

**A. INTRODUCTION**

The federal Council on Environmental Quality's regulations implementing the procedural provisions of the National Environmental Policy Act, set forth at 40 CFR Part 1500-1508, require federal agencies to consider the environmental consequences of their actions, including not only direct effects, but also indirect and cumulative effects.

Indirect impacts are those that are "caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR 1508.8). Generally, these impacts are induced by the proposed project. Indirect effects can occur within the full range of impact types, such as changes in land use; economic vitality; neighborhood character; traffic congestion; air quality; noise; vibration; and water and natural resources. Examples of indirect effects can include growth-inducing effects and other effects related to induced changes in land use patterns, population density, and growth rates, and related effects on air and water and other natural systems.

Cumulative impacts result from the incremental consequences of an action (the project) when added to other past and reasonably foreseeable future actions (40 CFR 1508.7). The cumulative effects of an action may be undetectable when viewed in the individual context of direct and even indirect impacts, but nevertheless when added to other actions can eventually lead to a measurable environmental change. Cumulative impacts are the net result of both the proposed project and the other improvements planned in, near, and around the project.

Chapters 5 through 18 of this FEIS assess the potential direct and indirect effects of the No Build Alternative and Second Avenue Subway for a range of technical areas. This chapter summarizes indirect effects of the project alternatives and addresses cumulative effects of these alternatives in combination with the conditions presented in the "Future Conditions Common to All Alternatives" sections of the previous chapters. To the extent that information on the construction periods for these projects is currently available, that information is provided below. Where possible, this chapter also considers the potential for cumulative effects from other reasonably foreseeable actions that are not yet developed enough to be included in capital budgets or identified in the long-range plans of transportation agencies. Please note that the cumulative impacts portion of this chapter has been substantially reorganized since issuance of the SDEIS in response to comments received on that document.

**B. INDIRECT EFFECTS**

By greatly improving subway service on Manhattan's East Side, operation of the Second Avenue Subway would have largely beneficial indirect effects. Most of the adverse impacts associated with the Second Avenue Subway would occur during construction. In contrast, the No Build Alternative would create no construction impacts, but its permanent long-term effects would be adverse, as discussed below.

## NO BUILD ALTERNATIVE

With the No Build Alternative, no subway would operate along Second Avenue south to Water Street or along the Broadway alignment south of 63rd Street. As development continues on the East Side of Manhattan, the rising population, some of whom will use the Lexington Avenue Line, will exacerbate conditions on this currently overcrowded line and East Side bus routes as well as add to vehicular congestion on the East Side's major north-south thoroughfares, with attendant increases in air pollutant emissions and noise. In some locations distant from existing subway stations, growth might occur less quickly without new subway service.

## SECOND AVENUE SUBWAY

### *TRANSPORTATION*

As described in other chapters of this FEIS, including Chapter 2, "Project Alternatives," the proposed underground storage yard on Second Avenue north of 125th Street has been substantially reduced in size, so that it would no longer extend east or west of the Second Avenue right-of-way. As a result, none of the bus parking facilities identified in the SDEIS would be affected, and no temporary displacement would be needed. Therefore, the potential for indirect impacts from these buses has been eliminated. No indirect effects on transportation have been identified.

### *SOCIAL AND ECONOMIC CONDITIONS*

#### *Impacts During Construction*

For social conditions, an indirect impact would occur if a project's direct effects were to cause other, secondary changes to neighborhood character or economic conditions. In this respect, for the Second Avenue Subway, indirect effects during the construction period could result from changes to development trends in the surrounding areas as a result of the disruption associated with construction. As noted in Chapter 6 ("Social Conditions"), it is possible that developers of new buildings located close to the construction areas on Second Avenue would delay their development proposals to avoid conflicts with construction for the new subway. This could temporarily delay or even alter land use trends, particularly in East Harlem and the East Village/Lower East Side/Chinatown where there is significant remaining development potential. Further, because some of the construction activities would temporarily reduce the desirability of some locations nearby, there is potential for a market decrease in rents for some properties. However, upon completion of the subway, these properties would benefit most from its construction, thereby alleviating any long-term hardships to building owners.

For this chapter, consideration has also been given as to whether the project would result in any significant adverse indirect effects from displacement.<sup>1</sup> For displacement, an example of an indirect effect would be if the displacement of residents in a building affected directly by a project were to cause other residents in unaffected buildings to move out.

---

<sup>1</sup> Chapter 8 ("Displacement and Relocation") analyzes the *direct* effects of displacement, including the need to acquire property for the Second Avenue Subway project and the resulting displacement of residents and businesses. Similarly, Chapter 6, "Social Conditions," assesses the *direct* effects on neighborhood character, zoning, and land use patterns from permanently replacing some existing buildings and businesses with subway structures.

As described in Chapter 8, while construction activities associated with building the new subway line would require temporary and permanent disruptions to some buildings' occupants (a direct effect), in most locations, this disruption would be short-term and would not affect neighborhood character. Therefore, it is not expected that this direct displacement would result in further relocations or departures of nearby businesses or residences (indirect effects) that in turn could potentially affect neighborhood character (also an indirect effect). At the 125th Street curve, where the disruptions would occur for a longer period of up to one year, some residents could choose not to move back to their apartments once the construction is complete; however, no indirect impacts on neighborhood character, urban design and visual resources, or land use are likely to occur, because substantial measures would be taken during the construction period (see Chapter 3, "Description of Construction Methods and Activities") to ensure that the buildings would remain standing and habitable.

Within the New York area, the subway's construction would result in economic benefits. It is expected that the project would attract specialized tradespeople to the city during the construction period. The expenditures of these workers and their families would support local businesses. Some of these benefits would be expected in the vicinity of the subway's alignment, where construction workers would support local retail businesses. In addition, the construction of a Second Avenue Subway would require materials produced outside the metropolitan area. Structural steel, railroad ties, concrete, train cars, and other procurements may be manufactured in communities in Upstate New York or elsewhere in the United States. The demand for infrastructure and materials associated with the subway would likely spur jobs and other economic benefits in these communities.

Finally, as described in detail elsewhere in this FEIS (see Chapter 7, "Public Open Space"), construction of the project would require use of several parks along the alignment for construction staging and shaft sites. To mitigate the impacts of the loss of those parks during construction, NYCT would work with the New York City Department of Parks and Recreation (NYCDPR) to identify suitable mitigation plans, such as identifying locations for replacement facilities. Although the potential locations for new or enhanced facilities have not yet been identified, any new facilities would in turn result in positive changes to the neighborhood character of the areas where they are created. New outdoor facilities in particular would change the appearance of the nearby area, as well as increasing pedestrian activity and noise levels within the immediate surroundings. However, the areas where such facilities are placed would be noisier than they currently are, and would also experience increased pedestrian traffic.

