposed Rezoning Area Boundary

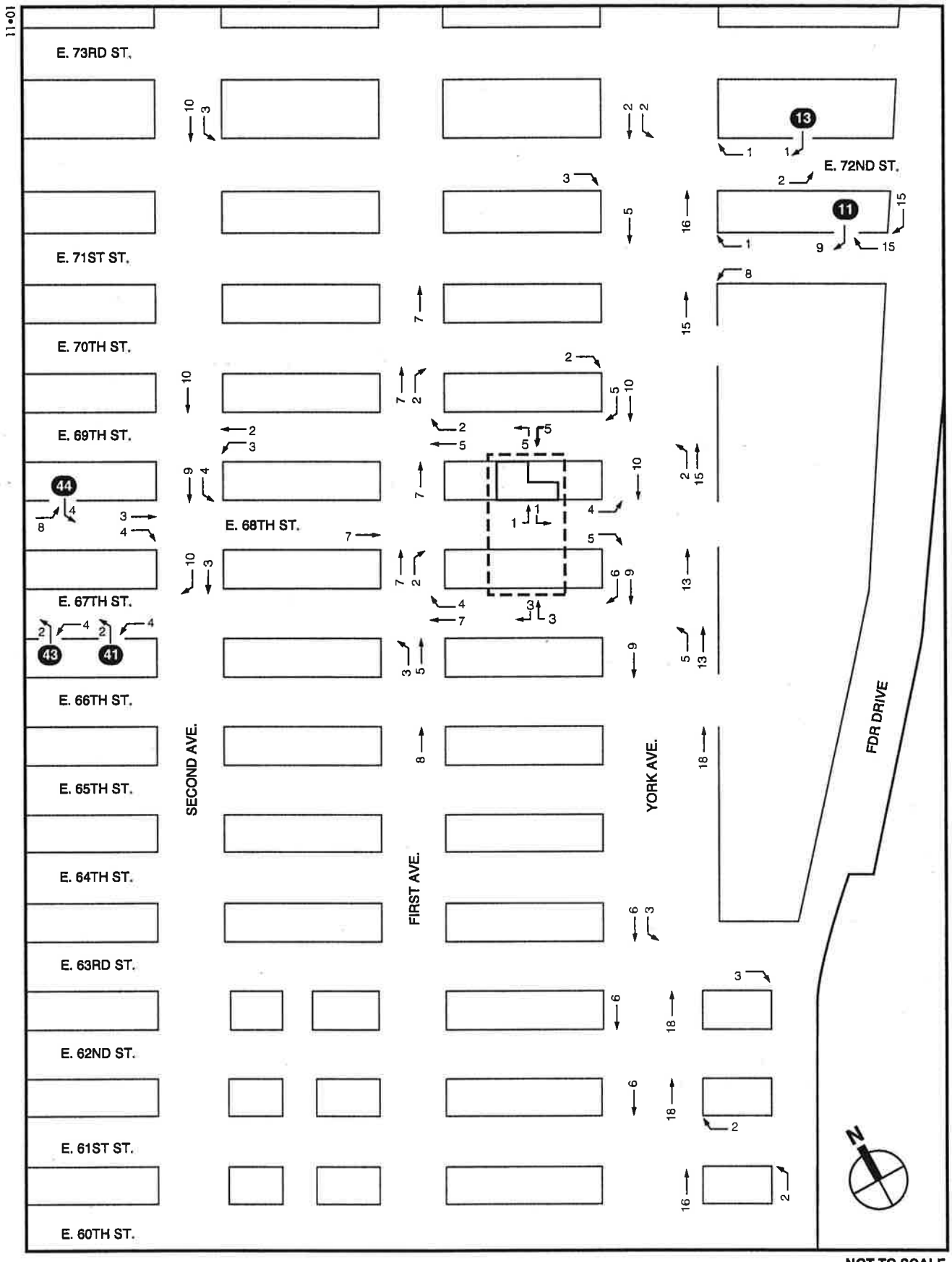
Phase 1 Research Building Site Boundary

42 *Parking Facility*

Full Buildout Project Generated Vehicle Trips • AM Peak Hour

FIGURE 12-20

MEMORIAL SLOAN-KETTERING CANCER CENTER



NOT TO SCALE

Proposed Rezoning Area Boundary

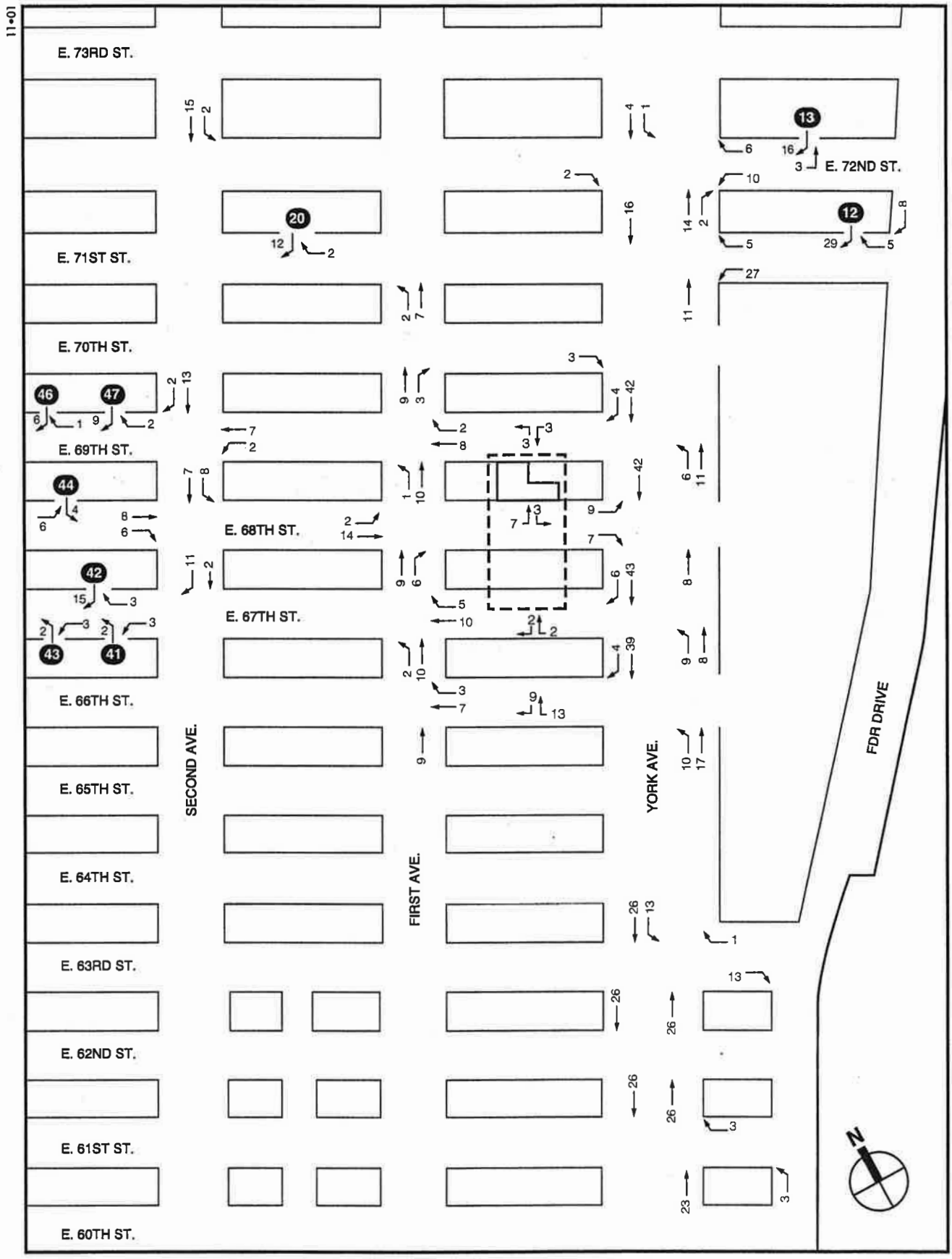
Phase 1 Research Building Site Boundary

42 *Parking Facility*

Full Buildout Project Generated Vehicle Trips • Midday Peak Hour

FIGURE 12-21

MEMORIAL SLOAN-KETTERING CANCER CENTER



Proposed Rezoning Area Boundary

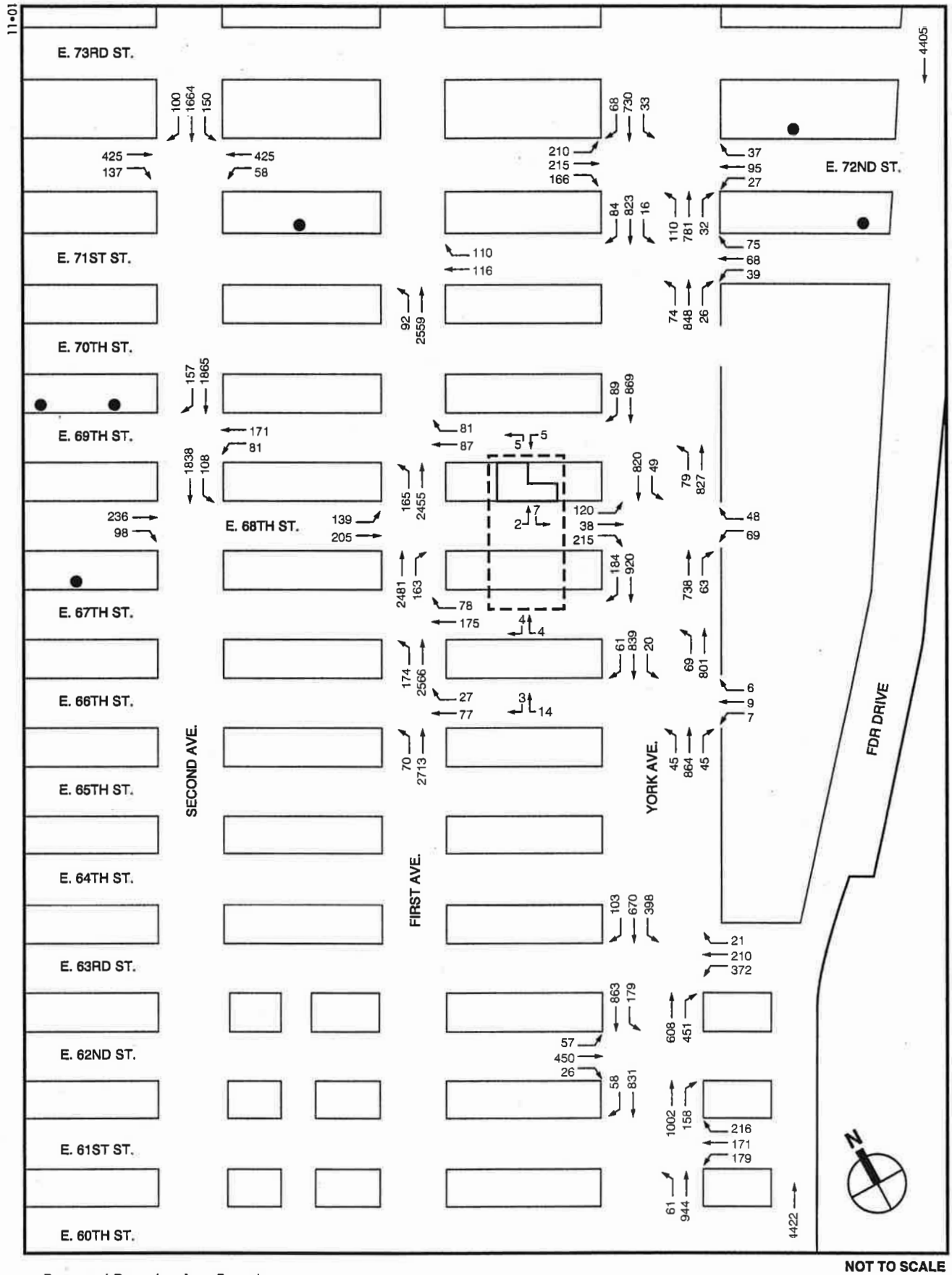
Phase 1 Research Building Site Boundary

42 *Parking Facility*

Full Buildout Project Generated Vehicle Trips • PM Peak Hour

FIGURE 12-22

MEMORIAL SLOAN-KETTERING CANCER CENTER



Proposed Rezoning Area Boundary

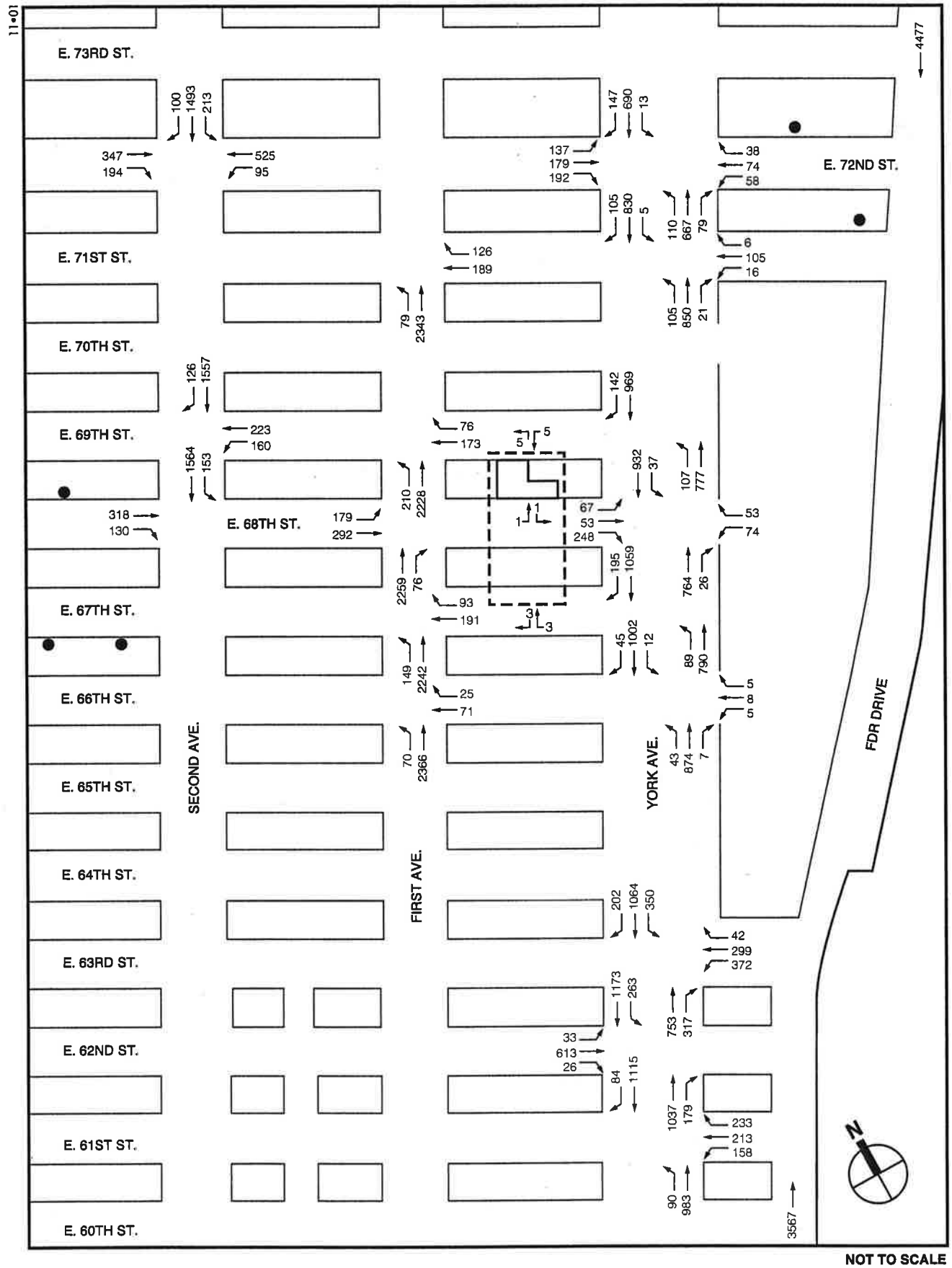
Phase 1 Research Building Site Boundary

Parking Facility

2011 Future with the Proposed Actions Traffic Volumes • AM Peak Hour

FIGURE 12-23

MEMORIAL SLOAN-KETTERING CANCER CENTER



Proposed Rezoning Area Boundary

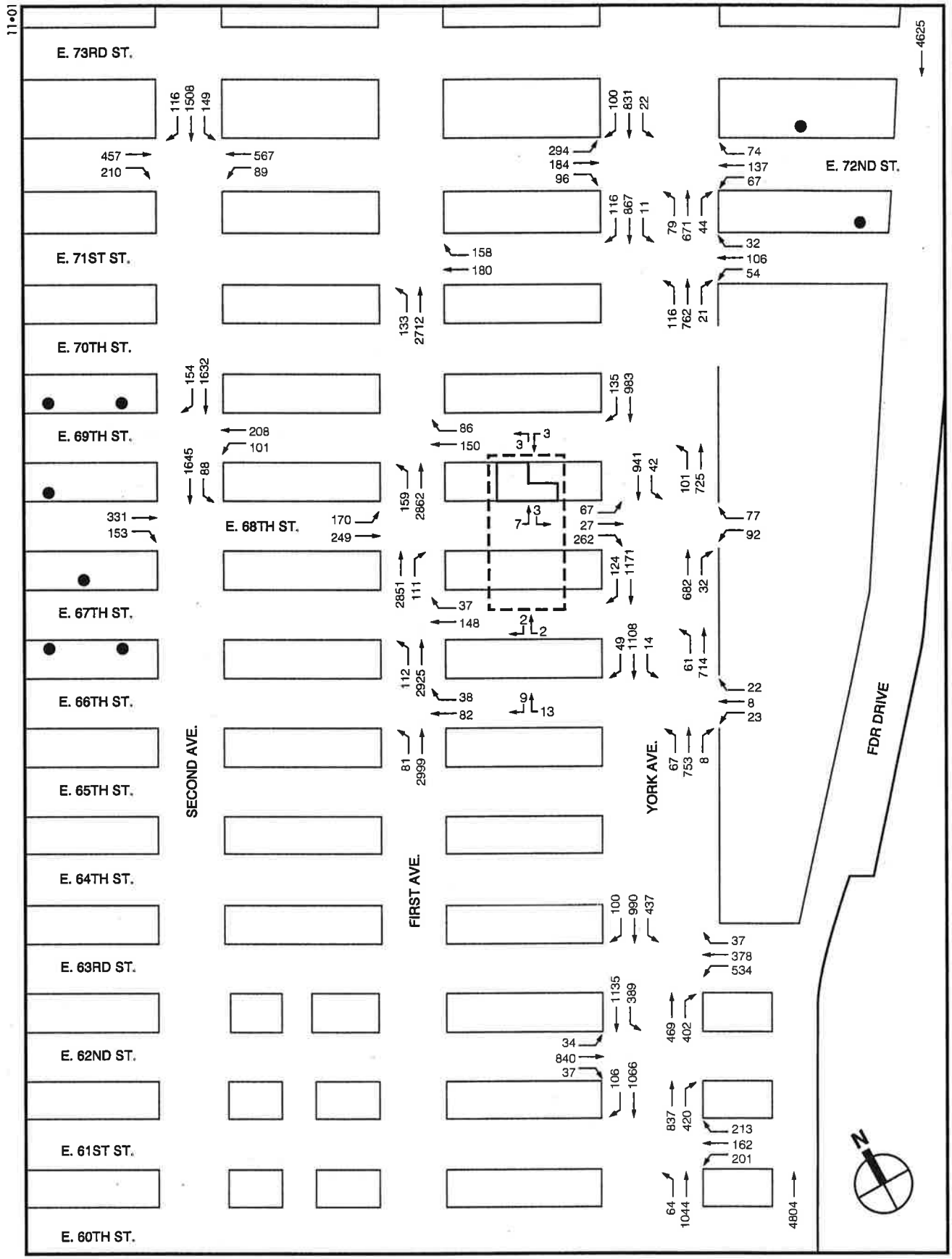
Phase 1 Research Building Site Boundary

Parking Facility

2011 Future with the Proposed Actions Traffic Volumes • Midday Peak Hour

FIGURE 12-24

MEMORIAL SLOAN-KETTERING CANCER CENTER



Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

Parking Facility

2011 Future with the Proposed Actions
Traffic Volumes • PM Peak Hour

FIGURE 12-25

MEMORIAL SLOAN-KETTERING CANCER CENTER

Table 12-19
Signalized Intersections:
2011 No Action and Future with the Proposed Actions Conditions Level of Service Analyses

Intersection	Weekday AM																
	No Action								with the Proposed Actions								
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS		Approach Delay	Approach LOS	Intersection Delay	Intersection LOS
YORK AVENUE & E. 61st STREET																	
Northbound	LT	0.897	12.5	B	12.5	B	12.8	B	LT	0.729	13.0	B		13.0	B	13.1	B
Southbound	TR	0.484	10.1	B	10.1	B			TR	0.486	10.1	B		10.1	B		
Westbound	L	0.297	17.4	C	17.8	C			L	0.297	17.4	C		17.8	C		
	LTR	0.337	17.7	C					LTR	0.339	17.7	C					
	R	0.382	16.3	C					R	0.391	16.4	C					
YORK AVENUE & E. 62nd STREET																	
Northbound	TR	0.926	29.6	D	28.0	D	21.6	C	TR	0.975	35.8	D	+	33.4	D	24.0	C
	R	0.434	17.5	C					R	0.434	17.5	C					
Southbound	LT	0.849	11.2	B	11.2	B			LT	0.851	11.2	B		11.2	B		
Eastbound	LTR	0.561	29.3	D	29.3	D			LTR	0.561	29.3	D		29.3	D		
YORK AVENUE & E. 63rd STREET																	
Northbound	T	0.797	32.3	D	21.2	C	32.7	D	T	0.868	35.5	D		23.6	C	33.9	D
	R	0.694	6.7	B					R	0.694	6.7	B					
Southbound	L	1.111	110.8	F	47.2	E			L	1.117	113.6	F		48.1	E		
	TR	0.627	14.3	B					TR	0.632	14.4	B					
Westbound	L	0.493	24.4	C	24.2	C			L	0.493	24.4	C		24.2	C		
	LTR	0.500	24.2	C					LTR	0.500	24.2	C					
YORK AVENUE & E. 66th STREET																	
Northbound	LTR	0.530	5.1	B	5.1	B	6.7	B	LTR	0.572	5.3	B		5.3	B	7.3	B
Southbound	LTR	0.765	7.8	B	7.8	B			LTR	0.811	8.9	B		8.9	B		
Westbound	LTR	0.138	21.8	C	21.8	C			LTR	0.138	21.8	C		21.8	C		
YORK AVENUE & E. 67th STREET																	
Northbound	LT	0.544	5.2	B	5.2	B	6.6	B	DfL	0.965	81.7	F	+	10.8	B	9.4	B
									T	0.512	5.0	A					
Southbound	TR	0.780	7.8	B	7.8	B			TR	0.798	8.2	B		8.2	B		
YORK AVENUE & E. 68th STREET																	
Northbound	TR	0.369	4.3	A	4.3	A	11.2	B	TR	0.387	4.4	A		4.4	A	11.9	B
Southbound	LT	0.815	9.0	B	9.0	B			LT	0.837	9.8	B		9.8	B		
Eastbound	LTR	0.627	27.4	D	27.4	D			LTR	0.677	28.5	D		28.5	D		
Westbound	L	0.484	26.4	D	24.6	C			L	0.525	27.8	D		25.3	D		
	R	0.166	22.0	C					R	0.166	22.0	C					
YORK AVENUE & E. 69th STREET																	
Northbound	LT	1.020	33.3	D	33.3	D	19.1	C	LT	1.088	57.0	E	+	57.0	E	30.9	D
Southbound	TR	0.654	6.1	B	6.1	B			TR	0.663	6.2	B		6.2	B		
YORK AVENUE & E. 71st STREET																	
Northbound	LTR	1.144	91.5	F	91.5	F	57.4	E	LTR	1.193	120.2	F	+	120.2	F	72.3	F
Southbound	LTR	0.977	29.2	D	29.2	D			LTR	0.989	31.5	D		31.5	D		
Westbound	LTR	0.754	26.4	D	26.4	D			LTR	0.777	29.9	D		29.9	D		
YORK AVENUE & E. 72nd STREET																	
Northbound	LTR	0.581	5.4	B	5.4	B	38.1	D	LTR	0.611	5.6	B		5.6	B	39.1	D
Southbound	LTR	0.728	7.2	B	7.2	B			LTR	0.805	8.9	B		8.9	B		
Eastbound	LTR	1.112	98.1	F	98.1	F			LTR	1.122	103.0	F	+	103.0	F		
Westbound	LTR	1.071	103.3	F	103.3	F			LTR	1.118	125.0	F	+	125.0	F		
FIRST AVENUE & E. 66th STREET																	
Northbound	LT	0.808	8.4	B	8.4	B	8.7	B	LT	0.812	8.4	B		8.4	B	8.8	B
Westbound	TR	0.407	16.6	C	16.6	C			TR	0.430	16.9	C		16.9	C		
FIRST AVENUE & E. 67th STREET																	
Northbound	LT	0.839	8.9	B	8.9	B	13.0	B	LT	0.844	9.0	B		9.0	B	14.5	B
Westbound	TR	0.989	58.2	E	58.2	E			TR	1.036	72.0	F	+	72.0	F		
FIRST AVENUE & E. 68th STREET																	
Northbound	TR	0.845	9.0	B	9.0	B	13.4	B	TR	0.851	9.1	B		9.1	B	17.2	C
Eastbound	LT	0.991	56.3	E	56.3	E			LT	1.087	88.7	F	+	88.7	F		
FIRST AVENUE & E. 69th STREET																	
Northbound	LT	0.816	8.5	B	8.5	B	9.1	B	LT	0.824	8.6	B		8.6	B	9.3	B
Westbound	TR	0.591	19.6	C	19.6	C			TR	0.624	20.4	C		20.4	C		
FIRST AVENUE & E. 71st STREET																	
Northbound	LT	0.514	5.9	B	5.9	B	6.7	B	LT	0.519	6.0	B		6.0	B	6.7	B
Westbound	TR	0.341	15.8	C	15.8	C			TR	0.341	15.8	C		15.8	C		
SECOND AVENUE & E. 68th STREET																	
Southbound	LT	0.577	7.3	B	7.3	B	16.3	C	LT	0.584	7.3	B		7.3	B	24.0	C
Eastbound	TR	1.052	75.4	F	75.4	F			TR	1.153	121.2	F	+	121.2	F		
SECOND AVENUE & E. 69th STREET																	
Southbound	TR	0.596	6.9	B	6.9	B	10.6	B	TR	0.605	7.0	B		7.0	B	11.9	B
Westbound	LT	0.904	38.9	D	38.9	D			LT	0.957	48.4	E	+	48.4	E		
SECOND AVENUE & E. 72nd STREET																	
Southbound	LTR	0.629	9.2	B	9.2	B	12.8	B	LTR	0.639	9.3	B		9.3	B	12.9	B
Eastbound	TR	0.632	16.5	C	16.5	C			TR	0.632	16.5	C		16.5	C		
Westbound	LT	0.812	22.0	C	22.0	C			LT	0.812	22.0	C		22.0	C		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.
+ = Significant Project Impact.

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Table 12-19 (continued)
Signalized Intersections:
2011 No Action and Future with Proposed Actions Conditions Level of Service Analyses

	Weekday Midday															
	No Action								with the Proposed Actions							
					Approach		Intersection						Approach		Intersection	
Intersection	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS
YORK AVENUE & E. 61st STREET																
Northbound	DfL	1.188	173.6	F	27.3	D	17.6	C	DfL	1.188	173.6	F	27.3	D	17.6	C
	T	0.764	13.7	B					T	0.777	13.9	B				
Southbound	TR	0.676	12.1	B	12.1	B			TR	0.679	12.1	B	12.1	B		
Westbound	L	0.209	10.8	B	11.3	B			L	0.209	10.8	B	11.4	B		
	LTR	0.298	11.3	B					LTR	0.299	11.3	B				
	R	0.334	11.7	B					R	0.336	11.7	B				
YORK AVENUE & E. 62nd STREET																
Northbound	TR	0.995	35.2	D	32.2	D	43.4	E	TR	1.012	39.3	D	35.8	D	45.2	E
	R	0.466	14.6	B					R	0.466	14.6	B				
Southbound	LT	1.106	61.5	F	61.5	F			LT	1.109	62.8	F	62.8	F		
Eastbound	LTR	0.703	23.4	C	23.4	C			LTR	0.703	23.4	C	23.4	C		
YORK AVENUE & E. 63rd STREET																
Northbound	T	0.891	28.7	D	22.0	C	29.8	D	T	0.913	30.4	D	23.4	C	30.9	D
	R	0.451	5.8	B					R	0.451	5.8	B				
Southbound	L	1.101	98.7	F	37.6	D			L	1.110	102.8	F	+ 39.0	D		
	TR	0.952	20.8	C					TR	0.957	21.4	C				
Westbound	L	0.619	24.2	C	23.8	C			L	0.621	24.3	C	23.8	C		
	LTR	0.656	23.6	C					LTR	0.655	23.6	C				
YORK AVENUE & E. 66th STREET																
Northbound	LTR	0.922	13.7	B	13.7	B	11.0	B	LTR	0.940	15.5	C	15.5	C	12.0	B
Southbound	LTR	0.845	8.6	B	8.6	B			LTR	0.853	8.9	B	8.9	B		
Westbound	LTR	0.078	16.1	C	16.1	C			LTR	0.078	16.1	C	16.1	C		
YORK AVENUE & E. 67th STREET																
Northbound	DfL	1.112	121.9	F	89.1	F	41.9	E	DfL	1.188	166.0	F	+ 102.7	F	47.9	E
	T	1.145	85.6	F					T	1.163	95.6	F	+			
Southbound	TR	0.869	9.1	B	9.1	B			TR	0.861	9.5	B	9.5	B		
YORK AVENUE & E. 68th STREET																
Northbound	TR	0.526	4.4	A	4.4	A	9.8	B	TR	0.535	4.4	A	4.4	A	10.1	B
Southbound	LT	0.838	8.6	B	8.6	B			LT	0.855	9.2	B	9.2	B		
Eastbound	LTR	0.608	20.7	C	20.7	C			LTR	0.623	21.0	C	21.0	C		
Westbound	L	0.517	20.9	C	19.2	C			L	0.530	21.3	C	19.4	C		
	R	0.201	16.8	C					R	0.201	16.8	C				
YORK AVENUE & E. 69th STREET																
Northbound	LT	0.981	22.5	C	22.5	C	13.0	B	LT	1.006	28.0	D	28.0	D	15.5	C
Southbound	TR	0.686	5.5	B	5.5	B			TR	0.696	5.6	B	5.6	B		
YORK AVENUE & E. 71st STREET																
Northbound	LTR	1.140	85.1	F	85.1	F	47.5	F	LTR	1.157	94.4	F	+ 94.4	F	52.1	E
Southbound	LTR	0.838	13.0	B	13.0	B			LTR	0.843	13.2	B	13.2	B		
Westbound	LTR	0.450	15.1	C	15.1	C			LTR	0.496	15.7	C	15.7	C		
YORK AVENUE & E. 72nd STREET																
Northbound	LTR	1.154	93.9	F	93.9	F	44.9	E	LTR	1.176	106.7	F	+ 106.7	F	50.1	E
Southbound	LTR	0.818	12.5	B	12.5	B			LTR	0.839	13.3	B	13.3	B		
Eastbound	LTR	0.850	25.0	C	25.0	C			LTR	0.856	25.4	D	25.4	D		
Westbound	LTR	0.723	23.2	C	23.2	C			LTR	0.730	23.6	C	23.6	C		
FIRST AVENUE & E. 66th STREET																
Northbound	LT	0.721	7.4	B	7.4	B	7.7	B	LT	0.723	7.4	B	7.4	B	7.8	B
Westbound	TR	0.371	16.2	C	16.2	C			TR	0.371	16.2	C	16.2	C		
FIRST AVENUE & E. 67th STREET																
Northbound	LT	0.700	7.2	B	7.2	B	15.5	C	LT	0.702	7.2	B	7.2	B	17.8	C
Westbound	TR	1.072	84.9	F	84.9	F			TR	1.115	103.8	F	+ 103.8	F		
FIRST AVENUE & E. 68th STREET																
Northbound	TR	0.677	7.0	B	7.0	B	21.1	C	TR	0.680	7.0	B	7.0	B	22.3	C
Eastbound	LT	1.105	91.6	F	91.6	F			LT	1.119	98.1	F	+ 98.1	F		
FIRST AVENUE & E. 69th STREET																
Northbound	LT	0.719	7.4	B	7.4	B	9.0	B	LT	0.721	7.4	B	7.4	B	9.1	B
Westbound	TR	0.766	25.9	D	25.9	D			TR	0.787	27.2	D	27.2	D		
FIRST AVENUE & E. 71st STREET																
Northbound	LT	0.661	6.9	B	6.9	B	8.2	B	LT	0.663	6.9	B	6.9	B	8.2	B
Westbound	TR	0.500	17.2	C	17.2	C			TR	0.500	17.2	C	17.2	C		
SECOND AVENUE & E. 68th STREET																
Southbound	LT	0.668	8.0	B	8.0	B	23.8	C	LT	0.673	8.1	B	8.1	B	26.6	D
Eastbound	TR	1.099	88.0	F	88.0	F			TR	1.119	97.4	F	+ 97.4	F		
SECOND AVENUE & E. 69th STREET																
Southbound	TR	0.647	7.3	B	7.3	B	23.5	C	TR	0.651	7.4	B	7.4	B	24.8	C
Westbound	LT	1.099	88.8	F	88.8	F			LT	1.112	94.6	F	+ 94.8	F		
SECOND AVENUE & E. 72nd STREET																
Southbound	LTR	0.768	10.8	B	10.8	B	15.8	C	LTR	0.774	10.9	B	10.9	B	15.9	C
Eastbound	TR	0.605	16.1	C	16.1	C			TR	0.605	16.1	C	16.1	C		
Westbound	LT	0.919	30.5	D	30.5	D			LT	0.919	30.5	D	30.5	D		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.
+ = Significant Project Impact.

Table 12-19 (continued)
Signalized Intersections:
2011 No Action and Future with the Proposed Actions Conditions Level of Service Analyses

Intersection	Weekday PM																
	No Action								with the Proposed Actions								
					Approach		Intersection						Approach		Intersection		
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS		Delay	LOS	Delay	LOS
YORK AVENUE & E. 61st STREET																	
Northbound	DfL	1.058	133.1	F	19.9	C	15.8	C	DfL	1.067	137.4	F	+	20.7	C	16.1	C
	T	0.736	13.2	B					T	0.754	13.5	B					
Southbound	TR	0.582	11.0	B	11.0	B			TR	0.584	11.1	B		11.1	B		
Westbound	L	0.319	17.6	C	17.7	C			L	0.319	17.6	C		17.7	C		
	LTR	0.323	17.5	C					LTR	0.324	17.5	C					
	R	0.362	18.0	C					R	0.369	18.1	C					
YORK AVENUE & E. 62nd STREET																	
Northbound	TR	0.780	22.5	C	43.8	E	52.4	E	TR	0.805	23.2	C		43.9	E	54.2	E
	R	1.101	87.2	F					R	1.101	87.2	F					
Southbound	LT	1.104	81.2	F	81.2	F			LT	1.113	85.3	F	+	85.3	F		
Eastbound	LTR	0.979	49.0	E	49.0	E			LTR	0.979	49.0	E		49.0	E		
YORK AVENUE & E. 63rd STREET																	
Northbound	T	0.595	28.1	D	17.5	C	24.8	C	T	0.632	28.8	D		18.1	C	27.3	D
	R	0.571	5.2	B					R	0.571	5.2	B					
Southbound	L	1.117	90.0	F	27.0	D			L	1.150	107.2	F	+	32.2	D		
	TR	0.804	1.9	A					TR	0.822	2.1	A					
Westbound	L	0.695	28.9	D	26.0	D			L	0.697	29.0	D		26.0	D		
	LTR	0.709	27.8	D					LTR	0.708	27.8	D					
YORK AVENUE & E. 66th STREET																	
Northbound	DfL	0.796	40.3	E	7.1	B	11.8	B	DfL	0.944	76.7	F	+	10.3	B	16.0	C
	TR	0.447	4.8	A					TR	0.458	4.7	A					
Southbound	LTR	0.928	14.0	B	14.0	B			LTR	0.972	19.2	C		19.2	C		
Westbound	LTR	0.340	23.8	C	23.8	C			LTR	0.340	23.8	C		23.8	C		
YORK AVENUE & E. 67th STREET																	
Northbound	DfL	0.776	37.7	D	61.4	F	29.3	D	DfL	0.917	68.7	F	+	69.5	F	33.0	D
	T	1.096	83.2	F					T	1.110	89.8	F	+				
Southbound	TR	0.854	9.6	B	9.6	B			TR	0.886	11.0	B		11.0	B		
YORK AVENUE & E. 68th STREET																	
Northbound	TR	0.514	5.0	A	5.0	A	12.3	B	TR	0.520	5.0	A		5.0	A	13.3	B
Southbound	LT	0.841	9.8	B	9.8	B			LT	0.865	11.8	B		11.8	B		
Eastbound	LTR	0.602	27.0	D	27.0	D			LTR	0.629	27.5	D		27.5	D		
Westbound	L	0.609	29.9	D	26.8	D			L	0.636	31.2	D		27.5	D		
	R	0.279	23.0	C					R	0.279	23.0	C					
YORK AVENUE & E. 69th STREET																	
Northbound	LT	1.025	35.4	D	35.4	D	19.3	C	LT	1.068	49.8	E	+	49.8	E	25.5	D
Southbound	TR	0.741	7.1	B	7.1	B			TR	0.772	7.6	B		7.6	B		
YORK AVENUE & E. 71st STREET																	
Northbound	LTR	1.119	78.3	F	78.3	F	46.7	E	LTR	1.134	85.9	F	+	85.9	F	53.1	E
Southbound	LTR	0.964	26.8	D	26.8	D			LTR	0.979	29.3	D		29.3	D		
Westbound	LTR	0.503	20.1	C	20.1	C			LTR	0.626	22.9	C		22.9	C		
YORK AVENUE & E. 72nd STREET																	
Northbound	LTR	0.982	21.1	C	21.1	C	40.5	E	LTR	0.982	24.6	C		24.6	C	55.2	E
Southbound	LTR	0.800	8.5	B	8.5	B			LTR	0.819	9.1	B		9.1	B		
Eastbound	DfL	1.092	103.9	F	73.8	F			DfL	1.092	103.9	F		74.0	F		
	TR	0.860	42.0	E					TR	0.864	42.5	E					
Westbound	LTR	1.161	140.4	F	140.4	F			LTR	1.324	261.5	F	+	261.5	F		
FIRST AVENUE & E. 66th STREET																	
Northbound	LT	0.724	7.3	B	7.3	B	7.7	B	LT	0.726	7.4	B		7.4	B	7.7	B
Westbound	TR	0.398	16.5	C	16.5	C			TR	0.429	16.9	C		16.9	C		
FIRST AVENUE & E. 67th STREET																	
Northbound	LT	0.739	7.5	B	7.5	B	8.2	B	LT	0.742	7.5	B		7.5	B	8.4	B
Westbound	TR	0.849	21.2	C	21.2	C			TR	0.706	23.3	C		23.3	C		
FIRST AVENUE & E. 68th STREET																	
Northbound	TR	0.753	7.6	B	7.6	B	19.0	C	TR	0.757	7.7	B		7.7	B	22.0	C
Eastbound	LT	1.113	92.8	F	92.8	F			LT	1.152	112.1	F	+	112.1	F		
FIRST AVENUE & E. 69th STREET																	
Northbound	LT	0.739	7.5	B	7.5	B	9.0	B	LT	0.742	7.5	B		7.5	B	9.4	B
Westbound	TR	0.817	29.8	D	29.8	D			TR	0.854	33.0	D		33.0	D		
FIRST AVENUE & E. 71st STREET																	
Northbound	LT	0.557	6.2	B	6.2	B	7.6	B	LT	0.559	6.2	B		6.2	B	7.6	B
Westbound	TR	0.562	18.0	C	18.0	C			TR	0.562	18.0	C		18.0	C		
SECOND AVENUE & E. 68th STREET																	
Southbound	LT	0.481	8.7	B	8.7	B	21.8	C	LT	0.486	8.7	B		8.7	B	25.8	D
Eastbound	TR	1.100	86.7	F	86.7	F			TR	1.138	104.8	F	+	104.8	F		
SECOND AVENUE & E. 69th STREET																	
Southbound	TR	0.574	6.8	B	6.8	B	11.5	B	TR	0.578	6.8	B		6.8	B	12.2	B
Westbound	LT	0.940	44.9	E	44.9	E			LT	0.965	50.0	E	+	50.0	E		
SECOND AVENUE & E. 72nd STREET																	
Southbound	LTR	0.609	9.1	B	9.1	B	22.7	C	LTR	0.615	9.1	B		9.1	B	22.8	C
Eastbound	TR	0.743	18.8	C	18.8	C			TR	0.743	18.8	C		18.8	C		
Westbound	LT	1.057	83.1	F	83.1	F			LT	1.057	83.1	F		83.1	F		

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.
+ = Significant Project Impact.

- The eastbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (103.0 spv) with a v/c ratio of 1.122;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (125.0 spv) with a v/c ratio of 1.118;
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS F (72.0 spv) with a v/c ratio of 1.036;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (88.7 spv) with a v/c ratio of 1.087; and
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (121.2 spv) with a v/c ratio of 1.153;
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS E (48.4 spv) with a v/c ratio of 0.957.

Midday Peak Hour

- The northbound de facto left-turn movement at the intersection of York Avenue and East 61st Street would operate at LOS F (173.6 spv) with a v/c ratio at the defacto left-turn movement of 1.188;
- The northbound through-right movement at the intersection of York Avenue and East 62nd Street would operate at LOS E (39.3 spv) with a v/c ratio of 1.012;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS F (62.8 spv) with a v/c ratio of 1.109;
- The northbound through-movement at the intersection of York Avenue and East 63rd Street would operate at LOS D (30.4 spv) with a v/c ratio of 0.913.
- The southbound approach at the intersection of York Avenue and East 63rd Street, where the through-right movement would operate at LOS C (21.4 spv) with a v/c ratio of 0.957 and the left-turn movement would operate at LOS F (102.8 spv) with a v/c ratio of 1.110;
- The northbound approach at the intersection of York Avenue and East 66th Street would operate at LOS C (15.5 spv) with a v/c ratio of 0.940;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street would operate at LOS F (166.0 spv) with a v/c ratio of 1.188;
- The northbound through movement at the intersection of York Avenue at East 67th Street would operate at LOS F (95.6 spv) with a v/c ratio of 1.163;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS D (28.0 spv) with a v/c ratio of 1.006;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (94.4 spv) with a v/c ratio of 1.157;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (106.7 spv) with a v/c ratio of 1.176;

- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS F (103.8 spv) with a v/c ratio of 1.115;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (98.1 spv) with a v/c ratio of 1.119;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (97.4 spv) with a v/c ratio of 1.119;
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS F (94.6 spv) with a v/c ratio of 1.112; and
- The westbound approach at the intersection of Second Avenue at East 72nd Street would operate at LOS D (30.5 spv) with a v/c ratio of 0.919.

PM Peak Hour

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street, which would operate at LOS F (137.4 spv) with a v/c ratio of 1.067;
- The northbound right-turn movement at the intersection of York Avenue and East 62nd Street would operate at LOS F (87.2 spv) with a v/c ratio of 1.101;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS F (65.3 spv) with a v/c ratio of 1.113;
- The eastbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (49.0 spv) with a v/c ratio of 0.979;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (107.2 spv) with a v/c ratio of 1.150;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 66th Street would operate at LOS F (76.7 spv) with a v/c ratio of 0.944;
- The southbound approach at the intersection of York Avenue and East 66th Street would operate at LOS C (19.2 spv) with a v/c ratio of 0.972;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street would operate at LOS F (68.7 spv) with a v/c ratio of 0.917;
- The northbound through movement at the intersection of York Avenue and East 67th Street would operate at LOS F (69.6 spv) with a v/c ratio of 1.110;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS F (49.8 spv) with a v/c ratio of 1.068;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (85.9 spv) with a v/c ratio of 1.134;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS D (29.3 spv) with a v/c ratio of 0.979;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS D (24.6 spv) with a v/c ratio of 0.982;

- The eastbound defacto left-turn movement at the intersection of York Avenue and East 72nd Street would operate at LOS F (103.9 spv) with a v/c ratio of 1.092;
- The eastbound through-right movements at the intersection of York Avenue and East 72nd Street would operate at LOS E (42.5 spv) with a v/c ratio of 0.864 in 2011;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (261.5 spv) with a v/c ratio of 1.324;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (112.1 spv) with a v/c ratio of 1.152;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (104.6 spv) with a v/c ratio of 1.138; and
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS E (50.0 spv) with a v/c ratio of 0.965; and
- The westbound approach at the intersection of Second Avenue and East 72nd Street would operate at LOS F (63.1 spv) with a v/c ratio of 1.057.

IMPACT CRITERIA FOR SIGNALIZED INTERSECTIONS

Impact criteria is described above, under "The Future with the Proposed Actions—2007."

IMPACTED LOCATIONS—2011 FUTURE CONDITIONS WITH THE PROPOSED ACTIONS

Based on standards set forth in the *CEQR Technical Manual*, the increases in traffic generated by the proposed actions would cause significant impacts at the locations listed below:

AM Peak Period

- The northbound through-right movement at the intersection of York Avenue and East 62nd Street, where delay would increase from 29.6 spv (LOS D) with a v/c ratio of 0.926 in 2011 No Action conditions to 35.8 spv (LOS D) with a v/c ratio of 0.975 in 2011 with the proposed actions;
- The northbound left-through movement at the intersection of York Avenue and East 67th Street, where delay would increase from 5.2 spv (LOS B) with a v/c ratio of 0.544 in 2011 No Action conditions to 81.7 spv (LOS F) with a v/c ratio of 0.965 at the defacto left-turn movement and to 5.0 spv (LOS A) with a v/c ratio of 0.512 at the through movement in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 69th Street, where delay would increase from 33.3 spv (LOS D) with a v/c ratio of 1.020 in 2011 No Action conditions to 57.0 spv (LOS E) with a v/c ratio of 1.088 in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 91.5 spv (LOS F) with a v/c ratio of 1.144 in 2011 No Action conditions to 120.2 spv (LOS F) with a v/c ratio of 1.193 in 2011 with the proposed actions;
- The eastbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 98.1 spv (LOS F) with a v/c ratio of 1.112 in 2011 No Action conditions to 103.0 (LOS F) with a v/c ratio of 1.122 in 2011 with the proposed actions;

- The westbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 103.3 spv (LOS F) with a v/c ratio of 1.071 in 2011 No Action conditions to 125.0 spv (LOS F) with a v/c ratio of 1.118 in 2011 with the proposed actions;
- The westbound approach at the intersection of First Avenue at East 67th Street, where delay would increase from 58.2 spv (LOS E) with a v/c ratio of 0.989 in 2011 No Action conditions to 72.0 spv (LOS F) with a v/c ratio of 1.036 in 2011 with the proposed actions;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 56.3 spv (LOS E) with a v/c ratio of 0.991 in 2011 No Action conditions to 88.7 spv (LOS F) with a v/c ratio of 1.087 in 2011 with the proposed actions;
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 75.4 spv (LOS F) with a v/c ratio of 1.052 in 2011 No Action conditions to 121.2 spv (LOS F) with a v/c ratio of 1.153 in 2011 with the proposed actions; and
- The westbound approach at the intersection of Second Avenue and East 69th Street, where delay would increase from 38.9 spv (LOS D) with a v/c ratio of 0.904 in 2011 No Action conditions to 48.4 spv (LOS E) with a v/c ratio of 0.957 in 2011 with the proposed actions.

Midday Peak Period

- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street, where delay would increase from 98.7 spv (LOS F) with a v/c ratio of 1.101 in 2011 No Action conditions to 102.8 spv (LOS F) with a v/c ratio of 1.110 in 2011 with the proposed actions;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street, where delay would increase from 121.9 spv (LOS F) with a v/c ratio of 1.112 in 2011 No Action conditions to 166.0 spv (LOS F) with a v/c ratio of 1.188 in 2011 with the proposed actions;
- The northbound through movement at the intersection of York Avenue and East 67th Street, where delay would increase from 85.6 spv (LOS F) with a v/c ratio of 1.145 in 2011 No Action conditions to 95.6 spv (LOS F) with a v/c ratio of 1.163 in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 85.1 spv (LOS F) with a v/c ratio of 1.140 in 2011 No Action conditions to 94.4 spv (LOS F) with a v/c ratio of 1.157 in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 93.9 spv (LOS F) with a v/c ratio of 1.154 in 2011 No Action conditions to 106.7 (LOS F) with a v/c ratio of 1.176 in 2011 with the proposed actions;
- The westbound approach at the intersection of First Avenue at East 67th Street, where delay would increase from 84.9 spv (LOS F) with a v/c ratio of 1.072 in 2011 No Action conditions to 103.8 spv (LOS F) with a v/c ratio of 1.115 in 2011 with the proposed actions;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 91.6 spv (LOS F) with a v/c ratio of 1.105 in 2011 No Action conditions to 98.1 spv (LOS F) with a v/c ratio of 1.119 in 2011 with the proposed actions;

- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 88.0 spv (LOS F) with a v/c ratio of 1.099 in 2011 No Action conditions to 97.4 spv (LOS F) with a v/c ratio of 1.119 in 2011 with the proposed actions; and
- The westbound approach at the intersection of Second Avenue and East 69th Street, where delay would increase from 88.6 spv (LOS F) with a v/c ratio of 1.099 in 2011 No Action conditions to 94.6 spv (LOS F) with a v/c ratio of 1.112 in 2011 with the proposed actions.

PM Peak Period

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street, where delay would increase from 133.1 spv (LOS F) with a v/c ratio of 1.058 in 2011 No Action conditions to 137.4 spv (LOS F) with a v/c ratio of 1.067 in 2011 with the proposed actions;
- The southbound approach at the intersection of York Avenue and East 62nd Street, where delay would increase from 61.2 spv (LOS F) with a v/c ratio of 1.104 in 2011 No Action conditions to 65.3 spv (LOS F) with a v/c ratio of 1.113 in 2011 with the proposed actions;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street, where delay would increase from 90.0 (LOS F) with a v/c ratio of 1.117 in 2011 No Action conditions to 107.2 spv (LOS F) with a v/c ratio of 1.150 in 2011 with the proposed actions;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 66th Street, where delay would increase from 40.3 spv (LOS E) with a v/c ratio of 0.796 in 2011 No Action conditions to 76.7 spv (LOS F) with a v/c ratio of 0.944 in 2011 with the proposed actions;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street, where delay would increase from 37.7 spv (LOS D) with a v/c ratio of 0.778 in 2011 No Action conditions to 68.7 spv (LOS F) with a v/c ratio of 0.917 in 2011 with the proposed actions;
- The northbound through movement at the intersection of York Avenue and East 67th Street, where delay would increase from 63.2 (LOS F) with a v/c ratio of 1.096 in 2011 No Action conditions to 69.6 (LOS F) with a v/c ratio of 1.110 in 2011 with the proposed actions;
- The northbound left-through movements at the intersection of York Avenue and East 69th Street, where delay would increase from 35.4 spv (LOS D) with a v/c ratio of 1.025 in 2011 No Action conditions to 49.8 spv (LOS E) with a v/c ratio of 1.068 at the through movement in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 78.3 spv (LOS F) with a v/c ratio of 1.119 in 2011 No Action conditions to 85.9 spv (LOS F) with a v/c ratio of 1.134 in 2011 with the proposed actions;
- The westbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 140.4 spv (LOS F) with a v/c ratio of 1.161 in 2011 No Action conditions to 261.5 spv (LOS F) with a v/c ratio of 1.324 in 2011 with the proposed actions;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 92.8 spv (LOS F) with a v/c ratio of 1.113 in 2011 No Action conditions to 112.1 spv (LOS F) with a v/c ratio of 1.152 in 2011 with the proposed actions;

- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 86.7 spv (LOS F) with a v/c ratio of 1.100 in 2011 No Action conditions to 104.6 (LOS F) with a v/c ratio of 1.138 in 2011 with the proposed actions; and
- The westbound approach at the intersection of Second Avenue and East 69th Street, where delay would increase from 44.9 spv (LOS E) with a v/c ratio of 0.940 in 2011 No Action conditions to 50.0 spv (LOS E) with a v/c ratio of 0.965 in 2011 with the proposed actions.

Recommended mitigation measures for these impacts are presented in Chapter 17, "Mitigation."

PARKING SUPPLY AND UTILIZATION

In addition to the background growth rate of 5.0 percent, utilization of the study area's off-street parking facilities was assumed to increase with project-generated demand. As shown in Table 12-20, the projected conditions indicate that the average overall utilization rate of the off-street parking facilities would increase to approximately 94 percent, with 431 available spaces during the midday peak period, in 2011 with the proposed actions.

Table 12-20
2011 Full Buildout
Weekday Midday Off-Street Parking Utilization

2001 Existing Conditions

Capacity (spaces)	7,384
Demand (spaces)*	6,204
Available Spaces*	1,033
Utilization	84%

2011 No-Action Conditions

Capacity (spaces)	7,384
2001 Existing	6,204
0.5 % per year growth	310
Parking Demand	
No Build Site 1: MSKCC Outpatient Facility	0
No Build Site 2: MSKCC Infill Project	0
No Build Site 3: Caspary-Hospital for Special Surgery	4
No Build Site 4: The Pearl/400 East 61st Street	17
No Build Site 5: 1234 First Avenue	36
No Build Site 6: 420-34 East 61st Street	66
No Build Site 7: 1117-1125 York Avenue	69
No Build Site 8: 403-407 East 61st Street	13
No Build Site 9: 409-415 East 61st Street	19
No Build Site 10: Rockefeller University Lab Building	0
Total Demand	6,738
Available Spaces	646
Utilization	91%

2011 Future With Proposed Action Conditions

Capacity (spaces)	7,384
2011 No Action Demand	6,738
Parking Demand	
2011 Proposed Action	215
Total Demand	6,953
Available Spaces	431
Utilization	94%

Note:
* Does not include utilization/availability information for parking facilities 25, 28, and 36, since the information for midday peak period was unavailable

❖

A. INTRODUCTION

The proposed actions would result in the additional generation of trips by all modes of transportation to and from the project site; the effects of these trips on traffic and parking conditions in the study area are addressed in Chapter 12, "Traffic and Parking." This chapter quantitatively examines the potential impact of the trips associated with the 2007 and 2011 Future with the Proposed Actions conditions on pedestrian and subway service levels in the study area.

As explained in the DEIS, the proposed actions considered in that document were not expected to result in any significant impacts to pedestrian facilities in 2007 or 2011. The analysis in the DEIS included trips generated by MSKCC; however, development on the block bounded by East 66th and East 67th Streets between York and First Avenues (south block) would no longer occur as part of the proposed actions analyzed for the FEIS. Because the proposed actions would result in substantially fewer person-trips (and therefore, fewer pedestrian trips) in Phase 2 than those analyzed for the DEIS, the proposed actions considered in this FEIS would not result in any significant impacts to pedestrian facilities in either 2007 or 2011.

The proposed actions would result in significant impacts to subway elements at the intersection of East 68th Street and Lexington Avenue in both the 2007 and 2011 analysis years; proposed mitigation measures for these elements are presented in Chapter 17, "Mitigation."

The proposed actions would result in fewer than 100 peak-hour bus transit riders to individual bus lines in the study area in 2007 and 2011. This is below the *City Environmental Quality Review (CEQR) Technical Manual* threshold requiring quantified analyses. Below this threshold, impacts to bus service are unlikely. Furthermore, in cases when bus lines exceed capacity, New York City Transit (NYCT) evaluates service conditions and adds additional buses to accommodate demand. Therefore, no significant impacts to bus operations during the peak hours with the proposed actions are anticipated.

B. EXISTING CONDITIONS

PEDESTRIAN CONDITIONS

ANALYSIS METHODOLOGY

Using the methodologies presented in the *Highway Capacity Manual* (*HCM*), Special Report 209 (Transportation Research Board, 1985), calculations were made to determine the adequacy of sidewalk, crosswalk, and corner reservoir capacities in relation to the demand imposed on them. Sidewalks were analyzed in terms of pedestrian flow. The calculation of the average pedestrians per minute per foot of effective walkway width is the basis for level of service (LOS) analysis. However, walkways are directly influenced by other elements of the transportation network and, to more accurately estimate the dynamics of walking, a "platoon" factor is applied in the calculation of pedestrian flow. This reflects the tendency of pedestrians

to move in congregated groups (platoons), and generally results in a LOS one level poorer than average flow rates.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of traffic signals. Street corners must provide sufficient space for a mix of standing pedestrians (queued to cross a street) and circulating pedestrians (crossing the other street or moving around the corner). *HCM* applies a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated time used by circulating pedestrians. The total "time-space" available for these activities is the net area of the corner (in square feet) multiplied by the cycle length and expressed as square feet per minute. The analysis then determines the total circulation time for all pedestrian movements at the corner (expressed as pedestrians per minute). The ratio of net time-space divided by pedestrian circulation time provides the LOS measurement of square feet per pedestrian.

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the area available (the crosswalk width multiplied by the width of the street) and the signal timing. This measure is expressed as square feet per minute. The average time it takes for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of the measure (again expressed as pedestrians per minute) to the time-space available in the crosswalk is the LOS measurement of available square feet per pedestrian. Additionally, in the first seconds of the "walk" cycle, the pedestrians who have queued to cross the street create a surge effect as they begin to cross. Therefore, the crosswalk LOS analysis includes a factor that adjusts for this "surge" to estimate worst-case conditions during the initial start-up. After the initial surge, the LOS analysis also takes into account vehicles turning the corner, thereby passing through the crosswalk. Figure 13-1 illustrates LOS standards on sidewalks and crosswalks, and Figure 13-2 illustrates LOS for the street corners.

STUDY AREA AND EXISTING VOLUMES

An examination of existing pedestrian conditions was conducted at the sidewalks, corners, and crosswalks at the intersections immediately bordering the proposed rezoning area, including the intersections of East 67th, East 68th, and East 69th Streets at York and First Avenues. Surveys of pedestrian volumes were conducted in October 2000 and May 2001 for the AM, midday, and PM peak hours. Generally, peak hour pedestrian volumes on the sidewalks surrounding the project site are moderate to high, as is usual for locations in Midtown Manhattan. Pedestrian activity on the facilities examined in the vicinity of the project site are high, resulting in excess of 6,000 peak hour pedestrian movements at the pedestrian intersections analyzed. In addition to recording counts of peak period pedestrian volumes, field measurements were taken of effective sidewalk widths, crosswalk widths, and of the total area within the reservoirs. (Effective sidewalk width is the width of the sidewalk at its narrowest point.) Taking all obstructions (e.g., fire hydrants, trash bins, planters, etc.) into account, effective sidewalk widths in the study area range from approximately 5 to 15 feet.

EXISTING LEVELS OF SERVICE

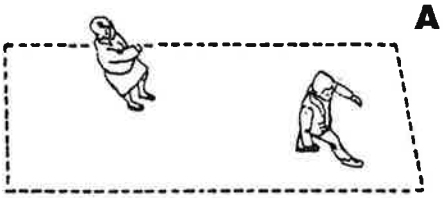
Using the LOS measures illustrated in Figures 13-1 and 13-2, the existing operations of pedestrian pathways bordering the project block were assessed for the AM, midday, and PM peak periods. The results of the pedestrian analyses for sidewalks, corners, and crosswalks are presented in Table 13-1. The analyses show that all of the study area sidewalks operate acceptably

LEVEL OF SERVICE A

Pedestrian Space: ≥ 130 sq ft/ped *Flow Rate:* ≤ 2 ped/min/ft

At walkway LOS A, pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.

A

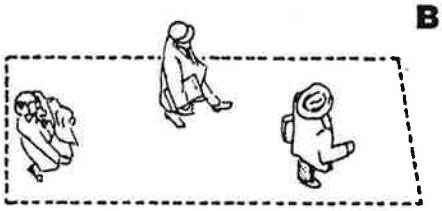


LEVEL OF SERVICE B

Pedestrian Space: ≥ 40 sq ft/ped *Flow Rate:* ≤ 7 ped/min/ft

At LOS B, sufficient area is provided to allow pedestrians to freely select walking speeds, to bypass other pedestrians, and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians, and to respond to their presence in the selection of their walking path.

B

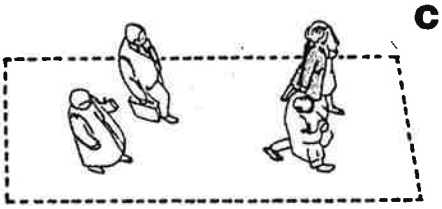


LEVEL OF SERVICE C

Pedestrian Space: ≥ 24 sq ft/ped *Flow Rate:* ≤ 10 ped/min/ft

At LOS C, sufficient space is available to select normal walking speeds, and to bypass other pedestrians in primarily unidirectional streams. Where reverse-direction or crossing movements exist, minor conflicts will occur, and speeds and volume will be somewhat lower.

C

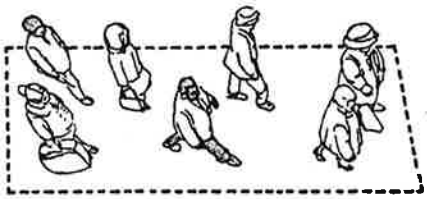


LEVEL OF SERVICE D

Pedestrian Space: ≥ 15 sq ft/ped *Flow Rate:* ≤ 15 ped/min/ft

At LOS D, freedom to select individual walking speed and to bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflict is high, and its avoidance requires frequent changes in speed and position. The LOS provides reasonably fluid flow; however, considerable friction and interaction between pedestrians is likely to occur.

D

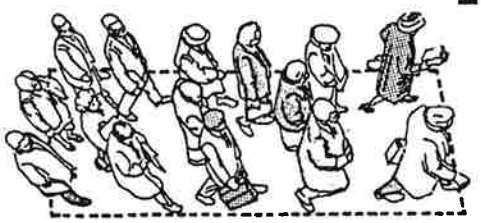


LEVEL OF SERVICE E

Pedestrian Space: ≥ 6 sq ft/ped *Flow Rate:* ≤ 25 ped/min/ft

At LOS E, virtually all pedestrians would have their normal walking speed restricted, requiring frequent adjustment of gait. At the lower range of this LOS, forward movement is possible only by "shuffling." Insufficient space is provided for passing of slower pedestrians. Cross- or reverse-flow movements are possible only with extreme difficulties. Design volumes approach the limit of walkway capacity, with resulting stoppages and interruptions to flow.

E

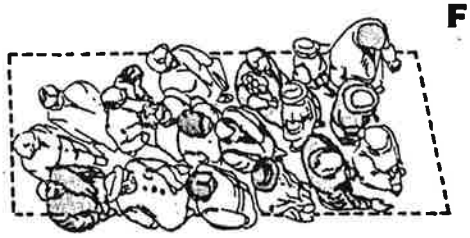


LEVEL OF SERVICE F

Pedestrian Space: ≤ 6 sq ft/ped *Flow Rate:* ≤ 7 ped/min/ft

At LOS F, all walking speeds are severely restricted, and forward progress is made only by "shuffling." There is frequent, unavoidable contact with other pedestrians. Cross- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrians.

F

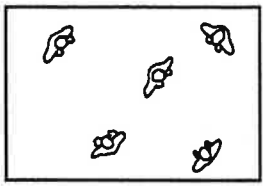


Pedestrian Level of Service

FIGURE 13-1

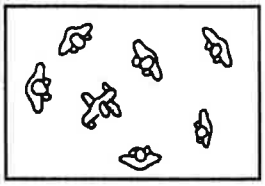
LEVEL OF SERVICE A

Average Pedestrian Area Occupancy: 13 sq ft/person or more
Average Inter-Person Spacing: 4 ft, or more
Description: Standing and free circulation through the queuing area is possible without disturbing others within the queue.



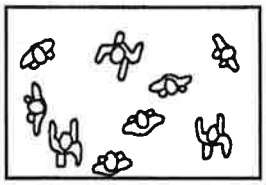
LEVEL OF SERVICE B

Average Pedestrian Area Occupancy: 10 to13 sq ft/person
Average Inter-Person Spacing: 3.5 to 4.0 ft
Description: Standing and partially restricted circulation to avoid disturbing others within the queue is possible.



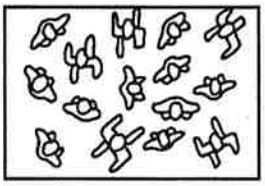
LEVEL OF SERVICE C

Average Pedestrian Area Occupancy: 7 to 10 sq ft/person
Average Inter-Person Spacing: 3.0 to 3.5 ft
Description: Standing and restricted circulation through the queuing area by disturbing others within the queue is possible; this density is within the range of personal comfort.



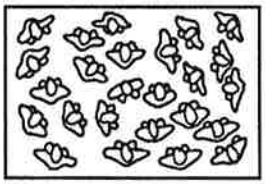
LEVEL OF SERVICE D

Average Pedestrian Area Occupancy: 3 to 7 sq ft/person
Average Inter-Person Spacing: 2 to 3 ft
Description: Standing without touching is possible; circulation is severely restricted within the queue and forward movement is only possible as a group; long term waiting at this density is discomforting.



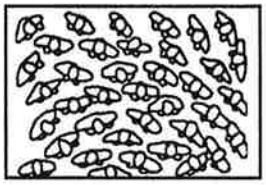
LEVEL OF SERVICE E

Average Pedestrian Area Occupancy: 2 to 3 sq ft/person
Average Inter-Person Spacing: 2 ft or less
Description: Standing in physical contact with others is unavoidable; circulation within the queue is not possible; queuing at this density can only be sustained for a short period without serious discomfort.



LEVEL OF SERVICE F

Average Pedestrian Area Occupancy: 2 sq ft/person or less
Average Inter-Person Spacing: Close contact with other persons
Description: Virtually all persons within the queue are standing in direct physical contact with those surrounding them; this density is extremely discomforting; no movement is possible within the queue; the potential for panic exists in large crowds at this density.



Standing Level of Service

FIGURE 13-2

Table 13-1
SIDEWALK ANALYSIS:
2001 EXISTING CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Sidewalk	AM					MD					PM				
			Average		Platoon			Average		Platoon			Average		Platoon	
		15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS
York Avenue & E 67th Street																
York Avenue between 67th & 68th Streets	west	140	1	A	5	B	275	2	A	6	B	240	1	A	5	B
York Avenue between 66th & 67th Streets	west	80	0	A	4	B	305	2	A	6	B	175	1	A	5	B
York Avenue & E 68th Street																
York Avenue between 68th & 69th Streets	west	175	1	A	5	B	115	1	A	5	B	175	1	A	5	B
	east	90	0	A	4	B	80	0	A	4	B	95	0	A	4	B
68th Street east of York Avenue	north	15	0	A	4	B	20	0	A	4	B	20	0	A	4	B
	south	10	0	A	4	B	20	0	A	4	B	15	0	A	4	B
York Avenue between 67th & 68th Streets	east	110	1	A	5	B	140	1	A	5	B	150	1	A	5	B
	west	180	1	A	5	B	170	1	A	5	B	130	1	A	5	B
68th Street between York & First Avenues	south	75	0	A	4	B	75	0	A	4	B	65	0	A	4	B
	north	85	0	A	4	B	100	1	A	5	B	80	0	A	4	B
York Avenue & E 69th Street																
York Avenue between 69th & 70th Streets	west	115	1	A	5	B	95	0	A	4	B	150	1	A	5	B
	east	63	0	A	4	B	75	0	A	4	B	48	0	A	4	B
York Avenue between 68th & 69th Streets	east	63	0	A	4	B	75	0	A	4	B	48	0	A	4	B
	west	205	1	A	5	B	120	1	A	5	B	130	1	A	5	B
69th Street between York & First Avenues	south	50	0	A	4	B	70	0	A	4	B	80	0	A	4	B
	north	75	0	A	4	B	100	1	A	5	B	85	0	A	4	B
First Avenue & E 68th Street																
First Avenue between 68th & 69th Streets	west	90	1	A	5	B	85	1	A	5	B	170	1	A	5	B
	east	90	1	A	5	B	60	0	A	4	B	65	0	A	4	B
68th Street between First & York Avenues	north	50	0	A	4	B	75	0	A	4	B	70	0	A	4	B
	south	40	0	A	4	B	40	0	A	4	B	75	0	A	4	B
First Avenue between 67th & 68th Streets	east	170	1	A	5	B	80	1	A	5	B	185	1	A	5	B
	west	115	1	A	5	B	80	1	A	5	B	185	1	A	5	B
68th Street between First & Second Avenues	south	55	0	A	4	B	55	0	A	4	B	55	0	A	4	B
	north	55	0	A	4	B	35	0	A	4	B	100	1	A	5	B
First Avenue & E 69th Street																
First Avenue between 69th & 70th Streets	west	80	0	A	4	B	70	0	A	4	B	180	1	A	5	B
	east	95	1	A	5	B	75	0	A	4	B	145	1	A	5	B
69th Street between First & York Avenues	north	30	0	A	4	B	50	0	A	4	B	45	0	A	4	B
	south	45	0	A	4	B	50	0	A	4	B	65	0	A	4	B
First Avenue between 68th & 69th Streets	east	250	1	A	5	B	75	0	A	4	B	205	1	A	5	B
	west	145	1	A	5	B	90	1	A	5	B	165	1	A	5	B
69th Street between First & Second Avenues	south	55	0	A	4	B	50	0	A	4	B	85	0	A	4	B
	north	50	0	A	4	B	50	0	A	4	B	90	1	A	5	B

Notes:
P/M/F = Pedestrians per Minute per Foot
LOS = Level of Service

Table 13-1 (continued)
CORNER ANALYSIS:
2001 EXISTING CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Corner	AM		Midday		PM	
		SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	Southwest	209	A	158	A	170	A
	Northwest	199	A	180	A	183	A
York Avenue & E 68th Street	Northeast	266	A	240	A	250	A
	Southeast	236	A	227	A	242	A
	Southwest	194	A	179	A	199	A
	Northwest	195	A	204	A	181	A
York Avenue & E 69th Street	Southwest	319	A	257	A	206	A
	Northwest	367	A	210	A	195	A
First Avenue & E 67th Street	Northeast	463	A	361	A	246	A
	Southeast	185	A	152	A	203	A
First Avenue & E 68th Street	Northeast	135	A	193	A	124	B
	Southeast	102	B	150	A	109	B
	Southwest	91	B	130	A	70	B
	Northwest	140	A	222	A	102	B
First Avenue & E 69th Street	Northeast	167	A	213	A	97	B
	Southeast	173	A	259	A	86	B
	Southwest	226	A	229	A	92	B
	Northwest	183	A	228	A	83	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

Table 13-1 (continued)
CROSSWALK ANALYSIS:
2001 EXISTING CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Crosswalk	AM						Midday						PM					
		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS	
		Without Vehicles		With Vehicles				Without Vehicles		With Vehicles				Without Vehicles		With Vehicles			
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	North	210	A	210	A	100	A	212	A	212	A	134	A	180	A	180	A	85	B
	South	252	A	252	A	120	A	170	A	170	A	107	A	158	A	158	A	75	B
	West	759	A	652	A	162	A	579	A	478	A	157	A	759	A	692	A	162	A
York Avenue & E 68th Street	North	131	A	119	B	61	B	132	A	121	B	82	B	126	B	116	B	59	B
	East	439	A	413	A	86	B	305	A	288	A	76	B	404	A	388	A	79	B
	South	109	B	92	B	51	B	119	B	92	B	74	B	119	B	93	B	56	B
	West	320	A	320	A	63	B	266	A	266	A	66	B	307	A	307	A	60	B
York Avenue & E 69th Street	North	226	A	226	A	109	B	117	B	117	B	75	B	166	A	166	A	80	B
	South	213	A	213	A	102	B	146	A	146	A	93	B	141	A	141	A	68	B
	West	717	A	647	A	140	A	478	A	400	A	119	B	379	A	327	A	74	B
First Avenue & E 67th Street	North	727	A	698	A	469	A	286	A	275	A	185	A	197	A	193	A	127	B
	East	552	A	552	A	138	A	720	A	720	A	180	A	502	A	502	A	125	B
	South	462	A	462	A	305	A	204	A	204	A	134	A	866	A	866	A	571	A
First Avenue & E 68th Street	North	176	A	165	A	116	B	229	A	211	A	151	A	130	A	120	B	86	B
	East	276	A	246	A	75	B	436	A	412	A	119	B	312	A	287	A	85	B
	South	164	A	164	A	106	B	234	A	234	A	151	A	171	A	171	A	110	B
	West	355	A	355	A	97	B	540	A	540	A	147	A	191	A	191	A	52	B
First Avenue & E 69th Street	North	182	A	175	A	120	B	217	A	208	A	143	A	87	B	83	B	57	B
	East	269	A	269	A	71	B	364	A	364	A	96	B	214	A	214	A	57	B
	South	198	A	198	A	131	A	347	A	347	A	228	A	87	B	87	B	57	B
	West	449	A	399	A	119	B	449	A	386	A	119	B	198	A	176	A	52	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

at LOS B or better (with average flow rates of 1 pedestrian per minute per foot [p/m/f] or less, and platoon flows of 5 p/m/f or less) during all peak periods. The study area street corners operate acceptably at LOS B or better (with densities of 70 square feet per pedestrian [sf/p] or more) during all peak periods. The study area crosswalks generally operate acceptably at LOS B or better under average conditions (with densities of 83 sf/p or more) during all peak periods. During surge conditions, crosswalks operate at LOS B or better (with densities of 52 sf/p or more) during the peak periods.

PUBLIC TRANSPORTATION

The project area is well served by public transportation facilities that provide access to other areas of the city, (see Figure 13-3), including a number of nearby bus lines (M15, M31, M66, M72, M98, M101, M102, and M103). The study area is also served by the number 6 subway train's 68th Street station at Lexington Avenue.

SUBWAYS

The closest subway line to the project site is the number 6 train, which runs along Lexington Avenue. On that line, the nearest stop is at East 68th Street, west of the proposed rezoning area. The street stairs for that stop are located on all four (northeast, southeast, northwest, and southwest) corners of the Lexington Avenue/68th Street intersection. The street stairs and turnstiles of this station were examined in this study. Passenger volumes for the AM and PM peak periods at the 68th Street station street stairs and turnstiles and gates were obtained from surveys conducted by Allee King Rosen and Fleming, Inc. in October 2000.

Demand levels were estimated for the various station elements at 68th Street station; passenger volumes were compared with the computed volume that each individual station element is capable of handling. Various capacity-reducing factors were applied to these station elements to account for pedestrian flow characteristics, such as friction caused by bidirectional flow and width reductions in stairwells produced by handrails.

NYCT defines a term, SVCD, for measuring the service levels of various station elements. The SVCD represents a service volume flow rate at the midpoint of LOS C and D. This level is used by NYCT to determine the adequacy of various station elements to accommodate demands at an acceptable LOS. Volume/SVCD (V/SVCD) ratios that range between 0 and 0.45 represent LOS A. For LOS B conditions, V/SVCD ratios range between 0.45 and 0.67. For LOS C conditions, V/SVCD ratios range between 0.67 and 1.00. LOS D, which indicates a moderate degree of congestion (typical throughout many of the subway stations in Midtown and Downtown Manhattan during the peak hours), has a V/SVCD ratio range between 1.00 and 1.33. At LOS E, when pedestrian volumes are unstable and congestion occurs, the V/SVCD ratio ranges between 1.33 and 1.67. LOS F, the level at which excessive delays occur, is represented by V/SVCD ratios in excess of 1.67, which indicates that the demand exceeds the capacity of the facility. When actual or projected demands are less than the calculated SVCD, level of service is considered acceptable (LOS A, B, or C); demands that exceed the SVCD indicate undesirable levels of service (D, E, or F).

Table 13-2 shows V/SVCD ratios next to the level of service for the various station elements for the stations examined in this study. As shown in Table 13-2, the stairs at the northwest and southwest corners of the East 68th Street and Lexington Avenue intersection operate acceptably at LOS C and D during the peak periods of analysis, and the turnstiles and exit gates operate acceptably at LOS A and B during these peaks. However, the stairs at the northeast and

Phase I Research Building Site

Proposed Rezoning Area Boundary

Proposed Large Scale Community Facility Development Boundary

M15 *Bus Route and Number*

6 *Subway Line and Number*

Subway Station

Transit Routes

FIGURE 13-3

MEMORIAL SLOAN-KETTERING CANCER CENTER

Table 13-2
Memorial Sloan Kettering Cancer Center
2001 Existing Conditions Level of Service Analysis

East 68th Street at Lexington Avenue #6 Train (Control Area R-246)

SUBWAY STATION ELEMENTS	WIDTH (ft)	EFFECTIVE WIDTH (ft)	AM 15-MINUTE PEDESTRIAN VOLUME IN	AM 15-MINUTE PEDESTRIAN VOLUME OUT	PM 15-MINUTE PEDESTRIAN VOLUME IN	PM 15-MINUTE PEDESTRIAN VOLUME OUT	FRICTION FACTOR AM	FRICTION FACTOR PM	15-MINUTE SVCD CAPACITY AM	15-MINUTE SVCD CAPACITY PM	V/SVCD RATIO AM	V/SVCD RATIO PM	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM
Street Stairs														
Northwest Corner	4.0	3.0	180	215	280	135	0.9	0.8	405	360	0.975	1.153	C	D
Northeast Corner	4.2	3.2	470	260	460	210	0.9	0.8	432	384	1.690	1.745	F	F
Southeast Corner	4.7	3.7	360	600	495	690	0.9	0.9	499	499	1.922	2.372	F	F
Southwest Corner	6.7	5.7	310	465	400	580	0.9	0.9	770	770	1.007	1.274	D	D
	QUANTITY													
Token Booth – R-246														
Two-Way Turnstiles	14		1270	1535	1610	1620			6720	6720	0.417	0.481	A	B
Exit Gates	2		50	5	25	5			1500	1500	0.037	0.020	A	A

Notes:
The Capacity for Stairs = 10 persons per minute per effective foot width
The Capacity for Turnstiles = 32 persons per minute (assumes a 20 percent reduction for cross traffic)
The Capacity for Exit Gates = 50 persons per minute
Source: City Environmental Quality Review Technical Manual

southeast corners of the East 68th Street and Lexington Avenue intersection operate at congested LOS F during the AM and PM peak periods in existing conditions.

BUSES

As shown in Figure 13-3, the study area is well served by NYCT bus lines. North-south routes run along York Avenue (M31), First and Second Avenues (M15) and 67th and 68th Streets (M66). The M98, M101, M102, and M103 buses travel along Third and Lexington Avenues in the study area. The scheduled frequency of service during the peak hours ranges from 2 to 12 buses per hour for each route. The actual frequency of bus service may vary depending on traffic conditions.

C. FUTURE WITHOUT THE PROPOSED ACTIONS—2007

Future conditions without the proposed project were analyzed for the year 2007, the year during which the Phase 1 Research Building could be completed. This future condition, referred to as the "No Action" condition, takes into account background growth rate and, where appropriate, other development projects expected to be completed by 2007.

Absent the actions required for the proposed development, there would be ten known development projects that are expected to be completed in the study area by 2007. These projects are outlined in Chapter 12, "Traffic and Parking." These independent projects will add to the demand for pedestrian and transportation services in the area and are accounted for in the analysis.

PEDESTRIAN CONDITIONS

Pedestrian conditions were analyzed for 2007 for the study area described above. Future pedestrian volumes were estimated using a discrete assignment to account for the Rockefeller Laboratory Building, which is located off of East 68th Street on the east side of York Avenue, and two residential development projects on the east side of First Avenue between East 65th and East 67th Streets (The Pearl and 1234 First Avenue), as well as a growth factor that accounts for general background growth and other projects in the area. The MSKCC Outpatient Facility and MSKCC Infill Project would not result in new pedestrian trips to the study area. The remaining five No Action development projects identified in the study area are not close enough to generate pedestrian trips at these analysis locations. These are the same developments that have been accounted for in the traffic analysis in Chapter 12, "Traffic and Parking." The background growth factor used to estimate 2007 future volumes in these analyses is 0.5 percent per year, as suggested in the *CEQR Technical Manual*. Applying this factor to the existing volumes yields a total background growth of 3 percent from 2001 to 2007, for the AM, midday, and PM peak hours.

