

34th Street Select Bus Service



Project Analysis Report

January 2012



New York City
Department of Transportation



Metropolitan Transportation Authority
New York City Transit
Bus Company

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1 INTRODUCTION

The New York City Department of Transportation (NYCDOT), in collaboration with the Metropolitan Transportation Authority (MTA) New York City Transit (NYCT) and in cooperation with MTA Bus Company (MTA Bus), is proposing the 34th Street Select Bus Service (SBS) project (the “Proposed Project”) to implement enhanced bus service along 34th Street from the Hudson River to the East River in Manhattan (New York County, New York).

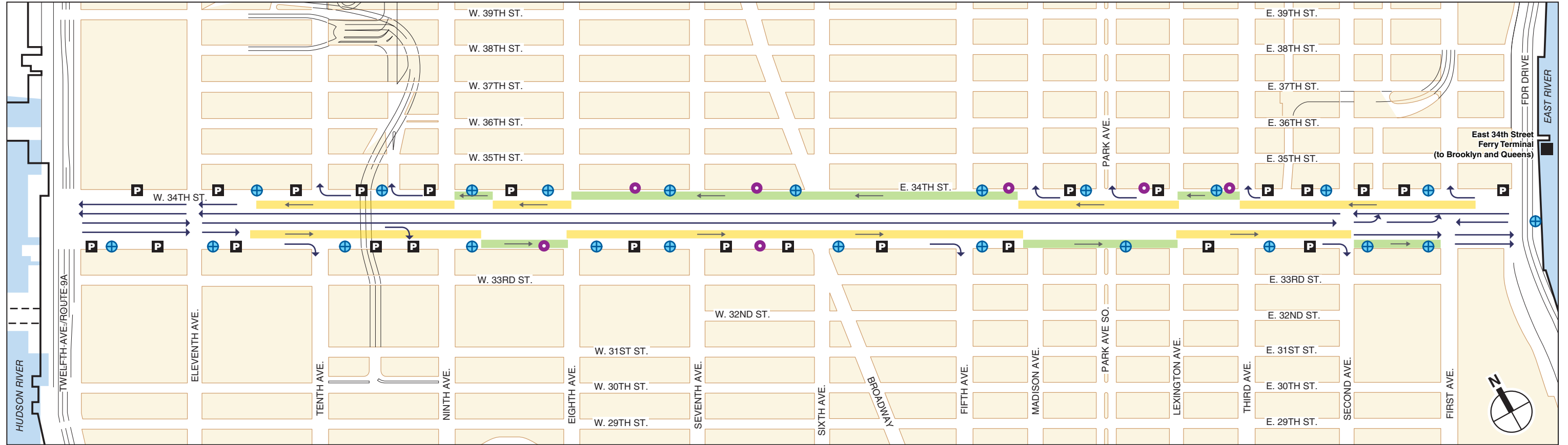
The purpose of the Proposed Project is to improve crosstown transit service and pedestrian mobility along 34th Street. Prior to the implementation of off-board fare collection by NYCT in November of 2011, bus speeds were approximately 4.3 miles per hour meaning that each bus required about one hour to make the 4-mile, round trip across the corridor. Even with off-board fare collection, traffic congestion on the corridor continues to slow bus service and cause bus bunching. Sidewalks are often so congested that pedestrians spill over into the roadway. These mobility and safety problems will continue to grow as new residential and commercial development planned for the corridor, such as Moynihan Station, the Eastern and Western Rail Yards, and the First Avenue Properties, generate nearly 3,500 new bus riders during the peak commuter hours and additional pedestrian activity throughout the day. Providing additional bus service without additional capital improvements along the corridor would not enhance the mobility for transit users, as bus speeds would not increase and could potentially decrease further. In addition, additional bus service would not address pedestrian safety and mobility concerns.

NYCDOT is providing this Project Analysis Report to the public for informational purposes and to further public understanding of the Proposed Project. In preparing this document, NYCDOT followed the methodologies of the *CEQR Technical Manual*. However, this report is not intended to be an official environmental review document.