### *Permanent Impacts*

As described in other chapters of this FEIS, the Second Avenue Subway would relieve congestion on the Lexington Avenue Line, making transportation more convenient for travelers in the Bronx, Manhattan, and Brooklyn who use that service. The Second Avenue Subway would also greatly improve transit access for communities on the far East Side, connecting them from East Harlem to Lower Manhattan, and would create for the first time a one-seat ride from East Harlem and the Upper East Side to West Midtown. In addition, the new subway would create a direct connection from the Metro-North Harlem-125th Street Station down the East Side to the Midtown and Lower Manhattan Central Business Districts, and the neighborhoods in between.

The ability of New York's transit system to conveniently serve major residential and employment centers is an essential component in the region's economic growth and productivity. The new subway would play a key role in helping the city sustain and improve its

## Second Avenue Subway FEIS

---

economic vitality, facilitating retention of jobs, expansion of existing businesses, and development of new businesses. Existing congestion and access problems within the subway network would be substantially reduced, and new capacity would be provided to support future economic growth. By improving the transportation infrastructure, the proposed Second Avenue Subway would help maintain the city's competitive edge nationally. Furthermore, since the city contributes greatly to the economy of the tri-state metropolitan region and New York State as a whole, areas outside the five boroughs would also benefit from the project.

The direct effects of the new subway service would also result in indirect effects on land use patterns and development in the nearby communities. The substantial improvement to transit service overall would greatly support study area neighborhoods by adding travel options for residents, workers, and visitors in these communities; by improving access to important land uses, such as hospitals, museums, schools, parks and other regional destinations; and by helping to relieve traffic congestion. In some neighborhoods—particularly East Harlem and the East Village/Lower East Side/Chinatown—the improved access would make development of vacant or underutilized lots in the area more likely by attracting new investment to the area. In Lower Manhattan, the new access would support existing commercial uses and make the area more attractive for prospective retail and residential uses. In other neighborhoods (e.g., the Upper East Side and East Midtown), the new subway could accelerate existing development trends, but would be unlikely to change them. New transit connections to and from other parts of the city and region would also extend the project's economic benefits outside of Manhattan.

The Second Avenue Subway would alter travel patterns within and near Manhattan's East Side. Commuters, residents, and visitors who previously used the Lexington Avenue Line or a local bus route may alter their trip to use the Second Avenue Subway. In most cases, the origin and destination of these trips is not expected to change, but the intermediate use of transit and pedestrian facilities could be considerably different. Thus, businesses en route, particularly those near stations, may experience increased patronage. Those adjacent to certain Lexington Avenue Line stations or major bus stops may experience a reduction in patronage. However, the Lexington Avenue Line would continue to be well-used, and these businesses would not likely be significantly affected.

In general, restaurants, fast-food stores, supermarkets and grocers, dry cleaners, and other convenience-related retail businesses and neighborhood services adjacent to or near proposed subway station entrances would benefit from increased pedestrian traffic as riders come and go to their homes and jobs. In areas where there is currently a considerable rate of retail vacancy, the stations may attract new commercial development and the vacant spaces would be reoccupied. Moreover, the stations would support other forms of development in the future, such as the publicly sponsored housing and retail businesses planned for the Houston Street area. These represent positive secondary economic effects, which could strengthen the overall character of the neighborhood and its retail environment. In areas where transit-related pedestrian activity already occurs (e.g., 125th Street), higher pedestrian volumes would reinforce the local retail environment.

With a new major means of access to the East Side, market rents may increase in certain areas in response to new or expanded demand. In other areas, the subway may spur new development to accommodate increased desires for residential, office, or retail space. However, considering the density and vitality that already exists in most of the East Side, these new developments would not be expected to fundamentally alter the character or quality of these communities.

## C. CUMULATIVE EFFECTS

### OVERVIEW

The Council on Environmental Quality's (CEQ's) "Considering Cumulative Effects Under the National Environmental Policy Act" (January 1997) offers a framework for examining cumulative impacts of a proposed action. Overall, this guidance is clear that an EIS under NEPA must consider that the effect of a project, in combination with other conditions and potential actions, may have an impact that could not be identified in an examination of impacts from the project alone. To this end, the CEQ outlines a process for the identification and evaluation of cumulative effects. It includes the following:

- Scoping, in which the cumulative effects issues are determined, geographic scope and time frame for the analysis are established, and other actions affecting the issues and areas of concern are identified.
- Analysis of the affected environment, in which the resources of concern identified in scoping are characterized in terms of their response to change. The stresses affecting these resources are also characterized, and a baseline condition for the resources is defined.
- Determination of environmental consequences, in which cause-and-effect relationships between the types of actions being taken and the stresses on resources are defined, the magnitude of impacts are determined, alternatives or mitigation to avoid adverse cumulative impacts are proposed, and the cumulative effects of the selected alternative are monitored.

Those steps were followed in preparation of this FEIS for the Second Avenue Subway. The process commenced in July 1995, when a Notice of Intent was published in the Federal Register, and public meetings to discuss the scope of the project and the scope of studies were held. A final scoping document that included comments received on the project and the scope of studies was issued in December 1995. Subsequently, a combined Major Investment Study (MIS) and Draft Environmental Impact Statement (DEIS) was published in 1999 to assess possible alternatives for a Second Avenue Subway. Following the MIS/DEIS and extensive public comments on that document, subsequent studies resulted in the determination that a full-length Second Avenue Subway should be pursued. That alternative was then assessed in the SDEIS, and now this FEIS.

As required under NEPA, the SDEIS and now this FEIS analyze the resources of concern identified in the scoping document. Baseline conditions and the environmental consequences of the proposed project on each resource are described and assessed in the preceding chapters of this document according to the CEQ guidance. This chapter looks specifically at the potential for the project to create cumulative impacts on the resources identified in the scoping document as described immediately below.

Following CEQ guidelines, an analysis of cumulative impacts considers resources, ecosystems, and human communities that could be potentially affected by the action and whether those could also be affected cumulatively by the action in combination with other reasonably foreseeable actions. A number of transportation, infrastructure, and development projects are proposed in and near the study area for the Second Avenue Subway. Several of these could be under construction at the same time as the new subway. Looking into the future, all of these projects would be operational at the same time as the Second Avenue Subway. The discussion below first identifies the relevant projects and proposals by study area neighborhood. In each case, the text

identifies whether the Second Avenue Subway's construction schedule has the potential to overlap with those for the various other projects, taking into consideration the project's proposed phasing plan.<sup>1</sup> Afterwards, it addresses the combined effects of these projects and proposals, along with the Second Avenue Subway, on the following resources: traffic and transportation, air quality, noise levels, natural resources, social and economic conditions, parks and open space, historic resources, and neighborhood character in each project subarea. Resources that would not be affected by cumulative activities within each area are not addressed.