The results of the 2007 No Action pedestrian analyses for sidewalks, corners, and crosswalks are presented in Table 13-3. As indicated in Table 13-3, the analyses show that all of the study area sidewalks would continue to operate acceptably at LOS B better (with average flow rates of 2 p/m/f or less, and platoon flows of 6 p/m/f or less) during all peak periods, similar to existing conditions. Service levels of the study area street corners would remain similar to existing conditions, continuing to operate acceptably at LOS B or better (with densities of 64 sf/p or more) during all peak periods. Similar to existing conditions, the study area crosswalks would generally continue to operate acceptably at LOS B or better under average conditions (with

Table 13-3
SIDEWALK ANALYSIS:
2007 NO ACTION CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Sidewalk	AM					MD					PM				
			Average		Platoon			Average		Platoon			Average		Platoon	
		15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS
York Avenue & E 67th Street																
York Avenue between 67th & 68th Streets	west	159	1	A	5	B	292	2	A	6	B	264	1	A	5	B
York Avenue between 66th & 67th Streets	west	82	0	A	4	B	314	2	A	6	B	180	1	A	5	B
York Avenue & E 68th Street																
York Avenue between 68th & 69th Streets	west	195	1	A	5	B	127	1	A	5	B	197	1	A	5	B
	east	102	1	A	5	B	91	0	A	4	B	107	1	A	5	B
68th Street east of York Avenue	north	35	0	A	4	B	32	0	A	4	B	41	0	A	4	B
	south	38	0	A	4	B	38	0	A	4	B	46	0	A	4	B
York Avenue between 67th & 68th Streets	east	130	1	A	5	B	159	1	A	5	B	171	1	A	5	B
	west	200	1	A	5	B	184	1	A	5	B	151	1	A	5	B
68th Street between York & First Avenues	south	88	0	A	4	B	80	0	A	4	B	80	0	A	4	B
	north	99	1	A	5	B	106	1	A	5	B	93	0	A	4	B
York Avenue & E 69th Street																
York Avenue between 69th & 70th Streets	west	133	1	A	5	B	107	0	A	4	B	172	1	A	5	B
	east	71	0	A	4	B	83	0	A	4	B	54	0	A	4	B
York Avenue between 68th & 69th Streets	east	74	0	A	4	B	86	0	A	4	B	58	0	A	4	B
	west	226	1	A	5	B	133	1	A	5	B	151	1	A	5	B
69th Street between York & First Avenues	south	55	0	A	4	B	75	0	A	4	B	86	0	A	4	B
	north	77	0	A	4	B	103	1	A	5	B	88	0	A	4	B
First Avenue & E 68th Street																
First Avenue between 68th & 69th Streets	west	93	1	A	5	B	88	1	A	5	B	175	1	A	5	B
	east	108	1	A	5	B	71	0	A	4	B	84	1	A	5	B
68th Street between First & York Avenues	north	63	0	A	4	B	80	0	A	4	B	83	0	A	4	B
	south	52	0	A	4	B	44	0	A	4	B	90	1	A	5	B
First Avenue between 67th & 68th Streets	east	190	1	A	5	B	91	1	A	5	B	208	1	A	5	B
	west	118	1	A	5	B	82	1	A	5	B	191	1	A	5	B
68th Street between First & Second Avenues	south	68	0	A	4	B	60	0	A	4	B	70	0	A	4	B
	north	68	0	A	4	B	39	0	A	4	B	114	1	A	5	B
First Avenue & E 69th Street																
First Avenue between 69th & 70th Streets	west	82	0	A	4	B	72	0	A	4	B	185	1	A	5	B
	east	113	1	A	5	B	86	0	A	4	B	166	1	A	5	B
69th Street between First & York Avenues	north	31	0	A	4	B	52	0	A	4	B	46	0	A	4	B
	south	49	0	A	4	B	55	0	A	4	B	71	0	A	4	B
First Avenue between 68th & 69th Streets	east	273	2	A	6	B	86	0	A	4	B	228	1	A	5	B
	west	149	1	A	5	B	93	1	A	5	B	170	1	A	5	B
69th Street between First & Second Avenues	south	60	0	A	4	B	55	0	A	4	B	92	1	A	5	B
	north	52	0	A	4	B	52	0	A	4	B	93	1	A	5	B

Notes:
P/M/F = Pedestrians per Minute per Foot
LOS = Level of Service

Table 13-3 (continued)
CORNER ANALYSIS:
2007 NO ACTION CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Corner	AM		Midday		PM	
		SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	Southwest	175	A	142	A	144	A
	Northwest	173	A	164	A	158	A
York Avenue & E 68th Street	Northeast	244	A	231	A	227	A
	Southeast	215	A	209	A	204	A
	Southwest	167	A	165	A	169	A
	Northwest	170	A	187	A	156	A
York Avenue & E 69th Street	Southwest	274	A	235	A	181	A
	Northwest	319	A	195	A	176	A
First Avenue & E 67th Street	Northeast	393	A	325	A	219	A
	Southeast	136	A	125	B	140	A
First Avenue & E 68th Street	Northeast	117	B	174	A	106	B
	Southeast	88	B	136	A	92	B
	Southwest	82	B	122	B	64	B
	Northwest	128	B	210	A	94	B
First Avenue & E 69th Street	Northeast	149	A	195	A	88	B
	Southeast	151	A	227	A	79	B
	Southwest	214	A	216	A	88	B
	Northwest	178	A	221	A	80	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

Table 13-3 (continued)
CROSSWALK ANALYSIS:
2007 NO ACTION CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Crosswalk	AM						Midday						PM					
		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS	
		Without Vehicles		With Vehicles				Without Vehicles		With Vehicles				Without Vehicles		With Vehicles			
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	North	204	A	204	A	96	B	205	A	205	A	129	B	175	A	175	A	83	B
	South	230	A	230	A	109	B	158	A	158	A	100	B	147	A	147	A	70	B
	West	583	A	500	A	124	B	500	A	413	A	136	A	567	A	517	A	121	B
York Avenue & E 68th Street	North	116	B	104	B	54	B	125	B	115	B	78	B	110	B	101	B	51	B
	East	427	A	402	A	83	B	298	A	282	A	75	B	394	A	378	A	77	B
	South	96	B	81	B	45	B	111	B	86	B	69	B	103	B	80	B	48	B
	West	272	A	272	A	53	B	238	A	238	A	59	B	254	A	254	A	50	B
York Avenue & E 69th Street	North	219	A	219	A	105	B	113	B	113	B	72	B	162	A	162	A	78	B
	South	199	A	199	A	96	B	139	A	139	A	89	B	131	A	131	A	63	B
	West	550	A	497	A	108	B	420	A	351	A	105	B	316	A	273	A	62	B
First Avenue & E 67th Street	North	727	A	698	A	469	A	278	A	267	A	179	A	193	A	189	A	124	B
	East	430	A	430	A	108	B	581	A	581	A	145	A	390	A	390	A	97	B
	South	420	A	420	A	277	A	190	A	190	A	125	B	693	A	693	A	457	A
First Avenue & E 68th Street	North	153	A	144	A	101	B	213	A	196	A	140	A	115	B	106	B	76	B
	East	238	A	213	A	65	B	381	A	360	A	104	B	261	A	240	A	71	B
	South	142	A	142	A	92	B	218	A	218	A	141	A	148	A	148	A	95	B
	West	345	A	345	A	94	B	518	A	518	A	141	A	185	A	185	A	50	B
First Avenue & E 69th Street	North	178	A	171	A	117	B	210	A	202	A	138	A	85	B	81	B	56	B
	East	226	A	226	A	60	B	317	A	317	A	84	B	183	A	183	A	48	B
	South	185	A	185	A	122	B	308	A	308	A	203	A	83	B	83	B	54	B
	West	434	A	386	A	115	B	434	A	374	A	115	B	192	A	171	A	51	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

densities of 80 sf/p or more) during all peak periods. Under surge conditions, these crosswalks would operate at LOS B (with densities of 50 sf/p or more) during the AM, midday, and PM peaks.

PUBLIC TRANSPORTATION

Future subway ridership was estimated using the same growth factors that were applied to pedestrian volumes, as described above, to account for additional riders from general background growth and from the No Action projects proposed for the area that are expected to be completed by 2007. For the purposes of the subway analysis, No Action projects expected to result in subway trips at the 68th Street station include the Rockefeller Laboratory Building, The Pearl, 1234 First Avenue, and the Hospital for Special Surgery's Caspary Building expansion. As noted above, the MSKCC Outpatient Facility and MSKCC Infill Project would not generate new trips to the study area. Subway trips generated by the remaining four residential No Action projects are expected to use the 59th Street station.

Subways

As illustrated in Table 13-4, by 2007, subway levels of service would remain at LOS F during the AM and PM peaks at the northeast and southeast corner stairs at 68th Street and Lexington Avenue. The northwest corner stair would deteriorate from LOS C in existing conditions to LOS D during the AM peak. All other station elements would continue to operate at the same LOS as under existing conditions.

D. FUTURE WITH THE PROPOSED ACTIONS—2007

The section analyzes the effects of additional trips operated by the proposed research building, along with the residential project that could be completed on the north block with the proposed actions, for the future 2007 analysis year. The proposed actions' incremental trips are compared to the No Action baseline in this analysis of pedestrian and subway conditions to assess potential impacts in the study area.

PEDESTRIAN CONDITIONS

Impacts are considered significant at sidewalks if there is an increase of 2 pedestrians per minute per foot to any locations where No-Build conditions are characterized by flow rates greater than 15 pedestrians per minute per foot. For corners and crosswalks, impacts are considered significant at any locations where the average occupancy is less than 15 square feet per pedestrian in the No-Build conditions, and the project would cause a decrease of 1 square foot per person or greater. Increases of fewer than 30 pedestrians within a 15-minute time period at any pedestrian element analyzed would not be considered a significant impact, and the deterioration in the level of service would not be noticeable.

The proposed research building and the development project on the north block would result in a total 15-minute increment of 74, 47, and 78 pedestrians to the study area sidewalks (this includes "walk only" trips as well as pedestrians that ride buses and subways) during the AM, midday, and PM peaks, respectively. As shown in Table 13-5, in 2007, the Future with the Proposed Actions, study area sidewalks would continue to operate acceptably at LOS B or better (with average flow rates of 2 p/m/f or less, and platoon flows of 5 p/m/f or less) during all peak periods, similar to 2007 No Action conditions. Service levels at the study area street corners would remain similar to No Action conditions, continuing to operate acceptably at LOS

Table 13-4
Memorial Sloan Kettering Cancer Center
2007 No Action Condition Level of Service Analysis

East 68th Street at Lexington Avenue #6 Train (Control Area R-246)

SUBWAY STATION ELEMENTS	WIDTH (ft)	EFFECTIVE WIDTH (ft)	AM 15-MINUTE PEDESTRIAN VOLUME IN	AM 15-MINUTE PEDESTRIAN VOLUME OUT	PM 15-MINUTE PEDESTRIAN VOLUME IN	PM 15-MINUTE PEDESTRIAN VOLUME OUT	FRICTION FACTOR AM	FRICTION FACTOR PM	15-MINUTE SVCD CAPACITY AM	15-MINUTE SVCD CAPACITY PM	V/SVCD RATIO AM	V/SVCD RATIO PM	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM
Street Stairs														
Northwest Corner	4.0	3.0	185	221	288	139	0.9	0.8	405	360	1.005	1.187	D	D
Northeast Corner	4.2	3.2	490	278	484	223	0.9	0.8	432	384	1.778	1.841	F	F
Southeast Corner	4.7	3.7	376	629	520	717	0.9	0.9	499	499	2.012	2.478	F	F
Southwest Corner	6.7	5.7	319	479	412	597	0.9	0.9	770	770	1.037	1.312	D	D
	QUANTITY													
Token Booth -- R-246														
Two-Way Turnstiles	14		1319	1602	1679	1682			6720	6720	0.435	0.500	A	B
Exit Gates	2		52	5	26	5			1500	1500	0.038	0.021	A	A

Notes:
The Capacity for Stairs = 10 persons per minute per effective foot width
The Capacity for Turnstiles = 32 persons per minute (assumes a 20 percent reduction for cross traffic)
The Capacity for Exit Gates = 50 persons per minute
Source: City Environmental Quality Review Technical Manual

Table 13-5
SIDEWALK ANALYSIS:
2007 FUTURE WITH THE PROPOSED ACTIONS CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Sidewalk	AM					MD					PM				
			Average		Platoon			Average		Platoon			Average		Platoon	
		15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS
York Avenue & E 67th Street																
York Avenue between 67th & 68th Streets	west	159	1	A	5	B	292	2	A	6	B	264	1	A	5	B
York Avenue between 66th & 67th Streets	west	82	0	A	4	B	314	2	A	6	B	180	1	A	5	B
York Avenue & E 68th Street																
York Avenue between 68th & 69th Streets	west	199	1	A	5	B	135	1	A	5	B	202	1	A	5	B
	east	102	1	A	5	B	91	0	A	4	B	107	1	A	5	B
68th Street east of York Avenue	north	35	0	A	4	B	32	0	A	4	B	41	0	A	4	B
	south	38	0	A	4	B	38	0	A	4	B	46	0	A	4	B
York Avenue between 67th & 68th Streets	east	130	1	A	5	B	159	1	A	5	B	171	1	A	5	B
	west	204	1	A	5	B	192	1	A	5	B	156	1	A	5	B
68th Street between York & First Avenues	south	88	0	A	4	B	80	0	A	4	B	80	0	A	4	B
	north	107	1	A	5	B	122	1	A	5	B	103	1	A	5	B
York Avenue & E 69th Street																
York Avenue between 69th & 70th Streets	west	142	1	A	5	B	115	1	A	5	B	180	1	A	5	B
	east	71	0	A	4	B	83	0	A	4	B	54	0	A	4	B
York Avenue between 68th & 69th Streets	east	74	0	A	4	B	86	0	A	4	B	58	0	A	4	B
	west	230	1	A	5	B	141	1	A	5	B	156	1	A	5	B
69th Street between York & First Avenues	south	60	0	A	4	B	75	0	A	4	B	89	0	A	4	B
	north	77	0	A	4	B	103	1	A	5	B	88	0	A	4	B
First Avenue & E 68th Street																
First Avenue between 68th & 69th Streets	west	93	1	A	5	B	88	1	A	5	B	175	1	A	5	B
	east	111	1	A	5	B	77	1	A	5	B	87	1	A	5	B
68th Street between First & York Avenues	north	110	1	A	5	B	102	1	A	5	B	133	1	A	5	B
	south	52	0	A	4	B	44	0	A	4	B	90	1	A	5	B
First Avenue between 67th & 68th Streets	east	193	1	A	5	B	97	1	A	5	B	211	1	A	5	B
	west	118	1	A	5	B	82	1	A	5	B	191	1	A	5	B
68th Street between First & Second Avenues	south	71	0	A	4	B	66	0	A	4	B	74	0	A	4	B
	north	106	1	A	5	B	45	0	A	4	B	153	1	A	5	B
First Avenue & E 69th Street																
First Avenue between 69th & 70th Streets	west	82	0	A	4	B	72	0	A	4	B	185	1	A	5	B
	east	116	1	A	5	B	92	1	A	5	B	169	1	A	5	B
69th Street between First & York Avenues	north	31	0	A	4	B	52	0	A	4	B	46	0	A	4	B
	south	57	0	A	4	B	56	0	A	4	B	79	0	A	4	B
First Avenue between 68th & 69th Streets	east	276	2	A	6	B	92	1	A	5	B	231	1	A	5	B
	west	149	1	A	5	B	93	1	A	5	B	170	1	A	5	B
69th Street between First & Second Avenues	south	68	0	A	4	B	56	0	A	4	B	100	1	A	5	B
	north	52	0	A	4	B	52	0	A	4	B	93	1	A	5	B

Notes:
P/M/F = Pedestrians per Minute per Foot
LOS = Level of Service

Table 13-5 (continued)
CORNER ANALYSIS:
2007 FUTURE WITH THE PROPOSED ACTIONS CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Corner	AM		Midday		PM	
		SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	Southwest	168	A	133	A	139	A
	Northwest	168	A	156	A	153	A
York Avenue & E 68th Street	Northeast	244	A	231	A	227	A
	Southeast	215	A	209	A	204	A
	Southwest	165	A	160	A	166	A
	Northwest	165	A	175	A	151	A
York Avenue & E 69th Street	Southwest	260	A	223	A	175	A
	Northwest	300	A	188	A	171	A
First Avenue & E 67th Street	Northeast	382	A	311	A	216	A
	Southeast	127	B	118	B	131	A
First Avenue & E 68th Street	Northeast	98	B	152	A	88	B
	Southeast	85	B	122	B	88	B
	Southwest	81	B	117	B	63	B
	Northwest	105	B	200	A	82	B
First Avenue & E 69th Street	Northeast	147	A	188	A	88	B
	Southeast	143	A	216	A	76	B
	Southwest	202	A	214	A	85	B
	Northwest	178	A	221	A	80	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

Table 13-5 (continued)
CROSSWALK ANALYSIS:
2007 FUTURE WITH THE PROPOSED ACTIONS CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Crosswalk	AM						Midday						PM					
		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS	
		Without Vehicles		With Vehicles				Without Vehicles		With Vehicles				Without Vehicles		With Vehicles			
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	North	204	A	204	A	96	B	205	A	205	A	129	B	175	A	175	A	83	B
	South	230	A	230	A	109	B	158	A	158	A	100	B	147	A	147	A	70	B
	West	552	A	474	A	118	B	455	A	376	A	124	B	532	A	485	A	113	B
York Avenue & E 68th Street	North	116	B	104	B	54	B	125	B	115	B	78	B	110	B	101	B	51	B
	East	427	A	402	A	83	B	298	A	282	A	75	B	394	A	378	A	77	B
	South	96	B	81	B	45	B	111	B	86	B	69	B	103	B	80	B	48	B
	West	262	A	262	A	51	B	223	A	223	A	56	B	244	A	244	A	48	B
York Avenue & E 69th Street	North	219	A	219	A	105	B	113	B	113	B	72	B	162	A	162	A	78	B
	South	199	A	199	A	96	B	136	A	136	A	87	B	131	A	131	A	63	B
	West	490	A	442	A	96	B	386	A	323	A	96	B	298	A	257	A	58	B
First Avenue & E 67th Street	North	727	A	698	A	469	A	278	A	267	A	179	A	193	A	189	A	124	B
	East	414	A	414	A	103	B	526	A	526	A	131	A	376	A	376	A	94	B
	South	355	A	355	A	234	A	185	A	185	A	122	B	533	A	533	A	351	A
First Avenue & E 68th Street	North	110	B	104	B	73	B	196	A	181	A	129	B	89	B	82	B	59	B
	East	228	A	204	A	62	B	335	A	317	A	91	B	247	A	227	A	67	B
	South	139	A	139	A	89	B	202	A	202	A	130	A	142	A	142	A	92	B
	West	345	A	345	A	94	B	518	A	518	A	141	A	185	A	185	A	50	B
First Avenue & E 69th Street	North	178	A	171	A	117	B	210	A	202	A	138	A	85	B	81	B	56	B
	East	221	A	221	A	58	B	296	A	296	A	78	B	179	A	179	A	48	B
	South	167	A	167	A	110	B	301	A	301	A	199	A	79	B	79	B	52	B
	West	434	A	386	A	115	B	434	A	374	A	115	B	192	A	171	A	51	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

B or better (with densities of 63 sf/p or more) during all peak periods. Similar to 2007 No Action conditions, the study area crosswalks would generally continue to operate acceptably at LOS B or better under average conditions (with densities of 79 sf/p or more) during all peak periods. Under surge conditions, the crosswalks would operate at LOS B or better, (with densities of 48 sf/p or more) during the AM, midday and PM peak periods. Therefore, there would be no significant adverse impacts to sidewalks, crosswalks, or street corners in 2007 Future with the Proposed Actions conditions.

PUBLIC TRANSPORTATION

Like the No Action Scenario, the 2007 Future with the Proposed Actions would add riders to the 68th Street subway station. As described below, these new riders would result in significant adverse impacts at two subway stairs at the station analyzed.

SUBWAYS

The proposed actions would result in approximately 40 and 43 new subway passengers during the AM and PM peak 15-minute periods analyzed respectively. As shown in Table 13-6, there would be no changes in levels of service at any of the station elements from increased ridership resulting from the proposed Phase 1 development. However, the proposed actions would result in an increase in the V/SVCD ratio at the northeast and southeast stairs, resulting in an impact at the northeast stair. Proposed mitigation is discussed in Chapter 17, "Mitigation."

E. FUTURE WITHOUT THE PROPOSED ACTIONS—2011

Future conditions without the proposed actions were analyzed for the year 2011, the year during which the development of the proposed Phase 1 and Phase 2 components ("full buildout") could be completed. This future condition, referred to as the "2011 No Action" condition, takes into account background growth rate and, where appropriate, other development projects expected to be completed by 2011.

Absent the actions required for the proposed development, the same ten known development projects that are expected to be completed in the study area by 2007 have been considered in the 2011 analysis. These projects are outlined in Chapter 12, "Traffic and Parking," and are discussed above in "The Future without the Proposed Actions—2007." These independent projects will add to the demand for pedestrian and transportation services in the area and are accounted for in the analysis.

PEDESTRIAN CONDITIONS

Pedestrian conditions were analyzed for 2011 for the study area described above. In addition to the anticipated projects that could be completed independently of the proposed actions, 2001 existing volumes were grown by a background growth rate of 0.5 percent per year, yielding a total background growth of 5 percent from 2001 to 2011, for the AM, midday, and PM peak hours.

The results of the 2011 No Action pedestrian analyses for sidewalks, corners, and crosswalks are presented in Table 13-7. As indicated in Table 13-7, the analyses show that all of the study area sidewalks would continue to operate acceptably at LOS B or better (with average flow rates of 2 p/m/f or less, and platoon flows of 6 p/m/f or less) during all peak periods, similar to existing conditions. Service levels of the study area street corners would remain similar to

Table 13-6
Memorial Sloan Kettering Cancer Center
2007 Future with the Proposed Actions Level of Service Analysis

East 68th Street at Lexington Avenue #6 Train (Control Area R-246)

SUBWAY STATION ELEMENTS	WIDTH (ft)	EFFECTIVE WIDTH (ft)	AM 15-MINUTE PEDESTRIAN VOLUME IN	AM 15-MINUTE PEDESTRIAN VOLUME OUT	PM 15-MINUTE PEDESTRIAN VOLUME IN	PM 15-MINUTE PEDESTRIAN VOLUME OUT	FRICTION FACTOR AM	FRICTION FACTOR PM	15-MINUTE SVCD CAPACITY AM	15-MINUTE SVCD CAPACITY PM	V/SVCD RATIO AM	V/SVCD RATIO PM	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM
Street Stairs														
Northwest Corner	4.0	3.0	185	221	288	139	0.9	0.8	405	360	1.005	1.187	D	D
Northeast Corner	4.2	3.2	492	294	500	227	0.9	0.8	432	384	1.819	1.893	F	F
Southeast Corner	4.7	3.7	379	644	536	722	0.9	0.9	499	499	2.048	2.518	F	F
Southwest Corner	6.7	5.7	319	479	412	597	0.9	0.9	770	770	1.037	1.312	D	D
	QUANTITY													
Token Booth -- R-246														
Two-Way Turnstiles	14		1324	1633	1710	1691			6720	6720	0.440	0.506	A	B
Exit Gates	2		52	5	26	5			1500	1500	0.038	0.021	A	A

Notes:
The Capacity for Stairs = 10 persons per minute per effective foot width
The Capacity for Turnstiles = 32 persons per minute (assumes a 20 percent reduction for cross traffic)
The Capacity for Exit Gates = 50 persons per minute
Source: City Environmental Quality Review Technical Manual

Table 13-7
SIDEWALK ANALYSIS:
2011 NO ACTION CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Sidewalk	AM					MD					PM				
			Average		Platoon			Average		Platoon			Average		Platoon	
		15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS
York Avenue & E 67th Street																
York Avenue between 67th & 68th Streets	west	162	1	A	5	B	298	2	A	6	B	269	1	A	5	B
York Avenue between 66th & 67th Streets	west	84	0	A	4	B	320	2	A	6	B	184	1	A	5	B
York Avenue & E 68th Street																
York Avenue between 68th & 69th Streets	west	199	1	A	5	B	130	1	A	5	B	201	1	A	5	B
	east	104	1	A	5	B	93	0	A	4	B	109	1	A	5	B
68th Street east of York Avenue	north	36	0	A	4	B	32	0	A	4	B	41	0	A	4	B
	south	39	0	A	4	B	38	0	A	4	B	47	0	A	4	B
York Avenue between 67th & 68th Streets	east	133	1	A	5	B	162	1	A	5	B	174	1	A	5	B
	west	204	1	A	5	B	188	1	A	5	B	154	1	A	5	B
68th Street between York & First Avenues	south	90	0	A	4	B	82	0	A	4	B	81	0	A	4	B
	north	100	1	A	5	B	108	1	A	5	B	95	0	A	4	B
York Avenue & E 69th Street																
York Avenue between 69th & 70th Streets	west	136	1	A	5	B	109	0	A	4	B	175	1	A	5	B
	east	72	0	A	4	B	85	0	A	4	B	55	0	A	4	B
York Avenue between 68th & 69th Streets	east	75	0	A	4	B	88	0	A	4	B	59	0	A	4	B
	west	230	1	A	5	B	135	1	A	5	B	154	1	A	5	B
69th Street between York & First Avenues	south	56	0	A	4	B	77	0	A	4	B	88	0	A	4	B
	north	79	0	A	4	B	105	1	A	5	B	89	0	A	4	B
First Avenue & E 68th Street																
First Avenue between 68th & 69th Streets	west	95	1	A	5	B	89	1	A	5	B	179	1	A	5	B
	east	110	1	A	5	B	72	0	A	4	B	85	1	A	5	B
68th Street between First & York Avenues	north	64	0	A	4	B	82	0	A	4	B	85	0	A	4	B
	south	53	0	A	4	B	45	0	A	4	B	92	1	A	5	B
First Avenue between 67th & 68th Streets	east	194	1	A	5	B	93	1	A	5	B	211	1	A	5	B
	west	121	1	A	5	B	84	1	A	5	B	194	1	A	5	B
68th Street between First & Second Avenues	south	69	0	A	4	B	61	0	A	4	B	71	0	A	4	B
	north	69	0	A	4	B	40	0	A	4	B	116	1	A	5	B
First Avenue & E 69th Street																
First Avenue between 69th & 70th Streets	west	84	0	A	4	B	74	0	A	4	B	189	1	A	5	B
	east	115	1	A	5	B	88	0	A	4	B	169	1	A	5	B
69th Street between First & York Avenues	north	32	0	A	4	B	53	0	A	4	B	47	0	A	4	B
	south	50	0	A	4	B	56	0	A	4	B	72	0	A	4	B
First Avenue between 68th & 69th Streets	east	278	2	A	6	B	88	0	A	4	B	232	1	A	5	B
	west	152	1	A	5	B	95	1	A	5	B	173	1	A	5	B
69th Street between First & Second Avenues	south	61	0	A	4	B	56	0	A	4	B	93	1	A	5	B
	north	53	0	A	4	B	53	0	A	4	B	95	1	A	5	B

Notes:
P/M/F = Pedestrians per Minute per Foot
LOS = Level of Service

Table 13-7 (continued)
CORNER ANALYSIS:
2011 NO ACTION CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Corner	AM		Midday		PM	
		SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	Southwest	174	A	139	A	141	A
	Northwest	169	A	161	A	155	A
York Avenue & E 68th Street	Northeast	238	A	226	A	222	A
	Southeast	211	A	205	A	200	A
	Southwest	165	A	162	A	166	A
	Northwest	167	A	184	A	153	A
York Avenue & E 69th Street	Southwest	270	A	230	A	177	A
	Northwest	314	A	192	A	172	A
First Avenue & E 67th Street	Northeast	376	A	318	A	213	A
	Southeast	131	A	123	B	137	A
First Avenue & E 68th Street	Northeast	115	B	169	A	104	B
	Southeast	87	B	132	A	90	B
	Southwest	80	B	121	B	63	B
	Northwest	125	B	205	A	92	B
First Avenue & E 69th Street	Northeast	146	A	190	A	86	B
	Southeast	148	A	224	A	77	B
	Southwest	208	A	211	A	86	B
	Northwest	173	A	213	A	78	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

Table 13-7 (continued)
CROSSWALK ANALYSIS:
2011 NO ACTION CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Crosswalk	AM						Midday						PM					
		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS	
		Without Vehicles		With Vehicles				Without Vehicles		With Vehicles				Without Vehicles		With Vehicles			
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	North	197	A	197	A	93	B	205	A	205	A	129	B	171	A	171	A	81	B
	South	230	A	230	A	109	B	154	A	154	A	97	B	143	A	143	A	68	B
	West	583	A	500	A	124	B	488	A	403	A	133	A	567	A	517	A	121	B
York Avenue & E 68th Street	North	114	B	102	B	53	B	122	B	112	B	76	B	108	B	99	B	50	B
	East	415	A	391	A	81	B	293	A	277	A	73	B	384	A	369	A	75	B
	South	95	B	80	B	44	B	109	B	85	B	68	B	101	B	79	B	47	B
	West	267	A	267	A	52	B	234	A	234	A	58	B	250	A	250	A	49	B
York Avenue & E 69th Street	North	213	A	213	A	102	B	111	B	111	B	71	B	159	A	159	A	76	B
	South	194	A	194	A	93	B	136	A	136	A	87	B	129	B	129	B	62	B
	West	550	A	497	A	108	B	411	A	344	A	103	B	311	A	269	A	61	B
First Avenue & E 67th Street	North	675	A	648	A	435	A	270	A	259	A	174	A	189	A	185	A	122	B
	East	419	A	419	A	105	B	581	A	581	A	145	A	381	A	381	A	95	B
	South	396	A	396	A	261	A	185	A	185	A	122	B	693	A	693	A	457	A
First Avenue & E 68th Street	North	150	A	141	A	99	B	207	A	191	A	137	A	114	B	105	B	75	B
	East	235	A	210	A	64	B	372	A	352	A	101	B	257	A	236	A	70	B
	South	140	A	140	A	90	B	213	A	213	A	137	A	145	A	145	A	93	B
	West	336	A	336	A	91	B	518	A	518	A	141	A	183	A	183	A	50	B
First Avenue & E 69th Street	North	173	A	166	A	114	B	204	A	196	A	134	A	83	B	79	B	54	B
	East	222	A	222	A	59	B	309	A	309	A	82	B	181	A	181	A	48	B
	South	180	A	180	A	119	B	308	A	308	A	203	A	81	B	81	B	53	B
	West	420	A	374	A	111	B	420	A	362	A	111	B	190	A	168	A	50	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

existing conditions, continuing to operate acceptably at LOS B or better (with densities of 63 sf/p or more) during all peak periods. Similar to existing conditions, the study area crosswalks would generally continue to operate acceptably at LOS B or better under average conditions (with densities of 79 sf/p or more) during all peak periods. Under surge conditions, crosswalks would also operate at LOS B (with densities of 48 sf/p) during the AM, midday, and PM peaks.

PUBLIC TRANSPORTATION

Future subway ridership was estimated using the same growth factors that were applied to pedestrian volumes, as described above. This accounts for additional riders from general background growth and from the No Action projects proposed for the area that are expected to be completed by 2011, as discussed in "The Future without the Proposed Actions—2007."

Subways

As illustrated in Table 13-8, by 2011, levels of service at the northeast and southeast subway stairs would remain at LOS F in the No Action conditions. The stair at the northwest corner would operate at LOS D in 2011 No Action conditions (compared with LOS C in existing conditions) during the AM peak. The stair at the southwest corner would operate at LOS E in 2011 No Action conditions (compared with LOS D in existing conditions) during the PM peak. All other station elements would continue to operate at the same LOS as under existing conditions.

F. FUTURE WITH THE PROPOSED ACTIONS—2011

The section analyzes the effects of additional trips generated by the proposed research building, the residential project that could be completed on the north block with the proposed actions, and the Phase 2 development for the future 2011 analysis year. To assess potential impacts, the proposed actions' incremental trips are compared to the 2011 No Action baseline included in this analysis of pedestrian and subway conditions in the study area.

PEDESTRIAN CONDITIONS

Impacts are considered significant at sidewalks if there is an increase of 2 pedestrians per minute per foot to any locations where No Action conditions are characterized by flow rates greater than 15 pedestrians per minute per foot. For corners and crosswalks, impacts are considered significant at any locations where the average occupancy is less than 15 square feet per pedestrian in the No Action conditions, and the project would cause a decrease of 1 square foot per person or greater. Increases of fewer than 30 pedestrians within a 15-minute time period at any pedestrian element analyzed would not be considered a significant impact, and the deterioration in the level of service would not be noticeable.

In the DEIS, completion of the full buildout was expected to result in a total 15-minute increment of 233, 221, and 289 pedestrian trips to the study area sidewalks (this includes "walk only" trips as well as pedestrians that ride buses and subways) during the AM, midday, and PM peaks, respectively. In comparison, the proposed actions presented in the FEIS would result in a total 15-minute increment of 163, 134, and 189 pedestrian trips to the study area sidewalks (including "walk only" trips as well as pedestrians that ride buses and subways) during the AM, midday, and PM peaks, respectively. As shown in Table 13-9, accounting for conditions with the proposed actions presented in the DEIS, study area sidewalks in 2001 would continue to

Table 13-8
Memorial Sloan Kettering Cancer Center
2011 No Action Condition Level of Service Analysis

East 68th Street at Lexington Avenue #6 Train (Control Area R-246)

SUBWAY STATION ELEMENTS	WIDTH (ft)	EFFECTIVE WIDTH (ft)	AM 15-MINUTE PEDESTRIAN VOLUME IN	AM 15-MINUTE PEDESTRIAN VOLUME OUT	PM 15-MINUTE PEDESTRIAN VOLUME IN	PM 15-MINUTE PEDESTRIAN VOLUME OUT	FRICTION FACTOR AM	FRICTION FACTOR PM	15-MINUTE SVCD CAPACITY AM	15-MINUTE SVCD CAPACITY PM	V/SVCD RATIO AM	V/SVCD RATIO PM	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM
Street Stairs														
Northwest Corner	4.0	3.0	189	226	294	142	0.9	0.8	405	360	1.024	1.210	D	D
Northeast Corner	4.2	3.2	494	273	483	221	0.9	0.8	432	384	1.774	1.832	F	F
Southeast Corner	4.7	3.7	378	630	520	725	0.9	0.9	499	499	2.018	2.491	F	F
Southwest Corner	6.7	5.7	326	488	420	609	0.9	0.9	770	770	1.058	1.337	D	E
	QUANTITY													
Token Booth -- R-246														
Two-Way Turnstiles	14		1334	1612	1691	1701			6720	6720	0.438	0.505	A	B
Exit Gates	2		53	5	26	5			1500	1500	0.039	0.021	A	A

Notes:
The Capacity for Stairs = 10 persons per minute per effective foot width
The Capacity for Turnstiles = 32 persons per minute (assumes a 20 percent reduction for cross traffic)
The Capacity for Exit Gates = 50 persons per minute
Source: City Environmental Quality Review Technical Manual

Table 13-9
SIDEWALK ANALYSIS:
2011 FUTURE WITH THE PROPOSED ACTIONS CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Sidewalk	AM					MD					PM				
			Average		Platoon			Average		Platoon			Average		Platoon	
		15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS	15-min Two-Way Volume	P/M/F	LOS	P/M/F	LOS
York Avenue & E 67th Street																
York Avenue between 67th & 68th Streets	west	170	1	A	5	B	314	2	A	6	B	282	2	A	6	B
York Avenue between 66th & 67th Streets	west	130	1	A	5	B	384	2	A	6	B	250	1	A	5	B
York Avenue & E 68th Street																
York Avenue between 68th & 69th Streets	west	224	1	A	5	B	177	1	A	5	B	237	1	A	5	B
	east	104	1	A	5	B	93	0	A	4	B	109	1	A	5	B
68th Street east of York Avenue	north	36	0	A	4	B	32	0	A	4	B	41	0	A	4	B
	south	39	0	A	4	B	38	0	A	4	B	47	0	A	4	B
York Avenue between 67th & 68th Streets	east	133	1	A	5	B	162	1	A	5	B	174	1	A	5	B
	west	216	1	A	5	B	212	1	A	5	B	172	1	A	5	B
68th Street between York & First Avenues	south	103	1	A	5	B	105	1	A	5	B	99	1	A	5	B
	north	108	1	A	5	B	124	1	A	5	B	105	1	A	5	B
York Avenue & E 69th Street																
York Avenue between 69th & 70th Streets	west	166	1	A	5	B	156	1	A	5	B	214	1	A	5	B
	east	72	0	A	4	B	85	0	A	4	B	55	0	A	4	B
York Avenue between 68th & 69th Streets	east	75	0	A	4	B	88	0	A	4	B	59	0	A	4	B
	west	255	1	A	5	B	182	1	A	5	B	190	1	A	5	B
69th Street between York & First Avenues	south	61	0	A	4	B	77	0	A	4	B	91	0	A	4	B
	north	79	0	A	4	B	105	1	A	5	B	89	0	A	4	B
First Avenue & E 68th Street																
First Avenue between 68th & 69th Streets	west	95	1	A	5	B	89	1	A	5	B	179	1	A	5	B
	east	126	1	A	5	B	101	1	A	5	B	106	1	A	5	B
68th Street between First & York Avenues	north	111	1	A	5	B	104	1	A	5	B	135	1	A	5	B
	south	66	0	A	4	B	68	0	A	4	B	110	1	A	5	B
First Avenue between 67th & 68th Streets	east	251	2	A	6	B	157	1	A	5	B	284	2	A	6	B
	west	121	1	A	5	B	84	1	A	5	B	194	1	A	5	B
68th Street between First & Second Avenues	south	100	1	A	5	B	79	0	A	4	B	109	1	A	5	B
	north	107	1	A	5	B	46	0	A	4	B	155	1	A	5	B
First Avenue & E 69th Street																
First Avenue between 69th & 70th Streets	west	84	0	A	4	B	74	0	A	4	B	189	1	A	5	B
	east	131	1	A	5	B	117	1	A	5	B	190	1	A	5	B
69th Street between First & York Avenues	north	32	0	A	4	B	53	0	A	4	B	47	0	A	4	B
	south	58	0	A	4	B	57	0	A	4	B	80	0	A	4	B
First Avenue between 68th & 69th Streets	east	294	2	A	6	B	117	1	A	5	B	253	1	A	5	B
	west	152	1	A	5	B	95	1	A	5	B	173	1	A	5	B
69th Street between First & Second Avenues	south	69	0	A	4	B	57	0	A	4	B	101	1	A	5	B
	north	53	0	A	4	B	53	0	A	4	B	95	1	A	5	B

Notes:
P/M/F = Pedestrians per Minute per Foot
LOS = Level of Service

Table 13-9 (continued)
CORNER ANALYSIS:
2011 FUTURE WITH THE PROPOSED ACTIONS CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Corner	AM		Midday		PM	
		SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	Southwest	128	B	97	B	99	B
	Northwest	155	A	139	A	138	A
York Avenue & E 68th Street	Northeast	238	A	226	A	222	A
	Southeast	211	A	205	A	200	A
	Southwest	150	A	138	A	146	A
	Northwest	150	A	150	A	134	A
York Avenue & E 69th Street	Southwest	230	A	186	A	153	A
	Northwest	260	A	159	A	150	A
First Avenue & E 67th Street	Northeast	273	A	243	A	164	A
	Southeast	104	B	99	B	100	B
First Avenue & E 68th Street	Northeast	92	B	130	A	76	B
	Southeast	70	B	93	B	73	B
	Southwest	69	B	109	B	59	B
	Northwest	101	B	189	A	73	B
First Avenue & E 69th Street	Northeast	135	A	160	A	81	B
	Southeast	132	A	182	A	71	B
	Southwest	197	A	209	A	84	B
	Northwest	173	A	213	A	78	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

Table 13-9 (continued)
CROSSWALK ANALYSIS:
2011 FUTURE WITH THE PROPOSED ACTIONS CONDITIONS LEVEL OF SERVICE ANALYSIS

Location	Crosswalk	AM						Midday						PM					
		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS		Average Pedestrian Space/LOS				Surge Pedestrian Space/LOS	
		Without Vehicles		With Vehicles				Without Vehicles		With Vehicles				Without Vehicles		With Vehicles			
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
York Avenue & E 67th Street	North	197	A	197	A	93	B	205	A	205	A	129	B	171	A	171	A	81	B
	South	230	A	230	A	109	B	154	A	154	A	97	B	143	A	143	A	68	B
	West	500	A	430	A	107	B	379	A	313	A	103	B	457	A	417	A	98	B
York Avenue & E 68th Street	North	114	B	102	B	53	B	122	B	112	B	76	B	108	B	99	B	50	B
	East	415	A	391	A	81	B	293	A	277	A	73	B	384	A	369	A	75	B
	South	95	B	80	B	44	B	109	B	85	B	68	B	101	B	79	B	47	B
	West	219	A	219	A	43	B	170	A	170	A	42	B	193	A	193	A	38	C
York Avenue & E 69th Street	North	213	A	213	A	102	B	111	B	111	B	71	B	159	A	159	A	76	B
	South	194	A	194	A	93	B	136	A	136	A	87	B	129	B	129	B	62	B
	West	390	A	352	A	76	B	273	A	228	A	68	B	239	A	206	A	47	B
First Avenue & E 67th Street	North	274	A	263	A	177	A	180	A	173	A	116	B	124	B	122	B	80	B
	East	404	A	404	A	101	B	526	A	526	A	131	A	368	A	368	A	95	B
	South	210	A	210	A	138	A	136	A	136	A	90	B	227	A	227	A	150	A
First Avenue & E 68th Street	North	106	B	100	B	70	B	182	A	168	A	120	B	77	B	71	B	51	B
	East	207	A	185	A	56	B	267	A	253	A	73	B	215	A	198	A	59	B
	South	113	B	113	B	73	B	180	A	180	A	116	B	130	A	130	A	84	B
	West	336	A	336	A	91	B	518	A	518	A	141	A	183	A	183	A	50	B
First Avenue & E 69th Street	North	173	A	166	A	114	B	204	A	196	A	134	A	83	B	79	B	54	B
	East	196	A	196	A	52	B	232	A	232	A	61	B	158	A	158	A	42	B
	South	163	A	163	A	108	B	301	A	301	A	199	A	77	B	77	B	51	B
	West	420	A	374	A	111	B	420	A	362	A	111	B	190	A	168	A	50	B

Notes:
SF/P = Square Feet per Pedestrian
LOS = Level of Service

operate acceptably at LOS B or better (with average flow rates of 2 p/m/f or less, and platoon flows of 6 p/m/f or less) during all peak periods, similar to 2011 No Action conditions. Service levels at the study area street corners would remain similar to No Action conditions, continuing to operate acceptably at LOS B or better (with densities of 59 sf/p or more) during all peak periods. Similar to 2011 No Action Conditions, the study area crosswalks would operate acceptably at LOS B or better (with densities of 71 sf/p or more). Under surge conditions, crosswalks would operate at LOS C or better, (with densities of 38 sf/p or more). Therefore, because no significant adverse impacts to sidewalks, crosswalks, or street corners would have resulted with the larger program analyzed for the DEIS, the proposed actions would not result in any significant adverse impacts to pedestrian elements in the study area in 2011 Future with the Proposed Actions conditions.

PUBLIC TRANSPORTATION

Like the No Action Scenario, the 2011 Future with the Proposed Actions would add riders to the 68th Street subway station. As described below, these new riders would result in significant impacts to the northeast and southeast stairs at the subway station analyzed.

SUBWAYS

The proposed actions would result in 90 and 101 new subway passengers during the AM and PM 15-minute peak periods analyzed, respectively. As shown in Table 13-10, there would be no changes in levels of service at any of the station elements from increased ridership resulting from the proposed development except at the turnstiles, which would operate at LOS B (compared with LOS A in 2011 No Action conditions) during the AM peak. However, the proposed actions would result in significant impacts at the northeast and southeast stairs, which would continue to operate at LOS F. Proposed mitigation measures are discussed in Chapter 17, "Mitigation."

Table 13-10
Memorial Sloan Kettering Cancer Center
2011 Future with the Proposed Actions Level of Service Analysis

East 68th Street at Lexington Avenue #6 Train (Control Area R-246)

SUBWAY STATION ELEMENTS	WIDTH (ft)	EFFECTIVE WIDTH (ft)	AM 15-MINUTE PEDESTRIAN VOLUME IN	AM 15-MINUTE PEDESTRIAN VOLUME OUT	PM 15-MINUTE PEDESTRIAN VOLUME IN	PM 15-MINUTE PEDESTRIAN VOLUME OUT	FRICTION FACTOR AM	FRICTION FACTOR PM	15-MINUTE SVCD CAPACITY AM	15-MINUTE SVCD CAPACITY PM	V/SVCD RATIO AM	V/SVCD RATIO PM	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM
Street Stairs														
Northwest Corner	4.0	3.0	189	226	294	142	0.9	0.8	405	360	1.024	1.210	D	D
Northeast Corner	4.2	3.2	497	315	524	231	0.9	0.8	432	384	1.878	1.965	F	F
Southeast Corner	4.7	3.7	381	672	560	735	0.9	0.9	499	499	2.108	2.593	F	F
Southwest Corner	6.7	5.7	326	488	420	609	0.9	0.9	770	770	1.058	1.337	D	E
	QUANTITY													
Token Booth – R-246														
Two-Way Turnstiles	14		1340	1696	1772	1722			6720	6720	0.452	0.520	B	B
Exit Gates	2		53	5	26	5			1500	1500	0.039	0.021	A	A

Notes:
The Capacity for Stairs = 10 persons per minute per effective foot width
The Capacity for Turnstiles = 32 persons per minute (assumes a 20 percent reduction for cross traffic)
The Capacity for Exit Gates = 50 persons per minute
Source: City Environmental Quality Review Technical Manual

A. INTRODUCTION

This chapter identifies and quantifies any significant direct and indirect air quality impacts from the proposed actions and the proposed development on the Memorial Sloan-Kettering Cancer Center (MSKCC) campus located on the Upper East Side of Manhattan. Indirect effects are caused by emissions from motor vehicles traveling to and from the MSKCC campus (mobile sources). Direct effects would stem from emissions generated by new stationary sources on the MSKCC campus, such as emissions from fuel burned onsite for heating and hot water systems. However, MSKCC would use Con Edison steam to provide heat and hot water for the proposed development on the three campus blocks. Therefore, no fuel would be burned onsite and no assessment of stationary source emissions from those operations is necessary. Since the proposed research building would contain laboratories, emissions from the building's fume hood exhaust system, in the event of an accidental chemical spill, will be examined. In addition, the campus is immediately south of a major stationary source (the New York Hospital boiler at East 70th Street), which means there is the potential for air quality impacts on the proposed development.

Since publication of the Draft Environmental Impact Statement (DEIS) the south block has been removed from the rezoning area, which would reduce traffic and emissions from mobile sources in the area. There was no impact due to mobile sources in the DEIS; therefore, the proposed actions now would similarly have no significant adverse impact on mobile source air quality due to traffic.

B. POLLUTANTS FOR ANALYSIS

As discussed further below, in New York City ambient concentrations of carbon monoxide, ozone, and lead are predominantly influenced by mobile source emissions; emissions of nitrogen oxides (NO_x) come from both mobile and stationary sources; and emissions of respirable particulate matter and sulfur dioxide (SO_2) are associated mainly with stationary sources.

CARBON MONOXIDE

Carbon monoxide (CO), a colorless and odorless gas, is produced in the urban environment primarily by the incomplete combustion of gasoline and other fossil fuels. In New York City, approximately 80 to 90 percent of CO emissions are from motor vehicles. CO concentrations can vary greatly over relatively short distances. Elevated concentrations are usually limited to locations near crowded intersections, along heavily traveled and congested roadways. Consequently, CO concentrations must be predicted on a localized or microscale basis. The proposed actions would increase traffic volumes on streets near the MSKCC campus and could therefore result in localized increases in CO levels. However, since the proposed actions' project-generated traffic would be lower than the *New York City Environmental Quality Review (CEQR)*

Technical Manual air quality screening threshold of 100 peak hour trips for this area of the city, no mobile source analysis was warranted.

NITROGEN OXIDES AND OZONE

Nitrogen oxides are of principal concern because of their role as precursors in the formation of photochemical oxidants, such as ozone. There is a standard for average annual nitrogen dioxide (NO_2) concentrations, which is normally examined only for fossil fuel energy sources. Ozone is formed through a series of reactions that take place in the atmosphere in the presence of sunlight. Because the reactions are slow, and occur as the pollutants are diffusing downwind, elevated ozone levels are often found many miles from sources of the precursor pollutants. The effects of nitrogen oxide emissions from mobile sources are therefore generally examined on a regional basis. The change in regional mobile source emissions of these pollutants is related to the total number of vehicle trips and vehicle miles of travel throughout the New York metropolitan area. The proposed actions would not have a significant effect on the overall volume of vehicular travel in the metropolitan area. It would not, therefore, have any measurable impact on regional nitrogen oxide emissions or on ozone levels, and an analysis of potential impacts from mobile sources for these pollutants was not warranted. However, since the New York Hospital boiler is nearby, NO_2 impacts on the proposed development from the plant were assessed.

LEAD

Lead emissions are principally associated with industrial sources and motor vehicles that use gasoline containing lead additives. Most U.S. vehicles produced since 1975, and all produced after 1980, are designed to use unleaded fuel. As these newer vehicles have replaced the older ones, motor-vehicle-related lead emissions have decreased. As a result, ambient concentrations of lead have declined significantly. Nationally, the average measured atmospheric lead level in 1985 was only about one-quarter the level in 1975.

In 1985, the U.S. Environmental Protection Agency (EPA) announced new rules drastically reducing the amount of lead permitted in leaded gasoline. The maximum allowable lead level in leaded gasoline was reduced from the previous limit of 1.1 grams per gallon to 0.5 grams per gallon effective July 1, 1985, and to 0.1 grams per gallon effective January 1, 1986. Monitoring results indicate that this action has been effective in significantly reducing atmospheric lead levels. Even at locations in the New York City area where traffic volumes are very high, atmospheric lead concentrations are far below the national standard of 1.5 micrograms per cubic meter (3-month average). No significant sources of lead are associated with the proposed actions. Therefore, no analysis was warranted.

RESPIRABLE PARTICULATES—PM_{10}

Particulate matter is emitted into the atmosphere from a variety of sources: industrial facilities, power plants, construction activity, etc. Gasoline-powered vehicles do not produce any significant quantities of particulate emissions. Diesel-powered vehicles, especially heavy trucks and buses, do emit particulates, and respirable particulate concentrations may, therefore, be locally elevated near roadways with high volumes of heavy diesel-powered vehicles. Particulates less than 10 μm in diameter (PM_{10}) have become of primary concern because they are respirable. The proposed actions would not be a significant source of increased regional vehicular trips or local diesel vehicle trips, and therefore, an analysis for respirable particulates was not

warranted. The potential future levels of PM_{10} at the proposed developments were analyzed, examining impacts from the New York Hospital boiler.

SULFUR DIOXIDE—SO_2

SO_2 emissions are primarily associated with the combustion of sulfur-containing fuels: oil and coal. No significant quantities are emitted from mobile sources. Monitored SO_2 concentrations in New York City are below the national standards. The proposed actions would not be a significant source of SO_2, and therefore, an analysis of this pollutant was not warranted. Additionally, potential future levels of SO_2 at the proposed development were evaluated for the New York Hospital boiler.

C. AIR QUALITY STANDARDS

NATIONAL AND STATE AIR QUALITY STANDARDS

As required by the Clean Air Act and its amendments, primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO_2, ozone, respirable particulate matter, SO_2, and lead. (Hydrocarbon standards have been rescinded because these pollutants are primarily of concern only in their role as ozone precursors.) In addition to retaining the PM_{10} standards, EPA adopted 24-hour and annual standards for respirable particulate matter with an aerodynamic equivalent diameter less than 2.5 μm ($PM_{2.5}$), which became effective September 16, 1997. Recently, the U.S. Supreme Court upheld EPA's new $PM_{2.5}$ NAAQS. However, it is expected to be several years before the appropriate analysis methods are available to assess $PM_{2.5}$ concentrations on a microscale level. In the interim, EPA recommends using an analysis of PM_{10} as a surrogate for a $PM_{2.5}$ analysis.

Table 14-1 shows the standards for these pollutants. These standards have also been adopted as the ambient air quality standards for the state of New York. The primary standards protect the public health, and represent levels at which there are no known significant effects on human health. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment. For CO, NO_2, ozone, and respirable particulates, the primary and secondary standards are the same.

STATE IMPLEMENTATION PLAN (SIP)

The Clean Air Act requires each state to submit to EPA a SIP for attainment of NAAQS. The 1977 and 1990 amendments require comprehensive plan revisions for areas where one or more of the standards have yet to be attained. All of New York City is designated non-attainment for ozone and CO. In the New York City metropolitan area, the standard for ozone continues to be exceeded. No violations of the CO standard have been recorded at New York State Department of Environmental Conservation (DEC) monitoring stations over the past few years. A CO attainment demonstration was submitted to EPA by DEC in November 1992. This submission noted that with an Enhanced Inspection & Maintenance program (I&M) in effect, there would be no CO violations in New York City by the 1995 attainment deadline. As part of its effort to attain the CO standard, New York City is also committed to implementing area-wide and site-specific control measures to reduce CO levels should unanticipated localized growth result in elevated CO levels before the attainment day and into the maintenance period.

Table 14-1

National and New York State Ambient Air Quality Standards

Pollutant	Primary		Secondary	
	PPM	Micrograms Per Cubic Meter	PPM	Micrograms Per Cubic Meter
Carbon Monoxide				
Maximum 8-Hour Concentration[1]	9		9	
Maximum 1-Hour Concentration[1]	35		35	
Lead				
Maximum Arithmetic Mean Averaged Over 3 Consecutive Months		1.5		1.5
Nitrogen Dioxide				
Annual Arithmetic Average	0.05	100	0.05	100
Ozone				
1-Hour Average[2]	0.12	235	0.12	235
Total Suspended Particulates (TSP)[3]				
Annual Mean		75		
Maximum 24-Hour Concentration		250		
Respirable Particulates (PM_{10})				
Annual Arithmetic Mean		50		50
Maximum 24-Hour Concentration[4]		150		150
Fine Respirable Matter ($PM_{2.5}$)				
Annual Arithmetic Mean		15		15
Maximum 24-Hour Concentration [1]		65		65
Sulfur Dioxide				
Annual Arithmetic Mean	0.03	80		
Maximum 24-Hour Concentration[1]	0.14	365		
Maximum 3-Hour Concentration[1]			0.50	1,300

Notes:
1 Not to be exceeded more than once a year.
2 Applies only to areas that were designated nonattainment when the ozone standard was adopted in July 1997.
3 TSP levels are regulated by a New York State Standard only.
4 Not to be exceeded by 99th percentile of 24-hour PM_{10} concentrations in a year (averaged over 3 years).
PPM = parts per million

Sources: 40 CFR Part 50—National Primary and Secondary Ambient Air Quality Standards. 40 CFR 50.12 "National Primary and Secondary Standard for Lead," 43 CFR 46245.

EPA has designated New York County (Manhattan) non-attainment for respirable particulate matter (PM_{10}). In 1995, a SIP revision and Attainment Demonstration was submitted to EPA for the control of PM_{10} concentrations in New York County.

DE MINIMIS CRITERIA

For all pollutants, causing the NAAQS to be exceeded generally constitutes a significant impact. In addition to the NAAQS, New York City has developed de minimis criteria to assess the significance of impacts on air quality that would result from a proposed development. These criteria, as detailed in the *CEQR Technical Manual*, set the minimum change in CO concentration that defines a significant environmental impact. Significant increases with respect to CO

concentrations in New York City are defined as (1) an increase of 0.5 parts per million (ppm) or more in the maximum 8-hour average CO concentration at a location where the predicted No Build 8-hour concentration is equal to or between 8 and 9 ppm, or (2) an increase of more than half the difference between baseline concentrations and the 8-hour standard, when No Build concentrations are below 8 ppm.

D. METHODOLOGY FOR PREDICTING POLLUTANT CONCENTRATIONS

MOBILE SOURCES

To compare estimated CO concentrations with the applicable national and state ambient air quality standards for CO and to determine whether the proposed actions would cause a significant air quality impact, estimates of maximum concentrations for these same periods are prepared.

The prediction of motor-vehicle-generated CO concentrations in an urban environment characterized by meteorological phenomena, traffic conditions, and physical configurations is a challenging problem. Air pollutant dispersion models simulate mathematically how traffic, meteorology, and geometry combine to affect pollutant concentrations. The mathematical expressions and formulations that comprise the various models attempt to describe an extremely complex physical phenomenon as closely as possible. However, because all models contain simplifications and approximations of actual conditions and interactions, and because a worst-case condition is of most interest, most of these dispersion models are conservative and tend to overpredict pollutant concentrations, particularly under adverse meteorological conditions.

The CO analysis for the proposed actions has employed a modeling approach approved by EPA that has been widely used for evaluating air quality impacts of projects in New York City, New York State, and throughout the country, and has coupled this approach with a series of worst-case assumptions relating to meteorology, background concentration levels, etc. This combination results in a conservative estimate of expected CO concentrations and resulting air quality impacts caused by the proposed actions.

DISPERSION MODELS FOR MICROSCALE ANALYSES

At all sites selected for study, a first-level conservative analysis was performed using EPA's CAL3QHC model, version 2 (*User's Guide to CAL3QHC, A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections*, Office of Air Quality, Planning Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina). The CAL3QHC model is based on the CALINE-3 line source dispersion model with an additional algorithm for estimating vehicle queue lengths at signalized intersections. The CALINE-3 model is a Gaussian model, which assumes that the dispersion of pollutants downwind of a pollution source follows a Gaussian (or normal) distribution, and is used for predicting CO concentrations along roadway segments. The pollution source is the emissions from motor vehicles operating under free-flow conditions. The refinement that CAL3QHC provides is the inclusion of the contribution of emissions from idling vehicles in the overall concentration. The queuing algorithm requires additional input for site-specific traffic parameters, such as signal timing, and performs delay calculations from the *Highway Capacity Manual* traffic forecasting model to predict the number of idling vehicles.

For a more refined analysis, the CAL3QHC model has been updated with an extended module, which allows for the incorporation of actual meteorological data into the modeling, instead of worst-case assumptions regarding meteorological parameters. This refined version of the model, CAL3QHCR, is only employed if maximum predicted CO concentrations are greater than the applicable ambient air quality standards and/or a de minimis impact is predicted with the first-level CAL3QHC modeling.

WORST-CASE METEOROLOGICAL CONDITIONS

In general, the transport and concentration of pollutants from vehicular sources are influenced by three principal meteorological factors: wind direction, wind speed, and atmospheric stability.

Wind direction influences the accumulation of pollutants at a particular receptor location. Wind direction was chosen to maximize pollutant concentrations at each of the prediction sites. In applying the CAL3QHC model, the wind angle was varied to determine the worst-case wind direction resulting in the maximum concentrations. Following the recommendations of EPA and the latest guidance from the New York City Department of Environmental Protection (DEP), CO computations with CAL3QHC were performed using a wind speed of 1 meter/second, and stability class D. A persistence factor of 0.70 was selected for the 8-hour period. This persistence factor takes into account that over 8 hours, vehicle volumes will fluctuate downward from the peak, speeds may vary, and wind directions and speeds will change somewhat as compared with the conservative assumptions used for the single highest hour. A surface roughness length (the parameter that signifies the frictional effect of the height and spacing of objects on the surface over which wind is flowing) of 3.21 meters was chosen, and, in addition, a 50° Fahrenheit ambient temperature was assumed for the emissions computations. At each receptor location, for the CAL3QHC modeling, the wind angle that maximized the pollutant concentrations was used in the analysis regardless of frequency of occurrence.

For the refined analysis with CAL3QHCR, 5 years of meteorological data with surface data from La Guardia Airport (1991-1995) and concurrent upper air data from Atlantic City, New Jersey and Brookhaven, New York were used in the simulation program. Modeling was performed for non-summer conditions only, since it is recognized by the EPA and DEC that potential elevated levels of CO only occur during non-summer conditions.

ANALYSIS YEARS

The CO microscale analysis was performed for two years—2001, to determine existing conditions, and 2011, the year of completion for Phase 2 and the worst-case year (i.e., in later years, emissions would be less due to vehicle turnover). The 2011 analyses were performed both without and with the proposed actions. No analysis was required for 2007, the year of completion of Phase 1, since project-generated traffic would be below the *CEQR Technical Manual* screening threshold of 100 trips for this area of the City.

VEHICLE EMISSIONS DATA

To predict ambient concentrations of pollutants generated by vehicular traffic, emissions from vehicle exhaust systems must be estimated accurately. Vehicular emissions were computed using the EPA-developed Mobile Source Emissions Model, MOBILE5B. Emission estimates were made for five classes of motor vehicles:

- Light-duty, gasoline-powered automobiles;

- Light-duty, gasoline-powered taxis;
- Light-duty, gasoline-powered trucks;
- Heavy-duty, gasoline-powered trucks; and
- Heavy-duty, diesel-powered vehicles.

No light-duty diesel-powered vehicles (automobiles and taxis), light-duty diesel-powered trucks, or motorcycles were assumed. In the case of motorcycles, the number of such vehicles on any street is generally small. In the case of diesel-powered vehicles, emissions from a comparable class of gasoline-powered vehicles were included. CO emissions from the gasoline-powered vehicles are higher than the comparable diesel-powered vehicle emissions and thus yield conservative estimates of total composite CO emissions and concentrations.

In addition, based on the latest guidance from DEC and DEP, sport-utility vehicles (SUVs) should be classified as light-duty gas trucks (LDGTs), in order to properly model their emissions. DEC has also officially removed the oxygenated fuels program and has replaced it with the Federal Reformulated Gasoline (RFG) program. Therefore, the MOBILE5B CO emission estimates were prepared accounting for this change in fuel programs.

Emission estimates were based on implementation of the New York State auto and light-duty gasoline-powered truck I&M program begun in January 1982 and the taxi I&M program begun in October 1977. The I&M program requires annual inspections of automobiles and light trucks to determine if CO and hydrocarbon emissions from the vehicles' exhaust systems are below emission standards. Vehicles failing the emissions test must undergo maintenance and pass a re-test to be registered in New York State.

Heavy-duty vehicle emission estimates reflect local engine displacement and vehicle loading characteristics. Light-duty truck emissions were based on an assumed 75 percent-25 percent split between trucks weighing less than 6,000 pounds and trucks weighing 6,000 to 8,500 pounds. These data were obtained from DEP and are based on vehicle registration data.

A few years ago, New York State decided to revise its future I&M program. Originally, the future I&M program was envisioned to include centralized facilities that would test vehicles under an "enhanced" program, at a dynamic load instead of at a simple idle. However, New York State has recently decided that while the future I&M program would still involve an enhanced I&M program, motorists would be allowed to take their vehicles to nearby service stations that would be allowed both to test and repair autos that failed the new I&M test. Emissions for the analysis were developed using the new I&M program.

For automobiles and light-duty gasoline-powered trucks, emission estimates account for three possible vehicle operating conditions: cold-vehicle operation, hot-start operation, and hot-stabilized operation. It is important to distinguish between these three operating categories, because vehicles emit CO at different rates depending on whether they are cold or warmed up. All taxis were assumed to be operating in a hot-stabilized mode; all arriving project-generated autos were assumed to be operating in a hot-stabilized mode; and all departing project-generated autos were assumed to be operating in a cold-start mode. Auto operating conditions used in the emission calculations were obtained from data supplied by DEP, *Bureau of Science and Technology Report No. 34 (Revised).* Since light-duty gasoline-powered trucks now include SUVs, the worst-case thermal conditions used for autos was assumed, as a conservative estimate. Table 14-2 summarizes these thermal state conditions.

Table 14-2
Vehicle Operating Conditions Assumed for the Analysis

	Analysis Period	
	AM Peak	PM Peak
Local Autos		
Percentage Cold (Non Catalytic)	22.5	19.8
Percentage Cold (Catalytic)	22.8	26.3
Percentage Hot (Catalytic)	0.6	4.2
Light-Duty Gasoline Trucks		
Percentage Cold (Non Catalytic)	22.5	22.5
Percentage Cold (Catalytic)	22.8	22.8
Percentage Hot (Catalytic)	0.6	0.6

TRAFFIC DATA

Traffic data for the air quality analysis were derived from traffic volume and vehicle classification counts and other information developed as part of the proposed actions' traffic analysis (see Chapter 12, "Traffic and Parking"). For the air quality analysis, the weekday AM (8 to 9 AM) and PM (5 to 6 PM) peak periods were subjected to full-scale microscale analysis. These time periods were selected for the mobile source analysis because they produce the highest levels of project-generated traffic, and therefore they have the greatest potential for significant air quality impacts. For the results of the first-level modeling, the peak 8-hour concentrations were determined by applying a persistence factor of 0.70 to the maximum predicted 1-hour local impact values.

BACKGROUND CONCENTRATIONS

Background concentrations are those pollutant concentrations not directly accounted for through the modeling analysis (which directly accounts for vehicular-generated emissions on the streets within 1,000 feet and line-of-sight of the receptor location). Background concentrations must be added to modeling results to obtain total pollutant concentrations at a prediction site.

The 1- and 8-hour average CO background concentrations used in this analysis are presented in Table 14-3 for 2001 and 2011. These values, obtained from DEP, are based on CO concentrations measured at DEC monitoring stations and are adjusted to reflect the changes in vehicular emissions expected since the concentrations were measured.

Table 14-3
Carbon Monoxide Background Concentrations

Analysis Years	1-Hour (ppm)*	8-Hour (ppm)*
2001	5.7	2.3
2011	6.0	2.0
Note: * Parts per million.		

MOBILE SOURCE RECEPTOR LOCATIONS

The intersections selected for microscale analysis for the DEIS are shown in Table 14-4 and Figure 14-1. A receptor site is a computer simulation of sidewalk or roadside locations near the intersection with continuous public access. Multiple receptor sites were modeled at these intersections (i.e., receptors were placed along the approach and departure links at spaced intervals).

Table 14-4
Mobile Source Receptor Locations

Receptor Site	Location
1	York Avenue and East 68th Street
2	York Avenue and East 66th Street
3	York Avenue and East 63rd Street

No detailed mobile source analysis was required for Phase 1 in the DEIS, since levels of project-generated traffic at any intersection would be below the *CEQR Technical Manual* mobile source 100 trip screening threshold in 2007. For the proposed actions for the FEIS, levels of project-generated traffic did not exceed the screening threshold for either Phase 1 or Phase 2.

The receptor sites were selected because they are the key locations in the study area where the combination of the highest levels of project-generated traffic and overall constrained traffic conditions are expected, and therefore represent the locations where the greatest air quality impacts and maximum changes in the CO concentrations would be expected.

STATIONARY SOURCES

CHEMICAL SPILL ANALYSIS

Introduction

Emissions from the proposed research building's fume hood exhaust system, in the event of an accidental chemical spill in one of the laboratories, were evaluated. Impacts were evaluated using information provided by MSKCC and procedures and methodologies contained in the *CEQR Technical Manual*. Maximum concentrations were compared to the Short-Term exposure levels (STELs) or ceiling levels recommended by the U.S. Occupational Safety and Health Administration (OSHA) for the chemicals examined. It is assumed that the laboratories would use the same types and quantities of materials that are currently used in existing laboratories elsewhere on the campus.

The expected usage of potentially hazardous materials and systems that would be employed in the proposed facilities to ensure the safety of both the staff and the surrounding community in the event of a chemical spill in one of the proposed laboratories are detailed below. A quantitative analysis employing mathematical modeling was performed to determine potential impacts on nearby places of public access and potential impacts due to recirculation into air intake systems.

Laboratory Fume Hood Exhausts

All laboratories in which hazardous chemicals are used would be equipped with fume hoods. Fume hoods are enclosures that are maintained under negative pressure and continuously vented to the outside. Their function is to protect research workers from potentially harmful fumes. By providing a continuous exhaust from laboratory rooms, they also prevent any fumes released within the laboratory from escaping into other areas of the building or through windows to the outside.

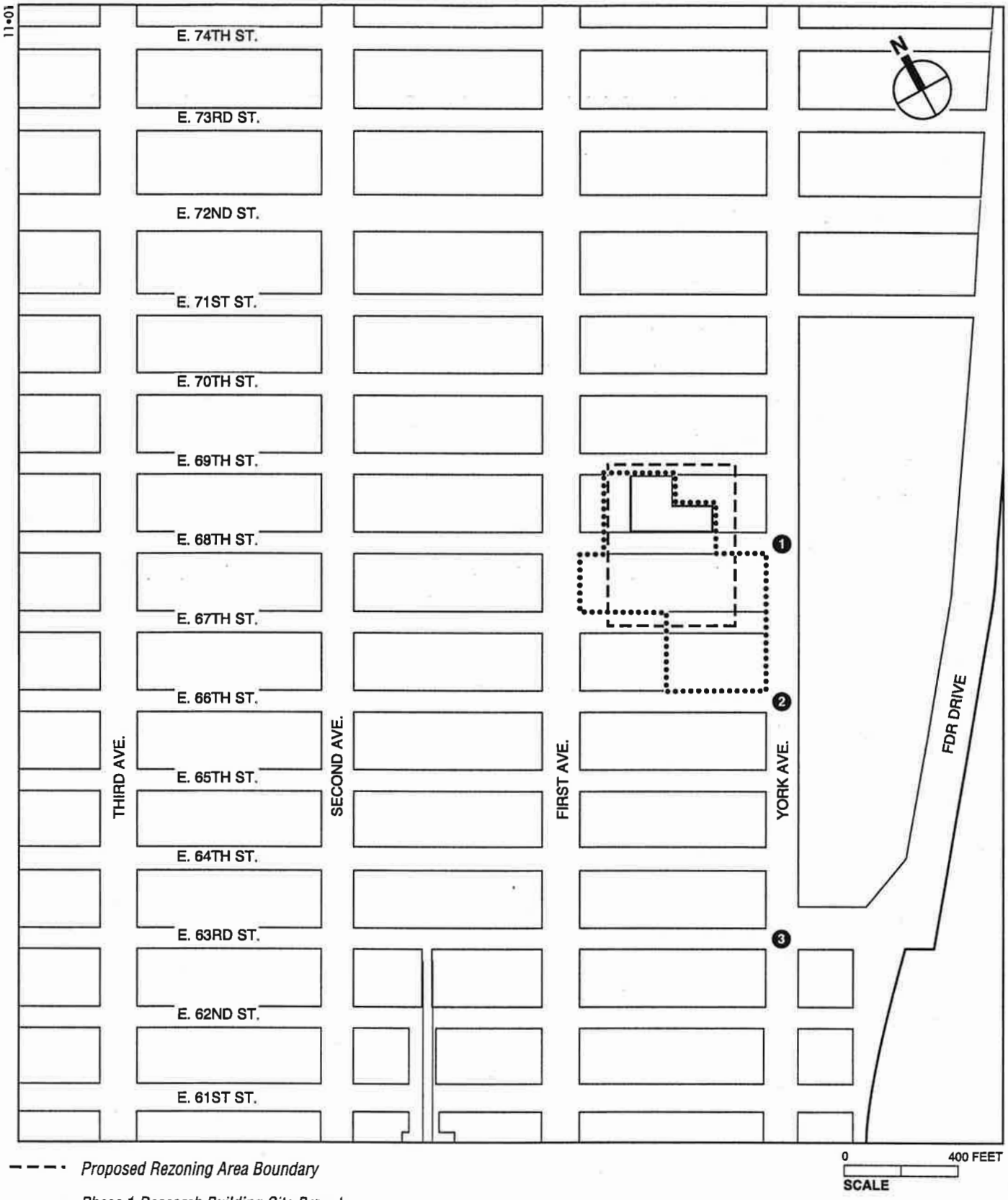
Based on the preliminary design information for the exhaust system supplied by the engineers, all fume hoods within the building would be vented to the building roof through separate ducts. As a worst case, it is currently assumed that the facility would have up to 159 fume hoods and the fans would vent to the outside through six to eight plenum chambers on the mechanical floor (23rd floor) of the building that mix the exhaust with fresh air. Each chamber would be equipped with four or five exhaust fans to maintain an exit velocity of about 3,000-4,000 feet per minute and a flow of 35,000 cubic feet per minute (cfm) per stack. The plenum exhaust fans will be located on the roof of the building. In addition, another ten to fifteen stacks maintaining a flow of 5,000 to 15,000 cubic feet per minute (cfm) per stack would also be located on the roof. All fans will be on emergency power, so all the hoods would continue to be sufficiently vented even during a general power failure.

Planned Operations

All hazardous materials used at MSKCC are used only in small quantities by trained professionals. The largest chemical containers are typically 4-liter jars, except for 5 gallon containers for solvents, which are used only in chemistry laboratories. The Department of Environmental Health and Safety and the individual investigators have established and enforce safety procedures for storage and use of all hazardous materials in all the laboratories.

Since the specific activities in the new building are not known, the complete inventory of chemicals used at MSKCC was examined. From the chemical inventory, approximately 50 chemicals were selected for further examination, based on their toxicity and potential for air quality impacts. Common buffers, salts, enzymes, nucleotides, peptides, and other biochemicals were not considered in the analysis due to their not being hazards as air pollutants. Nonvolatile chemicals (a vapor pressure of less than 10 mm Hg) were excluded as well. Table 14-5 shows the hazardous chemicals selected. The vapor pressure shown for each chemical is a measure of the material's volatility—its tendency to evaporate, or to form fumes or vapors, which is a critical parameter in determining potential impacts from chemical spills. The exposure standards (U.S. Occupational Safety and Health Administration [OSHA] permissible exposure limit [PEL], National Institute for Occupational Safety and Health [NIOSH] immediately dangerous to life or health [IDLH], and OSHA and/or NIOSH short-term exposure level [STEL] and ceiling values) are measures of the material's toxicity—more toxic substances have lower exposure standards.

As discussed above, this analysis evaluates the potential effects from a single accidental spill within one of the proposed laboratories. Due to the number of laboratories in the proposed research building, the unlikely event of more than one spill occurring at the same time was also qualitatively considered. Based on the extensive laboratory fume hood exhaust system proposed for this facility, and the high level of dilution for the exhaust, even multiple spills would not result in any potential health effects on any MSKCC campus buildings or the surrounding community. In addition, backup emergency power would ensure that ventilation would be



Proposed Rezoning Area Boundary

Phase 1 Research Building Site Boundary

Proposed Large-Scale Community Facility Development Boundary

1 *Air Quality Receptor Location*

Air Quality Receptor Locations

FIGURE 14-1

MEMORIAL SLOAN-KETTERING CANCER CENTER

maintained continuously, even in the event of a power failure. As shown by the results below, predicted levels from the exhaust systems are orders of magnitude below the STEL guideline levels, and therefore, even multiple spills would not result in any potential impacts.

Estimates of Worst-Case Emission Rates

The dispersion of hazardous chemicals from a spill within one of the proposed laboratories was analyzed to assess the potential for exposure of the general public and of workers within the university to hazardous fumes in the event of an accident. Evaporation rates for volatile hazardous chemicals expected to be used in the proposed laboratory were estimated using the model developed by the Shell Development Company (Fleischer, M.T., "An Evaporation/Air Dispersion Model for Chemical Spills on Land," Shell Development Company, December 1980). The Shell model, which was developed specifically to assess air quality impacts from chemical spills, calculates evaporation rates based on physical properties of the material, temperature, and rate of air flow over the spill surface. Room temperature conditions (20° C) and an air-flow rate of 0.5 meters/second were assumed for calculating evaporation rates.

Based on relative STELs and the vapor pressures of the chemicals listed in Table 14-5, a subset of the most potentially hazardous chemicals, shown in Table 14-6, were selected for the "worst-case" spill analysis. Besides the relative toxicities, other factors such as molecular weight, container size, and frequency of use were also considered. Chemicals with high vapor pressures are most likely to have high evaporation rates. Among the chemicals with the highest vapor pressures compiled for Table 14-5, the four chemicals selected also have the lowest STELs. Since the chemicals selected for detailed analysis are most likely to have the highest emissions rates and the lowest exposure standards, if the analysis of these chemicals resulted in no significant impacts, it would indicate that the other chemicals listed in Table 14-5 would also not present any significant potential impacts.

The analysis conservatively assumes that a full container of the chemical would be spilled in a fume hood. For a spill area of approximately 1 square meter, the emission rates were directly determined from the evaporation rates. For modeling purposes, the emission rates shown in Table 14-6 are calculated for a 15-minute time period. The vapor from the spill would be drawn into the fume hood exhaust system and released into the atmosphere via the roof exhaust fans. The high volume of air drawn through this system provides a high degree of dilution for hazardous fumes before they are released above the roof. The exhaust height of the cannon fans would be at an elevation of 420 feet, approximately 50 feet above the rooftop level of the building, which is at an elevation of 370 feet.

Modeling

The potential for recirculation of the fume hood emissions back into the building air intakes was assessed using the method described by D.J. Wilson in "A Design Procedure for Estimating Air Intake Contamination from Nearby Exhaust Vents," ASHRAE TRAS 89, Part 2A, pp. 136-152 (1983). This empirical procedure, which has been verified by both wind-tunnel and full-scale testing, is a refinement of the 1981 ASHRAE Handbook procedure, and takes into account such factors as plume momentum, stack-tip downwash, and cavity recirculation effects. This procedure determines the worst-case, absolute minimum dilution between exhaust vent and air intake. Three separate effects produce the available dilution: internal system dilution, obtained by combining exhaust streams (i.e., mixing in plenum chambers of multiple exhaust streams, introduction of fresh air supplied from roof intakes); wind dilution, dependent on the distance from

Table 14-5

Expected Hazardous Chemicals in the Proposed Laboratories

Chemical	Vapor Pressure mmHG	PEL PPM	STEL PPM	IDLH PPM	Ceiling PPM
Acetic Acid [64-19-7]	11	10	—	50	10
Acetone [67-64-1]	181	1,000	—	2,500	250
Acetonitrile [75-05-8]	73	40	—	500	20
Acrolein [107-02-8]	210	0.1	0.3	2	0.1
Allyl Alcohol [107-18-6]	17	2	4	20	2
Benzene [71-43-2]	75	1	1	500	—
Benzyl Alcohol [100-51-6]	13.3	—	—	—	—
bis-tributyltin Oxide [56-35-9]	—	0.1	0.2	—	—
Boron Trichloride [10294-34-5]	1,128	—	—	—	—
Butyl Lithium (in hexane) [109-72-8]	—	300	—	—	—
Butyraldehyde [123-72-8]	90	—	—	—	—
Carbon Disulfide [75-15-0]	297	20	10	500	30
Carbon Tetrachloride [56-23-5]	91	10	2	200	25
Chloroform [67-66-3]	160	—	2	500	50
Chlorotrimethylsilane [75-77-4]	100	—	—	—	—
Cyclohexane [110-82-7]	95	300	—	1,300	300
Dichloroethane [107-06-2]	87	50	—	—	100
Dichloromethane [75-09-2]	350	25	—	2,300	1000
Diethyl Ether [60-29-7]	440	400	—	1,900	—
Diisopropylamine [108-18-9]	70	5	—	200	5
Dimethoxypropane [7778-85-0]	40	—	—	—	—
p-Dioxane [123-91-1]	27	100	—	500	1
Ethanol [64-17-5]	44	1000	—	3,300	1000
Ethyl Acetate [141-78-6]	76	400	—	2,000	400
Ethyl Vinyl Ether [109-92-2]	428	—	—	—	—
Formic Acid [64-18-6]	23	5	—	30	5
Furan [110-00-9]	493	—	—	—	—
Heptane [142-82-5]	40	500	—	750	85
Hexane [110-54-3]	130	500	—	1,100	50
Hydrazine [302-01-2]	10	1	—	50	0.03
Isoamyl Alcohol [123-51-3]	28	100	125	500	100
Isobutyraldehyde [78-84-2]	170	—	—	—	—
Isopropanol [67-63-0]	33	400	500	2,000	400
Methanol [67-56-1]	96	200	—	6,000	200
Methyl Vinyl Ketone [78-94-4]	120	—	—	—	0.2
2-methylbutane [78-78-4]	578	—	—	—	—
Methylene Chloride [75-09-2]	350	500	—	2,300	1,000
Nitroethane [79-24-3]	21	100	—	1,000	100

Table 14-5

Expected Hazardous Chemicals in the Proposed Laboratories (cont'd)

Chemical	Vapor Pressure mmHG	PEL PPM	STEL PPM	IDLH PPM	Ceiling PPM
Oxalyl Chloride [79-37-8]	150	0.1	—	—	—
Pentane [109-66-0]	420	1,000	—	1,500	610
Peracetic Acid [79-21-0]	20	—	—	—	—
1-Propanol [71-23-8]	15	200	—	800	200
Propargyl Alcohol [107-19-7]	12	—	—	—	—
Propionaldehyde [123-38-6]	258	—	—	—	—
Propylene Oxide [75-56-9]	442	100	—	400	—
Pyridine [110-86-1]	16	5	—	1,000	5
Tetrahydrofuran [109-99-9]	129	200	—	2,000	200
Toluene [108-88-3]	22	200	150	500	100
Triethyl Amine [121-44-8]	54	25	—	200	—
Trimethylacetyl Chloride [3282-30-2]	36	—	—	—	—
Trimethyl Phosphite [121-45-9]	24	2	—	—	—
Vinyl Acetate [9003-22-9]	115	10	15	—	—

Notes:
PEL—Permissible Exposure Limit; Time Weighted Average (TWA) for up to a 10-hour workday during a 40-hour workweek.
STEL—Short-Term Exposure Limit is a 15-minute TWA exposure that should not be exceeded at any time during a workday.
IDLH—Immediately Dangerous to Life or Health.
Ceiling—Level set by NIOSH or OSHA not to be exceeded in any working exposure.
PPM = parts per million
Where an M-dash (—) appears there is no recommended corresponding guideline value.

