

A. INTRODUCTION

Secondary 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. Secondary effects can occur within the full range of impact types, such as changes in land use; economic vitality; neighborhood character; traffic congestion, with its associated effects on air quality and noise; water resources; and other natural resources.

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 secondary impacts, but nevertheless when added to other actions can eventually lead to a measurable environmental change.

Chapters 3 through 18 assess the potential primary and secondary effects of the No Action, TSM, and Preferred Alternatives for a range of technical areas. This chapter summarizes secondary effects of the project alternatives and addresses cumulative effects of the alternatives in combination with conditions as set forth in “Future Conditions Common to All Alternatives” section of the previous chapters, plus other reasonably foreseeable actions that are not yet to the point where they have been included in capital budgets or identified in the long-term planning of transportation agencies.

B. SECONDARY IMPACTS

As outlined in Chapter 1, “Project Purpose and Need,” an important goal of the East Side Access Project is to produce beneficial secondary impacts in the Long Island Transportation Corridor (LITC) and the New York metropolitan region. These are primarily sustained regional economic growth, a trend towards more efficient development patterns, and reduction in use of the automobile. The adverse secondary effects of the project alternatives identified in the previous chapters arise from changes in train service and localized commuting patterns and relate to land use, social conditions, economic conditions, transportation, and air quality. In comparing secondary effects among alternatives, the relevant assessments in Chapters 3 through 5, 9, 10, and 12 clearly demonstrate that only the Preferred Alternative would generate significant beneficial secondary impacts and that its secondary adverse impacts could be mitigated, as summarized below.

LAND USE, ZONING, AND PUBLIC POLICY

The East Side Access Project is not expected to have major effects on land use. As discussed in Chapter 3, the LITC is substantially developed. In Manhattan, both Grand Central Terminal (GCT) and Penn Station lie within the Midtown commercial center, surrounded by dense, predominantly commercial uses. Although the project could make the area around GCT more

attractive as a commercial district, it is an extremely desirable area now, but with few sites available for development. At Penn Station, the diversion of LIRR riders to GCT would have only minor, localized effect. Under the No Action and TSM Alternatives, these passengers would arrive in Penn Station, but travel to the area near GCT to reach their destinations.

As noted in Chapter 3, the Preferred Alternative's Sunnyside station would support the city's plans to create a Central Business District (CBD) in Long Island City. However, the ultimate success of the new CBD would depend primarily on public policy (to permit it and perhaps grant incentives for development) and economic trends. The project alternative's role would be supportive, but not critical. The No Action and TSM Alternatives would offer no beneficial secondary impact in Long Island City. None of the project alternatives would affect land uses in the areas surrounding the replacement yard sites (i.e., Blissville, Maspeth, Fresh Pond, and Highbridge Yards).

Secondary effects of the Preferred Alternative on land use on Long Island would be generally beneficial. By attracting new patrons to the LIRR, this alternative would reduce congestion on the area's highways, resulting in improved access to land uses. The alternative would clearly generally support policies in the Nassau County Comprehensive Plan and the Suffolk County resolutions on livable communities that seek to concentrate future growth in established areas, make efficient use of the transportation network, and revitalize existing town centers. Increased patronage on the LIRR would support land uses around local train stations and focus development on town centers, promoting a more efficient and centered land use pattern. The No Action and TSM Alternatives would provide no such beneficial secondary land use impact on Long Island. Development patterns would continue as urban sprawl with no impetus to alter land use patterns.

On a regional level, secondary land use/development effects of the No Action Alternative and even the TSM Alternative could actually be adverse. The increases in population and employment—and the development to support these increases—predicted for 2010 and 2020 are based on the assumption that transportation services would not deteriorate during this time. If under the No Action or TSM Alternative transportation service does indeed deteriorate, then the anticipated growth may not be achieved. On Long Island, where there is still substantial development potential, the potential effects of the No Action Alternative would be most apparent. Under the Preferred Alternative, there would be no rail transportation-related impediment to anticipated growth.