### **OTHER PROJECTS PROPOSED IN AND NEAR THE SECOND AVENUE SUBWAY STUDY AREA**

Today, much of Manhattan's aging infrastructure is in need of maintenance, repair and reconstruction. Many government agencies are sponsoring repair and reconstruction activities—a number of which would occur within or near the Second Avenue Subway study area. While the cumulative impacts of these efforts will be beneficial, in the short term, their construction impacts, combined with those of the Second Avenue Subway, would generate significant adverse cumulative impacts if Second Avenue Subway construction were to occur in the same vicinity and at the same time as those other projects.

In addition to the public infrastructure initiatives in the study area, Manhattan's Far East Side and East River waterfront are the focus of public and private development and institutional interest. The proposals, all of which are discussed, as appropriate, in the preceding chapters of this FEIS, are listed and briefly described below for each study area. Because these projects are in various stages of planning and design, the amount of information available at this time varies. In some cases, information on proposed construction schedules is not yet available. Where information is available, expected construction periods are indicated.

#### **EAST HARLEM**

In East Harlem, several major construction projects are planned along the Harlem River, as follows:

- Rehabilitation of the Third Avenue and Willis Avenue Bridges, which link Upper Manhattan and the Bronx; these activities are planned to occur between 2003 and 2012. This project would involve use of a staging area along the Harlem River in the vicinity of 129th Street.
- Rehabilitation and reconfiguration of certain aspects of the Triborough Bridge.
- Reconstruction of the 127th Street viaduct on the Harlem River Drive. This project is scheduled to begin in 2006 and be completed in 2010.

---

<sup>1</sup> As described in more detail in Chapter 3, "Construction Methods and Activities," a phasing plan has now been developed to allow the new Second Avenue Subway to be built and operated incrementally, thereby permitting portions of the project to operate prior to completion of the entire line. While final decisions have not yet been made regarding the project's detailed construction schedule, overall, it is anticipated that construction would commence in 2004, peak in 2010, and be completed by 2020. The phasing plan would permit portions of multiple phases to be constructed simultaneously. Once construction of a particular length of the alignment is completed, the surrounding neighborhood would not experience further impacts during construction of the additional phases.

- Reconstruction work on the FDR Drive in East Harlem, to create an extended auxiliary lane between 125th and 116th Streets. The project is currently in preliminary design but is not yet scheduled for construction.

While none of these projects would involve construction activities in the same locations as those for the Second Avenue Subway, traffic diversions and reductions in road capacity—particularly along the Harlem River Drive and on bridges where the project’s construction vehicles could travel—could result if Second Avenue Subway construction in East Harlem were to overlap with any of these projects. As described in Chapter 3, all Second Avenue Subway construction activities north of 105th Street would take place during construction of Phase 2. For all of the projects listed above, the potential for the Second Avenue Subway to cause cumulative impacts would occur if these projects were to be under construction simultaneously with Phase 2.

In addition, a large-scale retail redevelopment is proposed just west of Second Avenue between 128th and 125th Streets. Construction of a large retail establishment between 128th and 127th Streets is expected to be completed by 2005. A retail shopping center is expected to be developed between 127th and 126th Streets during the same period. However, based on the construction schedules, it is likely that the both of these projects would be complete before the Second Avenue Subway commences any Phase 2 activities involving breaking ground in East Harlem.

#### UPPER EAST SIDE

Transportation, infrastructure, and major development projects near Second Avenue on the Upper East Side are listed below. It is possible that Second Avenue Subway construction could overlap with several of these projects, as described below.

- Reconstruction of the FDR Drive from 63rd to 54th Streets. This phase of the FDR reconstruction project is expected to involve surface work on the existing FDR structure between 2004 and 2007. In addition, work has begun to complete an “Outboard Detour Roadway” that will serve as a temporary diversion road to accommodate traffic that would otherwise be diverted. This phase of the FDR project would primarily occur south of the geographic area that would be affected during Phase 1 of the Second Avenue Subway’s construction (the construction limits for Phase 1 extend from 105th Street to 62nd Street). However, as described below, it is possible that there would be some potential for cumulative impacts between projects during the early part of Phase 1. Overall, Phase 1’s construction period is expected to last for seven years, beginning in late 2004.
- The LIRR East Side Access project, which would bring LIRR trains through the 63rd Street tunnel and into Grand Central Terminal, would involve construction in the vicinity of 63rd Street and Second Avenue, near the southernmost border of Phase 1 of the Second Avenue Subway. However, work in this area would involve primarily below-ground tunnel excavation and would consequently not result in many surface impacts.
- A portion of Water Tunnel No. 3 will be constructed beneath a portion of the Upper East Side study area. The new construction will result in the water tunnel making a loop from Central Park West at 78th Street, moving south along the West Side to Canal Street, east beneath Canal Street to the vicinity of the Manhattan Bridge, northeast to 34th Street and Second Avenue, north beneath Second Avenue to 54th Street, and then northwest to

## Second Avenue Subway FEIS

---

rejoin the Stage 1 portion of the tunnel at West 78th Street. (See also the discussion of East Midtown, below).

- Construction of a new research building on the Memorial Sloane-Kettering Cancer Center (MSKCC) campus at 68th Street east of First Avenue is underway and is expected to be completed by 2007, during Phase 1's construction period.

### EAST MIDTOWN

In East Midtown, planned infrastructure, transportation and development projects near Second Avenue include the following, each of which would increase the amount of construction activity in East Midtown. Several of the projects would occur in relatively close proximity to the Second Avenue Subway's proposed construction activities which, for the East Midtown area, would primarily occur during Phase 3.

- Reconstruction of the FDR Drive between 42nd and 23rd Streets, beginning in 2009.
- As described above, Water Tunnel No. 3 is under construction beneath Second Avenue throughout much of the length of the East Midtown study area. At 35th Street, just east of Second Avenue, a new shaft and distribution chamber are planned. A second shaft and distribution chamber is planned for 54th Street and Second Avenue.
- The proposed redevelopment of the Consolidated Edison sites in East Midtown (between 41st and 35th Streets) would involve the construction of several high-rise buildings along First Avenue. The construction of three Consolidated Edison sites is expected to be completed by 2007, before any Phase 3 construction is expected to occur, and an additional site is expected to be completed by 2011, potentially during Phase 3's construction period.
- The United Nations is proposing another large development in East Midtown—a new 30-story office tower on the site of Robert Moses Playground at 42nd Street and First Avenue. Renovation of the existing Secretariat building is also planned. The project is expected to be completed by 2010. It is possible that some subway work in this portion of Phase 3 would have commenced by this time.
- MTA Bridges and Tunnels is planning to rehabilitate the bridge that carries Second Avenue over the depressed roadway of the Queens-Midtown Tunnel between 36th and 37th Streets. This bridge project is expected to start in November 2005 and be complete by December 2007, prior to any Second Avenue Subway construction in this vicinity. To minimize disruption in this area, MTA will work aggressively to meet this schedule, so that construction of the subway does not overlap with the bridge project. However, if the bridge project were to be delayed for any reason, it is possible that both the subway and bridge projects could be constructed simultaneously. In that case, because both the subway and bridge projects would require the closure of lanes on Second Avenue, coordination between the two projects would be essential. The subway construction would have a longer duration than the bridge work; hence, its schedule would determine when Second Avenue traffic could be shifted from one side of the roadway to the other.
- ⑦ Subway Extension-Hudson Yards Area Rezoning. The ⑦ line extension is expected to begin construction in 2005 and be completed by 2010. Development subsequent to the rezoning is expected to continue to 2025 and beyond. Construction of this project would not occur within the Second Avenue Subway study area.