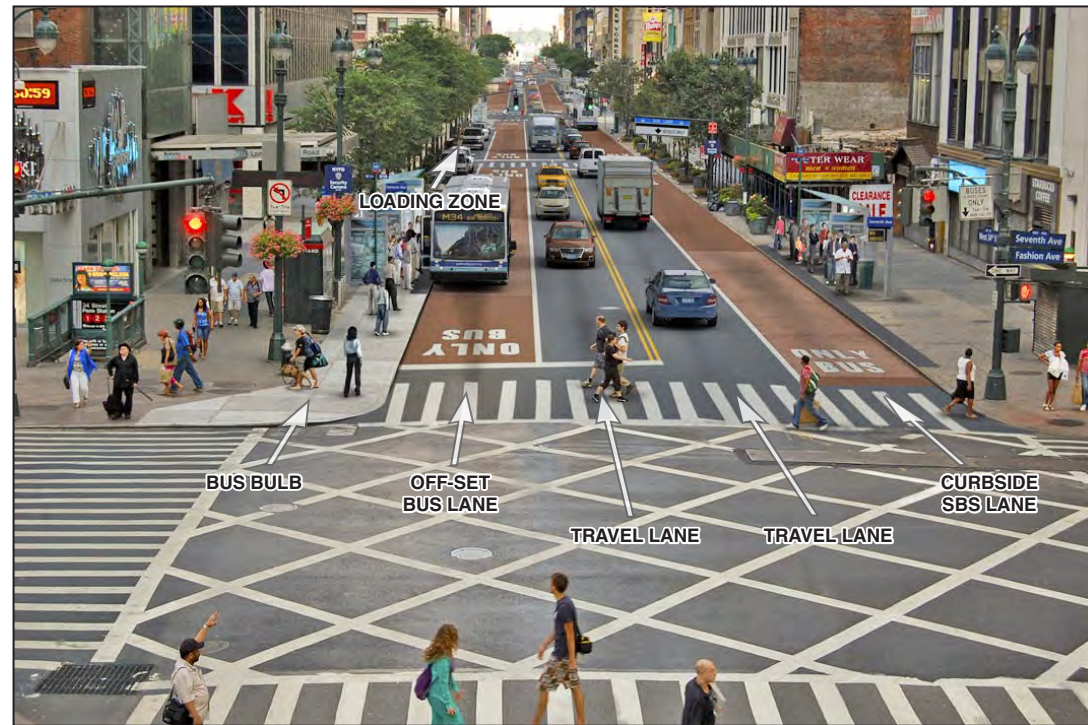
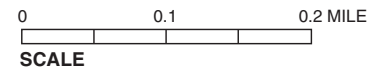
2 DESCRIPTION OF THE PROPOSED PROJECT

The Proposed Project would be constructed within the public right-of-way (streetbeds and adjacent sidewalks) of 34th Street in Manhattan (see **Figure S-1**). 34th Street is a busy, crosstown thoroughfare intersected by north-south avenues. It presently operates with two-way traffic and curbside bus lanes. The travel market is defined by the Hudson River to the west, 29th Street to the south, the East River to the east, and 40th Street to the north. More than 234,000 people work within the travel market, and more than 46,000 live within this area¹.