SOCIAL CONDITIONS

Secondary effects on social conditions from the project relate to changes in service and access for the area's residents and workers, access and support to community facilities and recreational opportunities, and community character. As discussed in Chapter 4, in general, the No Action Alternative would result in adverse secondary effects on social conditions throughout the LITC, the TSM Alternative's effects would be somewhat less adverse, and the Preferred Alternative would generate beneficial secondary effects, as described below. The project alternatives would not affect social conditions in the areas surrounding the yard sites.

With an increasing demand on rail transit service predicted under the No Action Alternative, access to the region's community facilities, workplaces, homes, and areas of commerce would become more difficult and inconvenient. On Long Island, where use of the LIRR is strongest, the decrease in quality of LIRR service would be felt most strongly. This change would

inconvenience all study area residents and support the trend toward an area characterized by increased dependence on the automobile. A portion of the labor force living on Long Island would be more likely to seek jobs outside the region's commercial center in New York City. The railroad's influence on land use trends would weaken, resulting in a stronger trend toward auto-dependent land use patterns. This is likely to have an adverse impact on efforts to preserve community character in areas that depend on the LIRR. Within Manhattan, the potential increase in Penn Station passengers making their way across town to and from their jobs on the East Side would add to congestion and detract from community character as well.

The TSM Alternative would slightly improve transportation service to East Midtown Manhattan, and therefore would result in small decreases in congestion in Midtown. Overall, however, the TSM Alternative would have little effect in terms of strengthening the CBD or improving access to regional community facilities. By offering some increase in capacity for commuter service on the LIRR, the TSM Alternative would cause less inconvenience to residents of Long Island than the No Action Alternative, but it would not abate the trend toward a neighborhood character more strongly characterized by dependence on the automobile.

In contrast, by greatly improving service to Manhattan from eastern Queens and Long Island, and by adding origin/destination options (GCT and Sunnyside station), the Preferred Alternative would benefit all corridor residents and would improve access to the region's community facilities. Those residents of Long Island and eastern Queens who commute on the LIRR would experience the greatest benefit. However, since the LIRR serves the region's community facilities, all residents would benefit. In addition, because the Preferred Alternative would succeed in diverting to the LIRR some commuters who would otherwise drive to work, it would support transit-centered development and help to shift the trends that currently favor suburban sprawl and automobile dependence.

ECONOMIC CONDITIONS AND RELOCATION

As discussed in Chapter 5, the direct displacement and required relocation of employment and businesses as a result of the Preferred Alternative is not expected to engender indirect, or secondary impacts. Secondary economic effects of the project on the LITC and study areas are, like those of land use and social conditions, related to the changes in transportation service and commuting patterns. Again, the No Action Alternative's potential secondary effects would be adverse, the TSM Alternative's less so, and the Preferred Alternative's beneficial, as summarized below. There would be a slight beneficial effect on economic conditions in the areas surrounding the yard sites.

Since the projections of population and employment for the LITC assume no deterioration in transportation service, with the decline in service under the No Action Alternative, these predicted growth levels might not be achieved. On Long Island, this could mean fewer new residents and possibly lower employment with a concomitant effect on the future local tax base and economic activity. In addition, commuters might adjust their travel patterns to compensate for deteriorating service on the LIRR, with economic impacts on the broader community exacerbating already congested conditions on major roads leading from Long Island to Manhattan.

Such a shift would increase congestion on the roads, increasing the time required for the journey to work by non-transit users, and slow the delivery of goods and services over roads throughout the region. This in turn would increase the cost of doing business, ultimately making the LITC a less desirable location for business. Thus, the No Action Alternative could affect the

attractiveness of the LITC, and particularly Manhattan, as a business location, undermining the projected employment growth for the region and the economic demand that would be generated by future employees.

The modifications proposed under the TSM Alternative would improve the journey to work for some LIRR commuters, and secondarily improve the movement of goods and services through the region. However, the improvements would not be sufficient to avoid the overcrowding and delays that are likely to occur in the future, and the existing disconnect between the location of jobs and the location of terminals would not be substantially improved by the implementation of the TSM Alternative.