Table 14-6

Chemicals Selected for "Worst-Case" Spill Analysis

Chemical	Quantity (liters)	Evaporation Rate (gram/meter²/sec)	Emission Rate (gram/sec)
Acrolein	0.5	1.20	1.20
Carbon Disulfide	0.1	1.88	1.88
Carbon Tetrachloride	4	0.96	0.96
Chloroform	4	1.41	1.41

vent to intake and the exit velocity; and dilution from the stack, caused by stack height and plume rise from vertical exhaust velocity. The critical wind speed for worst-case dilution is dependent on the exit velocity, the distance from vent to intake, and the cross-sectional area of the exhaust stack.

The recirculation analysis indicates that the minimum potential dilution factor between the cannon fan exhausts and the nearest air intake below the rooftop is extremely large (i.e., pollutant concentrations at the nearest intake to the exhaust fan would be essentially zero). This is due to

very high dilution from the stack, with a assumed stack height of 50 feet above the roof of the building.

Therefore, a spill in a fume hood as described above would produce a maximum concentration at the nearest intake location well below the corresponding STELs set by OSHA and/or NIOSH for any of the chemicals in Table 14-5.

Based on an examination of the surrounding community, it was determined that worst-case receptors would be air intakes and windows located on adjacent MSKCC buildings. The windows of the existing buildings on the MSKCC campus are of primary concern, because of their proximity to the proposed research building and since existing buildings have operable windows. No significant potential impacts would be likely to occur at off-campus locations in the surrounding community if the MSKCC locations analyzed do not result in any significant impacts, since the locations selected are the closest elevated receptors to the exhaust fans.

Maximum concentrations at elevated receptors downwind of the fume exhausts were estimated using the EPA INPUFF model, version 2.5 (Peterson, W.B., "A Multiple Source Gaussian Puff Dispersion Algorithm—Users Guide," EPA, 600/8-86-024, August 1986). This is the only EPA model designed to estimate impacts from short-term releases and was used to develop the guidelines in EPA's Chemical Emergency Preparedness Program, Interim Guidance (November 1985). INPUFF assumes a Gaussian dispersion of a pollutant "puff" as it is transported downwind of a release point. Stable atmospheric conditions and a 1-meter/second wind speed were assumed. Receptors were modeled at multiple heights at locations closest to the exhaust fans. Since the emissions resulting from chemical spills are short-term releases, a worst-case assumption of the wind blowing the exhaust directly to the window or air intake receptors was made for modeling purposes.

ANALYSIS OF EFFECTS FROM NEW YORK HOSPITAL BOILER

Introduction

To compare NO_2, PM_{10}, and SO_2 concentrations at the proposed development sites on the MSKCC campus with the national and state air quality standards, estimates of the maximum estimated concentrations must be prepared. Detailed modeling was employed to analyze impacts from the New York Hospital boiler.

Dispersion Modeling

Air quality impacts from the stationary source emissions from the New York Hospital boiler were evaluated using the SCREEN3 dispersion model developed by the EPA, and described in *SCREEN3 Model User's Guide* (EPA-454/B-95-004). The SCREEN3 model calculates pollutant concentrations from single sources based on a full range of meteorological data, including all stability classes and wind speeds. If the results with the SCREEN3 model indicate a potential exceedance of ambient air quality standards, a more refined analysis using EPA's *Industrial Source Complex Short Term* (ISC3) model would be required.

Receptor Locations

Discrete receptors (i.e., locations with operable windows or air intakes) on the proposed MSKCC developments and renovated Memorial Hospital were developed for the stationary source modeling analysis. The final analysis modeled worst case receptors located on the roofs

of the proposed buildings since modeling runs indicated that concentrations would always be highest at the most elevated locations on each of the buildings.

Emission Estimates and Stack Parameters

Emission estimates of the criteria pollutants of concern were input into the SCREEN3 dispersion model to estimate the impact on the proposed development when added to monitored background levels. The emission rates and stack parameters for the New York Hospital boiler were obtained from a copy of the certificate of operation obtained from DEP's Bureau of Air Resources (BAR) (see Table 14-7). Maximum hourly SO_2 and particulate emissions for the interruptible gas burning boilers were based on the maximum short term emission rates burning oil. The nitrogen oxides emission rate for the New York Hospital boiler operations was based on annual natural gas fuel consumption (224,000,000 ft^3/year) limit in the BAR permit. In addition, all of the NO_x are assumed to be NO_2, which is a conservative assumption, because based on ambient air monitoring data, approximately 50 percent of the NO_x is likely to be NO_2. Also, all of the particulates from the New York Hospital boiler were assumed to be PM_{10}.

Table 14-7

Stack Parameter and Emission Rate Data for the New York Hospital Boiler Stack

Parameter	New York Hospital Stack
Stack Height, Feet	383
Stack Diameter, Feet	8
Stack Exit Velocity, Feet/sec.	31.7
Stack Exit Temperature, F	300
Emissions, lbs./hr.	
NO_x*	7.84
SO_2**	59.45
Particulates**	4.06

Notes:

* No short-term maximum load emissions for nitrogen oxides were used, since the NO_2 standard is an annual average standard.

** Only short-term maximum load conditions were analyzed, since negligible SO_2 and particulates for interruptible gas burning boilers.

Background

To estimate the maximum expected total pollutant concentrations at a given receptor, the predicted levels were added to corresponding background concentrations (shown in Table 14-8). Background levels for NO_2, SO_2, and PM_{10} were based on concentrations monitored by the nearest DEC ambient air monitoring station. Measured background concentrations by DEC were added to the predicted contributions from the modeled sources to determine the maximum predicted total pollutant concentrations. The 3- and 24-hour background levels are the highest second maximum yearly concentrations measured for these pollutants for the 1997-1999 period. The annual average background values are the highest annual averages measured over the period 1997-1999. This analysis conservatively assumes that the maximum background concentrations

Table 14-8
Background Pollutant Concentrations

Pollutants	Averaging Period	Background Concentration ($\mu g/m^3$)	Ambient Standard ($\mu g/m^3$)
Nitrogen Dioxide (NO_2)	Annual	77	100
Sulfur Dioxide (SO_2)	3-hour	228	1,300
	24-hour	118	365
Inhalable Particulates	24-hour	74	150

occur on all days. Also shown in Table 14-8 are the ambient standards (see "Air Quality Standards," above).

E. EXISTING CONDITIONS

EXISTING MONITORED AIR QUALITY CONDITIONS (1999)

Monitored concentrations of CO, SO_2, particulates, NO_2, lead, and ozone ambient air quality data for the area are shown in Table 14-9. These values are the most recent monitored data available that have been published by DEC for these locations. There were no monitored violations of the NAAQS for the pollutants at these sites (with the exception of ozone, which is a regional pollutant) in 1999.

Table 14-9
Representative Monitored Ambient Air Quality Data

Pollutant	Location	Units	Period	Concentrations			Number of Exceedances of Federal Standard	
				Mean	Highest	Second Highest	Primary	Secondary
CO	Bloomingdale's	ppm	8-hour	—	5.5	4.7	0	0
			1-hour	—	6.8	6.2	0	0
SO_2	P.S. 59	ppm	Annual	0.013	—	—	0	—
			24-hour	—	0.050	0.045	0	—
			3-hour	—	0.101	0.087	—	0
Inhalable Particulates (PM_{10})	Madison Avenue and 46th Street	$\mu g/m^3$	Annual	47*	—	—	0	0
			24-hour	—	102	79	0	0
NO_2	P.S. 59	ppm	Annual	0.041	—	—	0	0
Lead	Greenpoint	$\mu g/m^3$	3-month	—	0.100	0.100	0	0
O_3	Mabel Dean H.S.	ppm	1-hour	—	0.122	0.120	1	1

Note: * Based on less than 75 percent available data.
Source: *New York State Air Quality Report, Ambient Air Monitoring Systems*, Annual 1999 DAR-00-1.

PREDICTED POLLUTANT CONCENTRATIONS IN THE STUDY AREA

As noted previously, receptors were placed at multiple sidewalk locations next to the three intersections under analysis. The receptor with the highest predicted CO concentrations was used to

represent these intersection sites for the existing conditions. CO concentrations were calculated for each receptor location, at each intersection, for each peak period specified above.

Table 14-10 shows the maximum predicted existing (2001) CO 8-hour average concentrations at these intersections. (No 1-hour values are shown since predicted values are much lower than the standard.) The values shown are the highest predicted concentrations for each receptor location for any time period analyzed, except for Site 3, where the concentration is the second highest predicted value using the CAL3QHCR model. At all receptor sites, the maximum predicted 8-hour average concentrations are within the national standard of 9 ppm.

Table 14-10

Maximum Predicted Existing 8-Hour Average Carbon Monoxide Concentrations for 2001 (parts per million)

Receptor Site	Location	Time Period	8-Hour
1	York Avenue and East 68th Street	PM	7.0
2	York Avenue and East 66th Street	PM	6.4
3	York Avenue and East 63rd Street*	PM	7.5

Note: 8-hour standard is 9 ppm.
* CAL3QHCR results.

F. FUTURE WITHOUT THE PROPOSED ACTIONS—2007

In the future without the proposed actions, there will not be any potential significant air quality impacts on the MSKCC campus. At all mobile source receptor sites, the maximum predicted concentrations would be expected to be below the NAAQS. There will be no potential for stationary source impacts without the proposed research building.

G. FUTURE WITH THE PROPOSED ACTIONS—2007

MOBILE SOURCES

The Phase 1 Build year of 2007 was not analyzed since the project-generated vehicles for this first phase would be considerably lower than for the year 2011, when both Phase 1 and 2 of the proposed development would be assumed to be completed. Therefore, potential impacts would be greatest for the Phase 2 completion year of 2011. In addition, the levels of project-generated traffic in Phase 1 do not exceed the *CEQR Technical Manual* threshold of 100 trips for this area of the city. Therefore, no detailed mobile source analysis is required for Phase 1.

STATIONARY SOURCES

Since Phase 1 would include completion of the proposed research building, the potential for stationary source impacts from the building's fume hood exhaust system, in the event of an accidental chemical spill, must be assessed. An analysis of potential effects from the proposed research building's exhaust systems is presented below, to assess potential impacts from all existing and proposed development (including Phase 2). The results of the analysis show that there would be no predicted significant health effects from the exhaust system of the proposed research building on the existing and future buildings of the MSKCC campus and the surrounding community.

Since Phase 1 would include completion of the proposed research building, the potential for stationary source impacts from the New York Hospital boiler stack on the proposed development, must be assessed. An analysis of the potential effects from the stack on the proposed research building's air intakes is included in the analysis presented below, which assesses potential impacts on all proposed MSKCC development (including Phase 2). The results of the analysis show that there would be no predicted significant adverse impacts on the proposed MSKCC development.

H. FUTURE WITHOUT THE PROPOSED ACTIONS—2011

MOBILE SOURCES

CO concentrations without the proposed actions were determined for the 2011 analysis year using the methodology previously described. Mobile source modeling was conducted at the Chapter 12, "Traffic and Parking." Table 14-11 shows future (2011) maximum predicted 8-hour average CO concentrations without the proposed actions at the intersections studied. (No 1-hour values are shown since no exceedances of the standard would occur.) The values shown are the highest predicted concentrations at the receptor locations for any time period analyzed.

Table 14-11
Future (2011) Maximum Predicted 8-Hour Average Carbon Monoxide No Action Concentration in the Study Area (parts per million)

Receptor Site	Location	Time Period	8-Hour
1	York Avenue and East 68th Street	PM	3.9
2	York Avenue and East 66th Street	PM	3.6
3	York Avenue and East 63rd Street	PM	4.9
Note:	8-hour standard is 9 ppm.		

I. FUTURE WITH THE PROPOSED ACTIONS—2011

The proposed actions would result in increased mobile source emissions in the immediate vicinity of the MSKCC campus. In addition, because the proposed actions would include a new research building, potential impacts resulting from emissions from the building's fume hood exhaust system were examined. Also, the potential impact of exhaust plumes from the New York Hospital boiler's stack on the proposed development was examined. The areas of potential impact are examined below.

MOBILE SOURCES

As explained in the DEIS, the proposed actions were not expected to result in any significant mobile source air quality impacts in 2007 or 2011. The analysis in the DEIS included trips generated by MSKCC development on the block bounded by East 66th and East 67th Streets between York and First Avenues (south block), which would no longer occur as part of the proposed actions analyzed for the FEIS.

As analyzed in the DEIS, CO concentrations with the proposed actions were determined for the 2011 analysis year using the methodology previously described. Table 14-12 shows the maximum predicted future (2011) 8-hour average CO concentrations with the proposed actions as analyzed in the DEIS at the intersections studied. (No 1-hour values are shown since no exceedances of the standard would occur and the de minimis criteria are only applicable to 8-hour concentrations. Therefore, the 8-hour values are the most critical for impact assessment.) The values shown are the highest predicted concentrations at the receptor locations. The results indicate that the proposed actions as analyzed in the DEIS would not result in any violations of the CO standard or any significant adverse impacts at all the receptor locations.

Table 14-12

Future (2011) Maximum Predicted 8-Hour Average Carbon Monoxide No Action and Action Concentrations (parts per million)

Receptor Site	Location	Time Period	No Action	Action
1	York Avenue and East 68th Street	PM	3.9	4.2
2	York Avenue and East 66th Street	AM	3.5	3.5
		PM	3.6	3.8
3	York Avenue and East 63rd Street	PM	4.9	4.9

Note: 8-hour standard is 9 ppm.

The project-generated trips for the Phase 2 completion year of 2011 for the proposed actions would be below the *CEQR Technical Manual* screening threshold. Therefore, no detailed analysis is necessary. As shown in Chapter 12, "Traffic and Parking," the full buildout would result in 180 and 218 vehicle trips during the AM and PM peak hours, respectively. Because the proposed actions would result in substantially fewer trips in Phase 2 than analyzed for the DEIS, the proposed actions considered in this FEIS would not result in any violations of the CO standard or any significant adverse impacts at all the receptor locations.

STATIONARY SOURCES

CHEMICAL SPILL ANALYSIS

The results of the analysis of emissions from the proposed research building's fume hood exhaust system are shown below in Table 14-13. The maximum concentrations at elevated receptors downwind of the fume exhausts were estimated using the methodology previously described. The maximum concentrations found at any MSKCC buildings are all far below the STEL levels. Therefore, the results indicate that for the container sizes given in Table 14-6 for

Table 14-13

Maximum Predicted Concentrations (ppm)

Chemical	STEL	15-Minute Average *
Acrolein	0.3	0.014
Carbon Disulfide	10	0.016
Carbon Tetrachloride	2	0.004
Chloroform	2	0.008

Note: * Results from modeling exhaust height of 410'.

the chemicals, there would be no predicted significant health effects from the exhaust system of the laboratories in the proposed research building on any MSKCC campus buildings and the surrounding community.

ANALYSIS OF EFFECTS FROM NEW YORK HOSPITAL BOILER

Potential stationary source impacts on the proposed development from the New York Hospital boiler stack were determined using the methodology previously described. The estimated concentrations from the modeling were added to the background concentrations to estimate ambient air quality at the MSKCC development sites. The results of this analysis are presented in Table 14-14.

Table 14-14
Stationary Source Analysis:
Maximum Predicted Pollutant Concentrations

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)	Predicted Concentration ($\mu g/m^3$)	Maximum Predicted Total Concentration ($\mu g/m^3$)	Ambient Standard ($\mu g/m^3$)
Nitrogen Dioxide (NO_2)	Annual	77	<1	77	100
Sulfur Dioxide (SO_2)	3 hour	228	74	302	1,300
	24 hour	118	33	151	365
Particulates (PM_{10})	24 hour	74	2	76	150

As shown in the table, the predicted pollutant concentrations for all of the pollutant time averaging periods are below their respective standards. Therefore, no significant adverse air quality impacts would occur.

CONSISTENCY WITH THE NEW YORK STATE AIR QUALITY IMPLEMENTATION PLAN

Maximum predicted CO concentrations with the proposed actions would be less than the corresponding ambient air standard. Therefore, the proposed actions would be consistent with the New York State Implementation Plan for the control of ozone and CO. ❖

A. INTRODUCTION*

Noise pollution in an urban area comes from many sources. Some sources are activities essential to the health, safety, and welfare of the city's inhabitants, such as noise from emergency vehicle sirens, garbage collection operations, and construction and maintenance equipment. Other sources, such as traffic, stem from the movement of people and goods, activities that are essential to the viability of the city as a place to live and do business. Although these and other noise-producing activities are necessary to a city, the noise they produce is undesirable. Urban noise detracts from the quality of the living environment and there is increasing evidence that excessive noise represents a threat to public health.

The noise analysis for the Memorial Sloan-Kettering Cancer Center (MSKCC) project consisted of three parts:

- A screening analysis to determine whether there are any locations where traffic generated by the proposed project would have the potential for resulting in significant noise impacts;
- A detailed analysis at any locations where traffic generated by the proposed project would have the potential for resulting in significant noise impacts to determine the magnitude of the increase in noise level; and
- An analysis to determine the level of building attenuation necessary to ensure that interior noise levels at the project site satisfy applicable interior noise criteria.

Since publication of the Draft Environmental Impact Statement (DEIS) the south block has been removed from the rezoning area, which would reduce traffic and traffic-generated noise in the area. There was no impact due to traffic-generated noise in the DEIS; therefore, the proposed actions now would similarly have no significant adverse impact on noise due to traffic.

The analysis which follows shows that no significant noise impacts would occur with the proposed actions and that with adequate building attenuation interior noise levels would comply with CEPO-CEQR requirements. In addition, an (E) designation would be placed on buildings subject to this rezoning to ensure that CEPO-CEQR requirements are satisfied.

B. NOISE FUNDAMENTALS

Quantitative information on the effects of airborne noise on people is well documented. If sufficiently loud, noise may adversely affect people in several ways. For example, noise may interfere with human activities, such as sleep, speech communication, and tasks requiring concentration or coordination. It may also cause annoyance, hearing damage, and other physiological problems. Several noise scales and rating methods are used to quantify the effects of noise on people. These scales and methods consider such factors as loudness, duration, time of occur-

* Since publication of the DEIS, the south block has been removed from the rezoning area.

rence, and changes in noise level with time. However, it must be remembered that all the stated effects of noise on people vary greatly with the individual.

"A"-WEIGHTED SOUND LEVEL (dBA)

Noise is typically measured in units called decibels (dB), which are 10 times the logarithm of the ratio of the sound pressure squared to a standard reference presence squared. Because loudness is important in the assessment of the effects of noise on people, the dependence of loudness on frequency must be taken into account in the noise scale used in environmental assessments. One of the simplified scales that accounts for the dependence of perceived loudness on frequency is the use of a weighting network, known as "A"-weighting, in the measurement system, to simulate the response of the human ear. For most noise assessments, the A-weighted sound pressure level in units of dBA is used in view of its widespread recognition and its close correlation with perception. In the current study, all measured noise levels are reported in dBA or A-weighted decibels. Common noise levels in dBA are shown in Table 15-1.

Table 15-1
Common Noise Levels

Sound Source	(dBA)
Military jet, air raid siren	130
Amplified rock music	110
Jet takeoff at 500 meters	100
Freight train at 30 meters	95
Train horn at 30 meters	90
Heavy truck at 15 meters	
Busy city street, loud shout	80
Busy traffic intersection	
Highway traffic at 15 meters, train	70
Predominantly industrial area	60
Light car traffic at 15 meters, city or commercial areas or residential areas close to industry	
Background noise in an office	50
Suburban areas with medium density transportation	
Public library	40
Soft whisper at 5 meters	30
Threshold of hearing	0

Note: A 10 dBA increase in level appears to double the loudness, and a 10 dBA decrease halves the apparent loudness.
Source: Allee King Rosen & Fleming, Inc.

COMMUNITY RESPONSE TO CHANGES IN NOISE LEVELS

The average ability of an individual to perceive changes in noise levels is well documented (see Table 15-2). Generally, changes in noise levels less than 3 dBA are barely perceptible to most listeners, whereas 10 dBA changes are normally perceived as doublings (or halvings) of noise levels. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

It is also possible to characterize the effects of noise on people by studying the aggregate response of people in communities. The rating method used for this purpose is based on a

Table 15-2

Average Ability to Perceive Changes in Noise Levels

Change (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A "dramatic change"
40	Difference between a faintly audible sound and a very loud sound

Source: Bolt Beranek and Neuman, Inc., *Fundamentals and Abatement of Highway Traffic Noise*, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.

statistical analysis of the fluctuations in noise levels in a community, and integrating the fluctuating sound energy over a known period of time, most typically during 1 hour or 24 hours. Various government and research institutions have proposed criteria that attempt to relate changes in noise levels to community response. One commonly applied criterion for estimating response is incorporated into the community response scale proposed by the International Standards Organization (ISO) of the United Nations (see Table 15-3). This scale relates changes in noise level to the degree of community response and permits direct estimation of the probable response of a community to a predicted change in noise level.

Table 15-3

Community Response to Increases in Noise Levels

Change (dBA)	Category	Description
0	None	No observed reaction
5	Little	Sporadic complaints
10	Medium	Widespread complaints
15	Strong	Threats of community action
20	Very strong	Vigorous community action

Source: International Standards Organization, *Noise Assessment with Respect to Community Responses*, ISO/TC 43. (New York: United Nations, November 1969).

NOISE DESCRIPTORS USED IN IMPACT ASSESSMENT

Because the sound pressure level unit of dBA describes a noise level at just one moment and very few noises are constant, other ways of describing noise over more extended periods have been developed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific period as if it had been a steady, unchanging sound. For this condition, a descriptor called the "equivalent sound level," L_{eq}, can be computed. L_{eq} is the constant sound level that, in a given situation and period (e.g., 1 hour, denoted by $L_{eq(1)}$, or 24 hours, denoted as $L_{eq(24)}$), conveys the same sound energy as the actual time-varying sound. Statistical sound level descriptors, such as L_1, L_{10}, L_{50}, L_{90}, and L_x, are sometimes used to indicate noise levels that are exceeded 1, 10, 50, 90, and x percent of the time, respectively. Discrete event peak levels are given as L_{01} levels.

The relationship between L_{eq} and levels of exceedance is worth noting. Because L_{eq} is defined in energy rather than straight numerical terms, it is not simply related to the levels of exceedance. If the noise fluctuates very little, L_{eq} will approximate L_{50} or the median level. If the noise fluctuates broadly, the L_{eq} will be approximately equal to the L_{10} value. If extreme fluctuations are present, the L_{eq} will exceed L_{90} or the background level by 10 or more decibels. Thus, the relationship between L_{eq} and the levels of exceedance will depend on the character of the noise. In community noise measurements, it has been observed that the L_{eq} is generally between L_{10} and L_{50}. The relationship between L_{eq} and exceedance levels has been used in this analysis to characterize the noise sources and to determine the nature and extent of their impact at all receptor locations.

For purposes of the proposed project, the maximum 1-hour equivalent sound level ($L_{eq(1)}$) has been selected as the noise descriptor to be used in the noise impact evaluation. $L_{eq(1)}$ is the noise descriptor recommended for use in the *New York City Environmental Quality Review (CEQR) Technical Manual* (December 1993) for vehicular traffic noise impact evaluation, and is used to provide an indication of highest expected sound levels. $L_{10(1)}$ is the noise descriptor used in the CEPO-CEQR noise exposure standards for vehicular traffic noise. Hourly statistical noise levels (particularly L_{10}) and L_{eq} levels were used to characterize the relevant noise sources and their relative importance at each receptor location.

C. NOISE STANDARDS AND CRITERIA

Noise levels associated with the construction and operation of the proposed project are subject to the emission source provisions of the New York City Noise Control Code and to Noise Standards set for the City Environmental Quality Review (CEQR) process. Other standards and guidelines promulgated by Federal agencies do not apply to project noise control, but are useful to review in that they establish measures of impacts. Construction equipment is regulated by the Noise Control Act of 1972.

NEW YORK CITY NOISE CODE

The New York City Noise Control Code promulgates sound-level standards for motor vehicles, air compressors, and paving breakers; requires that all exhausts be muffled; and prohibits all unnecessary noise adjacent to schools, hospitals, and courts. The code further limits construction activities to weekdays between 7 AM and 6 PM.

In 1979, Section 1403.3-6.01 of the code was reenacted as Local Law No. 64. This new law established ambient noise quality criteria and standards based on existing land use zoning

designations. Conformance with the noise level values contained in the law is determined by considering noise emitted directly from stationary activities within the boundaries of a project. Construction activities and noise sources outside the boundaries of a project are not included within the provisions of this law. Table 15-4 summarizes the ambient noise quality criteria established under Local Law No. 64.

Table 15-4
City of New York
Ambient Noise Quality Zone Criteria (dBA)

Ambient Noise Quality Zone (ANQZ)	Daytime Standards* (7 AM–10PM)	Nighttime Standards* (10 PM–7AM)
Low-Density Residential (R1 to R3) Land Uses (N1)	60	50
High-Density Residential (R4 to R10) Land Uses (N2)	65	55
Commercial (C1 to C8) and Manufacturing (M1 to M3) Land Uses (N3)	70	70

Note: * $L_{eq(1\ hour)}$.
Source: City of New York Local Law No. 64.

NEW YORK CEPO-CEQR NOISE STANDARDS

The New York City Department of Environmental Protection (DEP), Division of Noise Abatement has set external noise exposure standards and attenuation values. These standards are shown in Tables 15-5 and 15-6. Noise exposure is classified into four categories—acceptable, marginally acceptable, marginally unacceptable, and clearly unacceptable. The standards for traffic noise are based on maintaining an interior noise level for the worst-case hour L_{10} of less than or equal to 45 A-weighted decibels (dBA). Standards for aircraft and train noise are different, and are derived from the standards of the Federal Department of Housing and Urban Development (HUD). These standards were adopted for use in the CEQR process.

D. IMPACT DEFINITION

As recommended in the *CEQR Technical Manual*, this study uses the following criteria to define a significant noise impact:

- An increase of 5 dBA or more in Build $L_{eq(1)}$ noise levels if the No Build levels are less than 60 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 4 dBA or more in Build $L_{eq(1)}$ noise levels (measured at receptors determined to be sensitive under the No Build condition) if the No Build levels are 61 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA or more in Build $L_{eq(1)}$ noise levels (measured at receptors determined to be sensitive under the No Build condition) if the No Build levels are greater than 62 dBA $L_{eq(1)}$ and the analysis period is not a nighttime period.
- An increase of 3 dBA or more in Build $L_{eq(1)}$ noise levels (measured at receptors determined to be sensitive under the No Build condition) if the analysis period is a nighttime period (according to CEPO-CEQR standards, between 10 PM and 7 AM.).

Table 15-5

CEPO-CEQR Noise Exposure Standards for Use in City Environmental Impact Review[1]

Receptor Type	Time Period	Acceptable General External Exposure	Airport[3] Environs	Marginally Acceptable General External Exposure	Airport[3] Environs	Marginally Unacceptable General External Exposure	Airport[3] Environs	Clearly Unacceptable General External Exposure	Airport[3] Environs
1. Outdoor area requiring serenity and quiet[2]		$L_{10} \leq 55$ dBA	Ldn ≤ 60 dBA		60 < L_{dn} ≤ 65 dBA		(1) 65 < L_{dn} ≤ 70 dBA, (II) 70 < L_{dn} ≤		L_{dn} > 75 dBA,
2. Hospital, Nursing Home		$L_{10} \leq 55$ dBA		55 < L_{10} ≤ 65 dBA		65 < L_{10} ≤ 80 dBA		L_{10} > 80 dBA	
3. Residence, residential hotel or motel	7 AM to 11 PM	$L_{10} \leq 65$ dBA		65 < L_{10} ≤ 70 dBA		70 < L_{10} ≤ 80 dBA		L_{10} > 80 dBA	
	11 PM to 7 AM	$L_{10} \leq 55$ dBA		55 < L_{10} ≤ 70 dBA		70 < L_{10} ≤ 80 dBA		L_{10} > 80 dBA	
4. School, museum, library, court, house of worship, transient hotel or motel, public meeting room, auditorium, out-patient public health facility		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)	
5. Commercial or office		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)		Same as Residential Day (7 AM-11 PM)	
6. Industrial, public areas only[4]	Note 4	Note 4		Note 4		Note 4		Note 4	

Notes:
(i) In addition, any new activity shall not increase the ambient noise level by 3 dBA or more; (ii) CEPO-CEQR Noise Standards for train noise are similar to the above aircraft noise standards: the noise category for train noise is found by taking the L_{dn} value for such train noise to be an L_{dn}^{y} (L_{dn} contour) value (see table on the following page).

1 Measurements and projections of noise exposures are to be made at appropriate heights above site boundaries as given by American National Standards Institute (ANSI) Standards; all values are for the worst hour in the time period.

2 Tracts of land where serenity and quiet are extraordinarily important and serve an important public need and where the preservation of these qualities is essential for the area to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks or open spaces dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet. Examples are grounds for ambulatory hospital patients and patients and residents of sanitariums and old-age homes.

3 One may use the FAA-approved L_{dn} contours supplied by the Port Authority, or the noise contours may be computed from the federally approved INM Computer Model using flight data supplied by the Port Authority of New York and New Jersey.

4 External Noise Exposure standards for industrial areas of sounds produced by industrial operations other than operating motor vehicles or other transportation facilities are spelled out in the New York City Zoning Resolution, Sections 42-20 and 42-21. The referenced standards apply to M1, M2, and M3 manufacturing districts and to adjoining residence districts (performance standards are octave band standards).

Source: New York City Department of Environmental Protection (adopted policy 1983).

Table 15-6

CEPO-CEQR Exterior Noise Standards and Attenuation Values

Noise Category	Marginally Acceptable	Marginally Unacceptable		Clearly Unacceptable		
Vehicular A, B	$65 < L_{10} \leq 70$	$70 < L_{10} \leq 75$	$75 < L_{10} \leq 80$	$80 < L_{10} \leq 85$	$85 < L_{10} \leq 90$	$90 < L_{10} \leq 95$
Train A, B	$60 < L_{dn} \leq 65$	$65 < L_{dn} \leq 70$	$70 < L_{dn} \leq 75$	$75 < L_{dn} \leq 80$	$80 < L_{dn} \leq 85$	$85 < L_{dn} \leq 90$
Aircraft A, B	$60 < L\,\bar{y}_n \leq 65$	$65 < L\,\bar{y}_n \leq 70$	$70 < L\,\bar{y}_n \leq 75$	$L\,\bar{y}_n > 75$	N/A	N/A
Required Attenuation C	25 dB(A)	(I) 30 dB(A)	(II) 35 dB(A)	(I) 40 dB(A)	(II) 45 dB(A)	(III) 50 dB(A)

Notes:

a Different descriptors are used for each noise source: L_{10} for vehicular traffic; L_{dn} for train noise; and $L\,\bar{y}_n$ (L_{dn} Contour) for aircraft noise. *,†

b The various noise sources at a receptor location are measured and reported separately in accordance with generally accepted procedures for assessing an overall noise level. Cases where there is not a clearly dominant noise source require a judicious decision based on adequate field experience and analysis to determine the final noise category that is deemed appropriate for the overall noise exposure at each noise receptor site.

c The above composite window-wall attenuation values are for residential dwellings. Commercial office spaces and meeting rooms would be 5 dB(A) less in each category. All the above categories require a closed window situation and hence an alternate means of ventilation.

* L_{dn} requires a 24-hour measurement or supportive analysis if a shorter period is employed.

† $L\,\bar{y}_n$ = "L_{dn} Contour" is an annual average of L_{dn} values ("y" indicates "yearly average").

E. NOISE ANALYSIS METHODOLOGY

A proportional modeling technique was used as a screening mechanism to determine locations which had the potential for having significant noise impacts, and to quantify increases in noise levels at that locations where detailed noise analysis is necessary to determine significance. The proportional modeling technique assumes that traffic is the dominant noise source, and as explained below, locations where a doubling of traffic occur would have the potential for having a 3 dBA increase in noise levels.

Using this technique, typically, future traffic noise levels are estimated using the changes in traffic volumes to predict changes between No Build and Build levels. Vehicular traffic volumes can be converted into Passenger Car Equivalent (PCE) values, for which one medium-duty truck (having a gross weight between 9,400 and 25,000 pounds) is assumed to generate the noise equivalent of 16 cars, and one heavy-duty truck (having a gross weight of more than 25,000 pounds) is assumed to generate the noise equivalent of 85 cars. The change in future noise levels is calculated using the following equation:

$$F\,NL = E\,NL + 10 * \log_{10} (FPCE / EPCE)$$

where:

F NL = Future Noise Level

E NL = Existing Noise Level

F PCE = Future PCEs

E PCE = Existing PCEs

Because sound levels use a logarithmic scale, this model calculates change in sound levels logarithmically, with traffic change ratios. For example, assume that traffic is the dominant noise source at a particular location. If the existing traffic volume on a street is 100 PCEs and if the future traffic volume were increased by 50 PCEs to a total of 150 PCEs, the noise level would increase by 1.8 dBA. If the future traffic were increased by 100 PCEs, or doubled to a total of 200 PCEs, the noise level would increase by 3.0 dBA.

The same screening procedure was used to identify whether there are any locations in the vicinity of the proposed project where project-generated PCE values result in an increase of 3 dBA or more in vehicle-related noise levels from No Build to Build conditions—that is, where the potential exists for significant noise impacts.

The screening analysis examined the weekday AM, midday, and PM peak hours. These are the time periods when the proposed project has its maximum traffic generation and when the proposed project is most likely to have a significant noise impact. Peak hour traffic conditions for existing conditions, and year 2011 No Build and Build conditions were based on the traffic analysis performed for this environmental impact statement (EIS) presented in Chapter 12, "Traffic and Parking."

F. EXISTING CONDITIONS

SITE DESCRIPTION

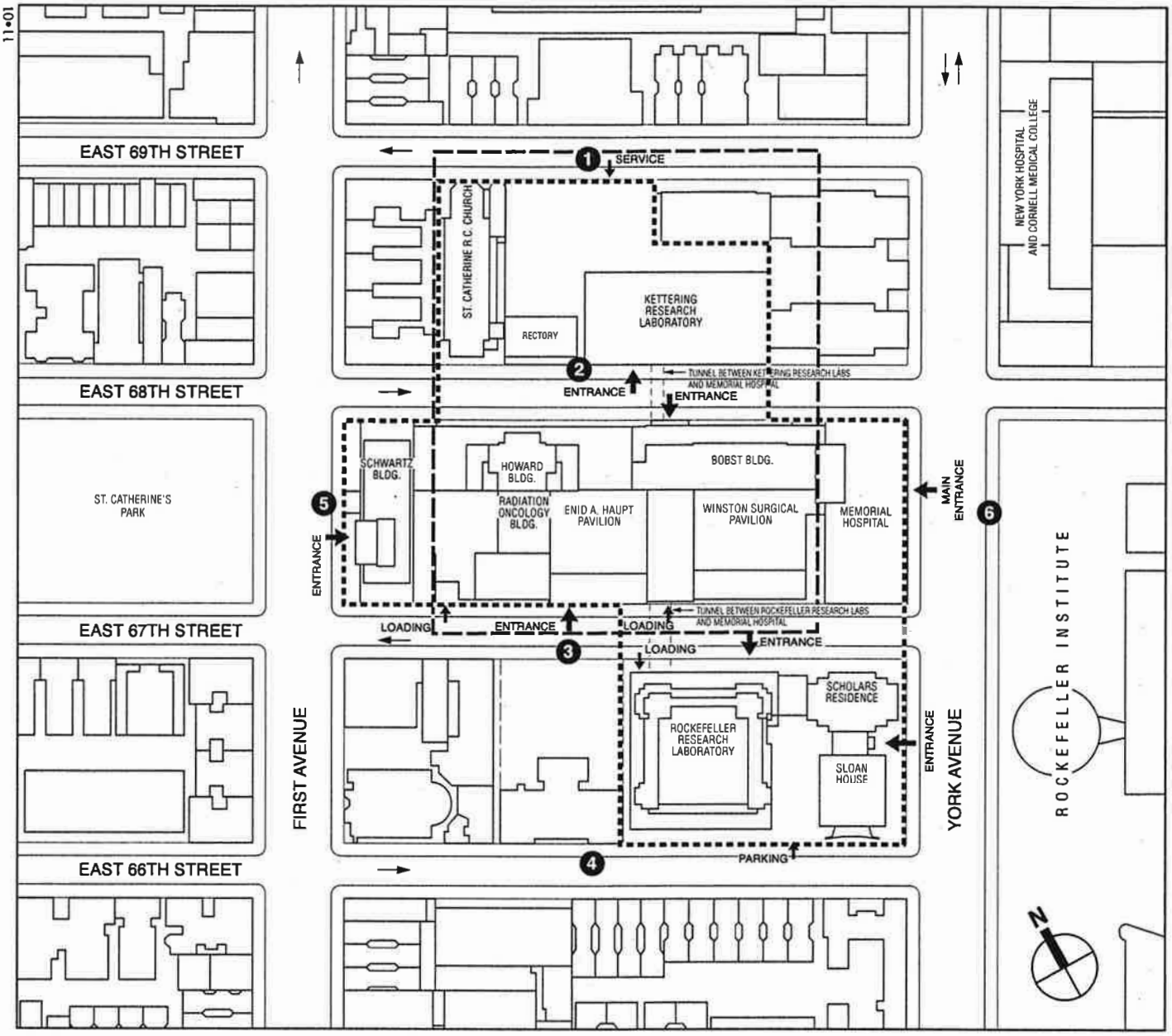
The MSKCC campus is located in an area bordered by East 69th Street to the north, East 66th Street to the south, York Avenue to the east, and First Avenue to the west. The project sites are located in an area with relatively heavily traffic and congested streets. The area has hospital, residential, and other noise sensitive uses, as well as commercial uses. The site is zoned R8, and is within an N2 Ambient Noise Quality Zone (ANQZ). $L_{eq(1)}$ noise level limits for this type of zone are 65 dBA for daytime (7 AM to 10 PM) and 55 dBA for nighttime (10 PM to 7 AM) hours.

SELECTION OF NOISE RECEPTOR LOCATIONS

Six receptor sites were selected. The selected receptor sites are located immediately adjacent to the project sites and are the locations where the maximum changes from project-generated traffic increases would be expected to occur based upon the screening analysis examines. They are locations with the highest potential for project impacts. They include locations adjacent to project buildings, residences, and playgrounds. The locations of the six receptors are shown in Figure 15-1. Site 1 is located on East 69th Street between York and First Avenues; Site 2 is located on East 68th Street between York and First Avenues; Site 3 is located on East 67th Street between York and First Avenues; Site 4 is located on East 66th Street between York and First Avenues; Site 5 is located on First Avenue between East 67th and East 68th Streets, and Site 6 is located on York Avenue between East 67th and East 68th Streets.

NOISE MONITORING

Noise monitoring at the six noise receptor locations was performed on April 17th, 18th, and 19th, 2001. At each of these sites, 20-minute measurements were made during the



Boundary of Proposed Rezoning Area

Boundary of Proposed Large Scale Community Facility Development

1 *Noise Receptor Location*

Noise Receptor Locations

FIGURE 15-1

MEMORIAL SLOAN-KETTERING CANCER CENTER

three weekday peak periods—the AM (8 to 9:30 AM), midday (12 noon to 1:30 PM), and PM (5 to 6:30 PM) peak time periods. Weather condition were noted to ensure a true reading as followed: wind speed under 12 mph; relative humidity under 90 percent; and temperature above 14°F and below 122°F. Consistent with CEQR practice, and to maximize possible project impacts, noise from aircraft activity in the project area was excluded from the noise measurements.

EQUIPMENT USED DURING NOISE MONITORING

The instrumentation used for the noise measurements was a Brüel & Kjær Type 4176 ½-inch microphone connected to a Larson Davis Laboratories (LDL) preamplifier attached to an LDL Model 700 Type 1 (according to ANSI Standard S1.4-1983) sound level meter. This assembly was mounted at a height of 5 feet above the ground surface on a tripod and at least 6 feet away from any large sound-reflecting surface to avoid major interference with sound propagation. The meter was calibrated before and after readings with a Brüel & Kjær Type 4231 sounD-level calibrator using the appropriate adaptor. Measurements at each location were made on the A-scale (dBA). The data were digitally recorded by the sound level meter and displayed at the end of the measurement period in units of dBA. Measured quantities included L_{eq}, L_1, L_{10}, L_{50}, and L_{90}. A windscreen was used during all sound measurements, except for calibration. Only traffic-related noise was measured; noise from other sources (e.g., aircraft flyovers, etc.) was excluded from the measured noise levels. This procedure was used in all noise monitoring, and acoustical data were obtained under acceptable weather and street surface conditions. All measurement procedures conformed with the requirements of ANSI Standard S1.13-1971 (R1976).

RESULTS OF BASELINE MEASUREMENTS

Existing L_{eq}, L_1, L_{10}, L_{50}, and L_{90} measured noise levels at the six receptor sites are shown in Table 15-7. At all sites, traffic was the dominant noise source. However, the measured noise levels reflect noise from all of the nearby noise sources. (For example, noise levels at Site 3 include noise from traffic and from the nearby playground.) In terms of the New York City CEPO-CEQR standards, existing noise levels at Sites 1, and 4 are in the "marginally acceptable" category; and existing noise levels at Sites 2, 3, 5, and 6 are in the "marginally unacceptable" category.

G. FUTURE CONDITIONS WITHOUT THE PROPOSED ACTIONS

Using the modeling methodology previously described, noise levels for No Build conditions in the three analysis periods for the year 2011 were calculated for all six receptor sites (see noise technical appendix). Future No Build noise levels at all six sites would be less than 0.7 dBA higher than existing noise levels (see Table 15-8). In terms of CEPO-CEQR standards, noise levels at Site 1 would remain in the "marginally acceptable" category; noise levels at Sites 2, 3, 5, and 6 would remain in the "marginally unacceptable" category; and noise levels at Site 4 would go from the "marginally acceptable" to the "marginally unacceptable" category. Thus, the change in noise levels at all six receptor sites would be insignificant and imperceptible.

Table 15-7
Existing Noise Levels

Site	Location	Time	L_{eq}	L_1	L_{10}	L_{50}	L_{90}
1	69th Street between York Avenue and First Avenue	AM	67.5	76.5	69.0	65.5	64.5
		MD	66.8	78.0	67.5	64.0	62.5
		PM	67.7	77.5	68.0	65.0	64.0
2	68th Street between York Avenue and First Avenue	AM	68.9	77.0	71.0	66.5	65.5
		MD	68.1	78.0	69.0	65.5	64.5
		PM	71.8	81.5	74.5	68.5	66.5
3	67th Street between York Avenue and First Avenue	AM	70.0	81.5	71.0	63.5	61.5
		MD	69.8	78.5	73.0	67.5	61.0
		PM	68.8	82.5	67.5	61.0	59.5
4	66th Street between York Avenue and First Avenue	AM	69.1	82.0	69.5	63.5	61.0
		MD	65.6	75.5	67.5	63.0	59.5
		PM	66.1	76.0	69.0	62.0	59.0
5	First Avenue between 67th and 68th Streets	AM	75.7	84.5	79.0	73.5	67.0
		MD	73.6	82.5	76.0	71.0	67.0
		PM	75.3	85.0	78.0	73.0	65.5
6	York Avenue between 67th and 68th Streets	AM	71.4	80.0	74.5	69.0	64.5
		MD	72.2	81.0	75.0	69.5	63.0
		PM	72.3	82.0	75.0	69.5	62.5

Note: Field measurements were performed by Allee King Rosen & Fleming, Inc., on April 17th, 18th, and 19th, 2001.

Table 15-8
Future No Build Noise Levels

Site	Location	Time	Existing $L_{eq(1)}$	Year 2011 No Build $L_{eq(1)}$	Change
1	69th Street between York Avenue and First Avenue	AM	67.5	67.7	0.2
		MD	66.8	67.0	0.2
		PM	67.7	67.9	0.2
2	68th Street between York Avenue and First Avenue	AM	68.9	69.3	0.4
		MD	68.1	68.3	0.2
		PM	71.8	72.1	0.3
3	67th Street between York Avenue and First Avenue	AM	70.0	70.2	0.2
		MD	69.8	70.0	0.2
		PM	68.8	69.1	0.3
4	66th Street between York Avenue and First Avenue	AM	69.1	69.7	0.6
		MD	65.6	66.1	0.5
		PM	66.1	66.6	0.5
5	First Avenue between 67th and 68th Streets	AM	75.7	76.0	0.3
		MD	73.6	73.8	0.2
		PM	75.3	75.6	0.3
6	York Avenue between 67th and 68th Streets	AM	71.4	71.7	0.3
		MD	72.2	72.4	0.2
		PM	72.3	72.6	0.3

H. THE FUTURE WITH THE PROPOSED ACTIONS

Using the modeling methodology previously described, noise levels for Build conditions in the three analysis periods for the year 2011* were calculated for all six receptor sites (see noise technical appendix). Noise levels at the six sites are summarized in Table 15-9. The analysis showed that noise levels at Sites 2, 3, 4, 5, and 6 would remain in the "marginally unacceptable" category, and noise levels at Site 1 would go from the "marginally acceptable" to the "marginally unacceptable" category. Thus, future noise levels under Build conditions in the year 2011 would be less than 2.0 dBA higher than future No Build noise levels. Changes of this degree of magnitude would be insignificant and imperceptible.

Table 15-9

Future Noise Levels With and Without the Proposed Project (in dBA)

Site	Time	Year 2011 No Build $L_{eq(1)}$	Year 2011 Build $L_{eq(1)}$	Change
1	AM	67.7	69.5	1.8
	MD	67.0	67.9	0.9
	PM	67.9	69.2	1.3
2	AM	69.3	70.5	1.2
	MD	68.3	68.9	0.6
	PM	72.1	72.3	0.2
3	AM	70.2	70.4	0.2
	MD	70.0	70.4	0.4
	PM	69.1	69.4	0.3
4	AM	69.7	69.9	0.2
	MD	66.1	66.1	0.0
	PM	66.6	66.9	0.3
5	AM	76.0	76.1	0.1
	MD	73.8	73.9	0.1
	PM	75.6	75.7	0.1
6	AM	71.7	72.0	0.3
	MD	72.4	72.6	0.2
	PM	72.6	72.7	0.1

ATTENUATION REQUIREMENTS

As shown in Table 15-6, the New York City *CEQR Technical Manual* has set noise attenuation quantities for building based on exterior noise levels; recommended noise attenuation values for buildings are designed to ensure interior noise levels of at most 45 dBA. These values are based on exterior $L_{10(1)}$ or L_{dn} noise levels. The noise descriptor ($L_{10(1)}$ or L_{dn}) used for examining the noise attenuation values is dependent on the type or category of noise source involved (e.g., vehicular, train, or aircraft); ambient noise near the proposed project is primarily due to traffic.

* The noise analyses were performed only for full build or Phase 2 conditions. Impacts for Phase 1 conditions would be less than those predicted to occur for Phase 2 conditions.

Table 15-10 lists the building noise attenuation for the six receptor sites (for additional information see Appendix A, Noise Technical Appendix).

Table 15-10
Locations for Building Attenuation

Site	Time	2011 Build L_{10} dBA	Attenuation dBA
1	AM	71.0	30
2	PM	75.0	30
3	MD	73.6	30
4	AM	70.3	30
5	AM	79.4	35
6	MD	75.4	35

The values shown are the maximum predicted noise levels for the three time periods examined. All of the project buildings would have well sealed, double-glazed windows and central air conditioning (i.e., alternative ventilation). These measures would provide a minimum of 35 dBA of attenuation. With these measures, interior L_{10} noise levels at all of the project buildings would comply with CEPO-CEQR requirements and would be 45 dBA or lower. All buildings subject to this rezoning would receive an (E) designation to ensure that attenuation is provided to comply with CEPO-CEQR noise requirements. The text of the (E) designation is as follows concerning Block 1463, Lots 5, 11, 21, 31:

> In order to ensure an acceptable interior noise environment, at all facades to East 68th and East 69th Streets, future uses must provide a closed window condition with a minimum window/wall attenuation of 30 dB(A), in order to maintain an interior noise level of 45 dB(A). In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, central air conditioning or air conditioning sleeves containing air conditioners.

The text of the (E) designation is as follows on Block 1462, Lot 5:

> In order to ensure an acceptable interior noise environment, at all facades to roadways, future uses must provide a closed window condition with a minimum window/wall attenuation of 35 dB(A), in order to maintain an interior noise level of 45 dB(A). In order to maintain a closed-window condition, an alternate means of ventilation must also be provided. Alternate means of ventilation includes, but is not limited to, central air conditioning or air conditioning sleeves containing air conditioners.

The (E) designation would ensure that there would be no significant adverse noise impacts.

In addition, detailed specification for mechanical equipment such as HVAC and elevator motors have not yet been prepared. However, all mechanical equipment would utilize sufficient noise reduction devices to comply with applicable noise regulations and standards. Therefore, the proposed project would not have any significant adverse noise impacts.

❖

A. INTRODUCTION

This chapter summarizes the construction plan and identifies potential impacts that could result from construction activities associated with the proposed expansion of the Memorial Sloan-Kettering Cancer Center (MSKCC) campus. This chapter addresses these issues by discussing the phasing and timetable of the proposed actions, describing the various elements of the construction plan, analyzing the potential impacts from construction-related activities, and addressing measures that may be employed to minimize those impacts.

B. CONSTRUCTION PROGRAM

Development of the proposed MSKCC campus is anticipated to be completed in two phases. The proposed research building located on the north block (between East 68th and 69th Streets) and is expected to be completed in 2007. The building program for the MSKCC main campus block has not yet been defined; however, for purposes of environmental review, a hypothetical worst-case program has been developed and assumed to be completed in 2011*. As described in detail in Chapter 1, "Project Description," the development schedule would be as follows:

- Research Building in 2007—Construction of the proposed research building is anticipated to start in Spring 2002 and be completed by 2007. The proposed research building would comprise a 23-story tower and a low-rise 7-story structure. The building would include laboratories, support space and offices, an auditorium, and a replacement space for the St. Catherine's Church Rectory, which would be demolished for the project. The existing Kettering Building would also be demolished for the project. To maintain laboratory operations of the existing building, construction would begin with the new research tower adjacent to St. Catherine's Church. Once the laboratory activities are relocated to the completed tower portion, demolition of the Kettering Building and construction of the remainder of the proposed research building would commence.

- Full Development in 2011—For environmental review purposes, construction on the MSKCC main campus block is assumed to commence after the completion of the research building and be completed by 2011. The reasonable worst-case development scenario assumes the potential demolition on the main campus block of the Arnold and Marie Schwartz International Hall of Science for Cancer Research on First Avenue and the Howard Building on East 68th Street. This development scenario entails the replacement of existing in-patient rooms, and the expansion of existing offices and diagnostic and treatment facilities. Full development under the proposed rezoning of the project could also include the renovation of the Memorial Hospital to replace and expand offices and on-call space.

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* Since publication of the DEIS, the south block between East 66th and 67th Streets has been withdrawn from the proposed actions. This chapter has been changed to reflect this revision.

RESEARCH BUILDING CONSTRUCTION STAGES AND ACTIVITIES

The work for the proposed research building would be performed in two stages. On the west side of the site, it would commence with the demolition of the Rectory on the western portion of the site and end with completion of the 23-story research tower and new Rectory. On the east side of the site, it would commence with the demolition of the existing Kettering Laboratory Building and end with construction of the low-rise structure. Table 16-1 presents the estimated duration for the construction phases.

Table 16-1

Research Building Construction Activities and Durations

	Research Tower		Low Rise Wing	
Construction Activity	Actual (in months)	Cumulative* (in months)	Actual (in months)	Cumulative* (in months)
Demolition	2	2	6	6
Excavation and Foundation	12	10	6	6
Structure and Shell	15	6	8	3
Interior Construction and Finishing	24	24	11	11
Cumulative Duration Total	**-**	**42**	**-**	**26**

Note: * Cumulative durations shown assume overlaps among various construction activities.

There would be overlaps among the various construction phases such as demolition of structures overlapping site excavation and grading, and work on interior construction taking place as the shell structure is being completed. Thus, the overall cumulative schedule for construction of the proposed research building and Rectory is anticipated to last approximately 68 months (or approximately 5 ½ years). Each of the construction stages noted in the Table 16-1 is described in more detail below.

DEMOLITION

Development of the research building would require the demolition of the adjacent 2-story Rectory and the existing 11-story Kettering Building. Demolition and site clearance are expected to last approximately 2 months for the tower portion of the building on the west side of the site and 6 months for the low-rise construction on the east side of the site. Demolition would commence with the abatement of any hazardous materials in the existing buildings, which would likely consist largely of asbestos-containing materials and lead-based paint commonly found in the building materials of older structures. Demolition would involve the use of cranes, robotic demolition machines, jackhammers, loaders, and dump trucks. All demolition debris would be carted offsite for disposal in a licensed landfill. To protect the public during the demolition work, sidewalk bridges, netting, and appropriate protective enclosures would be installed along the perimeter of the site.

EXCAVATION AND FOUNDATION

Following demolition, construction of the project's foundation and below-grade elements would commence and is expected to last approximately 12 months for the research tower (with a 2-month overlap with the demolition activity) and 6 months for the low-rise wing. Because bedrock is shallow in the project area, solid rock excavation will be necessary, which will

require rock drilling, controlled blasting with low-level charges, as well as the use of heavy excavation equipment and cranes to remove rock from the site. To minimize adverse effects from the rock drilling, blasting, and excavation activities, the project would implement a protection and monitoring program that would include:

- Hiring an independent engineer or testing agency to conduct vibration monitoring to ensure that blasting and excavation activities are done in conformance with applicable building codes;
- Surveying existing building foundations adjacent to the construction site to establish baseline conditions. Monitoring of structural movement would be conducted and compared against the baseline conditions to safeguard the integrity of nearby structures from construction-generated activities;
- Protecting St. Catherine's Church according to a specific construction protection plan described below under "Historic Resources;"
- Protecting the Kettering Building's roof and facade, during construction of the research tower; and
- Protecting other adjacent buildings.

To minimize disruption to the study area residences and users, the project would provide advance notice to adjacent property owners of anticipated blasting periods. Other construction activities would be coordinated with church and laboratory activities to minimize disruptions to their operations.

Foundation work would include site clearance, excavation, and pouring of concrete footings and foundation. Ready-mix concrete trucks would deliver concrete to the site and trucks would remove excavated material for off-site disposal in a licensed landfill.

STRUCTURE AND SHELL

The structure and shell stage would include would include construction of the steel frameworks (installation of beams and columns) for the proposed research building and new rectory, their facades (exterior walls and cladding), and roofs. During this time, the construction and pouring of the buildings' concrete floors, or "decks" would occur. Installation of the buildings' mechanical, electrical, and plumbing systems would start during this stage and continue through the interior construction and finishing stage. These activities would require the use of cranes, derricks, exterior hoists, delivery trucks, and welding equipment.

Cranes would be used to lift steel, facade elements, large pieces of equipment, etc. All materials for the construction of the project and all debris generated as part of the construction generally would be moved via lifts. Trucks would continue to deliver materials and carters would remove construction debris.

The total duration of the structure and shell stage in the research tower of construction is expected to span 15 months, of which approximately 9 months would overlap with the interior construction stage; thus, the total duration of the structure and shell stage would be approximately 6 months. The duration of the structure and shell stage in the low-rise wing is expected to span 8 months, of which approximately 5 month would overlap the interior construction stage; thus, the total duration would be 3 months.

INTERIOR CONSTRUCTION AND FINISHING

Installation of the building's mechanical, electrical, and plumbing systems would continue during this stage and include installation of heating, ventilation, and air conditioning (HVAC) equipment and ductwork, installation of electric lines within the buildings, and interior installation of water supply and wastewater piping. Installation and checking of elevator and life safety systems would also take place at this time.

This stage would also include the construction of interior walls, installation of lighting fixtures, and interior finishes (flooring, painting, etc.). Interior construction of the tower is expected to last approximately 24 months. Interior construction of the low-rise portion is expected to last approximately 11 months.

CONSTRUCTION STAGES AND ACTIVITIES FOR FULL DEVELOPMENT

The second analysis 2011 is assumed based on the Department of City Planning guidelines that limits analysis years to a decade into the future. It is unlikely that full development of such a complex project as redevelopment on active hospital campus could occur in this amount of time. Further, since the full development program has not been defined, it is not possible at this time to provide sequencing or site-specific details on the construction activities. However, similar to the research building construction, the full development would involve demolition; excavation and foundation; structure and shell; and interior construction and finishings. During this construction process, MSKCC would also implement a program to minimize disruption to the active hospital uses located adjacent to the affected construction site.

C. TYPICAL CONSTRUCTION ACTIVITIES

Typical equipment used for demolition, excavation, and pouring the foundation would include excavators, bulldozers, rockbreakers, backhoes, tractors, hammers, cranes, drills, and concrete pumping trucks. Equipment that would be used in construction would include mobile cranes, hoist complexes, dump trucks and loaders, concrete trucks, and back hoes. Trucks would arrive at the site with pre-mixed concrete and other building materials, and would remove any excavated material and construction debris. Typical equipment used during construction of the superstructure and framing would include cranes, compressors, derricks, hoists, bending jigs, and welding machines. During facade and roof construction, hoists and cranes would continue to be used. Trucks would remain in use for material supply and construction waste removal.

Construction activities would normally take place Monday through Friday although the delivery or installation of certain critical equipment could occur on weekend days. The permitted hours of construction are regulated by the New York City Department of Buildings (NYCDOB), apply in all areas of the city, and are reflected in the collective bargaining agreements with major construction trade unions. In accordance with those regulations, work would begin at 7 AM on weekdays and workers would generally arrive and begin to prepare work areas between the hours of 6:30 AM and 8 AM. Normally, major construction activity would end at 4:30 PM with such tasks as site clean up ending at 5:30 PM. There is the potential that construction of this project would entail work on Saturdays between the hours of 6:30 AM and 3:30 PM and on occasional Sundays. Overtime and weekend work would be required for the staging of certain oversized materials to comply with the requirements of the New York City Department of Transportation (NYCDOT). Overtime may also be required to complete some time-sensitive tasks beyond the normal work day to somewhat later weekday hours and possibly weekends. To

work in the weekend, a special permit from the NYCDOB is required. Should weekend work be necessary, the project would obtain the necessary permit.

D. FUTURE WITH THE PROPOSED ACTIONS

Construction of the proposed project may be disruptive to the surrounding area and, in particular, to the adjacent residential and active hospital operations during the construction period. The following analysis describes the overall temporary effects on land use, community facilities, historic and archaeological resources, hazardous materials, traffic and transportation, air quality, and noise.

LAND USE

Construction of the proposed research building or the full build-out would cause some disruptions to activities in the surrounding area. Although total construction is anticipated to last approximately 68 months for the proposed research building, these disruptions would be temporary in nature and would not occur for the entire duration. Construction would be similar to construction at other sites in the city and the hours of the construction would be regulated by NYCDOB. In general, construction would not alter surrounding land uses, although certain types of activities would be intrusive to adjacent residences, hospital users, and community facilities, particularly the Woodward Nursery School play area directly north of the proposed research building site. During certain construction activities such as demolition, excavation, and exterior construction, part or all of the play area may be less attractive for use or may require closure during intense construction activities. In later stages of the proposed research building's construction, when work would take place within the building shell, effects on the school's play area would be substantially reduced. MSKCC has discussed relocation of Woodward School with the school's leadership and with representatives of New York-Presbyterian Hospital, which owns the school's present location. It is likely that Woodward will be relocated to the ground floor of the present MSKCC library, and have a separate entrance to that space from 1233 York Avenue. A play area would be provided in a terrace adjacent to the medical library. Preliminary designs are now being developed for review by Woodward. Other changes, such as the sidewalk closures, would also be apparent to people living and working in the surrounding area but the implementation of a construction management plan would minimize the effects of these closures.

COMMUNITY FACILITIES

Construction activities on the site would result in some interruptions to activities in the surrounding area and would include various lane and/or sidewalk closures for different stages of construction. However, all of the streets affected would be accessible to emergency vehicles and available for emergency access. Project coordination with both the New York City Police Department (NYPD) and the New York City Fire Department (FDNY) would ensure unimpeded emergency access during construction.

Because there would be active hospital uses and on-going activities at St. Catherine's Church, measures in accordance with NYCDOB codes governing construction activities would be implemented by MSKCC. Construction activities would be coordinated with the church and laboratory activities to minimize disruptions to their operations.

HISTORIC RESOURCES

RESEARCH BUILDING—2007

Construction of the research building could potentially cause damage to St. Catherine's Church as it is located immediately west of the project site. To mitigate any adverse physical impacts resulting from ground-bourne, construction-period vibrations on the church building, a construction protection plan would be developed.

FULL DEVELOPMENT—2011

No construction impacts are expected on designated or eligible historic resources on the main campus block since none of the historic resources are located adjacent to the main campus block.

HAZARDOUS MATERIALS

Chapter 10, "Hazardous Materials," discusses a potential for adverse impacts during construction activities resulting from the presence of chemical and radioactive products, hazardous waste, petroleum storage tanks, asbestos-containing materials (ACMs), PCB-containing materials, and lead-based paint. Construction activities for both the research building and full development scenarios developments could disturb hazardous materials and increase pathways for human exposure. However, it is anticipated that impacts would be avoided by performing construction activities in accordance with the following protocol:

- Prior to any demolition activities, all remaining chemical and radioactive materials should be removed from the site and disposed of in accordance with all applicable federal and state regulations. All areas used for storage would then require careful inspection and possible cleaning in accordance with the requirements for federal hazardous waste or radioactive waste storage facilities. If there is evidence of releases or spills, testing of the underlying soil or groundwater would be required. Since bedrock is shallow in this area, little or no soil and groundwater may actually be present beneath the basements of the buildings.
- All petroleum storage tanks, associated piping, and materials which may remain with the tanks (as well as any contaminated soil), would be properly removed and disposed of according to local, state and federal regulations and guidelines;
- Unless documentation can prove otherwise, any renovation or demolition activities with the potential to disturb lead-based paint in buildings constructed prior to 1977 would be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62 - Lead Exposure in Construction); and
- Prior to any renovation or demolition activities, a comprehensive asbestos survey of all structures constructed before 1981 would be conducted in the safe and accessible affected areas that includes the sampling of all suspect materials to confirm the presence or absence of asbestos. All ACMs would be abated prior to demolition of the existing buildings in accordance with city, state, and federal regulations.

NYCDEP has requested that prior to excavation, a Phase II subsurface investigation of the Kettering Laboratory site and construction sites on the main campus block be conducted to fully characterize the potential contamination at the site. An investigative work plan including a testing protocol and Health and Safety Plan will be submitted to NYCDEP for review and

approval before testing is undertaken. The results of the testing program and the remediation plan, if required, will be submitted to NYCDEP for review and approval. Since the Kettering Laboratory and other buildings must continue to function until the building is demolished, it is impractical to complete a testing program until that time. Therefore, MSKCC has entered into a restrictive declaration that would ensure that the appropriate characterization and remediation take place before any soil disturbance or construction begins. All pertinent surface and sub surface blueprints and site plans for the proposed construction project, as well as the previously completed Phase I ESA Report will be submitted to NYCDEP for review.

With these procedures in place, no significant adverse impacts are expected to occur as a result of hazardous materials removal.

TRAFFIC AND TRANSPORTATION

RESEARCH BUILDING—2007

The proposed action would generate trips from workers traveling to and from the site, as well as from the movement of goods and equipment. The estimated average number of construction workers on site at any one time would vary, depending on the phase of construction, as follows:

- The demolition stage would require about 40 workers on site;
- The excavation and foundation work would require the labor of an average of 50 persons for the tower portion and 40 persons for the low-rise portion;
- Workers required for construction of the structure and shell would range from 230 to 350 workers for the tower portion and from 150 to 200 workers for the low-rise portion, depending on the tasks.
- Workers for the interior construction and finishing would range from 200 to 400 workers for the tower portion and from 100 to 200 workers for the low-rise portion; the number of workers would decrease as the project nears completion.

Given typical construction hours, worker trips would be concentrated in off-peak hours and would not represent a substantial increment during peak travel periods. Construction workers would travel primarily by public transportation, with a smaller percentage by private automobile. Therefore, vehicle trips associated with construction would not be likely to have significant adverse impacts on surrounding streets.

Truck movements would be spread throughout the day and would generally occur between the hours of 7:30 AM and 4:30 PM, depending on the period of construction. The following numbers of trucks (for materials delivery and removal of debris/scrap from construction operations) are anticipated during the various construction stages:

- Demolition: 3 trips per day during the approximately 2 months of Phase 1 and approximately 6 months of the Phase 2;
- Excavation and Foundation: 18 trips per day over approximately 10 months for the tower component and 9 trips per day over approximately 6 months for the low-rise component;
- Structure and Shell: 13 to 15 trip per day over approximately 15 months for the tower component and 8 to 10 trips per day over approximately 8 months for the low-rise component; and

- Interior construction: 9 to 12 trip per day over approximately 24 months and 11 months for the tower component and the low-rise component, respectively;

It is assumed that all construction work would be done during one daily shift. However, if it becomes necessary to expedite an area of construction that is falling behind schedule, there could be an added second shift, subject to city approval.

Construction activities would result in the short-term temporary disruption of both traffic and pedestrian movements around the project sites. During the construction periods for the Phase 1 project, construction staging is not expected to require regular street closings or traffic detours. The project may require temporary lane closures for a portion of the buildings' construction stages and the sidewalks would likely be narrowed to construct a wooden barrier fence along the back of the sidewalk. During certain construction stages (i.e., demolition, excavation, and foundation), there could be complete sidewalk closures (with temporary pedestrian walkways detoured to the opposite sidewalk on East 69th Street) for the construction of the tower and on 68th Street during the construction of the low-rise component. Additionally, in order to maintain traffic flow, temporary "No Parking" regulations would be in effect for curbsides located across from and along the construction site.

Approvals for all temporary sidewalk and curb lane closures during construction would be worked out in coordination with NYCDOT's Office of Construction Management and Coordination (OCMC) to minimize potential impacts to pedestrian and vehicular circulation surrounding the site.

FULL DEVELOPMENT—2011

As noted above, the full development program has not been fully defined; thus, the sequencing or site-specific details on the construction activities are not known. However, as with construction of the research building, full development could be expected to result in the short-term temporary disruption of both traffic and pedestrian movements around the affected project sites. As with construction of the research building, approvals for all temporary sidewalk and curb lane closures during construction on the main campus and south campus sites would be coordinated with OCMC to minimize potential impacts to pedestrian and vehicular circulation surrounding the site.

AIR QUALITY

The principal air quality impact associated with construction activities is the generation of fugitive dust. Fugitive dust emissions from site-clearing operations can occur from excavation, hauling, dumping, spreading, grading, compaction, wind erosion, and traffic over unpaved areas. Actual quantities of emissions depend on the extent and nature of the clearing operations, the type of equipment employed, the physical characteristics of the underlying soil, the speed at which construction vehicles are operated, and the type of fugitive dust control methods employed. For this project, demolition, excavation, and construction would be conducted with the care mandated by the site's proximity to active uses. Dust control measures—including watering of exposed areas and dust covers for trucks—would be implemented to ensure that Section 1402.2-9.11 of the New York City Air Pollution Control Code regulating construction-related dust emissions is followed. As a result, no significant air quality impacts from fugitive dust emissions would be anticipated.

Construction vehicles would not result in any significant long-term disruption of local traffic, so carbon monoxide levels would not be significantly affected. Emissions from diesel-powered construction equipment would not be great enough to produce any significant local or regional impacts.

NOISE

Impacts on community noise levels during construction would include noise from the operation of construction equipment and noise from construction vehicles and delivery vehicles traveling to and from the site. The level of impact of these noise sources depends on the noise characteristics of the equipment and activities involved, the construction schedule, and the location of potentially sensitive noise receptors.

Noise and vibration levels at a given location depend on the type and quantity of construction equipment being operated, as well as the distance from the construction site. Typical noise levels of construction equipment expected to be employed during the construction process are shown in Table 16-2. Noise levels due to construction activities would vary widely, depending on the phase of construction—site clearing and excavations, foundation work, erection of structural steel, construction of exterior walls, etc.—and the specific tasks being undertaken.

Construction noise generated by the proposed action is expected to be similar to the noise generated by other construction projects in the city. Increased noise levels resulting from construction activities can be expected to be most significant during the early phases of construction, particularly from rock drilling and blasting, but would be of relatively short duration.

Temporary increases in noise levels resulting from operation of delivery trucks and other construction vehicles would not be significant. Although small increases in noise levels are expected to be found near a few defined truck routes and in the immediate vicinity of the development site, changes from construction-related vehicles are expected to be minimal.

It is anticipated that noise and vibration levels during construction may be perceptible from nearby sensitive areas. Although these are recognized as temporary impacts, they can be a source of annoyance. During the construction phase, measures would be used to reduce the construction noise and vibration levels to acceptable limits, as discussed below.

Noise and vibration impacts from construction activities would be most noticeable during the early phases of construction. During periods of intensive excavation activity, such as excavation of bedrock, appropriate measures would be taken to ensure that no structural damage to adjacent structures would occur. As noted above, the project would implement a program to monitor vibrations to ensure that blasting and excavation activities are done in conformance with applicable building codes. Existing building foundations adjacent to the construction site would be surveyed and structural movement would be monitored to safeguard the integrity of these structures from construction-generated activities. In addition, construction activities resulting in elevated noise or vibrations would be coordinated with the church and laboratory to minimize disruptions to these operations.

Any noise impacts would be temporary and short-term. After erection of the superstructure, the majority of the buildings would be enclosed and noise levels related to on-site construction activities would be significantly reduced.

Table 16-2

Typical Noise Emission Levels for Construction Equipment

Equipment Item	Noise Level at 50 ft. (dBA)
Air Compressor	81
Asphalt Spreader (paver)	89
Asphalt Truck	88
Backhoe	85
Bulldozer	87
Compactor	80
Concrete Plant	83[1]
Concrete Spreader	89
Concrete Mixer	85
Concrete Vibrator	76
Crane (derrick)	88
Delivery Truck	88
Diamond Saw	90[2]
Dredge	88
Dump Truck	88
Front End Loader	84
Gas-driven Vibro-compactor	76
Hoist	76
Jackhammer (Paving Breaker)	88
Line Drill	98
Motor Crane	83
Extractor	101
Pump	76
Roller	80
Shovel	82
Truck	88

Notes:

[1] Wood, E.W. and A.R. Thompson, *Sound Level Survey, Concrete Batch Plant: Limerick Generating Station*, Bolt Beranek and Newman Inc., Report 2825, Cambridge, MA, May 1974.

[2] New York State Department of Environmental Conservation, *Construction Noise Survey*, Report No. NC-P2, Albany, NY, April 1974.

Source: Patterson, W.N., R.A. Ely, and S.M. Swanson, *Regulation of Construction Activity Noise*, Bolt Beranek and Newman, Inc., Report 2887, for the Environmental Protection Agency, Washington, D.C., November 1974. Except for footnoted items.

The project would adhere to all of the requirements of the New York City Building Code, the New York City Noise Control Code, and EPA's noise emission standards. These local and federal requirements mandate that certain classifications of construction equipment and motor vehicles meet specified noise emission standards; that construction activities be limited to weekdays between the hours of 7 AM and 6 PM; and that construction materials be handled and transported in such a manner as not to create unnecessary noise. These regulations would be carefully followed. If weekend work is necessary, the project would obtain the necessary permits. In addition, appropriate low-noise emission level equipment and operational procedures would be used. Compliance with noise control measures would be ensured by including them in the contract documents as material specification and by directives to the construction contractor. ❖

A. INTRODUCTION

The technical analyses presented in Chapters 2 through 16 examine the potential for significant impacts resulting from the proposed actions. Where potential significant adverse impacts have been identified, measures that would minimize or avoid them have been considered. This chapter discusses these mitigation measures in the areas of urban design, neighborhood character, hazardous materials, traffic and parking, pedestrians and transit, and air quality (analyzing the air quality effects of the proposed traffic mitigation measures). Unavoidable adverse impacts are discussed in Chapter 19.

B. HISTORIC RESOURCES

Construction of the proposed research building could potentially affect the Church of St. Catherine of Siena. To mitigate these potential adverse physical impacts, a construction protection plan would be developed and implemented following the guidelines set forth in "The New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark" and "Protection Programs for Landmark Buildings." The construction protection plan would describe in detail the demolition, excavation, and construction procedures of the proposed actions. Construction procedures to protect the foundations and structure of the adjacent church would be developed and monitored by independent structural and foundation engineers. The construction protection plan would also provide for the inspecting and reporting of the existing conditions at the Church of St. Catherine of Siena; establish protection procedures; establish a monitoring program to measure vertical and lateral movement and vibration; establish and monitor construction methods to limit vibrations; and establish methods and materials to be used for any repairs. The independent engineers would be empowered to issue "stop work" orders to prevent any damage to the Church of St. Catherine of Siena.

As discussed in Chapter 6, "Shadows," and Chapter 7, "Historic Resources," the stained glass windows on the east facade of the Church of St. Catherine of Siena currently receive sunlight in the morning (see Figures 6-15 and 6-16). Since the proposed project would be built adjacent to the east side of the church, between it and the sun, there would be an increase in shadows on the east facade of the church as a result of the proposed project. To mitigate this potential impact, the applicant has included in the project's design exterior illumination for the stained glass windows at this location. This illumination would supplement the natural light on the windows that would be diminished by the proposed project. The illumination would allow the stained glass windows to be seen from within the church in a way that would provide clarity to the artwork.

The light sources would be located on the exterior of the church and/or the exterior of the research building, and be directed toward each of the stained glass openings. The selection and direction of the fixtures would be such as to minimize spill onto the adjacent buildings. The exterior light sources would be located after consultation with church officials and be placed in

such a manner as to minimize impact on the exterior of the church. Methods to minimize impact on the church may include, but would not be limited to, placing the light sources on the exterior of the research building, or, if attached to the church, by attaching the lights at mortar joints. The light sources should be positioned to minimize visibility of the light sources from the street. The controls for the lights would either be located inside the church or rectory, and would be controlled by the clergy or church staff.

C. URBAN DESIGN

As described in Chapter 8, "Urban Design and Visual Resources," the two towers in the mid-blocks and the increased density could cause a significant adverse impact to urban design. Since publication of the DEIS, the height of the proposed research building has been reduced from 440 feet to 420 feet to partially mitigate this potential impact. However, the project buildings would still greatly increase the density of the mid-blocks and have a much larger presence on East 68th and 69th Streets. Further, alternatives have been considered that have less density and/or different building envelopes (see Chapter 18, "Alternatives").

D. NEIGHBORHOOD CHARACTER

The impact of the proposed research building on urban design due to increased density would contribute to an adverse impact on neighborhood character in 2007 along with the increased traffic. This impact on neighborhood character would be partially mitigated by the reduction in height of the research building envelope from 440 feet to 420 feet. In 2011, at full buildout, the shorter building would also partially mitigate the significant adverse impact on urban design and the significant adverse impact on the neighborhood character.

E. HAZARDOUS MATERIALS

NYCDEP has requested that prior to excavation, a Phase II subsurface investigation on the Kettering Laboratory site and on construction sites on the main campus block would be conducted to fully characterize the potential contamination. An investigative work plan including a testing protocol and Health and Safety Plan would be submitted to NYCDEP for review and approval before testing is undertaken. The results of the testing program and the remediation plan, if required, would be submitted to NYCDEP for review and approval. Since the existing Kettering Laboratory and other buildings must continue to function until demolition, it is impractical to complete a testing program until that time.

In coordination with the Department of Environmental Protection (DEP), MSKCC has entered into a Restrictive Declaration that would ensure that the appropriate characterization and remediation take place before any soil disturbance or construction begins by requiring that:

- No demolition, excavation, other soil disturbance or construction in connection with the proposed buildings would commence on the subject property without completion of a Phase II Environmental Site Assessment (ESA). Prior to the Phase II ESA, an investigative sampling protocol and Health and Safety Plan would be submitted to DEP for review and approval. Upon completion of the Phase II ESA, a detailed report, and if warranted, remedial recommendations would be submitted to DEP for review and approval;

In addition the following measures will be adhered to:

- Any suspected or conclusively identified underground storage tanks (USTs) that are found on the potential construction sites would be removed and/or closed in accordance with all federal, state, and local regulations. If any USTs located on the project sites are leaking, or if any USTs with a capacity of more than 1,100 gallons are removed, they would be reported to the Department of Environmental Conservation (DEC) and the New York City Fire Department. All closure reports would be submitted to DEC for review and approval;

- A complete asbestos survey would be performed on the project sites, and any asbestos containing materials found on the sites would be removed in accordance with all applicable federal, state, and local regulations.

With this restrictive declaration and adherence to the required state and federal regulations outlined above, the potential for an adverse impact would be avoided.

As discussed in Chapter 10, Hazardous Materials," there is the potential for adverse impacts during construction activities resulting from the presence of chemical and radioactive products, hazardous waste, petroleum storage tanks, asbestos-containing materials, PCB-containing materials, and lead-based paint. It is anticipated that such impacts would be avoided by performing construction activities in accordance with the following protocol:

- Prior to any demolition activities, all remaining chemical and radioactive materials should be removed from the site and disposed of in accordance with all applicable federal and state regulations. All areas used for storage would then require careful inspection and possibly cleaning in accordance with the requirements for federal hazardous waste or radioactive waste storage facilities. If there is evidence of releases or spills, testing of the underlying soil or groundwater would be required. Since bedrock is shallow in this area, little or no soil and groundwater may actually be present beneath the basements of the buildings.

- All petroleum storage tanks, associated piping, and materials which may remain with the tanks (as well as any contaminated soil), should be properly removed and disposed of according to local, state and federal regulations and guidelines.

- Unless documentation can prove otherwise, any renovation or demolition activities with the potential to disturb lead-based paint in buildings constructed prior to 1977 should be performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—Lead Exposure in Construction).