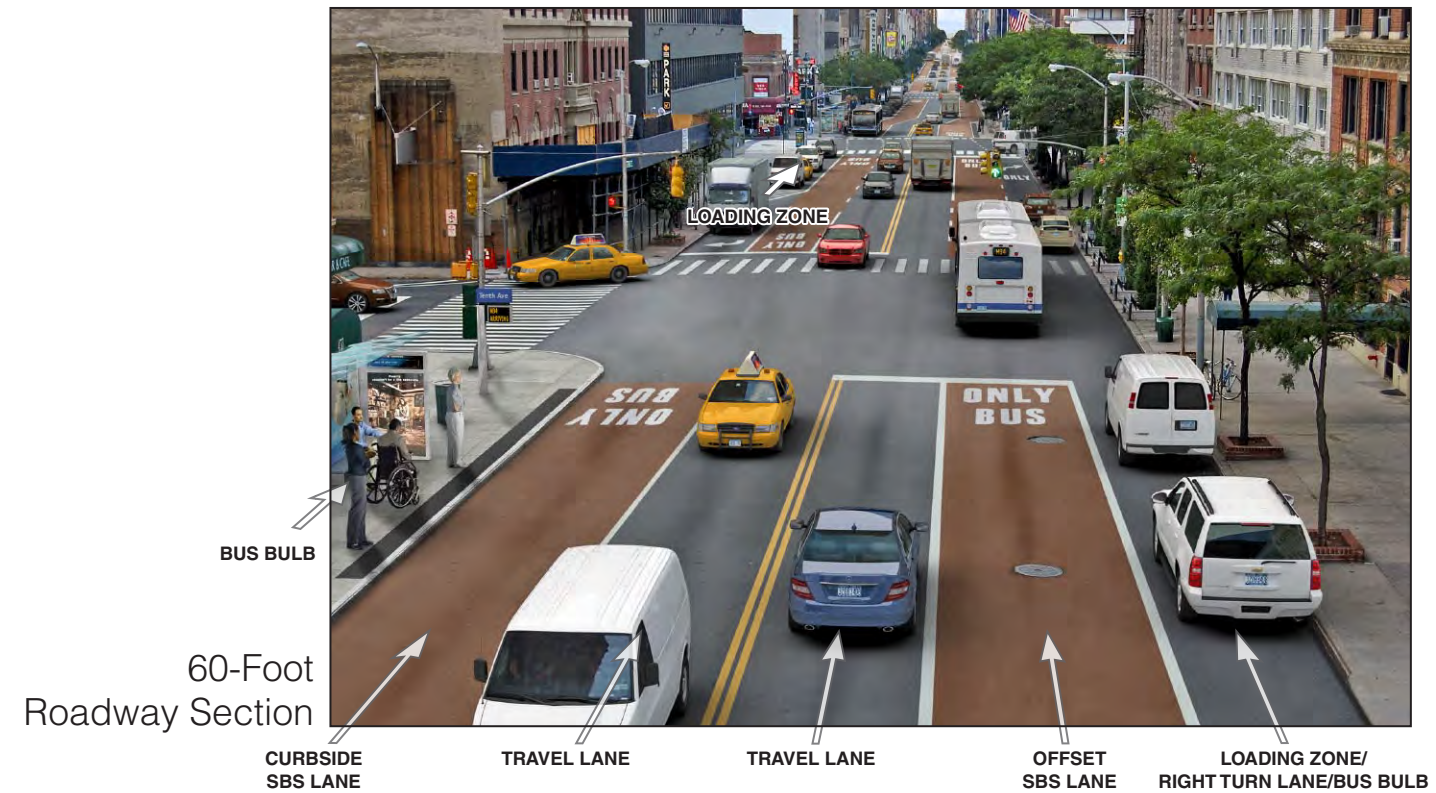
¹ Total residents and employees for the following Manhattan Census Block Groups: 62001, 62002, 70001, 70002, 70003, 70004, 70005, 70006, 72001, 72002, 72003, 72004, 72005, 72006, 72007, 74001,



- Express Bus Stop
- ⊕ Select Bus Service Station
- Through Travel Lane
- Turning Lane
- Offset Bus Lane
- Curbside Bus Lane
- P Curbside Loading and Parking Zone



52-Foot Roadway Section



60-Foot Roadway Section

34th Street SBS Proposed Corridor Configuration
Figure S-1

34th Street Select Bus Service

The design of the Proposed Project has been vetted with the public through an extensive community outreach process. Project elements would consist of:

- Offset bus lanes to improve bus speeds;
- Curbside loading and unloading zones on every block of the corridor;
- Ten (10) right turn bays at key intersections to reduce congestion;
- One (1) left turn bay at the intersection of First Avenue and 34th Street;
- 24 new SBS stations, with new shelters, benches, signage, and passenger information;
- 14 sidewalk extensions (bulb outs) at a total of 18 SBS stations that will provide about 20,400 square feet of new pedestrian space;
- Seven express bus stops;
- Overhead and mounted signs;
- Transit signal priority equipment; and
- Adjustments to signal timings at certain intersections along 34th Street and other adjacent streets.

Construction of the Proposed Project would commence in the summer of 2012, and most construction work would be completed by the late fall of 2012 (with construction in the vicinity of the Hudson Yards project to be completed in 2013). The new bus lanes and stations would be served by the M34 and M34A Select Bus Service, and by express buses which already operate along 34th Street.

3 ANALYSIS FRAMEWORK AND RESULTS

This Project Analysis Report examines the potential impacts of the Proposed Project. The analysis considers a number of potential environmental issues including, but not limited to, parkland, aesthetics, historic and cultural resources, transportation, air quality, energy and climate change, noise, vibration, hazardous materials, water quality, wetlands, and threatened and endangered species. CEQR guidelines were used to assess traffic, noise and air quality impacts.