The Preferred Alternative would create two major improvements in the LIRR infrastructure that would have significant beneficial impacts on the region's economy: the provision of new LIRR service to a new LIRR terminal at GCT and the creation of a new LIRR station in Sunnyside, Queens. The direct impacts from these improvements would be the elimination of the existing disconnect between the location of jobs and location of terminals, as well as substantial relief from the currently overcrowded conditions on many LIRR peak hour trains, and considerable reduction in the time required for the journey to work. Non-LIRR users would also benefit, since the diversion of auto commuters to the train would reduce congestion on the major Long Island roadways leading to Manhattan.

With the Preferred Alternative, the rail transit system would be adequate to serve the region with the economic growth that is currently projected. Therefore, compared with the No Action Alternative the Preferred Alternative would have a clear positive secondary impact on productivity within the LITC, and particularly in Manhattan. Eliminating the disconnect between the locations of jobs and the LIRR terminals, improving transportation service, reducing travel time, and improving the quality of life would provide the transportation support that is needed for the region, particularly Manhattan, in light of its projected growth in employment. Research suggests a strong correlation between infrastructure investment and more openings of new businesses, as well as expansions of existing businesses. The investment proposed under the Preferred Alternative would count heavily to support the LITC and Manhattan, in particular, as a viable location for business growth. As noted in Chapter 5, achieving the employment projections for Manhattan would generate about \$26 billion in new annual earnings (wages and salaries) by 2020 in today's dollars, as well as considerable secondary spending and employment impacts throughout the state.

As another secondary effect, there would be changes in spending patterns at the two Manhattan LIRR terminals with an increase of 161,000 daily LIRR riders at GCT compared to the No Action Alternative and a decrease of 115,000 daily LIRR riders at Penn Station compared to the No Action Alternative. These changes would be offsetting (and a net benefit, since the increase at GCT would be greater than the decrease at LIRR), but neither would be significant, for the following reasons: (1) at GCT, the retail and restaurant establishments constitute a destination for more than a million workers, residents, and visitors in the Midtown area, and MNR and future LIRR commuters; (2) at Penn Station, the shops and restaurants currently thrive on approximately 307,000 daily rail commuters and an estimated additional 200,000 subway riders who pass through the terminal to and from work each day, in addition to workers and visitors in the area; and (3) the reduction of riders at Penn Station would result in a total number of commuters that is approximately the same as today's number, since NJ Transit and Amtrak commuters, subway riders, and surrounding employment are all expected to increase in the future with or without the project.

The location of a new LIRR station in Sunnyside would increase accessibility to the area for the Long Island work force. Expanding direct links to the work force in a wider region would make Long Island City a more attractive location for the growing service industries in the area, particularly business services, since a larger labor pool with a broader range of skills would be more readily accessible. In the long run, the Preferred Alternative would enhance opportunities for future development in Long Island City, where nearly 4 million square feet of office space are currently planned. In addition, the combination of midday railcar storage and the proposed new station would very likely increase employment, and thus consumer expenditures by railroad employees as well as new LIRR commuters.

Long Island would also benefit from the Preferred Alternative. The attraction of an area as a business location is not only based on the transportation infrastructure, but also on the availability of the work force. Since transportation on Long Island is problematic in every mode, investing in LIRR infrastructure is likely to improve the quality of life on Long Island for users and non-users of the system alike, i.e., improved rail service would also reduce traffic congestion, both of which would support the attraction of Long Island as a desirable residential location. Population growth (and thus, growth in the work force) and employment growth projected for Long Island would be more readily achievable under the Preferred Alternative.

TRANSPORTATION

OVERVIEW

In considering secondary transportation effects of the project alternatives, only the Preferred Alternative, which proposes substantial changes in service leading to measurable changes in commutation patterns, would generate impacts (see Chapter 9). The No Action Alternative and TSM Alternative would generally not create significant secondary effects, except as noted in the discussions below.

In terms of regional travel, the Preferred Alternative would provide an overall significant beneficial secondary effect by improving transportation service from Long Island and eastern Queens to Manhattan and Queens. It would provide commuters destined for Manhattan with increased and improved train service—there would be more trains into Manhattan, greater availability of seats, and the flexibility to get directly to the East Side of Midtown Manhattan in addition to the West Side. It would reduce auto commutation into Manhattan as well, by diverting auto trips from eastern Queens and Long Island, to the LIRR. Overall, the Preferred Alternative would reduce total daily vehicle miles traveled (VMT) by about 342,000 in 2010 and by 375,000 in 2020 compared to the No Action Alternative. There would be 11,000 fewer daily auto trips to work in 2010, and 12,000 fewer daily trips in 2020. Background traffic in the overall Midtown area would decrease by 2 percent compared to the No Action Alternative, and weekday parking demand in Manhattan from Long Island commuters would be approximately 3,000 vehicles below that of the No Action Alternative.