- Several hospital development projects are planned in East Midtown. These include East River Science Park, a project of the New York University (NYU) School of Medicine that would add a new biotechnology and research component to NYU's campus between the FDR and First Avenue, from 30th to 28th Streets. Immediately south, Bellevue is building a new DNA facility and ambulatory care facility between the FDR and First Avenue, in this case between 28th and 26th Streets. That facility is expected to be completed in 2004, prior to any Second Avenue Subway work in the vicinity.

GRAMERCY PARK/UNION SQUARE AND EAST VILLAGE/LOWER EAST SIDE/CHINA-TOWN

In the East Village/Lower East Side/Chinatown neighborhood zone, several large projects are proposed, as listed below, but only one—redevelopment in the Cooper Square Urban Renewal Area—would occur in close proximity to the Second Avenue Subway activities:

- Reconstruction of the FDR Drive between 15th and Montgomery Streets. This project, which is located some distance from the project alignment, is currently in the conceptual stages and has not yet been programmed for construction.
- Water Tunnel No. 3 will be constructed through this area, but the construction would not be beneath Second Avenue in this area, so no cumulative impacts in this vicinity are expected.
- A study of traffic in Chinatown is currently underway by the Lower Manhattan Development Corporation (LMDC) and the New York City Department of Transportation (NYCDOT), with the goal of developing a strategy for improving traffic flow and conditions in Chinatown, as well as connections with surrounding areas of Lower Manhattan. The study is expected to last three years but does not itself involve any construction. Depending on the results of the study, traffic conditions in this section of the neighborhood zone would likely be improved.
- Several large mixed-use developments are proposed near Houston Street as part of the Cooper Square Urban Renewal Area. Specifically, development of 712 housing units, community facility and retail space between Stanton and Second Streets along Second Avenue is expected to begin in 2003, prior to Second Avenue construction of Phases 3 and 4.

If the Cooper Square Urban Renewal Area developments were to be substantially delayed, they could directly overlap with the Second Avenue Subway construction activities for the Houston Street Station and possible shaft site. Additional construction staging areas and construction activity in the same area could result in traffic delays. Otherwise, it is unlikely that the Second Avenue Subway project would result in cumulative impacts with the other projects because the projects would not be built close enough to or at the same as the Second Avenue Subway.

LOWER MANHATTAN

As described in Chapter 6, "Social Conditions," numerous projects involving the reconstruction of Lower Manhattan are either underway or planned for the future. These projects range from large-scale transportation and redevelopment undertakings to smaller scale, neighborhood based improvements, and are summarized below.

## Second Avenue Subway FEIS

---

- Reconstruction of West Street/Route 9A along the west side of Manhattan between Albany and Chambers Streets is expected to be completed by 2008. Because this project is located on the western edge of Manhattan, construction activities would not directly interact with Second Avenue Subway activities; however, traffic diversions and increased trucking could have spillover effects east of West Street if the Route 9A project were to be delayed to overlap with subway construction in Lower Manhattan.
- Construction of a new PATH terminal station beneath the World Trade Center site. Construction is expected to occur between 2005 and 2006; therefore, this project would probably be completed before subway activities in the vicinity.
- Eventual construction of a 19 station beneath the World Trade Center site; a construction date has not yet been established.
- Construction of a new terminal for the 19 line at South Ferry. This project is expected to be completed by 2007, before any Second Avenue Subway activities in Lower Manhattan.
- Construction of the Fulton Transit Center on the east side of Broadway in the vicinity of Fulton Street. Construction is expected to occur between 2005 and 2007—before subway construction for the new Second Avenue Line.
- Reconstruction of the World Trade Center site; construction of a memorial dedicated to the events of September 11, 2001. Construction is expected to be completed in two phases, with construction of the memorial, open spaces, Freedom Tower, and the bases of Towers 2, 3 and 4 completed by 2009 (prior to Second Avenue Subway construction in this area). The remainder of the buildings' bulk is planned to be complete by 2015, and some of these activities could overlap with Second Avenue Subway construction activities.
- Rehabilitation of 13 City parks, as described in the New York City Department of Parks and Recreation's, "Open Space Vision for Lower Manhattan" and summarized, as relevant, in Chapter 7, "Public Open Space." Renovations within the parks are expected to be completed by 2005; if so, they would be complete prior to any subway activities related to Phase 4.
- Ongoing development in Battery Park City. Planned development projects are expected to be completed by 2006—before breaking ground on Phase 4.
- Other residential development projects throughout Lower Manhattan, spurred by a number of financial incentives.
- A plan is underway to rezone Water Street. As part of this effort, Water Street would become a boulevard with wider sidewalks, trees, and other amenities. Construction is expected to start in 2004.

As described above, unless these projects were to be substantially delayed, it is likely that most of these projects would be completed prior to the initiation of Phase 4 construction activities for the Second Avenue Subway. However, the analyses provided below conservatively consider the cumulative impacts that would result if the subway were to be built concurrently with these projects.

Aside from the projects noted above, plans are being discussed for several additional projects that would affect Lower Manhattan if they were to materialize. One such plan is to provide direct access between JFK Airport and Lower Manhattan via Jamaica Station and the Air Train. Potential residential and other development as set forth in the Mayor's Vision for Lower Manhattan and summarized in Chapter 6 has also been proposed. Finally, in the planning process for Lower Manhattan, it is possible that other projects may wish to consider barging some of their materials or equipment in and out of the area, although no such proposals have been formalized at this time.

### **POTENTIAL CUMULATIVE EFFECTS**

The construction phase of the Second Avenue Subway is expected to last for approximately 16 years. During that period, the various construction activities would affect land use, economic conditions, visual and neighborhood character, historic resources, transportation, air quality, and noise, as described throughout this FEIS. Temporary cumulative effects could occur if other projects in the vicinity of the Second Avenue Subway alignment were constructed at the same time or in close proximity to subway construction. As described below, for each subarea in the project's study area, these cumulative effects would increase the intensity and duration of certain construction-related impacts.