Overall, the analyses conclude that the Proposed Project would not result in any significant adverse impacts (see **Table S-1**).

74002, 74003, 76001, 76002, 78001, 78002, 78003, 78004, 78005, 78006, 78007, 80001, 80002, 80003, 80004, 80005, 82001, 82002, 82003, 84002, 860101, 860102, 88002, 88004, 95001, 95002, 97002, 97004, 99001, 101001, 103001, 109001, 111001, 111003, 113001, 115001, 115002, 117001; Residential population from the U.S. Bureau of the Census, Census 2010 (data accessed in March 2010), Employment population from reverse-journey-to-work data in the 2000 Census Transportation Planning Package.

Table S-1
Summary of Analyses and Mitigation Measures

Area of Evaluation	Potential Impact or Benefit	Proposed Mitigation
Land Use and Social Conditions		
Land Use, Zoning, and Public Policy	No significant adverse impact	Not applicable
Land Acquisition, Displacement and Relocation	No significant adverse impact	Not applicable
Economic Impacts	No significant adverse impact	Not applicable
Community Facilities and Services	No significant adverse impact	Not applicable
Parkland and Open Space	No significant adverse impact	Not applicable
Urban Design, Visual Resources, and Shadows	No significant adverse impact	Not applicable
Public Health	No significant adverse impact	Not applicable
Neighborhood Character	No significant adverse impact	Not applicable
Historic and Cultural Resources		
Archaeological Resources	No significant adverse impact	Not applicable
Architectural Resources	Construction period vibration	Compliance with construction laws and regulations, development of a Construction Protection Plan (CPP)
Transportation		
Traffic	No significant adverse impact	Not applicable
Parking	Additional loading/pick-up and drop-off spaces during weekday daytime and evening hours. At night and on weekends, additional curbside parking spaces along 34th Street.	Not applicable
Transit	Environmental benefits from enhanced access to transit and regional air quality through a reduction in vehicle miles traveled.	Not applicable
Pedestrians	At the majority of Select Bus Service station locations, expanded pedestrian circulation space. Introduction of bulb outs at some corners along 34th Street, reducing conflict time between the pedestrians and vehicular traffic. Crosswalk widths would be standardized to 15 feet along the 34th Street corridor, except certain crosswalk widths would be made larger.	Not applicable
Air Quality	No significant adverse impact	Not applicable
Energy and Climate Change	Reduction in bus trip time, especially idling time at bus stops/stations, resulting in fuel savings and greenhouse gas emissions reductions.	Not applicable
Noise and Vibration	Construction period vibration	Compliance with construction laws and regulations, development of a Construction Protection Plan (CPP)
Infrastructure		
Utilities	No significant adverse impact	Not applicable
Solid Waste and Sanitation Services	No significant adverse impact	Not applicable
Hazardous Materials	No significant adverse impact	Any subsurface work that involves the disturbance of soils would be conducted in accordance with a Project-specific Health and Safety Plan (HASP) to identify and manage any encountered hazardous materials to protect public health, worker safety, and the environment.

Table S-1 (Continued)
Summary of Analyses and Mitigation Measures

Area of Evaluation	Potential Impact or Benefit	Proposed Mitigation
Natural Resources		
Geology, Topography, and Soils	No significant adverse impact	Not applicable
Water Quality	No significant adverse impact	Not applicable
Floodplains	No significant adverse impact	Not applicable
Wetlands	No significant adverse impact	Not applicable
NYC Waterfront Revitalization Program	No significant adverse impact	Not applicable
Vegetation and Wildlife Habitat	No significant adverse impact	Not applicable
Threatened and Endangered Species	No significant adverse impact	Not applicable

The Proposed Project would alter some crosswalks along 34th Street. Specifically, the Proposed Project would introduce bulb outs at some corners along 34th Street, which would decrease the lengths of crosswalks, the time to cross the street, and thus the potential conflict time between the pedestrians and vehicular traffic. Also, these bulb outs would provide pedestrian refuge along wider cross-sections and increase the pedestrian space along congested sidewalks. As part of the Proposed Project, the crosswalk widths would be standardized to 15 feet along the 34th Street corridor. However, based on a preliminary analysis and in view of the current congested operating conditions, crosswalk widths would be larger than 15 feet at:

- The north, east, and south crosswalks at the intersection of 34th Street and Eighth Avenue;
- All crosswalks at the intersection of 34th Street and Seventh Avenue;
- All crosswalks at the intersection of 34th Street and Sixth Avenue; and
- The west crosswalk at the intersection of 34th Street and Fifth Avenue.