- Prior to any renovation or demolition activities, a comprehensive asbestos survey of all structures constructed prior to 1981 should be conducted in the safe and accessible affected areas that includes the sampling of all suspect materials to confirm the presence or absence of asbestos. Based on the findings of the survey, the identified asbestos-containing materials should be quantified, with cost estimates prepared for the repair and/or removal of all asbestos-containing material in a detailed asbestos abatement plan.

The chemicals and radioactive materials used and stored in the building to be demolished as well as the chemicals and radioactive materials to be used in the proposed and potential buildings would continue to be handled in accordance with all applicable federal, state and local

regulations. With the implementation of these measures, no significant adverse impacts related to hazardous materials would be expected to occur as a result of the demolition and construction activities.

F. TRAFFIC AND PARKING

Chapter 12, "Traffic and Parking," summarizes the project's impacts on traffic and parking. The analysis in that chapter considers the effects of the project's development in the year 2007 and again in 2011, when full development of the project is expected to be complete. Mitigation measures are discussed below for both the 2007 and 2011 analysis years.

2007 ANALYSIS YEAR

IMPACTED LOCATIONS—2007 FUTURE CONDITIONS WITH THE PROPOSED ACTIONS

As discussed in Chapter 12, "Traffic and Parking," based on standards set forth in the *CEQR Technical Manual*, the increases in traffic generated by the proposed actions would result in significant impacts at the following locations:

AM Peak Period

- The northbound approach at the intersection of York Avenue and East 69th Street, where delay would increase from 26.9 spv (LOS D) with a v/c ratio of 0.994 in 2007 No Action conditions to 35. 0 spv (LOS D) with a v/c ratio of 1.027 in 2007 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 75.7 spv (LOS F) with a v/c ratio of 1.113 in 2007 No Action conditions to 86.2 spv (LOS F) with a v/c ratio of 1.134 in 2007 with the proposed actions;
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 69.4 spv (LOS F) with a v/c ratio of 1.034 in 2007 No Action conditions to 84.4 spv (LOS F) with a v/c ratio of 1.075 in 2007 with the proposed actions;

PM Peak Period

- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street, where delay would increase from 80.2 spv (LOS F) with a v/c ratio of 1.096 in 2007 No Action conditions to 86.2 spv (LOS F) with a v/c ratio of 1.109 in 2007 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 67th Street, where delay would increase from 14.7 spv (LOS B) with a v/c ratio at the left-through movements of 0.909 in 2007 No Action conditions to 39.6 spv (LOS D) with a v/c ratio of 0.790 at the defacto left-turn movement and to 57.3 spv (LOS E) with a v/c ratio of 1.082 at the through-movement in 2007 with the proposed actions;
- The westbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 117.8 spv (LOS F) with a v/c ratio of 1.119 in 2007 No Action conditions to 123.6 spv (LOS F) with a v/c ratio of 1.130 in 2007 with the proposed actions;

- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 82.4 spv (LOS F) with a v/c ratio of 1.090 in 2007 No Action conditions to 87.4 spv (LOS F) with a v/c ratio of 1.102 in 2007 with the proposed actions; and
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 77.2 spv (LOS F) with a v/c ratio of 1.078 in 2007 No Action conditions to 82.5 spv (LOS F) with a v/c ratio of 1.091 in 2007 with the proposed actions.

RECOMMENDED MITIGATION MEASURES

The paragraphs below discuss each affected intersection and its required mitigation. Table 17-1 summarizes all of the measures contained in the mitigation plan for 2007 during the AM and PM peak hours. There were no significant adverse impacts to traffic during the midday peak hour. Proposed signal retimings that would mitigate impacts would result in all of the affected intersections being brought back to the same service conditions, or better than those under No Action conditions. The New York City Department of Transportation (NYCDOT) has reviewed these mitigation measures, and has agreed to evaluate operating conditions upon completion of Phase 1. At that time, appropriate mitigation measures will be implemented. Progression studies will be performed on the York Avenue corridor, as required by NYCDOT.

York Avenue and East 63rd Street

The impact at the southbound left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the westbound phase and adding to the southbound lagging phase. With this retiming, delays at the southbound left-turn movement would improve to 63.0 spv (LOS F) with a v/c ratio of 1.056 from a delay of 86.2 spv (LOS F) with a v/c ratio of 1.109 in 2007 with the proposed actions. This measure would mitigate the impact to No Action conditions or better.

York Avenue and East 67th Street

The impact at the northbound approach at this intersection during the PM peak period could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) on the northbound approach and developing an 8-second lagging phase (and 3 seconds of yellow plus all red time) for the northbound through and left turn. Parking regulations at the northbound approach would be "No Standing from Here to Corner 4 PM to 7 PM." With these measures, delays at the northbound approach would improve to 5.9 spv (LOS B) with a v/c ratio of 0.630 from a delay of 39.6 spv (LOS D) with a v/c of 0.790 at the defacto northbound left-turn movement and 57.3 (LOS E) with a v/c ratio of 1.082 at the northbound left-through movement in 2007 with the proposed actions. This measure would mitigate the impact to No Action conditions or better.

York Avenue and East 69th Street

The impact at the northbound left-through movement at this intersection during the AM peak period could be mitigated by subtracting 1 second of green time from the eastbound/westbound pedestrian phase and adding it to the northbound/southbound phase. With this retiming, delays at the northbound left-through movement would improve to 30.6 spv (LOS D) with a v/c ratioof 1.013 from a delay of 35.0 spv (LOS D) with a v/c ratio of 1.027 in 2007 with the proposed

Table 17-1
Signalized Intersections:
2007 No Action, Future with the Proposed Actions, and Future with Mitigation - Level of Service Analyses

Intersection	Weekday AM																							Recommended Improvements
	No Action							Future with the Proposed Actions							Future with Mitigation									
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	
YORK AVENUE & E. 69th STREET																								
Northbound	LT	0.994	26.9	D	26.9	D	16.0	C	1.027	35.0	D +	35.0	D	20.0	C	LT	1.013	30.6	D	30.6	D	17.6	C	Subtract 1 second of green time from the WB phase and add to the NB/SB phase
Southbound	TR	0.642	5.9	B	5.9	B			0.649	6.0	B	6.0	B			TR	0.640	5.5	B	5.5	B			
YORK AVENUE & E. 71st STREET																								
Northbound	LTR	1.113	75.7	F	75.7	F	48.0	E	1.134	86.2	F +	86.2	F	53.5	E	LTR	1.113	75.0	F	75.0	F	47.3	E	Subtract 1 second of green time from the WB phase and add to the NB/SB phase
Southbound	LTR	0.946	24.4	C	24.4	C			0.955	25.6	D	25.6	D			LTR	0.940	23.0	C	23.0	C			
Westbound	LTR	0.736	27.4	D	27.4	D			0.739	27.6	D	27.6	D			LTR	0.754	29.0	D	29.0	D			
SECOND AVENUE & E. 68th STREET																								
Southbound	LT	0.586	7.2	B	7.2	B	15.5	C	0.570	7.2	B	7.2	B	17.7	C	LT	0.594	8.4	B	8.4	B	15.8	C	Subtract 2 seconds of green time from the SB phase and add to the EB phase
Eastbound	TR	1.034	69.4	F	69.4	F			1.075	84.4	F +	84.4	F			TR	1.017	62.3	F	62.3	F			

Notes:
L = Left Turn, T = Through, R = Right Turn; LOS = Level of Service.
+ = Significant Project Impact.

Table 17-1 (continued)
Signalized Intersections:
2007 No Action, Future with the Proposed Actions, and Future with Mitigation - Level of Service Analyses

Intersection	Weekday PM																							Recommended Improvements
	No Action								Future with the Proposed Actions								Future with Mitigation							
	Lane	V/C	Delay		Approach		Intersection		V/C	Delay		Approach		Intersection			Lane	V/C	Delay		Approach		Intersection		
	Group	Ratio	(seconds)	LOS	Delay	LOS	Delay	LOS	Ratio	(seconds)	LOS	Delay	LOS	Delay	LOS		Group	Ratio	(seconds)	LOS	Delay	LOS	Delay	LOS	
YORK AVENUE & E. 63rd STREET																								
Northbound	T	0.584	27.9	D	17.4	C	23.4	C	0.592	28.0	D	17.5	C	24.3	C		T	0.592	28.0	D	17.7	C	21.4	C	Subtract 1 second of green time from the WB phase and add it to the SB lagging phase
	R	0.560	5.1	B					0.560	5.1	B						R	0.568	5.6	B					
Southbound	L	1.096	80.2	F	24.1	C			1.109	86.2	F +	25.9	D				L	1.056	63.0	F	18.8	C			
	TR	0.789	1.8	A					0.796	1.9	A						TR	0.783	1.2	A					
Westbound	L	0.680	28.5	D	27.7	D			0.680	28.5	D	27.7	D				L	0.702	29.7	D	28.7	D			
	LTR	0.696	27.3	D					0.698	27.4	D						LTR	0.713	28.2	D					
YORK AVENUE & E. 67th STREET																								
Northbound	LT	0.909	14.7	B	14.7	B	11.3	B	0.790	39.6	D +	56.0	E	27.1	D		LT	0.630	5.9	B	5.9	B	21.0	C	Daylight the northbound approach for 150 feet and develop a 11-sec lagging phase for northbound through and left turn
									1.082	57.3	E +														
Southbound	TR	0.838	9.1	B	9.1	B			0.851	9.5	B	9.5	B				TR	0.997	30.6	D	30.6	D			
YORK AVENUE & E. 72nd STREET																								
Northbound	LTR	0.938	17.7	C	17.7	C	36.0	D	0.945	18.6	C	18.6	C	37.0	D		LTR	0.958	21.1	C	21.1	C	34.0	D	Subtract 1 second of green time from the NB/SB phase and add it to the EB/WB phase
Southbound	LTR	0.760	8.0	B	8.0	B			0.784	8.1	B	8.1	B				LTR	0.795	8.9	B	8.9	B			
Eastbound	DfL	1.072	95.5	F	68.6	F			1.072	95.5	F	68.7	F				DfL	1.045	84.5	F	61.8	F			
	TR	0.843	40.3	E					0.847	40.6	E						TR	0.826	38.0	D					
Westbound	LTR	1.119	117.8	F	117.8	F			1.130	123.6	F +	123.6	F				LTR	1.081	99.5	F	99.5	F			
FIRST AVENUE & E. 68th STREET																								
Northbound	TR	0.738	7.5	B	7.5	B	17.5	C	0.741	7.5	B	7.5	B	18.3	C		TR	0.756	8.2	B	8.2	B	16.9	C	Subtract 1 second of green time from the NB phase and add it to the EB phase
Eastbound	LT	1.090	82.4	F	82.4	F			1.102	87.4	F +	87.4	F				LT	1.069	73.1	F	73.1	F			
SECOND AVENUE & E. 68th STREET																								
Southbound	LT	0.473	6.7	B	6.7	B	20.0	C	0.474	6.7	B	6.7	B	21.1	C		LT	0.484	7.2	B	7.2	B	19.1	C	Subtract 1 second of green time from the SB phase and add it to the EB phase
Eastbound	TR	1.078	77.2	F	77.2	F			1.091	82.5	F +	82.5	F				TR	1.060	69.7	F	69.7	F			

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.
+ = Significant Project Impact.

actions. This measure would mitigate the impact back to 32.5 spv or better. Based on an approximately 60-foot roadbed width on York Avenue, an average pedestrian walking speed of 3 feet per second, and a start-up time of 3 seconds, the minimum time needed for pedestrians crossing York Avenue is 23 seconds. With the proposed retiming, there would be 36 seconds available for pedestrians crossing York Avenue. If this retiming is not implemented, and there is no alternative mitigation measure, there would be a significant impact at this intersection.

York Avenue and East 71st Street

The impact at the northbound approach at this intersection during the AM peak period could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phase. With this retiming, delays at the northbound approach would improve to 75.0 spv (LOS F) with a v/c ratio of 1.113 from a delay of 86.2 spv (LOS F) with a v/c ratio of 1.134 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

York Avenue and East 72nd Street

The impact at the westbound approach at this during the PM peak period could be mitigated by subtracting 1 second of green time from the northbound/southbound phase and adding it to the eastbound/westbound phase. With this retiming, delays at the westbound approach would improve to 99.5 spv (LOS F) with a v/c ratio of 1.081 from a delay of 123.6 spv (LOS F) with a v/c ratio of 1.130 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

First Avenue and East 68th Street

The impact at the eastbound approach at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 73.1 spv (LOS F) with a v/c ratio of 1.069 from a delay of 87.4 (LOS F) with a v/c ratio of 1.102 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

Second Avenue and East 68th Street

The impact at the eastbound approach at this intersection during the AM peak period could be mitigated by subtracting 2 seconds of green time from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 62.3 spv (LOS F) with a v/c ratio of 1.017 from a delay of 84.4 spv (LOS F) with a v/c ratio of 1.075 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

During the PM peak hour, the impact could be mitigated by subtracting 1 second of green time from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 69.7 spv (LOS F) with a v/c ratio of 1.060 from a delay of 82.5 spv (LOS F) with a v/c ratio of 1.091 in 2007 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

2011 ANALYSIS YEAR

IMPACTED LOCATIONS—2011 FUTURE CONDITIONS WITH THE PROPOSED ACTIONS

As discussed in Chapter 12, "Traffic and Parking," based on standards set forth in the *CEQR Technical Manual*, the increases in traffic generated by the proposed actions would cause significant impacts at the locations listed below:

AM Peak Period

- The northbound approach at the intersection of York Avenue and East 62nd Street, where delay would increase from 29.6 spv (LOS D) with a v/c ratio of 0.926 in 2011 No Action conditions to 35.8 spv (LOS E) with a v/c ratio of 0.975 in 2011 with the proposed actions;
- The northbound left-through movement at the intersection of York Avenue and East 67th Street, where delay would increase from 5.2 spv (LOS B) with a v/c ratio of 0.544 in 2011 No Action conditions to 81.7 spv (LOS F) with a v/c ratio of 0.965 at the defacto left-turn movement and to 5.0 spv (LOS A) with a v/c ratio of 0.512 at the through movement in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 69th Street, where delay would increase from 33.3 spv (LOS D) with a v/c ratio of 1.020 in 2011 No Action conditions to 57.0 spv (LOS E) with a v/c ratio of 1.088 in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 91.5 spv (LOS F) with a v/c ratio of 1.144 in 2011 No Action conditions to 120.2 spv (LOS F) with a v/c ratio of 1.193 in 2011 with the proposed actions;
- The eastbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 98.1 spv (LOS F) with a v/c ratio of 1.112 in 2011 No Action conditions to 103.0 (LOS F) with a v/c ratio of 1.122 in 2011 with the proposed actions;
- The westbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 103.3 spv (LOS F) with a v/c ratio of 1.071 in 2011 No Action conditions to 125.0 spv (LOS F) with a v/c ratio of 1.118 in 2011 with the proposed actions;
- The westbound approach at the intersection of First Avenue at East 67th Street, where delay would increase from 58.2 spv (LOS E) with a v/c ratio of 0.989 in 2011 No Action conditions to 72.0 spv (LOS F) with a v/c ratio of 1.036 in 2011 with the proposed actions;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 56.3 spv (LOS E) with a v/c ratio of 0.991 in 2011 No Action conditions to 88.7 spv (LOS F) with a v/c ratio of 1.087 in 2011 with the proposed actions;
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 75.4 spv (LOS F) with a v/c ratio of 1.052 in 2011 No

Action conditions to 121.2 spv (LOS F) with a v/c ratio of 1.153 in 2011 with the proposed actions; and

- The westbound approach at the intersection of Second Avenue and East 69th Street, where delay would increase from 38.9 spv (LOS D) with a v/c ratio of 0.904 in 2011 No Action conditions to 48.4 spv (LOS E) with a v/c ratio of 0.957 in 2011 with the proposed actions.

Midday Peak Period

- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street, where delay would increase from 98.7 spv (LOS F) with a v/c ratio of 1.101 in 2011 No Action conditions to 102.8 spv (LOS F) with a v/c ratio of 1.110 in 2011 with the proposed actions;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street, where delay would increase from 121.9 spv (LOS F) with a v/c ratio of 1.112 in 2011 No Action conditions to 166.0 spv (LOS F) with a v/c ratio of 1.188 in 2011 with the proposed actions;
- The northbound through movement at the intersection of York Avenue and East 67th Street, where delay would increase from 85.6 spv (LOS F) with a v/c ratio of 1.145 in 2011 No Action conditions to 95.6 spv (LOS F) with a v/c ratio of 1.163 in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 85.1 spv (LOS F) with a v/c ratio of 1.140 in 2011 No Action conditions to 94.4 spv (LOS F) with a v/c ratio of 1.157 in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 93.9 spv (LOS F) with a v/c ratio of 1.154 in 2011 No Action conditions to 106.7 (LOS F) with a v/c ratio of 1.176 in 2011 with the proposed actions;
- The westbound approach at the intersection of First Avenue at East 67th Street, where delay would increase from 84.9 spv (LOS F) with a v/c ratio of 1.072 in 2011 No Action conditions to 103.8 spv (LOS F) with a v/c ratio of 1.115 in 2011 with the proposed actions;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 91.6 spv (LOS F) with a v/c ratio of 1.105 in 2011 No Action conditions to 98.1 spv (LOS F) with a v/c ratio of 1.119 in 2011 with the proposed actions;
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 88.0 spv (LOS F) with a v/c ratio of 1.099 in 2011 No Action conditions to 97.4 spv (LOS F) with a v/c ratio of 1.119 in 2011 with the proposed actions; and
- The westbound approach at the intersection of Second Avenue and East 69th Street, where delay would increase from 88.6 spv (LOS F) with a v/c ratio of 1.099 in 2011 No

Action conditions to 94.6 spv (LOS F) with a v/c ratio of 1.112 in 2011 with the proposed actions.

PM Peak Period

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street, where delay would increase from 133.1 spv (LOS F) with a v/c ratio of 1.058 in 2011 No Action conditions to 137.4 spv (LOS F) with a v/c ratio of 1.067 in 2011 with the proposed actions;
- The southbound approach at the intersection of York Avenue and East 62nd Street, where delay would increase from 61.2 spv (LOS F) with a v/c ratio of 1.104 in 2011 No Action conditions to 65.3 spv (LOS F) with a v/c ratio of 1.113 in 2011 with the proposed actions;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street, where delay would increase from 90.0 (LOS F) with a v/c ratio of 1.117 in 2011 No Action conditions to 107.2 spv (LOS F) with a v/c ratio of 1.150 in 2011 with the proposed actions;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 66th Street, where delay would increase from 40.3 spv (LOS E) with a v/c ratio of 0.796 in 2011 No Action conditions to 76.7 spv (LOS F) with a v/c ratio of 0.944 in 2011 with the proposed actions;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street, where delay would increase from 37.7 spv (LOS D) with a v/c ratio of 0.778 in 2011 No Action conditions to 68.7 spv (LOS F) with a v/c ratio of 0.917 in 2011 with the proposed actions;
- The northbound through movement at the intersection of York Avenue and East 67th Street, where delay would increase 63.2 (LOS F) with a v/c ratio of 1.096 in 2011 No Action conditions to 69.6 (LOS F) with a v/c ratio of 1.110 in 2011 with the proposed actions;
- The northbound left-through movements at the intersection of York Avenue and East 69th Street, where delay would increase from 35.4 spv (LOS D) with a v/c ratio of 1.025 in 2011 No Action conditions to 49.8 spv (LOS E) with a v/c ratio of 1.068 in 2011 with the proposed actions;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 78.3 spv (LOS F) with a v/c ratio of 1.119 in 2011 No Action conditions to 85.9 spv (LOS F) with a v/c ratio of 1.134 in 2011 with the proposed actions;
- The westbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 140.4 spv (LOS F) with a v/c ratio of 1.161 in 2011 No Action conditions to 261.5 spv (LOS F) with a v/c ratio of 1.324 in 2011 with the proposed actions;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 92.8 spv (LOS F) with a v/c ratio of 1.113 in 2011 No Action conditions to 112.1 spv (LOS F) with a v/c ratio of 1.152 in 2011 with the proposed actions;

- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 86.7 spv (LOS F) with a v/c ratio of 1.100 in 2011 No Action conditions to 104.6 (LOS F) with a v/c ratio of 1.138 in 2011 with the proposed actions; and
- The westbound approach at the intersection of Second Avenue and East 69th Street, where delay would increase from 44.9 spv (LOS E) with a v/c ratio of 0.940 in 2011 No Action conditions to 50.0 spv (LOS E) with a v/c ratio of 0.965 in 2011 with the proposed actions.

RECOMMENDED MITIGATION MEASURES

The paragraphs below discuss each affected intersection and its required mitigation. Table 17-2 summarizes all of the measures contained in the mitigation plan for 2011 during the AM, midday, and PM peak hours. Proposed signal retimings that would mitigate impacts would result in all of the affected intersections being brought back to the same service conditions, or better than those under No Action conditions. The New York City Department of Transportation (NYCDOT) has reviewed these mitigation measures, and has agreed to evaluate operating conditions prior to completion of Phase 2. At that time, appropriate mitigation measures will be implemented. Progression studies will be performed on the York Avenue corridor, as required by NYCDOT.

York Avenue and East 61st Street

The impact at the northbound defacto left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phase. With this retiming, delays at the northbound defacto left-turn movement would improve to 122.0 spv (LOS F) with a v/c ratio of 1.037 from a delay of 137.4 spv (LOS F) with a v/c ratio of 1.067 in 2011 with the proposed actions. This measure would mitigate the impact back to No Action conditions or better.

York Avenue and East 62nd Street

The impact at the northbound approach at this intersection during the AM peak period could be mitigated by subtracting 1 second of green time from the southbound lagging phase and adding it to the northbound/southbound phase. With this retiming, delays would improve to 32.1 spv (LOS D) with a v/c ratio of 0.955 from 35.8 spv (LOS D) with a v/c ratio of 0.975 in 2011 with the proposed actions during the AM peak period.

The impact at the southbound approach at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the pedestrian phase and adding it to the southbound lagging phase. With this retiming, delays would improve to 57.5 spv (LOS E) with a v/c ratio of 1.198 from 65.3 spv (LOS F) with a v/c ratio of 1.113 in 2011 with the proposed actions. With these measures in place, impacts would be mitigated back to No Action conditions or better.

Table 17-2
Signalized Intersections:
2011 No Action, Future with the Proposed Actions, and Future with Mitigation - Level of Service Analyses

	Weekday AM																							
	No Action							Future with the Proposed Actions							Future with Mitigation								
					Approach		Intersection					Approach		Intersection							Approach		Intersection		
Intersection	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Recommended Improvements
YORK AVENUE & E. 62nd STREET																								
Northbound	TR	0.926	29.6	D	28.0	D	21.6	C	0.975	35.8	D +	33.4	D	24.0	C	TR	0.955	32.1	D	30.1	D	22.6	C	Subtract 1 second of green time from the SB lagging phase and add to the NB/SB phase
	R	0.434	17.5	C					0.434	17.5	C					R	0.425	16.8	C					
Southbound	LT	0.849	11.2	B	11.2	B			0.851	11.2	B	11.2	B			LT	0.851	11.2	B	11.2	B			
Eastbound	LTR	0.561	29.3	D	29.3	D			0.561	29.3	D	29.3	D			LTR	0.561	29.3	D	29.3	D			
YORK AVENUE & E. 67th STREET																								
Northbound	LT	0.544	5.2	B	5.2	B	6.6	B	0.965	81.7	F +	10.8	B	9.4	B	LT	0.479	4.8	A	4.8	A	13.7	B	Develop a 11-second leading phase for northbound through and left turn
									0.512	5.0	A													
Southbound	TR	0.760	7.8	B	7.8	B			0.798	8.2	B	8.2	B			TR	0.935	21.4	C	21.4	C			
YORK AVENUE & E. 69th STREET																								
Northbound	LT	1.020	33.3	D	33.3	D	19.1	C	1.088	57.0	E +	57.0	E	30.9	D	LT	0.709	6.8	B	6.8	B	10.3	B	Develop a 11-second leading phase for northbound through and left turn
Southbound	TR	0.654	6.1	B	6.1	B			0.663	6.2	B	6.2	B			TR	0.777	13.6	B	13.6	B			
YORK AVENUE & E. 71st STREET																								
Northbound	LTR	1.144	91.5	F	91.5	F	57.4	E	1.193	120.2	F +	120.2	F	72.3	F	LTR	1.074	57.8	E	57.8	E	43.5	E	Daylight the northbound approach for 150 feet
Southbound	LTR	0.977	29.2	D	29.2	D			0.989	31.5	D	31.5	D			LTR	0.989	31.5	D	31.5	D			
Westbound	LTR	0.754	28.4	D	28.4	D			0.777	29.9	D	29.9	D			LTR	0.777	29.9	D	29.9	D			
YORK AVENUE & E. 72nd STREET																								
Northbound	LTR	0.581	5.4	B	5.4	B	36.1	D	0.611	5.6	B	5.6	B	39.1	D	LTR	0.619	6.1	B	6.1	B	33.8	D	Subtract 1 second of green time from the NB/SB phase and add it to the EB/WB phase
Southbound	LTR	0.728	7.2	B	7.2	B			0.805	8.9	B	8.9	B			LTR	0.816	9.8	B	9.8	B			
Eastbound	LTR	1.112	98.1	F	98.1	F			1.122	103.0	F +	103.0	F			LTR	1.088	86.6	F	86.6	F			
Westbound	LTR	1.071	103.3	F	103.3	F			1.118	125.0	F +	125.0	F			LTR	1.068	101.3	F	101.3	F			
FIRST AVENUE & E. 67th STREET																								
Northbound	LT	0.839	8.9	B	8.9	B	13.0	B	0.844	9.0	B	9.0	B	14.5	B	LT	0.878	10.9	B	10.9	B	14.6	B	Subtract 2 seconds of green time from the NB phase and add to the WB phase
Westbound	TR	0.989	58.2	E	58.2	E			1.036	72.0	F +	72.0	F			TR	0.976	53.2	E	53.2	E			
FIRST AVENUE & E. 68th STREET																								
Northbound	TR	0.845	9.0	B	9.0	B	13.4	B	0.851	9.1	B	9.1	B	17.2	C	TR	0.904	12.3	B	12.3	B	16.6	C	Subtract 3 seconds of green time from the NB phase and add to the EB phase
Eastbound	LT	0.991	56.3	E	56.3	E			1.087	88.7	F +	88.7	F			LT	0.997	55.2	E	55.2	E			
SECOND AVENUE & E. 68th STREET																								
Southbound	LT	0.577	7.3	B	7.3	B	16.3	C	0.584	7.3	B	7.3	B	24.0	C	LT	0.636	9.8	B	9.8	B	17.8	C	Subtract 4 seconds of green time from the SB phase and add to the EB phase
Eastbound	TR	1.052	75.4	F	75.4	F			1.153	121.2	F +	121.2	F			TR	1.035	66.0	F	66.0	F			
SECOND AVENUE & E. 69th STREET																								
Southbound	TR	0.596	6.9	B	6.9	B	10.6	B	0.605	7.0	B	7.0	B	11.9	B	TR	0.630	8.2	B	8.2	B	11.7	B	Subtract 2 seconds of green time from the SB phase and add to the WB phase
Westbound	LT	0.904	38.9	D	38.9	D			0.957	48.4	E +	48.4	E			LT	0.904	37.2	D	37.2	D			

Notes:
L = Left Turn, T = Through, R = Right Turn; LOS = Level of Service.
+ = Significant Project Impact.

Table 17-2 (continued)
Signalized Intersections:
2011 No Action, Future with the Proposed Actions, and Future with Mitigation - Level of Service Analyses

	Weekday Midday																							
	No Action							Future with the Proposed Actions							Future with Mitigation									
Intersection	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Recommended Improvements
YORK AVENUE & E. 63rd STREET																								
Northbound	T	0.891	28.7	D	22.0	C	29.8	D	0.913	30.4	D	23.4	C	30.9	D	T	0.949	35.1	D	26.9	D	28.6	D	Subtract 1 second of green time from the NB/SB phase and add to the SB lagging phase
	R	0.451	5.8	B					0.451	5.8	B					R	0.460	6.3	B					
Southbound	L	1.101	98.7	F	37.6	D			1.110	102.8	F +	39.0	D			L	1.041	71.9	F	31.9	D			
	TR	0.952	20.8	C					0.957	21.4	C					TR	0.957	21.4	C					
Westbound	L	0.619	24.2	C	23.8	C			0.621	24.3	C	23.8	C			L	0.621	24.3	C	23.8	C			
	LTR	0.656	23.6	C					0.655	23.6	C					LTR	0.655	23.6	C					
YORK AVENUE & E. 67th STREET																								
Northbound	DfL	1.112	121.9	F	89.1	F	41.9	E	1.188	166.0	F +	102.7	F	47.9	E	LT	0.870	10.2	B	10.2	B	20.5	C	Daylight the northbound approach for 150 feet and develop a 11-sec leading phase for northbound through and left turn
	T	1.145	85.6	F					1.163	95.6	F +													
Southbound	TR	0.869	9.1	B	9.1	B			0.881	9.5	B	9.5	B			TR	0.991	27.8	D	27.8	D			
YORK AVENUE & E. 71st STREET																								
Northbound	LTR	1.140	85.1	F	85.1	F	47.5	F	1.157	94.4	F +	94.4	F	52.1	E	LTR	1.129	78.5	F	78.5	F	44.1	E	Subtract 1 second of green time from the WB phase and add to the NB/SB phase
Southbound	LTR	0.838	13.0	B	13.0	B			0.843	13.2	B	13.2	B			LTR	0.826	12.0	B	12.0	B			
Westbound	LTR	0.450	15.1	C	15.1	C			0.496	15.7	C	15.7	C			LTR	0.509	16.4	C	16.4	C			
YORK AVENUE & E. 72nd STREET																								
Northbound	LTR	1.154	93.9	F	93.9	F	44.9	E	1.176	106.7	F +	106.7	F	50.1	E	LTR	1.147	89.3	F	89.3	F	44.3	E	Subtract 1 second of green time from the EB/SB phase and add to the NB/SB phase
Southbound	LTR	0.818	12.5	B	12.5	B			0.839	13.3	B	13.3	B			LTR	0.822	12.1	B	12.1	B			
Eastbound	LTR	0.850	25.0	C	25.0	C			0.856	25.4	D	25.4	D			LTR	0.885	28.4	D	28.4	D			
Westbound	LTR	0.723	23.2	C	23.2	C			0.730	23.6	C	23.6	C			LTR	0.758	26.0	D	26.0	D			
FIRST AVENUE & E. 67th STREET																								
Northbound	LT	0.700	7.2	B	7.2	B	15.5	C	0.702	7.2	B	7.2	B	17.8	C	LT	0.731	8.6	B	8.6	B	15.9	C	Subtract 2 seconds of green time from the NB phase and add to the WB phase
Westbound	TR	1.072	84.9	F	84.9	F			1.115	103.8	F +	103.8	F			TR	1.051	75.2	F	75.2	F			
FIRST AVENUE & E. 68th STREET																								
Northbound	TR	0.677	7.0	B	7.0	B	21.1	C	0.680	7.0	B	7.0	B	22.3	C	TR	0.693	7.7	B	7.7	B	20.2	C	Subtract 1 second of green time from the NB phase and add to the EB phase
Eastbound	LT	1.105	91.6	F	91.6	F			1.119	98.1	F +	98.1	F			LT	1.086	82.3	F	82.3	F			
SECOND AVENUE & E. 68th STREET																								
Southbound	LT	0.668	8.0	B	8.0	B	23.8	C	0.673	8.1	B	8.1	B	26.6	D	LT	0.687	8.7	B	8.7	B	23.4	C	Subtract 1 second of green time from the SB phase and add to the EB phase
Eastbound	TR	1.099	88.9	F	88.0	F			1.119	97.4	F +	97.4	F			TR	1.088	82.5	F	82.5	F			
SECOND AVENUE & E. 69th STREET																								
Southbound	TR	0.647	7.3	B	7.3	B	23.5	C	0.651	7.4	B	7.4	B	24.8	C	TR	0.664	8.0	B	8.0	B	22.3	C	Subtract 1 second of green time from the SB phase and add to the WB phase
Westbound	LT	1.099	88.6	F	88.6	F			1.112	94.6	F +	94.6	F			LT	1.081	79.8	F	79.8	F			

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.
+ = Significant Project Impact.

Table 17-2 (continued)
Signalized Intersections:
2011 No Action, Future with the Proposed Actions, and Future with Mitigation - Level of Service Analyses

Intersection	Weekday PM																						Recommended Improvements
	No Action							Future with the Proposed Acitons							Future with Mitigation								
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	
YORK AVENUE & E. 61st STREET																							
Northbound	DfL	1.058	133.1	F	19.9	C	15.8	C	1.067	137.4	F +	20.7	C	16.1	C	DfL	1.037	122.0	F	18.7	C	15.2	C	Subtract 1 second of green time from the WB phase and add to the NB/SB phase
	T	0.736	13.2	B					0.754	13.5	B					T	0.742	12.7	B					
Southbound	TR	0.582	11.0	B	11.0	B			0.594	11.1	B	11.1	B			TR	0.585	10.5	B	10.5	B			
Westbound	L	0.319	17.6	C	17.7	C			0.319	17.6	C	17.7	C			L	0.325	18.1	C	18.2	C			
	LTR	0.323	17.5	C					0.324	17.5	C					LTR	0.330	18.1	C					
	R	0.362	18.0	C					0.369	18.1	C					R	0.376	18.7	C					
YORK AVENUE & E. 62nd STREET																							
Northbound	TR	0.780	22.5	C	43.8	E	52.4	E	0.805	23.2	C	43.9	E	54.2	E	TR	0.805	23.2	C	43.9	E	50.9	E	Subtract 1 second of green time from the pedestrian phase and add it to the SB lagging phase
	R	1.101	87.2	F					1.101	87.2	F					R	1.101	87.2	F					
Southbound	LT	1.104	61.2	F	61.2	F			1.113	65.3	F +	65.3	F			LT	1.098	57.5	E	57.5	E			
Eastbound	LTR	0.979	49.0	E	49.0	E			0.979	49.0	E	49.0	E			LTR	0.979	49.0	E	49.0	E			
YORK AVENUE & E. 63rd STREET																							
Northbound	T	0.595	28.1	D	17.5	C	24.8	C	0.632	28.6	D	18.1	C	27.3	D	T	0.650	29.6	D	18.9	C	23.9	C	Subtract 1 second of green time from the NB/SB phase and add to the SB lagging phase
	R	0.571	5.2	B					0.571	5.2	B					R	0.579	5.7	B					
Southbound	L	1.117	90.0	F	27.0	D			1.150	107.2	F +	32.2	D			L	1.096	79.1	F	24.1	C			
	TR	0.804	1.9	A					0.822	2.1	A					TR	0.822	2.1	A					
Westbound	L	0.695	28.9	D	28.0	D			0.697	29.0	D	28.0	D			L	0.697	29.0	D	28.0	D			
	LTR	0.709	27.6	D					0.708	27.6	D					LTR	0.708	27.6	D					
YORK AVENUE & E. 66th STREET																							
Northbound	DfL	0.796	40.3	E	7.1	B	11.8	B	0.944	76.7	F +	10.3	B	16.0	C	DfL	0.809	37.9	D	5.5	B	8.9	B	Subtract 5 seconds of green time from the WB phase and add to the NB/SB phase
	TR	0.447	4.6	A					0.458	4.7	A					TR	0.429	2.8	A					
Southbound	LTR	0.928	14.0	B	14.0	B			0.972	19.2	C	19.2	C			LTR	0.912	9.8	B	9.8	B			
Westbound	LTR	0.340	23.6	C	23.6	C			0.340	23.6	C	23.6	C			LTR	0.390	26.8	D	26.8	D			
YORK AVENUE & E. 67th STREET																							
Northbound	DfL	0.778	37.7	D	61.4	F	29.3	D	0.917	68.7	F +	69.5	F	33.0	D	LT	0.740	7.4	B	7.4	B	15.6	C	Daylight the southbound approach for 150 feet and develop a 11-sec leading phase for northbound through and left turn
	T	1.096	63.2	F					1.110	69.6	F +													
Southbound	TR	0.854	9.6	B	9.6	B			0.888	11.0	B	11.0	B			TR	0.937	20.7	C	20.7	C			
YORK AVENUE & E. 69th STREET																							
Northbound	LT	1.025	35.4	D	35.4	D	19.3	C	1.068	49.8	E +	49.8	E	25.5	D	LT	0.774	8.1	B	8.1	B	14.2	B	Develop a 11-second leading phase for northbound through and left turn
Southbound	TR	0.741	7.1	B	7.1	B			0.772	7.6	B	7.6	B			TR	0.905	18.7	C	18.7	C			
YORK AVENUE & E. 71st STREET																							
Northbound	LTR	1.119	78.3	F	78.3	F	48.7	E	1.134	85.9	F +	85.9	F	53.1	E	LTR	1.114	75.2	F	75.2	F	47.0	E	Subtract 1 seconds of green time from the WB phase and add to the NB/SB phase
Southbound	LTR	0.964	26.6	D	26.6	D			0.979	29.3	D	29.3	D			LTR	0.964	26.0	D	26.0	D			
Westbound	LTR	0.503	20.1	C	20.1	C			0.626	22.9	C	22.9	C			LTR	0.639	23.8	C	23.8	C			
YORK AVENUE & E. 72nd STREET																							
Northbound	LTR	0.962	21.1	C	21.1	C	40.5	E	0.982	24.6	C	24.6	C	55.2	E	LTR	0.982	24.6	C	24.6	C	36.7	D	Daylight the westbound approach for 150 feet
Southbound	LTR	0.800	8.5	B	8.5	B			0.819	9.1	B	9.1	B			LTR	0.819	9.1	B	9.1	B			
Eastbound	DfL	1.092	103.9	F	73.8	F			1.092	103.9	F	74.0	F			DfL	1.092	103.9	F	74.0	F			
	TR	0.860	42.0	E					0.864	42.5	E					TR	0.864	42.5	E					
Westbound	LTR	1.161	140.4	F	140.4	F			1.324	261.5	F +	261.5	F			LTR	1.059	89.1	F	89.1	F			
FIRST AVENUE & E. 68th STREET																							
Northbound	TR	0.753	7.6	B	7.6	B	19.0	C	0.757	7.7	B	7.7	B	22.0	C	TR	0.788	9.1	B	9.1	B	18.7	C	Subtract 2 seconds of green time from the NB phase and add to the EB phase
Eastbound	LT	1.113	92.8	F	92.8	F			1.152	112.1	F +	112.1	F			LT	1.086	78.8	F	78.8	F			
SECOND AVENUE & E. 68th STREET																							
Southbound	LT	0.481	6.7	B	6.7	B	21.8	C	0.486	6.7	B	6.7	B	25.6	D	LT	0.507	7.8	B	7.8	B	20.8	C	Subtract 2 seconds of green time from the SB phase and add to the EB phase
Eastbound	TR	1.100	86.7	F	86.7	F			1.138	104.6	F +	104.6	F			TR	1.076	74.9	F	74.9	F			
SECOND AVENUE & E. 69th STREET																							
Southbound	TR	0.574	6.8	B	6.8	B	11.5	B	0.578	6.8	B	6.8	B	12.2	B	TR	0.590	7.4	B	7.4	B	11.9	B	Subtract 1 second of green time from the SB phase and add to the WB phase
Westbound	LT	0.940	44.9	E	44.9	E			0.965	50.0	E +	50.0	E			LT	0.937	43.5	E	43.5	E			

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.
+ = Significant Project Impact

York Avenue and East 63rd Street

The impact at the southbound left-turn movement at this intersection during the midday and PM peak periods could be mitigated by subtracting 1 second of green time from the northbound/southbound phase and adding it to the southbound lagging phase. With these retimings, delays would improve to 71.9 (LOS F) with a v/c ratio of 1.041 from 102.8 spv (LOS F) with a v/c ratio of 1.110 during the PM peak period in 2011 with the proposed actions during the midday peak period, and to 79.1 spv (LOS F) with a v/c ratio of 1.096 from 107.2 spv (LOS F) with a v/c ratio of 1.150 in 2011 with the proposed actions.

With these measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and 66th Street

The impact at the northbound defacto left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 5 seconds of green time from the westbound phase and adding it to the northbound/southbound phase. With this retiming, delays would improve to 37.9 spv (LOS D) with a v/c ratio of 0.809 from a delay of 76.7 spv (LOS F) with a v/c ratio of 0.944 in 2011 with the proposed actions. With this measure in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 67th Street

The impact at the northbound left-turn and through movements at this intersection during the AM, midday, and PM peak periods could be mitigated by creating a leading northbound phase with 8 seconds of green time (and 3 seconds of yellow plus all red time). In addition, during the midday and PM peak periods, parking at the southbound approach would be prohibited (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces). Parking regulations would be "No Standing from Here to Corner Noon to 2 PM and 4 PM to 7 PM." With these measures, delays would improve to 4.8 spv (LOS A) with a v/c of 0.479 from delays of 81.7 spv (LOS F) with a v/c ratio of 0.965 at the northbound defacto left-turn movement and 5.0 spv (LOS A) with a v/c ratio of 0.512 at the through movement in 2011 with the proposed actions during the AM peak period, to 10.2 spv (LOS B) with a v/c ratio of 0.870 from a delay of 166.0 spv (LOS F) with a v/c ratio of 1.188 at the defacto left-turn movement and 95.6 (LOS F) with a v/c ratio of 1.163 at the through movement in 2011 with the proposed actions during the midday peak period, and to 7.4 (LOS B) with a v/c ratio of 0.740 from 68.7 spv (LOS F) with a v/c of 0.917 at the defacto left-turn movement and 69.6 spv (LOS F) with a v/c ratio of 1.110 at the through movement in 2011 with the proposed actions during the PM peak period. With these measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 69th Street

The impact at the northbound approach at this intersection during the AM and PM peak periods could be mitigated by creating a leading northbound phase with 8 seconds of green time (and 3 seconds of yellow plus all red time). With this retiming, delays at the northbound approach would improve to 6.8 spv (LOS B) with a v/c ratio of 0.709 from 57.0 spv (LOS F) with a v/c ratio of 1.088 in 2011 with the proposed actions during the AM peak, and to 8.1 spv (LOS B) with a v/c ratio of 0.774 from delays of 49.8 spv (LOS E) with a v/c ratio of 1.068 in 2011 with the proposed actions during the PM peak.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 71st Street

The impact at the northbound approach at this intersection during the AM peak period could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) at the northbound approach. Parking regulations would be "No Standing From Here to Corner 7AM to 10AM." With this measure, delays at the northbound approach would improve to 57.8 spv (LOS F) with a v/c ratio of 1.074 from a delay of 120.2 (LOS F) with a v/c ratio of 1.193 in 2011 with the proposed actions.

During both the midday and PM peak periods, the impacts could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phases. With this retiming, delays at the northbound approach would improve to 78.5 spv (LOS F) with a v/c ratio of 1.129 from a delay of 94.4 (LOS F) with a v/c ratio of 1.157 in 2011 with the proposed actions during the midday peak period, and to 75.2 (LOS F) with a v/c ratio of 1.114 from a delay of 85.9 spv (LOS F) with a v/c of 1.134 in 2011 with the proposed actions during the PM peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 72nd Street

The impacts at the eastbound and westbound approaches during the AM peak period could be mitigated by subtracting 1 second of green time from the northbound and southbound phase and adding it to the eastbound/westbound phase. With this retiming, delays at the eastbound approach would improve to 86.6 spv (LOS F) with a v/c ratio of 1.088 from 103.0 (LOS F) with a v/c ratio of 1.122 in 2011 with the proposed actions. At the westbound approach, delays would improve to 101.3 spv (LOS F) with a v/c ratio of 1.068 from 125.0 (LOS F) with a v/c ratio of 1.118 in 2011 with the proposed actions.

During the midday peak period, the impact at the northbound approach could be mitigated by subtracting 1 second of green time from the eastbound/westbound pedestrian phase and adding it to the northbound/southbound phase. With this retiming, delays at the northbound approach would improve to 89.3 spv (LOS F) with a v/c ratio of 1.147 from a delay of 106.7 (LOS F) with a v/c ratio of 1.176 in 2011 with the proposed actions.

During the PM peak period, the impact at the westbound approach could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) on westbound approach. Parking regulations would be "No Standing From Here to Corner 4PM to 7PM." Parking demand is discussed below in Section C, "Parking." With this measure, delays at the westbound approach would improve to 89.1 (LOS F) with a v/c ratio of 1.059 from a delay of 261.5 spv (LOS F) with a v/c ratio of 1.324 in 2011 with the proposed actions.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

First Avenue at East 67th Street

The impact at the westbound approach at this intersection during the AM and midday peak periods could be mitigated by subtracting 2 seconds of green time from the northbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 53.2 spv (LOS E) with a v/c ratio of 0.976 from a delay of 72.0 spv (LOS F) with a v/c ratio of 1.036 in 2011 with the proposed actions during the AM peak period, and to 75.2 spv (LOS F) with a v/c ratio of 1.051 from a delay of 103.8 spv (LOS F) with a v/c ratio of 1.115 in 2011 with the proposed actions during the midday peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

First Avenue and 68th Street

The impact at the eastbound approach during the AM peak period could be mitigated by subtracting 3 seconds of green time from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 55.2 spv (LOS E) with a v/c ratio of 0.997 from a delay of 88.7 spv (LOS F) with a v/c ratio of 1.087 in 2011 with the proposed actions.

The impact at the eastbound approach at this intersection during the midday and PM peak periods could be mitigated by subtracting 1 and 2 seconds of green time, respectively, from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 82.3 spv (LOS F) with a v/c ratio of 1.086 from a delay of 98.1 spv (LOS F) with a v/c ratio of 1.119 in 2011 with the proposed actions during the midday peak period, and to 78.8 spv (LOS F) with a v/c ratio of 1.086 from a delay of 112.1 spv (LOS F) with a v/c ratio of 1.152 in 2011 with the proposed actions during the PM peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Second Avenue and 68th Street

The impact at the eastbound approach at this intersection during the AM peak period could be mitigated by subtracting 4 seconds of green time from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 66.0 spv (LOS F) with a v/c ratio of 1.035 from a delay of 121.2 spv (LOS F) with a v/c ratio of 1.153 in 2011 with the proposed actions.

During the midday and PM peak periods the impacts at the eastbound approach could be mitigated by subtracting 1 and 2 seconds of green time, respectively, from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 82.5 spv (LOS F) with a v/c ratio of 1.088 from a delay of 97.4 spv (LOS F) with a v/c ratio of 1.119 in 2011 with the proposed actions during the midday peak, and to 74.9 spv (LOS F) with a v/c ratio of 1.076 from a delay of 104.6 spv (LOS F) with a v/c ratio of 1.138 in 2011 with the proposed actions during the PM peak.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Second Avenue and East 69th Street

The impact at the westbound approach at this intersection during the AM peak period could be mitigated by subtracting 2 seconds of green time from the southbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 37.2 spv (LOS D) with a v/c ratio of 0.904 from a delay of 48.4 spv (LOS E) with a v/c ratio of 0.957 in 2011 with the proposed actions.

During the midday peak period, the impact could be mitigated by subtracting 1 and 2 second of green time from the southbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 79.8 spv (LOS F) with a v/c ratio of 1.081 from a delay of 94.6 spv (LOS F) with a v/c ratio of 1.112 in 2011 with the proposed actions.

During the PM peak period the impact could be mitigated by subtracting 1 second of green time from the southbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 43.5 spv (LOS D) with a v/c ratio of 0.937 from a delay of 50.0 spv (LOS E) with a v/c ratio of 0.965 in 2011 with the proposed actions.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

PARKING

It is assumed that the 18 on-street parking spaces lost due to the proposed 2011 mitigation measures would add to the off-street parking demand in the area, increasing the midday off-street parking utilization rate to approximately 94.5 percent. There would be available off-street parking capacity, and no significant impacts to parking would result from restricting on-street parking as described above.

G. PEDESTRIANS AND TRANSIT

The proposed actions are not expected to result in any significant impacts to pedestrian conditions in either the 2007 or 2011 future analysis years. However, the subway station stairs at the southeast and northeast corners of East 68th Street at Lexington Avenue would be significantly affected. In 2007, there would be a significant impact at the northeast stair, which would operate at level of service (LOS) F requiring a widening of one inch as recommended by CEQR (see Table 17-3). In 2011, there would be significant impacts at both the southeast stair and the northeast stair; a widening of a total of three inches (including 1 inch for 2007 and 2 inches for 2011) from existing conditions at the northeast stair would be required by CEQR to alleviate crowded stair conditions (see Table 17-3), and at the southeast stairs a widening of two inches from existing conditions would be necessary.

As noted in the *City Environmental Quality Review (CEQR) Technical Manual*, the Metropolitan Transit Authority (MTA) generally does not disrupt service on a stairway to complete a widening of two inches, but could instead choose to widen the stair by at least six inches to one foot. Therefore, no subway stair mitigation would be undertaken for 2007. Instead, discussions with the MTA have focused on widening the northeast and southeast stairs as part of the Phase 2 development.

Table 17-3
Memorial Sloan Kettering Cancer Center
Mitigation Measures

East 68th Street at Lexington Avenue #6 Train (Control Area R-246)

SUBWAY STATION ELEMENTS	WIDTH (INCHES)	EFFECTIVE WIDTH (INCHES)	NO ACTION AM 15-MINUTE PEDESTRIAN VOLUME IN	NO ACTION AM 15-MINUTE PEDESTRIAN VOLUME OUT	NO ACTION PM 15-MINUTE PEDESTRIAN VOLUME IN	NO ACTION PM 15-MINUTE PEDESTRIAN VOLUME OUT	PROJECT INCREMENT AM 15-MINUTE PEDESTRIAN VOLUME IN	PROJECT INCREMENT AM 15-MINUTE PEDESTRIAN VOLUME OUT	PROJECT INCREMENT PM 15-MINUTE PEDESTRIAN VOLUME IN	PROJECT INCREMENT PM 15-MINUTE PEDESTRIAN VOLUME OUT	REQUIRED INCHES OF WIDENING* AM	REQUIRED INCHES OF WIDENING* PM
2007												
Street Stairs												
Northeast Corner	50	38	490	278	484	223	3	16	16	5	0.89	1.07
Southeast Corner	56	44	376	629	520	717	3	16	16	5	0.79	0.71
2011												
Street Stairs												
Northeast Corner	50	38	494	273	483	221	3	42	41	11	2.23	2.75
Southeast Corner	56	44	378	630	520	725	3	42	41	11	1.96	1.80

Notes:

* Source: *CEQR Technical Manual* - page 3P-14, "To determine the amount of widening required, the following formula should be used:

$$\frac{X}{We} = \frac{Vp}{Vna}$$

where X = required inches of widening
We = effective width in the No Action
Vp = project-induced pedestrian volume
Vna = No Action pedestrian volume"

It should be noted that page 3P-16 of the *CEQR Technical Manual* states that "the MTA generally will not disrupt service on the stairway to complete a 2-inch widening; instead, it may choose to widen the stair by 2 feet." "An engineering feasibility study with conceptual plans has been prepared for widening the stairways at this station. The MTA has reviewed this study and approved the conceptual improvements (see Figures 17-1 and 17-2). The *CEQR Technical Manual* also states "in these cases, the applicant generally identifies the cost associated with that percent of the construction required to mitigate the action's significant adverse impacts." The applicant would be responsible for this portion of the improvement. There is no commitment by the MTA regarding funding of this mitigation at this time. If mitigation is not implemented, a significant adverse impact at would occur.

H. AIR QUALITY

Chapter 14, "Air Quality," shows the maximum predicted 8-hour carbon monoxide (CO) concentrations for the proposed actions as analyzed in the DEIS, and concludes that the proposed actions would not result in any significant adverse air quality impacts. Therefore, no air quality mitigation is required. This section considers the effects on air quality of the proposed actions as analyzed in the DEIS with implementation of the traffic mitigation measures discussed above. Table 17-4 shows the effect the proposed traffic mitigation measures would have on the maximum predicted 8-hour CO concentrations with the proposed actions at the analysis sites. The values shown are the highest predicted concentrations for each receptor location for any of the time periods analyzed. However, this analysis completed for the DEIS included trips generated by MSKCC development on the block bounded by East 66th and East 67th Streets between York and First Avenues, which would no longer occur as part of the proposed actions analyzed for the FEIS.

The results indicate that the proposed actions as analyzed in the DEIS with the proposed traffic mitigation would not result in any violations of the CO standard or any significant adverse impacts at the receptor locations. Because the proposed actions would result in substantially fewer trips in Phase 2 than analyzed for the DEIS, the proposed actions considered in this FEIS would not result in any violations of the CO standard or any significant adverse impacts at all the receptor locations.

Table 17-4

Future (2011) Maximum Predicted 8-Hour Average Carbon Monoxide No Action, Action, and Action with Mitigation Concentrations (parts per million)

Receptor Site	Location	Time Period	Concentration		
			No Action	Action	Action with Mitigation
1	York Avenue and East 68th Street	PM	3.9	4.2	4.0
2	York Avenue and East 66th Street	AM	3.5	3.5	3.5
		PM	3.6	3.8	3.3
3	York Avenue and East 63rd Street	PM	4.9	4.9	5.0

Notes: 8-hour standard is 9 ppm.

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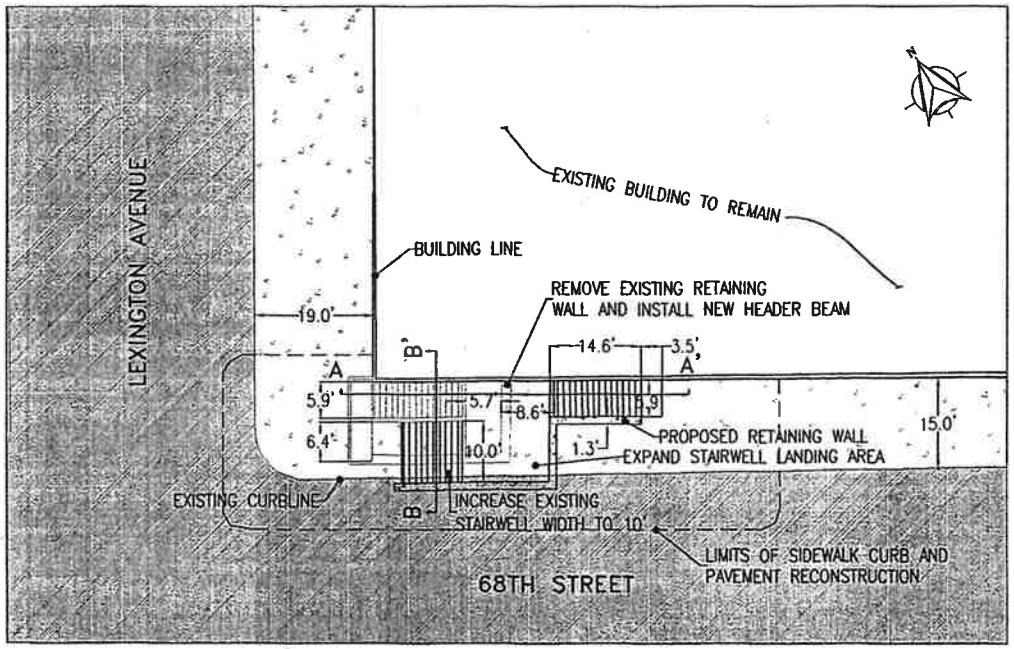
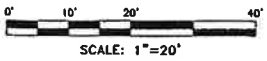
PLAN VIEW – NORTHEAST STAIR



NOTE:
FOR ILLUSTRATIVE PURPOSES ONLY



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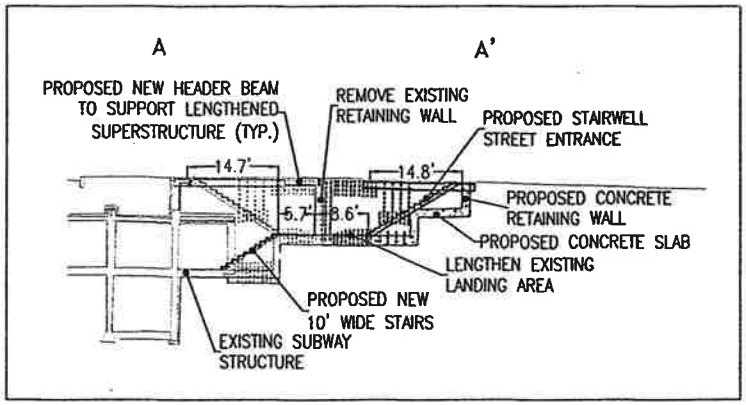
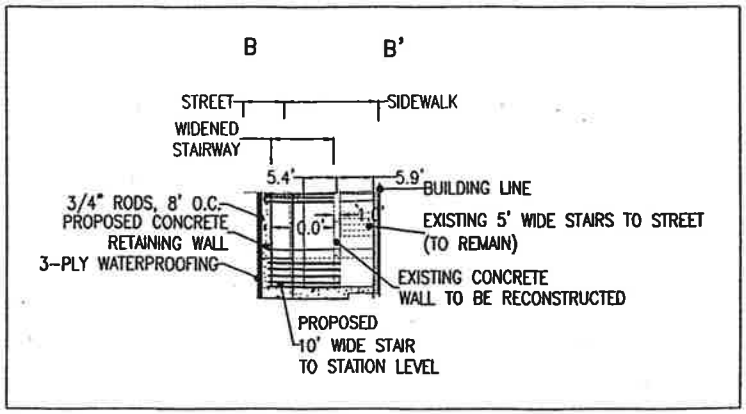
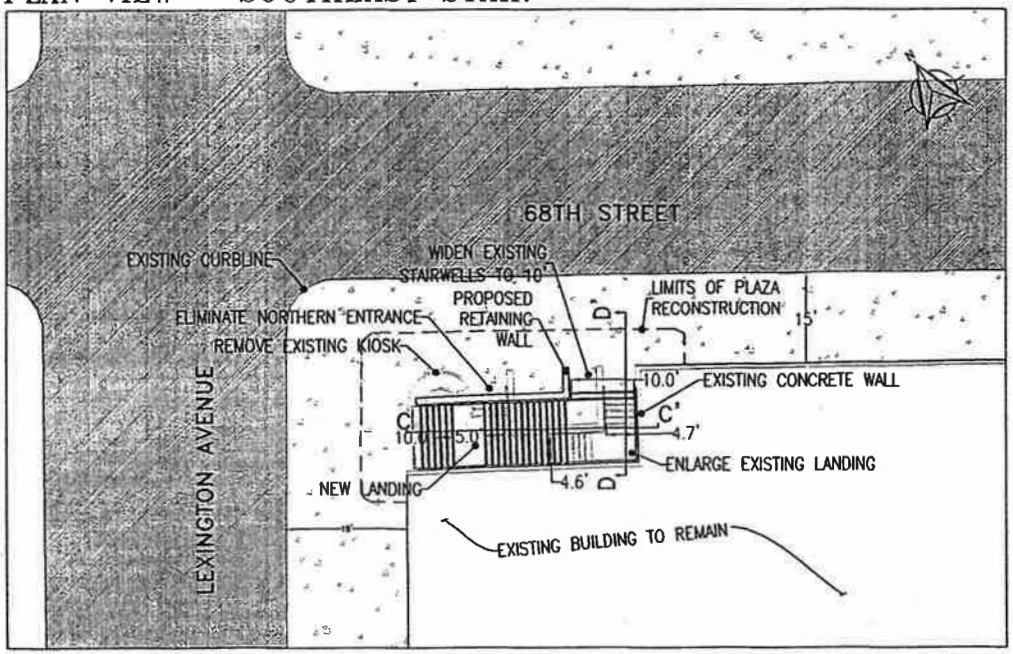


SECTION B–B'



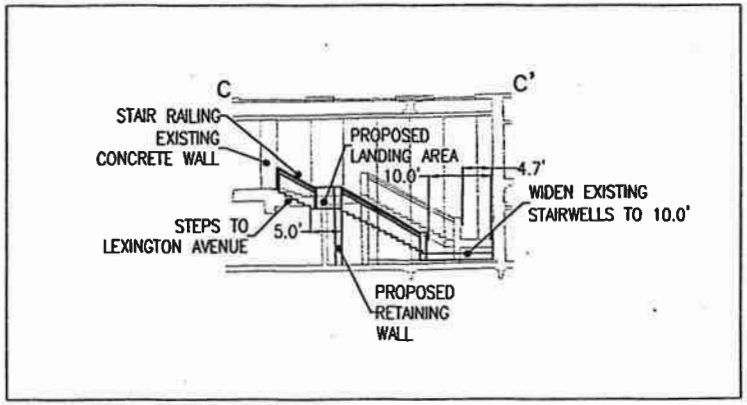
Potential Subway Entrance Improvements
68th Street Station Northeast Entrance
FIGURE 17-1

PLAN VIEW - SOUTHEAST STAIR



NOTE:
FOR ILLUSTRATIVE PURPOSES ONLY

SECTION C-C'



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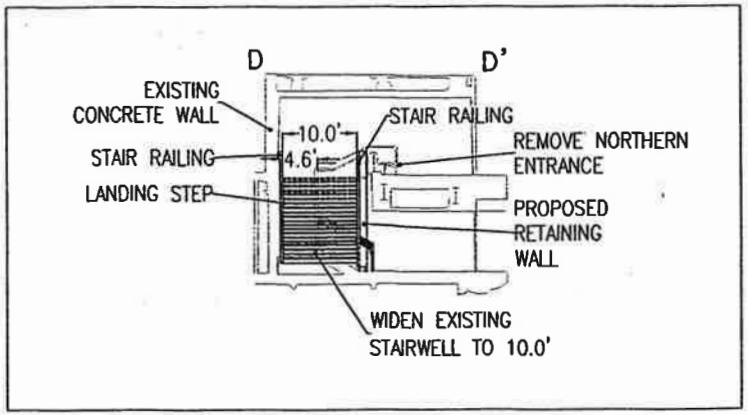

Potential Subway Entrance Improvements
68th Street Station Southeast Entrance
FIGURE 17-2

A. INTRODUCTION

This chapter analyzes alternatives to the proposed rezoning and other land use actions for Memorial Sloan-Kettering Cancer Center (MSKCC). Alternatives considered include: the No Action Alternative, in which no development takes place on the MSKCC campus; an R8 Research Building Alternative, with height and setback waivers; an R8 As-of-Right Research Building Alternative; an R8 mixed-use as-of-right development on the north block; an R9 rezoning scenario with as-of-right development; the Manhattan Borough President's Alternative; the CIVITAS Alternative; alternative sites; and a Reduced Main Campus Block Development Alternative.

For each of the technical analyses presented in the Environmental Impact Statement (EIS), the anticipated effects of the proposed project are compared to those that would result from each of the alternatives.

Except for the No Action Alternative, it is possible that these alternatives could potentially receive funding from the Dormitory Authority of the State of New York (DASNY). Because that funding action would be a discretionary action subject to State Environmental Quality Review, if such funding took place those alternatives would be the subject of environmental review even if constructed as-of-right under zoning.

B. NO ACTION ALTERNATIVE

This alternative is discussed and analyzed as the future without the proposed actions in each of the technical areas of Chapters 2 through 16 of the EIS. The No Action Alternative would not involve any major changes to the structures on the project site (construction or demolition). The Church Rectory would remain on site. It assumes that the proposed land use actions do not take place. The effects of this alternative are summarized below as they compare to the proposed actions.

LAND USE, ZONING, AND PUBLIC POLICY

Under the No Action Alternative, the former site of St. Catherine's School on East 69th Street would remain a vacant lot (with temporary MSKCC uses such as the current construction trailers and parking) and the Rectory would remain in its current location on 68th Street in 2007. The Kettering Building would also remain in place and in use. There would be no expansion and enhancement of an already important land use in the study area, medical facilities.

In 2011 the vacant lot in the north block would remain largely unused as described above, and there would be no further development on the main campus block.

Unlike the proposed project, there would be no rezoning of the two midblocks between 67th and 69th Streets and York and First Avenues from R8 to R9. The allowable density of development for community facilities in the proposed rezoning area would not be increased from a floor area

ratio (FAR) of 6.5 to 10 FAR. No LSCFD would be designated and the planning for the campus as a whole would be impeded. There would be no shift of additional bulk from the north block to the main campus block. Overall the land use on the MSKCC campus would not become more dense and there would be no expansion or enhancement of MSKCC's health care-related land uses.

SOCIOECONOMIC CONDITIONS

The existing rectory of St. Catherine's Church would remain in place. It would not be removed and then replaced in the base of the new structure adjacent to the church.

None of the economic benefits realized during either the construction and operation of the proposed research building and the potential future development on the main campus block would occur. There would be no direct or generated construction employment or income, nor the expected city and state revenue resulting from the construction employment, income, and economic activity. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would not occur. The new workers and increase in hospital activity anticipated as a result of the proposed actions would not occur. Overall, the No Action Alternative would be a significantly smaller contributing source of city and state revenues.

COMMUNITY FACILITIES

The No Action Alternative would not create the proposed research building or the potential development on the main campus block of the MSKCC campus, nor would it bring new workers and patients to the project site. However, even with the new buildings and the new population, no adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area are anticipated.

The No Action Alternative would not allow MSKCC to build its proposed research building and would significantly diminish MSKCC's ability to plan for future needs on the main campus.

OPEN SPACE AND RECREATIONAL FACILITIES

Without the proposed actions, the associated population would not increase the number of open space users in the study area.

Without the proposed research building or any redevelopment in the remainder of the north block rezoning area, there would be 645 fewer workers in 2007. The 1.8 percent decrease in the worker open space ratio, or a decrease of less than 0.01 acres of passive open space per 1,000 workers would not occur. The 0.9 percent decrease in the overall passive open space ratio would not occur. Under the No Action Alternative, project-generated shadows would not be cast on St. Catherine's Park in 2007. As with the proposed project, the No Action Alternative would not result in an impact on open space in 2007.

Without the proposed actions there would be approximately 1,299 fewer workers in the study area in 2011 compared with the proposed actions. The decrease in the worker open space ratio by 3.5 percent (a decrease of less than 0.01 acres of passive open space per 1,000 workers) would not occur. The 1.7 percent decrease in the overall passive open space ratio (a decrease of less than 0.01 acres per 1,000 residents and workers) would not occur. Shadows from development on the main campus block would not be cast on St. Catherine's Park under this alternative, and the unmitigable open space impacts projected with the proposed actions in 2011

would not occur. There would not be the potential for a significant effect on daytime workers' use of passive open space.

SHADOWS

Without the proposed research building there would be no increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007. There would also be no increase in shadow on the plaza on York Avenue at the corner of 70th Street.

Without the proposed research building and the potential development on the main campus block there would be no increase in shadows on St. Catherine's Park from the beginning of the analysis period through the morning in 2011. Again, there would also be no increase in shadow on the plaza on York Avenue at the corner of 70th Street.

HISTORIC RESOURCES

If the proposed research building is not built, there would be no potential for construction-related impacts on St. Catherine's Church. There would be no increase in shadows on the stained-glass windows of St. Catherine's Church, and consequently there would be no potential significant impact on historic resources in the study area. The mitigation with the proposed actions—lighting of the Church's east windows—would not be required with the No Action alternative.

With or without the proposed actions, construction would occur adjacent to St. John Nepomucene for a project unrelated to MSKCC.

URBAN DESIGN AND VISUAL RESOURCES

Unlike the proposed actions, the No Action Alternative would not alter the urban design context in 2007 with the introduction of new activity and more dense development to the project site. A building reaching to 420 feet in the midblock between East 68th and 69th Streets would not be built. The No Action Alternative would not be expected to enliven the nearby portions of the study area with greater activity and more pedestrians; nor would it create a presence at the streetwall of East 69th Street. The current mix of uses and old and new, large and small buildings would not be altered. Views of the east windows of St. Catherine's Church would not be blocked. There would be no potential for a significant adverse impact on urban design in 2007.

With the No Action Alternative, the density between East 67th and 69th Streets would not be increased in 2011 by the construction of a new building on the north block and new development on the main campus block reaching to approximately 420 and 448 feet, respectively. The urban design context of the surrounding streets would not be affected, as the relative presence of the buildings on the streets would remain the same. There would be no potential for a significant adverse impact on urban design. As with the proposed actions, existing visual resources and view corridors would not be affected by the No Action Alternative in 2007 or 2011.

NEIGHBORHOOD CHARACTER

Without the proposed actions and resulting development, the development site in the north block would remain vacant with temporary uses such as the current construction trailers. There would be no enhancement of an important land use in the area, medical facilities. There would be no

new tower adjacent to the Church of St. Catherine of Siena, a small scale church, and no increase in building density in the midblock. There would be no new activity in the area. The increase in traffic due to development pursuant to the proposed actions would not occur. This alternative would not result in any new project-generated trips. Additional traffic resulting from general growth and other planned developments in the study area would not result in impacts to noise levels. Project-generated changes to urban design conditions and open space, which would result in impacts to neighborhood character, would not occur under this alternative.

HAZARDOUS MATERIALS

Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished or renovated would remain in place and maintained according to all applicable local, state and federal regulations. Potential hazardous materials impacts resulting from excavation of the Kettering Building site would not occur and mitigation in the form of a restrictive declaration requiring Phase II subsurface testing, and, if necessary, remediation in connection with redevelopment of the Kettering site, would not be needed.

All hazardous chemicals and other hazardous materials would continue to the handled, stored and disposed of in accordance with all applicable federal, state and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would not increase over the existing conditions; however, even with the proposed actions and anticipated development no adverse impacts are anticipated.

TRAFFIC AND PARKING

Traffic volumes would be expected to increase as a result of planned developments in the study area and general growth in the city, resulting in increased congestion at some locations. This alternative would not result in any new project-generated trips. In 2007 under the No Action Alternative, there would not be significant impacts at 3, 0, and 5 intersections during the AM, midday, and PM peak periods, respectively, as there would be with the proposed actions. There would be no need for traffic mitigation associated with MSKCC operations, as there would be with the proposed actions. Unlike the proposed project there would be no increase in demand for parking with the No Action Alternative.

In 2011 under this alternative there would be not significant impacts at 9, 8, and 11 intersections during the AM, midday, and PM peak periods, respectively, as there would be with the proposed actions. There would be no need for traffic mitigation associated with MSKCC operations, as there would be with the proposed actions. Unlike the proposed project there would be no increase in demand for parking with the No Action Alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in volume as a result of background growth and planned developments. This alternative would not result in any new pedestrian trips and, therefore, there would be no increased demand for pedestrian space in the study area.

Similarly, subway and bus trips would not increase as a result of this alternative, and no additional demand for subway and bus service would occur with this alternative. There would be no potential impacts on the northeast and southeast subway stairs at the East 68th Street station in 2007 and 2011, and no need for mitigation in 2011.

AIR QUALITY

With the No Action Alternative, the increases in the 8-hour carbon monoxide concentrations resulting from development associated with the proposed actions would not occur. No violations of the National Ambient Air Quality Standards (NAAQS) are expected to occur either under the No Action Alternative or the proposed actions and resulting development by 2007, and both would be consistent with the State Implementation Plan (SIP).

In 2011 with the No Action Alternative, the increases in the 8-hour carbon monoxide concentrations resulting from development associated with the proposed actions, none of which are significant, would not occur. No violations of the NAAQS are expected to occur either under the No Action Alternative or the proposed actions and resulting development, and both would be consistent with the State Implementation Plan (SIP).

In addition, in 2007 or 2011 with the No Action Alternative, there would be no potential effects from any research building exhaust system on any MSKCC campus buildings or the surrounding community.

NOISE

Both with the No Action Alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. With both the No Action Alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. Without the proposed action, there would be no development requiring sound attenuation under an (E) designation.

CONSTRUCTION IMPACTS

The No Action Alternative would not entail any construction activity at the project sites and thus, avoid the temporary construction impacts attributable to development anticipated pursuant to the proposed actions. However, this No Action Alternative would neither meet the future operational needs of the MSKCC nor provide the economic benefits associated with the construction activities generated by the proposed project.

C. R8 RESEARCH BUILDING ALTERNATIVE

This alternative assumes that the rezoning does not take place, and that a smaller research building would be built under current zoning on the north block (see Figure 18-1). This alternative research building would be similar to the proposed R9 research building, but it would be 18 stories tall rather than 23 stories (a total of approximately 360 feet—approximately 60 feet shorter than the proposed building). It would provide the same laboratory floor plates in both the tower and the low-rise wing as the proposed project. A portion of the building could be allocated for the Church Rectory. With an allowable FAR of 6.5, it would have 392,275 square feet of floor area. This would be approximately 118,000 square feet smaller than the proposed research building which would use 510,389 square feet of the floor area generated on this site with the rezoning. Without the rezoning, there would be no increase in allowable floor area on MSKCC's

main campus block. Since it is fully built out at R8, it is assumed that it would remain as it is with no further changes beyond the current construction program (see Figure 18-2).*

Only 11 out of the proposed 16 laboratory floors in the tower portion of the research building could be provided. This would not satisfy MSKCC's program needs for research space, as only 198 of the required 288 laboratory modules would be included. The total population of this building would be 720 as compared to 912 with the proposed actions. In terms of the main block of the campus, MSKCC believes that it would be severely constrained in its planning for future development under this alternative.

This R8 research building alternative would require all of the same height and setback modifications and variances for lot coverage and rear yard requirements as the proposed research building from both CPC and the Board of Standards and Appeals (BSA). This design would allow phasing of the research building so the Kettering Building could be retained until the tower portion is built. Therefore, it would also require the same special permit from BSA for temporary failure to comply during the construction process before the Kettering Building is demolished, and would require an (E) designation for noise.

Because it would entail construction of the research building only, all construction would be completed by 2007 and there would be no 2011 build year.

LAND USE, ZONING, AND PUBLIC POLICY

As with the proposed actions and proposed research building, the Rectory of St. Catherine's Church and the Kettering Building would be demolished. The sites of the these two buildings as well as the vacant lot on East 69th Street that was the site of St. Catherine's School would be redeveloped with a new research building by 2007. There would be a lesser expansion and enhancement of an already important land use in the study area, medical facilities, than with the proposed actions.

In 2011 conditions would be the same as those in 2007 as no further development would take place on the main campus block and the alternative research building would be the only new building. Overall the land use on the MSKCC campus would become more dense only on the north block, and, even there, the increase would be less than with the proposed actions.

Unlike the proposed actions, there would be no rezoning of the two midblocks between East 67th and 69th Streets and York and First Avenues from R8 to R9. The allowable density of development for community facilities in the proposed rezoning area would not be increased from 6.5 to 10 FAR. No LSCFD would be designated and the planning for the campus as a whole would be impeded. There would be no shift of additional bulk from the north block to the main campus block. As stated above, the R8 research building would require all the same waivers of height, setback, and lot coverage from CPC and BSA as the proposed research

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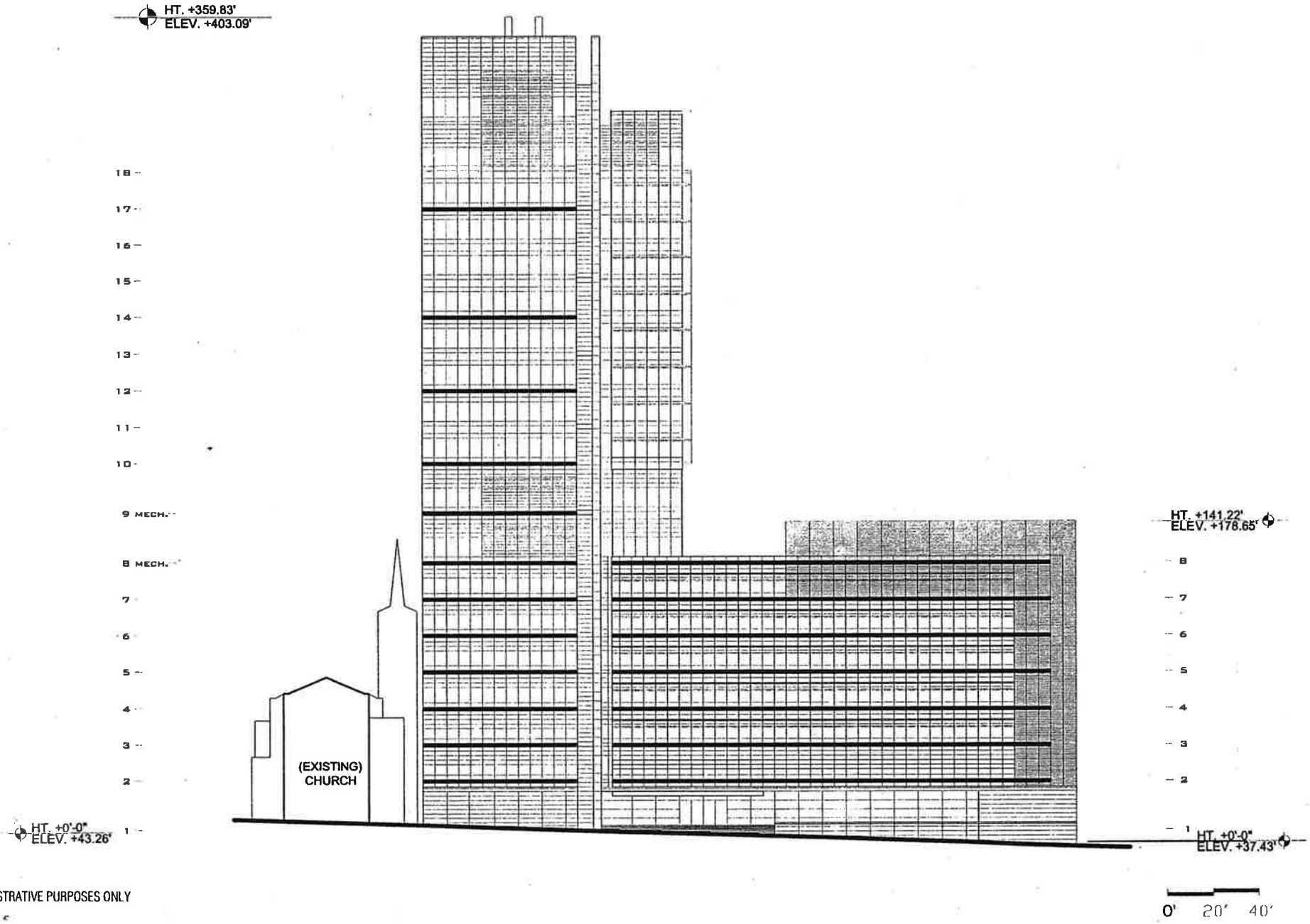
* Another R8 Alternative would be 22-story (424-foot-tall) research tower, approximately the same size as the proposed research building . In this case, there would be only a single floor (18 laboratory modules) less than in the proposed building. However, all the dry lab space, the auditorium, and the support space in the low-rise portion of the building could not be built. When the Kettering Building would be demolished, its site would remain vacant.

Similar to the 90 laboratory modules that would not be built with the R8 Alternative analyzed, the reduction in dry labs, auditorium, and support space from the building program would severely limit the utility of this 22-story R8 Alternative.