At the same time, the project could result in localized effects on other transportation elements. These would include the potential for increased traffic at intersections surrounding GCT, where the number of taxis would increase. These effects would also include increased traffic and parking at LIRR stations in eastern Queens and on Long Island, where the number of riders is projected to increase because of the Preferred Alternative.

GRAND CENTRAL TERMINAL AND SURROUNDING AREA

In the area surrounding GCT, all of the local traffic impacts could be mitigated with standard traffic improvement measures, such as signal phasing and timing modifications, more restrictive parking regulations, and by providing exclusive phases for turning movements at some intersections where there are significant conflicts with high volumes of pedestrians.

Other local effects of the Preferred Alternative would include both increases and decreases in ridership and related impacts on subways serving GCT. Ridership on the Lexington Avenue line would rise. There would be increases in the number of pedestrians in and around the terminal. The subway impacts include overcrowding on several subway station elements (e.g., stairs, escalators, entrances, etc.) and an increase in demand on the “line haul,” or the number of passengers on the trains entering and leaving the station during the peak hours. Mitigation of the subway impacts includes a series of improvements to increase usage of currently underutilized areas within the transit system such as the “free” passageway connecting the 42nd Street Shuttle with the Lexington Avenue line, strategic placement of control agents to divert passenger flows to paths with available capacity, new stairwells, additional turnstiles, and removal of impedances to smooth passenger flows on the subway platforms. The overall mitigation strategy aims at generating more balanced use of passageways, stairwells and escalators to create a more balanced distribution of passengers to, from, and within the subway station. Certain elements could be mitigated fully while others only partially.

The increases in pedestrian flows in GCT would not result in significant adverse secondary impacts. In one location, it is recommended that an existing escalator bank, which operates with one escalator up and one down at all times, be operated with both escalators up in the AM peak period and both down in the PM peak period to accommodate increased pedestrian activity.

In the area surrounding GCT, the secondary effects of increased pedestrian flow would be limited to locations near GCT, since most of these passengers would travel to the area from Penn Station under the No Action and TSM Alternatives. Still, the assessment in Chapter 9 found that there would be significant impacts requiring mitigation at several locations. Some 15-foot-wide crosswalks would need to be widened to 20 feet. At some locations, street furniture and other impediments to pedestrian flow would need to be cleared or limited. This could include sidewalk vendors, newspaper kiosks, and flower boxes, for example. Quick, steady removal of refuse bags that often line sections of sidewalk in Midtown would also be needed.

With the Preferred Alternative there would be reduced demand for several bus routes that connect Penn Station with the East Side, since LIRR commuters could take direct LIRR service to GCT. There would also be some ridership increases on East Side bus routes by LIRR commuters arriving at GCT who would need to transfer to other routes to get to their final destinations. It is NYCT’s policy to adjust bus schedules and frequencies as demand dictates.

While pedestrian, subway, and taxi activity would increase at GCT, it would decrease in and around Penn Station. In 2020, compared to the No Action Alternative diverted LIRR riders would reduce total rail commuters in Penn Station by nearly 30 percent. Thus, passenger movements in Penn Station would be less congested, vehicle traffic on the street network would be less congested, and crowding in subway stations and on subway lines would be eased.

LONG ISLAND CITY/SUNNYSIDE AND FLATBUSH AVENUE TERMINAL

The Preferred Alternative would generate a relatively small number of new LIRR riders at its proposed Sunnyside station during the peak commuting periods. It is anticipated that 90 percent of these LIRR commuters at Sunnyside would walk to their final destination in the area after alighting from LIRR trains, that 9 to 10 percent would transfer to subways or buses, and that less than 1 percent would take taxis or be picked up or dropped off by car. Significant adverse traffic and transportation impacts are not expected.