Construction of the Proposed Project would last less than 12 months. During this time, there is potential for temporary impacts on access and circulation through the 34th Street corridor, increases in emissions from construction vehicles and dust, and increases in noise from construction equipment. In addition, there are a number of historic buildings in the area that are considered sensitive for construction-period vibration. However, these and other potential impacts of construction would be minimized through compliance with construction laws and regulations, development of a Construction Protection Plan (CPP) and Maintenance and Protection of Traffic (MPT) Plan, and through communication with local residents and businesses.

It was determined that the Proposed Project would not remove or relocate street trees. Trees in the area are limited to landscape plantings in above grade moveable planters and at grade tree pits along the sidewalk and roadway. As the above-grade vegetative planters are movable, the project will have no impacts to these planters. Wooden tree protection and tree wrap would be installed around existing trees to create a zone to prevent stockpiling under the tree and keep machinery from damaging the tree. Tree protection would remain intact until construction is complete. To minimize the potential construction impact to tree root zones, excavation within the root zone would use minimally invasive techniques, such as hand excavation and pneumatic excavation,

while at all times protecting exposed roots from desiccation. Any removal of pavement or curb that might impact stability of a tree would be done under field supervision of a certified arborist

Overall, while construction activities may result in temporary nuisances in the surrounding community, the Proposed Project would not result in significant adverse construction impacts. *

1-1 INTRODUCTION

The New York City Department of Transportation (NYCDOT), in collaboration with the Metropolitan Transportation Authority (MTA) New York City Transit (NYCT) and in cooperation with MTA Bus Company (MTA Bus), is proposing the 34th Street Select Bus Service (SBS) project (the “Proposed Project”) to implement enhanced bus service along 34th Street from the Hudson River to the East River in Manhattan (New York County, New York).

In 2010, NYCDOT, NYCT, and MTA Bus completed the *34th Street Transit Corridor Alternatives Analysis Screening Report*, which examined ways to improve transit service on 34th Street. The study concluded that bus rapid transit, which is branded as Select Bus Service in New York City, was the Locally Preferred Alternative for the project. Subsequent to the alternatives analysis, NYCDOT and NYCT have been progressing project development to identify a preferred design for 34th Street Select Bus Service.

The preferred design, which has been vetted with the public and other project stakeholders, is described and analyzed as the Proposed Project in this Project Analysis Report. The elements of the Proposed Project, which would be constructed within the street bed and sidewalks of 34th Street, would consist of:

- Offset and curbside bus lanes to improve bus speeds;
- Curbside loading and unloading zones on every block of the corridor;
- Ten (10) right turn bays at key intersections to reduce congestion;
- 24 new SBS stations, with new shelters, benches, signage, and passenger information;
- 14 sidewalk extensions (bulb outs) at a total of 18 SBS stations that will provide about 20,400 square feet of new pedestrian space;
- Seven express bus stops;
- Overhead and mounted signs;
- Transit signal priority equipment; and
- Adjustments to signal timings at certain intersections.

Construction of the Proposed Project would commence in the summer of 2012, and most construction work would be completed by the late fall of 2012. However, the construction of project elements between Tenth and Twelfth Avenues (Route 9A) would be delayed until approximately late 2013 to avoid conflicts with ongoing work for the No.

34th Street Select Bus Service

7 Train Extension and the Hudson Yards park and boulevard projects. Overall, the goal for the time to construction completion is six months, and will take no more than twelve months.

The new bus lanes and stations would be served by the M34 and M34A Select Bus Service, and by express buses which already operate along 34th Street. NYCDOT is providing this Project Analysis Report to the public for informational purposes and to further public understanding of the Proposed Project.

NYCDOT is providing this Project Analysis Report to the public for informational purposes and to further public understanding of the Proposed Project.

1-2 PURPOSE AND NEED

The purpose of the Proposed Project is to improve crosstown transit service and pedestrian mobility along 34th Street. Current local bus speeds are approximately 4.3 miles per hour meaning that each bus requires about one hour to make the 4-mile, round trip across the corridor. Sidewalks are often so congested that pedestrians spill over into the roadway. These mobility and safety problems will continue to deteriorate as new residential and commercial development generate nearly 3,500 new bus riders during the peak commuter hours and additional pedestrian activity throughout the day. Providing additional bus service without additional capital improvements along the corridor would not enhance the mobility for transit users, as bus speeds would not increase and could potentially decrease further. In addition, additional bus service would not address pedestrian safety and mobility concerns.