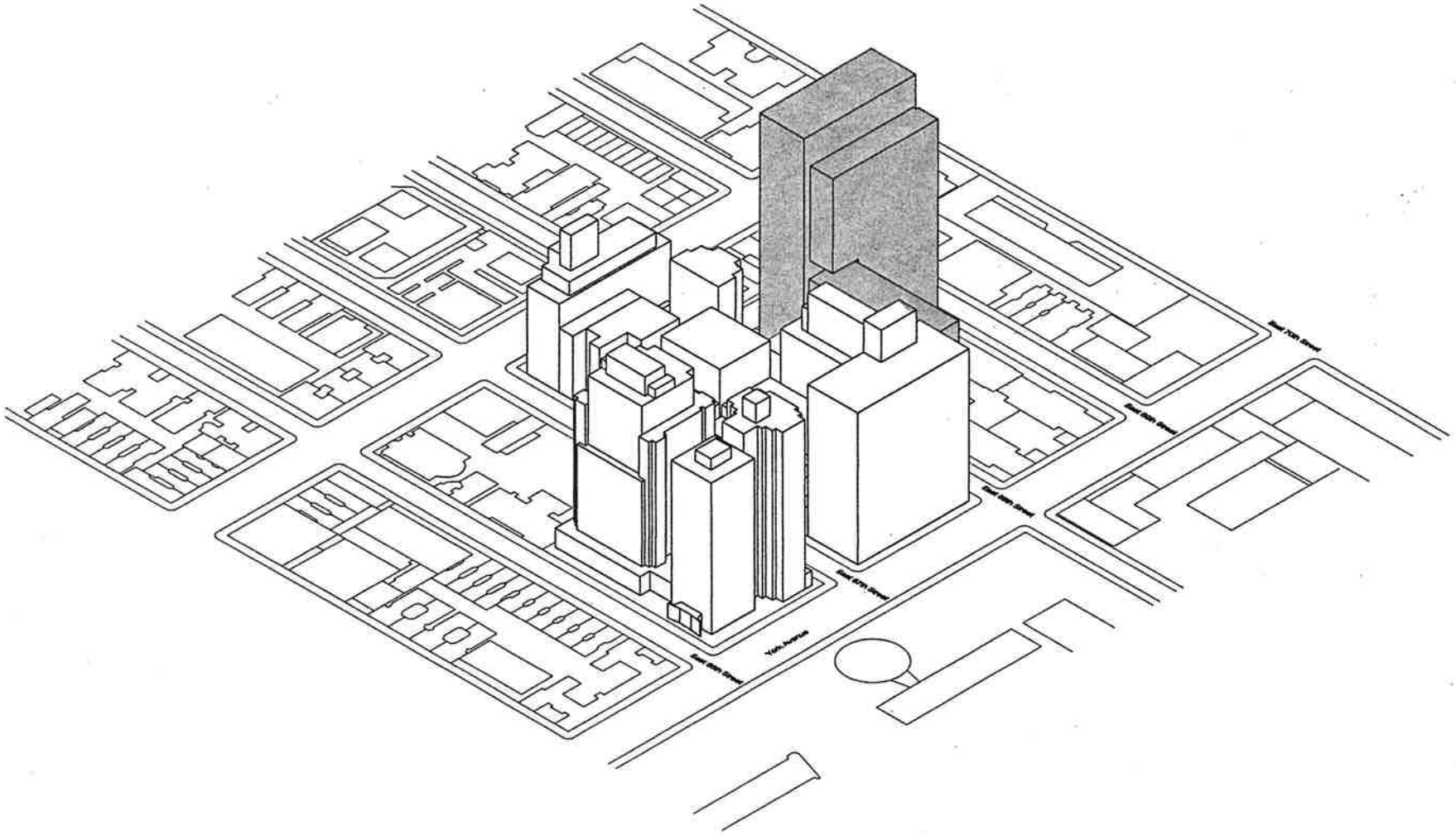
FOR ILLUSTRATIVE PURPOSES ONLY

R8 Research Building Alternative East 68th Street Elevation

FIGURE 18-1

MEMORIAL SLOAN-KETTERING
CANCER CENTER

5•01



FOR ILLUSTRATIVE PURPOSES ONLY

R8 Research Building Bulk Diagram with MSKCC Campus

FIGURE 18-2

building. These would not have any effect on potential development beyond the proposed research building site itself.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of the R8 Research Building Alternative would be substantially less than those anticipated with the proposed actions. There would be less direct or generated construction employment and income; and the city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less. Fewer new workers would come to the site. Overall, the R8 Research Building Alternative would be a significantly smaller source of economic activity and city and state revenues.

In 2011 this alternative would be the same as 2007, as the research building is the only building assumed to be constructed under R8 zoning. Overall, the R8 Research Building Alternative would generate significantly less economic activity and city and state revenues.

COMMUNITY FACILITIES

The R8 Research Building Alternative would create a smaller new research building and no new buildings on the main campus block. It would increase the worker population by a much smaller number and it would bring no new patients to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

However, with the R8 Research Building Alternative, MSKCC would not be able to build the full program of space that its believes it needs for research in 2007, and it would have significantly diminished ability to plan for future needs on the main campus block. Overall, MSKCC believes that it would be less able to perform research and provide treatment and care for its patients.

OPEN SPACE AND RECREATIONAL FACILITIES

Under this alternative, the research building would be smaller than the proposed research building and would add a smaller population to the open space users in the study area.

In 2007 there would be 356 new employees as compared to 645 new employees with the proposed building and other development in the north block. There would be no additional residential or community facility population due to other development (unrelated to MSKCC) permitted by the rezoning. With only 356 workers, this alternative would fall below the threshold for an open space analysis and would not affect open space. While there would be early morning shadows on St. Catherine's Park, they would be less than with the proposed actions and would not create an open space impact.

With the R8 Research Building Alternative, there would be no additional development on the main campus block and, as in 2007, the open space analysis would not be warranted.

SHADOWS

With the smaller R8 research building there would be a smaller increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007. Shadows would be 10 percent shorter and this difference could be noticeable on sunny days in May to August (see Figures 6-2 to 6-5 in Chapter 6, "Shadows"). The shorter shadow length would not substantially shorten the duration of shadow increment on the park. However, even with the proposed research building, the increment would be gone by mid-morning. The increase in shadow on the plaza on York Avenue at the corner of 70th Street would be smaller or non-existent. The increase in shadows on the east windows of St. Catherine's Church would be the same as the proposed research building.

In 2011 with the smaller R8 research building and without the potential development on the main campus block, the increase in shadows on St. Catherine's Park would be as described above for 2007. Like the proposed actions, this alternative would not result in significant shadow impacts in 2007 or 2011.

HISTORIC RESOURCES

Similar to conditions with the proposed actions, the R8 research building could result in construction-related impacts to St. Catherine's Church and would require the same type of construction protection plan to mitigate the impacts. Although this alternative would result in a shorter building compared to the proposed actions, the potential impacts to St. Catherine's Church due to increased shadows would be approximately the same. The mitigation for the impact–the provision of lighting to the church's east-facing windows–would be the same as under the proposed action.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

Similar to the proposed actions, under the R8 Research Building Alternative there would be a new, more dense development on the north block. However, the R8 research building would be approximately 60 feet shorter than the proposed research building (360 feet versus 420 feet), and thus would be expected to have somewhat less of a density-related effect on the project site and surrounding area. Due to its significantly lower height compared to the proposed actions, this alternative would not result in the partially mitigated urban design impacts that would occur under the proposed actions. It should be noted, however, that MSKCC does not consider this alternative to be viable as it would not meet MSKCC's stated programmatic needs.

However, the research building would still greatly increase the density of the mid-blocks of East 68th and 69th Streets. As with the proposed actions, the research building would also create a much greater presence at the streetwall of East 69th Street. Since this building is similar to the proposed project, it is assumed that the same design measures would be contemplated to reduce the visual effect of the increased density. In addition to providing a masonry base, these design measures include dividing the tower into slipped forms to diminish its visual presence, horizontal shading fins on the east facade, a vertical composition of fritted or patterned glass on the west facade, and transparent ground-level entrances and plantings to join the interior and exterior.

The R8 Research Building Alternative would not develop the main campus block or change the context or density of that block, and thus would have less of an impact than the proposed actions. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the R8 Research Building Alternative.

NEIGHBORHOOD CHARACTER

With the R8 Research Building Alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. As with the proposed project, a construction protection plan would be implemented to avoid construction-related impacts to St. Catherine's Church. Views to its east windows would be blocked, and lighting would be provided to replace lost sunlight. There would be a new, but somewhat shorter, tower adjacent to the small-scale St. Catherine's Church. The tall structure would increase density in the midblock location. There would be less new activity in the area in 2007 and much less in 2011. The increase in traffic due to the R8 research building would be less than with the proposed research building and much less as compared to conditions in 2011 with the proposed actions. Similar to conditions with the proposed project, with an (E) designation there would be noise impacts due to placing sensitive receptors in a noisy area. This alternative would not result in the significant adverse neighborhood character impacts related to open space, shadow and urban design impacts. However, as noted above, MSKCC believes that this alternative is not viable in that it does not meet its stated programmatic needs.

HAZARDOUS MATERIALS

Like the proposed actions, this alternative would have the potential to disturb hazardous materials. Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished (St. Catherine's Church Rectory and the Kettering Building) would be removed in accordance with all applicable local, state and federal regulations. As with the proposed project, potential construction related impacts could occur as a result of development of the Kettering site. The impacts could be mitigated by the same mechanism (a Restrictive Declaration on the property) requiring prior to excavation a Phase II subsurface investigation to determine if contamination exists. If necessary, remediation would be undertaken. The protocol and remediation plan would be reviewed and approved by the New York City Department of Environmental Protection (DEP) as specified in the Restrictive Declaration. All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase in 2007, but would be substantially less than with the proposed actions. The would be no further increase in the demand or usage of infrastructure in 2011 as no further development is anticipated. However, even with the proposed actions and anticipated development, no adverse impacts are anticipated.

TRAFFIC AND PARKING

Traffic volumes would increase less with this alternative because anticipated development would be much less (see Table 18-1). In 2007 the R8 Research Building Alternative would generate 30, 12, and 32 fewer trips during the AM, midday, and PM peak periods, resulting in lower traffic volumes than with the proposed actions. The need for traffic mitigation measures would be similar to those recommended for 2007 with the proposed actions. The increase in demand for parking would be less than with the proposed actions, and there would be no significant impacts to parking with this alternative.

In 2011, there would be no further MSKCC development, and this alternative would result in 140, 96, and 178 fewer vehicle trips than the proposed actions during the AM, midday, and PM peak periods, respectively. There would be fewer affected locations than with the proposed actions. The need for traffic mitigation associated with MSKCC operations would be reduced as compared to the proposed actions. Again, the increase in demand for parking would be less than with the proposed actions, and there would be no significant impacts to parking with this alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes as a result of the R8 Research Building Alternative. However, in 2007, this alternative would generate 173, 89, and 182 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011, this alternative would result in 656, 554, and 816 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. Like the proposed actions, there would not be any significant adverse impacts to pedestrian conditions with this alternative.

Similarly, subway and bus trips would increase as a result of this alternative, but in 2007, there would be 74, 2, and 77 fewer subway trips, and 27, 2, and 27 fewer bus trips than with the proposed actions during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011, there would be 275, 53, and 313 fewer subway trips, and 101, 45, and 127 fewer bus trips than with the proposed action during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would be no impacts and no need for mitigation at the northeast and southeast subway stairs at the East 68th Street station in 2011.

AIR QUALITY

With the R8 Research Building Alternative, the increases in the 8-hour carbon monoxide concentrations expected from development associated with the proposed actions, none of which are significant, would be comparable or lower, since project-generated traffic volumes would be lower for this alternative. No violations of the NAAQS are expected to occur either under the R8 Research Building Alternative or with the proposed actions by 2007, and both would be consistent with the SIP. In 2011 with the R8 Research Building Alternative, the increases in the 8-hour carbon monoxide concentrations resulting from development associated with the proposed actions, none of which are significant, would be substantially lower, since this alternative would include no further MSKCC development after 2007. No violations of the NAAQS are predicted

Table 18-1
Comparison of Proposed Actions with R8 Research Building Alternative - 2007

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R8 Research Building Alternative	32	2	5	0	81	4	26	1	32	2	176	9	185
- Proposed Actions	57	5	9	1	147	12	49	5	59	14	321	37	358
Difference	-25	-3	-4	-1	-66	-8	-23	-4	-27	-12	-145	-28	-173
Weekday MD Peak Hour													
R8 Research Building Alternative	0	0	0	0	0	0	0	0	34	62	34	62	96
- Proposed Actions	1	1	0	0	1	1	1	1	64	115	67	118	185
Difference	-1	-1	0	0	-1	-1	-1	-1	-30	-53	-33	-56	-89
Weekday PM Peak Hour													
R8 Research Building Alternative	5	30	1	5	14	77	4	25	5	30	29	166	196
- Proposed Actions	11	55	2	9	28	140	11	45	19	58	71	307	378
Difference	-6	-25	-1	-4	-14	-63	-7	-20	-14	-28	-42	-141	-182

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R8 Research Building Alternative	25	1	4	4	4	4	33	9	42
- Proposed Actions	44	4	7	7	5	5	56	16	72
Difference	-19	-3	-3	-3	-1	-1	-23	-7	-30
Weekday MD Peak Hour									
R8 Research Building Alternative	0	0	0	0	0	0	0	0	0
- Proposed Actions	1	1	0	0	5	5	6	6	12
Difference	-1	-1	0	0	-5	-5	-6	-6	-12
Weekday PM Peak Hour									
R8 Research Building Alternative	4	24	4	4	2	2	10	30	40
- Proposed Actions	9	43	7	7	3	3	19	53	72
Difference	-5	-19	-3	-3	-1	-1	-9	-23	-32

Table 18-1 (continued)
Comparison of Proposed Actions with R8 Research Building Alternative - 2011

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R8 Research Building Alternative	32	2	5	0	81	4	26	1	32	2	176	9	185
- Proposed Actions	146	13	28	3	336	24	118	10	141	21	772	70	841
Difference	-114	-11	-23	-3	-255	-20	-92	-9	-109	-19	-596	-61	-656
Weekday MD Peak Hour													
R8 Research Building Alternative	0	0	0	0	0	0	0	0	34	62	34	62	96
- Proposed Actions	55	30	18	10	34	19	29	16	170	268	307	343	650
Difference	-55	-30	-18	-10	-34	-19	-29	-16	-136	-206	-273	-281	-554
Weekday PM Peak Hour													
R8 Research Building Alternative	5	30	1	5	14	77	4	25	5	30	29	166	196
- Proposed Actions	63	147	18	29	82	322	43	113	55	140	261	751	1012
Difference	-58	-117	-17	-24	-68	-245	-39	-88	-50	-110	-232	-585	-816

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R8 Research Building Alternative	25	1	4	4	4	4	33	9	42
- Proposed Actions	112	10	21	21	9	9	142	40	182
Difference	-87	-9	-17	-17	-5	-5	-109	-31	-140
Weekday MD Peak Hour									
R8 Research Building Alternative	0	0	0	0	0	0	0	0	0
- Proposed Actions	34	19	13	13	8	8	56	40	96
Difference	-34	-19	-13	-13	-8	-8	-56	-40	-96
Weekday PM Peak Hour									
R8 Research Building Alternative	4	24	4	4	2	2	10	30	40
- Proposed Actions	43	111	27	27	5	5	75	143	218
Difference	-39	-87	-23	-23	-3	-3	-65	-113	-178

to occur either under the R8 Research Building Alternative or with the proposed actions and resulting development, and both would be consistent with the SIP.

In addition, in 2007 and 2011 with the R8 Research Building Alternative, due to the shorter research building, additional measures may be required to avoid potential significant health effects from the exhaust system of the laboratories on any MSKCC campus buildings or the surrounding community. Such measures may include, but would not be limited to, changes to the design of the mechanical systems that would modify exhaust parameters to reduce emissions.

NOISE

Both with the R8 Research Building Alternative and the proposed project, in the years 2007 and 2011, noise levels in the project study area will not be significantly increased compared to existing levels. With both the R8 Research Building Alternative and the proposed project, no significant adverse noise impacts would result from building mechanical systems. Similar to the proposed project, this alternative would require an (E) designation for noise.

CONSTRUCTION IMPACTS

As compared to development with the proposed actions, the R8 Research Building Alternative would have smaller temporary construction impacts attributable to development of the north block, which is anticipated to be completed by 2007. Under this alternative, no further development would be anticipated on the main campus block. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts. The R8 Research Building Alternative would reduce the duration of construction-related impacts as compared to the proposed actions but would still entail the same activities and phasing (i.e., demolition, excavation and foundation, structure and shell, interior finishing). This alternative would neither fully meet the operational needs of the MSKCC nor provide the economic benefits associated with the construction of the proposed project.

D. R8 AS-OF-RIGHT RESEARCH BUILDING ALTERNATIVE*

This alternative assumes that the rezoning does not take place, no LSCFD would be established, and that a smaller as-of-right research building would be built under current zoning on the north block (see Figure 18-3). It would have a 38 percent tower. This tower would be considerably smaller than that of the proposed project and in the opinion of MSKCC and its architects, would not be a suitable form to house a state-of-the-art research building. It would be 21 stories tall (approximately 407 feet—slightly shorter than the proposed research building). Floor-to-floor heights would be the same as those under the proposed actions. With an allowable FAR of 6.5, it would have 382,451 square feet of floor area. This would be approximately 137,000 square feet smaller than the proposed research building which would be 510,389 square feet. A portion of the building could be allocated for use as St. Catherine's Church Rectory. Without the rezoning, there would be no increase in allowable floor area on the main campus block. Since it is fully built out at R8, it is assumed that it would remain as it is, with no further changes beyond the current construction program.

MSKCC believes that the R8 As-of-Right Research Building Alternative is not a feasible alternative, as it would not satisfy MSKCC's stated program needs for research space, as fewer

* This alternative is new in the FEIS.

than 288 laboratory modules would be provided. Further, construction of the building could not be phased to allow the Kettering Building to remain in place until the tower portion is complete. The total population of this building is assumed to be 720 as compared to 912 with the proposed actions. On the main block of the campus, MSKCC believes that it would be constrained in its planning for future development.

The R8 as-of-right research building would not require any of the height and setback modifications and variances for lot coverage and rear yard requirements that are needed for the proposed research building. It would also not require the BSA special permit for temporary failure to comply, as the Kettering Building would have to be demolished before construction would begin.

Under this alternative, the proposed research building could be completed sooner because there would not be the two stage construction process necessary with the proposed research building. This alternative would not have a second phase or 2011 build year.

LAND USE, ZONING, AND PUBLIC POLICY

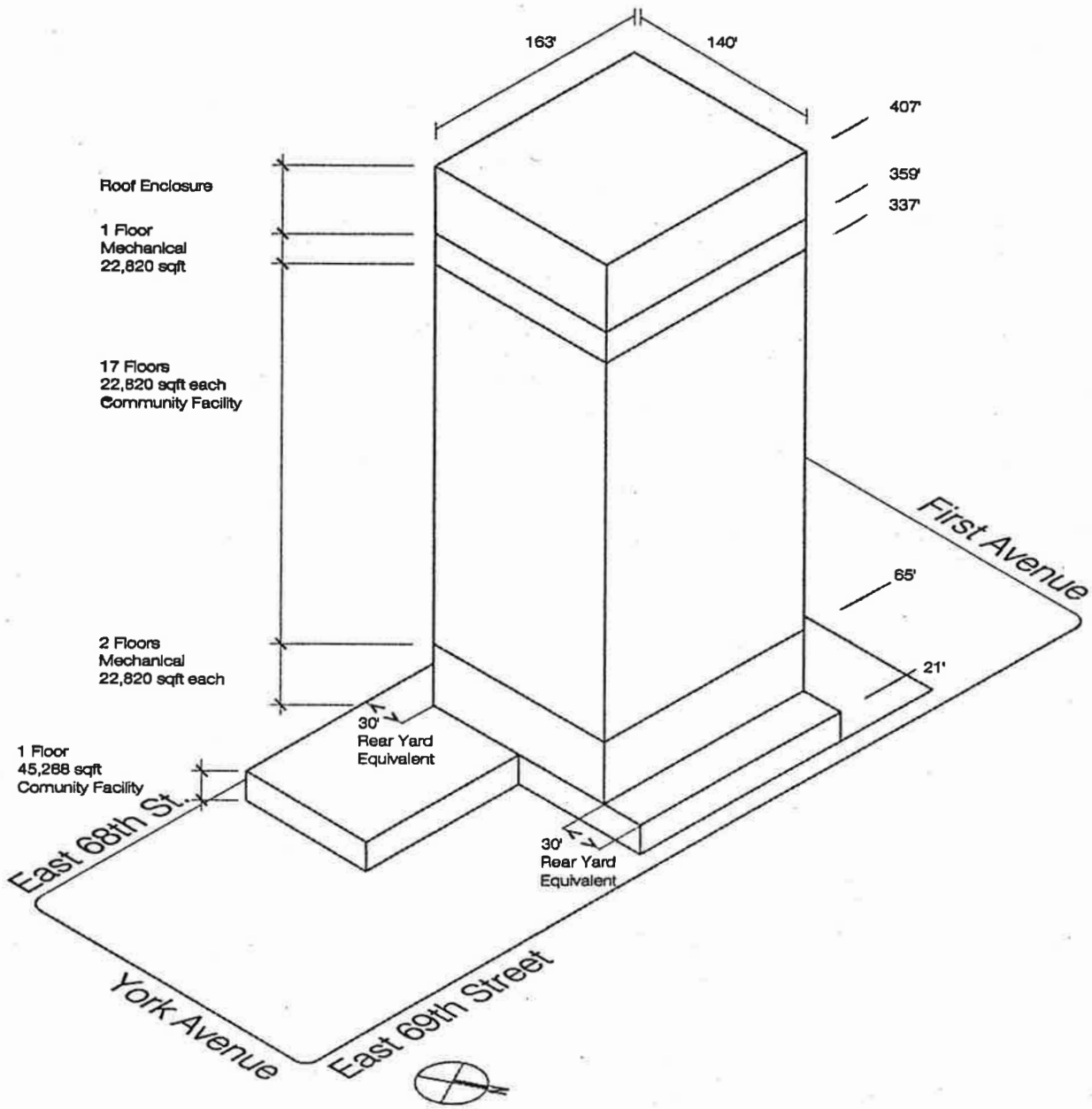
As with the proposed actions and proposed research building, the St. Catherine's Church Rectory and the Kettering Building would be demolished. The sites of the these two buildings as well as the vacant lot on East 69th Street that was the site of St. Catherine's School would be redeveloped with a new research building by 2007. There would be a lesser expansion and enhancement of an already important land use in the study area, medical facilities, than with the proposed actions. Because the Kettering Laboratory would have to be displaced at the beginning of construction, this would be unacceptable to MSKCC.

In 2011 conditions would be the same as those in 2007 as no further development would take place on the main campus block and the R8 as-of-right research building would be the only new building. Overall the land use on the MSKCC campus would only become more dense on the north block, and, even there, the increase would be much less than with the proposed actions.

Unlike the proposed project, there would be no rezoning of the two midblocks between East 67th and 69th Streets and York and First Avenues from R8 to R9. The allowable density of development for community facilities in the proposed rezoning area would not be increased from 6.5 FAR to 10 FAR. No LSCFD would be designated and the planning for the campus as a whole would be impeded. There would be no shift of additional bulk from the north block to the main campus block. There would be no waivers of height, setback, and lot coverage from CPC and BSA.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of the R8 As-of-Right Research Building Alternative would be substantially less than those anticipated with the proposed actions. There would be less direct or generated construction employment and income; and the city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less. Fewer new workers would come to the site. Overall, the R8 As-of-Right Research Building Alternative would be a significantly smaller source of economic activity and city and state revenues.



R8 As-of-Right Research Building

FIGURE 18-3

In 2011 this alternative would be the same as 2007, as the research building is the only building assumed to be constructed under R8 zoning. Overall, the R8 As-of-Right Research Building Alternative would generate significantly less economic activity and city and state revenues.

COMMUNITY FACILITIES

The R8 As-of-Right Research Building Alternative would create a smaller new research building and no new buildings on the main campus block. It would increase the worker population by a much smaller number and it would bring no new patients to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

However, with the R8 As-of-Right Research Building Alternative, MSKCC would not be able to build the full program of space that its believes it needs for research in 2007, and it would have significantly diminished ability to plan for future needs on the main campus block. Overall, MSKCC would be less able to perform research and provide treatment and care for its patients.

OPEN SPACE AND RECREATIONAL FACILITIES

Under this alternative, the research building would be smaller than the proposed research building and would add a smaller population to the open space users in the study area.

As with the proposed actions, this alternative would not result in significant adverse open space impacts in 2007. In 2007 there would be 356 new employees as compared to 645 new employees with the proposed actions. There would be no additional residential population due to development (unrelated to MSKCC) permitted by the rezoning. In contrast to the proposed actions, with fewer than 500 new employees, this alternative is below the CEQR threshold for an open space analysis, and would not affect open space. Since the building would be taller but more slender than the proposed research building, it would have longer but narrower shadows. Since they would only fall on St. Catherine's Park in the early morning, they would not significantly affect open space.

With the R8 As-of-Right Research Building Alternative, there would be no additional development on the main campus block and, as in 2007, an open space analysis would not be warranted.

Unlike the proposed action, this alternative would not result in open space impacts related to increased uses and increased shadows in 2011. While this alternative would not result in the open space impacts that would occur under the proposed action in 2011, the applicant believes that this alternative is not feasible, as noted above.

SHADOWS

As with the proposed action, this alternative would not result in significant adverse shadow impacts, although the alternative's shadows would be somewhat different from those of the proposed actions. With the R8 As-of-Right Research Building Alternative, there would be an increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007 similar to conditions under the proposed actions. Shadows would be longer but more slender than those of the proposed project. The longer, narrower shadow would somewhat alter the portions of St. Catherine's Park that would be in shadow. However, even with the proposed

research building, the increment would be gone by mid-morning. The increase in shadow on the plaza on York Avenue at the corner of 70th Street would also be comparable.

In 2011 with the R8 as-of-right research building and without the potential development on the main campus block, the increase in shadows on St. Catherine's Park would be as described above for 2007. Like the proposed actions, this alternative would not result in significant impacts to shadows in 2007 or 2011.

HISTORIC RESOURCES

Development of this alternative could result in the same type of construction related impacts to St. Catherine's Church as the proposed actions. However, because development of the alternative could occur as-of-right, mitigation in the form of a construction protection plan would not be required. There would be increased shadows on the east-facing stained-glass windows of St. Catherine's Church, but would be slightly less than under the proposed actions due to setbacks and this alternative would not have the mitigation identified for the proposed actions.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

Similar to the proposed actions, under the R8 As-of-Right Research Building Alternative there would be new, more dense development on the north block. While the R8 as-of-right building would only be approximately 13 feet shorter than the proposed research building (407 feet versus 420 feet), it would be set back 30 feet above the one-story base and would not have an adverse effect on urban design. It would increase the density of the midblock as compared to current conditions, but it would be consistent with the density allowed by existing zoning. As with the proposed actions, the R8 as-of-right research building would have a much larger presence at the streetwall of East 69th Street and would greatly increase the density of the mid-blocks.

The R8 As-of-Right Research Building Alternative would not develop the main campus block or change the context or density of that block, and thus would have less of an impact than the proposed actions. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011.

NEIGHBORHOOD CHARACTER

With the R8 As-of-Right Research Building Alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. However, a construction protection plan would not be required to avoid construction-related impacts to St. Catherine's Church. Views and sunlight to its east windows would be blocked. There would be a new, slightly taller tower adjacent to the small-scale St. Catherine's Church. The tall structure would increase density in the midblock location, but because the tower would be set back 30 feet above the one-story base, there would not be an urban design impact. There would be less new activity in the area in 2007 and much less in 2011. The increase in traffic due to the R8 as-of-right research building would be less than with the proposed research building and much less as compared to conditions in 2011 with the proposed actions. As an as-of-right project, an (E) designation for noise attenuation would not be imposed. Overall, similar to

conditions with the proposed actions, this alternative would have an adverse impact on some elements of neighborhood character in 2007, but no additional impacts in the 2011 analysis year.

HAZARDOUS MATERIALS

Like the proposed actions, this alternative would have the potential to disturb hazardous materials. Asbestos-contaminated materials and lead-based paint believed to be present in the existing buildings to be demolished (St. Catherine's Church Rectory and the Kettering Building) would be removed in accordance with all applicable local, state and federal regulations. However, because this alternative would be as-of-right, no mechanism would be in place for Phase II subsurface investigation to be conducted on the Kettering site, and potential impacts would be unmitigated.

All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, State and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase in 2007, but would be substantially less than with the proposed actions. The would be no further increase in the demand or usage of infrastructure in 2011 as no further development is anticipated. However, even with the proposed actions and anticipated development, no adverse impacts are anticipated.

TRAFFIC AND PARKING

Traffic volumes would increase less with this alternative because anticipated development would be much less (see Table 18-2). In 2007 the R8 As-of-Right Research Building Alternative would generate 30, 12, and 32 fewer trips during the AM, midday, and PM peak periods, resulting in lower traffic volumes than with the proposed actions. Similar to conditions with the proposed research building, there would be impacts; however, as the building would be as-of-right, no mitigation would be required. The increase in demand for parking would be less than with the proposed actions, and there would be no significant impacts to parking with this alternative.

In 2011, there would be no further MSKCC development, and this alternative would result in 140, 96, and 178 fewer vehicle trips than the proposed actions during the AM, midday, and PM peak periods, respectively. There would be fewer affected locations than with the proposed actions. However, there would be no required mitigation. Again, the increase in demand for parking would be less than with the proposed actions, and there would be no significant impacts to parking with this alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes as a result of the R8 As-of-Right Research Building Alternative. However, in 2007, this alternative would generate 173, 89, and 182 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011 this alternative would not add any more pedestrian trips. Like the proposed action, there would not be any significant adverse impacts to pedestrian conditions with this alternative.

Table 18-2
Comparison of Proposed Actions with R8 As-of-Right Research Building Alternative - 2007

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R8 AOR Research Building Alternative	32	2	5	0	81	4	26	1	32	2	176	9	185
- Proposed Actions	57	5	9	1	147	12	49	5	59	14	321	37	358
Difference	-25	-3	-4	-1	-66	-8	-23	-4	-27	-12	-145	-28	-173
Weekday MD Peak Hour													
R8 AOR Research Building Alternative	0	0	0	0	0	0	0	0	34	62	34	62	96
- Proposed Actions	1	1	0	0	1	1	1	1	64	115	67	118	185
Difference	-1	-1	0	0	-1	-1	-1	-1	-30	-53	-33	-56	-89
Weekday PM Peak Hour													
R8 AOR Research Building Alternative	5	30	1	5	14	77	4	25	5	30	29	166	196
- Proposed Actions	11	55	2	9	28	140	11	45	19	58	71	307	378
Difference	-6	-25	-1	-4	-14	-63	-7	-20	-14	-28	-42	-141	-182

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R8 AOR Research Building Alternative	25	1	4	4	4	4	33	9	42
- Proposed Actions	44	4	7	7	5	5	56	16	72
Difference	-19	-3	-3	-3	-1	-1	-23	-7	-30
Weekday MD Peak Hour									
R8 AOR Research Building Alternative	0	0	0	0	0	0	0	0	0
- Proposed Actions	1	1	0	0	5	5	6	6	12
Difference	-1	-1	0	0	-5	-5	-6	-6	-12
Weekday PM Peak Hour									
R8 AOR Research Building Alternative	4	24	4	4	2	2	10	30	40
- Proposed Actions	9	43	7	7	3	3	19	53	72
Difference	-5	-19	-3	-3	-1	-1	-9	-23	-32

Table 18-2 (continued)
Comparison of Proposed Actions with R8 As-of-Right Research Building Alternative - 2011

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R8 AOR Research Building Alternative	32	2	5	0	81	4	26	1	32	2	176	9	185
- Proposed Actions	146	13	28	3	336	24	118	10	141	21	772	70	841
Difference	-114	-11	-23	-3	-255	-20	-92	-9	-109	-19	-596	-61	-656
Weekday MD Peak Hour													
R8 AOR Research Building Alternative	0	0	0	0	0	0	0	0	34	62	34	62	96
- Proposed Actions	55	30	18	10	34	19	29	16	170	268	307	343	650
Difference	-55	-30	-18	-10	-34	-19	-29	-16	-136	-206	-273	-281	-554
Weekday PM Peak Hour													
R8 AOR Research Building Alternative	5	30	1	5	14	77	4	25	5	30	29	166	196
- Proposed Actions	63	147	18	29	82	322	43	113	55	140	261	751	1012
Difference	-58	-117	-17	-24	-68	-245	-39	-88	-50	-110	-232	-585	-816

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R8 AOR Research Building Alternative	25	1	4	4	4	4	33	9	42
- Proposed Actions	112	10	21	21	9	9	142	40	182
Difference	-87	-9	-17	-17	-5	-5	-109	-31	-140
Weekday MD Peak Hour									
R8 AOR Research Building Alternative	0	0	0	0	0	0	0	0	0
- Proposed Actions	34	19	13	13	8	8	56	40	96
Difference	-34	-19	-13	-13	-8	-8	-56	-40	-96
Weekday PM Peak Hour									
R8 AOR Research Building Alternative	4	24	4	4	2	2	10	30	40
- Proposed Actions	43	111	27	27	5	5	75	143	218
Difference	-39	-87	-23	-23	-3	-3	-65	-113	-178

Similarly, subway and bus trips would increase as a result of this alternative, but in 2007, there would be 74, 2, and 77 fewer subway trips, and 27, 2, and 27 fewer bus trips than with the proposed actions during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011, there would be 275, 53, and 313 fewer subway trips, and 101, 45, and 127 fewer bus trips than with the proposed action during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would be no impacts and no need for mitigation at the northeast and southeast subway stairs at the East 68th Street station in 2011.

AIR QUALITY

With the R8 As-of-Right Research Building Alternative, the increases in the 8-hour carbon monoxide concentrations expected from development associated with the proposed actions, none of which are significant, would be comparable or lower, since project-generated traffic volumes would be lower for this alternative. No violations of the National Ambient Air Quality Standards (NAAQS) are expected to occur either under the R8 As-of-Right Research Building Alternative or with the proposed actions and resulting development by 2007, and both would be consistent with the State Implementation Plan (SIP). In 2011 with the R8 As-of-Right Research Building Alternative, the increases in the 8-hour carbon monoxide concentrations resulting from development associated with the proposed actions, none of which are significant, would be substantially lower, since this alternative would include no further MSKCC development after 2007. No violations of the National Ambient Air Quality Standards (NAAQS) are predicted to occur either under the R8 As-of-Right Research Building Alternative or with the proposed actions and resulting development, and both would be consistent with the State Implementation Plan (SIP).

In addition, in 2007 or 2011 with the R8 As-of-Right Research Building Alternative, due to the shorter research building, additional measures may be required to avoid potential significant impacts from the exhaust system of the laboratories on any MSKCC campus buildings and the surrounding community. Such measures may include, but would not be limited to, changes to the design of the mechanical systems that would modify exhaust parameters to reduce emissions. However, for an as-of-right project, these measures would not be required.

NOISE

Both with the R8 As-of-Right Research Building Alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area will not be significantly increased compared to existing levels. With both the R8 As-of-Right Research Building Alternative and the proposed project, no significant adverse noise impacts would result from building mechanical systems. Unlike the proposed project, this alternative could result in impacts resulting from new construction and new users being added to an area with high ambient noise levels. However, because the alternative would be as-of-right, and not involve a change in zoning, an (E) designation for noise attenuation could not occur and the potential impact would be unmitigated.

CONSTRUCTION IMPACTS

As compared to development with the proposed actions, the R8 As-of-Right Research Building Alternative would have smaller temporary construction impacts attributable to construction of

the north block, which is anticipated to be completed by 2007. Under this alternative, no further development would be anticipated on the main campus block. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts. The R8 As-of-Right Research Building Alternative would reduce the duration of construction-related impacts as compared to the proposed actions but would still entail the same activities and phasing (i.e., demolition, excavation and foundation, structure and shell, interior finishing). This alternative would neither fully meet the operational needs of the MSKCC nor provide the economic benefits associated with the construction of the proposed project.

E. R8 AS-OF-RIGHT MIXED-USE ALTERNATIVE

This alternative assumes an R8 mixed-use development on the north block with no additional floor area available on the main campus block of the MSKCC campus. In this alternative, development on the north block would include community facility uses on the first five floors and residential above (see Figure 18-4). The five floors of community facility use would total 137,112 gross square feet excluding rooftop mechanical space. The residential tower would have 32 floors with 8,400-square-foot floor plates for a gross floor area of 268,800 square feet, substantially smaller compared to the approximately 20,000-square-foot floor plates and 510,389 square feet of the proposed research building. Unlike the R8 As-of-Right Research Building Alternative, which would produce a square tower with 22,820-square-foot floor plates in a configuration intended to maximize lab and support space, this alternative would produce a more slender tower that would maximize the light, air, height and views desirable for a residential building. This building would be significantly taller than the R8 As-of-Right Research Building and the proposed research building. Assuming an apartment area of 900 gross square feet, this would yield approximately 300 apartments. A portion of the building could house the St. Catherine's Church Rectory.

With a total building height of 503 feet, the overall height to the top of the residential floors would be 481 feet, with an additional 22 feet for the mechanical penthouse. The total floor area would be 405,912 square feet as compared to the proposed research building, which would have a floor area of 510,389 square feet.

This alternative requires no land use actions and no LSCFD would be established.

While this alternative shows what could be developed as-of-right with the existing zoning, it does not satisfy MSKCC's urgent need for new research laboratory space. It would not provide sufficient community facility space to satisfy the research program, and would not provide the required laboratory floor plate. Further, it assumes demolition of the Kettering Building which is also unlikely without the construction of new research space. While the research space could be built at a remote site, this would contradict MSKCC's policy of having researchers in proximity to the patients they treat, thus promoting the interaction of scientific exploration and treatment. Further, it would not allow any additional development on the remainder of the campus. Overall, it does not represent an acceptable alternative to MSKCC because it would not satisfy the stated purpose and need of the proposed actions.

It is assumed that only the site in the north block would be developed. Because there is no additional floor area available on the main campus block, there would be no further development and only one build year because no additional construction would take place through 2011.

LAND USE, ZONING, AND PUBLIC POLICY

With the R8 As-of-Right Mixed-Use Alternative, St. Catherine's Church Rectory and the Kettering Building would be demolished and a new mixed- use building would rise on the north block of the site in 2007. This alternative would provide far less community facility space (137,112 square feet) for hospital use than the proposed research building (491,907 square feet). The expansion of MSKCC facilities in 2007 would be largely residential. In a project unrelated to MSKCC, a residential tower would replace Bethany Memorial Church at the corner of First Avenue and East 67th Street.

In 2011 the development on the north block would be as described above, while there would be no new development on the main campus block. Overall, land use on the MSKCC campus would become more dense only on the north block where the site is underbuilt in an R8 zone.

There would be no rezoning from R8 to R9 of the two midblocks, and the allowable density of development for community facilities in the proposed rezoning area would not be increased from 6.5 to 10 FAR. No LSCFD would be designated and the planning for the campus as a whole would be impeded. There would be no authorization to shift bulk from the north block to the main campus block. None of the actions in relation to height and setback or lot coverage would be required for this alternative.

SOCIOECONOMIC CONDITIONS

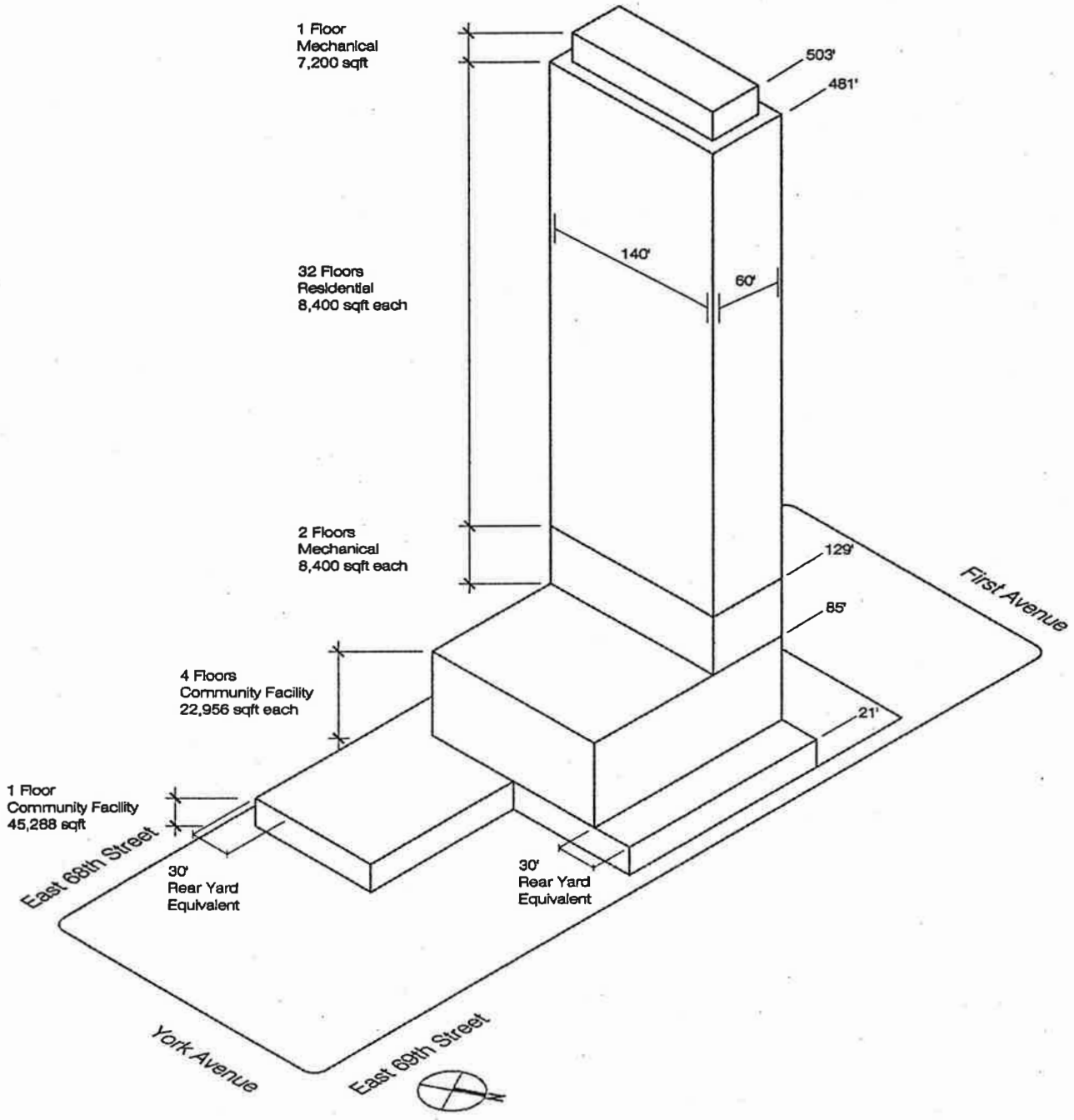
The economic benefits realized during construction on the north block and operation of the R8 mixed-use building would be far less than with the proposed R9 research building as it would be over 100,000 square feet smaller, and because a residential tower would cost less to build and provide fewer jobs during operation. The direct or generated construction employment and income, and the expected city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less than with the proposed actions. All the new researchers and the increase in research and hospital activity anticipated as a result of the proposed actions would not occur.

In 2011, in addition to the economic benefits of development on the north block generating less economic activity than the proposed actions, there would be no new development and no new economic activity on the main campus and south blocks. Overall, the R8 As-of-Right Mixed-Use Alternative would be a far smaller generator of economic activity and of city and state revenues.

COMMUNITY FACILITIES

The R8 As-of Right Mixed-Use Alternative would not only increase the demand for police and fire protection, but its residential component would increase the demand for school seats in neighborhood schools.

It would not create the proposed research building, and there would be no expansion of hospital facilities on the main campus block. Therefore, it would contribute far less to MSKCC as a medical, research, and treatment facility which benefits the community than would the proposed actions. No LSCFD would be established under this alternative.



R8 As-of-Right Alternative Mixed-Use Development on the North Block

FIGURE 18-4

OPEN SPACE AND RECREATIONAL FACILITIES

With the R8 As-of-Right Mixed-Use Alternative, the residents of the apartments would increase the demand for active open space within a ½-mile radius as well as passive open space within a ¼ mile as compared to development with the proposed actions, which would only increase the demand for passive open space within a ¼-mile radius.

With the R8 mixed-use building, the 300 apartments would be assumed to have 480 residents (based on 1.6 persons per household, U.S. Census 2000). Assuming one employee for 15 units in the residential portion and one employee per 560 square feet for the medical-related portion of the building (based on the employee-per-square-foot ratio for the proposed research building), there would be a total of about 264 employees, or a loss of 100 employees, compared to a net gain of 548 new employees in the proposed research building.

There could be an adverse impact on open space due to the combination of increased users and increased shadows on St. Catherine's Park, although compared to the proposed actions, the impacts would occur sooner (2007 vs. 2011), be more related to active open space than to passive open space, and result from different shadowing effects. In 2007 the tower of the R8 mixed-use building would cast a longer shadow on St. Catherine's Park than the proposed research building. It would be taller than the proposed research building, but it would also be more slender in its north-south dimension, making its shadow somewhat more slender at its angle to the park.

With this alternative in 2011 there would be no new employees in the north block, no new employees on the main campus block, and approximately 100 fewer employees overall compared to existing conditions. The would be a 0.3 percent increase in the worker open space ratio, compared to a 3.5 percent decrease with the proposed actions. The percent decrease in the overall passive open space ratio would be 0.5 as compared to 1.7 with the proposed actions. The potential impact on passive open space would be less under this alternative due to the reduction in new employees, while the demand for active open space would be increased due to the increase in residents.

Unlike the proposed actions, even if impacts were to occur, consideration of mitigation would not be required.

SHADOWS

In 2007 the tower of the R8 As-of-Right Mixed-Use building would cast a longer shadow on St. Catherine's Park than the proposed research building. It would be taller than the proposed research building, but it would also be more slender in its north-south dimension, making its shadow somewhat more slender at its angle to the park. It would also cast shadows on the windows of St. Catherine's Church, similar to the proposed project.

With the R8 As-of-Right Mixed-Use Alternative there would be no new development on the main campus block and the duration of the shadow increment on the park in spring, summer, and fall would be reduced as compared to the proposed actions.

HISTORIC RESOURCES

This alternative could potentially affect St. Catherine's Church during construction, but it would not require a construction protection plan because it is as-of-right. The increase in shadows on the stained-glass windows of St. Catherine's Church would be considered a potential significant

adverse impact; however, no further analysis would be required because this alternative is as-of-right. No other historic resources would be affected by this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

This alternative would introduce new activity and more dense development to the project site, in a building reaching to 503 feet in the midblock between East 68th and 69th Streets. However, this as-of-right development would not result in the adverse impacts associated with the proposed actions. The building, as compared with the proposed actions, would be significantly higher, but less wide in its north-south dimension. Compared to the proposed actions, this alternative would have less of a streetwall presence along East 68th and East 69th Streets, because it would have 30-foot setbacks above a one-story base on both streets, whereas the proposed research building would rise to its full height without setback. As with the proposed actions, the alternative would greatly increase the density of the mid-blocks. Overall, this alternative would result in a very slender, tall tower built in accordance with R8 zoning. The building's setbacks and tower would result in a substantially less bulky design than the proposed actions, and this alternative would not result in the impacts that would result from the proposed actions. The alternative would also enliven the nearby portions of the study area with greater activity and more pedestrians, but to a different degree given the different uses of the building. In the R8 As-of-Right Mixed-Use Alternative, there would be no requirement to explore or provide mitigation for the potential adverse impact on urban design.

In 2011 the density of the project site between East 68th and 69th Streets would be increased by the mixed-use tower described above. However, there would be no further development on the rest of the campus, and thus the alternative would have less of an impact on the urban design context of the surrounding area. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the R8 As-of-Right Mixed-Use Alternative.

NEIGHBORHOOD CHARACTER

Similar to conditions with the proposed actions, the site in the north block which contains the Rectory, the Kettering Building, and a vacant lot would be redeveloped. The mixed-use building would be significantly taller and predominantly residential in use. This would represent a minor increase in medical facilities as compared to the proposed actions. Measures to avoid impacts on St. Catherine's Church, a historic resource, would not be required. Views as well as light to the Church's east windows would be blocked; but no mitigation could be required. The new tower next to St. Catherine's, a small-scale church, and the increase in density in the midblocks would adversely affect the urban design character of the area; but no mitigation measures would be provided. There would be new activity in the area. Traffic generated by the R8 As-of-Right Mixed-Use Alternative would be similar to the proposed actions in 2007, and would decrease compared with the proposed actions in 2011. Similar to conditions with the proposed actions there would be no impact on noise levels. Overall, there would be an adverse impact on some aspects of neighborhood character similar to the proposed action in 2007, but much less in the 2011 analysis year.

HAZARDOUS MATERIALS

Like the proposed actions, this alternative would have the potential to disturb hazardous materials. Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished would be removed in accordance with all applicable city, state and federal regulations. However, because this alternative would be as-of-right, no

mechanism (in the form of a Restrictive Declaration) would be in place for a Phase II investigation of the Kettering site, and any potential impacts would be umitigated.

All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase far less than with the proposed actions; however, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The R8 As-of-Right Mixed-Use Alternative would result in 300 dwelling units and a net loss of 100 employees in 2007. As compared to the proposed actions, vehicular trip generation in 2007 would be expected to decrease by approximately 33 vehicle trips during both the AM and PM peaks (see Table 18-3). There would be an increase of 14 vehicle trips during the midday peak with the R8 As-of-Right Mixed-Use Alternative. Similar to conditions with the proposed research building there would be traffic impacts. However, because the building would be as-of-right, no mitigation would be required. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking with this alternative.

Under the R8 As-of-Right Mixed-Use Alternative, in 2011 there would be no new trips generated by activities on the main campus block, and new trips generated from the north block would be the same as in 2007. In 2011, the R8 As-of-Right Mixed-Use Alternative would result in 143, 70, and 179 fewer vehicle trips than the proposed actions during the AM, midday, and PM peak periods, respectively. There would be fewer affected locations than with the proposed actions. However, there would be no required mitigation. Again, the increase in demand for parking would be much less than with the proposed actions and, like the proposed actions, there would be no significant adverse impact to parking with this alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes over No Action conditions under the R8 As-of-Right Mixed-Use Alternative. However, in 2007 this alternative would generate 192, 99, and 175 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011, the R8 As-of-Right Mixed-Use Alternative would result in 675, 564, and 809 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. Like the proposed actions, the R8 As-of-Right Mixed-Use Alternative would not result in any significant adverse pedestrian impacts.

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result in 154 and 160 fewer subway trips and 32 and 31 fewer bus trips during the AM and PM peaks, and 16 more subway and 14 more bus trips during the midday peak period. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011, there would be 355, 35, and 396 fewer subway trips and 106, 29, and 131 fewer bus trips during the AM, midday, and PM peak periods,

Table 18-3
Comparison of Proposed Actions with R8 As-of-Right Mixed Use Alternative - 2007

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R8 AOR Mixed Use Alternative	-7	26	0	14	-23	28	-4	26	7	103	-27	193	166
- Proposed Actions	57	5	9	1	147	12	49	5	59	14	321	37	358
Difference	-64	21	-9	13	-170	16	-53	21	-52	89	-348	156	-192
Weekday MD Peak Hour													
R8 AOR Mixed Use Alternative	7	7	4	4	9	9	8	8	20	10	48	38	86
- Proposed Actions	1	1	0	0	1	1	1	1	64	115	67	118	185
Difference	6	6	4	4	8	8	7	7	-44	-105	-19	-80	-99
Weekday PM Peak Hour													
R8 AOR Mixed Use Alternative	21	-1	13	4	23	-15	23	2	99	32	180	23	203
- Proposed Actions	11	55	2	9	28	140	11	45	19	58	71	307	378
Difference	10	-56	11	-5	-5	-155	12	-43	80	-26	109	-284	-175

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R8 AOR Mixed Use Alternative	-5	22	9	9	2	2	6	33	39
- Proposed Actions	44	4	7	7	5	5	56	16	72
Difference	-49	18	2	2	-3	-3	-50	17	-33
Weekday MD Peak Hour									
R8 AOR Mixed Use Alternative	7	7	5	5	1	1	13	13	26
- Proposed Actions	1	1	0	0	5	5	6	6	12
Difference	6	6	5	5	-4	-4	7	7	14
Weekday PM Peak Hour									
R8 AOR Mixed Use Alternative	20	1	8	8	1	1	29	10	39
- Proposed Actions	9	43	7	7	3	3	19	53	72
Difference	11	-42	1	1	-2	-2	10	-43	-33

Table 18-3 (continued)
Comparison of Proposed Actions with R8 As-of-Right Mixed Use Alternative - 2011

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R8 AOR Mixed Use Alternative	-7	26	0	14	-23	28	-4	26	7	103	-27	193	166
- Proposed Actions	146	13	28	3	336	24	118	10	141	21	772	70	841
Difference	-153	13	-28	11	-359	4	-122	16	-134	82	-799	123	-675
Weekday MD Peak Hour													
R8 AOR Mixed Use Alternative	7	7	4	4	9	9	8	8	20	10	48	38	86
- Proposed Actions	55	30	18	10	34	19	29	16	170	268	307	343	650
Difference	-48	-23	-14	-6	-25	-10	-21	-8	-150	-258	-259	-305	-564
Weekday PM Peak Hour													
R8 AOR Mixed Use Alternative	21	-1	13	4	23	-15	23	2	99	32	180	23	203
- Proposed Actions	63	147	18	29	82	322	43	113	55	140	261	751	1012
Difference	-42	-148	-5	-25	-59	-337	-20	-111	44	-108	-81	-728	-809

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R8 AOR Mixed Use Alternative	-5	22	9	9	2	2	6	33	39
- Proposed Actions	112	10	21	21	9	9	142	40	182
Difference	-117	12	-12	-12	-7	-7	-136	-7	-143
Weekday MD Peak Hour									
R8 AOR Mixed Use Alternative	7	7	5	5	1	1	13	13	26
- Proposed Actions	34	19	13	13	8	8	56	40	96
Difference	-27	-12	-8	-8	-7	-7	-43	-27	-70
Weekday PM Peak Hour									
R8 AOR Mixed Use Alternative	20	1	8	8	1	1	29	10	39
- Proposed Actions	43	111	27	27	5	5	75	143	218
Difference	-23	-110	-19	-19	-4	-4	-46	-133	-179

respectively. Unlike the proposed actions, there would be no impacts and no need for mitigation at the northeast and southeast subway stairs at the East 68th Street Station in 2011.

AIR QUALITY

With the R8 As-of-Right Mixed-Use Alternative, the increases in the 8-hour carbon monoxide concentrations expected from the proposed actions, none of which are significant, would be comparable, since project-generated traffic volumes would be lower with this alternative. No violations of the NAAQS are expected to occur either under the R8 As-of-Right Mixed-Use Alternative or with the proposed actions by 2007, and both would be consistent with the SIP.

In 2011 with the R8 As-of-Right Mixed-Use Alternative, the increases in the 8-hour carbon monoxide concentrations resulting from the proposed actions, none of which are significant, would be significantly lower, since this alternative would include no further MSKCC development after 2007. No violations of the NAAQS are predicted to occur either under the R8 As-of-Right Alternative or with the proposed actions, and both would be consistent with the SIP.

In addition, in 2007 and 2011 with the R8 As-of-Right Mixed-Use Alternative, there would be no potential effects from any laboratory exhaust system, since this alternative would not include any research facility development. This alternative also assumes development of a taller residential building on the north block. However, due to the distance from the New York Hospital boiler stack to the building, it is not expected that any significant stationary source impacts would occur on the proposed development.

NOISE

Both with the R8 As-of-Right Mixed-Use Alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. With both the R8 As-of-Right Mixed-Use Alternative and the proposed project, no significant adverse noise impacts would result from building mechanical systems. There would be no provision for an (E) designation for noise because this alternative is as-of-right. As a result, because this alternative would place a new population in an area with existing high ambient noise levels, there could be an unmitigated noise impact.

CONSTRUCTION IMPACTS

The R8 As-of-Right Mixed-Use Alternative would lessen the temporary construction impacts attributable to development anticipated pursuant to the proposed actions. Moreover, similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts. The R8 As-of-Right Mixed-Use Alternative would reduce the duration of construction-related impacts as compared to the proposed actions but would still entail the same activities and phasing (i.e., demolition, excavation and foundation, structure and shell, interior finishing). However, this alternative would not fully meet the operational needs of the MSKCC.

F. R9 AS-OF-RIGHT RESEARCH BUILDING ALTERNATIVE*

This alternative assumes that the rezoning takes place, but that there is no transfer of floor area from the north block to the main campus block. It assumes that the full floor area generated on the north block remains on the north block, and that development under the rezoning takes place as-of-right. No LSCFD plan would be established and no waivers for height and setback of yards would be sought, and no BSA actions would be required. There would be a Restrictive Declaration for hazardous materials placed on the property.

The research building would be 30 stories tall (551 feet to the top of the roof enclosure). See Figure 18-5. Floor-to-floor heights would be the same as those with the proposed actions. The tower would have a footprint of approximately 163 feet by 140 feet with setbacks of 30 feet from both 68th and 69th Streets. The 1-story base would cover the site, rising to a height of 21 feet. With a floor area of approximately 638,600 square feet, this alternative provides more floor area than MSKCC is requesting for the proposed research building on this site (510,389 square feet). Although the area of the laboratory floor plates would be similar, MSKCC believes that the shape of the laboratory floor plates in this alternative would not provide the same efficiency of layout as the proposed laboratory tower floor plate. This layout might accommodate somewhat more program or may only accommodate the proposed program. A portion of the building could be allocated for use as St. Catherine's Church Rectory.

This laboratory floor plate would not allow the Kettering Building to remain in place while the tower is being built as the foot print of the tower would overlap with the foot print of the Kettering Building.

On the main campus block, the new building area would be 513,700 square feet as compared to 613,700 as proposed. The new as-of-right building for the inpatient hospital would be five floors (65 feet) shorter than the new building assumed with the proposed actions (383 rather than 448 feet tall). As compared to the proposed actions, this inpatient hospital would have 150 fewer beds. The existing 39 pediatric beds would be assumed to stay in their current location so the net reduction in beds as compared to the proposed project would be 111. This would reduce the main campus block population as compared to that of the proposed actions by 111 inpatients, 333 inpatient visitors, and 65 inpatient staff.

Overall, MSKCC does not believe that this is a viable alternative, and it has stated that it would not pursue such an alternative.

The rezoning would allow the same additional development on the non-MSKCC properties in the north block as the proposed actions would.

LAND USE, ZONING, AND PUBLIC POLICY

With the R9 As-of-Right Research Building Alternative, as with the proposed actions, the St. Catherine's Church Rectory and the Kettering Building would be demolished. The sites of these two buildings as well as the vacant lot on East 69th Street that was the site of St. Catherine's School would be redeveloped with a new, larger research building by 2007. There would be a larger expansion and enhancement of an already important land use in the study area, medical facilities, as compared to the proposed actions. However the Kettering Laboratory would have to be displaced at the beginning of construction. This would be unacceptable to MSKCC.

* This section is new to the FEIS.

In the 2011 analysis year the additional development on the main campus block would be less than proposed by 100,000 square feet. Overall the land use on the MSKCC campus would be similar to conditions with the proposed actions.

As with the proposed actions, the allowable density of development for community facilities in the rezoning area would be increased from 6.5 to 10 FAR. However, unlike the proposed actions, there would be no authorizations from CPC to transfer floor area from the north block to the main campus block and to modify height and setback; there would be no lot coverage, no rear yard variances and no special permit for temporary failure to comply from BSA.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of the R9 As-of-Right Research Building Alternative would be similar to those anticipated with the proposed research building. Compared to the proposed actions, there would be more direct or generated construction employment and income by 2007 and about the same by 2011; and the city and state revenue resulting from the construction employment, income, and activity would be more by 2007 and similar by 2011. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would also be more by 2007 and similar by 2011. A similar number or possibly more employees would come to the site upon completion of the project. However, it would be a less efficient working environment.

At full build-out this alternative would be similar in floor area overall but would provide what MSKCC believes would be a lesser new hospital than the proposed actions. Overall, this alternative would likely generate similar economic benefits as the proposed actions.

COMMUNITY FACILITIES

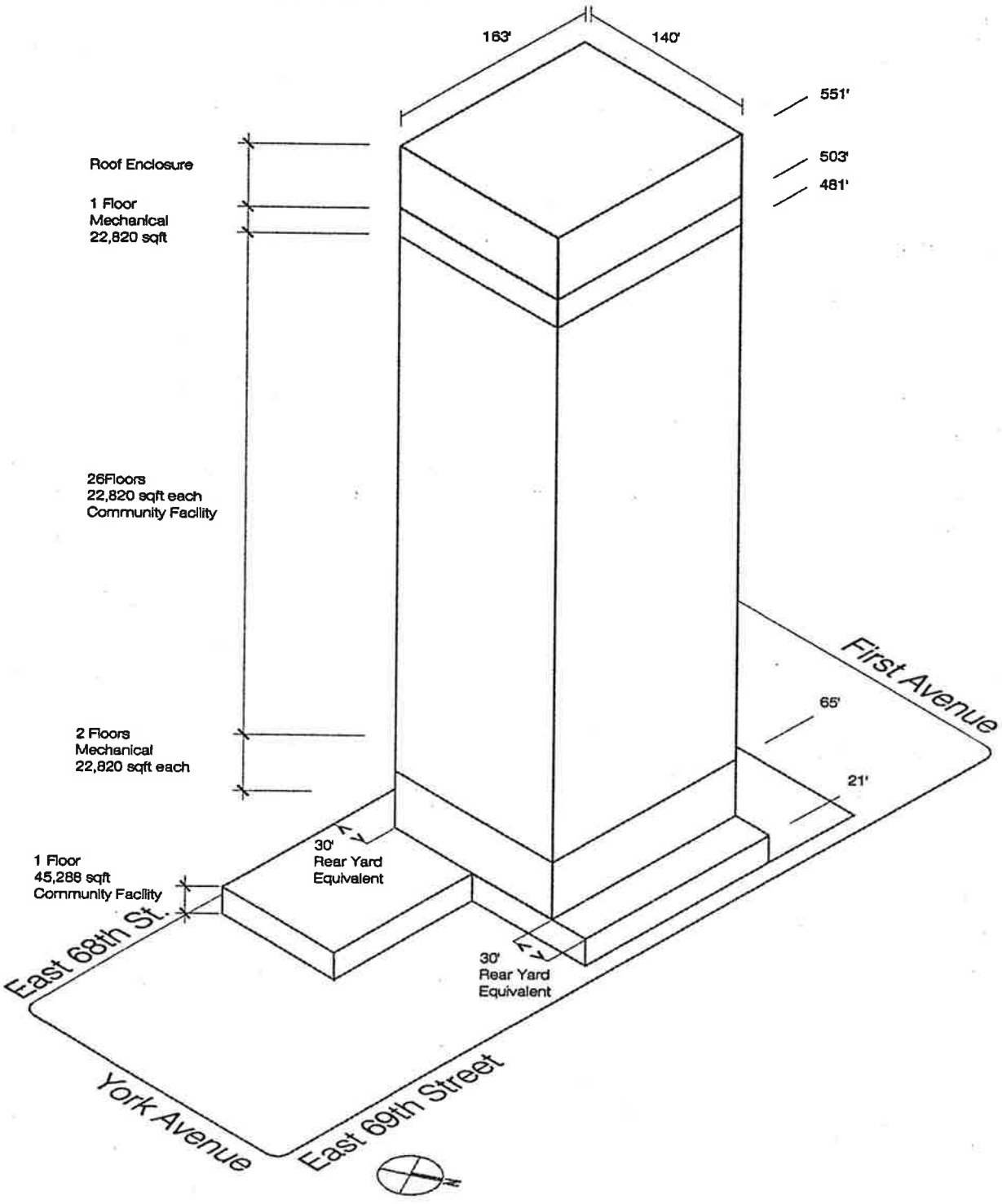
This alternative would create a larger new research building, but less new construction on the main campus block. It would increase the worker population probably by a similar number or somewhat smaller number, and it would bring many fewer new patients and visitors to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

However, with this alternative, MSKCC believes that it would have diminished ability to conduct translational research and to plan for future needs. Overall, MSKCC believes that it would be less able to perform research and provide treatment and care for its patients than it would with the proposed actions.

OPEN SPACE AND RECREATIONAL FACILITIES

Under this alternative, the R9 As-of-Right research building would provide more floor area and possibly more staff than the proposed research building. It would be much taller and cast a longer shadow on St. Catherine's Park. Considering the additional shadow from this research building, this alternative could have an impact on open space. Even if impacts were to occur, consideration of mitigation would not be required.

Considering development on both the north block and the main campus block, the amount of development would be similar to the proposed project and overall the populations might be similar. While there would be an increase in shadow with the taller research building there



R9 As-of-Right Research Building

FIGURE 18-5

would be a decrease in shadow with the shorter building on the main block. So overall, the impacts on open space would probably be similar to those of the proposed actions.

SHADOWS

The R9 As-of-Right research building would be 551 feet tall, about 150 feet taller than the proposed research building. The increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007 would be greater but the increment would be gone by mid-morning.

In 2011 under this alternative there would be a 65-foot-shorter building in the main campus block. Therefore, the later morning shadow increment would be less than with the proposed actions.

HISTORIC RESOURCES

Similar to conditions with the proposed research building, a potential impact to St. Catherine's Church would be possible under this alternative and the impact would also be mitigated through a construction protection plan. The building envelope under this alternative (taller than the proposed research building, but with 30-foot setbacks above a 21-foot-high base) would result in slightly less shadow on the church's east windows, resulting in a slightly smaller impact. The new shadows on the church's east-facing, stained-glass windows during the morning would cover most if not all the windows that are not currently in shadow. To mitigate this impact, lighting could be provided to the east-facing windows to replace the sunlight lost in the morning.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

The R9 As-of-Right Research Building Alternative would create less of a street wall presence on 68th and 69th Streets because only the 21-foot-high base would be along the property line, but the resulting tower would not rise straight up to its full height of 420 feet on 68th and 69th Streets. Under this alternative, the tower would be set back 30 feet on both the north and south before rising to 551 feet, 131 feet taller than the proposed building. Like the proposed actions, this alternative would result in a tall mid-block tower, but unlike the proposed actions, the tower would be square, rather than oriented on a north-south axis. While its effects on urban design conditions would be different from those of the proposed actions, overall the R9 As-of-Right Research Building Alternative would have the same or somewhat greater (given its additional bulk) potential to adversely impact the urban design characteristics of the study area than the proposed research building.

Development on the main campus block would be reduced by 100,000 square feet; and the smaller potential building would have less of an urban design impact that the one described with the actions as proposed. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by this alternative.

NEIGHBORHOOD CHARACTER

With this alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. As with the proposed actions, a construction protection plan would be implemented to avoid construction-related impacts to St.

Catherine's Church. As with the proposed actions, morning sunlight to those windows would be largely lost, but due to the 30-foot setbacks, there may be more light than with the proposed actions. There would be a new and taller tower adjacent to the small-scale St. Catherine's Church. There would more new activity in the area in 2007, but much less in 2011. The increase in traffic would be similar to that in the proposed actions for 2007 and 2011. Similar to conditions with the proposed actions, with an (E) designation there would be no noise impacts on interiors of new construction in the rezoning area. Overall, as compared to conditions with the proposed actions, this alternative would have about the same impact on elements of neighborhood character in the 2011 analysis year.

HAZARDOUS MATERIALS

Asbestos-containing materials and lead-based paint believed to be present in the existing buildings to be demolished (St. Catherine's Church Rectory and the Kettering Building) would be removed in accordance with all applicable local, state and federal regulations. As with the proposed actions, an impact related to subsurface construction could occur, but could be mitigated by requiring a Phase II subsurface investigation to be undertaken to determine if contamination exists, and, if necessary, remediation. The protocol and remediation plan would be reviewed and approved by DEP as specified in a Restrictive Declaration on the property. All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, the increase in demands on local utility systems, including water supply, solid waste and recycling, and energy, would be approximately the same as with the proposed actions. However, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The R9 As-of-Right Research Building Alternative would result in more floor area than the proposed actions in 2007. However, because it could be less efficiently arranged, it might not accommodate more program area or more population. Development of the north block could result in more vehicle trips than the proposed action. Assuming the same user population on the north block as the proposed actions, traffic impacts and mitigation would be the same as for the proposed actions. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking.

Under this alternative, in 2011 there would be new trips generated from the north block as in 2007, as well as trips to the main campus block. Based on fewer inpatients, visitors, and staff in 2011, trips to the main campus block would be fewer than with the proposed project. Assuming there are the same trips to the north block, full build out would result in 9, 9, and 12 fewer vehicle trips, than the proposed actions in 2011 (see Table 18-4). Impacts and the need for traffic mitigation would be similar to the proposed actions. The increase in demand for parking would also be similar to proposed conditions, and like the proposed actions, there would be no significant adverse impact to parking.

Table 18-4
Comparison of Proposed Actions with R9 As-of-Right Research Building Alternative - 2007

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R9 AOR Research Building Alternative	57	5	9	1	147	12	49	5	59	14	321	37	358
- Proposed Actions	57	5	9	1	147	12	49	5	59	14	321	37	358
Difference	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekday MD Peak Hour													
R9 AOR Research Building Alternative	1	1	0	0	1	1	1	1	64	115	67	118	185
- Proposed Actions	1	1	0	0	1	1	1	1	64	115	67	118	185
Difference	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekday PM Peak Hour													
R9 AOR Research Building Alternative	11	55	2	9	28	140	11	45	19	58	71	307	378
- Proposed Actions	11	55	2	9	28	140	11	45	19	58	71	307	378
Difference	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R9 AOR Research Building Alternative	44	4	7	7	5	5	56	16	72
- Proposed Actions	44	4	7	7	5	5	56	16	72
Difference	0	0	0	0	0	0	0	0	0
Weekday MD Peak Hour									
R9 AOR Research Building Alternative	1	1	0	0	5	5	6	6	12
- Proposed Actions	1	1	0	0	5	5	6	6	12
Difference	0	0	0	0	0	0	0	0	0
Weekday PM Peak Hour									
R9 AOR Research Building Alternative	9	43	7	7	3	3	19	53	72
- Proposed Actions	9	43	7	7	3	3	19	53	72
Difference	0	0	0	0	0	0	0	0	0

Table 18-4 (continued)
Comparison of Proposed Actions with R9 As-of-Right Research Building Alternative - 2011

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R9 AOR Research Building Alternative	140	12	26	3	319	22	112	10	134	19	730	66	797
- Proposed Actions	146	13	28	3	336	24	118	10	141	21	772	70	841
Difference	-6	-1	-2	-0	-17	-2	-6	-0	-7	-2	-42	-4	-44
Weekday MD Peak Hour													
R9 AOR Research Building Alternative	48	26	16	9	30	17	26	14	159	254	279	319	599
- Proposed Actions	55	30	18	10	34	19	29	16	170	268	307	343	650
Difference	-7	-4	-2	-1	-4	-2	-3	-2	-11	-14	-28	-24	-51
Weekday PM Peak Hour													
R9 AOR Research Building Alternative	56	138	16	27	77	306	39	107	51	132	240	710	950
- Proposed Actions	63	147	18	29	82	322	43	113	55	140	261	751	1012
Difference	-7	-9	-2	-2	-5	-16	-4	-6	-4	-8	-21	-41	-62

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R9 AOR Research Building Alternative	105	9	20	20	9	9	134	38	173
- Proposed Actions	112	10	21	21	9	9	142	40	182
Difference	-7	-1	-1	-1	0	0	-8	-2	-9
Weekday MD Peak Hour									
R9 AOR Research Building Alternative	30	17	12	12	8	8	50	37	87
- Proposed Actions	34	19	13	13	8	8	56	40	96
Difference	-4	-2	-1	-1	0	0	-6	-3	-9
Weekday PM Peak Hour									
R9 AOR Research Building Alternative	39	105	26	26	5	5	70	136	206
- Proposed Actions	43	111	27	27	5	5	75	143	218
Difference	-4	-6	-1	-1	0	0	-5	-7	-12

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes over No Action conditions under this alternative. In 2007, this alternative would generate the same number of pedestrian trips than the proposed actions. In 2011, it would result in 44, 51, and 62 fewer pedestrian trips than the proposed actions. Like the proposed actions, this alternative would not result in any significant adverse pedestrian impacts.

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result in the same number of subway and bus trips as the proposed actions. Like the proposed actions, there would be the same impact at the northeast subway stair that would not require mitigation. In 2011, there would be 19, 6, and 21 fewer of subway trips, and like the proposed actions, the same impacts would occur and the same mitigation would be required at the northeast and southeast subway stairs at the East 68th Street Station.

AIR QUALITY

With the R9 As-of-Right Research Building Alternative, the increases in the 8-hour carbon monoxide concentrations expected from the proposed actions, none of which are significant, would be comparable. No violations of the NAAQS are expected to occur under this Alternative or with the proposed actions by 2007, and both would be consistent with the SIP.

In 2011 with this alternative, the increases in the 8-hour carbon monoxide concentrations resulting from the proposed actions, none of which are significant, would be similar to those with the proposed actions. No violations of the NAAQS are predicted to occur either under the R9 As-of-Right Research Building Alternative or with the proposed actions, and both would be consistent with the SIP.

This alternative assumes the development of a taller building on the north block. However, due to its distance from the New York Hospital boiler stack, it is not expected that any significant stationary source impacts would occur on the proposed development.

In addition, similar to the development under the proposed actions, there would be no potential significant health effects from the exhaust system of the laboratories in the proposed research building on any MSKCC campus buildings or the surrounding community.

NOISE

Both with this alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. With both this alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. Similar to the proposed actions, this alternative would include an (E) designation for noise in the rezoning area.

CONSTRUCTION IMPACTS

The R9 As-of-Right Research Building Alternative would have temporary construction impacts similar to the proposed actions. The duration and phasing of construction activities would be comparable to that of the proposed actions on the north block. On the main campus block they would also be similar. Similar to the proposed actions, any construction-related impacts would

be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

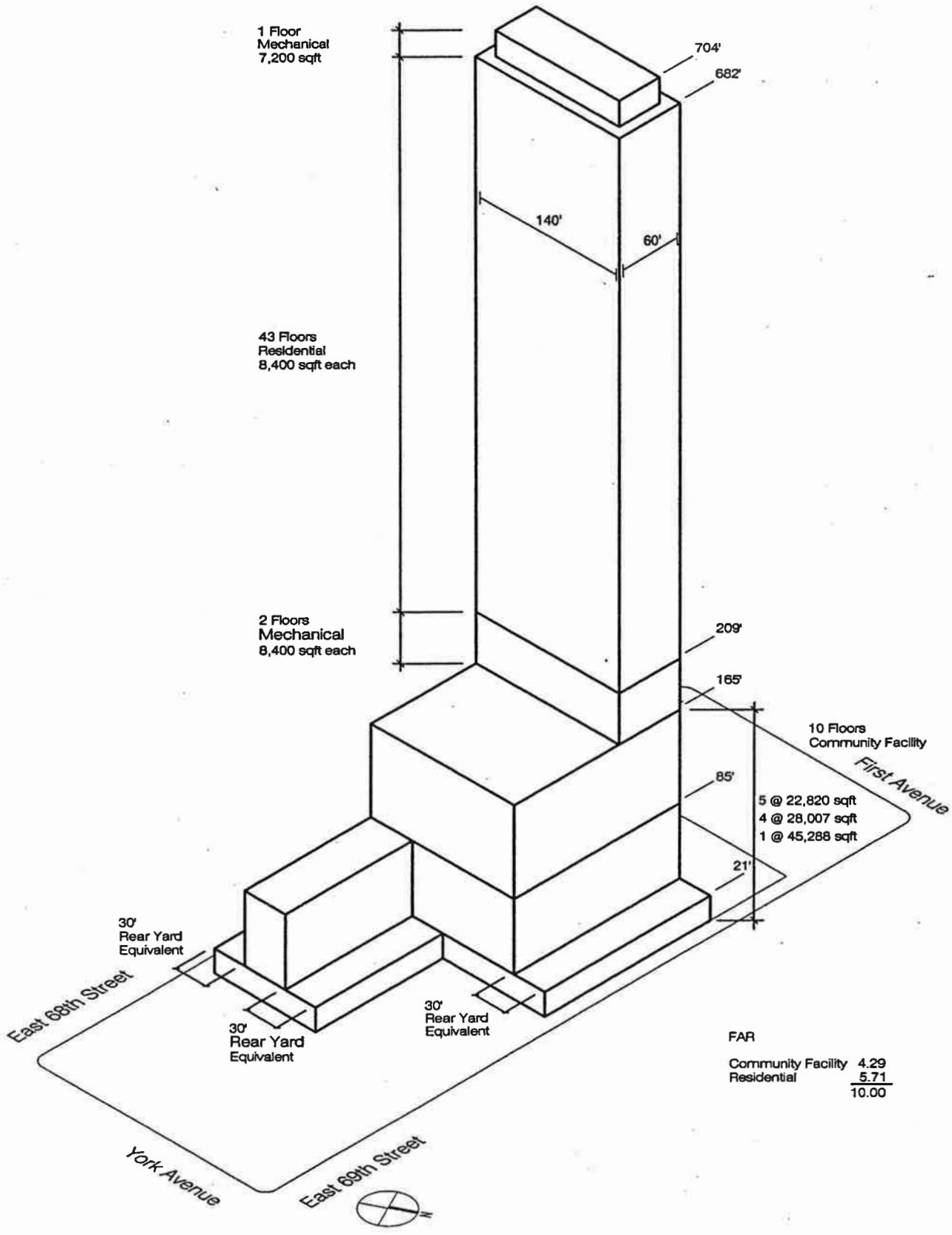
G. R9 AS-OF-RIGHT MIXED-USE ALTERNATIVE

This alternative assumes that the proposed rezoning is approved, and development of a mixed-use building proceeds on an as-of-right basis. There would be no designation of a LSCFD and no transfer of development rights from the north block to the main campus block. Given these parameters, the most likely development on the north block would be a mixed-use building with hospital-related uses (community facility) on the first ten floors and staff housing (residential) uses above (see Figure 18-6). The total floor area would be 603,500 square feet, with the floor area for the residential uses of 344,599 square feet, and the floor area for community facility use of 258,901 square feet. This amount of space for community facility use would not support the proposed laboratory program, nor would it provide the laboratory floor plate provided by the proposed actions. In addition, a portion of this community facility would be expected to be allocated for St. Catherine's Church Rectory. The building would have a total of 56 floors including the mechanical penthouse.

The first floor of the building would cover the site in the north block. The second through fifth floors would be set back 30 feet on the north and south sides. The sixth through the tenth floors would be only on the through-block portion of the site. The overall height of the community facility base would be 165 feet. Above that a tower would rise on the western side of the base. The lowest two floors of the tower would be mechanical, and they would be 44 feet tall together. Above the mechanical floors, there would be 43 floors of apartments with 8,400- square-foot floor plates for a gross floor area of 361,200 square feet. Assuming an apartment area of 900 square feet, this would yield approximately 400 apartments. A portion of the building could house the St. Catherine's Church Rectory. The total height from the ground to the top of the residential tower would be about 682 feet. Above this there would a mechanical penthouse setback from the parapet that rises another 22 feet. At 704 feet, this tower would be almost 300 feet taller than the proposed research building.

On the main campus block development would be as proposed, except that there would be no transfer of up to 100,000 square feet (see Figure 18-7). Therefore, the overall development would be 100,000 square feet less than proposed. The new inpatient tower would be shorter by 4 stories (64 feet).