Under the TSM Alternative additional LIRR commuters would arrive at the Hunters Point Avenue terminal station, the vast majority of whom would then transfer to westbound IRT No. 7 Flushing line trains to Manhattan's East Side at the No. 7 line's Hunters Point Avenue station. These No. 7 trains are already operating at capacity, without room for additional passengers. A few new LIRR riders are projected to use the very infrequent LIRR service to its Long Island City station; many of these riders would also transfer to the No. 7 line at its Vernon-Jackson station.

Under the TSM Alternative additional LIRR riders would travel to the Flatbush Avenue terminal in downtown Brooklyn and transfer to the northbound Nos. 4, 5, or 6 lines. Those lines are also subjected to serious crowding levels, and the addition of new LIRR commuters there would exacerbate those conditions.

EASTERN QUEENS AND LONG ISLAND

The analysis of potential impacts at LIRR stations focused in detail on 15 of the LIRR's stations in eastern Queens and Long Island, representing the range of all stations, including several of the busiest stations and others with more moderate usage, stations within local business districts and others closer to residential areas or in fringe areas, stations with multiple bus routes and others with limited service, and stations with extensive parking capacity and others with very limited parking availability. Potential traffic impacts were examined at the representative stations, while parking impacts were evaluated at all stations.

Traffic

Analysis of traffic conditions found several intersections with the potential for significant impact under the Preferred Alternative. All of these impacts could be mitigated via standard traffic engineering improvements, such as the installation of traffic signals at unsignalized intersections, signal phasing and/or timing modifications at signalized intersections, lane re-striping, offsetting centerlines of streets to gain additional capacity in one direction, and more restrictive parking regulations. These are standard measures within the day-to-day jurisdiction of the agencies responsible for maintaining traffic operations. Since the detailed traffic impact analyses were conducted for a representative set of stations, standard traffic engineering improvements would likely be sufficient to mitigate traffic impacts that might occur at any of the LIRR's numerous other stations. At one grade crossing, the mitigation would relate to the timing of the crossing gate.

Parking

The Preferred Alternative can be expected to increase parking demands at each of the LIRR's 124 stations as described in detail in Table 9E-13 in Chapter 9, section E. Several stations would be able to accommodate the demands, while others would experience significant parking shortfalls (in most cases, parking shortfalls would be expected even under the No Action

Alternative). Depending on the individual station in question, mitigation of these shortfalls would include: expansion of existing lots or construction of new lots or garages; modification of train service and schedules to increase service at stations with available parking or where parking could be added more easily; institution of fare policy changes to attract riders to a new station by shifting one or more stations from one fare zone to another; increasing bus service or heavily subsidizing bus fares; implementation of new feeder bus services; improving facilities to increase pickup and drop-off activity rather than parking; providing preferential parking areas for car-poolers, with enforcement; construction of new stations near or between two major stations where parking demands greatly exceed parking availability; promoting bicycle use; and others. Ridership and parking projections would need to be closely monitored, and the LIRR would need to be ready to implement one or more of these strategies at individual stations.

AIR QUALITY

Air quality effects of the project are “secondary” and result from changes in traffic patterns induced by modifications to travel patterns associated with the project (see Chapter 10). The Preferred Alternative would generate two types of secondary air quality effects—regional (“meso-scale”) changes in vehicular miles traveled and related pollutant burdens of carbon monoxide, volatile organic compounds, compounds of nitrogen and oxygen, and small particulate matter; and localized (“microscale”) increases or decreases in pollutants associated with automobiles, represented by the analysis of carbon monoxide concentrations at specific sites. The TSM Alternative would affect only regional air quality, since it would have no effect on local traffic conditions near GCT, and minimal effects in Sunnyside and some at LIRR stations.

As shown in Table 10-8 in Chapter 10, the Preferred and TSM Alternatives would reduce pollutant burdens attributable to the automobile compared to the No Action Alternative, with the Preferred Alternative’s reductions equaling between 3 and 5 times that of the TSM Alternative. (For context, Table 10-9 in Chapter 10 provides a listing of pollutant emissions for the entire New York Metropolitan Area.) The TSM Alternative would increase pollutant burdens produced by the operation of diesel trains. In total, the Preferred Alternative would show beneficial secondary effects on regional air quality. The TSM Alternative would have beneficial effects on all but nitrogen oxygen compounds.