1-2-1 PROJECT LOCATION

The Proposed Project would be located in Midtown Manhattan (see **Figure 1-1**) and includes portions of the road bed and adjacent sidewalks of 34th Street from the FDR Drive to Twelfth Avenue.

1-2-1-1 EXISTING CORRIDOR

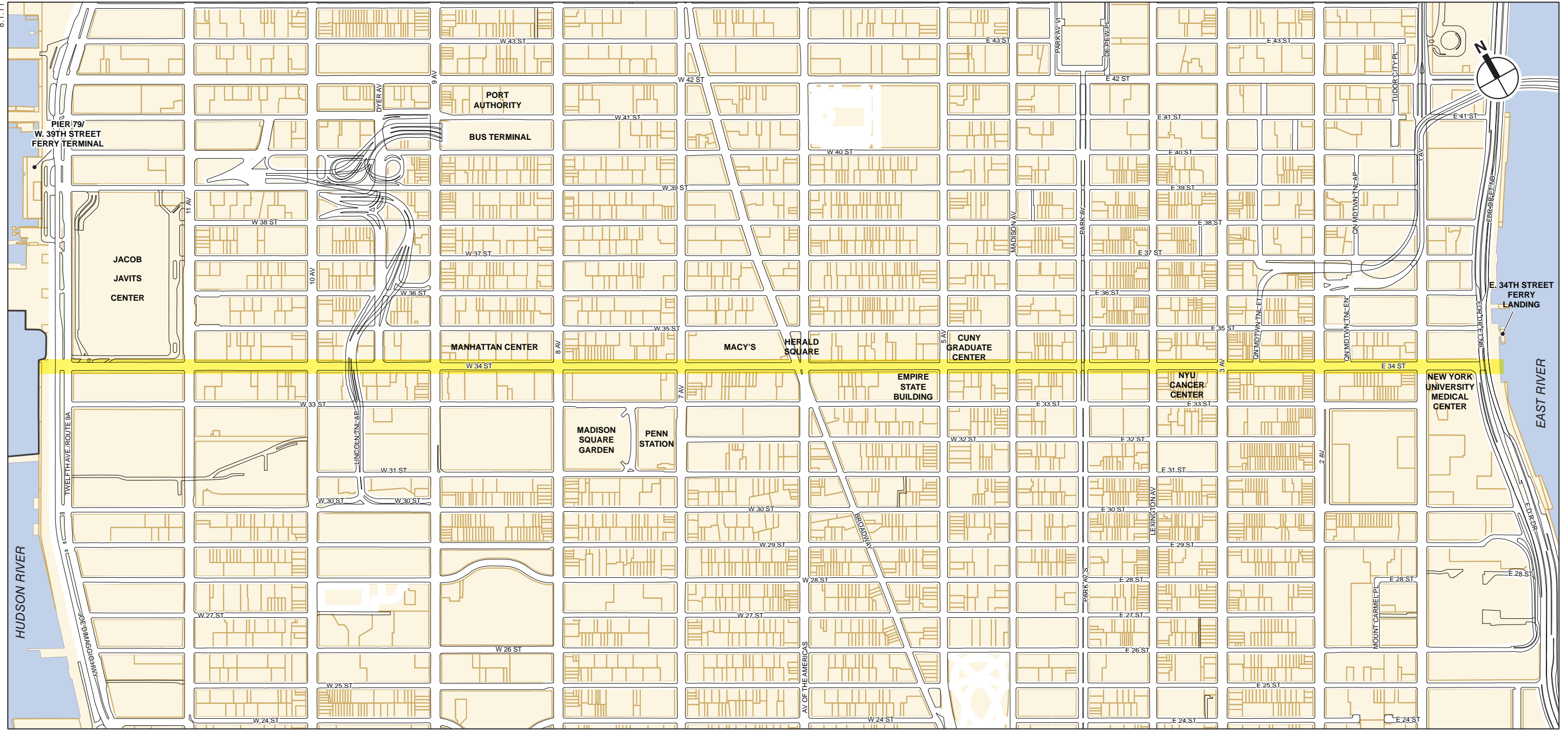
34th Street spans Manhattan from the Hudson River to the East River (see **Figure 1-2**). 34th Street corridor is approximately 2 miles long and consists of 14 city blocks that vary in length. The width of the 34th Street roadbed varies from 52 feet to 60 feet with the wider sections of the roadway east of Third Avenue and west of Ninth Avenue and the narrower sections in between. 34th Street operates with four to six lanes and serves two-way traffic. Its center lanes are used for general traffic, and for much of its length, its curbside lanes are designated as bus lanes on weekdays from 7AM to 7PM. At other times, the curbside lanes are used by standing and/or parked vehicles, including the loading and unloading of trucks. The roadbed is flanked by public sidewalks that range in width from approximately 12 to 24 feet.