As described throughout the FEIS, NYCT has developed an extensive coordination program involving the state and city to coordinate activities and minimize or avoid potential cumulative impacts from subway construction and other construction projects where practicable. For example, as described previously in Chapter 2, NYCT has eliminated the 129th Street barge site from further consideration because its use would have interfered with the NYCDOT's planned reconstruction of the Willis and Third Avenue Bridges. Similarly, discussions with NYCDOT, the NYSDOT, and MTA Bridges and Tunnels have also begun to identify a better understanding of the various projects' needs and schedules, and to minimize potential for overlapping impacts and activities. As the Second Avenue Subway progresses, NYCT will also work through the proposed Interagency Traffic Task Force described in Chapter 5D to monitor traffic in areas where cumulative impacts could occur and to develop mitigation measures where practicable.

With respect to other projects sponsored by the MTA, the MTA will continue working through its Long-Range Planning Framework described in Appendix A, "Planning Context," to create a unified program of improvements for its subway and commuter rail system. The MTA Long-Range Planning Framework Group includes key staff from the MTA and its subsidiaries, LIRR, Metro-North, and NYCT, and additional input from the New York Metropolitan Transportation Council (NYMTC), the Port Authority of New York and New Jersey (PANY/NJ), and the New York City Department of City Planning, as appropriate. Aside from ensuring that the various plans remain compatible, the Long-Range Planning Framework Group will also continue coordinating construction schedules and key activities, with an eye towards sharing resources and avoiding conflict where possible. For example, NYCT will work with LIRR to coordinate construction scheduling in the 63rd Street vicinity and in Lower Manhattan if necessary in order to minimize conflicts and overlapping activities in the same locations.

Some of the New York City Department of Environmental Protection's (NYCDEP) activities related to Water Tunnel Number 3 within the East Midtown area could be complete before construction commences on Phase 3. However, in the event that construction schedules for the Subway and Water Tunnel Number 3 were to coincide, particularly during the period of surface-level excavation for portions of Phase 3, NYCT and the New York City Department of

## Second Avenue Subway FEIS

---

Environmental Protection (NYCDEP) would coordinate the closure of streets and sidewalks to minimize detours; the movement of equipment into and out of their respective sites to reduce conflicts; and the daily construction activities at each site. Such coordination should help avoid detrimental effects from both projects both on one another and the surrounding community. To that end, NYCT and NYCDEP have initiated discussions to coordinate the development of these projects, including the possible sharing of construction staging space at St. Vartan Park. In this way, the projects could minimize the number of properties that could be affected temporarily during the construction periods.

To the extent that parklands within a given area could be affected by multiple projects simultaneously, NYCT will coordinate with both the New York City Department of Parks and Recreation (NYCDPR) and the other public or private initiatives to develop satisfactory mitigation measures. In some instances—particularly in East Midtown where St. Vartan Park and Robert Moses Park could be affected by different projects concurrently—plans for temporary replacement park spaces would be identified and coordinated prior to any construction in the area.

To the greatest degree possible, NYCT would coordinate with public and private contractors to reduce the cumulative impacts of simultaneous construction; however, in some cases it may be impossible to avoid these impacts as developers and agencies strive to complete their projects in a timely and cost-effective manner. In those cases, significant adverse impacts from cumulative impacts could result, as detailed below. Please note that for each subarea, the text focuses only on those subjects where cumulative impacts could occur.

### EAST HARLEM

As described in Chapter 2, “Project Alternatives,” several different train storage options are under consideration. One of these options would involve building underground storage tracks in East Harlem north of 125th Street, necessitating cut-and-cover excavation and a possible construction staging area at 128th Street during Phase 2. Other projects nearby that could be in construction at the same time include NYCDOT’s work on the Third Avenue and Willis Avenue Bridges, the rehabilitation of the Triborough Bridge, and the reconstruction of the 127th Street Viaduct. As described above, it is anticipated that the two large-scale retail developments between Second and Third Avenues north of 125th Street would be completed by 2005, prior to any project construction in the area.

South of 125th Street, project activities include construction of the subway tunnel, stations at 125th, 116th, and 106th Streets, and related ancillary facilities. The only known construction activity in this area would be reconstruction work on the FDR Drive to create an extended auxiliary lane between 125th and 116th Streets.

Most of the larger activities expected to take place in East Harlem would occur at the river’s edge, separated from Second Avenue Subway construction by the FDR Drive, a busy highway. Therefore, although these bridge and highway construction projects are large-scale activities, the potential for cumulative impacts would be reduced, because the activities would not occur in close proximity. Nevertheless, it is likely that some Second Avenue Subway construction vehicles would travel over the bridges and highways undergoing construction, adding traffic and potential delays to the street and highway network, as described below.

Transportation, Air Quality, and Noise

Based on information currently available, it is possible that detours associated with the bridge and highway reconstruction projects would overlap with traffic diversions resulting from the construction of the Second Avenue Subway, particularly during Phases 1 and 2. The cumulative impacts may increase congestion on certain streets in East Harlem and further restrict access to certain businesses in the area. Construction of the Second Avenue Subway at the same time as the NYSDOT projects would exacerbate temporary traffic and noise impacts at certain intersections—particularly at exit and entry ramps to the FDR Drive. Traffic delays would result from lane closures associated with these construction projects. All of the projects would add construction vehicle trips to the area, with deleterious effects on the level of service (LOS). Dust would also increase if all of these projects were to occur simultaneously. The construction work on the Triborough Bridge could result in some delays on the bridge while construction is under way, which could in turn affect traffic near 125th Street and Second Avenue. As detailed in Chapter 5D, NYCT will work with the Interagency Traffic Task Force to mitigate vehicular, surface transit, and pedestrian traffic in the East Harlem area prior to and throughout the project's duration.

Social and Economic Conditions and Neighborhood Character

As described in Chapter 6, East Harlem is currently undergoing commercial and residential development. The surface construction associated with building the subway—particularly in conjunction with some of the other projects proposed for the area—could dissuade some developers from initiating projects in the area, potentially slowing some projected commercial redevelopment. Although the end product of construction—a full-length Second Avenue Subway—would strengthen the area's attractiveness for business, some retailers may experience some temporary declines in business activity during the construction period. On the other hand, some businesses would also benefit from construction workers patronizing their establishments—particularly with construction of multiple projects in the same neighborhood.

Traffic detours resulting from these projects could also reduce the number of parking spaces, and limit access to certain businesses. If construction of other transportation projects were to lengthen the construction periods, future development projects could be further delayed, resulting in adverse social and economic impacts. However, upon completion of the projects, the improved transportation systems would likely induce development in the area.

The intensification and extension of construction activity in East Harlem resulting from consecutive and concurrent projects would create adverse neighborhood character impacts. Traffic, air quality, and noise impacts would be increased and would occur for longer periods of time, as would the visual impacts stemming from construction activity. Commercial and residential development could be stalled, leaving vacant sites unoccupied for extended periods. To the degree practicable, NYCT will coordinate with various involved agencies and private contractors to minimize the extent of such disruptions.