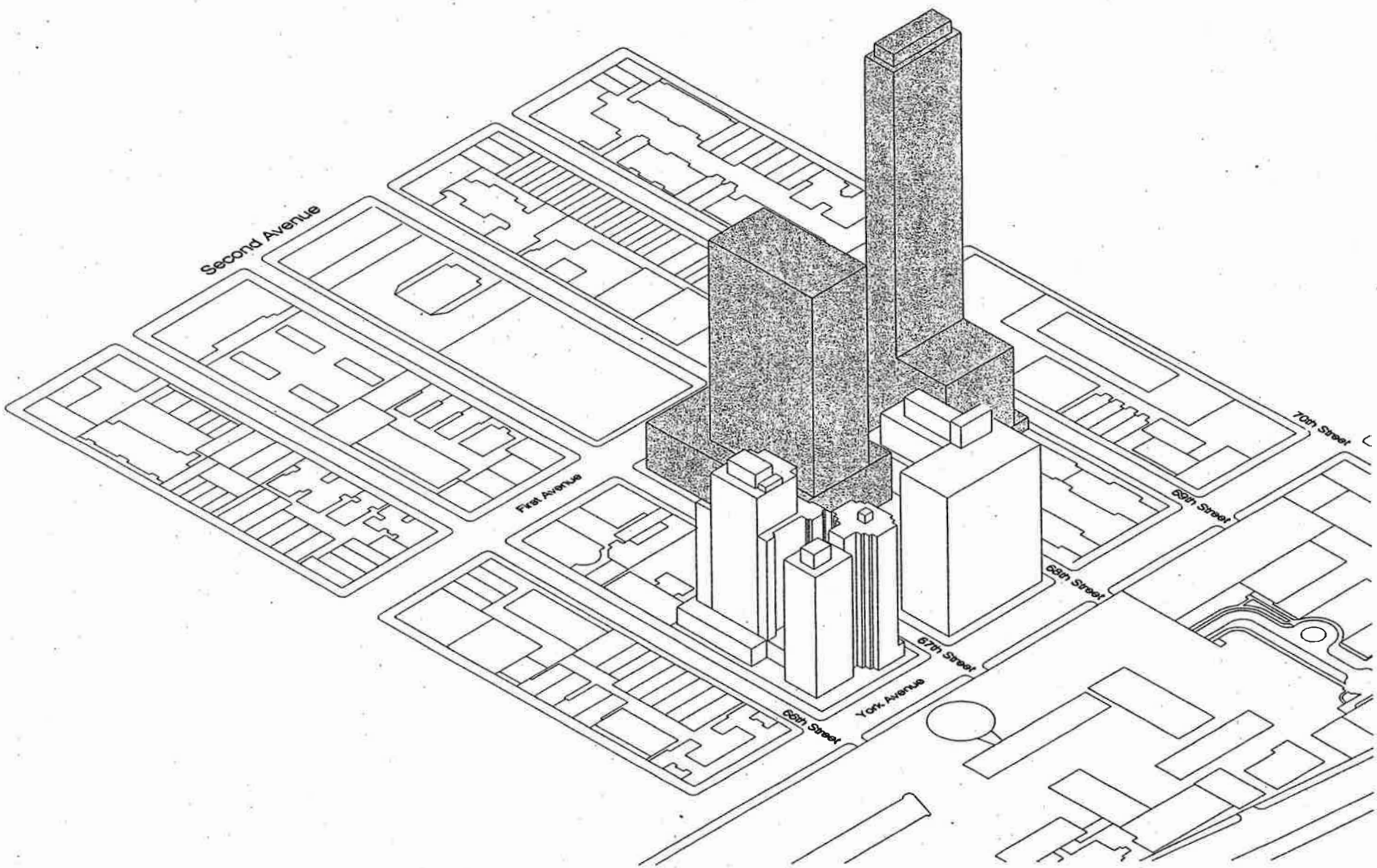
While this alternative shows what could be developed as-of-right with the proposed rezoning, it does not satisfy MSKCC's need for new research laboratory space. Further, it assumes demolition of the Kettering Building, which MSKCC considers unlikely without construction of new research space. Furthermore, the research space in the Kettering Building would be lost (demolished) at the commencement of construction. While the research space could be built at a remote site, this would contradict MSKCC's policy and programmatic requirement of having researchers in proximity to the patients they treat, and would not promote the interaction of scientific exploration and treatment. On the main campus block the reduction in floor area of 100,000 square feet would reduce either the number of inpatient beds or the diagnostic and treatment space that could be provided. This too would be inconsistent with MSKCC's stated program goals.



R9 As-of-Right Alternative Mixed-Use Development on the North Block

FIGURE 18-6

10•01



R9 As-of-Right Alternative Full Campus Development Bulk Diagram

FIGURE 18-7

Again, it is assumed that the site in the north block, because it is vacant, would be developed first and would be complete by 2007, and that development on the main campus block would follow with an analysis year of 2011.

Unlike the proposed project, the only action necessary for this alternative is the rezoning of the midblocks from R8 to R9.

LAND USE, ZONING, AND PUBLIC POLICY

Under the R9 As-of-Right Mixed-Use Alternative, St. Catherine's Church Rectory and the Kettering Building would be demolished. A new mixed-use building would rise on the proposed research building site providing space for hospital-related uses as well as staff housing. The expansion of MSKCC facilities in 2007 would be largely residential. As with the proposed actions, there could be the development of 45,637 zoning square feet (zsf) of community facility use and 33,438 zsf of residential use (approximately 33 dwelling units) on two lots located on the north block. These lots are not owned by MSKCC.

In 2011 the development on the north block would be as described above, while the development on the main campus block would be similar to the proposed project, but 100,000 square feet smaller. As compared to the proposed actions, the housing on campus would be increased. Overall, the land use on the MSKCC campus would become more dense.

Similar to the proposed actions, there would be a rezoning from R8 to R9 of the two midblocks between 67th and 69th Streets and York and First Avenues. The allowable density of development for community facilities in the proposed rezoning area would be increased from 6.5 to 10 FAR. However, no LSCFD would be designated and the planning for the campus as a whole would be impeded. There would be no authorization to shift bulk from the north block to the main campus block. None of the actions in relation to height and setback, lot coverage, or rear yards would be required for this alternative.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during construction on the north block and operation of the mixed-use building would be less than with the proposed research building, as a residential tower would cost less to build and provide fewer jobs during operation than the proposed research building. The direct or generated construction employment and income, and the expected city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less than with the proposed actions. All the new researchers and the increase in research and hospital activity anticipated as a result of the proposed actions would not occur.

Development on the main campus block would also be reduced due to the potential development on the main campus block being smaller by 100,000 square feet. Overall, the R9 As-of-Right Mixed-Use Alternative would be a significantly smaller generator of economic activity and of city and state revenues.

COMMUNITY FACILITIES

Similar to development with the proposed actions, this alternative would increase the demand for police and fire protection. Unlike the proposed project, it would have a residential component which would increase the demand for seats in neighborhood schools.

It would not create the proposed research building and the new construction on the main campus block would be smaller than proposed actions. Therefore, it would contribute far less to MSKCC as a medical, research, and treatment facility resulting in fewer benefits to the community than would the proposed actions.

OPEN SPACE AND RECREATIONAL FACILITIES

With the R9 As-of-Right Mixed-Use Alternative, the residents of the apartments would increase the demand for active open space in a ½-mile radius, as well as passive open space within ¼ mile as compared to development with the proposed actions, which would only increase the demand for passive open space.

With the mixed-use building, the 400 apartments would be assumed to have 640 residents (based on 1.6 persons per household, US Census 2000). Assuming one employee per 15 dwelling units for the residential portion of the building and one employee per 560 square feet for the medical-related portion of the building (based on the employee-per-square-foot ratio for the proposed research building), there would be a total of about 489 employees, or an increase of 125 employees compared to a net increase of 548 employees in the proposed research building. The decrease in the overall passive open space ratio would be 1.2 percent as compared to 0.9 percent with the proposed actions. The reduction in the open space ratio is due to the large residential population with the mixed-use building. As with the proposed actions, the worker population is not expected to result in significant adverse impacts to open space under this alternative. However, the additional residents added by this alternative could result in an open space impact by 2007. Shadows from the mixed-use building would add to this impact.

With this R9 As-of-Right Alternative in 2011 there would be approximately 423 fewer new employees in the north block and approximately 107 fewer employees in the main campus block in 2011 (based on the employee-per-square-foot ratio for development on the main campus block under the proposed actions). The decrease in the worker open space ratio would be 2.1 percent as compared to 3.5 percent with the proposed actions. The percent decrease in the overall passive open space ratio would be 1.8 as compared to 1.7 with the proposed actions. The potential impact on passive open space would be slightly higher within the ¼-mile study area, and the demand for active open space would be increased with the increase in residential population.

As with the proposed actions, the combination of increased users and increased shadows on St. Catherine's Park would indicate a potential adverse impact on open space by 2011. Like conditions with the proposed actions, the open space impact would be unmitigated.

SHADOWS

In 2007 the tower of the mixed-use building would cast a shadow on St. Catherine's Park longer than that of the proposed research building, as this building would be taller. The tower would also be more slender in its north-south dimension making its shadow somewhat more slender given its angle to the Park. It would also cast a shadow on the windows of St. Catherine's Church.

With the R9 As-of-Right Alternative, development on the main campus block would cast a shorter shadow as the inpatient tower would be 4 stories (64 feet) shorter; and the increment on the park in spring, summer, and fall would be reduced compared to the proposed actions. Its length would be reduced by about 14 percent and would reduce later morning shadows in the

March/September, May/August and June analysis dates (see Figures 6-7 to 6-13 in Chapter 6, "Shadows").

HISTORIC RESOURCES

Similar to conditions with the proposed actions, the R9 As-of-Right Alternative would result in an impact and would have mitigation in the form of a construction protection plan for St. Catherine's Church to avoid construction-related impacts to that structure. This alternative would increase shadows on the east-facing stained-glass windows of St. Catherine's Church except at its north end. Like the proposed actions, the R9 alternative could provide lighting to the church's east-facing windows.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

The R9 As-of-Right Mixed-Use Alternative would have a significant adverse impact on urban design in 2007 from the introduction of new activity and more dense development to the project site, in a building reaching to 704 feet in the midblock between East 68th and 69th Streets. The mixed-use building would be approximately 284 feet taller than the proposed research building (704 feet versus 420 feet), and thus would be expected to have a much greater presence. The tower of this alternative would be much more slender (with floor plates of 8,400 square feet) than the proposed research building (with floor plates of approximately 20,000 square feet). The building would have an FAR of 10 compared to the proposed FAR of approximately 9.0 (accounting for existing church on the lot). Compared to the proposed actions, this alternative would have similar, or greater impacts to urban design given its greater height and density. Its setbacks and more slender tower should be somewhat more compatible with urban design conditions, but overall its impact would be comparable or greater than that of the proposed actions. As with the proposed actions, this alternative would be expected to have a much greater presence at the streetwalls of East 68th and 69th Streets and would greatly increase the density of these mid-blocks. Unlike the proposed research building, which rises to 420 feet without setbacks, this alternative would have a 21-foot-high one-story base with a 30-foot setback above (on East 68th and 69th Streets). The alternative would also enliven the nearby portions of the study area with greater activity and more pedestrians, but to a different degree given the different uses of the building. In the R9 As-of-Right Alternative, as with the proposed action, the design of the mixed-use building could be developed to acknowledge the adjacency of the church with a complementary masonry facade, and to incorporate other design measures to mitigate potential adverse impacts.

In 2011 the density of the project site between East 67th and 69th Streets would be increased by the mixed-use tower described above, as well as by a tower in the middle of the main campus block. However, as there would be no FAR transfer to the main campus block, the midblock tower would not be as tall as with the proposed actions, and thus would have less of a presence in and effect on the surrounding area. Overall, the increased midblock density could create a significant adverse impact. Mitigation measures developed as part of the design process could avoid impacts; however, if none were identified, an unmitigated adverse impact could result. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the R9 As-of-Right Alternative.

NEIGHBORHOOD CHARACTER

Similar to conditions with the proposed actions, the site in the north block which contains the Rectory, the Kettering Building and a vacant lot would be redeveloped. However, the development would be much taller and predominantly residential. This would not represent such an important increase in medical facilities as compared to the proposed actions. Similar to conditions with the proposed actions, a construction protection plan would be implemented to avoid construction-related impacts to St. Catherine's Church, but sunlight to its east windows would be blocked except at the north end. There would be a new tower next to St. Catherine's, a small-scale church; and there would be an increase in density in the midblocks. There would be new activity in the area. The increase in traffic due to development generated by this alternative would be greater than the proposed actions in 2007 and less than the proposed actions in 2011. There would be no impact on noise levels with this alternative or with the proposed project. Overall, there would be an adverse impact on some aspects of neighborhood character similar to the proposed project.

HAZARDOUS MATERIALS

Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished or renovated would be removed in accordance with all applicable city, state and federal regulations. As with the proposed project, prior to excavation a Phase II subsurface investigation would be implemented to determine if contamination exists. If necessary, remediation would be undertaken. The protocol and remediation plan would be reviewed and approved by DEP as specified in a restrictive declaration on the property. All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, State and local regulations as they are now and as they would be with the proposed actions and anticipated development. If no restrictive declaration was executed, and no testing and remediation undertaken, an unavoidable adverse impact could result.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase similar to the proposed actions; however, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

As compared to the proposed actions, the R9 As-of-Right Mixed-Use Alternative would be expected to result in an increase of approximately 8, 24, and 8 vehicle trips during the AM, midday, and PM peak hours, respectively, in 2007 (see Table 18-5). This alternative would result in similar impacts to locations as the proposed actions. Similar to 2007 conditions with the proposed actions, there would be a need for traffic mitigation associated with MSKCC operations. There would also be an increase in demand for parking, but like the proposed actions, there would not be significant adverse impacts to parking with this alternative.

In 2011 with the R9 As-of-Right Alternative, there would be fewer trips generated by the main campus block as compared to the proposed actions, and full build-out of the R9 As-of-Right Alternative would result in a decrease of approximately 2 and 3 vehicle trips during the AM and PM peak hours, respectively. There would be an increase of 24 vehicle trips during the midday peak hour. Similar to conditions with the proposed project, there would be need for traffic

Table 18-5
Comparison of Proposed Actions with R9 As-of-Right Mixed Use Alternative - 2007

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R9 AOR Mixed Use Alternative	25	33	4	8	56	40	25	51	44	140	154	272	426
- Proposed Actions	57	5	9	1	147	12	49	5	59	14	321	37	358
Difference	-32	28	-5	7	-91	28	-24	46	-15	126	-167	235	68
Weekday MD Peak Hour													
R9 AOR Mixed Use Alternative	10	10	2	2	11	11	15	15	63	80	102	119	222
- Proposed Actions	1	1	0	0	1	1	1	1	64	115	67	118	185
Difference	9	9	2	2	10	10	14	14	-1	-35	35	1	37
Weekday PM Peak Hour													
R9 AOR Mixed Use Alternative	34	32	8	6	44	63	52	36	138	77	275	212	489
- Proposed Actions	11	55	2	9	28	140	11	45	19	58	71	307	378
Difference	23	-23	6	-3	16	-77	41	-9	119	19	204	-95	111

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R9 AOR Mixed Use Alternative	20	30	8	8	7	7	35	45	80
- Proposed Actions	44	4	7	7	5	5	56	16	72
Difference	-24	26	1	1	2	2	-21	29	8
Weekday MD Peak Hour									
R9 AOR Mixed Use Alternative	9	9	3	3	6	6	18	18	36
- Proposed Actions	1	1	0	0	5	5	6	6	12
Difference	8	8	3	3	1	1	12	12	24
Weekday PM Peak Hour									
R9 AOR Mixed Use Alternative	31	26	8	8	3	3	42	38	80
- Proposed Actions	9	43	7	7	3	3	19	53	72
Difference	22	-17	1	1	0	0	23	-15	8

Table 18-5 (continued)
Comparison of Proposed Actions with R9 As-of-Right Mixed Use Alternative - 2011

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
R9 AOR Mixed Use Alternative	107	40	22	10	220	51	86	56	117	146	553	302	854
- Proposed Actions	146	13	28	3	336	24	118	10	141	21	772	70	841
Difference	-39	27	-6	7	-116	27	-32	46	-24	125	-219	232	13
Weekday MD Peak Hour													
R9 AOR Mixed Use Alternative	64	39	20	12	44	29	43	30	158	214	331	325	658
- Proposed Actions	55	30	18	10	34	19	29	16	170	268	307	343	650
Difference	9	9	2	2	10	10	14	14	-12	-54	24	-18	8
Weekday PM Peak Hour													
R9 AOR Mixed Use Alternative	85	115	24	24	94	222	82	96	173	150	457	606	1065
- Proposed Actions	63	147	18	29	82	322	43	113	55	140	261	751	1012
Difference	22	-32	6	-5	12	-100	39	-17	118	10	196	-145	53

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
R9 AOR Mixed Use Alternative	80	35	21	21	11	11	113	67	180
- Proposed Actions	112	10	21	21	9	9	142	40	182
Difference	-32	25	0	0	2	2	-29	27	-2
Weekday MD Peak Hour									
R9 AOR Mixed Use Alternative	42	27	16	16	9	9	68	52	120
- Proposed Actions	34	19	13	13	8	8	56	40	96
Difference	8	8	3	3	1	1	12	12	24
Weekday PM Peak Hour									
R9 AOR Mixed Use Alternative	64	87	27	27	5	5	96	120	215
- Proposed Actions	43	111	27	27	5	5	75	143	218
Difference	21	-24	0	0	0	0	21	-23	-3

mitigation associated with MSKCC operations. There would also be an increase in demand for parking, but like the proposed actions, there would not be a significant adverse impact to parking from this alternative.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes above the No Action conditions under the R9 As-of-Right Mixed-Use Alternative. In 2007, this alternative would generate 68, 37, and 111 more pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011, the R9 As-of-Right Mixed-Use Alternative would result in 13, 8, and 53 more fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. Like the proposed actions, no significant adverse impacts to pedestrian conditions are expected with this alternative.

Similarly, subway and bus trips would increase as a result of this alternative. In 2007, there would be 22, 28, and 32 more bus trips than the proposed actions during the AM, midday, and PM peak periods, respectively. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2007, the R9 As-of-Right Mixed-Use Alternative would result in 63 and 61 fewer subway trips during the AM and PM peak periods, and 20 more subway trips during the midday peak period. In 2011, this alternative would result in 89 and 88 fewer subway trips during the AM and PM peak periods, respectively, than would the proposed actions. This alternative would result in 20 more subway trips during the midday peak period, and 14, 28, and 22 more bus trips during the AM, midday, and PM peak periods, respectively. Like the proposed project, this alternative would result in impacts requiring mitigation at the northeast and southeast stairs in 2011.

AIR QUALITY

With the R9 As-of-Right Mixed-Use Alternative, the increases in the 8-hour carbon monoxide concentrations expected from development associated with the proposed project, none of which are significant, would be comparable or lower, since project-generated traffic volumes would be only slightly higher in 2007 and would be lower in 2011 with this alternative. No violations of the NAAQS are expected to occur either under the R9 As-of-Right Mixed-Use Alternative or with the proposed actions by 2007, and both would be consistent with the SIP.

In 2011 with the R9 As-of-Right Mixed-Use Alternative, the increases in the 8-hour carbon monoxide concentrations resulting from development associated with the proposed actions, none of which are significant, would be comparable or lower. No violations of the NAAQS are predicted to occur either under the R9 As-of-Right Alternative or with the proposed actions, and both would be consistent with the SIP.

In addition, in 2007 or 2011 with the R9 As-of-Right Alternative, there would be no potential effects from any laboratory exhaust system, since this alternative would not include any research facility development. This alternative also assumes development of a taller residential building on the north block. However, due to the distance from the New York Hospital boiler stack to the building, it is not expected that any significant stationary source impacts would occur on the proposed development.

NOISE

Both with the R9 As-of-Right Mixed-Use Building Alternative and the proposed actions, in the years 2007 and 2011 noise levels in the project study area would not be significantly increased compared to existing levels. With both the R9 As-of-Right Mixed-Use Alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. Similar to the proposed actions, this alternative would require an (E) designation for noise.

CONSTRUCTION IMPACTS

The R9 As-of-Right Mixed-Use Alternative would have temporary construction impacts similar to the proposed actions. The duration and phasing of construction activities would be comparable to that of the proposed project on the north block. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

H. MANHATTAN BOROUGH PRESIDENT'S ALTERNATIVE*

OVERVIEW

In response to concerns voiced during the public review process, the Manhattan Borough President proposed an alternative to the proposed project. The intention of the alternative is to strike a balance, reducing the amount of area to be rezoned and the amount of development that could take place. This alternative did not address the proposed LSCFD. This alternative proposed the following:

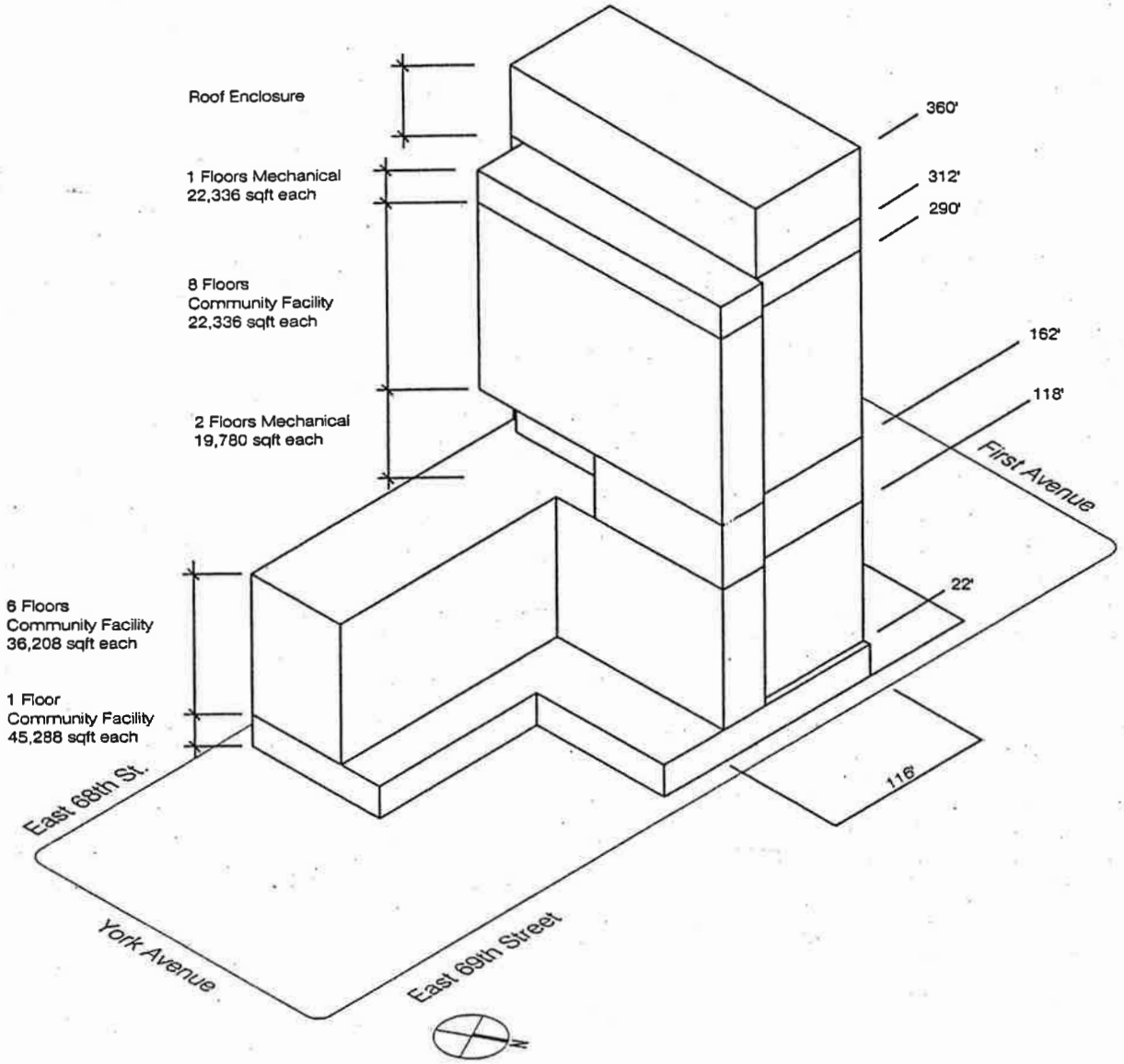
- North block—Rezoning only the southern half of the north midblock and limiting the height of the research tower to the top of the stacks to 360 feet (see Figure 18-8).

  This rezoning would generate a total of approximately 519,771 square feet of floor area. Allowing for the church (9,824 square feet) and the rectory (18,482 square feet), the floor area available for the research use would be 491,465 square feet, as compared to the proposed research building which would provide 510,389 square feet in the new building with 491,907 square feet available for research. The total built FAR for the lot would be about 8.6, compared to 9.0 with the proposed actions. However, due to the 360-foot height limit, five laboratory floors would not be constructed. This smaller building would not, in MSKCC's view, provide adequate space for relocation of researchers from the Kettering Building and the laboratories in the Schwartz Building and in Rockefeller Research Laboratory. Further, there would be no space onsite for recruitment in the future.

  This proposal would also not create the up to 100,000 square feet of floor area on the north block that is proposed to be transferred to the main campus block.

- Main campus block—Eliminating 100,000 square feet of floor area to be transferred to this block from the north block, and limiting development to a new hospital (up to 300 feet tall) on First Avenue and development on the midblock to a height of 175 feet (see Figure 18-9).

* This section is new to the FEIS.

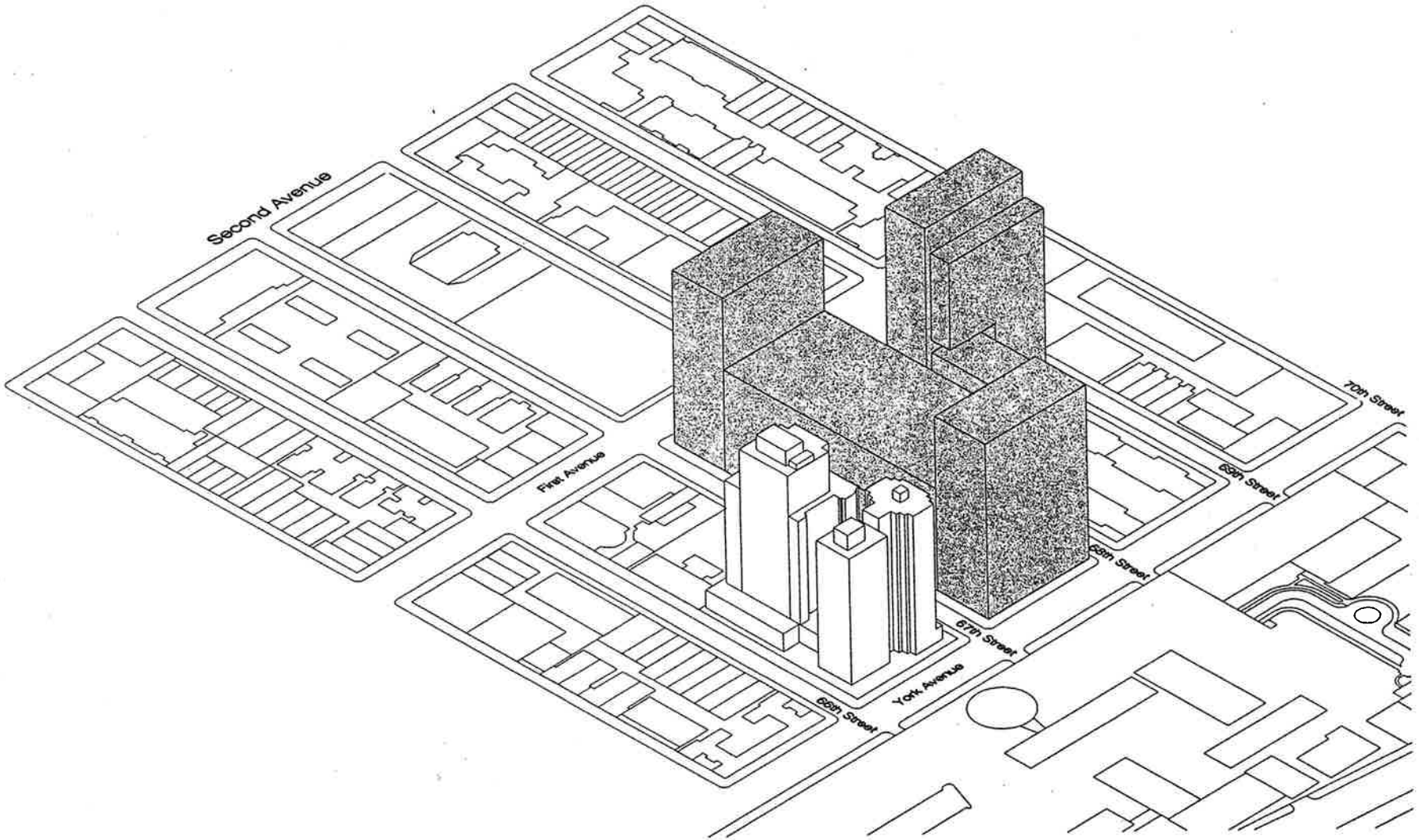


Borough President's Alternative Research Building

FIGURE 18-8

MEMORIAL SLOAN-KETTERING
CANCER CENTER

10•01



Borough President's Alternative
Full Campus Development Bulk Diagram

FIGURE 18-9

Without the transfer of floor area from the north campus block, the increase in zoning floor area on this block would be 290,340 square feet rather than 390,340 square feet.

Since the 100-foot depth of the First Avenue frontage is not sufficient to accommodate a modern hospital inpatient bed floor, the hospital along First Avenue would have to partially occupy the midblock or it would not be feasible to build. A minimum height of 300 feet would be required for a total length of 175 feet along 67th Street in order to replace all inpatient beds. This alternative would likely require height and setback waivers or variances.

- Elimination of the south block (between 66th and 67th Streets) from the rezoning area.

  (Rezoning of this block has been removed from the proposed action in the FEIS.)

PURPOSE AND NEED

MSKCC believes that the Manhattan Borough President's (MBP) Alternative would not meet the needs of its proposed research program and its ability to plan for the future and create a new hospital on its main campus block. Although it is currently expected that future midblock development would be lower than 175 feet, MSKCC believes that limiting future flexibility at this time is not prudent because the hospital's program requirements (type of structures needed, preferred floor plates, etc.) could conceivably change in the next 10 years or more. Overall, MSKCC believes that this alternative does not satisfy MSKCC's objectives.

LAND USE ACTIONS

In addition to the rezoning, the MBP Alternative would require all of the same actions for the research building in the north block and height and setback waivers for the potential new hospital building along York Avenue on the main campus block.

LAND USE, ZONING, AND PUBLIC POLICY

With the MBP Alternative, as with the proposed actions, the St. Catherine's Church Rectory and the Kettering Building would be demolished. The sites of the these two buildings as well as the vacant lot on East 69th Street that was the site of St. Catherine's School would be redeveloped with a new, smaller research building by 2007. There would be a much smaller expansion and enhancement of an already important land use in the study area, medical facilities, as compared to the proposed actions.

In the 2011 analysis year the additional development on the main campus block would be less than proposed by 100,000 square feet. Overall the land use on the MSKCC campus would become somewhat more dense on the north and the main campus blocks.

Unlike the proposed actions, there would be no rezoning of the northern half of the midblock between East 68th and 69th Streets from R8 to R9. The allowable density of development for community facilities in the smaller rezoning area would be increased from 6.5 to 10 FAR. An LSCFD would be designated, but planning for the campus as a whole would be impeded as compared to the proposed actions. There would be no shift of additional bulk from the north block to the main campus block. As stated above, this alternative would require the same waivers of height and setback and lot coverage as the proposed research building from both CPC and BSA. These would not have any effect on potential development beyond the proposed research building site itself.

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of the MBP Alternative Research Building would be less than those anticipated with the proposed research building. There would be less direct or generated construction employment and income; and the city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less. Fewer new workers would come to the site. Overall, the MBP Alternative would be a smaller source of economic activity and city and state revenues.

At full build-out the MBP Alternative would be smaller than the project as proposed because there would be substantially less new development on the north and main campus blocks. Overall, this alternative would generate substantially less economic activity and city and state revenues.

COMMUNITY FACILITIES

This alternative would create a smaller new research building, less new construction on the main campus block, and no new development on the south block. It would increase the worker population by a much smaller number and it would bring many fewer new patients and visitors to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

However, with this alternative, MSKCC believes that it would have a much diminished ability to plan for future needs on the main campus and south blocks. Overall, MSKCC believes that it would be less able to perform research and provide treatment and care for its patients than it would with the proposed actions.

OPEN SPACE AND RECREATIONAL FACILITIES

Under this alternative, the MBP research building would accommodate a smaller program area and have less staff than the proposed research building. By being substantially shorter, its shadow on St. Catherine's Park would be smaller. It is unlikely that there would be any increase in worker or resident populations in the remainder of the north block rezoning area as it would be so small.

In 2007, the decrease in the worker open space ratio would be 1.0 percent (or a decrease of less than 0.01 acres of passive open space per 1,000 workers). The decrease in the overall passive open space ratio would be 0.5 percent. As compared to the proposed actions, there would be a smaller increase in shadows on St. Catherine's Park. Overall, with the reduction in residents, workers, and shadows like the proposed actions the MBP Alternative would not have an impact on open space in 2007.

With the MBP Alternative, there would be approximately 384 fewer workers in the study area at full build-out as compared to conditions anticipated with the proposed actions, as less development is anticipated on the main campus block. The decrease in the worker open space ratio would be 2.5 percent rather than 3.5 percent. The decrease in the overall passive open space ratio would be 1.2 rather than 1.7 percent. However, with the potential new hospital along

First Avenue in a building 300 feet tall, there would be a greater impact on open space than the proposed actions due to an increase in shadows cast on St. Catherine's Park.

SHADOWS

With the MBP Alternative the parapet of the research building would be 60 feet shorter than the proposed building. The increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007 would be reduced. Shadows would be approximately 14 percent shorter and this difference could be noticeable on sunny days in May to August. This would be similar to shadows with the proposed research building, with the increment gone by mid-morning. Neither this alternative nor the proposed actions would result in significant shadow impacts to the park in 2007.

In 2011 with the MBP research building and with a 300-foot-tall hospital along First Avenue on the main campus block, the increase in shadows on St. Catherine's Park would be greater than with the proposed project, which assumed as-of-right development with R9 zoning. The difference would be noticeable on sunny days from March to September. Overall, in 2011, neither this alternative nor the proposed actions would result in significant shadow impacts to the park, although their shadows would be somewhat different.

HISTORIC RESOURCES

Similar to conditions with the proposed research building, the MBP research building could result in construction-related impacts to the Church of St. Catherine of Siena. The same mitigation measure—a construction protection plan—would be employed to avoid this impact. The new shadows on the church's east-facing, stained-glass windows during the morning would cover most if not all of the windows that are not currently in shadow. To mitigate this impact, MSKCC would provide lighting to the east-facing windows to replace the sunlight lost in the morning.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

As with the proposed actions, the MBP research building would have a much greater presence at the streetwall of East 68th and 69th Streets. However, with the reduction in height, compared to the proposed research building, the MBP Alternative would have less potential to adversely impact the urban design of the project site through the introduction of new, more dense development onto the north block.

Development on the main campus block would be reduced by 100,000 square feet. With the new hospital tower along First Avenue and the height of midblock development limited to 175 feet, this alternative would substantially reduce the proposed project's overall impact on density in the midblock. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the Smaller Alternative.

NEIGHBORHOOD CHARACTER

With the MBP Alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. As with the proposed actions, a potential impact could occur, but a construction protection plan would be required to

avoid construction-related impacts to St. Catherine's Church. There would be a new, but shorter, tower adjacent to the small-scale St. Catherine's Church. There would the somewhat less new activity in the area in 2007, but much less in 2011. The increase in traffic from the smaller research building would be less than that of the proposed research building, but at full build-out there would be much less traffic generated as compared to conditions in 2011 with the proposed actions. Similar to conditions with the proposed actions, with an (E) designation there would be no noise impacts on interiors of new construction in the rezoning area. Overall, as compared to conditions with the proposed actions, this alternative would have a lesser impact or no impact on elements of neighborhood character in the 2011 analysis year.

HAZARDOUS MATERIALS

This alternative would have the same potential for hazardous materials impacts as the proposed project and would require the same mitigation measures.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase far less than with the proposed actions. However, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The MBP Alternative would result in less development than the proposed actions in 2007 (see Table 18-6). This alternative would result in 17 fewer vehicle trips than the proposed actions during the AM and PM peaks, and the same number of vehicle trips during the midday peak. Similar to conditions with the proposed actions, there would be a need for traffic mitigation associated with MSKCC operations. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking.

Under the MBP Alternative, in 2011 there would be no new development on the south block, and new trips generated from the north block would be the same as in 2007. Development on the main campus block would result in fewer trips than with the proposed actions (see Table 18-5). In 2011, the MBP Alternative would result in 26, 8, and 29 fewer vehicle trips than the proposed actions during the AM, midday, and PM peak periods, respectively. There would be fewer impacted locations during the AM, midday, and PM peaks, respectively, than with the proposed actions. The need for traffic mitigation associated with MSKCC operations would be reduced as compared to the proposed actions. Again, the increase in demand for parking would be less than with the proposed actions, but like the proposed actions, there would be no significant adverse impact to parking.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes over No Action conditions under the MBP Alternative. In 2007, this alternative would generate 96, 49, and 99 fewer pedestrian trips than the proposed actions during the AM, midday, and PM peak periods, respectively. In 2011, the MBP Alternative would result in 140, 100, and 161 fewer pedestrian trips than the proposed action during the AM, midday, and PM peak periods, respectively. Like the proposed actions, the MBP Alternative would not result in any significant adverse pedestrian impacts.

Table 18-6
Comparison of Proposed Actions with Manhattan Borough President's Alternative - 2007

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
Manh. Boro. President's Alternative	41	4	6	1	106	9	35	4	43	13	231	32	262
- Proposed Actions	57	5	9	1	147	12	49	5	59	14	321	37	358
Difference	-16	-1	-3	-0	-41	-3	-14	-1	-16	-1	-90	-5	-96
Weekday MD Peak Hour													
Manh. Boro. President's Alternative	1	1	0	0	1	1	1	1	47	84	50	87	136
- Proposed Actions	1	1	0	0	1	1	1	1	64	115	67	118	185
Difference	0	0	0	0	0	0	0	0	-17	-31	-17	-31	-49
Weekday PM Peak Hour													
Manh. Boro. President's Alternative	8	40	2	6	21	101	9	33	16	43	56	223	279
- Proposed Actions	11	55	2	9	28	140	11	45	19	58	71	307	378
Difference	-3	-15	-0	-3	-7	-39	-2	-12	-3	-15	-15	-84	-99

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
Manh. Boro. President's Alternative	32	3	5	5	5	5	42	13	55
- Proposed Actions	44	4	7	7	5	5	56	16	72
Difference	-12	-1	-2	-2	0	0	-14	-3	-17
Weekday MD Peak Hour									
Manh. Boro. President's Alternative	1	1	0	0	5	5	6	6	12
- Proposed Actions	1	1	0	0	5	5	6	6	12
Difference	0	0	0	0	0	0	0	0	0
Weekday PM Peak Hour									
Manh. Boro. President's Alternative	7	31	5	5	3	3	15	39	55
- Proposed Actions	9	43	7	7	3	3	19	53	72
Difference	-2	-12	-2	-2	0	0	-4	-14	-17

Table 18-6 (continued)
Comparison of Proposed Actions with Manhattan Borough President's Alternative - 2011

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
Manh. Boro. President's Alternative	124	11	23	3	278	19	98	9	118	18	640	61	701
- Proposed Actions	146	13	28	3	336	24	118	10	141	21	772	70	841
Difference	-22	-2	-5	-0	-58	-5	-20	-1	-23	-3	-132	-9	-140
Weekday MD Peak Hour													
Manh. Boro. President's Alternative	48	26	16	9	30	17	26	14	142	223	262	288	550
- Proposed Actions	55	30	18	10	34	19	29	16	170	268	307	343	650
Difference	-7	-4	-2	-1	-4	-2	-3	-2	-28	-45	-45	-55	-100
Weekday PM Peak Hour													
Manh. Boro. President's Alternative	53	123	16	24	70	267	37	95	48	117	225	626	851
- Proposed Actions	63	147	18	29	82	322	43	113	55	140	261	751	1012
Difference	-10	-24	-2	-5	-12	-55	-6	-18	-7	-23	-36	-125	-161

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
Manh. Boro. President's Alternative	93	8	18	18	9	9	120	13	156
- Proposed Actions	112	10	21	21	9	9	142	40	182
Difference	-19	-2	-3	-3	0	0	-22	-27	-26
Weekday MD Peak Hour									
Manh. Boro. President's Alternative	30	17	12	12	8	8	50	37	87
- Proposed Actions	34	19	13	13	8	8	55	40	95
Difference	-4	-2	-1	-1	0	0	-5	-3	-8
Weekday PM Peak Hour									
Manh. Boro. President's Alternative	37	93	24	24	5	5	66	122	189
- Proposed Actions	43	111	27	27	5	5	75	143	218
Difference	-6	-18	-3	-3	0	0	-9	-21	-29

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result in 44, 0, and 46, fewer subway and 15, 0, and 14 fewer bus trips during the AM, midday, and PM peaks than the proposed actions. Unlike the proposed actions, there would not be an impact to the northeast subway stair in 2007. No subway mitigation would be required with either this alternative or the proposed actions in 2007. In 2011, there would be 63, 6, and 67 fewer subway trips and 21, 5, and 24 fewer bus trips during the AM, midday, and PM peak periods, respectively. Overall, the impacts of this alternative would be the same as for the proposed actions, and mitigation at the northeast and southeast subway stairs at the East 68th Street Station would be required in 2011.

AIR QUALITY

With the MBP Alternative, the increases in the 8-hour carbon monoxide concentrations expected from the proposed actions, none of which are significant, would be comparable in 2007, since project-generated traffic volumes would be lower. No violations of the NAAQS are expected to occur either under the MBP Alternative or with the proposed actions by 2007, and both would be consistent with the SIP.

In 2011 with the MBP Alternative, the insignificant increases in the 8-hour carbon monoxide concentrations resulting from the proposed actions, none of which are significant, would be less since project-generated traffic volumes would be lower with this alternative. No violations of the NAAQS are predicted to occur either under the MBP Alternative or with the proposed actions, and both would be consistent with the SIP.

In addition, in 2007 and 2011 with the MBP Alternative, due to the shorter research building, additional measures may be required to avoid potential significant health effects from the exhaust system of the laboratories on any MSKCC campus buildings and the surrounding community. Such measures may include, but would not be limited to, changes to the design of the mechanical systems that would modify exhaust parameters to reduce emissions.

NOISE

Both with the MBP Alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. With both the Smaller Alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. Similar to the proposed actions, this alternative would include an (E) designation for noise in the rezoning area.

CONSTRUCTION IMPACTS

The MBP Alternative would have temporary construction impacts similar to the proposed actions. The duration and phasing of construction activities would be comparable to that of the proposed actions on the north block. On the main campus block they would also be similar. However, there would be no construction in the south block. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

I. CIVITAS ALTERNATIVE*

OVERVIEW

During the public review process, CIVITAS, stating that it was not opposed to MSKCC building a research building at the proposed location, proposed an alternative research building to be built under existing zoning. CIVITAS did not consider any further development on the main campus block. The alternative presented below represents CIVITAS' most recent submission in a letter dated October 18, 2001 (see Figures 18-10 and 18-11).

According to the materials submitted, the CIVITAS Alternative would have 520,000 square feet of floor area, similar to MSKCC's proposed research building. However, its height would be limited to approximately 320 feet on 68th Street facing the main block of the MSKCC campus. On 69th Street it would rise 9 levels or approximately 160 feet.

PURPOSE AND NEED

The intent of the CIVITAS Alternative is to create a research building under the existing R8 zoning that meets the programmatic needs of MSKCC. CIVITAS believes that this alternative would be more in keeping with the lower midblock densities intended by zoning. However, the CIVITAS Alternative would require BSA approvals for major bulk waivers and variances. These would include some form of variance to increase allowable floor area from 6.5 to 8.2 (8.6 with church and rectory), a variance for 100 percent lot coverage, a variance to waive rear yards and rear yard equivalents in their entirety for the entire height of the building, and modification of height and setback.

MSKCC believes that this alternative does not meet its objectives for several reasons. First, there would be no further development allowed on the main campus block, reducing MSKCC's ability to plan for a new hospital once the research building is completed.

With regard to the research building and its program, CIVITAS states that its alternative would only provide 260,000 square feet in the first phase of development, as compared to MSKCC's proposed first phase which would provide 425,000 square feet. (It should be noted that CIVITAS did not provide floor area calculations; and the drawings do not appear to support 260,000 square feet in the first phase.) Therefore, in the first phase of construction, the CIVITAS Alternative would not accommodate the program for replacing space in the Kettering Building in full, would not replace outdated laboratory space in the Schwartz Building, and would not supplement undersized laboratory facilities in the Rockefeller Research Laboratory. Further, it would not provide the badly needed space for recruitment or expansion of programs.

In addition, the floor areas provided with the CIVITAS Alternative do not appear to provide for any floor area for mechanical space. Therefore, floors could have to be added for mechanical space. Otherwise, the CIVITAS Alternative would actually provide less floor area than the proposed laboratory building.

MSKCC believes that the laboratory floor plates that would be provided in the completed building would have inefficient layouts and would not serve the intended research programs. The laboratories in the tower (first phase of construction), as proposed, require a floor plate that is essentially 122 feet wide by 200 feet deep. MSKCC believes that removing six floors from the

* This section is new to the FEIS.

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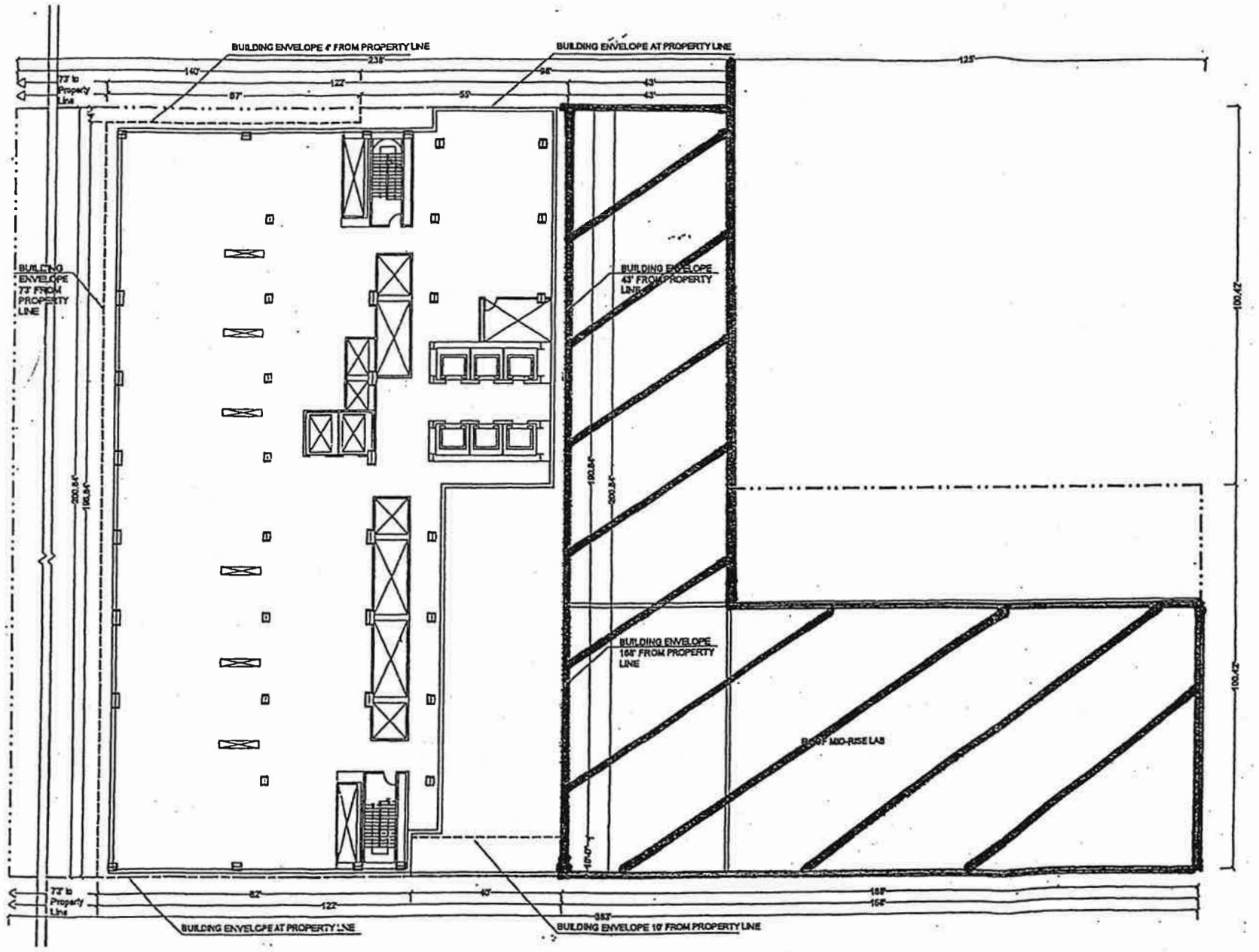

CIVITAS Alternative

FIGURE 18-10

MEMORIAL SLOAN-KETTERING CANCER CENTER

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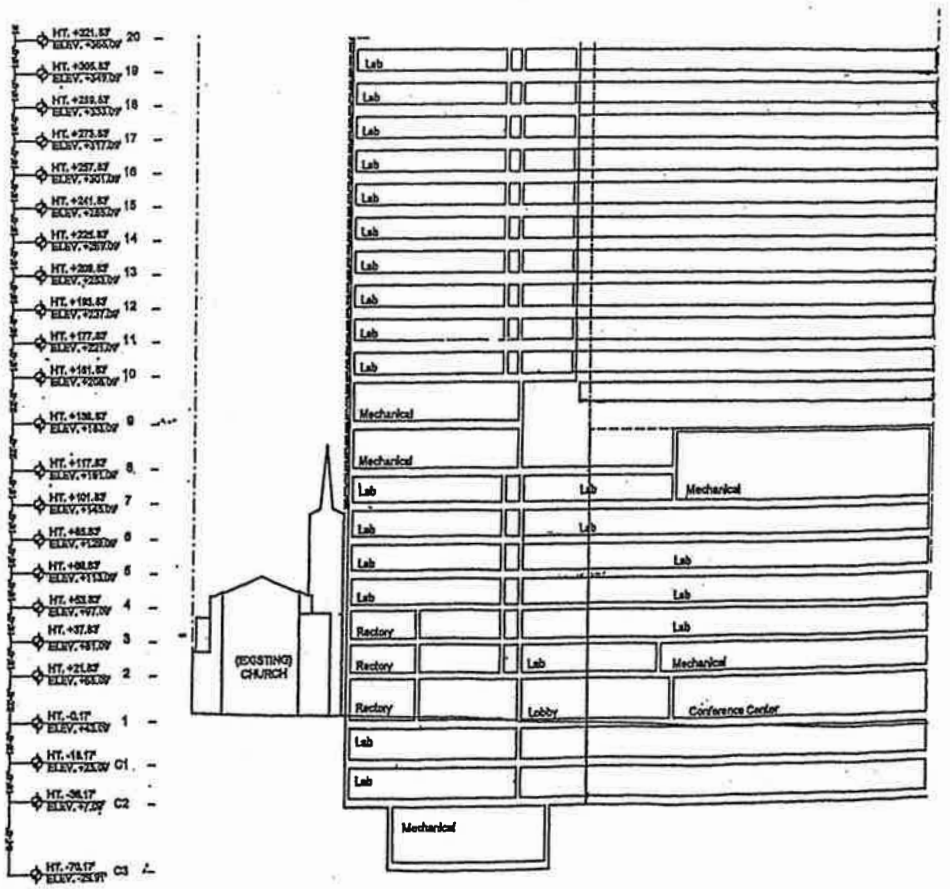

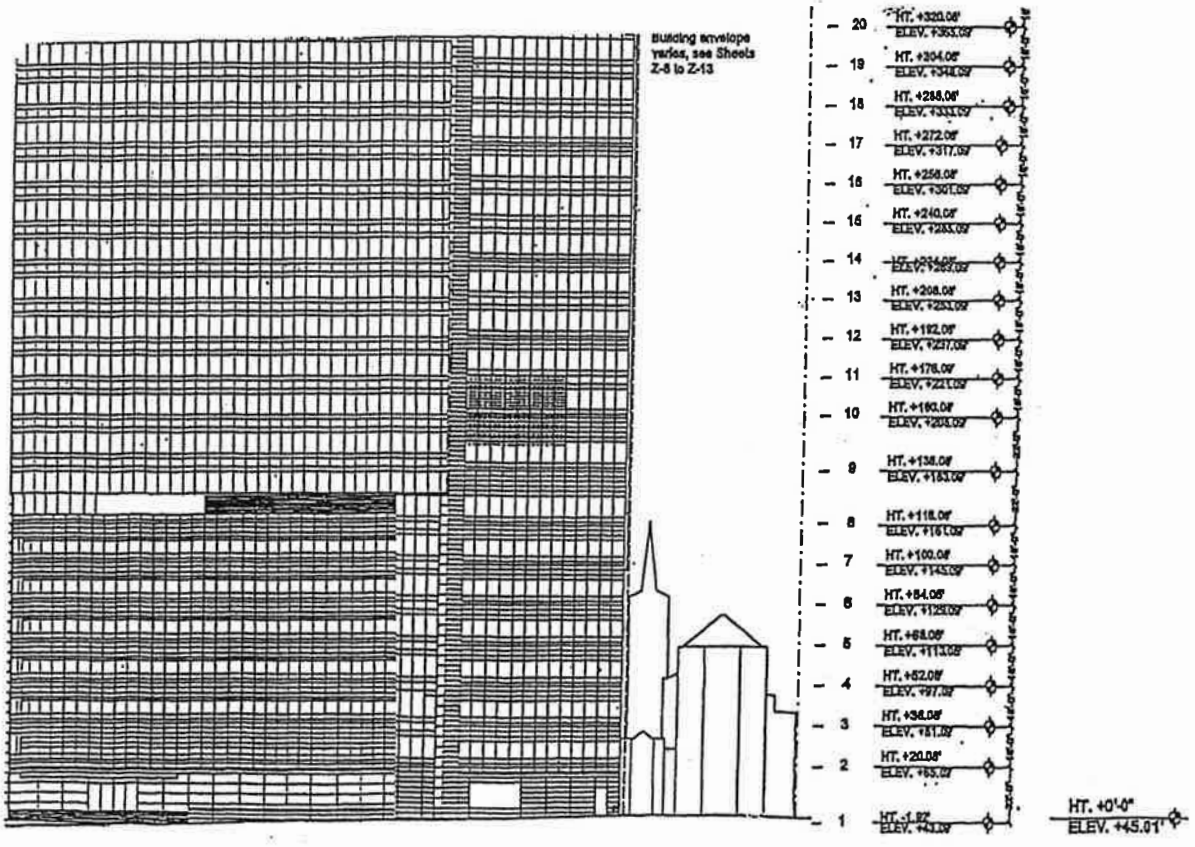

CIVITAS Alternative

FIGURE 18-11

top of the building and distributing this floor area to lower floors would not produce efficient functional layouts.

Overall, MSKCC does not believe that the CIVITAS Alternative represents a viable alternative.

LAND USE, ZONING, AND PUBLIC POLICY

With the CIVITAS Alternative, as with the proposed actions, the St. Catherine's Church Rectory and the Kettering Building would be demolished. The sites of the these two buildings as well as the vacant lot on East 69th Street that was the site of St. Catherine's School would be redeveloped with a new research building by 2007. MSKCC believes that this alternative would be a less useful expansion and enhancement of an already important land use in the study area, medical facilities, as compared to the proposed actions.

In the 2011 analysis year there would be no additional development on the main campus block.

There would be a number of BSA actions but no rezoning and no other CPC actions. The BSA actions would include some form of variance to increase allowable floor area from 6.5 to 8.2 (8.6 with church and rectory), a variance for 100 percent lot coverage, a variance to waive rear yards and rear yard equivalents in their entirety for the entire height of the building, and modification of height and setback. Existing zoning on the two midblocks between 67th and 69th Streets would remain R8.

SOCIOECONOMIC CONDITIONS

If the CIVITAS Alternative is assumed to provide the same floor area and program area as the proposed research building, the economic benefits realized during the construction and operation of the CIVITAS research building would be similar to those with the proposed research building. There would be similar direct or generated construction employment and income; and the city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be also be similar. The same number of new workers would come to the site.

As there would be no development on the main campus block, the CIVITAS Alternative would not generate any of the economic benefits associated with development in that block. Overall, this alternative would generate substantially less economic activity and city and state revenues.

COMMUNITY FACILITIES

The CIVITAS Alternative would create a new research building but no new development on the main campus block. It would increase the worker population by a much smaller number and it would bring no new patients and visitors to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

However, with this alternative, MSKCC believes that it would have substantially diminished ability to plan for its future needs. Overall, MSKCC believes that it would be less able to perform research and provide treatment and care for its patients than it would be with the proposed actions.

OPEN SPACE AND RECREATIONAL FACILITIES

Under this alternative, the research building is assumed to accommodate the same program area and have the same staff as the proposed research building. However, by being substantially shorter its shadow on St. Catherine's Park would be reduced. In 2007 there would be no new residents in the north block or workers not associated with MSKCC because there would be no rezoning to allow further development of non-MSKCC properties.

The decrease in the worker open space ratio would be 1.5 percent (or a decrease of less than 0.01 acres of passive open space per 1,000 workers). The decrease in the overall passive open space ratio would be 0.7 percent. Overall, neither the proposed actions nor the CIVITAS Alternative would have an impact on open space in 2007.

With the CIVITAS Alternative, there would be no further development beyond 2007. Therefore, open space conditions would be the same as in 2011, and the unmitigated open space impacts attributed to the proposed action would not occur.

SHADOWS

With the CIVITAS Alternative the research building would be approximately 320 feet tall on 68th Street at its southwest corner, which is nearest St. Catherine's Park. This would be 80 feet lower than the parapet of the proposed research building. The increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007 would be substantially reduced.

Since there would be no development in the main campus block, there would be no additional shadows later in the morning with the CIVITAS Alternative.

HISTORIC RESOURCES

Similar to conditions with the proposed research building, construction of the CIVITAS research building could impact St. Catherine's Church and would require mitigation—a construction protection plan to avoid construction-related impacts to the church. As with the proposed actions, new shadows on the church's east-facing, stained-glass windows during the morning would cover most if not all of the windows that are not currently in shadow. Also like the proposed project, this impact would be mitigated by providing lighting to the windows.

No other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

Unlike the proposed research building, which would have a tower with no setbacks rising to a height of 420 feet, the CIVITAS Alternative would have a 140-foot-high streetwall along 69th Street and a 322-foot-high streetwall along 68th Street (see Figure 18-12). Although the height would be reduced as compared to the 420-foot-tall research tower, the FAR would be the same for both this alternative and the proposed research building. Similarly, the lower wing along 69th Street may be more in keeping with the heights of typical midblock buildings, but this alternative would not reduce the density of development on the site. Further, the streetwall along 68th Street would be 322 feet by 290 feet, which would have a significant adverse impact in terms of density.

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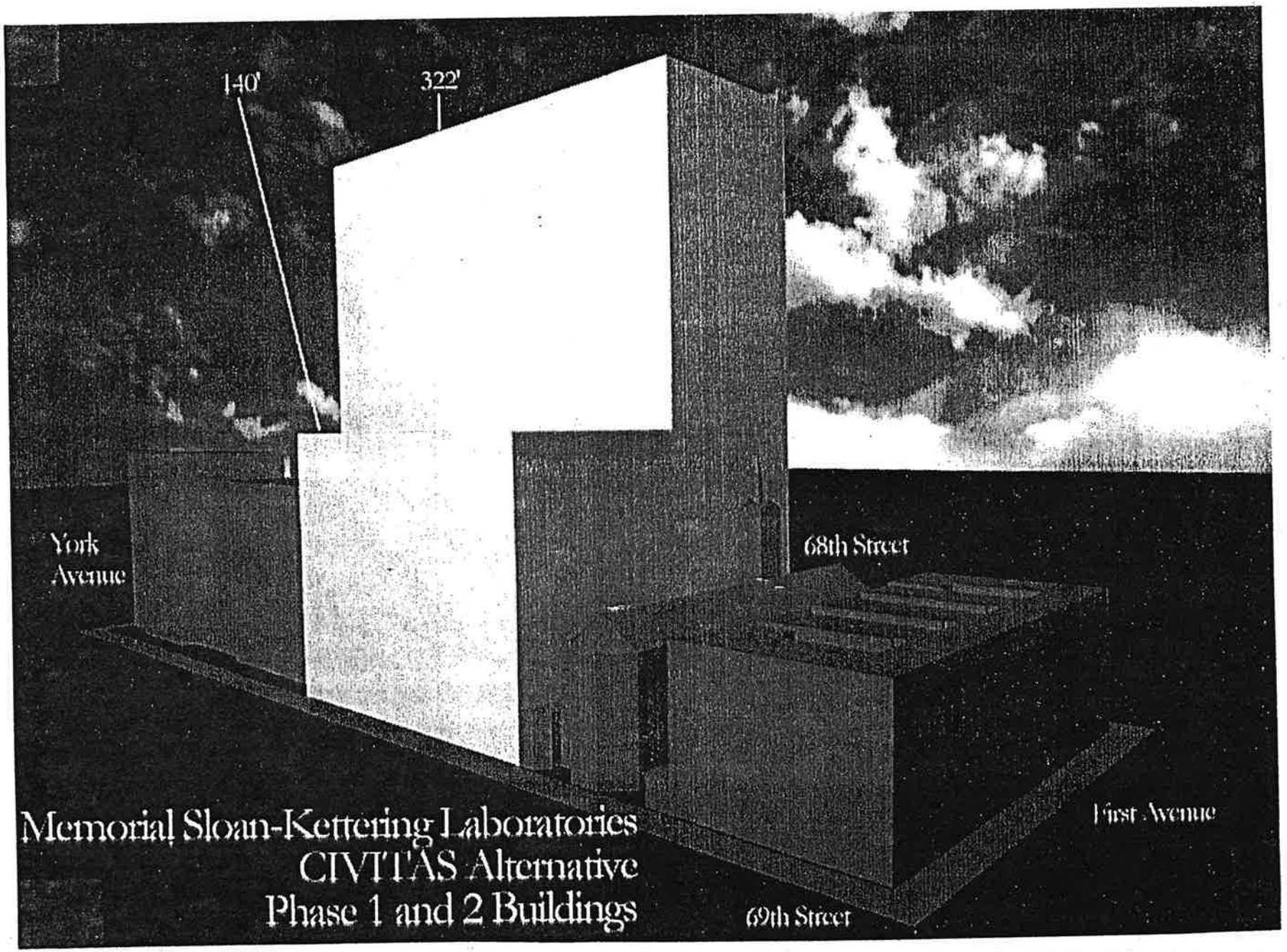

CIVITAS Alternative

FIGURE 18-12

With no development on the main campus block, the CIVITAS Alternative would reduce the overall impact on density in the midblock compared to the proposed actions. As with the proposed actions, existing view corridors would not be altered in 2007 or 2011 by the CIVITAS Alternative. Although this alternative would have less of an impact on urban design than the proposed actions, MSKCC does not believe that this alternative meets its programmatic needs.

NEIGHBORHOOD CHARACTER

With the CIVITAS Alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. As with the proposed actions, a construction protection plan would be required to avoid construction-related impacts to St. Catherine's Church. There would be new, but shorter and wider facades adjacent to the small scale St. Catherine's Church. This alternative would have lesser overall impacts to urban design. Like the proposed actions, this alternative would result in an open space impact in 2007, but would not have any of the additional effects associated with the proposed actions in 2011. There would be similar new activity in the area in 2007, but much less in 2011. The increase in traffic from the research building would be the same as that of the proposed research building, but at full build-out there would be much less traffic generated as compared to conditions in 2011 with the proposed actions. An (E) designation would only be applied to the research building site. Overall, as compared to conditions with the proposed actions, this alternative would have a lesser impact on neighborhood character in the 2011 analysis year.

HAZARDOUS MATERIALS

Like the proposed actions, this alternative would have the potential to disturb hazardous materials. Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished would be removed in accordance with all applicable city, state and federal regulations. However, because this alternative would be as-of-right, no mechanism (in the form of a Restrictive Declaration) would be in place for a Phase II investigation of the Kettering site, and any potential impacts would be unmitigated.

All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations, as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, demands on local utility systems, including water supply, solid waste and recycling, and energy, would increase far less than with the proposed actions. However, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The CIVITAS Alternative would result in the same development as the proposed actions in 2007. Similar to conditions with the proposed actions, there would be a need for traffic mitigation associated with MSKCC operations at 3, 0, and 5 intersections during the AM, midday, and PM peaks, respectively. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking with the CIVITAS Alternative.

Under the CIVITAS Alternative, there would be no new development on the main campus block and therefore no additional changes in study area traffic and parking conditions due to MSKCC

activities. Impacts attributed to the proposed actions in 2011 would, therefore, not occur, and mitigation for those impacts would not be needed.

PEDESTRIANS AND TRANSIT

In 2007, this alternative would generate the same pedestrian trips as the proposed actions. However, there would be no additional increase in pedestrians since there would be no further development on the main campus block. Like the proposed actions, the CIVITAS Alternative would not result in any significant adverse pedestrian impacts.

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result in the same subway and bus trips as the proposed actions and the same subway impact that would not require mitigation as with the proposed actions. However, with no further development, MSKCC would not add more transit trips in 2011. Therefore, unlike the proposed actions, no mitigation would be required at the northeast and southeast stairs in 2011.

AIR QUALITY

With the CIVITAS Alternative, the increases in the 8-hour carbon monoxide concentrations expected from the proposed actions, none of which are significant, would be the same in 2007, since project-generated traffic volumes would be the same. No violations of the NAAQS are expected to occur either under the CIVITAS Alternative or with the proposed actions by 2007, and both would be consistent with the SIP.

With the shorter CIVITAS research building additional measures may be required to avoid potential significant adverse impacts from the exhaust system of the laboratories on the surrounding community. Such measures may include, but would not be limited to, changes to the design of the mechanical systems that would modify exhaust parameters to reduce emissions.

NOISE

Both with the CIVITAS Alternative and the proposed actions, noise levels in the study area would not be significantly increased compared to existing levels in 2007. With both the CIVITAS Alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. As with the proposed actions, this alternative would only require an (E) designation for noise for the research building.

CONSTRUCTION IMPACTS

The CIVITAS Alternative would have temporary construction impacts similar to the proposed actions. The duration and phasing of construction activities would be comparable to that of the proposed actions on the north block. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts.

J. ALTERNATIVE LOCATIONS*

During the public review, several alternative locations were proposed for the research building. As described below, none of the other locations mentioned met MSKCC's goals for the project and none are deemed practicable by MSKCC.

- Avenue sites or other sites owned or controlled by MSKCC in Manhattan.

  Figure 18-13 illustrates the properties solely owned by MSKCC on the upper East Side of Manhattan. As can be seen by comparing the relative sizes of the site of the proposed laboratory building to the other sites, it is the largest except the main campus block and the south block of MSKCC. MSKCC believes that it is not feasible to demolish a sufficiently large portion of the main campus block to develop the proposed research building; this would remove actively used diagnostic and treatment facilities or inpatient hospital facilities. Nor does MSKCC believe that it is feasible to demolish a sufficiently large portion of the south block because the Rockefeller Research Laboratory occupies more than half this site. Given that the constraints of the proposed research building site produce a building of 23 stories, development on any of the smaller sites would produce smaller and what MSKCC believes to be less efficient floor plates.

  If the research facility were to be built on any of the other sites on the Upper East Side, impacts would likely be similar to those with the proposed building. Further, it can be assumed that the site of the proposed research building would be developed for a different use. Development could be for a range of uses from the R8 As-of-Right Mixed Use Alternative or to an ambulatory care facility (outpatient clinic) which could have 560 staff, 900 patients daily, and 2,250 visitors accompanying or meeting patients daily (see Table S-3 Phase 2—South Block Population Estimates for MSKCC in the DEIS).

- Long Island City.

  Locations in Long Island City, even with ferry connections, would not satisfy the needs of translational research. A location in Long Island City would be too far away from the main campus block and the inpatient hospital to meet the needs of translational research, which requires a close bench-to-bed relationship. Specifically, translational research involves clinicians (medical doctors who are treating patients) also working as, or working closely with, research scientists developing new treatments in laboratories that can then be taken directly to the patients. Over the years MSKCC has tried to accomplish this type of research at remote locations. None were successful and MSKCC was forced to close each in spite of the major investments that had been made. Translational research relies on face-to-face communication and interaction among clinicians, scientists, and patients.

  Long Island City has been considered for the development of commercial biotech laboratories. While biotech laboratories do depend on relatively proximate major teaching hospitals, as commercial operations they do not generally share staff closely.

  Again, if the proposed research building could be developed in Long Island City, the proposed site in the north block would be developed and development could range from a mixed-use building to an ambulatory care facility.

- Roosevelt Island.

* This section is new to the FEIS.

Similar to a location in Long Island City, MSKCC believes that a location on Roosevelt Island would be too distant from the MSKCC campus to serve for translational research. Further, the Roosevelt Island plan does not call for such a use. Even if this remote location were acceptable to MSKCC, it would involve amendment of the current plan for Roosevelt Island.

If development of a research facility were to occur on Roosevelt Island, the proposed site of the research facility in the north block would be redeveloped, and a range of uses, described above, would be possible.

K. REDUCED MAIN CAMPUS BLOCK DEVELOPMENT ALTERNATIVE*

This alternative is the same as the proposed actions except for the amount of new floor area assumed on the main campus block.

While the main campus block would be rezoned to R9, this alternative assumes that only 125,000 square feet of additional floor area is developed without additional review and approval by CPC. This area could be used by MSKCC for one or more small projects similar to the infill/infrastructure project currently under construction on the main campus. However, it would not be sufficient for construction of a new inpatient hospital which would be expected to be over 600,000 square feet in size (see Chapter 1, "Project Description"). It is assumed that this area would be used as diagnostic and treatment space. Based on a population estimate of 388 staff, 530 patients and 1,400 visitors for 161,600 square feet of diagnostic and treatment space with the proposed actions, the potential population of this 125,000 square feet would be 302 staff, 413 patients and 1,092 visitors. (This is a total of 466 fewer staff, 130 fewer inpatients, 117 fewer diagnostic and treatment patients, and 698 fewer visitors than the proposed actions would bring to this block.)

The physical form of this 125,000 square feet is not defined, but it is expected that it could be developed in a form similar to the infill/infrastructure project which is essentially filling voids in the midblock of the main campus block.

This alternative would require all the same actions and approvals as the proposed project as well as some form of limitation on development in the main block. Use of the additional floor area generated by the rezoning and the transfer of floor area from the north block would require additional review and approval by CPC.

In 2007 this alternative would be the same as the proposed actions. At full build-out, this alternative would reduce the impacts associated with population. Since it would not create a major new structure, the urban design and shadow effects would be reduced as would the economic benefits.

LAND USE, ZONING, AND PUBLIC POLICY

Land use impacts would be similar and the rezoning would take place as proposed. However, the floor area of the midblock of the main campus block available for use without additional review and approval by CPC would be far less than with the proposed project.

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* This section is new to the FEIS.

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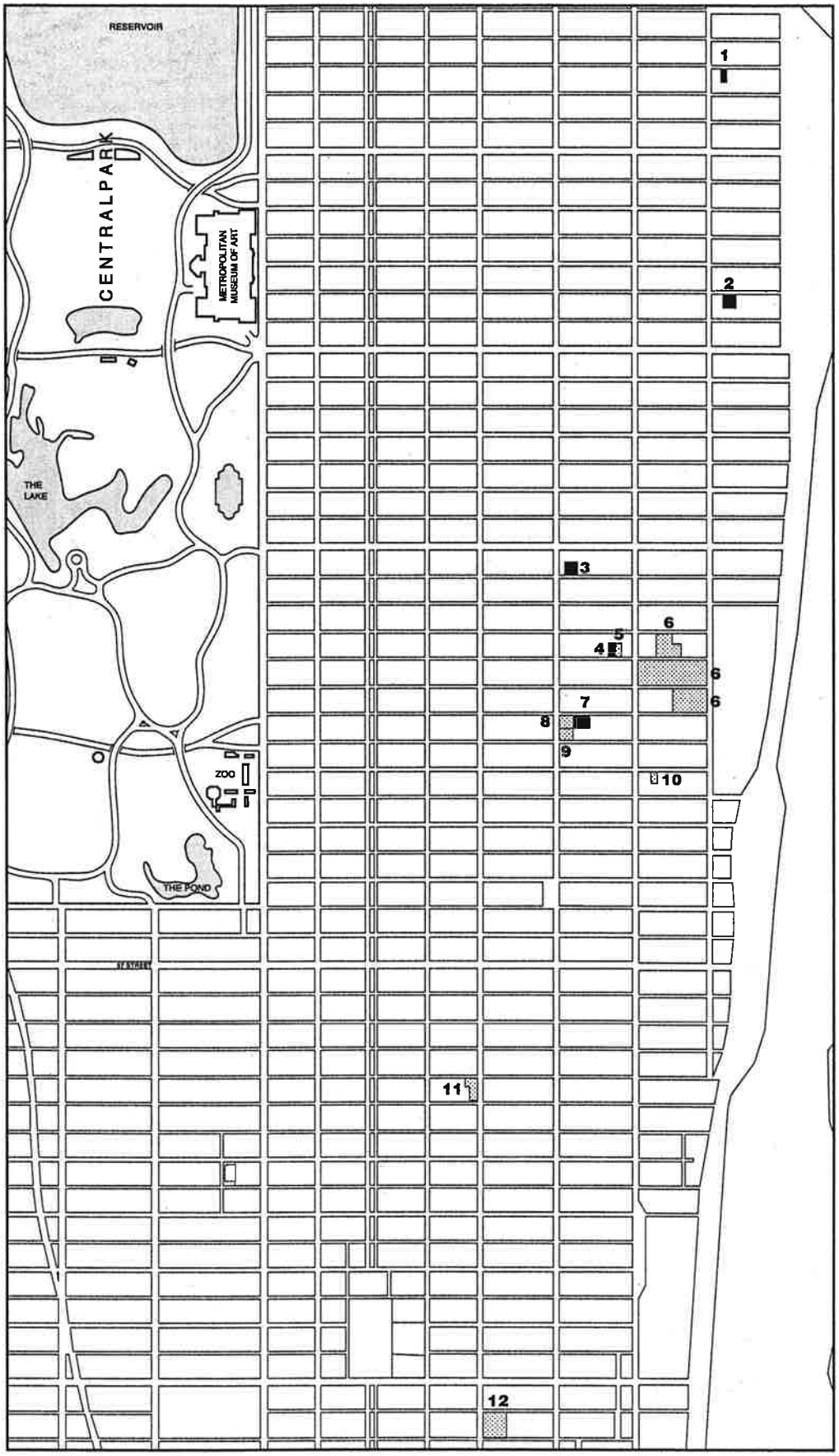

KEY

MSKCC Owned Properties (Residential)

MSKCC Owned Properties (Community Facilities)

504 East 89st Street	1
504 East 81st Street	2
303 East 71st Street	3
345 East 68th Street	4
353 East 68th Street	5
MSKCC Community Facility Campus	6
306-318 East 66th Street	7
1246 Second Avenue	8
303 East 65th Street	9
402 East 64th Street	10
160 East 53rd Street	11
633 Third Avenue	12

MSKCC - Owned Properties

FIGURE 18-13

SOCIOECONOMIC CONDITIONS

The economic benefits realized during the construction and operation of this alternative would be less than those anticipated with full build-out of the proposed project. There would be less direct or generated construction employment and income; and the city and state revenue resulting from the construction employment, income, and activity would be less. Employment resulting from construction expenditures, including jobs from business establishments providing goods and services to contractors, would be less.

At full build-out this alternative is estimated to provide 466 fewer jobs than development with the proposed actions. Overall, this alternative would generate fewer economic benefits.

COMMUNITY FACILITIES

This alternative would result in the same research building as with the proposed actions, but less new construction on the main campus block. It would increase the worker population by a smaller number and it would bring fewer new patients and visitors to the project site. Neither this alternative nor the potential development with the proposed actions would result in any adverse impacts on the ability of the New York City Police Department or the New York City Fire Department to provide adequate routine services in the area.

With this alternative, MSKCC would continue to have the ability to plan for future needs, subject to the need to seek additional reviews and approval by CPC.

OPEN SPACE AND RECREATIONAL FACILITIES

The population associated with this alternative would be the same as with the proposed actions in 2007. This alternative would have the same shadows on St. Catherine's Park as compared to the proposed project. Overall, in 2007 neither this alternative nor the proposed actions would have an open space impact.

In 2011, the open space user population on the main campus block would be greatly reduced. There would be no additional new shadow on St. Catherine's Park from the relatively low structure in the midblock. With this alternative, there would be approximately 466 fewer workers in the study area in 2011. There would be a 2.6 percent decrease in the open space ratio, compared to a 3.5 percent decrease with the proposed actions. The percent decrease in the overall passive open space ratio would be 1.3 percent as compared to 2.7 percent with the proposed actions. The potential impact on open space would be less under this alternative compared to the proposed actions, but would still constitute a significant adverse impact. As with the proposed actions, the impact would be unmitigable.

SHADOWS

The increase in early morning shadows on St. Catherine's Park in the spring, summer, and fall in 2007 would be the same as with the proposed project. The duration of shadow increment on the park would be the same as that of the proposed research building.

In 2011 under this alternative there would be no additional increase in shadows on the park.

HISTORIC RESOURCES

This alternative would have the same historic resource impacts and require the same mitigation measures for those impacts as the proposed actions. Similar to conditions with the proposed

actions, the research building could have an adverse impact on St. Catherine's Church during construction. As with the proposed actions, mitigation to avoid this impact would be a construction protection plan. New shadows on the church's east-facing, stained-glass windows during the morning would cover most if not all the windows that are not currently in shadow. To mitigate this impact, which would occur with either this alternative or the proposed actions, lighting could be provided to the east-facing windows to replace the sunlight lost in the morning. Similar to the proposed actions, no other historic resources would be affected by MSKCC's actions with this alternative or the proposed actions.

URBAN DESIGN AND VISUAL RESOURCES

Since the research building in the Reduced Main Campus Block Development Alternative would be the same as the proposed project, it would have the same adverse impact on urban design in 2007. As with the proposed actions, this impact would be unmitigable.

In 2011, development on the main campus block would be far less than with the proposed actions. There would be no major new structure of 390,000 square feet, but rather portions of the midblock would be infilled with up to 125,000 square feet. With a midblock area of approximately 83,000 square feet, this would be the equivalent of adding less than two floors across the midblock. As compared to the proposed actions, this would not significantly increase the midblock density in this block. Overall this alternative would have a lesser impact on urban design than with the proposed actions. The impact, combined with the impact of the proposed research facility, would constitute a significant adverse impact. As with the proposed actions, the impact would be unmitigable. As with the proposed actions, this would have no impact on visual resources or view corridors.

NEIGHBORHOOD CHARACTER

With this alternative, the development site in the north block would be redeveloped to expand and improve an existing land use in the area, medical facilities. As with the proposed actions, a construction protection plan would be needed to mitigate construction-related impacts to St. Catherine's Church. Views to the east-facing stained-glass windows of St. Catherine's Church would be blocked except at its north end. Morning sunlight to those windows would be largely lost. There would be a new and taller tower adjacent to the small-scale St. Catherine's Church. Compared to the proposed actions, there would more new activity in the area in 2007, but much less in 2011. The increase in traffic from the research building would be the same as with the proposed project but less at full buildout. Similar to conditions with the proposed actions, with an (E) designation there would be no noise impacts on interiors of new construction in the rezoning area. Overall, as compared to conditions with the proposed actions, this alternative would have a lesser impact on elements of neighborhood character in the 2011 analysis year. As with the proposed actions, the impacts could be considered significant and adverse and would be unmitigable.

HAZARDOUS MATERIALS

Like the proposed actions, this alternative would have the potential to disturb hazardous materials. Asbestos-contaminated-materials and lead-based paint believed to be present in the existing buildings to be demolished (St. Catherine's Church Rectory and the Kettering Building) would be removed in accordance with all applicable local, state and federal regulations. As with the proposed project, potential construction related impacts could occur as a result of

development of the Kettering site. The impacts could be mitigated by the same mechanism (a Restrictive Declaration on the property) requiring prior to excavation a Phase II subsurface investigation to determine if contamination exists. If necessary, remediation would be undertaken. The protocol and remediation plan would be reviewed and approved by the New York City Department of Environmental Protection (DEP) as specified in the Restrictive Declaration. All hazardous chemicals and other hazardous materials would continue to be handled, stored and disposed of in accordance with all applicable federal, state and local regulations as they are now and as they would be with the proposed actions and anticipated development.