At its west end, 34th Street connects to Route 9A (Twelfth Avenue), and at its east end there are ramps to the Franklin Delano Roosevelt (FDR) Drive. Route 9A and the FDR Drive are part of the regional roadway network with connections to the interstate highways that serve New York City. 34th Street also has, between Third and First Avenues, an entrance to and exit from the Queens-Midtown Tunnel, which provides a vehicular connection between Midtown Manhattan and the Long Island Expressway. At Dyer Avenue, on the west side of Manhattan, access is provided to the Lincoln Tunnel, one of Manhattan's three vehicular connections to New Jersey.



- 34th Street Corridor
- Select Streets
- Bridge or Tunnel
- Ferry Terminal





Along 34th Street, there are a number of popular and prominent destinations including the Jacob K. Javits Convention Center (Javits Center), Pennsylvania (Penn) Station, Madison Square Garden, the flagship Macy's store, the Empire State Building, and the New York University Langone Medical Center. Due to its connections with these and other adjoining land uses, 34th Street is an important travel corridor for a variety of travel types and functions. 34th Street has among the highest pedestrian volumes in New York City, with people accessing the regional transit network at Penn Station and several subway stations, and/or taking advantage of the area's numerous commercial and cultural destinations. The street is heavily used by local buses serving crosstown travel needs, express buses from other parts of the city and region, some intercity bus routes, and tour buses.

1-2-1-2 TRAVEL MARKET

The many uses along the 34th Street corridor attract trips for a variety of purposes. For this study, the travel market is defined by the Hudson River to the west, 29th Street to the south, the East River to the east, and 40th Street to the north. More than 234,000 people work within the travel market, and more than 46,000 live within this area¹. Planned future development projects will increase the number of people that work and live in the travel market. Combined, these projects could add more than 75,000 workers and more than 20,000 residents².

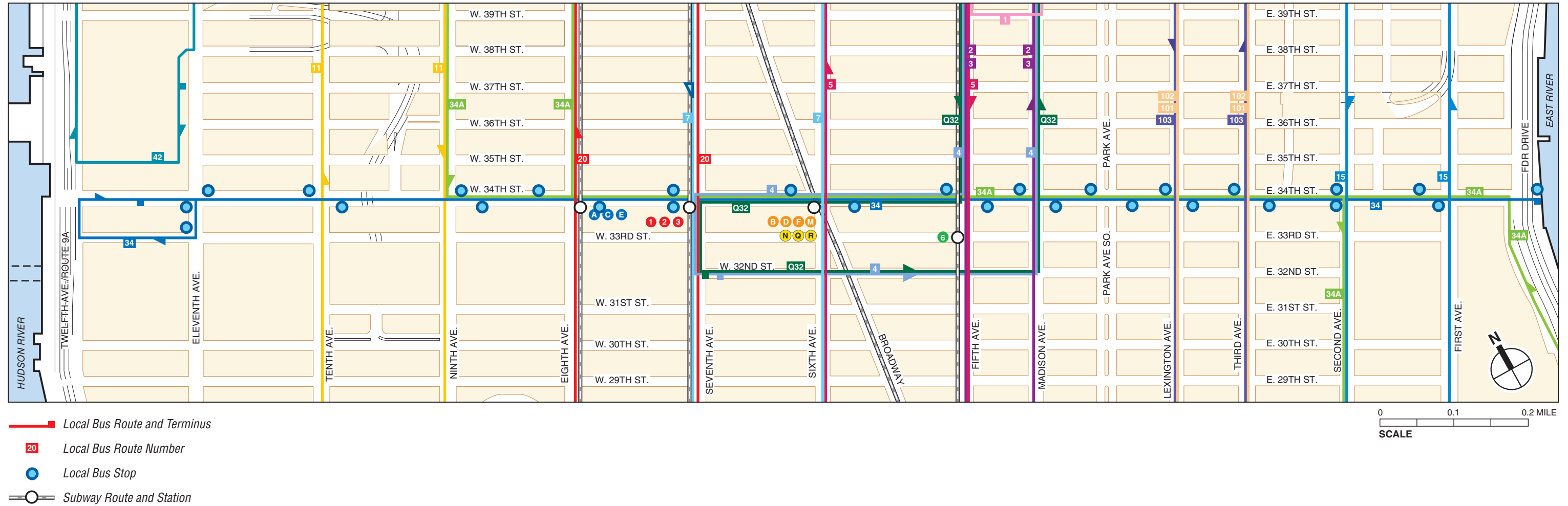
Furthermore, the Empire State Building's observation deck is visited by 3.8 million people each year, and the areas retail uses attract scores of shoppers. The Javits Center serves 3 million annual patrons for trade shows and exhibitions; Madison Square Garden seats between 18,500 and 20,000 people for sports and entertainment events multiple times each week; and the Manhattan Center/Hammerstein Ballroom hosts concerts and other live entertainment events throughout the year. The New York University Medical Center, Bellevue Hospital, and surrounding medical office buildings form one of the highest concentrations of health care facilities in New York City, and the City University of New York (CUNY) Graduate Center serves approximately 4,000 students from its campus at Fifth Avenue and 34th Street.