Parks and Open Space

The Second Avenue Subway project would result in direct use of the western portion of Playground 96 in East Harlem. The increased noise, dust, and visual disturbances associated with construction activities could result in indirect impacts on some parks, particularly the eastern portion of Playground 96. These could be aggravated by construction from other nearby projects. NYCT will work with NYCDPR to schedule activities to minimize such disruptions where practicable.

## Second Avenue Subway FEIS

---

### UPPER EAST SIDE

As described in Chapter 3, Phase 1 of the subway's construction would affect the area between 105th Street and 62nd Street. Subway activities in the Upper East Side could include tunnel spoils removal activities between 99th and 98th Streets and from the tunnel connecting the TBM launch site between 93rd and 91st Streets with 62nd Street; construction of the 96th, 86th, and 72nd Street Stations, and associated ancillary facilities; and spoils removal from the construction of the curve at 63rd Street to allow for a tunnel connection to the 63rd Street/Broadway Line. Overall, it is expected to take approximately 7 years to build this phase, with construction starting in late 2004.

Other nearby projects that would be in construction at the same time as Phase 1 include the reconstruction of the FDR Drive between 63rd and 58th Streets, construction associated with the LIRR East Side Access project near 63rd Street and Second Avenue, expansion of the Memorial Sloan Kettering Cancer Center between both First and York Avenues and East 69th and 66th Streets, and activities related to NYCDEP's Third Water Tunnel on Second Avenue at 54th Street.

### Transportation, Air Quality, and Noise

Reconstruction of the FDR Drive between 63rd and 58th Streets and expansion of Memorial Sloan Kettering Cancer Center are expected to overlap with the beginning stage of Second Avenue Subway construction in the Upper East Side. However, these projects do not abut the Second Avenue Subway corridor. In addition, the FDR project would primarily occur south of Phase 1's boundaries. Moreover, most of the above-ground subway construction in this vicinity would occur after 2007, when these two projects are already complete. Thus, considerable potential for cumulative noise and air impacts would be avoided. However, traffic impacts associated with additional construction vehicles on the road network would still occur, exacerbating any detours and congestion created by the other two projects. The cumulative effect may result in additional congestion and noise on certain streets on the Upper East Side, along with a reduction in parking. Similarly, if the 66th Street shaft site were operational at the same time as the FDR or MSKCC projects, or if the 72nd or 55th Street Stations were to begin construction earlier than currently projected, then this simultaneous construction would exacerbate traffic, air quality, and noise impacts. NYCT will work with the Interagency Traffic Task Force to mitigate vehicular, surface transit, and pedestrian traffic on the Upper East Side prior to and throughout the project's duration.

During the FDR reconstruction, the construction of a temporary roadway to maintain lanes and traffic flow on this highway would mitigate the impacts on nearby roadways, such as Second Avenue. NYCT and its contractors would work with NYSDOT and Memorial-Sloan Kettering Cancer Center to coordinate deliveries and other activities to the degree practicable.

With respect to the LIRR East Side Access Project, the two projects would coordinate to avoid conflicts and overlapping construction activities in the same locations and to take advantage of track outages. As a result of the rehabilitation of the lower level of the 63rd Street Tunnel for the East Side Access project, some access might be required to the active subway tracks (the **F** train) on the upper level of the tunnel. This would occur during nights and weekends. With the construction of the Second Avenue Subway, suspension of **F** train service would also be necessary on limited nights and weekends, particularly during the excavation of the connection to the bellmouths at 63rd Street. Thus, riders of this line would experience more disruptions if the projects are not well coordinated to take advantage of track outages.

*Social and Economic Conditions and Neighborhood Character*

Since most of the Second Avenue Subway's construction would occur below ground in the areas where other major Upper East Side construction projects are expected to take place, there would be few cumulative social and economic impacts, since such impacts stem from physical, visual, and audible disturbances to a surrounding area. No major construction projects are planned in the vicinity of the East 90s, where the Second Avenue Subway's surface construction activities on the Upper East Side would be most concentrated during the early stages of the project. However, if the Upper East Side construction projects were to occur simultaneously with construction of above-ground Second Avenue Subway activities, then cumulative social, economic, and neighborhood character impacts could occur. In particular, construction of the LIRR East Side Access vent facility at 63rd Street could overlap with spoils removal activities at 66th Street, increasing construction activity in the area and resulting in cumulative social, economic, and neighborhood character impacts in the vicinity. Some retail establishments would benefit from the patronage of the projects' construction workers.

*EAST MIDTOWN*

In the East Midtown neighborhood zone, Second Avenue Subway construction would entail building a staging area and access shaft site for the project's tunnel boring activities at the western portion of St. Vartan Park, at Second Avenue and 35th Street. This activity would begin during Phase 3 and would continue for up to 8 years. Additionally, construction of the 55th, 42nd, and 34th Street Stations and ancillary facilities would also occur in this area in Phase 3, as would the 63rd Street tunnel connection to Queens for non-passenger services.

During the East Midtown construction period for the subway, several other large projects are also expected to be in construction; these include reconstruction of the FDR Drive between 42nd and 23rd Streets, Water Tunnel Number 3 with shaft sites at 54th and 34th Streets, the last phase of a high-rise commercial and residential development planned on four parcels currently owned by Consolidated Edison along First Avenue between 41st and 35th Streets, construction of a new United Nations Building at 42nd Street west of the FDR Drive, and the East River Science Park on the New York University School of Medicine campus. The new DNA facility and ambulatory care center on the Bellevue Hospital Campus is expected to be complete before Phase 3 begins, but this assessment conservatively considers the potential for cumulative impacts if this project were to be delayed to coincide with subway activities.

As part of the Water Tunnel shaft site and distribution chamber construction, NYCDEP plans to close the sidewalk adjacent to St. Vartan Park, and possibly one or more lanes on both Second Avenue and East 35th Street, for portions of up to three years. It is possible that these activities will be complete prior to subway construction in the 30s; however, NYCT is working with NYCDEP to coordinate construction staging plans, designs, schedules, and traffic plans to minimize the potential for cumulative impacts in the event that both projects happen simultaneously. Coordination efforts include examining alternative construction staging layouts. Another possibility is that portions of construction staging activities might be relocated for some or all of any common construction period, if necessary, either to 35th Street between Second Avenue and the Queens-Midtown Tunnel service road, or to portions of St. Vartan Park where other Second Avenue Subway construction activities would occur. Other cumulative construction-period impacts could occur with the construction of another NYCDEP Water Tunnel distribution chamber near the Second Avenue Subway's planned 55th Street Station—in this case, at 54th Street and Second Avenue. At this location, NYCDEP would require closure of

## Second Avenue Subway FEIS

---

a portion of 54th Street for portions of up to three years. Similar coordination efforts would be pursued at this location.