The air quality analysis in Chapter 10 found that the Preferred Alternative would have an impact on air quality at one location: Madison Avenue and 48th Street in *Manhattan*. The concentration of carbon monoxide would remain within standards, but the increase over the No Action condition is considered to be significant. This impact would be mitigated by proposed traffic mitigation at that location.

ENERGY

Secondary energy impacts of the project are associated with traffic-related energy use. As discussed in Chapter 12 and shown on Table 12-1, the change from auto use to LIRR travel for the journey to work under TSM and Preferred Alternatives would reduce travel-related energy consumption. The TSM Alternative would reduce annual VMT by 33.3 million miles, resulting in a 177 billion-BTU reduction in energy consumption. The Preferred Alternative would reduce total VMT by 100.4 million miles, but adding energy consumption from additional electric trains, thus generating a net reduction in energy consumption of 151 billion BTUs. This compares to an estimated annual ground transportation consumption in New York State of 874 trillion BTUs.

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 EIS for the East Side Access Project. The scoping process described the methods to be used to analyze cumulative impacts, and the analysis of the affected environment and consequences of the proposed action considered the cumulative effects of the East Side Access Project together with other projects expected to occur in the area.

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. To this end, this EIS considers as the future baseline condition the combination of existing conditions together with known development plans, public policies, projected population and employment growth, and other general background growth. The TSM and Preferred Alternatives are then compared with this future baseline condition.

Specifically, the consideration of project impacts in Chapters 3 through 18 of the EIS included regional traffic and transportation plans, as well as projected growth in population and employment throughout the region. The following projects were included in the future baseline conditions:

- *LIRR service plans to operate the dual-mode locomotives and provide a one-seat ride to Penn Station from areas in diesel territory.*
- *LIRR plans to operate up to 42 trains per hour during peak periods.*

MTA/LIRR East Side Access FEIS

- *Metro-North 2020 service plans including additional service permitted by the Mid Harlem Line Third Track Project and the Wassaic Extension Project.*
- *The Secaucus Transfer Project in New Jersey, which will enable a direct transfer from NJ Transit's Main Line, Bergen County Line and Pascack Valley Line and Metro-North's Port Jervis and Spring Valley Lines to NJ Transit Northeast Corridor service to Penn Station.*
- *The NJ Transit Montclair Connection that will add Boonton Line trains to Midtown Direct Service to Penn Station with electrification on the Boonton Line extended to Great Notch.*
- *The JFK Light Rail System, or Air Train, that will connect the airport to LIRR's Jamaica station and NYCT Howard Beach subways in Queens.*
- *Free bus-to-subway transfers on the MTA system.*
- *Bus service modifications to represent expected future year operations.*
- *The NYCT's 63rd Street Tunnel Connector Project that will link the B and Q trains to the Queens Boulevard E and F lines and enhance overall passenger capacity across the East River and reduce crowding on the E and F lines.*
- *Major capital improvements by NYCT to the Flatbush/Atlantic/Pacific Avenue subways in Brooklyn and the reopening of all four tracks on the Manhattan Bridge.*

These regional transportation projects that have been approved and will be implemented by 2010 and 2020 were included in the patronage estimates made for the No Action, TSM, and Preferred Alternatives for the years 2010 and 2020, as appropriate, and are thus considered in the evaluation of the impacts of the three project alternatives. In addition, a number of major proposed future land use projects were included in the transportation and other EIS analyses of East Side Access Project impacts. These considerations account for a major portion of cumulative effects analysis of project alternatives.

In addition, there are a number of additional proposals for transportation projects in the region that are in various stages of the planning process. If constructed, these projects would affect the capacity of the existing transportation system and alter commuter access patterns to and within Midtown Manhattan. Just as the continued growth of Midtown's business district has pushed to the limit the available capacity of the existing transportation infrastructure in the LITC, commuter demand for direct service to Manhattan has steadily grown from Westchester, Putnam, and Dutchess Counties to the north and areas in New Jersey and New York located west of the Hudson River.