INFRASTRUCTURE

Under this alternative, the increase in demands on local utility systems, including water supply, solid waste and recycling, and energy, would be the same in 2007, and far less in 2011 than with the proposed actions. However, even with the proposed actions and anticipated development, there would not be any adverse impacts.

TRAFFIC AND PARKING

The Reduced Main Campus Block Development Alternative would result in the same floor area and the same number of vehicle trips as the proposed actions in 2007 (see Table 18-6). Similar to conditions with the proposed actions, there would be the same impacts and a need for traffic mitigation associated with MSKCC operations. There would also be an increase in demand for parking, but like the proposed actions, there would be no significant adverse impact to parking.

In 2011, trips to the main campus block would be fewer that with the proposed project. Assuming there are more trips to the north block, this alternative would result in 60, 30, and 70 fewer vehicle trips during the AM, midday, and PM peak hours, respectively, than the proposed project in 2011, as shown in Table 18-7. In 2011, there would be impacts at 7, 7, and 9 intersections with this alternative (as shown in Table 18-8), as compared to 9, 8, and 11 intersections with the proposed actions during the AM, midday, and PM peaks.

With this alternative, there would not be impacts at the following locations, as there would be with the proposed actions:

- York Avenue and East 62nd Street (AM and PM peaks);
- York Avenue and East 63rd Street (midday peak);
- York Avenue and East 72nd Street (AM peak); and
- Second Avenue and East 69th Street (PM peak).

As described below, traffic mitigation would be similar to the proposed actions. The increase in demand for parking would also be less than with the proposed conditions, and like the proposed actions, there would be no significant adverse impact to parking.

LEVELS OF SERVICE—2011 FUTURE WITH THE REDUCED MAIN CAMPUS BLOCK DEVELOPMENT ALTERNATIVE

Table 18-8 presents a comparison of 2011 No Action and future conditions with the Reduced Main Campus Block Alternative for the weekday AM, midday, and PM peak hours. Locations that have notable service problems of LOS E or worse or v/c ratios greater than 0.9 are listed below, with the levels of service projected for future conditions with The Reduced Main Campus Block Development Alternative in 2011.

Table 18-7
Comparison of Proposed Actions with Reduced Main Campus Block Development Alternative - 2007

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
Reduced Main Campus Block Development Alternative	57	5	9	1	147	12	49	5	59	14	321	37	358
- Proposed Actions	57	5	9	1	147	12	49	5	59	14	321	37	358
Difference	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekday MD Peak Hour													
Reduced Main Campus Block Development Alternative	1	1	0	0	1	1	1	1	64	115	67	118	185
- Proposed Actions	1	1	0	0	1	1	1	1	64	115	67	118	185
Difference	0	0	0	0	0	0	0	0	0	0	0	0	0
Weekday PM Peak Hour													
Reduced Main Campus Block Development Alternative	11	55	2	9	28	140	11	45	19	58	71	307	378
- Proposed Actions	11	55	2	9	28	140	11	45	19	58	71	307	378
Difference	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
Reduced Main Campus Block Development Alternative	44	4	7	7	5	5	56	16	72
- Proposed Actions	44	4	7	7	5	5	56	16	72
Difference	0	0	0	0	0	0	0	0	0
Weekday MD Peak Hour									
Reduced Main Campus Block Development Alternative	1	1	0	0	5	5	6	6	12
- Proposed Actions	1	1	0	0	5	5	6	6	12
Difference	0	0	0	0	0	0	0	0	0
Weekday PM Peak Hour									
Reduced Main Campus Block Development Alternative	9	43	7	7	3	3	19	53	72
- Proposed Actions	9	43	7	7	3	3	19	53	72
Difference	0	0	0	0	0	0	0	0	0

Table 18-7 (continued)
Comparison of Proposed Actions with Reduced Main Campus Block Development Alternative - 2011

Peak Hour Person Trips by Mode

	Auto		Taxi		Subway		Bus		Walk/Other		Total		
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour													
Reduced Main Campus Block Development Alternative	99	9	18	2	225	18	79	7	95	17	517	53	571
- Proposed Actions	146	13	28	3	336	24	118	10	141	21	772	70	841
Difference	-47	-4	-10	-1	-111	-6	-39	-3	-46	-4	-255	-17	-270
Weekday MD Peak Hour													
Reduced Main Campus Block Development Alternative	36	20	12	7	23	13	20	11	115	180	207	231	437
- Proposed Actions	55	30	18	10	34	19	29	16	170	268	307	343	650
Difference	-19	-10	-6	-3	-11	-6	-9	-5	-55	-88	-100	-112	-213
Weekday PM Peak Hour													
Reduced Main Campus Block Development Alternative	42	98	12	19	56	216	29	76	40	94	180	504	684
- Proposed Actions	63	147	18	29	82	322	43	113	55	140	261	751	1012
Difference	-21	-49	-6	-10	-26	-106	-14	-37	-15	-46	-81	-247	-328

Peak Hour Vehicle Trips

	Auto		Taxi		Deliveries		Total		
	In	Out	In	Out	In	Out	In	Out	In+Out
Weekday AM Peak Hour									
Reduced Main Campus Block Development Alternative	74	7	14	14	6	6	94	27	122
- Proposed Actions	112	10	21	21	9	9	142	40	182
Difference	-38	-3	-7	-7	-3	-3	-48	-13	-60
Weekday MD Peak Hour									
Reduced Main Campus Block Development Alternative	23	13	9	9	6	6	38	28	66
- Proposed Actions	34	19	13	13	8	8	56	40	96
Difference	-11	-6	-4	-4	-2	-2	-18	-12	-30
Weekday PM Peak Hour									
Reduced Main Campus Block Development Alternative	30	74	17	17	4	4	50	95	146
- Proposed Actions	43	111	27	27	5	5	75	143	218
Difference	-13	-37	-10	-10	-1	-1	-25	-48	-72

Table 18-8
Signalized Intersections:
2011 No Action, the Reduced Main Campus Block Development Alternative, and Proposed Mitigation - Level of Service Analyses

	Weekday AM																							
	No Action								with the RMCBD Alternative								with Proposed Mitigation							
					Approach		Intersection					Approach		Intersection							Approach		Intersection		
Intersection	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Recommended Improvements	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS
YORK AVENUE & E. 61st STREET																								
Northbound	LT	0.697	12.5	B	12.5	B	12.8	B	0.718	12.8	B	12.8	B	13.0	B		LT	0.718	12.8	B	12.8	B	13.0	B
Southbound	TR	0.484	10.1	B	10.1	B			0.486	10.1	B	10.1	B				TR	0.486	10.1	B	10.1	B		
Westbound	L	0.297	17.4	C	17.8	C			0.297	17.4	C	17.8	C				L	0.297	17.4	C	17.8	C		
	LTR	0.337	17.7	C					0.338	17.7	C						LTR	0.338	17.7	C				
	R	0.382	18.3	C					0.389	18.3	C						R	0.389	18.3	C				
YORK AVENUE & E. 62nd STREET																								
Northbound	TR	0.926	29.6	D	28.0	D	21.6	C	0.958	33.2	D	31.1	D	23.0	C		TR	0.958	33.2	D	31.1	D	23.0	C
	R	0.434	17.5	C					0.434	17.5	C						R	0.434	17.5	C				
Southbound	LT	0.849	11.2	B	11.2	B			0.851	11.2	B	11.2	B				LT	0.851	11.2	B	11.2	B		
Eastbound	LTR	0.561	29.3	D	29.3	D			0.561	29.3	D	29.3	D				LTR	0.561	29.3	D	29.3	D		
YORK AVENUE & E. 63rd STREET																								
Northbound	T	0.797	32.3	D	21.2	C	32.7	D	0.844	34.2	D	22.6	C	33.5	D		T	0.844	34.2	D	22.6	C	33.5	D
	R	0.694	6.7	B					0.694	6.7	B						R	0.694	6.7	B				
Southbound	L	1.111	110.8	F	47.2	E			1.117	113.6	F	48.1	E				L	1.117	113.6	F	48.1	E		
	TR	0.627	14.3	B					0.630	14.4	B						TR	0.630	14.4	B				
Westbound	L	0.493	24.4	C	24.2	C			0.491	24.4	C	24.2	C				L	0.491	24.4	C	24.2	C		
	LTR	0.500	24.2	C					0.501	24.2	C						LTR	0.501	24.2	C				
YORK AVENUE & E. 66th STREET																								
Northbound	LTR	0.530	5.1	B	5.1	B	6.7	B	0.559	5.2	B	5.2	B	7.1	B		LTR	0.559	5.2	B	5.2	B	7.1	B
Southbound	LTR	0.765	7.8	B	7.8	B			0.797	8.5	B	8.5	B				LTR	0.797	8.5	B	8.5	B		
Westbound	LTR	0.138	21.8	C	21.8	C			0.138	21.8	C	21.8	C				LTR	0.138	21.8	C	21.8	C		
YORK AVENUE & E. 67th STREET																								
Northbound	LT	0.544	5.2	B	5.2	B	6.6	B	0.925	68.8	F +	9.7	B	8.8	B		LT	0.464	4.7	A	4.7	A	13.3	B
									0.504	4.9	A					Develop a 11-second leading phase for northbound through and left turn								
Southbound	TR	0.780	7.8	B	7.8	B			0.792	8.1	B	8.1	B				TR	0.928	20.7	C	20.7	C		
YORK AVENUE & E. 68th STREET																								
Northbound	TR	0.369	4.3	A	4.3	A	11.2	B	0.381	4.3	A	4.3	A	11.6	B		TR	0.381	4.3	A	4.3	A	11.6	B
Southbound	LT	0.815	9.0	B	9.0	B			0.830	9.5	B	9.5	B				LT	0.830	9.5	B	9.5	B		
Eastbound	LTR	0.627	27.4	D	27.4	D			0.659	28.1	D	28.1	D				LTR	0.659	28.1	D	28.1	D		
Westbound	L	0.484	26.4	D	24.6	C			0.510	27.2	D	25.0	C				L	0.510	27.2	D	25.0	C		
	R	0.166	22.0	C					0.166	22.0	C						R	0.166	22.0	C				
YORK AVENUE & E. 69th STREET																								
Northbound	LT	1.020	33.3	D	33.3	D	19.1	C	1.068	48.9	E +	48.9	E	26.8	D		LT	0.697	6.6	B	6.6	B	10.2	B
Southbound	TR	0.654	6.1	B	6.1	B			0.661	6.1	B	6.1	B			Develop a 11-second leading phase for northbound through and left turn	TR	0.775	13.6	B	13.6	B		
YORK AVENUE & E. 71st STREET																								
Northbound	LTR	1.144	91.5	F	91.5	F	57.4	E	1.177	110.3	F +	110.3	F	67.1	F		LTR	1.134	84.7	F	84.7	F	52.7	E
Southbound	LTR	0.977	29.2	D	29.2	D			0.984	30.5	D	30.5	D			Subtract 2 seconds of green time from the WB phase and add to the NB/SB phase	LTR	0.953	24.1	C	24.1	C		
Westbound	LTR	0.754	28.4	D	28.4	D			0.764	29.0	D	29.0	D				LTR	0.795	32.3	D	32.3	D		
YORK AVENUE & E. 72nd STREET																								
Northbound	LTR	0.581	5.4	B	5.4	B	36.1	D	0.600	5.6	B	5.6	B	36.6	D		LTR	0.600	5.6	B	5.6	B	36.6	D
Southbound	LTR	0.728	7.2	B	7.2	B			0.779	8.2	B	8.2	B				LTR	0.779	8.2	B	8.2	B		
Eastbound	LTR	1.112	98.1	F	98.1	F			1.115	99.7	F	99.7	F				LTR	1.115	99.7	F	99.7	F		
Westbound	LTR	1.071	103.3	F	103.3	F			1.075	104.7	F	104.7	F				LTR	1.075	104.7	F	104.7	F		

Table 18-8 (continued)
Signalized Intersections:
2011 No Action, the Reduced Main Campus Block Development Alternative, and Proposed Mitigation - Level of Service Analyses

Intersection	Weekday AM																						Recommended Improvements
	No Action								with the RMCBD Alternative							with Proposed Mitigation							
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	
FIRST AVENUE & E. 66th STREET																							
Northbound	LT	0.808	8.4	B	8.4	B	8.7	B	0.811	8.4	B	8.4	B	8.8	B	LT	0.811	8.4	B	8.4	B	8.8	B	
Westbound	TR	0.407	16.6	C	16.6	C			0.426	16.8	C	16.8	C			TR	0.426	16.8	C	16.8	C			
FIRST AVENUE & E. 67th STREET																							
Northbound	LT	0.839	8.9	B	8.9	B	13.0	B	0.842	9.0	B	9.0	B	13.8	B	LT	0.859	9.9	B	9.9	B	13.8	B	Subtract 1 second of green time from the NB phase and add to the WB phase
Westbound	TR	0.989	58.2	E	58.2	E			1.015	65.4	F +	65.4	F			TR	0.985	56.2	E	56.2	E			
FIRST AVENUE & E. 68th STREET																							
Northbound	TR	0.845	9.0	B	9.0	B	13.4	B	0.849	9.1	B	9.1	B	14.9	B	TR	0.883	11.0	B	11.0	B	14.9	B	Subtract 2 seconds of green time from the NB phase and add to the EB phase
Eastbound	LT	0.991	56.3	E	56.3	E			1.035	69.2	F +	69.2	F			LT	0.976	50.8	E	50.8	E			
FIRST AVENUE & E. 69th STREET																							
Northbound	LT	0.816	8.5	B	8.5	B	9.1	B	0.820	8.6	B	8.6	B	9.3	B	LT	0.820	8.6	B	8.6	B	9.3	B	
Westbound	TR	0.591	19.6	C	19.6	C			0.616	20.2	C	20.2	C			TR	0.616	20.2	C	20.2	C			
FIRST AVENUE & E. 71st STREET																							
Northbound	LT	0.514	5.9	B	5.9	B	6.7	B	0.516	5.9	B	5.9	B	6.7	B	LT	0.516	5.9	B	5.9	B	6.7	B	
Westbound	TR	0.341	15.8	C	15.8	C			0.341	15.8	C	15.8	C			TR	0.341	15.8	C	15.8	C			
SECOND AVENUE & E. 68th STREET																							
Southbound	LT	0.577	7.3	B	7.3	B	16.3	C	0.582	7.3	B	7.3	B	20.6	C	LT	0.620	9.1	B	9.1	B	16.9	C	Subtract 3 seconds of green time from the SB phase and add to the EB phase
Eastbound	TR	1.052	75.4	F	75.4	F			1.117	103.0	F +	103.0	F			TR	1.029	65.1	F	65.1	F			
SECOND AVENUE & E. 69th STREET																							
Southbound	TR	0.596	6.9	B	6.9	B	10.6	B	0.601	6.9	B	6.9	B	11.5	B	TR	0.626	8.1	B	8.1	B	11.4	B	Subtract 2 seconds of green time from the SB phase and add to the WB phase
Westbound	LT	0.904	38.9	D	38.9	D			0.941	45.2	E +	45.2	E			LT	0.889	35.2	D	35.2	D			
SECOND AVENUE & E. 72nd STREET																							
Southbound	LTR	0.629	9.2	B	9.2	B	12.8	B	0.635	9.3	B	9.3	B	12.9	B	LTR	0.635	9.3	B	9.3	B	12.9	B	
Eastbound	TR	0.632	16.5	C	16.5	C			0.632	16.5	C	16.5	C			TR	0.632	16.5	C	16.5	C			
Westbound	LT	0.812	22.0	C	22.0	C			0.812	22.0	C	22.0	C			LT	0.812	22.0	C	22.0	C			

Notes:
L = Left Turn, T = Through, R = Right Turn; LOS = Level of Service.
+ = Significant Project Impact

Table 18-8 (continued)
Signalized Intersections:
2011 No Action, the Reduced Main Campus Block Development Alternative, and Proposed Mitigation - Level of Service Analyses

Intersection	Weekday Midday																						Recommended Improvements
	No Action								with the RMCBD Alternative							with Proposed Mitigation							
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	
YORK AVENUE & E. 61st STREET																							
Northbound	DfL	1.188	173.6	F	27.3	D	17.6	C	1.188	173.6	F	27.3	D	17.6	C	DfL	1.188	173.6	F	27.3	D	17.6	C	
	T	0.764	13.7	B					0.772	13.8	B					T	0.772	13.8	B					
Southbound	TR	0.676	12.1	B	12.1	B			0.678	12.1	B	12.1	B			TR	0.678	12.1	B	12.1	B			
Westbound	L	0.209	10.8	B	11.3	B			0.209	10.8	B	11.3	B			L	0.209	10.8	B	11.3	B			
	LTR	0.298	11.3	B					0.299	11.3	B					LTR	0.299	11.3	B					
	R	0.334	11.7	B					0.334	11.7	B					R	0.334	11.7	B					
YORK AVENUE & E. 62nd STREET																							
Northbound	TR	0.995	35.2	D	32.2	D	43.4	E	1.007	37.8	D	34.5	D	44.6	E	TR	1.007	37.8	D	34.5	D	44.6	E	
	R	0.466	14.6	B					0.466	14.6	B					R	0.466	14.6	B					
Southbound	LT	1.106	61.5	F	61.5	F			1.108	62.5	F	62.5	F			LT	1.108	62.5	F	62.5	F			
Eastbound	LTR	0.703	23.4	C	23.4	C			0.703	23.4	C	23.4	C			LTR	0.703	23.4	C	23.4	C			
YORK AVENUE & E. 63rd STREET																							
Northbound	T	0.891	28.7	D	22.0	C	29.8	D	0.905	29.7	D	22.8	C	30.5	D	T	0.905	29.7	D	22.8	C	30.5	D	
	R	0.451	5.8	B					0.451	5.8	B					R	0.451	5.8	B					
Southbound	L	1.101	98.7	F	37.6	D			1.107	101.4	F	38.6	D			L	1.107	101.4	F	38.6	D			
	TR	0.952	20.8	C					0.956	21.2	C					TR	0.956	21.2	C					
Westbound	L	0.619	24.2	C	23.8	C			0.621	24.3	C	23.8	C			L	0.621	24.3	C	23.8	C			
	LTR	0.656	23.6	C					0.655	23.6	C					LTR	0.655	23.6	C					
YORK AVENUE & E. 66th STREET																							
Northbound	LTR	0.922	13.7	B	13.7	B	11.0	B	0.934	14.8	B	14.8	B	11.7	B	LTR	0.934	14.8	B	14.8	B	11.7	B	
Southbound	LTR	0.845	8.6	B	8.6	B			0.851	8.8	B	8.8	B			LTR	0.851	8.8	B	8.8	B			
Westbound	LTR	0.078	16.1	C	16.1	C			0.078	16.1	C	16.1	C			LTR	0.078	16.1	C	16.1	C			
YORK AVENUE & E. 67th STREET																							
Northbound	DfL	1.112	121.9	F	89.1	F	41.9	E	1.175	157.1	F +	98.3	F	46.0	E	LT	0.862	9.8	B	9.8	B	19.8	C	Daylight the southbound approach for 150 feet and develop a 11-sec leading phase for northbound through and left turn
	T	1.145	85.6	F					1.156	91.6	F +													
Southbound	TR	0.869	9.1	B	9.1	B			0.877	9.4	B	9.4	B			TR	0.986	26.8	D	26.8	D			
YORK AVENUE & E. 68th STREET																							
Northbound	TR	0.526	4.4	A	4.4	A	9.8	B	0.531	4.4	A	4.4	A	10.0	B	TR	0.531	4.4	A	4.4	A	10.0	B	
Southbound	LT	0.838	8.6	B	8.6	B			0.848	8.9	B	8.9	B			LT	0.848	8.9	B	8.9	B			
Eastbound	LTR	0.608	20.7	C	20.7	C			0.617	20.9	C	20.9	C			LTR	0.617	20.9	C	20.9	C			
Westbound	L	0.517	20.9	C	19.2	C			0.525	21.1	C	19.4	C			L	0.525	21.1	C	19.4	C			
	R	0.201	16.8	C					0.201	16.8	C					R	0.201	16.8	C					
YORK AVENUE & E. 69th STREET																							
Northbound	LT	0.981	22.5	C	22.5	C	13.0	B	0.997	25.7	D	25.7	D	14.5	B	LT	0.997	25.7	D	25.7	D	14.5	B	
Southbound	TR	0.686	5.5	B	5.5	B			0.694	5.5	B	5.5	B			TR	0.694	5.5	B	5.5	B			
YORK AVENUE & E. 71st STREET																							
Northbound	LTR	1.140	85.1	F	85.1	F	47.5	F	1.151	91.0	F +	91.0	F	50.5	E	LTR	1.123	75.5	F	75.5	F	42.6	E	Subtract 1 second of green time from the WB phase and add to the NB/SB phase
Southbound	LTR	0.838	13.0	B	13.0	B			0.843	13.2	B	13.2	B			LTR	0.825	12.0	B	12.0	B			
Westbound	LTR	0.450	15.1	C	15.1	C			0.479	15.5	C	15.5	C			LTR	0.492	16.2	C	16.2	C			
YORK AVENUE & E. 72nd STREET																							
Northbound	LTR	1.154	93.9	F	93.9	F	44.9	E	1.167	101.3	F +	101.3	F	48.0	E	LTR	1.138	84.5	F	84.5	F	42.4	E	Subtract 1 second of green time from the EB/SB phase and add to the NB/SB phase
Southbound	LTR	0.818	12.5	B	12.5	B			0.829	12.9	B	12.9	B			LTR	0.812	11.8	B	11.8	B			
Eastbound	LTR	0.850	25.0	C	25.0	C			0.856	25.4	D	25.4	D			LTR	0.885	28.4	D	28.4	D			
Westbound	LTR	0.723	23.2	C	23.2	C			0.730	23.6	C	23.6	C			LTR	0.758	26.0	D	26.0	D			

Table 18-8 (continued)
Signalized Intersections:
2011 No Action, the Reduced Main Campus Block Development Alternative, and Proposed Mitigation - Level of Service Analyses

Intersection	Weekday Midday																						Recommended Improvements
	No Action								with the RMCBD Alternative							with Proposed Mitigation							
					Approach		Intersection					Approach		Intersection						Approach		Intersection	
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	
FIRST AVENUE & E. 66th STREET																							
Northbound	LT	0.721	7.4	B	7.4	B	7.7	B	0.723	7.4	B	7.4	B	7.8	B	LT	0.723	7.4	B	7.4	B	7.8	B	
Westbound	TR	0.371	16.2	C	16.2	C			0.371	16.2	C	16.2	C			TR	0.371	16.2	C	16.2	C			
FIRST AVENUE & E. 67th STREET																							
Northbound	LT	0.700	7.2	B	7.2	B	15.5	C	0.701	7.2	B	7.2	B	17.1	C	LT	0.715	7.9	B	7.9	B	16.1	C	Subtract 1 second of green time from the NB phase and add to the WB phase
Westbound	TR	1.072	84.9	F	84.9	F			1.102	97.9	F +	97.9	F			TR	1.070	83.2	F	83.2	F			
FIRST AVENUE & E. 68th STREET																							
Northbound	TR	0.677	7.0	B	7.0	B	21.1	C	0.679	7.0	B	7.0	B	21.9	C	TR	0.693	7.7	B	7.7	B	19.9	C	Subtract 1 second of green time from the NB phase and add to the EB phase
Eastbound	LT	1.105	91.6	F	91.6	F			1.115	96.2	F +	96.2	F			LT	1.082	80.7	F	80.7	F			
FIRST AVENUE & E. 69th STREET																							
Northbound	LT	0.719	7.4	B	7.4	B	9.0	B	0.720	7.4	B	7.4	B	9.1	B	LT	0.720	7.4	B	7.4	B	9.1	B	
Westbound	TR	0.766	25.9	D	25.9	D			0.784	27.0	D	27.0	D			TR	0.784	27.0	D	27.0	D			
FIRST AVENUE & E. 71st STREET																							
Northbound	LT	0.661	6.9	B	6.9	B	8.2	B	0.662	6.9	B	6.9	B	8.2	B	LT	0.662	6.9	B	6.9	B	8.2	B	
Westbound	TR	0.500	17.2	C	17.2	C			0.500	17.2	C	17.2	C			TR	0.500	17.2	C	17.2	C			
SECOND AVENUE & E. 68th STREET																							
Southbound	LT	0.668	8.0	B	8.0	B	23.8	C	0.671	8.1	B	8.1	B	26.1	D	LT	0.685	8.7	B	8.7	B	22.9	C	Subtract 1 second of green time from the SB phase and add to the EB phase
Eastbound	TR	1.099	88.0	F	88.0	F			1.114	95.0	F +	95.0	F			TR	1.083	80.5	F	80.5	F			
SECOND AVENUE & E. 69th STREET																							
Southbound	TR	0.647	7.3	B	7.3	B	23.5	C	0.649	7.4	B	7.4	B	24.6	C	TR	0.662	8.0	B	8.0	B	22.2	C	Subtract 1 second of green time from the SB phase and add to the WB phase
Westbound	LT	1.099	88.6	F	88.6	F			1.110	93.7	F +	93.7	F			LT	1.079	79.0	F	79.0	F			
SECOND AVENUE & E. 72nd STREET																							
Southbound	LTR	0.768	10.8	B	10.8	B	15.8	C	0.772	10.9	B	10.9	B	15.8	C	LTR	0.772	10.9	B	10.9	B	15.8	C	
Eastbound	TR	0.605	16.1	C	16.1	C			0.605	16.1	C	16.1	C			TR	0.605	16.1	C	16.1	C			
Westbound	LT	0.919	30.5	D	30.5	D			0.919	30.5	D	30.5	D			LT	0.919	30.5	D	30.5	D			

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service,
+ = Significant Project Impact.

Table 18-8 (continued)
Signalized Intersections:
2011 No Action, the Reduced Main Campus Block Development Alternative, and Proposed Mitigation - Level of Service Analyses

Intersection	Weekday PM																						Recommended Improvements
	No Action								with the RMCBD Alternative								with Proposed Mitigation						
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Approach Delay	Approach LOS	Intersection Delay	Intersection LOS	
YORK AVENUE & E. 61st STREET																							
Northbound	DfL	1.058	133.1	F	19.9	C	15.8	C	1.064	136.0	F +	20.5	C	16.1	C	DfL	1.035	120.8	F	18.6	C	15.1	C	Subtract 1 second of green time from the WB phase and add to the NB/SB phase
	T	0.736	13.2	B					0.748	13.4	B					T	0.736	12.6	B					
Southbound	TR	0.582	11.0	B	11.0	B			0.590	11.1	B	11.1	B			TR	0.581	10.5	B	10.5	B			
Westbound	L	0.319	17.6	C	17.7	C			0.319	17.6	C	17.7	C			L	0.325	18.1	C	18.2	C			
	LTR	0.323	17.5	C					0.323	17.5	C					LTR	0.329	18.0	C					
	R	0.362	18.0	C					0.367	18.1	C					R	0.374	18.6	C					
YORK AVENUE & E. 62nd STREET																							
Northbound	TR	0.780	22.5	C	43.8	E	52.4	E	0.796	22.9	C	43.8	E	53.6	E	TR	0.796	22.9	C	43.8	E	53.6	E	
	R	1.101	87.2	F					1.101	87.2	F					R	1.101	87.2	F					
Southbound	LT	1.104	61.2	F	61.2	F			1.110	63.9	F	63.9	F			LT	1.110	63.9	F	63.9	F			
Eastbound	LTR	0.979	49.0	E	49.0	E			0.979	49.0	E	49.0	E			LTR	0.979	49.0	E	49.0	E			
YORK AVENUE & E. 63rd STREET																							
Northbound	T	0.595	28.1	D	17.5	C	24.8	C	0.619	28.4	D	17.9	C	26.3	D	T	0.637	29.4	D	18.6	C	23.0	C	Subtract 1 second of green time from the NB/SB phase and add to the SB lagging phase
	R	0.571	5.2	B					0.571	5.2	B					R	0.579	5.7	B					
Southbound	L	1.117	90.0	F	27.0	D			1.137	100.2	F +	30.1	D			L	1.083	73.5	F	22.4	C			
	TR	0.804	1.9	A					0.816	2.0	A					TR	0.816	2.0	A					
Westbound	L	0.695	28.9	D	28.0	D			0.697	29.0	D	28.0	D			L	0.697	29.0	D	28.0	D			
	LTR	0.709	27.6	D					0.708	27.6	D					LTR	0.708	27.6	D					
YORK AVENUE & E. 66th STREET																							
Northbound	DfL	0.796	40.3	E	7.1	B	11.8	B	0.885	59.4	E +	8.7	B	14.2	B	DfL	0.806	39.2	D	6.1	B	10.1	B	Subtract 3 seconds of green time from the WB phase and add to the NB/SB phase
	TR	0.447	4.6	A					0.454	4.7	A					TR	0.437	3.5	A					
Southbound	LTR	0.928	14.0	B	14.0	B			0.957	17.1	C	17.1	C			LTR	0.921	11.6	B	11.6	B			
Westbound	LTR	0.340	23.6	C	23.6	C			0.340	23.6	C	23.6	C			LTR	0.368	25.5	D	25.5	D			
YORK AVENUE & E. 67th STREET																							
Northbound	DfL	0.778	37.7	D	61.4	F	29.3	D	0.883	59.2	E +	67.0	F	31.8	D	LT	0.731	7.2	B	7.2	B	14.8	B	Daylight the southbound approach for 150 feet and develop a 11-sec leading phase for northbound through and left turn
	T	1.096	63.2	F					1.106	67.6	F +													
Southbound	TR	0.854	9.6	B	9.6	B			0.876	10.4	B	10.4	B			TR	0.924	19.5	C	19.5	C			
YORK AVENUE & E. 68th STREET																							
Northbound	TR	0.514	5.0	A	5.0	A	12.3	B	0.518	5.0	A	5.0	A	12.9	B	TR	0.518	5.0	A	5.0	A	12.9	B	
Southbound	LT	0.841	9.8	B	9.8	B			0.869	11.0	B	11.0	B			LT	0.869	11.0	B	11.0	B			
Eastbound	LTR	0.602	27.0	D	27.0	D			0.622	27.4	D	27.4	D			LTR	0.622	27.4	D	27.4	D			
Westbound	L	0.609	29.9	D	26.8	D			0.629	30.9	D	27.3	D			L	0.629	30.9	D	27.3	D			
	R	0.279	23.0	C					0.279	23.0	C					R	0.279	23.0	C					
YORK AVENUE & E. 69th STREET																							
Northbound	LT	1.025	35.4	D	35.4	D	19.3	C	1.051	43.7	E +	43.7	E	22.9	C	LT	0.747	7.5	B	7.5	B	13.4	B	Develop a 11-second leading phase for northbound through and left turn
Southbound	TR	0.741	7.1	B	7.1	B			0.761	7.4	B	7.4	B			TR	0.892	17.9	C	17.9	C			
YORK AVENUE & E. 71st STREET																							
Northbound	LTR	1.119	78.3	F	78.3	F	48.7	E	1.128	82.8	F +	82.8	F	51.1	E	LTR	1.108	72.3	F	72.3	F	45.2	E	Subtract 1 second of green time from the WB phase and add to the NB/SB phase
Southbound	LTR	0.964	26.6	D	26.6	D			0.971	27.8	D	27.8	D			LTR	0.956	24.8	C	24.8	C			
Westbound	LTR	0.503	20.1	C	20.1	C			0.590	22.0	C	22.0	C			LTR	0.602	22.7	C	22.7	C			
YORK AVENUE & E. 72nd STREET																							
Northbound	LTR	0.962	21.1	C	21.1	C	40.5	E	0.974	23.2	C	23.2	C	47.1	E	LTR	1.002	30.5	D	30.5	D	40.2	E	Subtract 2 seconds of green time from the NB/SB phase and add to the EB/WB phase
Southbound	LTR	0.800	8.5	B	8.5	B			0.814	8.9	B	8.9	B			LTR	0.835	10.6	B	10.6	B			
Eastbound	DfL	1.092	103.9	F	73.8	F			1.092	103.9	F	74.0	F			DfL	1.039	81.6	F	59.9	E			
	TR	0.860	42.0	E					0.864	42.5	E					TR	0.822	37.0	D					
Westbound	LTR	1.161	140.4	F	140.4	F			1.242	193.7	F +	193.7	F			LTR	1.139	126.2	F	126.2	F			

Table 18-8 (continued)
Signalized Intersections:
2011 No Action, the Reduced Main Campus Block Development Alternative, and Proposed Mitigation - Level of Service Analyses

Intersection	Weekday PM																						Recommended Improvements
	No Action								with the RMCBD Alternative							with Proposed Mitigation							
					Approach		Intersection					Approach		Intersection						Approach		Intersection	
	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	Lane Group	V/C Ratio	Delay (seconds)	LOS	Delay	LOS	Delay	LOS	
FIRST AVENUE & E. 66th STREET																							
Northbound	LT	0.724	7.3	B	7.3	B	7.7	B	0.725	7.4	B	7.4	B	7.7	B	LT	0.725	7.4	B	7.4	B	7.7	B	
Westbound	TR	0.398	16.5	C	16.5	C			0.420	16.8	C	16.8	C			TR	0.420	16.8	C	16.8	C			
FIRST AVENUE & E. 67th STREET																							
Northbound	LT	0.739	7.5	B	7.5	B	8.2	B	0.741	7.5	B	7.5	B	8.4	B	LT	0.741	7.5	B	7.5	B	8.4	B	
Westbound	TR	0.649	21.2	C	21.2	C			0.689	22.6	C	22.6	C			TR	0.689	22.6	C	22.6	C			
FIRST AVENUE & E. 68th STREET																							
Northbound	TR	0.753	7.6	B	7.6	B	19.0	C	0.756	7.7	B	7.7	B	20.8	C	TR	0.772	8.4	B	8.4	B	19.1	C	Subtract 1 second of green time from the NB phase and add to the EB phase
Eastbound	LT	1.113	92.8	F	92.8	F			1.137	104.7	F +	104.7	F			LT	1.104	87.6	F	87.6	F			
FIRST AVENUE & E. 69th STREET																							
Northbound	LT	0.739	7.5	B	7.5	B	9.0	B	0.741	7.5	B	7.5	B	9.2	B	LT	0.741	7.5	B	7.5	B	9.2	B	
Westbound	TR	0.817	29.6	D	29.6	D			0.836	31.2	D	31.2	D			TR	0.836	31.2	D	31.2	D			
FIRST AVENUE & E. 71st STREET																							
Northbound	LT	0.557	6.2	B	6.2	B	7.6	B	0.558	6.2	B	6.2	B	7.6	B	LT	0.558	6.2	B	6.2	B	7.6	B	
Westbound	TR	0.562	18.0	C	18.0	C			0.562	18.0	C	18.0	C			TR	0.562	18.0	C	18.0	C			
SECOND AVENUE & E. 68th STREET																							
Southbound	LT	0.481	6.7	B	6.7	B	21.8	C	0.485	6.7	B	6.7	B	24.1	C	LT	0.495	7.3	B	7.3	B	21.6	C	Subtract 1 second of green time from the SB phase and add to the EB phase
Eastbound	TR	1.100	86.7	F	86.7	F			1.124	97.6	F +	97.6	F			TR	1.093	82.4	F	82.4	F			
SECOND AVENUE & E. 69th STREET																							
Southbound	TR	0.574	6.8	B	6.8	B	11.5	B	0.577	6.8	B	6.8	B	11.9	B	TR	0.577	6.8	B	6.8	B	11.9	B	
Westbound	LT	0.940	44.9	E	44.9	E			0.954	47.8	E	47.8	E			LT	0.954	47.8	E	47.8	E			
SECOND AVENUE & E. 72nd STREET																							
Southbound	LTR	0.609	9.1	B	9.1	B	22.7	C	0.613	9.1	B	9.1	B	22.6	C	LTR	0.613	9.1	B	9.1	B	22.6	C	
Eastbound	TR	0.743	18.8	C	18.8	C			0.743	18.8	C	18.8	C			TR	0.743	18.8	C	18.8	C			
Westbound	LT	1.057	63.1	F	63.1	F			1.057	63.1	F	63.1	F			LT	1.057	63.1	F	63.1	F			

Notes:
L = Left Turn, T = Through, R = Right Turn, DfL = Defacto Left Turn; LOS = Level of Service.
+ = Significant Project Impact.

AM Peak Hour

- The northbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS D (33.2 spv) with a v/c ratio at the through-right movement of 0.958;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (113.6 spv) with a v/c ratio of 1.117;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street would operate at LOS F (68.8 spv) with a v/c ratio of 0.925; and
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS F (48.9 spv) with a v/c ratio of 1.068;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (110.3 spv) with a v/c ratio of 1.177;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS D (30.5 spv) with a v/c ratio of 0.984;
- The eastbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (99.7 spv) with a v/c ratio of 1.115;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (104.7 spv) with a v/c ratio of 1.075;
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS F (65.4 spv) with a v/c ratio of 1.015;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (69.2 spv) with a v/c ratio of 1.035;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (103.0 spv) with a v/c ratio of 1.117; and
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS E (45.2 spv) with a v/c ratio of 0.941.

Midday Peak Hour

- The northbound de facto left-turn movement at the intersection of York Avenue and East 61st Street would operate at LOS F (173.6 spv) with a v/c ratio at the defacto left-turn movement of 1.188;
- The northbound through-right movement at the intersection of York Avenue and East 62nd Street would operate at LOS E (37.8 spv) with a v/c ratio of 1.007;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS F (62.5 spv) with a v/c ratio of 1.108;
- The northbound through movement at the intersection of York Avenue and East 63rd Street would operate at LOS D (29.7 spv) with a v/c ratio of 0.905.
- The southbound approach at the intersection of York Avenue and East 63rd Street, where the through-right movement would operate at LOS C (21.2 spv) with a v/c ratio of 0.956 and the left-turn movement would operate at LOS F (101.4 spv) with a v/c ratio of 1.107;

- The northbound approach at the intersection of York Avenue and East 66th Street would operate at LOS B (14.8 spv) with a v/c ratio of 0.934;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street would operate at LOS F (157.1 spv) with a v/c ratio of 1.175;
- The northbound through movement at the intersection of York Avenue at East 67th Street would operate at LOS F (91.6 spv) with a v/c ratio of 1.156;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS D (25.7 spv) with a v/c ratio of 0.997;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (91.0 spv) with a v/c ratio of 1.151;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (101.3 spv) with a v/c ratio of 1.167;
- The westbound approach at the intersection of First Avenue and East 67th Street would operate at LOS F (97.9 spv) with a v/c ratio of 1.102;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (96.2 spv) with a v/c ratio of 1.115;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (95.0 spv) with a v/c ratio of 1.114;
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS F (93.7 spv) with a v/c ratio of 1.110; and
- The westbound approach at the intersection of Second Avenue at East 72nd Street would operate at LOS D (30.5 spv) with a v/c ratio of 0.919.

PM Peak Hour

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street, which would operate at LOS F (136.0 spv) with a v/c ratio of 1.064;
- The northbound right-turn movement at the intersection of York Avenue and East 62nd Street would operate at LOS F (87.2 spv) with a v/c ratio of 1.101;
- The southbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS F (63.9 spv) with a v/c ratio of 1.110;
- The eastbound approach at the intersection of York Avenue and East 62nd Street would operate at LOS E (49.0 spv) with a v/c ratio of 0.979;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street would operate at LOS F (100.2 spv) with a v/c ratio of 1.137;
- The southbound approach at the intersection of York Avenue and East 66th Street would operate at LOS C (17.1 spv) with a v/c ratio of 0.957;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street would operate at LOS E (59.2 spv) with a v/c ratio of 0.883;

- The northbound through movement at the intersection of York Avenue and East 67th Street would operate at LOS F (67.6 spv) with a v/c ratio of 1.106;
- The northbound approach at the intersection of York Avenue and East 69th Street would operate at LOS F (43.7 spv) with a v/c ratio of 1.051;
- The northbound approach at the intersection of York Avenue and East 71st Street would operate at LOS F (82.8 spv) with a v/c ratio of 1.128;
- The southbound approach at the intersection of York Avenue and East 71st Street would operate at LOS D (27.8 spv) with a v/c ratio of 0.971;
- The northbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS C (23.2 spv) with a v/c ratio of 0.974;
- The eastbound defacto left-turn movement at the intersection of York Avenue and East 72nd Street would operate at LOS F (103.9 spv) with a v/c ratio of 1.092;
- The eastbound through-right movements at the intersection of York Avenue and East 72nd Street would operate at LOS E (42.5 spv) with a v/c ratio of 0.864 in 2011;
- The westbound approach at the intersection of York Avenue and East 72nd Street would operate at LOS F (193.7 spv) with a v/c ratio of 1.242;
- The eastbound approach at the intersection of First Avenue at East 68th Street would operate at LOS F (104.7 spv) with a v/c ratio of 1.137;
- The eastbound approach at the intersection of Second Avenue and East 68th Street would operate at LOS F (1.124 spv) with a v/c ratio of 97.6; and
- The westbound approach at the intersection of Second Avenue and East 69th Street would operate at LOS E (47.8 spv) with a v/c ratio of 0.954; and
- The westbound approach at the intersection of Second Avenue and East 72nd Street would operate at LOS F (63.1 spv) with a v/c ratio of 1.057.

IMPACTED LOCATIONS—2011 FUTURE CONDITIONS WITH THE REDUCED MAIN CAMPUS BLOCK DEVELOPMENT ALTERNATIVE

Impact criteria is discussed in Chapter 12, "Traffic and Parking." Based on standards set forth in the *CEQR Technical Manual*, the increases in traffic generated by this alternative would cause significant impacts at the locations listed below:

AM Peak Period

- The northbound left-through movement at the intersection of York Avenue and East 67th Street, where delay would increase from 5.2 spv (LOS B) with a v/c ratio of 0.544 in 2011 No Action conditions to 68.8 spv (LOS F) with a v/c ratio of 0.925 at the defacto left-turn movement and to 4.9 spv (LOS A) with a v/c ratio of 0.504 at the through movement in 2011 with this alternative;
- The northbound approach at the intersection of York Avenue and East 69th Street, where delay would increase from 33.3 spv (LOS D) with a v/c ratio of 1.020 in 2011 No Action conditions to 48.9 spv (LOS E) with a v/c ratio of 1.068 in 2011 with this alternative;

- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 91.5 spv (LOS F) with a v/c ratio of 1.144 in 2011 No Action conditions to 110.3 spv (LOS F) with a v/c ratio of 1.177 in 2011 with this alternative;
- The westbound approach at the intersection of First Avenue at East 67th Street, where delay would increase from 58.2 spv (LOS E) with a v/c ratio of 0.989 in 2011 No Action conditions to 65.4 spv (LOS F) with a v/c ratio of 1.015 in 2011 with this alternative;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 56.3 spv (LOS E) with a v/c ratio of 0.991 in 2011 No Action conditions to 69.2 spv (LOS F) with a v/c ratio of 1.035 in 2011 with this alternative;
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 75.4 spv (LOS F) with a v/c ratio of 1.052 in 2011 No Action conditions to 103.0 spv (LOS F) with a v/c ratio of 1.117 in 2011 with this alternative; and
- The westbound approach at the intersection of Second Avenue and East 69th Street, where delay would increase from 38.9 spv (LOS D) with a v/c ratio of 0.904 in 2011 No Action conditions to 45.2 spv (LOS E) with a v/c ratio of 0.941 in 2011 with this alternative.

Midday Peak Period

- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street, where delay would increase from 121.9 spv (LOS F) with a v/c ratio of 1.112 in 2011 No Action conditions to 157.1 spv (LOS F) with a v/c ratio of 1.175 in 2011 with this alternative;
- The northbound through movement at the intersection of York Avenue and East 67th Street, where delay would increase from 85.6 spv (LOS F) with a v/c ratio of 1.145 in 2011 No Action conditions to 91.6 spv (LOS F) with a v/c ratio of 1.156 in 2011 with this alternative;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 85.1 spv (LOS F) with a v/c ratio of 1.140 in 2011 No Action conditions to 91.0 spv (LOS F) with a v/c ratio of 1.151 in 2011 with this alternative;
- The northbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 93.9 spv (LOS F) with a v/c ratio of 1.154 in 2011 No Action conditions to 101.3 (LOS F) with a v/c ratio of 1.167 in 2011 with this alternative;
- The westbound approach at the intersection of First Avenue at East 67th Street, where delay would increase from 84.9 spv (LOS F) with a v/c ratio of 1.072 in 2011 No Action conditions to 97.9 spv (LOS F) with a v/c ratio of 1.102 in 2011 with this alternative;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 91.6 spv (LOS F) with a v/c ratio of 1.105 in 2011 No Action conditions to 96.2 spv (LOS F) with a v/c ratio of 1.115 in 2011 with this alternative;
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 88.0 spv (LOS F) with a v/c ratio of 1.099 in 2011 No Action conditions to 95.0 spv (LOS F) with a v/c ratio of 1.114 in 2011 with this alternative, and
- The westbound approach at the intersection of Second Avenue and East 69th Street, where delay would increase from 88.6 spv (LOS F) with a v/c ratio of 1.099 in 2011 No Action conditions to 93.7 spv (LOS F) with a v/c ratio of 1.110 in 2011 with this alternative.

PM Peak Period

- The northbound defacto left-turn movement at the intersection of York Avenue and East 61st Street, where delay would increase from 133.1 spv (LOS F) with a v/c ratio of 1.058 in 2011 No Action conditions to 136.0 spv (LOS F) with a v/c ratio of 1.064 in 2011 with this alternative;
- The southbound left-turn movement at the intersection of York Avenue and East 63rd Street, where delay would increase from 90.0 (LOS F) with a v/c ratio of 1.117 in 2011 No Action conditions to 100.2 spv (LOS F) with a v/c ratio of 1.137 in 2011 with this alternative;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 66th Street, where delay would increase from 40.3 spv (LOS E) with a v/c ratio of 0.796 in 2011 No Action conditions to 59.4 spv (LOS E) with a v/c ratio of 0.885 in 2011 with this alternative;
- The northbound defacto left-turn movement at the intersection of York Avenue and East 67th Street, where delay would increase from 37.7 spv (LOS D) with a v/c ratio of 0.778 in 2011 No Action conditions to 59.2 spv (LOS E) with a v/c ratio of 0.883 in 2011 with this alternative;
- The northbound through movement at the intersection of York Avenue and East 67th Street, where delay would increase 63.2 (LOS F) with a v/c ratio of 1.096 in 2011 No Action conditions to 67.6 (LOS F) with a v/c ratio of 1.106 in 2011 with this alternative;
- The northbound left-through movements at the intersection of York Avenue and East 69th Street, where delay would increase from 35.4 spv (LOS D) with a v/c ratio of 1.025 in 2011 No Action conditions to 43.7 spv (LOS E) with a v/c ratio of 1.051 in 2011 with this alternative;
- The northbound approach at the intersection of York Avenue and East 71st Street, where delay would increase from 78.3 spv (LOS F) with a v/c ratio of 1.119 in 2011 No Action conditions to 82.8 spv (LOS F) with a v/c ratio of 1.128 in 2011 with this alternative;
- The westbound approach at the intersection of York Avenue at East 72nd Street, where delay would increase from 140.4 spv (LOS F) with a v/c ratio of 1.161 in 2011 No Action conditions to 193.7 spv (LOS F) with a v/c ratio of 1.242 in 2011 with this alternative;
- The eastbound approach at the intersection of First Avenue and East 68th Street, where delay would increase from 92.8 spv (LOS F) with a v/c ratio of 1.113 in 2011 No Action conditions to 104.7 spv (LOS F) with a v/c ratio of 1.137 in 2011 with this alternative; and
- The eastbound approach at the intersection of Second Avenue and East 68th Street, where delay would increase from 86.7 spv (LOS F) with a v/c ratio of 1.100 in 2011 No Action conditions to 97.6 (LOS F) with a v/c ratio of 1.124 in 2011 with the proposed actions.

RECOMMENDED MITIGATION MEASURES

The paragraphs below discuss each affected intersection and its required mitigation. Table 18-8 summarizes all of the measures contained in the mitigation plan for 2011 during the AM, midday, and PM peak hours. Proposed signal retimings that would mitigate impacts would result in all of the affected intersections being brought back to the same service conditions, or better, than those under No Action conditions. This alternative would result in the need for mitigation measures similar to or lesser than the proposed actions. NYCDOT has reviewed the mitigation

measures for the proposed actions, and has agreed to evaluate operating conditions upon to completion of Phase 2. At that time, appropriate mitigation measures would be implemented.

York Avenue and East 61st Street

The impact at the northbound defacto left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phase, as with the proposed actions. With this retiming, delays at the northbound defacto left-turn movement would improve to 120.8 spv (LOS F) with a v/c ratio of 1.035 from a delay of 136.0 spv (LOS F) with a v/c ratio of 1.064 in 2011 with this alternative. This measure would mitigate the impact back to No Action conditions or better.

York Avenue and East 63rd Street

The impact at the southbound left-turn movement at this intersection during the PM peak periods could be mitigated by subtracting 1 second of green time from the northbound/southbound phase and adding it to the southbound lagging phase, as with the proposed actions. With this retiming, delays would improve to 73.5 (LOS F) with a v/c ratio of 1.083 from 100.2 spv (LOS F) with a v/c ratio of 1.137 in 2011 with this alternative during the PM peak period.

With this measure in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and 66th Street

The impact at the northbound defacto left-turn movement at this intersection during the PM peak period could be mitigated by subtracting 3 seconds of green time (as compared to 5 seconds with the proposed actions) from the westbound phase and adding it to the northbound/southbound phase. With this retiming, delays would improve to 39.2 spv (LOS D) with a v/c ratio of 0.806 from a delay of 59.4 spv (LOS E) with a v/c ratio of 0.885 in 2011 with this alternative. With this measure in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 67th Street

The impact at the northbound left-turn and through movements at this intersection during the AM, midday, and PM peak periods could be mitigated by creating a leading northbound phase with 8 seconds of green time (and 3 seconds of yellow plus all red time). In addition, during the midday and PM peak periods, parking at the southbound approach would be prohibited (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces). Parking regulations would be "No Standing from Here to Corner Noon to 2 PM and 4 PM to 7 PM." These measures would be the same as with the proposed actions. With these measures, delays would improve to 4.7 spv (LOS A) with a v/c of 0.464 from delays of 68.8 spv (LOS F) with a v/c ratio of 0.925 at the northbound defacto left-turn movement and 4.9 spv (LOS A) with a v/c ratio of 0.504 at the through movement in 2011 with this alternative during the AM peak period, to 9.8 spv (LOS B) with a v/c ratio of 0.862 from a delay of 157.1 spv (LOS F) with a v/c ratio of 1.175 at the defacto left-turn movement and 91.6 (LOS F) with a v/c ratio of 1.156 at the through movement in 2011 with this alternative during the midday peak period, and to 7.2 (LOS B) with a v/c ratio of 0.731 from 59.2 spv (LOS F) with a v/c of 0.883 at the defacto left-turn movement and 67.6 spv (LOS F) with a v/c ratio of 1.106 at the through movement in 2011 with this alternative during the PM peak period. With these measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 69th Street

As with the proposed actions, the impact at the northbound approach at this intersection during the AM and PM peak periods could be mitigated by creating a leading northbound phase with 8 seconds of green time (and 3 seconds of yellow plus all red time). With this retiming, delays at the northbound approach would improve to 6.6 spv (LOS B) with a v/c ratio of 0.697 from 48.9 spv (LOS E) with a v/c ratio of 1.068 in 2011 with this alternative during the AM peak, and to 7.5 spv (LOS B) with a v/c ratio of 0.747 from delays of 43.7 spv (LOS E) with a v/c ratio of 1.051 in 2011 with this alternative during the PM peak.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 71st Street

With the proposed actions, the impact at the northbound approach at this intersection during the AM peak period could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) at the northbound approach. Parking regulations would be "No Standing From Here to Corner 7AM to 10AM." With this alternative, the impact at the northbound approach could be mitigated by subtracting 2 seconds of green time from the westbound phase and adding it to the northbound/southbound phase. With this measure, delays at the northbound approach would improve to 84.7 spv (LOS F) with a v/c ratio of 1.134 from a delay of 110.3 (LOS F) with a v/c ratio of 1.177 in 2011 with this alternative.

During both the midday and PM peak periods, the impacts could be mitigated by subtracting 1 second of green time from the westbound phase and adding it to the northbound/southbound phase, as with the proposed actions. With this retiming, delays at the northbound approach would improve to 75.5 spv (LOS F) with a v/c ratio of 1.123 from a delay of 91.0 (LOS F) with a v/c ratio of 1.151 in 2011 with this alternative during the midday peak period, and to 72.3 (LOS F) with a v/c ratio of 1.108 from a delay of 82.8 spv (LOS F) with a v/c of 1.128 in 2011 with this alternative during the PM peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

York Avenue and East 72nd Street

During the midday peak period, the impact at the northbound approach could be mitigated by subtracting 1 second of green time from the eastbound/westbound pedestrian phase and adding it to the northbound/southbound phase, as with the proposed actions. With this retiming, delays at the northbound approach would improve to 84.5 spv (LOS F) with a v/c ratio of 1.138 from a delay of 101.3 (LOS F) with a v/c ratio of 1.167 in 2011 with this alternative.

With the proposed actions, during the PM peak period, the impact at the westbound approach could be mitigated by prohibiting parking (daylighting) for approximately 150 feet from the intersection (approximately 6 spaces) on westbound approach. Parking regulations would be "No Standing From Here to Corner 4PM to 7PM." With this alternative, the impact at the westbound approach could be mitigated by subtracting 2 seconds of green time fro the northbound/southbound phase and adding it to the eastbound/westbound phase. With this measure, delays at the westbound approach would improve to 126.2 (LOS F) with a v/c ratio of 1.139 from a delay of 193.7 spv (LOS F) with a v/c ratio of 1.242 in 2011 with this alternative.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

First Avenue at East 67th Street

The impact at the westbound approach at this intersection during the AM and midday peak periods could be mitigated by subtracting 1 second of green time (as compared to 2 seconds with the proposed actions) from the northbound phase and adding it to the westbound phase. With this retiming, delays at the westbound approach would improve to 56.2 spv (LOS E) with a v/c ratio of 0.985 from a delay of 65.4 spv (LOS F) with a v/c ratio of 1.015 in 2011 with this alternative during the AM peak period, and to 83.2 spv (LOS F) with a v/c ratio of 1.070 from a delay of 97.9 spv (LOS F) with a v/c ratio of 1.102 in 2011 with this alternative during the midday peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

First Avenue and 68th Street

The impact at the eastbound approach during the AM peak period could be mitigated by subtracting 2 seconds of green time (as compared to 3 seconds with the proposed actions) from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 50.8 spv (LOS E) with a v/c ratio of 0.976 from a delay of 69.2 spv (LOS F) with a v/c ratio of 1.035 in 2011 with this alternative.

The impact at the eastbound approach at this intersection during the midday and PM peak periods could be mitigated by subtracting 1 second of green time (as compared to 1 second in the midday and 2 seconds in the PM, respectively with the proposed actions), from the northbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 80.7 spv (LOS F) with a v/c ratio of 1.082 from a delay of 96.2 spv (LOS F) with a v/c ratio of 1.115 in 2011 with this alternative during the midday peak period, and to 87.6 spv (LOS F) with a v/c ratio of 1.104 from a delay of 104.7 spv (LOS F) with a v/c ratio of 1.137 in 2011 with this alternative during the PM peak period.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Second Avenue and 68th Street

The impact at the eastbound approach at this intersection during the AM peak period could be mitigated by subtracting 3 seconds of green time (as compared to 4 seconds with the proposed actions) from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 65.1 spv (LOS F) with a v/c ratio of 1.029 from a delay of 103.0 spv (LOS F) with a v/c ratio of 1.117 in 2011 with this alternative.

During the midday and PM peak periods the impacts at the eastbound approach could be mitigated by subtracting 1 second of green time (as compared to 1 second during the midday and 2 seconds during the PM, respectively with the proposed actions), from the southbound phase and adding it to the eastbound phase. With this retiming, delays at the eastbound approach would improve to 80.5 spv (LOS F) with a v/c ratio of 1.083 from a delay of 95.0 spv (LOS F) with a v/c ratio of 1.114 in 2011 with this alternative during the midday peak, and to 82.4 spv (LOS F) with a v/c ratio of 1.093 from a delay of 97.6 spv (LOS F) with a v/c ratio of 1.124 in 2011 with this alternative during the PM peak.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

Second Avenue and East 69th Street

The impact at the westbound approach at this intersection during the AM peak period could be mitigated by subtracting 2 seconds of green time from the southbound phase and adding it to the westbound phase, as with the proposed actions. With this retiming, delays at the westbound approach would improve to 35.2 spv (LOS D) with a v/c ratio of 0.889 from a delay of 45.2 spv (LOS E) with a v/c ratio of 0.941 in 2011 with this alternative.

During the midday peak period, the impact could be mitigated by subtracting 1 second of green time from the southbound phase and adding it to the westbound phase, as compared with the proposed actions. With this retiming, delays at the westbound approach would improve to 79.0 spv (LOS F) with a v/c ratio of 1.079 from a delay of 93.7 spv (LOS F) with a v/c ratio of 1.110 in 2011 with this alternative.

With these proposed measures in place, impacts would be mitigated back to No Action conditions or better.

PARKING

As with the proposed actions, assuming a background growth rate of 5.0 percent, utilization of the study area's off-street parking facilities was assumed to increase with project-generated demand. As shown in Table 18-9, the projected conditions indicate that the overall utilization rate of the off-street parking facilities would increase to approximately 93 percent (as compared to 94 percent with proposed actions) from a 2011 No Action utilization of 91 percent. It is assumed that the 6 on-street parking spaces (compared with 18 spaces with the proposed action's) lost due to the proposed 2011 mitigation measures would add to the off-street parking demand in the area, increasing the midday off-street parking utilization rate to approximately 93.3 percent. There would be available off-street parking capacity, and no significant impacts to parking would result from restricting on-street parking as described above.

PEDESTRIANS AND TRANSIT

Pedestrian facilities in the study area would experience an increase in pedestrian volumes over No Action conditions under this alternative. In 2007, this alternative would generate the same number of pedestrian trips than the proposed actions. In 2011, it would result in 270, 213, and 328 fewer pedestrian trips as the proposed actions. Like the proposed actions, this alternative would not result in any significant adverse pedestrian impacts.

Similarly, subway and bus trips would increase above No Action conditions as a result of this alternative. In 2007, this alternative would result the same number subway and bus trips than the proposed actions. In 2007, there would be the same impact to the northeast subway stair as the proposed actions, and, as discussed in Chapter 17, "Mitigation," mitigation would not be required. In 2011, there would be 117, 17, and 132 fewer subway trips than the proposed actions, but like the proposed actions, there would be impacts to the northeast and southeast stairs requiring mitigation. As shown in Table 18-10, a widening of two inches at each of the northeast and southeast stairs would be required, as compared to the proposed actions, which would require a widening of three inches at the northeast stair and two inches at the southeast stair. An engineering feasibility study with conceptual plans has been reviewed and approved by the MTA for the proposed actions; the same improvements would appropriately mitigate this

Table 18-9
2011 Full Buildout
Weekday Midday Off-Street Parking Utilization

2001 Existing Conditions

Capacity (spaces)	7,384
Demand (spaces)*	6,204
Available Spaces*	1,033
Utilization	84%

2011 No-Action Conditions

Capacity (spaces)	7,384
2001 Existing	6,204
0.5 % per year growth	310
Parking Demand	
No Build Site 1: MSKCC Outpatient Facility	0
No Build Site 2: MSKCC Infill Project	0
No Build Site 3: Caspary-Hospital for Special Surgery	4
No Build Site 4: The Pearl/400 East 61st Street	17
No Build Site 5: 1234 First Avenue	36
No Build Site 6: 420-34 East 61st Street	66
No Build Site 7: 1117-1125 York Avenue	69
No Build Site 8: 403-407 East 61st Street	13
No Build Site 9: 409-415 East 61st Street	19
No Build Site 10: Rockefeller University Lab Building	0
Total Demand	6,738
Available Spaces	646
Utilization	91%

2011 Future With the Reduced Main Campus Block Development Alternative

Capacity (spaces)	7,384
2011 No Action Demand	6,738
Parking Demand	
2011 RMCBD Alternative	146
Total Demand	6,884
Available Spaces	500
Utilization	93%

Note:
* Does not include utilization/availability information for parking facilities 25, 28, and 36, since the information for midday peak period was unavailable

Table 18-10
Memorial Sloan Kettering Cancer Center
2011 Future with the Proposed Actions Level of Service Analysis - Reduced Main Campus Block Development Alternative

East 68th Street at Lexington Avenue #6 Train (Control Area R-246)

SUBWAY STATION ELEMENTS	WIDTH (ft)	EFFECTIVE WIDTH (ft)	AM 15-MINUTE PEDESTRIAN VOLUME IN	AM 15-MINUTE PEDESTRIAN VOLUME OUT	PM 15-MINUTE PEDESTRIAN VOLUME IN	PM 15-MINUTE PEDESTRIAN VOLUME OUT	FRICTION FACTOR AM	FRICTION FACTOR PM	15-MINUTE SVCD CAPACITY AM	15-MINUTE SVCD CAPACITY PM	V/SVCD RATIO AM	V/SVCD RATIO PM	LEVEL OF SERVICE AM	LEVEL OF SERVICE PM
Street Stairs														
Northwest Corner	4.0	3.0	189	226	294	142	0.9	0.8	405	360	1.024	1.210	D	D
Northeast Corner	4.2	3.2	496	301	510	231	0.9	0.8	432	384	1.845	1.930	F	F
Southeast Corner	4.7	3.7	381	658	547	735	0.9	0.9	499	499	2.079	2.566	F	F
Southwest Corner	6.7	5.7	326	488	420	609	0.9	0.9	770	770	1.058	1.337	D	E
	QUANTITY													
Token Booth – R-246														
Two-Way Turnstiles	14		1339	1668	1745	1722			6720	6720	0.447	0.516	A	B
Exit Gates	2		53	5	26	5			1500	1500	0.039	0.021	A	A

Notes:
The Capacity for Stairs = 10 persons per minute per effective foot width
The Capacity for Turnstiles = 32 persons per minute (assumes a 20 percent reduction for cross traffic)
The Capacity for Exit Gates = 50 persons per minute
Source: City Environmental Quality Review Technical Manual

Table 18-10 (continued)
Memorial Sloan Kettering Cancer Center
Reduced Main Campus Block Development Alternative - Proposed Mitigation Measures

East 68th Street at Lexington Avenue #6 Train (Control Area R-246)

SUBWAY STATION ELEMENTS	WIDTH (INCHES)	EFFECTIVE WIDTH (INCHES)	NO ACTION AM 15-MINUTE PEDESTRIAN VOLUME IN	NO ACTION AM 15-MINUTE PEDESTRIAN VOLUME OUT	NO ACTION PM 15-MINUTE PEDESTRIAN VOLUME IN	NO ACTION PM 15-MINUTE PEDESTRIAN VOLUME OUT	PROJECT INCREMENT AM 15-MINUTE PEDESTRIAN VOLUME IN	PROJECT INCREMENT AM 15-MINUTE PEDESTRIAN VOLUME OUT	PROJECT INCREMENT PM 15-MINUTE PEDESTRIAN VOLUME IN	PROJECT INCREMENT PM 15-MINUTE PEDESTRIAN VOLUME OUT	REQUIRED INCHES OF WIDENING* AM	REQUIRED INCHES OF WIDENING* PM
2007												
Street Stairs												
Northeast Corner	50	38	490	278	484	223	3	16	16	5	0.89	1.07
Southeast Corner	56	44	376	629	520	717	3	16	16	5	0.79	0.71
2011												
Street Stairs												
Northeast Corner	50	38	494	273	483	221	3	28	27	11	1.51	2.03
Southeast Corner	56	44	378	630	520	725	3	28	27	11	1.33	1.33

Notes:
* Source: *CEQR Technical Manual* - page 3P-14, "To determine the amount of widening required, the following formula should be used:

$$\frac{X}{We} = \frac{Vp}{Vna}$$

where X = required inches of widening
We = effective width in the No Action
Vp = project-induced pedestrian volume
Vna = No Action pedestrian volume"

impact. As with the proposed actions, the applicant would be responsible for funding the cost associated with the percent of construction required to mitigate the alternative's impacts. As with the proposed actions, there is no commitment by the MTA regarding funding this mitigation at this time, and if mitigation is not implemented, a significant adverse impact would occur.

AIR QUALITY

With this alternative, the insignificant increases in the 8-hour carbon monoxide concentrations expected from the proposed actions would be less. No violations of the NAAQS are predicted to occur under this alternative or with the proposed actions by 2007 or 2011, and both would be consistent with the SIP.

In addition, similar to the development under the proposed actions, there would be no potential significant adverse impacts from the exhaust system of the laboratories in the proposed research building on any MSKCC campus buildings or the surrounding community.

NOISE

Both with this alternative and the proposed actions, in the years 2007 and 2011, noise levels in the project study area would not be significantly increased compared to existing levels. With both this alternative and the proposed actions, no significant adverse noise impacts would result from building mechanical systems. Similar to the proposed actions, this alternative would require the same (E) designation for noise in the rezoning area to avoid significant adverse noise impacts.

CONSTRUCTION IMPACTS

The Reduced Main Campus Block Development Alternative would have temporary construction impacts similar to the proposed actions. The duration and phasing of construction activities would be comparable to that of the proposed actions on the north block. On the main campus block there would be much less construction. Similar to the proposed actions, any construction-related impacts would be relatively short-term and be governed by applicable city, state, and federal regulations regarding construction activity, thereby avoiding significant adverse impacts. ❖

Chapter 19: Unavoidable Adverse Impacts*

As described in Chapter 5, "Open Space and Recreational Facilities," there would be an adverse impact on open space in 2011 due to the increase in open space users and the increase in shadows on St. Catherine's Park from the proposed research building and potential development on the main campus block. Potential improvements are limited, as St. Catherine's Park (the only public space in the immediate area) has been extensively renovated in the past few years and there are no capital improvements that it needs relative to passive open space. There are no potential sites for additional open space in the control of the New York City Department of Parks and Recreation or Memorial Sloan-Kettering Cancer Center. Therefore, the project would result in an unmitigated significant adverse impact to open space in 2011.

As described in Chapter 8, "Urban Design and Visual Resources," the proposed actions would result in a significant adverse impact to urban design in 2007 and 2011, due to increased density in the midblocks. This significant adverse impact on urban design would be partially mitigated by reduction in height of the proposed research building envelope from 440 to 420 feet. At full build out the two buildings would have a significant adverse impact on urban design due to increased density.

This impact on urban design would also result in a significant adverse impact to neighborhood character. However, the reduction in the height of the research building's envelope would partially mitigate the building's adverse effect on urban design and its corresponding effect on this aspect of neighborhood character. At full build out in 2011, increases in traffic and in urban design density would cause a significant adverse impact on neighborhood character. This impact was reduced and partially mitigated between DEIS and FEIS by the reduction in the size of the research building and the elimination of the south block (and resulting development, employees, interests and visitors) from the rezoning area. Nonetheless, this impact to neighborhood character would not be fully mitigated.

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* This chapter is new to the FEIS.

Chapter 20: Growth-Inducing Aspects of the Proposed Project

Memorial Sloan-Kettering Cancer Center (MSKCC) proposes to rezone from R8 to R9 two midblocks on Manhattan's Upper East Side and designate the MSKCC campus as a Large-Scale Community Facility Development. The proposal also includes actions specific to the first phase of anticipated development, a research laboratory building on the north block of the campus, as well as transfer of development rights from the north block to the main campus block.

MSKCC would not be a new use in the area, and the proposed actions would enable MSKCC to uphold its commitment to innovation in research and patient care and to the collaboration among scientists, physicians and other clinical investigators by allowing MSKCC to expand its research and diagnostic and treatment facilities, have adequately sized state-of-the-art inpatient rooms, and provide housing for its patients who must be near the hospital for treatment.

No significant development is expected to occur in the surrounding area as a result of the proposed project. ❖

Chapter 21: Irreversible and Irretrievable Commitment of Resources

There are several resources, both natural and built, that would be expended in the construction and operation of the proposed research building and other potential development on the Memorial Sloan-Kettering Cancer Center campus. These resources include the building materials used in construction of the project; energy in the form of gas and electricity consumed during construction and operation of the building; and the human effort required to develop, construct, and operate various components of the project. They are considered irretrievably committed because their reuse for some other purpose than the project would be highly unlikely.

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A. INTRODUCTION

This chapter of the Memorial Sloan-Kettering Cancer Center Final Environmental Impact Statement (FEIS) addresses the substantive comments received on the June 1, 2001, Draft Environmental Impact Statement (DEIS). Comments include those presented at the DEIS public hearing held on October 10, 2001 at City Hall and continued on October 12, 2001 at 22 Reade Street, and written comments submitted to the New York City Planning Commission (CPC). The period for public comment remained open until October 22, 2001.

Section B lists the groups and individuals who commented on the DEIS. Section C summarizes and responds to substantive comments made at the public hearing and received in writing. Where multiple comments were made on the same subject, they have been summarized into a single comment with the appropriate commentors listed in parentheses. Some commentors presented testimony at the public hearing and submitted written comments.

More than 60 speakers were heard on the two days of the hearing. The list below includes speakers both for and against the project. Speakers indicating their support for the project are indicated by "pro" at the end of their listing.

B. COMMENTORS ON THE DEIS

COMMENTORS AT THE PUBLIC HEARING

1. John Van Der Tuin, 10021 Community Coalition (letter dated October 10, 2001) (Tuin)
2. Jonas Cohen, Professor at Long Island University, (Cohen)
3. Lauren Lenissi letter read by Walter Watkins, 69th Street resident (Lenissi)
4. Richard O'Reilly, Memorial Sloan-Kettering Cancer Center (MSKCC) staff, (O'Reilly)
5. Suzanne Fawbush, 10021 Community Coalition (and letters dated October 10, 2001 and October 17, 2001) (Fawbush)
6. Ernest Graf, 62nd Street resident, (and letter dated October 9, 2001) (Graf)
7. Alexander Pete Grannis, Assemblyman 65th Assembly District, New York County, (and letters dated July 12, 2001, September 12 and October 22, 2001) (Grannis)
8. Dave Doctor, neighborhood resident (and letter dated October 10, 2001) (Doctor)
9. Joel Ross, 10021 Community Coalition, (and letter dated October 10, 2001) (Ross)
10. Bernard Phair, MSKCC patient (Phair)

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* **This entire chapter is new to the EIS.**

11. Barbara Knowlton, 68th Street resident and 10021 Community Coalition (Knowlton)
12. David Scheinberg, MSKCC staff (Scheinberg)
13. Sarah A Stackpole, M.D., letter dated October 10, 2001 and read by Joan Duncan Oliver, neighborhood resident and 10021 Community Coalition, (Stackpole)
14. Joy Kieras, resident 400 East 64th Street, (and letter dated October 10, 2001) (Kieras)
15. Elizabeth Ann Poynor, MSKCC staff (Poynor)
16. Roy H. Carlin (letter, undated) (Carlin)
17. Jonathan Pearlroth (letter dated September 6, 2001) (Pearlroth)
18. Dr. Joy Zagoren, research scientist (and letter, with Lawrence A. Yannuzzi, M.D., undated) (Zagoren)
19. Kenneth Offit, M.D., MPH, Upper East Side resident and MSKCC employee (and letter dated October 8, 2001) (Offit)
20. Irene Peveri, Co-chair, East Side Rezoning Alliance (and letter dated October 10, 2001) (Peveri)
21. Derrick Sant'Angelo, MSKCC staff (letter dated October 2001) (Sant' Angelo)
22. C.P. Capell, native New Yorker (Capell)
23. Donna Sbriglia, MSKCC staff (Sbriglia)
24. Genie Rice, President of CIVITAS, (Rice)
25. Donna Shalala letter dated August 14, 2001 and read by Regina Hartfield (Shalala)
26. Norman Marcus, attorney representing CIVITAS, ("Hills and Valleys: A Well-Considered Plan for Manhattan." by Norman Marcus in MetroPlanner, October 2001) (Marcus)
27. Michael P. Berry letter dated October 4, 2001 and read by Jim Asp (Berry)
28. Richard Bass, Herrick, Feinstein, LLP, consultant to CIVITAS (and letter dated October 18, 2001) (Bass)
29. John Boogaerts, MSKCC patient (letter dated October 10, 2001) (Boogaerts)
30. Community Board 8 resolution dated July 16, 2001 and read by Heddy White (CB8)
31. Betty Cooper Wallerstein, president of the East 79th Street Neighborhood Association and member of Community Board 8 (letter, undated) (Wallerstein)
32. Sandra Levine, HDC (Levine)
33. Wendy Selnick, Registered Nurse at Saint Vincent's Hospital and East 68th Street resident (Selnick)
34. Ulrich Hammerling (Hammerling)
35. Elizabeth Ashby, President, Historic Neighborhood Enhancement Alliance (and letters dated September 8, 2001 and October 19, 2001) (Ashby)
36. Miriam Hecht, resident East 68th Street (Hecht)
37. Landmark West! letter read by Carolyn Greenberg (Landmark West!)

38. Terry Slater (Slater)
39. Leonard Sidney, East Side Tenants Association (Sidney)
40. Lisa Kersavage, Friends of the Upper East Side Historic District, (and letter dated October 10, 2001) (Kersavage)
41. Jason Chrein, Upper West Side resident (letter dated October 9, 2001) (Chrein)
42. Jeannie McGuire, resident at 71st Street and First Avenue (McGuire)
43. Carolyn Maloney, Congresswoman, 14th District, New York (and letter dated October 10, 2001) (Maloney)
44. Lowe van der Valk, President Carnegie Hill Neighbors (Valk)
45. Paul Welling, 10021 Community Coalition (Welling)
46. Sam Bishop, 10021 Community Coalition (dated October 10, 2001) (Bishop)
47. Heddy White, (White)
48. Jane Anderson
49. Judith E. Schneider (and letter, undated) (JSchneider)
50. Bernard Adler, P.E., traffic consultant to 10021 Community Coalition (and letter date October 10, 2001) (Adler)
51. M. Barry Schneider (letters dated July 24, 2001 and October 10, 2001) (BSchneider)
52. Margaret Grieve, MSKCC patient (Grieve)
53. Douglas Warner, Chairman of JP Morgan Chase and of MSKCC (Warner)
54. Walter Lorell, East 69th Street resident (Lorell)
55. Lisa Denzin (Denzin)
56. H. Patrick Stewart, resident of Roosevelt Island (Stewart)
57. Municipal Art Society (MAS) statement dated October 12, 2001, and read by Darya Cowan
58. Liz Krueger, East 70th Street resident (letter dated October 10, 2001) (Krueger)
59. C. Virginia Fields, Manhattan Borough President (letter dated October 12, 2001) (Fields)
60. Vern J. Bergelin, AICP letter dated August 8, 2001, and read by Avice Meehan (Bergelin)
61. Loretta Ponticello (Ponticello)
62. Stanley Stark, of HLW International, LLP, letter dated October 11, 2001, and read by Norman Riley of CIVITAS (Stark)
63. Terry Grace, neighborhood resident (Grace)
64. Michael Hill, neighborhood resident (Hill)
65. Evelyn Strauss, Chair of Union Square Community Coalition (Strauss)
66. Jim Griffin, neighborhood resident (Griffin)

WRITTEN COMMENTS

67. Steven P. Rosalie, Associate Provost, Cornell University, and Neil Underberg, Winston & Strawn. Letter dated August 28, 2001. (Cornell)
68. Craig Kandell, Editorial and Graphics Specialist, MSKCC. Letter dated October 4, 2001. (Kandell)
69. Norman Marcus, Swidler Berlin, Shereff Friedman, LLP. Letter dated October 18, 2001. (Marcus letter)
70. Carol A. Sigmond, Attorney at Law. Letter dated October 19, 2001.
71. Grace E. Ungers. Letters dated August 1, 2001 and October 17, 2001. (Ungers)
72. Joyce Matz, Joyce Matz Associates. Letter dated August 23, 2001. (Matz)
73. State Assemblyman Pete Grannis, Congresswoman Carolyn Maloney, State Senator Roy Goodman, City Council Member Gifford Miller, City Council Member Eva Moskowitz. Letter dated September 5, 2001. (Officials)
74. CIVITAS, Letter dated July 2, 2001. (CIVITAS)
75. Sarah S. Eggers, letters dated October 8, 2001 and October 10, 2001. (Eggers)
76. Leslie McCullough Jeffries, letter dated October 10, 2001.
77. Lawrence A. Yannuzzi, M.D. Letter dated September 12, 2001. (Yannuzzi)
78. Jane E. Nichols. Letter dated August 16, 2001.
79. Mindy Dolgin Schwartz. Letter dated October 2, 2001.
80. Wilma Siegel. Letter dated September 12, 2001.
81. Adrienne M. Berziga. Letter dated October 10, 2001.
82. Susan L. Fischer. Letter dated September 7, 2001.
83. Historic Districts Council. Letter dated October 10, 2001. (HDC)
84. Leigh Turner, letter dated October 12, 2001 (Turner)
85. Rhoda Raffaelli. Letter dated October 9, 2001.(Raffaelli)
86. Charles Spielholz, Ph. D. Undated letter. (Spielholz)
87. State Senator Roy Goodman. Letter dated October 26, 2001. (Goodman)

C. COMMENTS AND RESPONSES

PROJECT DESCRIPTION—SITE

Comment 1: Locating the proposed research building on the block bounded by East 68th and 69th Streets and York and First Avenues is contrary to the Group of 35 Report and the Genesis project and what Dr. Varmus has written about development of biotech laboratories on the waterfront in Queens. (Tuin, Krueger, Hill)

Response: The Group of 35 Final Report examines economic strategies to benefit New York City. The report recommends offering incentives to the biotech industry and is considering five sites for its development: Bellevue Hospital, SUNY Downstate in Brooklyn, Audubon IV in Upper Manhattan, Queens West, and Albert Einstein College of Medicine in the Bronx.

GEN*NY*SIS—Generating Employment Through New York Science—was a proposal, authored by the state Senate, to create a biomedical research investment program focused on applied research. The proposal included offered generous incentives and tax relief, and would have supported research at a variety of institutions, including MSKCC. Gen*NY*sis passed the Senate, but was not acted upon by the Assembly.

In a January 2000 interview, Dr. Harold Varmus, president of MSKCC, discussed his vision for the biotech industry in New York City on the Queens waterfront. He envisioned a vibrant and profitable biotech industry that would be connected by ferry to MSKCC and other institutions along the East River.

The comment seems to suggest that the proposed translational research facility is a biotechnology laboratory. MSKCC is proposing to construct the research building on the north block of the campus for a comprehensive program of cancer research conducted in the context of MSKCC's historic clinical, educational and research mission as a not-for-profit academic medical center. The proposed building is not intended to house for-profit biotechnology companies focused on the commercial development of new drugs or technologies. The need for interdisciplinary research was described in the DEIS in Chapter 1, "Project Description." A new section J. "Alternative Locations," has been added to Chapter 18, "Alternatives," of the FEIS to further describe translational research and the constraints of its being at a location as distant from the main campus as Long Island City. Further description of translational research has also been added to Section C, "Project Purpose and Need," Chapter 1 of the FEIS. In MSKCC's opinion, translational research requires a close bench-to-bed relationship. Specifically, translational research involves clinicians (medical doctors who are treating patients) also working as, or working closely with, research scientists developing new treatments in laboratories that can then be taken directly to the patients. Over the years, MSKCC has tried to accomplish this type of research at remote locations. None of these remote locations were successful and MSKCC was forced to close each in spite of the major investments that had been made. MSKCC's laboratory research program—and particularly its transitional research program —relies on face-to-face communication and interaction among clinicians and scientists, and the patients to whose welfare they are dedicated.

Biotech companies flourish when they are located near major teaching hospitals and academic research centers like MSKCC. As private, profit-making enterprises, biotechnology companies' focus is on the commercialization of new drugs and technologies rather than on academic research.

MSKCC continues to believe that development of biotechnology facilities on the waterfront in Queens is viable and should be explored. However, a biotech lab is not the kind of facility that MSKCC is proposing to build on the north block.