### Transportation, Air Quality, and Noise

Construction activities associated with the reconstruction of the FDR Drive between 23rd and 42nd Streets, Water Tunnel Number 3, development of the final phase of Consolidated Edison's First Avenue properties, and the expansion of the United Nations could all occur simultaneously with construction of the Second Avenue Subway. Collectively, these projects would result in intense construction activity in the area between 42nd and 34th Streets, adding to the temporary disruption of traffic around the subway alignment's construction area resulting from construction-related trips.

All of these projects would add construction vehicles to the street network, resulting in a reduction of roadway capacity on avenues and some adjacent cross-streets, which could lead to diversion of some traffic and traffic increases on three parallel thoroughfares: Second Avenue, First Avenue and the FDR Drive. Lane closures could also occur on First and Second Avenues. Although no lane closures are anticipated on 42nd Street from construction of the United Nations building at East 42nd Street, the street could be affected by cumulative construction, further exacerbating traffic and access problems as vehicles travel crosstown to access alternate north-southbound routes. Construction on any Con Edison parcels still underway during the subway's construction period and at the United Nations Development Corporation site could result in the closure of one or more nearby curb lanes to facilitate construction and delivery vehicle activity. Should construction activity from any of the projects overlap along streets with crosstown buses, there could be some diversion of traffic including diversion of some bus routes. On-street parking could also be reduced throughout this area. As in other locations, NYCT will work with the Interagency Traffic Task Force to coordinate projects with the potential to affect vehicular, surface transit, and pedestrian traffic.

As described in Chapter 5B, many vehicles on Second Avenue are expected to be rerouted to parallel Avenues or to the FDR Drive during the project's construction period. However, the construction activities that would be occurring on the other Avenues and the FDR Drive would hamper the ability of these thoroughfares to alleviate the decreased capacity that will occur on Second Avenue. As part of the FDR reconstruction, a temporary viaduct will be constructed to maintain three lanes on that highway, so that traffic from this roadway would not divert to local streets. It is expected that roadway capacity on the FDR would be retained to minimize potential detours. Nevertheless, it is likely that congestion during certain periods of the day would result in vehicle diversions to local streets, thereby increasing congestion near the alignment of the Second Avenue Subway.

The Water Tunnel Number 3 shaft at 35th Street could be under construction in the roadway and sidewalk in the same vicinity and the same time as the Second Avenue shaft site at St. Vartan Park, or could share space within the construction laydown site to minimize some cumulative impacts to the surrounding neighborhood. Nevertheless, simultaneous construction activities would still exacerbate traffic and noise impacts by increasing the construction activity and vehicles in the area and potentially the extent of roadway closure. MTA NYCT and NYCDEP have begun discussions on how both agencies could schedule construction in a way that would minimize cumulative impacts on the community.

Local fugitive dust concentrations in the vicinity to overlapping construction activities, particularly during the most intensive construction phases such as tunnel excavation, would also



increase. The extent of particulate concentrations resulting from overlapping construction activities would be relatively short in duration and would not have any permanent impact. As a result, no significant air quality impacts from fugitive dust emissions are anticipated, and excavation and other construction activities would be conducted with the care mandated by the site's proximity to active uses.

Surface impacts related to the 7 train's extension would generally be limited to portions of West Midtown. However, there may be periods of concurrent construction activities that would impact crosstown traffic on 42nd and 34th Streets, further affecting traffic conditions in the area.

#### *Social and Economic Conditions and Neighborhood Character*

Simultaneous construction of development projects in East Midtown, if any, would result in temporary effects to social and economic conditions and neighborhood character during the construction period. These would be caused by a combination of factors, including disruption of access; increased traffic, noise, and dust; visual impacts stemming from the introduction of construction equipment and activities; loss of parkland (discussed below); and other factors as described in Chapter 6. Such impacts would be particularly pronounced in the area between 42nd and 34th Streets, where multiple construction projects in a confined geographic area could occur simultaneously. However, in that vicinity, certain retail establishments would likely benefit from the patronage of the many construction workers.

Depending on the extent and locations of these disruptions, it is possible that development of some new buildings in this area could be slowed until the Second Avenue Subway is completed, thus delaying or perhaps altering a development trend. However, it is not expected that either the United Nations or Con Edison projects would experience such delays.

#### *Parks and Open Space*

Significant adverse cumulative open space impacts would occur from the construction projects that are expected to occur in the East Midtown area simultaneously. As described in Chapter 3, project construction in the western portion of St. Vartan Park would result in closures to that portion of the park for up to 8 years. The construction of the United Nations building on a portion of Robert Moses Playground would also occur during a portion of this period. Thus, two neighborhood parks providing active recreational facilities would be closed to public use during the same time period. In addition, the potential use of St. Vartan Park by NYCDEP for its water tunnel shaft site could potentially extend use of this park to a larger area, resulting in further reductions to the open space. As described in Chapter 7, "Public Open Space," NYCT will provide a temporary replacement park for the active recreational facilities that the Second Avenue Subway would displace at St. Vartan Park prior to beginning subway construction. It is also expected that the city will require replacement park space for the United Nations project. Therefore, any potential for cumulative impacts on open space caused by the Second Avenue Subway project would be fully mitigated.

#### *GRAMERCY PARK/UNION SQUARE*

The Second Avenue Subway's construction activities in the Gramercy Park/Union Square would include construction of the 23rd and 14th Street Stations and ancillary facilities during Phase 3. While not yet scheduled for construction, reconstruction of the FDR Drive between 15th and Montgomery Streets could potentially be underway at the same time. Given the considerable distance between the FDR and the project alignment in this area, it is unlikely that cumulative

## Second Avenue Subway FEIS

---

impacts aside from those related to traffic would result from Second Avenue Subway construction.

### *Transportation, Air Quality and Noise*

With respect to traffic, trucks servicing the Second Avenue Subway project are expected to use local streets to access the Queens-Midtown Tunnel. However, depending on the plans developed for the FDR, it is possible that during FDR reconstruction, some increases in traffic could occur on 23rd and 14th Streets and on Second and First Avenues. If these increases were to occur during station construction, cumulative traffic impacts would be created, and increases to noise and dust would also occur. NYCT will work with the Interagency Traffic Task Force to coordinate its efforts with NYSDOT and NYCDOT and other agencies during the construction process.

### *Social and Economic Conditions and Neighborhood Character*

Although some businesses would benefit from the patronage of construction workers, any intensification of construction in the area from overlapping construction activities and traffic diversions would also have adverse social, economic, and neighborhood character impacts during the construction period. These would be concentrated near the 23rd and 14th Street Stations.