POTENTIAL TRANSPORTATION PROJECTS IN THE CUMULATIVE EFFECTS STUDY AREA

As discussed in Chapter 1, MTA agencies are cooperating with other agencies as they plan to improve mobility throughout the New York metropolitan region, moving toward a unified regional transportation system to link business centers, communities and airports together and with the rest of the region. This effort includes the East Side Access Project plus the following potential future actions:

- *Second Avenue subway, whose goal is to improve subway service on the East Side of Manhattan.*
- *East River Crossing, to improve NYCT service between Brooklyn and Manhattan.*
- *LaGuardia Subway Access, to provide direct rapid transit access between Manhattan and LaGuardia Airport using service extended from the Queensboro Plaza station on the N train.*
- *Metro-North Railroad Penn Station Access, to provide Metro-North riders direct access to the West Side of Manhattan via Penn Station.*
- *Lower Manhattan Access, to plan new service to give commuters better access to Lower Manhattan.*
- *Far West Midtown Study, to extend the No. 7 train west from its current terminus at Times Square to a new terminus near the Javits Center.*
- *One-Seat Transit Access to John F. Kennedy International (JFK) Airport, to provide direct rapid transit access between Manhattan and the airport.*
- *Access to the Region's Core, to provide additional trans-Hudson public transportation capacity to Midtown Manhattan.*

In sum, the goal and cumulative effect of these projects with the East Side Access Preferred Alternative would be to balance transportation throughout the region, greatly improving the journey to work by providing additional capacity and access to the center city in all three CBD locations—East Midtown, West Midtown, and Lower Manhattan—from all commuting directions. Together, the projects would allow the region to compete economically for jobs and growth in the national and international arena by improving access to the region's commercial core, reduce dependence on the automobile and auto-related regional VMT by increasing rail capacity, improve regional air quality, and decrease energy consumption. With the East Side Access No Action Alternative or TSM Alternative, these benefits would not accrue to the LITC, and the full cumulative positive effects would be substantially reduced.

A more specific review of the East Side Access Project in conjunction with each potential project is provided below.

SECOND AVENUE SUBWAY/MANHATTAN EAST SIDE TRANSIT ALTERNATIVES (MESA)

The MTA is dedicated to developing a Second Avenue subway to extend the entire length of Manhattan's East Side, bringing critical relief to the Lexington Avenue subway. A total of \$1.05 billion has been allocated in the MTA's 2000-2004 Capital Program for a full-length Second Avenue subway project. The MESA study is the planning effort for the northern element of the full build subway.

The impact of the Second Avenue subway in conjunction with the Preferred Alternative would be to alleviate conditions on the Lexington Avenue line, particularly at the Grand Central subway station. In particular, the Second Avenue subway would divert riders from the Lexington Avenue line, bringing operations to below capacity on the Lexington Avenue line. With this improvement, the new subway riders generated by the Preferred Alternative would no longer exacerbate existing crowding in the subway system. Therefore, the

MTA/LIRR East Side Access FEIS

Preferred Alternative would no longer result in significant adverse impacts on station elements and line-haul crowding in the subway. Construction of the Second Avenue subway would generally be far from the East Side Access Project's construction locations and so there would not be a cumulative construction impact from the two projects.

EAST RIVER CROSSING

Improved NYCT service between Brooklyn and Manhattan proposed under the East River Crossing project would attract more LIRR customers with Lower Manhattan destinations to travel via Brooklyn. This would reduce the potential impacts that the East Side Access Project's Preferred Alternative is predicted to have on the Lexington Avenue subway at GCT. As a first step, the MTA 2000-2004 Capital Program includes new transfer connections at Jay Street and Lawrence Street in Downtown Brooklyn and at Bleecker Street and Broadway-Lafayette in Lower Manhattan. These new transfers would provide more routing opportunities for customers bound for Lower Manhattan.

LAGUARDIA SUBWAY ACCESS

This project would begin the trip to LaGuardia on the Broadway line N train in Manhattan. To the extent that airport passengers who currently use the GCT subway stations to get to the airport bus at 42nd Street and Park Avenue would be diverted to the Broadway line, this project would reduce the impacts that the East Side Access Project's Preferred Alternative is predicted to have on the southbound Lexington Avenue subway at GCT.