Comment 2: The MSKCC laboratory could be located across the river in Long Island City. (Ross, Levine, Lorell, Turner, Grannis) A 16- or 17-story building might be acceptable, but the rest should go to Long Island City. (Ross) The location is a matter of convenience and ego. The lab could go to Long Island City. (McGuire)

Response: The comment does not distinguish between translational and biotechnical laboratories. As stated in the response to Comment 1, MSKCC believes the proposed translational research building would not satisfy the requirements for proximity to the hospital and clinical facilities of MSKCC if it were located in Long Island City.

Comment 3: The "bench to bed" argument is without merit. With current methods of research, research labs need not be so near the hospital and patients. Research is done on animals, not people. New drugs are not used in a clinical setting without FDA approval; prior design and experimentation can be done elsewhere. A patient's blood and tissue samples can be sent to labs all over town. (Lenissi, Stackpole, Zagoren, Lorell, Krueger, Grace, Grannis, Eggers, Yannuzzi)

Response: The comment ignores the distinction between the proposed translational research and other types of laboratory research. MSKCC has provided the following discussion of its "bench to bed" argument: Since its founding, MSKCC has focused on changing the paradigm for cancer treatment. That focus has included a comprehensive program of laboratory research that works with the patients served. The proposed research building will house a comprehensive laboratory research program, with a particular emphasis on translational research that will bridge MSKCC's programs of patient care and fundamental biological research. Translational research—described by MSKCC as "bench to bed"—takes the findings of biological research, and applies that understanding toward the development of new therapeutic agents. Translational research requires the close and effective interaction among scientists, clinician-scientists and clinicians. In view of MSKCC, a vibrant program of translational research must occur in close proximity to Memorial Hospital, and foster face-to-face interactions among investigators.

MSKCC agrees that treatments must first be approved by the FDA, among others, before they can be used on patients. MSKCC develops new therapeutic agents for which they hold an investigational new drug approval (IND) from the FDA, and which may be manufactured at MSKCC or under MSKCC's supervision by an outside entity for immediate use.

Additional information has been added to Section C, "Project Purpose and Need," of Chapter 1, "Project Description," to explain MSKCC's policy and philosophy regarding translational research.

Comment 4: Only half the researchers in the proposed research building have clinical responsibilities, the rest can go to a laboratory elsewhere. (Grannis, Ashby)

Response: In MSKCC's opinion it is not merely that many of the research scientists are also practicing physicians, but it is also that there is a major benefit in innovation due to proximity and propinquity. The interaction of physicians and scientists is a primary part of the research process. This is described in Section C, "Project Purpose and Need," of Chapter 1, "Project Description," in the DEIS and further detailed in the FEIS. Dividing the laboratory in half and putting half in a remote location does not support MSKCC's objectives and is not considered by MSKCC to be a viable alternative.

Comment 5: Roosevelt Island would be a good site for the lab. (Stewart, Grannis)

Response: Similar to Long Island City, MSKCC believes that Roosevelt Island is too far away from MSKCC to satisfy the proximity requirement for its research program. This FEIS has been expanded with a new section, J. "Alternative Locations," in Chapter 18, "Alternatives."

Comment 6: MSKCC is shoe horning this research building in an inappropriate location. (Ross)

Response: The location immediately north of the main campus block of MSKCC is an ideal location in MKSCC's opinion. Further, it is in the midst of a major concentration of significant medical facilities; and this allows interaction and collaboration with scientists and physicians from those institutions as well. Further, the architects for the proposed research building have been able to achieve a state-of-the-art research building to satisfy MSKCC's defined needs in spite of the foot print constraints.

PROJECT DESCRIPTION—PURPOSE AND NEED

Comment 7: MSKCC should provide a clear definition of future needs and uses. (Grannis, Rice) MSKCC Master Plan leaves out a lot of detail. (Slater) A three-block rezoning should only be done with a Master Plan (MAS). With no definite plans, MSKCC doesn't need rezoning. (Kersavage)

Response: In response to these and similar comments, MSKCC has withdrawn its request for rezoning of the south midblock between East 66th and 67th Streets as stated in the Foreword and Chapter 1, "Project Description," of this FEIS. The south block has been retained in the LSCFD in order for MSKCC to better plan its future development. MSKCC does have definite, immediate plans for the

research building on the north block as described in the DEIS and this FEIS. On the main campus block, Memorial Hospital is aging and MSKCC believes it will clearly need to be replaced with a new adequately sized facility. Without the rezoning on the main campus block, MSKCC has no further undeveloped floor area. So whether it is for a replacement hospital or for improving diagnostic and treatment facilities, MSKCC cannot do any construction without increased floor area.

Comment 8: There are no concrete plans for the south block. (Fields)

Response: Since publication of the DEIS, MSKCC has withdrawn its request to rezone the south campus block as described in this FEIS. The south block is still proposed to be part of the LSCFD as it is a contiguous part of the campus; and its inclusion in the LSCFD is intended to allow MSKCC to develop a comprehensive plan for its future.

Comment 9: MSKCC is a business that has to sell bonds because it doesn't make money. (Capell) Although MSKCC is a hospital, it is also a business, with a high-paid CEO and underpaid researchers. (Spielholz)

Response: As described in the DEIS and the FEIS, MSKCC is a not-for-profit institution. Although its financial status and use of financing mechanisms are not an area of CEQR analysis, MSKCC has provided the following response: MSKCC seeks bond financing for major capital projects because, like a homeowner buying a house or making major improvements, that is the most appropriate way to fund a significant expense. MSKCC "loses" money each year in large measure because it underwrites patient care services for individuals who lack insurance or financial resources to pay for their care at MSKCC. In addition, MSKCC uses the income from its invested reserves to provide enhancements to the environment of care. Compensation of MSKCC's researchers is competitive with the compensation at comparable institutions. The compensation of MSKCC's president and CEO was determined following outside review by compensation consultants and reflects the demands of the position.

Comment 10: It is wrong to say that not approving the project will hinder cancer research. (Wallerstein)

Response: As described in Section B, "No Action Alternative," of Chapter 18, "Alternatives," of the DEIS and this FEIS, disapproval of the project would render MSKCC unable to build its proposed research building and would thereby significantly diminish its ability to plan for its future needs on its main campus. As was stated by a number of speakers in support of this project at the public hearing, the research building is very important to MSKCC's ability to plan for its future success as a cancer care center.

Comment 11: The new lab building will be commercial and MSKCC will rent out space to others. (Grace) MSKCC is rumored to have plans to develop its property for housing or industry. (Spielholz)

Response: MSKCC does not plan to rent out any space in this building and it has no plans to develop the site for anything other than a translational research building. The proposed research building is not an appropriate configuration for a residential building, as shown in Chapter 18, "Alternatives," in the discussion of mixed-use alternatives. Were the building to be used for commercial biotech, the site would have to be rezoned for commercial use and a Special Permit under Section 74-48 of the Zoning Resolution would be required. Were the building to be used for industrial purposes, rezoning would also be required. Since neither commercial use, or industrial use would be permitted under the proposed rezoning, there is no need to consider these uses in the environmental review.

Comment 12: The rezoning is not a benefit to the community or the city. (Grace)

Response: As noted in the FEIS, the proposed project would result in significant adverse impacts to historic resources, urban design, neighborhood character, open space, hazardous materials, traffic, and transit. Mitigation measures are provided to reduce or avoid these impacts, except for open space, urban design, and neighborhood character. While there would be a significant adverse impact on urban design, this impact has been partially mitigated by reducing the height of the proposed research building from 440 to 420 feet.

PROJECT DESCRIPTION—ARCHITECTURAL DESIGN

Comment 13: A research laboratory should be a horizontal building, not a vertical building. An 8- to 10-story building is preferable, as you don't have to travel up and down as frequently. (Knowlton, Zagoren, Hill, Griffin, Spielholz, Yannuzzi)

Response: While some institutions may consider a larger floor plate to be beneficial, MSKCC believes that the close physical relationship to MSKCC and the adjacent medical institutions make this site, which defines the foot print of the research building, highly desirable. As described in Section I, "CIVITAS Alternative," of Chapter 18, "Alternatives," a larger floor plate on this site was not shown to be practicable in MSKCC's opinion.

Comment 14: CIVITAS has proposed a research building that would provide the same floor area and be 140 feet tall on 69th Street, and 320 feet tall on 68th Street. It would accommodate retaining the Kettering building until the first phase is complete. (Bass)

Response: A discussion of the CIVITAS alternative has been added to the FEIS in Section I of Chapter 18, "Alternatives." As described in further detail there, MSKCC does not believe that the floor area provided would satisfy MSKCC's need for

laboratory space and the mechanical area to support it. While CIVITAS states that its alternative would provide 260,000 square feet, the drawings do not support this assertion in the opinion of MSKCC and its architects. Further, the floor area required for the first phase is not intended to merely replace the Kettering Laboratory floor area, but also to provide adequately sized, state-of-the-art facilities for the researchers and programs in Kettering, for researchers in Schwartz, and for some of the researchers in Rockefeller Research Laboratory, as well as space for researchers and physicians that are currently being recruited.

Comment 15: The institutions did not collaborate on their plans. (Slater) Rockefeller University and New York University are also proposing lab buildings. Why couldn't the institutions get together? (Stark) Given the construction of similar laboratory buildings on the East Side, including Rockefeller University and Bellevue, joint space planning and infrastructure sharing should be considered. (Marcus)

Response: Each institution needs its own research facilities to meet its own needs. It should be noted that laboratories proposed for development on land that is currently part of the Bellevue campus are commercial biotech laboratories, not translational research facilities, and therefore, are not comparable to this project. As described in Chapter 1, "Project Description," of both the DEIS and the FEIS, MSKCC is working with other institutions to develop laboratories that can be shared, such as the Center for Structural Biology in upper Manhattan. In addition, MSKCC has long-standing collaborative relationships with Rockefeller University, Cornell University, Weill Medical College of Cornell University, and New York Presbyterian Hospital.

Comment 16: Rockefeller University's proposed research building is only 230 feet tall. (Ponticello)

Response: Rockefeller University's proposed research building is subject to its own CEQR review. Its height and its program are based on its own site constraints and its own program. Shorter research buildings are considered in Chapter 18, "Alternatives."

Comment 17: MSKCC has not shared its programmatic requirements, making it difficult to engage in meaningful discussion and evaluation. (Marcus letter, Stark)

Response: MSKCC plans have become part of the public record as part of the ULURP application, and programmatic and laboratory requirements were outlined in the DEIS in Section F, "Proposed Plans," in Chapter 1, "Project Description."

PROJECT DESCRIPTION—LAND USE ACTIONS

Comment 18: The proposed rezoning is over-reaching and goes beyond what MSKCC needs. (Grannis)

Response: In response to comments from the public, DCP, and elected officials, MSKCC has removed the south block from the proposed rezoning area. The DEIS and the FEIS document the need for the rezoning of the north block and the main campus block in Section C, "Project Purpose and Need," of Chapter 1, "Project Description."

Comment 19: The up-zoning is enormous and outrageously overbroad. The rezoning is an assault. R9 in the midblock would allow much larger buildings adjacent to 4-story buildings. The rezoning would allow too much density in the midblock, and such a large concentration of increased density would have adverse impacts. (Fawbush, Rice, Levine, Kersavage, Maloney)

Response: As stated above, MSKCC has reduced the height of the proposed research building and removed the south block from the rezoning area, and reduced the rezoning area by one-third. The DEIS disclosed an adverse impact on urban design and visual character in 2007 with the proposed research building. As described in the FEIS, the reduction in the height of the proposed research building from 440 feet to 420 feet has somewhat reduced that effect. The DEIS also disclosed a significant adverse impact in 2011, with full build out on the main campus and south blocks as well as the north campus block. With the removal of the south block from the rezoning, the overall impact has been reduced. However, as disclosed in FEIS Chapter 8, "Urban Design and Visual Resources," there is still an adverse impact created by increased density in the midblock.

Comment 20: MSKCC is asking CPC and the Board of Standards and Appeals (BSA) for waivers from virtually all requirements of R9 zoning. (Ashby)

Response: From CPC, MSKCC is requesting an authorization to modify height and setback requirements on streets internal to its LSCFD (68th Street), and a Special Permit to modify height and setback on peripheral streets (69th Street) as described in Section E, "Proposed Actions, of Chapter 1, "Project Description,"in both the DEIS and the FEIS. From BSA, MSKCC is requesting variances for lot coverage and for modification of rear yard equivalent. MSKCC is also requesting a special permit for temporary failure to comply for a brief time during construction of the research building. This is also described in Section E, "Proposed Actions, of Chapter 1, "Project Description,"in both the DEIS and the FEIS. All of these actions would apply only to the research building and not to any other site. Further development on the main campus block is also expected to require additional actions when the actual architectural program and design is developed as described in Section G. "Proposed Design, "of Chapter 1, "Project Description" of the DEIS.

Comment 21: The proposed lab building can be built with existing R8 zoning. (Grannis, Stackpole, Levine, Krueger)

Response: Various R8 alternatives are considered in Chapter 18, "Alternatives." R8 zoning does not provide sufficient floor area (392,275 square feet) to satisfy the program of the building (529,229 square feet). There is no other mechanism in the zoning resolution to increase this floor area that would be applicable to this site and this use.

Comment 22: The proposed lab building can be built with R8 zoning by asking BSA for variances under Section 72-21. (Rice, Marcus, HDC)

Response: The amount of floor area that would be required to satisfy the proposed building program has not previously been granted by BSA under Section 72-21 at similar locations, to the knowledge of MSKCC's land use attorney. In addition to the lot coverage and rear yard variances which the applicant has requested, the BSA would have to approve a variance providing FAR 1.7 beyond the maximum permitted floor area under R8. Variances are to be pursued when applications providing the necessary change are not available from CPC. In this instance, the map amendment replacing the midblock R8 with a midblock R9 would provide the additional floor area needed by MSKCC for development of the proposed research building in a manner consistent with its programmatic needs.

Comment 23: The proposed actions give MSKCC *carte blanche* for future development. Although MSKCC states that it will have to come back before CB8 and CPC to achieve its full build out, once granted the R9 zoning, it will have a blank check to build whatever R9 zoning permits. Furthermore, MSKCC has repeatedly said that the reason it is seeking the R9 now is so that it could *avoid* coming back to the Community Board and other parties involved in ULURP. (Fawbush)

Response: The recognition of the MSKCC campus as a LSCFD, approval of the authorizations for height and setback relief, and the transfer of floor area across a street, provide CPC with the opportunity to regulate any further development within the boundaries of the LSCFD. MSKCC has stated that it is seeking the zoning text amendment to avoid the need for a series of incremental major land use actions in the future, not to avoid further the necessity of any land use actions. MSKCC does not anticipate asking for further major actions, but it is likely that height and setback waivers would be necessary to build modern hospital buildings, which as shown with the proposed research building (see Chapter 1, "Project Description," in the DEIS and FEIS) tend to rise straight up without setbacks. The DEIS and the FEIS look at a reasonable worst case full build out on the campus with the proposed rezoning.

Comment 24: MSKCC is not a campus. It is only 50 percent of three blocks. (Marcus)

Response: "Campus" is not a defined term for the purposes of the Zoning Resolution of the City of New York. The properties owned by MSKCC on the three blocks set forth in its applications, clearly comply with the requirements contained in Section 12-10 as a large-scale community facility. The church is part of this designation because its unused floor is transferred to MSKCC property.

Comment 25: There should be a restrictive declaration for further development and what it should provide or include. (JSchneider)

Response: CPC has the discretion to require a restrictive declaration in connection with the approvals of these applications.

Comment 26: If a rezoning needs a Restrictive Declaration, there must be something inherently wrong with it. Moreover, Restrictive Declarations are often long, complex, difficult to understand and implement, and enforceable only in court. (Marcus)

Response: Restrictive declarations are routinely adopted by CPC in connection with land use applications.

Comment 27: The proposed research building cannot be considered an "accessory use" to Memorial Hospital. It is not permitted under zoning. (Ashby, Sigmond) Such a facility is not part of usual hospital functions and does not serve patients at all. Thus, the use is not accessory. In its explanation of why the proposed research building will not require Certificate of Need (CON) review, MSKCC has publicly stated that there is no relationship between the hospital and the research facility. (Sigmond)

Response: Medical laboratories operated by a not-for-profit entity are an established Group 4 community facility use in their own right, and can exist independently. For example, the New York Blood Center at 304 East 67th Street is located in an R8 zoning district. In addition, MSKCC's own Kettering Building, which is to be replaced through the approvals sought in these applications, has a certificate of occupancy as a Group 4 community facility use. There is nonetheless a strong relationship and need for physical proximity between the clinical and research components of MSKCC.

Article 28 of the Public Health Law (see §2802) and Department of Health regulations (10 NYCRR §710.1) require that "the erection, building, acquisition, alteration, reconstruction, improvement, extension or modification of a medical facility, including its equipment and services," shall be subject to the certificate of need program. Accordingly, only projects that directly affect or involve licensed medical facilities come within the CON process: physician's office buildings, staff residences and research facilities have not been subject to CON review. Even where a private physician offered imaging services to hospital patients in a mobile unit on the hospital premises, the service was regarded as not a hospital service that required CON review. The

fact that the research building has a corporate or functional relationship to the hospital licensed pursuant to Article 28 does not subject the building to CON review.

Comment 28: Designation of the LSCFD would enable MSKCC to receive certain height, setback, and rear yard waivers and permit the transfer of development rights from the research building site to any other part of the campus. Under certain circumstances, the designation would allow ULURP to be sidestepped. (Grannis)

Response: Authorizations and special permits requested pursuant to LSCFD are subject to CPC's land use review procedures.

LAND USE, ZONING, AND PUBLIC POLICY

Comment 29: Research laboratories are Use Group 17 and are not allowed in residential districts. If the research laboratory is really part of the hospital, MSKCC needs a Certificate of Need approval; but they say they don't need the Certificate of Need, so this is not part of the hospital. (Tuin)

Response: Medical laboratories operated by not-for-profit entities are deemed Use Group 4 and are permitted in R8 and R9 districts as a matter of right. See response to Comment 27 above in regard to the Certificate of Need.

Comment 30: R9 violates the lower density and the valleys of the midblock. It undermines residential use. There is no R9 in any midblock on the Upper East Side. (Tuin, Fawbush, Stackpole, Peveri, Levine, Krueger, Ponticello, Marcus, CIVITAS, HDC)

Response: R9 is uniformly mapped throughout all areas of Manhattan predominately zoned between R8 and R10, where the uses reflect occupancy by large-scale medical institutions providing clinical, research, and educational facilities serving the entire metropolitan region. R9 is mapped in the midblocks east of York Avenue, from East 63rd to East 72nd Streets, and at the Mount Sinai Medical Center between Fifth and Madison Avenues and 96th and 102nd Streets.

Comment 31: Rezoning to R9 in the midblock reverses the 1985 rezoning of midblocks on the Upper East Side to R8B. (CB8, Ashby, Valk, Grannis, HDC, Goodman) R8 zoning was left on the MSKCC midblocks in recognition that institutions needed more. R9 is not found on any East Side midblocks. (CB8, Slater, Grannis, Goodman) R8 is an infringement on the R8B midblocks and R9 makes it worse. (Kersavage)

Response: In considering which midblocks would be suitable for R8B under the 1985 rezoning, CPC applied its judgment to determine which midblocks qualified for

the R8B contextual profile it had developed. CPC's decision that the midblocks occupied by MSKCC did not meet that profile was limited to that inquiry and had no intended implications for or against future land use actions. As described in the FEIS, Chapter 1, "Project Description," and Chapter 2, "Land Use, Zoning and Public Policy," the rezoning would only be applied to two midblocks and it would not constitute a significant adverse impact on land use, zoning, and public policy.

Comment 32: R9 zoning is acceptable east of York Avenue, but not west of York Avenue. (Fawbush)

Response: The City zoning map currently provides for R9 in locations west of York Avenue, including the Mount Sinai Medical Center between Fifth and Madison Avenues and East 96th and 102nd Streets. While the location is beyond the study area for MSKCC, the major medical center use is comparable. In the study area for this project, R9 is mapped in the midblocks east of York Avenue from East 63rd Street to East 72nd Street, again for major medical institutions.

Comment 33: Rezoning to R9 for MSKCC sets a dangerous precedent. (Lenissi, Peveri, Ashby, Landmark West!, Slater, Sidney, Chrein, Griffin, Grannis, Eggers, Marcus, CIVITAS, Yannuzzi, HDC)

Response: All land use applications are reviewed closely by CPC and are subject to City Council review. Each rezoning is subject to review pursuant to the Uniform Land Use Review Procedure and City Environmental Quality Review (as described in Section I. "Environmental Review and Project Status," of Chapter 1, "Project Description," in both the DEIS and the FEIS). Any such similar applications will be similarly reviewed, and thus, the use of these applications as precedent will be closely limited to their facts.

Comment 34: Institutions want more than any developer would ask. DCP needs to reexamine community facility zoning. (Peveri)

Response: DCP has been reviewing the Community Facility zoning regulations, however, no changes have been proposed to date. Changes to these zoning regulations are beyond the scope of this action.

Comment 35: R9 zoning in the midblock will destroy the city. (Ross)

Response: Since publication of the DEIS the proposed rezoning area has been reduced from three midblocks to two midblocks. As stated above, each rezoning request is judged by CPC on its own merit and each is subject to review pursuant to the Uniform Land Use Review Procedure and City Environmental Quality Review. In Chapter 2, "Land Use Zoning and Public Policy," the FEIS has examined the potential impacts of the rezoning of these two midblocks and has not identified

any significant adverse impacts in terms of land use and zoning. While significant adverse impacts were identified in other analysis areas, these impacts are limited to the study area and do not constitute destruction of the city.

Comment 36: MSKCC should not overwhelm the larger welfare of the population of an area of which it is only one part, no matter how important its mission. (Marcus)

Response: This FEIS as well as the DEIS examined a full range of environmental issues that affect the community surrounding MSKCC. Only a limited number of impacts were identified and mitigation was proposed for all mitigable impacts.

Comment 37: This is the largest proposed rezoning in the last 40 years. There is no R9 in the midblocks of the Upper East Side. (Maloney)

Response: Since publication of the DEIS, the area of the proposed rezoning has been reduced from three midblocks to two midblocks. The proposed rezoning area is considerably smaller than any of the contextual rezonings which applied to entire communities. R9 is mapped in the midblocks directly east of MSKCC on the midblocks east of York Avenue. R9 is also mapped on the Mount Sinai Medical Center campus.

Comment 38: MSKCC believes that other tall midblock buildings justify approval of the rezoning. Comparable midblock buildings exist only on wide crosstown streets, not on smaller residential side streets. (Grannis)

Response: MSKCC does not argue that other tall midblock buildings justify approval of the rezoning. MSKCC has sought rezoning on the basis of its needs to carry out its mission as described in "Chapter 1, Project Description." As shown in Chapter 18, "Alternatives" R8 zoning would permit a building as tall or taller than the proposed research facility. Additional material has been added to Chapter 8, "Urban Design and Visual Character," in the FEIS regarding midblock buildings and average building heights.

Comment 39: The City Planning Commission should leave the zoning R8. (Kieras)

Response: Three R8 Alternatives are presented in Chapter 18, "Alternatives." None of these satisfy MSKCC programmatic needs for the research building and none would provide MSKCC with the additional floor area that it needs to develop on the midblock.

Comment 40: R8B zoning allows light and air in the light courts of city and suburban homes. (Kieras) R8B zoning has enormous support. (Slater)

Response: No R8B Alternative has been studied because it is neither the existing, nor the proposed zoning district.

Comment 41: With an FAR of 10 for institutions under the proposed rezoning, residential uses with a maximum FAR of 7.5 would no longer compete for available sites. Whereas MSKCC owns perhaps 50 percent of the land in the 3 blocks, with the rest being a mix of residential, school, and church uses, MSKCC would have a strong incentive to purchase the remaining sites. (Marcus)

Response: Since publication of the DEIS, the south block has been removed from the proposed rezoning area. The sites in the rezoning area, as analyzed in the FEIS, that are not part of MSKCC's LSCFD are owned by New York Hospital. MSKCC believes that it is unlikely that NYH would sell its property to MSKCC.

Comment 42: There are two projects being contemplated by the Cornell University School of Medicine on the block bounded by York and First Avenues and 69th and 70th Streets. They should be considered in the MSKCC FEIS. (Cornell)

Response: Plans for these projects are in the preliminary stages. Preliminary bulk studies indicate the need for approvals by CPC or BSA. Applications have not been submitted to DCP or BSA. Therefore, their specific definition is speculative at this time. Further, those projects would be subject to their environmental review. A number of projects are identified in Section C, "Land Use," of Chapter 2, "Land Use, Zoning and Public Policy," and analyzed in each of the technical analyses. Further, the traffic analysis includes a background growth rate to account for currently undefined or unidentified projects.

COMMUNITY FACILITIES AND SERVICES

Comment 43: MSKCC is causing the relocation of the Woodward School. (Marcus, CB8)

Response: The Potential disruption of outdoor activities at the school during construction of the research building was identified in the DEIS Chapter 16, " Construction Impacts."

MSKCC has discussed relocation of the William H. Woodward, Jr. Nursery School with the school's leadership and with representatives of New York-Presbyterian Hospital, which owns the school's present location. As a result of these conversations, MSKCC believes that it is likely that the school would be relocated to the ground floor of the present MSKCC library, and have a separate entrance to that space from 1233 York Avenue. A play area would be provided in a terrace adjacent to the medical library. Preliminary designs are now being developed for review by the school.

OPEN SPACE AND RECREATIONAL FACILITIES

Comment 44: The area is woefully lacking in open space. St. Catherine's Park is one of the most heavily used open spaces. MSKCC employees eat lunch there. Prostate Center patients and visitors will use the park. The impact on the park will be disastrous. The only way to protect the park is to deny MSKCC's application. (Welling)

Response: Both the DEIS and FEIS acknowledge that the area is underserved in terms of open space resources, and that St. Catherine's Park is heavily used by neighborhood residents and workers. This is not expected to change in the future with or without the proposed project.

The DEIS indicated that the minimal decrease of the passive open space ratio resulting from the proposed project would not, by itself, constitute a significant adverse effect on open space resources. However, it was determined in the DEIS that the effect of both the decrease in the passive open space ratio *and* shadows on the park from the proposed research building would be considered a significant adverse impact. Between the DEIS and FEIS the height of the proposed research building was reduced from 440 feet to 420 feet; consequently the corresponding shadows would be less. In addition, the south block has been removed from the rezoning area; and, therefore, the number of open space users would be less than that with the DEIS proposal. Because of the reduction in the project's shadow and smaller number of open space users, the FEIS concludes that the proposed research building would not have a significant adverse impact on open space in general, or St. Catherine's Park in particular.

However, full development on the main campus block would further increase open space users and shadows on St. Catherine's Park. The FEIS identifies a potential significant adverse impact in 2011. This is an unmitigable impact as disclosed in Chapter 19, "Unavoidable Adverse Impacts."

Comment 45: Open space mitigation should be provided for St. Catherine's Park (JSchneider, BSchneider)

Response: The open space impact is unmitigable as disclosed in Chapter 19, "Unavoidable Adverse Impacts."

HISTORIC RESOURCES

Comment 46: St. Catherine's Church will be overwhelmed by a 440-foot tower, 10 feet away. (Griffin)

Response: As stated in the Foreword and throughout the FEIS, since publication of the DEIS, the height of the proposed research building has been reduced from 440 feet to 420 feet.

The FEIS discloses the significant adverse impacts that the proposed building's shadows would have on the church's windows and identifies mitigation

measures for those impacts. The FEIS discloses potential construction impacts and also identifies mitigation measures for them. The FEIS does not project any other adverse impacts on the church as a result of the proposed building's height or bulk.

MSKCC, its architects, and consultants have stated that it has been their intention to create a building that would respect the design of St. Catherine's Church and would visually minimize the new building's appearance from the side streets.

As currently contemplated, the building's masonry base is intended to relate in scale, color, and texture to St. Catherine's Church. The design of the building addresses the adjacency of the church by the inclusion of a linear courtyard between the two buildings. The courtyard would offer views from the rectory, which is planned to be located on the lower floors of the research building to the east facade and windows of the church. The north-south orientation of the building's tower is intended to help minimize the appearance of the building in its immediate context on both East 68th and 69th Streets, since the two narrower facades are along the streetwall.

URBAN DESIGN AND VISUAL RESOURCES

Comment 47: The research building is over-scaled, but designed to minimize visual impacts. (MAS)

Response: Since publication of the DEIS, the height of the research building has been reduced from 440 to 420 feet. MSKCC has stated that much attention has been given to the design of the proposed research building to reduce its overall appearance. As currently contemplated, the architectural design calls for projecting horizontal shading devices on the east side of the tower that would create shadow patterns across this facade. As a result, the tower's scale and appearance could be perceived as constantly changing and the appearance of the increased scale in the midblock could be reduced. These design refinements are described in the FEIS in Chapter 1, "Project Description," as well as Chapter 8, "Urban Design and Visual Resources."

In addition, the approximately 7-story wing of the building along East 68th Street would be contextual with that of surrounding buildings, and this portion of the building, rather than the tower, would be most apparent to pedestrians passing by on East 68th Street.

NEIGHBORHOOD CHARACTER

Comment 48: The neighborhood should not be overwhelmed by inappropriate development resulting from R9 zoning. (Knowlton, Griffin)

Response: As described in Chapter 9, "Neighborhood Character," is an amalgam of many factors including land use, scale and type of development, historic features, patterns and volumes of traffic, noise levels and other physical and social

characteristics. In the DEIS, a significant adverse impact was identified based largely on increased density and traffic in both build years. This impact would be partially mitigated by the fact that density in the midblock has been greatly reduced with the reduction in height of the research building, and the south block has been removed from the rezoning area. In addition, at full build out, population and traffic generation would also be greatly reduced.

Comment 49: The neighborhood has been altered by large structures built in the last 10 years. (McGuire)

Response: As described in Chapter 2, "Land Use, Zoning, and Public Policy," recent development in the area has included 38- and 50-story residential buildings on East 72nd and 73rd Streets, and a 24-story residential building at East 66th Street and First Avenue. It has also included an expansion of Sotheby's on York Avenue between East 71st and 72nd Streets, as well as projects at the medical institutions east of York Avenue. There are also several developments expected to occur in the near future that are independent of MSKCC's proposed project. These are identified in Table 2-1, "Development Projects Expected to Occur by 2007," in the FEIS as well as the DEIS. The FEIS as well as the DEIS accounts for past development, identifies ongoing trends, and incorporates known future projects into the relevant analyses.

Comment 50: The proposed development will unduly impact on the use, development and character of the neighborhood by overcrowding it, placing a huge high rise in the midblock, and by darkening the only open space in the area. (Sigmond) While I recognize the need to modernize MSKCC's research facilities, there is no reason this should negatively impact the quality of life on these Upper East Side blocks. (Spielholz)

I am concerned with the adverse effects of the addition of more than 7,000 people to an already congested area. Even a portion of this added growth would have impacts in terms of pedestrian traffic, vehicle congestion, and pollution, crowding of the Lexington Avenue subway line and M66 bus (which was not even considered in the DEIS), and shadows on St. Catherine's Park. (Grannis) The proposed facility would have adverse effects on the quality of life in this residential community and its inhabitants, specifically air, water, noise, litter, traffic, parking, transportation, food services, toxic waste, and population density. (Yannuzzi)

Response: Both the DEIS and FEIS consider the project's potential to affect conditions related to, among others, land use, open space, pedestrians and transit, traffic and parking, air quality, noise, infrastructure, hazardous materials, and overall neighborhood character. Since publication of the DEIS, the height of the research building has been reduced from 440 feet to 420 feet and the south block has been eliminated from the rezoning area. This would greatly reduce anticipated effects and impacts in terms of the 2001 build year (when the south block is assumed to be developed with an ambulatory care facility and a short-

term residence for hospital patients and their families). As discussed in the relevant analyses of this FEIS, the proposed project (with mitigation, where practicable) would not result in significant adverse impacts in the technical areas of land use, pedestrians and transit, traffic and parking, air quality, noise, infrastructure, and hazardous materials. However, the FEIS concludes that taken together, the effects of the proposed project particularly as related to density, would cause a significant adverse impact on neighborhood character. Because the effect is related to the scale of the buildings, there is no practicable way to mitigate the impact and satisfy the programmatic requirements of MSKCC on the existing site.

HAZARDOUS MATERIALS

Comment 51: As shown in Table 10-3, this project would permit a building filled with biohazards in a residential neighborhood. (Ross) CPC cannot permit this tower full of biohazards in a high density residential area. (Carlin)

Response: Both the DEIS and the FEIS analyze potential hazardous material impacts in Chapter 10, "Hazardous Materials." This chapter shows that managing hazardous materials is very closely regulated and that significant adverse impacts are not anticipated. MSKCC has a highly trained technical staff. All hospitals do handle hazardous materials. MSKCC has a biosafety level 3 laboratory which is not currently in use. Such a lab may be needed for a specific patient, now or in the future. That is why one is to be provided in the proposed research building. Biosafety level 3 materials are handled according to Center for Disease Control and National Institutes of Heath guidelines. MSKCC has biosafety level 2 materials. All of them are handled appropriately.

Further, hospitals and their accessory uses are permitted in residential districts.

Comment 52: EIS does not disclose hazardous materials. Residents do not want them handled or vented in their community. (Bishop)

Response: Both the DEIS and FEIS contain a thorough disclosure of hazardous materials employed and handled at MSKCC's existing and proposed research and patient care facilities. As discussed in the EIS, the transport, use, and disposal of these materials is strictly regulated and MSKCC adheres to all required procedures. Therefore, no adverse impacts are anticipated and no mitigation is required. Chapter 14, "Air Quality," includes an analysis of the effects on air quality of a worst-case laboratory spill which concludes that even under such extreme conditions, no significant air quality impacts would result.

Also disclosed in the EIS is the project's potential to disturb hazardous materials during demolition and construction activities. The removal, handling, and disposal of these materials is also closely regulated, and all necessary measures will be employed to assure that no workers, visitors, or nearby residents are exposed to hazardous materials during demolition and construction activities. In order to avoid any potential adverse impacts due to

contamination of subsurface materials, MSKCC has entered into a restrictive declaration requiring MSKCC to test soil and ground water after demolition of buildings and to perform remediation, if necessary, based on the test results. All testing and remediation would be subject to the review and approval of the Department of Environmental Protection.

Comment 53: The proposed loading dock is on a residential street and will draw hazardous materials trucks onto residential streets. (Sigmond)

Response: As discussed in Chapter 12, "Traffic and Parking," trucks traveling to the loading dock would be required to travel along truck routes designated by the New York City Department of Transportation (NYCDOT), which, in the study area, includes First and Second Avenues. As disclosed in the FEIS, on the cross streets most hazardous materials deliveries and pick ups are expected to take place from 68th Street, where they are now located. A system of tunnels through the MSKCC campus would allow material to be distributed to the proposed research building. For deliveries on 69th Street, the proposed building would have deep truck docks that would fully enclose delivery/pick-up activities. The loading area for the proposed research building is shown on Figure 1-5 of the FEIS. No hazardous materials deliveries, pick-up, or waste disposal is expected to be conducted at curbside.

TRAFFIC AND TRANSPORTATION

Comment 54: The Lexington Avenue Subway is already too crowded. (Maloney)

Response: While there is overcrowding on the Lexington Avenue subway both with and without the proposed project, the increment from MSKCC would not represent a major change. Based on data provided by New York City Transit (NYCT) for the year 2000, ridership at the Lexington Avenue subway station at 68th Street ranks 24th out of 424 stations, with an annual ridership of 9,762,139. This line carried approximately 33,610 riders per weekday in 2000. The proposed project would result in approximately 320 riders per day in 2007, and approximately 1,130 riders per day at full buildout of the project in 2011. In 2011, this increment would represent approximately 3 percent of existing daily ridership at this station. As discussed in Chapters 13, "Pedestrians and Transit," and 17, "Mitigation," the project as analyzed under CEQR for this FEIS would result in impacts at the northeast and southeast subway stairways at the 68th Street station that require mitigation in 2011.

Comment 55: The traffic study area does not include the critical intersections that provide access to and from the Queensboro Bridge. The DEIS indicates that 19 percent of the vehicular traffic generated by the proposed expansion would come from either Queens or Long Island, yet ignores the major access portal immediately to the south of the project area. No traffic data was collected nor analyses performed for the intersections of Second Avenue with the access to the

Queensboro Bridge, Second Avenue with 62nd Street, the exit from the Queensboro Bridge with 62nd Street, and First Avenue with 62nd Street.

The *City Environmental Quality Review (CEQR) Technical Manual* states that there are "..several primary factors in defining the traffic study area, including: What are the problem locations or potential problem locations along these routes or next to these routes that could be affected by traffic generated by the proposed action?" In addition, the New York Hospital EIS, prepared in 1991, and whose trip generation is the same order of magnitude as the subject application, which was used to establish trip assignment for the Memorial Sloan-Kettering DEIS, states that the "... study area boundary was extended south to East 57th Street to reflect the unique influence of the Queensboro Bridge facility on the Midtown Manhattan traffic operations."

Field observations conducted by Adler Consulting indicate that the above intersections experience considerable congestion during the PM peak hour and require Traffic Control Agents to ensure that the intersections are clear and spillbacks from downstream intersections do not block these intersections. The traffic study area should be expanded to include analyses of these critical intersections. (Adler)

Response: The intersections sited in the comment would have relatively small levels of incremental traffic from the project and therefore were not included in the analysis for detailed study or field observation. Intersections for detailed traffic analysis were selected in coordination with DCP and NYCDOT, under *CEQR Technical Manual* guidelines. The study area is bounded by East 72nd Street to the north, East 61st Street to the south, Second Avenue to the west, and York Avenue to the east. Analyses were performed for the intersections closest to the project site that would experience the greatest effects from trips generated by the proposed actions. The proposed actions would result in fewer than 30 vehicle trips during each of the AM, midday, and PM peak periods analyzed at the intersections along First and Second Avenues at East 62nd Street; a maximum of 14 and 3 project-generated vehicle trips would travel through these intersections on First and Second Avenues, respectively, with full buildout of the proposed actions. It is unlikely that these low volumes of project-generated vehicle trips would result in significant impacts at the intersections of East 62nd Street. Therefore, additional analysis at these intersections is not warranted. The NY Hospital EIS is ten years old and analyzed a facility with different programmatic and operating characteristics. In any case, that EIS identified only one of the locations referred to in the comment (East 62nd Street and Second Avenue) as being sensitive to significant impacts from the NY Hospital project.

Comment 56: Within the traffic study area, two potentially critical intersections were not analyzed: the intersection of York Avenue with 70th Street and the intersection of First Avenue with 70th Street. The intersection of York Avenue with 70th Street is the emergency entrance to New York Hospital, which should, for this reason alone, warrant its inclusion in the traffic study. The potential impacts on

access to emergency services should also be addressed. In addition, the 70th Street intersection is located immediately to the south of two intersections that currently exhibit poor Levels of Service (LOS E or F) during all three time periods. By not including the intersection of York Avenue with 70th Street, there is a break in the continuity of the traffic flows analyzed and the information presented.

The intersection of First Avenue with 70th Street is the only intersection between 66th Street and 71st Street that is not analyzed. From a continuity perspective, and since 70th Street is the approach to the emergency entrance to New York Hospital, both the intersections at York Avenue and First Avenue should be included within the study and analyzed. (Adler)

Response: Intersections analyzed were selected in coordination with DCP and NYCDOT, and were presented in the Scope of Work; the study area focused on locations most likely to be impacted by project generated traffic. As shown in the project-generated traffic figures (Chapter 12 of the FEIS) York Avenue at East 70th Street is less sensitive to project-generated trips because project trips are in the through movements. In addition, no more than 3 project-generated trips turn right on to East 70th Street from First Avenue and continue to make an eastbound right turn on to York Avenue. The intersections at East 72nd and East 71st Streets at York Avenue were selected for analysis because East 72nd Street is a major crosstown street and East 71st Street provides access to the local street network from the FDR Drive.

Comment 57: The DEIS states that traffic data was collected in October 2000 and February 2001 and included peak period turning movement counts and one week of counts from automatic traffic recorders (ATRs). The *CEQR Technical Manual* states that "... weekday traffic counts have generally been taken over a three-day period to ensure that a representative day is reflected in the traffic volume analyses ..." The DEIS does not indicate whether the ATR counts were conducted concurrently with the manual turning counts to establish volumes for a representative day. The procedures followed to determine the existing traffic volumes should be documented. In addition, the peak hours have not been identified in the DEIS. (Adler)

Response: As noted in Chapter 12, "Traffic and Parking," the data collection program was conducted in October, 2000 and February and March, 2001. ATR counts on York Avenue were conducted during the week of October 2, 2000; in accordance with the guidelines presented in the CEQR Manual on page 3O-8, "one day of manual counts concurrently with a three-day 24-hour automatic traffic recorder (ATR) machine count, from which adjustments to the one-day manual count can be made. It is entirely possible that fewer or more than three days of counts may be needed to represent a typical day." Manual traffic counts at study area intersections were conducted on October 4, 2000. Additional ATR and turning movement counts were collected in February and March, 2001. This data is part of the backup submitted to NYCDCP and NYCDOT, as part of the CEQR file, and is available for public review.

Based on the data, the existing network peak hours are 8 to 9 AM; 1:30 to 2:30 PM; and 5 to 6 PM.

Comment 58: The *CEQR Technical Manual* states "Travel speed and delay data are generally collected for use in the mobile source air quality analyses, and should be collected concurrently with the traffic count program." The DEIS does not indicate that travel speed and delay data were collected. The DEIS should indicate if these data were collected and, if so, when. (Adler)

Response: Field data for travel speeds and delay used in the mobile source air quality analysis were collected on October 4, 2000, as part of the data collection program conducted in October, 2000. This data is part of the backup submitted to NYCDCP and NYCDOT, as part of the CEQR file, and is available for public review.

Comment 59: A review of the existing traffic volume information contained in Figures 12-2 through 12-4 of the DEIS indicate that the volumes on westbound 71st Street and 72nd Street approaching York Avenue are similar. This is unexpected since 71st Street is an exit from the southbound FDR Drive and 72nd Street is a dead-end street. The traffic volume data contained in the New York Hospital EIS suggests that volumes on 71st Street should exceed the volumes on 72nd Street by at least two to one and possibly by as much as seven to one, depending upon time of day. The traffic volume information for the 71st Street intersection with York Avenue should be recounted and verified. It may also be necessary to perform additional capacity analyses. (Adler)

Response: The traffic volumes for East 71st and East 72nd Streets are based on field data recorded in February and March 2001. Peak volumes obtained from the counts were used in establishing the base traffic volumes. The traffic volume information presented in the *New York Hospital EIS* is 11 years old and may not be representative of existing traffic volumes. Since the September 11, 2001 tragedy, data collection efforts have been suspended indefinitely; a recount at this time would not be representative of conditions presented in the EIS. Therefore, data collection and any additional capacity analyses for these locations would be inconsistent with the baseline conditions presented in Chapter 12, "Traffic and Parking," of the DEIS.

Comment 60: At the intersection of York Avenue with 63rd Street, the capacity analyses were performed for the westbound 63rd Street approach as three shared-use lanes. A review of the physical inventory worksheet and a field survey by representatives of Adler Consulting indicate that the westbound 63rd Street approach consists of a left-turn only lane, a shared left-turn/through lane, and a shared right-turn/through lane. The capacity analyses should be recomputed using the correct lane configuration for the westbound 63rd Street approach. The proposed mitigation, which involved the transfer of green time from the

westbound approach to the north- and southbound York Avenue approaches, may need to be reconsidered. (Adler)

Response: The capacity analysis erroneously analyzed the westbound approach at East 63rd Street and York Avenue as three shared lanes. The HCS analysis for this intersection has been updated and Chapter 12, "Traffic and Parking," has been revised to reflect the configuration at the westbound approach of East 63rd Street. With the FEIS proposed actions and revisions to the lane configuration, there would no longer be a significant impact to this intersection during the AM peak period in 2011. Proposed mitigation measures, like those presented in the DEIS, include a one-second transfer of green time between north- and southbound shared and exclusive phases for this intersection are presented in Chapter 17, "Mitigation."

Comment 61: The capacity analyses information for the intersection of York Avenue with 62nd Street, summarized in Table 12-19, indicate that LOS E conditions are anticipated for the eastbound 62nd Street approach during the PM peak period when the proposed project is operational.

A review of the capacity analyses worksheets indicate that eastbound 62nd Street was analyzed with a three-lane approach. The physical inventory included with the capacity worksheets indicates that the street is approximately 34 feet wide with no standing permitted from 7 AM until 7 PM, except trucks loading and unloading on the north side of the street and no parking allowed anytime on the south curb. However, a field inventory of the parking regulations by representatives of Adler Consulting indicate that both curb faces (north and south) exhibit the "no standing permitted from 7 AM until 7 PM, except trucks loading and unloading" regulations. This means that both curb lanes would probably be occupied by vehicles during the peak periods. There would be approximately 18 feet available for use by moving vehicles, which would result in two lanes of moving traffic, not three lanes. The capacity analyses should be recomputed using two nine-foot traffic lanes for the eastbound 62nd Street approach. (Adler)

Response: Based on field inventories prepared for the analysis and additional field visits by Allee King Rosen & Fleming in October 2001, the parking regulation on the south side of East 62nd Street is "No Standing from 7AM to 7PM except Sunday," and the parking regulation on the north side of East 62nd Street is "No Standing from 7 AM to 7 PM except trucks loading and unloading except Sunday." Therefore, the lane configuration (3 nine feet moving ones and a 7 feet parking lane) for eastbound East 62nd Street approach analyzed in the HCS is correct, since parking is allowed only on the north side and the curb lane on the south side of East 62nd Street is available for moving traffic.

Comment 62: The capacity analyses information summarized in Table 12-19 indicates that LOS D conditions are anticipated for both the eastbound and westbound approaches of 68th Street at the intersection with York Avenue when the

proposed project is operational. However, observations of traffic during the weekday PM peak period by Adler Consulting indicated that both eastbound and westbound 68th Street (the exit from New York Hospital) currently experience LOS F conditions due to high numbers of turning vehicles, receiving lanes on York Avenue that are unavailable for use by turning traffic due to double-parked cars, and considerable pedestrian interference.

A review of the capacity analyses worksheets indicate that eastbound 68th Street was analyzed with a two-lane approach. However, the physical inventory indicates that the street is approximately 30 feet wide with curb parking permitted on the north side of the street and a bus stop located on the south curb. This leaves approximately 14 feet available for use to moving vehicles, which must be considered as one lane, not as two lanes. The capacity analyses should be recomputed using one lane (that is 14 feet wide) for the eastbound 68th Street approach. In addition, the DEIS should document and explain all instances where user inputs were entered to override the values calculated by the Highway Capacity Software analyses and then used to determine capacity. (Adler)

Response: Typically, bus lanes are analyzed as moving lanes. The bus stop on the south side of East 68th Street serves the M66 bus route, which has a maximum frequency of 15 buses per hour (or, an average of one bus every 4 minutes) during the PM peak hour. Most of the time, during these peak hours this bus stop is not being utilized, and therefore, serves as a moving lane for eastbound traffic. In addition, these buses are already included in existing traffic network volumes.

Also, LOS D conditions anticipated for the east- and westbound approaches of East 68th Street are representative of legally permitted, observed traffic operating conditions. Intermittent double-parking in the midblock area is an enforcement issue. The eastbound approach was correctly analyzed with two, 10 foot wide moving lanes. Therefore, no revisions to the analysis of this intersection is required.

HCS analysis was normalized at intersection approaches with volume-to-capacity (v/c) ratios of greater than 1.05 in existing conditions, in accordance with methodology practiced by DCP and NYCDOT. These locations are part of the HCS backup submitted to both of these agencies, and, as part of the CEQR file, are available for public inspection. Backup materials such as these are not generally published as part of the EIS.

Comment 63: The parking analysis indicates that there will be a very small number of off-street parking spaces available after the proposed project is operational. However, the "Existing Off-Street Parking Utilization" information contained in Table 12-2 is incomplete, since data were missing for nine facilities and incomplete data available for a tenth facility. Since the DEIS indicates that approximately 3 ½ percent of the off-street parking spaces within the study area would be available after the proposed project is operational, the missing

parking data should be collected and potential parking impacts reassessed. (Adler)

Response: Data for these facilities was unavailable from the parking facility operators, and therefore, these facilities were not included in the calculation of total available spaces for the off-street parking analysis. Exclusion of these facilities is conservative, because it is unlikely that all nine facilities would currently be at over 100 percent utilization. If this data were available and included in the analyses, the percent of available spaces would likely be similar to the analysis presented in the FEIS. Therefore, no reassessment of off-street parking facilities is required.

Comment 64: The DEIS failed to include the traffic impacts associated with the following developments in the study area: three apartment buildings along First, Second, and Third Avenues in the upper 70s, New York Hospital development at the corner of 70th Street with York Avenue, Rockefeller University facility at 68th Street with York Avenue, residential developments on 60th and 61st Streets, the Bridgemarket development, and the Bloomberg building (Alexander's redevelopment). It should be noted that many of these additional developments were already identified in the Greater Bridgemarket Traffic Study, which was prepared in July 2000 (approximately one year before the subject DEIS) by the New York City Department of City Planning. (Adler)

Response: Bridgemarket was operational when existing traffic counts were conducted, and therefore, trips generated by this development are included in existing baseline conditions.

Specific No Build projects within an approximate one quarter-mile radius were included in the analysis of conditions in the future without the project. The Rockefeller University Lab Building and four residential developments on the block bounded by East 60th and 61st Streets between York and First Avenues, were included in the analysis of future conditions without the project, as shown in Table 12-3, "Development Projects Expected to Occur by 2011."

In addition, a background growth rate of 0.5 percent per year, in accordance with the *CEQR Technical Manual*, was included for future analysis years, presenting a conservative estimate of future conditions. Trips generated by residential projects north of East 73rd Street and the Alexander's site west of Third Avenue would result in few trips through study area intersections, and can be accounted for in the background growth rate. Therefore, these projects need not be added to the No Build project list. As noted in the response to Comment 42, plans for the Cornell/New York Hospital project at East 70th Street and York Avenue are in preliminary planning stages, require approvals by CPC or BSA, and are expected to be subject to environmental review. Because applications have not yet been submitted to DCP or BSA, the project is speculative at this time, and should not be included in the traffic analysis for the proposed project.

Comment 65: There are discrepancies concerning the total number of people that would be generated by Phase 2 of the Proposed Action. On Page 12-43, the text indicates that there would be a net increase of 30 inpatients and 3,970 visitors per day. However, the population estimates contained in Tables 1-3 and 1-4 indicate that there would be 130 new inpatients and that there would be a total of 4,040 visitors per day. The discrepancies should be resolved, and the appropriate revised analyses should be performed. (Adler)

Response: It is not expected that 100 percent of inpatients and their visitors would arrive and depart the hospital daily, nor would they arrive and depart all during the peak hours of analysis. Rather, based on conversations with MSKCC, the inpatients and their visitors were adjusted to account for an average stay, and to account for a distribution of visitors over visiting hours. Therefore, no revisions to estimates of the inpatients and their visitors are necessary.

Comment 66: Figures 12-20 through 12-22 depict project-generated vehicle trips at full build out for the AM, midday, and PM peak hours, respectively. They indicate that traffic on York Avenue would make a right turn onto 71st Street for access to one of two parking garages. However, the traffic signs at the intersection of 71st Street with York Avenue prohibit turns from York Avenue onto 71st Street except for trucks making deliveries to New York Hospital. The vehicles in question must either be assigned to other parking garages in the area or assigned to continue on York Avenue to 73rd Street for access to the FDR Drive ramps to 71st Street and the garages. (Adler)

Response: Project generated trips were erroneously assigned to the northbound right-turn movement at the intersection of East 71st Street and York Avenue. The sign in the field reads, "No right turn except trucks for hospital deliveries." Traffic has been reassigned to continue north on York Avenue to East 73rd Street to access the garage on East 71st Street between York and First Avenues. The analysis has been updated to reflect this reassignment, as shown in Chapter 12, "Traffic and Parking."

Comment 67: The vehicle trips made by outpatients and visitors, as summarized in Table 12-16, represent approximately 60 percent of the vehicle trip making in Phase 2 and almost half (49 percent) of the total number of vehicle trips expected to be generated with full build out. However, the temporal distribution, modal split, vehicle occupancy, and hourly directional distribution for the vehicle trips made by outpatients and visitors are based on a single survey that was performed ten years ago in 1991. The use of "black cars" has grown considerably in New York City. The Department of City Planning, in conjunction with NYCDOT, should determine whether a ten year-old survey should be used as the basis for calculating these critical elements of this DEIS. (Adler)

Response: Trip generation rates were determined in coordination with and approval by DCP, the lead agency. NYCDOT has also reviewed the traffic analysis presented in the DEIS. The comment has not supplied any documentation to

challenge the travel demand estimates. As explained in Chapter 12 of the EIS, a variety of sources were applied in analyzing the travel demand characteristics of the project. In this approach, specific assumptions were made separately for employees and visitors/patients. Black cars, are one, relatively small component of the vehicle demand at the site. Unlike traffic volume data (which typically should be from within a three year time frame), information regarding means of transportation is not considered particularly time sensitive. For example, information from the 1990 Census of Housing and Population regarding the mode of transportation used in traveling to work is applied for a ten year period until new census data becomes available. Similarly, the Institute of Transportation Engineers provides widely used trip generation rates based on surveys that in many instances are ten years older or more.

Comment 68: The mitigation proposed in the DEIS to ameliorate the expected traffic conditions consist primarily of traffic signal timing changes, in conjunction with "daylighting" at two intersections. The DEIS recommends daylighting parking spaces on northbound York Avenue at 71st Street, and on westbound 72nd Street at York Avenue, not alongside Sloan-Kettering buildings, nor within the proposed rezoning area boundary. The DEIS displays on-street parking regulations in Figure 12-6. The information in this Figure does not include the area north of 70th Street. In other words, recommendations have been made for an area for which base data is not presented.

Representatives of Adler Consulting conducted a field survey to review the proposed mitigation, and in particular, the streets recommended for daylighting. On northbound York Avenue at 71st Street, "No-Standing" is permitted for an area approximately 45 feet south of the corner. The regulations for the remainder of the blockface include "No-Standing except taxis from 7 AM to 10 AM Monday to Friday" and "No-Standing except Ambulettes." On westbound 72nd Street approaching York Avenue, the current parking regulations for the 150 feet recommended for daylighting include "No Standing except trucks loading and unloading from 8 AM until 6 PM Monday to Friday," together with approximately three parking spaces reserved for Diplomats and Consuls. Given the types of parking regulations already in existence at these two locations, it is inconceivable that these would be changed and therefore, impacts due to the project would not be mitigated.

If the proposed daylighting is not implemented for the intersection of York Avenue with 71st Street, it is expected to experience LOS F operating conditions in the AM peak hour, with the northbound York Avenue approach also expected to operate at LOS F with an average delay of 143.0 seconds per vehicle and a volume to capacity (v/c) ratio of 1.227. For the intersection of York Avenue with 72nd Street, not implementing the proposed daylighting would result in LOS F conditions during the PM peak hour, with an anticipated delay on the westbound 72nd Street approach of 381.1 seconds (over six (6) minutes) per vehicle, a v/c ratio of 1.439, and LOS F conditions. Since westbound 72nd Street is actually a small cul-de-sac, drivers would experience

difficulty entering or leaving parking spaces or garages on the street and overall traffic maneuvering would become more difficult. (Adler)

Response: A detailed physical inventory of existing parking conditions and parking regulations at the intersections of East 71st and East 72nd Streets with York Avenue were submitted to NYCDOT in July 2001. Parking regulations for East 71st and East 72nd Street have been added to Figure 12-6.

As noted in Chapter 17, "Mitigation," changes to parking regulations are at the discretion of NYCDOT. NYCDOT has reviewed these mitigation measures, and has determined that they are appropriate and feasible. NYCDOT would evaluate operating conditions prior to completion of the project and, that time, determine those mitigation measures to be implemented.

Daylighting at the westbound East 72nd Street approach would improve vehicle movements at its intersection with York Avenue by providing a clear curb lane within 150 feet of the approach.

Comment 69: Even with the implementation of the proposed mitigation package, the DEIS indicates that LOS F conditions are expected at the following intersections:

- York Avenue with 61st Street (northbound left turn in the PM peak);
- York Avenue with 62nd Street (southbound left turn in the AM and midday peak and northbound right turn in the PM peak);
- York Avenue with 63rd Street (southbound left turn in the PM peak);
- York Avenue with 71st Street (northbound York Avenue approach in the midday and PM peaks);
- York Avenue with 72nd Street (eastbound and westbound approaches of 72nd Street in both the AM and PM peak hours, and northbound York Avenue approach during the midday peak hour);
- First Avenue with 67th Street (westbound 67th Street in the midday peak);
- First Avenue with 68th Street (eastbound 68th Street during both the midday and PM peak hours); and
- Second Avenue with 69th Street (eastbound 69th Street during the PM peak hour).

The number of locations expected to experience poor LOS indicate that the area around MSKCC would be congested throughout the day. (Adler)

Response: As noted on page 12-32 of the FEIS and on page 30-28 of the *CEQR Technical Manual*, "the identification of significant impacts leads to the need to identify and evaluate suitable mitigation measures, i.e., measures that mitigate the impact or return projected future to conditions to what they would be if the proposed action were not in place, or to acceptable levels (for future no action LOS D, E, or F, mitigation back to the no action conditions is required...)." The

proposed mitigation measures presented in the EIS mitigate all significant impacts back to future conditions without the proposed actions, as shown in Chapter 17, "Mitigation." The levels of service at study area intersections are representative of typical locations in Manhattan, which tend to be congested during the peak hours.

Comment 70: The signal timing changes proposed as part of the mitigation package in the DEIS include shifting eight seconds of green time in the signal cycle to create a leading green phase for northbound York Avenue at both 67th Street and 69th Street during the AM peak hour. During the midday peak hour, the mitigation proposed in the DEIS includes creating a leading green phase for northbound York Avenue at the intersection with 67th Street, as well as taking time from the pedestrian phase at two York Avenue intersections, 69th Street and 72nd Street, and shifting the time to York Avenue traffic. The mitigation proposed for the PM peak hour includes shifting eight seconds of green time in the signal cycle to create a leading green phase for northbound York Avenue at both 67th Street and 69th Street, shifting 11 seconds of green time from the westbound approach of 66th Street to north/south York Avenue, and shifting one second of green time from the pedestrian phase at the intersection of York Avenue with 62nd Street to the southbound lagging green phase. These proposed signal timing changes could create major disruptions to traffic flows, particularly along York Avenue. NYCDOT should determine if these proposed signal timing changes would adversely effect traffic flow along the corridors and therefore adversely impact the neighborhood. (Adler)

Response: Based on the analysis, the changes to signal timing would improve operating conditions at the study area intersections from Build conditions back to No Build conditions, as discussed in Chapter 17, "Mitigation," and in accordance with *CEQR Technical Manual* guidelines. With the proposed mitigation measures in place, the project would not result in impacts to traffic or neighborhood character. In addition, a progression analysis will be performed and submitted to NYCDOT for review. Changes to signal timing are at the discretion of NYCDOT. NYCDOT has reviewed the proposed mitigation measures presented in both the DEIS and FEIS, and has agreed to conceptual changes to signal timing as mitigation. NYCDOT has agreed to evaluate operating conditions prior to completion of the project. At that time, appropriate mitigation measures will be implemented.

Comment 71: As noted above, the proposed mitigation in the DEIS includes changes to the pedestrian and vehicular signal timing. Analyses were completed to assess the impact of the proposed mitigation on vehicular traffic. However, no analyses were performed to assess the impacts of the proposed changes to the pedestrian timing or the impacts on pedestrians of the proposed changes to the vehicular signal timing. Analyses of the proposed mitigation should be performed to determine the impacts on pedestrians. (Adler)

Response: Estimates of the minimum time necessary for pedestrians to cross the avenues and streets at intersections where signal timing changes are proposed were performed. This time was calculated by dividing the sidewalk to sidewalk width by an average pedestrian walking speed of 3 feet per second, and adding a 3 second start-up time. This 3 second walking speed is conservative for New York City, but accounts for patient trips, children, and senior citizens. The proposed signal timings would transfer no more than 5 seconds per phase from one direction to another, and, in cases where a new exclusive phase is proposed, would transfer green time from a shared phase on the same roadway. Based on the estimates of minimum green time needed to cross, there would be adequate crossing time available for pedestrians to cross with the proposed signal timings presented in Chapter 17, "Mitigation."

Comment 72: The analyses for the 68th Street and Lexington Avenue subway station indicate that for two stairways, the northeast corner and the southeast corner, the projected passenger demand would exceed the capacity during both the AM and PM peak hours. LOS F, with V/SVCD ratios (the ratio of the expected passenger volume to the Service Volume at the midpoint of Level-of-Service "C" to Level-of-Service "D") calculated as high as 2.637 (more than twice the number of passengers as can be accommodated at an acceptable LOS) are anticipated.

The mitigation proposed for the stairways at the 68th Street Subway Station includes widening two stairways: the northeast corner by a total of five inches and the southeast corner stairway widened by a total of four inches. These mitigating measures are subject to the review of the Metropolitan Transportation Authority, which may or may not choose to implement the recommended mitigation. It is noted that even if the proposed mitigation is implemented, LOS F conditions, with V/SVCD ratios at or exceeding 2.000, (still more than twice as many passengers as can be accommodated at an acceptable Level of Service) are anticipated for patrons using the stairs. (Adler)

Response: The subway stair analysis has been revised for the reduced Phase 2 development scenario resulting from the elimination of the south block from the proposed rezoning area presented in this FEIS. As a result, the proposed actions at full build in the 2011 analysis year would result in significant impacts requiring stairway widenings of three and two inches at the northeast and southeast stairs, as discussed in Chapter 13, "Pedestrians and Transit," and in Chapter 17, "Mitigation." Required inches of widening were calculated in accordance with methodology presented in the CEQR Technical Manual. It should be noted that page 3P-16 of the CEQR Technical Manual states that "the MTA generally will not disrupt service on the stairway to complete a 2-inch widening; instead, it may choose to widen the stair by 2 feet. In these cases, the applicant generally identifies the cost associated with that percent of the construction required to mitigate the action's significant adverse impacts." An engineering feasibility study with conceptual plans has been prepared for widening the stairways at this station. The MTA has reviewed this study and approved the conceptual improvements. The MTA and the applicant must

resolve the funding arrangements before such improvements can be implemented. If mitigation is not undertaken, the project would result in a significant impact at these locations.

Comment 73: The design of the loading dock does not appear to conform to the requirements of zoning. (Sigmond)

Response: The proposed building would be 510,389 square feet and would have two loading berths. The Zoning Resolution requirements are as follows: no berth requirement for the first 10,000 square feet, one berth for the next 290,000 square feet, and one berth for each additional 300,000 square feet. Therefore, the loading dock does comply with Zoning Resolution Sections 25-72 and 25-74, both as to size and number.

AIR QUALITY

Comment 74: The application has not been reviewed by the City's Health Department. This is particularly distressing as the neighborhood is a breast cancer cluster and its main distinguishing feature is the concentration of hospitals spewing heavy metals and other biohazards into the air. (Sigmond, Turner) At a minimum, all the hospitals in the area should be required to install scrubbers and filters, and institute monitoring of their ventilation systems for heavy metals and other carcinogens including arsenic and strontium. (Sigmond)

Response: No discretionary approvals from the City's Health Department are needed in connection with the application. All identified biohazards in the laboratory are handled in special cabinets, which filter any airborne releases. When greater biocontainment is needed, a special lab is available which also filters all exhausted air before its outdoor discharge. The lab building may operate a diesel fueled generator to provide emergency power if electricity service is lost. This generator is operated briefly each month in order to test its reliability. The generators have permits issued by the New York City Department of Environmental Protection (NYCDEP) and operate according to their requirements. MSKCC does not operate (nor does it plan to in the new lab) an incinerator or boiler, which would be the usual source of airborne products of combustion.

Comment 75: The EIS fails to identify or analyze particulates of 2.5 μm in diameter ($PM_{2.5}$), the standard established by USEPA that has recently been upheld in the courts. (Tuin)

Response: As discussed in section C of Chapter 14, "Air Quality," in addition to retaining the PM_{10} standards, EPA adopted 24-hour and annual standards for respirable particulate matter with an aerodynamic equivalent diameter less than 2.5 μm ($PM_{2.5}$), which became effective September 16, 1997. Recently, the U.S. Supreme Court upheld EPA's new $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS). However, it is expected to be several years before the appropriate analysis methods are available to assess $PM_{2.5}$ concentrations on a

microscale level. When EPA first enacted the new standards in 1997, they did not intend to implement them until at least five years from that date. Due to the current lack of ambient air data, modeling techniques, and emissions factors for a variety of sources, implementation of the new standards is not expected until 2005. In the interim, EPA recommends using an analysis of PM_{10} as a surrogate for a $PM_{2.5}$ analysis. Since the proposed actions would not generate a significant number of trips from heavy-duty diesel vehicles, no significant impacts on PM_{10} or $PM_{2.5}$ levels would occur.

Comment 76: The air quality chapter is deficient because it fails to examine intersections affected by the 59th Street Bridge, namely First and Third Avenues at 57th Street, and 59th Street between Third and Lexington Avenues. These have a history as Carbon Monoxide (CO) "hot spots" and require study. (Tuin)

Response: The receptor sites analyzed in the air quality chapter of the EIS are the key locations in the study area where the combination of the highest levels of project-generated traffic and overall constrained traffic conditions are expected, and therefore represent the locations where the greatest air quality impacts and maximum changes in the CO concentrations would be expected. Based on the trip generation for the proposed actions, intersections associated with 59th Street Bridge traffic patterns would not be significantly affected by project trips. In addition, CO levels at the intersections cited are in compliance with the SIP, as EPA is currently reviewing comments on its proposal to re-designate the New York metropolitan area as being in attainment with respect to CO.

CONSTRUCTION

Comment 77: Based on experience with MSKCC's construction of the Rockefeller Research Laboratory and Prostate Center in the neighborhood, this project would allow on-going adverse impacts of construction. (Selnick, Griffin) The initial construction will create traffic, parking shortages, public transportation overload, and will directly threaten the Woodward School playground and negatively impact St. Catherine's Park. The construction implications for dust, waste, noise, and sewage problems will be worse than those for the Prostate Center and will affect the entire neighborhood. (Eggers)

Response: Construction of the proposed project may be disruptive to the surrounding area and, in particular, to the adjacent residential and active hospital operations during construction. Chapter 16 of the FEIS, "Construction," describes the overall effects of construction activities on land use, community facilities, historic and archaeological resources, hazardous materials, traffic and transportation, air quality, and noise. As noted in the chapter, no significant adverse impacts are expected to occur as a result of hazardous waste removal, and no significant air quality impacts from fugitive dust emissions are anticipated. Disruptions of traffic and pedestrian movements around the project site and construction noise would be temporary and short-term. Temporary sidewalk and curb lane closures would be coordinated with NYCDOT to minimize

potential impacts to pedestrian and vehicular circulation around the construction site, and construction would adhere to the requirements of the NYC Building Code, the NYC Noise Control Code, and EPA's noise emission standards.

ALTERNATIVES

Comment 78: MSKCC can meet its needs by rezoning the south half of the north midblock and the main campus midblock. MSKCC should limit the height of the research building to a total 360 feet. On the main campus block the height along First Avenue should be limited to 300 feet, and the midblock height should be limited to 175 feet. (Fields)

Response: In response to this comment, an additional section "H. Manhattan Borough President's Alternative," has been added to Chapter 18, "Alternatives."

Comment 79: MSKCC can build on one of its other properties. MSKCC can build the research building on one of its avenue sites. (Wallerstein, Levine, Krueger, Grace, HDC)

Response: In response to this comment, an additional section "J. Alternative Locations," has been added to the Chapter 18. "Alternatives."

Comment 80: Alternative locations outside Manhattan would allow more efficient larger foot print for the research building. (Chrein)

Response: In response to this comment, an additional section "J. Alternative Locations," has been added to the Chapter 18. "Alternatives."

Comment 81: MSKCC should try to find a compromise and enter into a real dialog with the community. (Wallerstein, Valk)

Response: As a result of the review process with the Community Board and at CPC, MSKCC has withdrawn the south block from the proposed rezoning area and reduced the height of the proposed research building from 440 feet to 420 feet. Possible alternatives to the proposal are considered in Chapter 18, "Alternatives."

Comment 82: Alternative proposals presented to MSKCC meet its needs while respecting the community. (Sidney, Bass) CIVITAS has prepared an alternative that successfully redistributes the research building's bulk and avoids a midblock tower. (Bass)

Response: In response to this comment, an additional section "I. CIVITAS Alternative," has been added to the Chapter 18. "Alternatives."

Comment 83: MKSCC has not been willing to look at alternatives. (Stark)

Response: An analysis of 11 alternatives is presented in Chapter 18, "Alternatives," of the FEIS. Of these, four were presented in the DEIS (the No Action, R8 Research Building, R8 As-of-Right Research Building, and R9 As-of-Right Mixed Use Alternatives). MSKCC and its architects examined a number of alternative designs for the proposed site of the research building. Prior to selecting the proposed site, MSKCC examined alternative locations. MSKCC even built a research facility in Westchester. However, because of it remote location this facility was not successful and was subsequently closed. In response to public comments, seven alternatives were added to the FEIS analysis: the R8 As-of-Right Mixed Use Alternative; the R9 As-of-Right Research Building Alternative; the Manhattan Borough President's Alternative; the CIVITAS Proposal Alternative; the Reduced Main Campus Block Development Alternative; and an analysis of alternative sites.

TERRORISM, SAFETY AND PUBLIC HEALTH

Comment 84: This will be a trophy building that will attract terrorists. A 440-foot tall building will be a threat to the safety of the East Side. (Ross, Knowlton)

Response: Assessing the potential for a terrorist attack is beyond the scope of a CEQR analysis. Further, such as analysis would be highly speculative and made even more so on the basis of building height given the number of other buildings in the same height range including the Kingsley at First Avenue and 70th Street (40 stories—approximately 400 feet, assuming 10 feet floor-to-floor), the Helmsley Medical Tower on York between 70th and 71st (26 stories—approximately 350 feet, assuming 14 feet floor-to-floor), the Bellaire on 72nd Street between York Avenue and the FDR Drive (43 stories—approximately 430 feet, assuming 10 feet floor-to-floor), and 525 East 72nd Street on 73rd Street at the FDR (50 stories—approximately 500 feet tall).

Comment 85: September 11 requires a reevaluation of towers. Fire ladders only reach 11 stories. (Carlin)

Response: The FEIS assumes that the Phase 1 and Phase 2 developments would comply with all New York City building code requirements for fire safety and egress.

Comment 86: There are no fireblocks around the stairs and no fireblocks around fume hoods. (Bishop)

Response: The FEIS assumes that the Phase 1 and Phase 2 developments would comply with all New York City building code requirements. All chemical storage rooms and laboratories are fire rated. All stairs are two-hour-rated enclosures and all fume hoods are within dedicated two-hour-rated exhaust shafts. All

emergency stairways are two hour rated enclosures and chemical hoods are located within fire rate laboratory zones.

Comment 87: Systemic shortcomings of MSKCC have allowed employees and the public to be exposed to dangerous and chronically negligent environmental and safety conditions at Rockefeller Research Laboratories. Inadequate ductwork and drainage have resulted in exposure to biological and airborne hazards. This should be considered in evaluating MSKCC's application. Proper controls and oversight are needed. (Kandell)

Response: As noted in Chapter 10, "Hazardous Materials," the use and disposal of hazardous chemicals, radioactive materials, and biohazards are regulated by the NYC Fire, Health, and Environmental Protection Departments; the NYS Department of Environmental Conservation; OSHA, and other agencies. Controls and oversight are not the subject of CEQR or CPC land use approvals. In addition, MSKCC adheres to the highest possible safety standards by maintaining a highly trained staff and significant resources to ensure safe conditions in its laboratories and other facilities.

Comment 88: Accidents or an intentional act of terror could result in hazardous materials being released into the entire area. A 44-story tower filled with hazardous materials is too dangerous to have in the middle of a dense residential area. A smaller building would reduce the risk and make any events more containable. (Turner)

Response: The FEIS assumes that the Phase 1 and Phase 2 developments would comply with all New York City building code requirements for fire safety and egress. The proposed 23-story laboratory building is designed throughout with fire rated compartments. These provide containment of fire and smoke, and are supported by a fire suppression system. Hazardous materials are handled by trained individuals who follow safety standards of the federal, state, and local governments. Chemicals, and biological and radiological materials are in a safe and appropriate environment that helps ensure that building construction, support systems, and trained staff can adequately contain accidents. It also lessens the vulnerability of being a primary target of an intentional act of terror. Trained spill response experts are available to control and clean up accidents. MSKCC's security procedures identify all individuals entering the lab buildings. Staff has responsibility for challenging visitors and strangers entering their work areas.

In residential R8 and R9 districts, community facility uses such as the proposed development are permitted as-of-right.

MISCELLANEOUS

Comment 89: The project will have adverse impacts on residents, traffic, air, dust, water, noise, and garbage. (Lenissi, Lorell)

Response: The potential for the proposed project to result in impacts to these areas is addressed in the DEIS and FEIS. Those analyses conclude that the project would not have significant adverse impacts to air quality, water supply, noise, or solid waste handling. Traffic impacts identified in the EIS could all be mitigated, as described in Chapter 17, "Mitigation."

Comment 90: The proposed project will cause heartburn and gridlock. (Kieras)

Response: Project-generated traffic impacts would occur in several locations, as detailed in Chapter 12, "Traffic and Parking." However, as described in the response to the preceding comment, these impacts could all be mitigated and conditions would return to No Build levels or better.

Comment 91: The project has serious negative impacts. (CB8)

Response: Comment noted. Both the DEIS and FEIS contain a full range of environmental analyses that assess and disclose the proposed project's potential to result in significant adverse environmental impacts.

Comment 92: CPC should consider the resolution of the Community Board 8 subcommittee, which reviewed the project in depth and had specific recommendations that were not part of the Community Board 8 resolution.

(a) A restrictive declaration should be required so that the institution would have to come back to our community and CPC for approval of any other buildings on their LSCFD.

(b) Open space mitigation for St. Catherine's Park to respond to the increased shadows and greatly increased usage from the Institution—it is strongly recommended that MSKCC establish a City-managed Trust and Agency Account. The Trust and Agency Account will provide for necessary on-the-ground workers and security, as well as replacement of plantings and general park/playground maintenance. These funds should commence at the beginning of the project and increase on a yearly basis.

(c) Mitigation for the William Woodward School—a secure rear yard enclosure must be provided to protect the safety and welfare of the children during construction, if the institution cannot find another location for the school.

(d) Mitigation for P.S. 183—minimize the impact on the schoolyard as the middle and south blocks are built out. The school does not have a gymnasium. The schoolyard serves that function, as well as hosting a weekly year-round Green/Flea Market that raises funds for the school.

(e) Mitigation for Parking—additional parking must be provided for future buildings on the central and south blocks.

(f) Mitigation for Traffic—installation of Muni-meters, which would allow more on-street parking; permanent deployment of NYPD Traffic Control Agents at the designated Hot Spot intersections stated in the EIS rather than altering traffic signals, which would make it more difficult for pedestrians to cross at already bad intersections.

(g) Mitigation for Transportation—remove the MTA column at the East 68th Street and Lexington Avenue subway entrance to allow for pedestrians; improve signalization on the Lexington Line immediately, as it is currently scheduled for 2010; and institute ferry service at 60th Street for the 1,000 MSKCC workers coming from Roosevelt Island, (as well as workers in transit from New York Hospital and Rockefeller University).

(h) Mitigation for Construction & Demolition—such as establishing a Community Advisory Committee that will meet regularly with members of the community and Community Board 8; providing a 24-hour construction hot-line with the Project Construction Supervisor's name and phone number; prohibiting construction before 7 AM; and prohibiting illegal parking by the contractor or his employees on the local streets. (White, JSchneider, BSchneider)

Response: (a) CPC often uses restrictive declarations in connection with approvals pursuant to LSCFDs. MSKCC has publicly stated its willingness to enter into a declaration if requested by CPC to describe future land use actions which would be subject to community board and CPC review.

(b) As described in Chapter 19, "Unavoidable Adverse Impacts," there would be an unavoidable adverse impact on open space in 2011 due to the increase in open space users and the increase in shadows on St. Catherine's Park (the primary open space in the study area) from the proposed research building and potential development on the main campus block. Potential improvements are limited. St. Catherine's Park is the only public space in the immediate area. There are no potential sites for additional open space in the control of the New York City Department of Parks and Recreation or MSKCC. Although it is heavily used, St. Catherine's Park has been extensively renovated in the past few years. There are no capital improvements that it needs relative to passive open space. Therefore, the project would result in an unmitigable significant adverse impact to open space in 2011.

(c) While the FEIS does not identify an impact to the Woodward School, it does note, in Chapter 16, "Construction Impacts," that construction of the proposed research building would result in temporary disruptions to activities at the Woodward School's play area. As discussed in the response to comment 43 above, MSKCC is in discussions with the Woodward School and New York-Presbyterian Hospital to relocate the school. It is likely that the school will be relocated to the ground floor of the present MSKCC library, and have a separate entrance to that space from 1233 York Avenue. A secure play area would be provided adjacent to that space.

(d) The rezoning of the south block of the MSKCC campus is no longer part of the proposed project. Therefore, no future MSKCC construction would take place on that block. Construction on the main campus block across the street from P.S. 183 would not require closure of the schoolyard, and measures during construction (e.g. dust control) will be employed to avoid any impacts to the school, its students, or its playground.

(e) The south block has been removed form the rezoning area and is no longer a part of this action. The FEIS (Chapter 12, "Traffic and Parking,") indicates that full build out of the proposed project on the main campus block will increase the demand for parking. However, it also shows that the assignment of project-generated vehicle trips to off-street parking garages would result in midday peak hour utilizations of 90 and 94 percent during the 2007 and 2011 build years. Therefore, the proposed actions would not result in any significant impacts to parking in the study area. Nevertheless, MSKCC has stated that it is willing to consider the feasibility of providing parking with future development on the main campus block.

(f) Changes to parking regulations and signal timings are at the discretion of NYCDOT. The proposed mitigation measures presented in the DEIS were reviewed by NYCDOT, which has agreed to evaluate operating conditions upon the completion of each phase of the proposed actions. At that time, appropriate mitigation measures will be implemented.

(g) Removal of the column at the northeast corner of East 68th Street and Lexington Avenue, and changes to signalization in the subway tunnels are under the jurisdiction of the MTA. However, pedestrian access at the subway stair would be improved with the proposed mitigation measures, which would result in a stairway widening at the northeast and southeast corners in 2011. An engineering feasibility study with conceptual plans has been prepared for these widenings. Illustrative plans are presented in Chapter 17, "Mitigation." As noted in Chapter 17, the MTA is reviewing the feasibility study and will make a determination on the appropriate mitigation measures.

(h) Though the project would not result in any significant construction impacts, as discussed in Chapter 16, "Construction Impacts," construction of the proposed project may result in temporary effects on land use, community facilities, historic and archaeological resources, hazardous materials, traffic and transportation, air quality, and noise. Construction effects would be minimized, as discussed in the chapter. As noted in Chapter 16, in accordance with the permitted hours of construction regulated by the NYC Department of Buildings, work would begin at 7AM on weekdays, though workers would generally arrive and begin to prepare work areas earlier than 7AM. Special construction vehicles would not be double-parked or parked with a construction indicator (i.e., a "cone," which allows all day parking of construction related vehicles) on the street outside of the construction area designated by NYCDOT.

MSKCC already maintains a 24-hour phone line. Further, MSKCC would be willing to continue to hold regular well-publicized meetings with the community, a practice that has been underway for nearly a year.

Comment 93: The DEIS hearing venue should be changed from Reade Street to a larger space. (Matz, Officials)

Response: Due to public response, comments on the DEIS were received at two locations on two dates. The public hearing commenced on October 10, 2001 at City Hall and was continued on October 12, 2001 at the offices of the DCP at 22 Reade Street. The record remained open through October 22, 2001 for submission of written comments.

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