### EAST VILLAGE/LOWER EAST SIDE/CHINATOWN

In the East Village/Lower East Side/Chinatown neighborhood zone, Second Avenue Subway construction could include tunnel spoils removal and staging activities at Houston Street, as well as construction of the Houston Street Station and ancillary facilities in Phase 3, and of the Grand Street and Chatham Square Stations and ancillary facilities in Phase 4. These activities could occur in the same vicinity as the Cooper Square development projects noted above. However, as described previously, there is minimal potential for cumulative construction impacts within this neighborhood zone as a result of subway construction activities. First, Water Tunnel Number 3's construction would not be located near the subway alignment. Second, as described in Chapter 3, construction in the area is likely to occur after the development projects are completed. Thus, conflicts with the Cooper Square Urban Renewal Area developments between Second Avenue and the Bowery and between Stanton and Second Streets are also not envisioned at this time. Nevertheless, an analysis of cumulative impacts is provided below in the event that the schedule for either the subway or the Cooper Square developments change.

### *Transportation, Air Quality and Noise*

If the aforementioned projects were to be in construction at the same time, cumulative transportation, and noise impacts would result, and dust would increase, particularly in the area near Houston Street and Second Avenue. Traffic impacts associated with additional construction vehicles being on the road network simultaneously would occur, exacerbating congestion on local roads, and the amount of on-street parking could be reduced. NYCT would work with the developer(s) of the Cooper Square Urban Renewal Area projects to coordinate deliveries, lane closures and other activities to the degree practicable.

### *Social and Economic Conditions and Neighborhood Character*

If the projects in the area were to occur simultaneously, the concurrent construction would result in cumulative social, economic, and neighborhood character impacts from decreased accessibility, and from the traffic, noise, air, and visual impacts associated with construction

activity. Impacts would be especially pronounced in the area between Second and Stanton Streets, where construction related to the Cooper Square Urban Renewal Area could occur simultaneously with spoils removal or station construction activities at Houston Street. In addition, the construction activity could delay other development projects in the area. On the other hand, multiple projects would also generate increased economic activity for some retail businesses.

#### Parks and Open Space

The reconstruction of the Manhattan Bridge and the construction of Water Tunnel Number 3 are not expected to result in any open space impacts. The Cooper Square Urban Renewal Area developments would introduce new residents to the neighborhood zone. These residents would be located in the vicinity of Sara D. Roosevelt Park. Therefore, the project's proposed closure of portions of this park during construction would affect additional residents, exacerbating the already significant adverse impact on open space. As described in Chapter 7 and in the Section 4(f) Evaluation, there is no feasible and prudent way for the project to avoid affecting this park.

#### LOWER MANHATTAN

The Second Avenue Subway's construction activities in Lower Manhattan could include tunnel spoils removal at Hanover Square and construction of the Seaport and Hanover Square Stations and ancillary facilities. As described previously, numerous other projects are planned for this area; among the largest of these are: reconstruction of the World Trade Center site including construction of a memorial; construction of the Fulton Transit Center on the east side of Broadway near Fulton Street; reconstruction of West Street/Route 9A between Albany and Chambers Streets; construction of the new PATH terminal and 19 Station beneath the World Trade Center site; construction of a new terminal for the 19 lines at South Ferry; construction of several buildings within Battery Park City; and improvements at 13 parks.

Because the Second Avenue Subway construction activities in this vicinity would be part of Phase 4 of the construction plan, it is expected that most of these projects would be completed prior to beginning Phase 4. It is expected that Route 9A, the PATH terminal, public parks, and Battery Park City developments would be complete prior to the start of subway construction in the area.

#### Transportation, Air Quality and Noise

While much of the reconstruction work associated with the World Trade Center site, West Street/Route 9A, and several other projects would occur far to the west of Second Avenue, traffic flows in the congested downtown area could nevertheless be affected adversely by diversions and increased trucking. As described in Chapter 5, Lower Manhattan is already a congested area. Therefore, significant adverse effects on vehicular LOS would likely result from any traffic delays resulting from lane closures, deliveries, etc. associated with the construction projects. Transit projects at the Fulton Street Transit Center, as well as reconstruction of the PATH Terminal and the 19 stations, could cause some alterations in transit service within the downtown area if they were to overlap with subway activities. Significant adverse noise impacts from overlapping construction activities would also occur, and local fugitive dust concentrations in the vicinity to concurrent construction activities would also increase.

Given the extent of the construction activities that are expected in Lower Manhattan over the coming years and the number of agencies involved in permitting, approving, funding, and constructing these projects, extensive coordination will have to occur to minimize the potential for delays to one or more projects and to minimize local impacts. As in other locations, NYCT

## Second Avenue Subway FEIS

---

will work with the Interagency Traffic Task Force to coordinate projects to mitigate impacts to vehicular, surface transit, and pedestrian traffic.

### *Social and Economic Conditions*

Major construction activity is expected to occur in Lower Manhattan through at least 2015. In conjunction with Second Avenue Subway construction, these projects will result in cumulative impacts on social and economic conditions and neighborhood character. These impacts would be caused by a combination of factors, including disruption of access; increased traffic, noise, and dust; reduction in the number of parking spaces; visual impacts stemming from the introduction of construction equipment and activities; loss of parkland (discussed below); and other factors as described in Chapter 6. Economic benefits would ensue for some retail establishments as a result of increased patronage from construction workers.

### *Natural Resources*

If any of the agencies involved in construction projects in Lower Manhattan were to seek to use a barge site to transport materials in and out of Manhattan, it is possible that they would also seek to use the Pier 6 site. If so, the site might have to be expanded to include more in-water infrastructure than that proposed by the Second Avenue Subway. This could result in additional temporary adverse impacts on natural resources; however, these would be offset by the reductions in vehicular traffic and air quality improvements that would also occur. In any case, none of the agencies besides NYCT has proposed using Pier 6 for barging activities at this time. If such a plan were to be contemplated by any agency, that agency would be responsible for assessing the potential for adverse impacts—including cumulative impacts—on natural and other environmental resources.

## OPERATIONAL EFFECTS

In its operational phase, the Second Avenue Subway is expected to result in few, if any, adverse cumulative impacts. The various development projects described throughout this chapter would increase demand for transit service on Manhattan's East Side, thereby contributing to the goals and objectives of the Second Avenue Subway. As described below, major transportation improvements planned in and near Manhattan would support the Second Avenue Subway in improving access to underserved areas.

The LIRR East Side Access Project would significantly improve access to Manhattan's East Side for commuters from Eastern Queens, Nassau, and Suffolk Counties. A result of the East Side Access Project will be the increased use of the Lexington Avenue Line by LIRR commuters. The Second Avenue Subway would provide additional capacity for new riders. Therefore, the cumulative operational effects of both projects would be beneficial.

The 7 Flushing Line Extension would improve access to Manhattan's West Side. The extension of the 7 train could result in increased demand for a transfer to and from the new Second Avenue Line at 42nd Street for passengers seeking crosstown service to destinations west of Eighth Avenue. However, this increase would likely be minimal, since a similar opportunity would be available from the Broadway Line at 42nd Street-Times Square. A 7 train extension in combination with a Second Avenue Line would provide access between the far West Side with East Harlem and the Upper East Side.

Cumulatively, these transportation projects would provide access to and within Manhattan from river to river, which would be a benefit to the regional transportation system. \*