METRO-NORTH RAILROAD PENN STATION ACCESS

This potential project proposes to bring all three Metro-North lines into Penn Station to serve commuters who work in West Midtown and to offer an alternative route (Penn Station to Seventh Avenue line No. 1, 2, 3, A, C, and E subway trains) to Lower Manhattan for its commuters. The Metro-North trains would use the existing Amtrak right-of-way on the West Side and would make a new connection to the East River tunnels from Queens. This project in conjunction with the Preferred Alternative would reduce the impact of project-related pedestrian flows in and around GCT, taxi and automobile traffic near GCT, and transfers to the Lexington Avenue subway. At the same time pedestrian and vehicular traffic at Penn Station would increase compared to the Preferred Alternative alone, but the increase would not reach the congested levels of the project's No Action Alternative or TSM Alternative, because Metro-North trains would not be as crowded as LIRR trains.

Given the severe capacity constraints in the East River Tunnels and at Penn Station, the Metro-North Railroad Penn Station Access project could not go forward under the East Side Access No Action Alternative or TSM Alternative. The East Side Access Preferred Alternative would free track space at Penn Station and would make available capacity for up to five trains per hour in the East River Tunnels during the peak periods. In addition, the Harold Interlocking improvements that would be completed for the East Side Access Project would facilitate access to the East River Tunnels for the Metro-North New Haven Line trains that would share the Hell Gate line with Amtrak's Northeast Corridor high speed service.

LOWER MANHATTAN ACCESS

Long-term alternatives to bring commuters more directly to Lower Manhattan include (1) new subway lines in Manhattan and Brooklyn to lessen congestion on lines serving GCT, Penn Station, and Flatbush Avenue terminal; (2) extending Metro-North service to Lower Manhattan and on to Flatbush Avenue terminal, bypassing GCT; (3) new shuttle service from GCT to Lower Manhattan; or (4) extending commuter rail service from GCT, Penn Station, or Jamaica station to Lower Manhattan.

By drawing commuters out of GCT and offering alternatives to use of the Lexington Avenue line, each of the Lower Manhattan Access options would reduce the significance of impacts that the Preferred Alternative is predicted to have on pedestrian conditions in and around GCT, on traffic conditions near GCT, on the Lexington Avenue line 42nd Street station, and on the Lexington Avenue line-haul condition. Each of the Lower Manhattan Access options would be physically and operationally compatible with the East Side Access Project's Preferred Alternative.

FAR WEST MIDTOWN STUDY

This plan is to extend the No. 7 train from its current terminus near Eighth Avenue and 42nd Street west and south to the Jacob K. Javits Convention Center. If the plan had a stop at Penn Station, it would permit commuters from New Jersey to reach GCT more conveniently than current arrangements (which now require a transfer from the Eighth Avenue or Seventh Avenue subway line to the 42nd Street Shuttle or the No. 7 line at Times Square). This would relieve conditions on the Shuttle and alter somewhat the pattern of pedestrian flows in and around GCT. It would not create a cumulative effect with the East Side Access Project's Preferred Alternative.

ONE-SEAT TRANSIT ACCESS TO JFK AIRPORT

Currently, construction is under way on a train link from JFK Airport to Jamaica station in Queens. From there, passengers can transfer to the LIRR or NYCT subways. The one-seat transit access concept involves a direct rail ride between Manhattan and JFK Airport. The implementation of the East Side Access Project is necessary for a one-seat ride to JFK Airport.

ACCESS TO THE REGION'S CORE

The Access to the Region's Core (ARC) study is a Major Investment Study whose goal is to improve access to Midtown Manhattan from the east and west. The study alternatives are exploratory concepts that are not currently tied to further development steps, such as an Environmental Impact Statement.

The East Side Access Project's service would significantly improve access from the east. From the west, the need to improve capacity from counties of New Jersey and New York west of the Hudson River remains. Both short- and long-term concepts are being explored, including increasing capacity at Penn Station and extending new service from west of the Hudson River eastward across Midtown Manhattan. The East Side Access Preferred Alternative would not preclude such future services at GCT. ❖