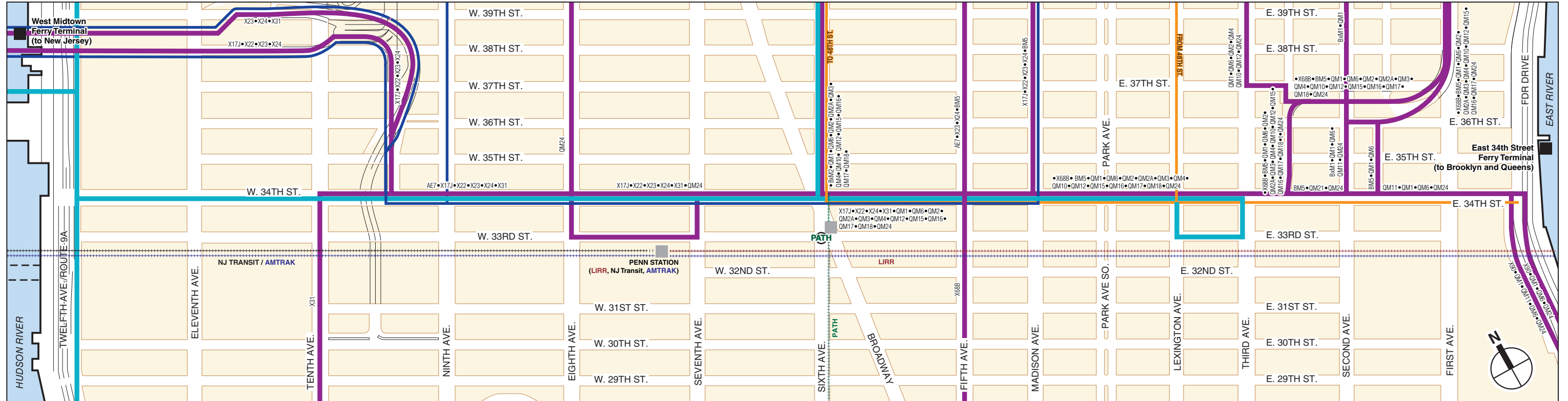
1-2-1-3 EXISTING TRANSIT SERVICE

34th Street is served by multiple transit modes, as shown in **Figures 1-3** and **1-4**. Penn Station is the country's busiest rail terminal, used by Amtrak intercity trains, and New Jersey Transit (NJ TRANSIT) and MTA Long Island Railroad (LIRR) commuter trains. NYCT operates four subway stations along 34th Street with north-south express and local service on 15 subway routes, and provides north-south bus service on 16 routes.

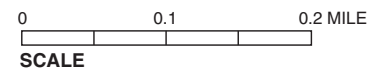
¹ Total residents and employees for the following Manhattan Census Block Groups: 62001, 62002, 70001, 70002, 70003, 70004, 70005, 70006, 72001, 72002, 72003, 72004, 72005, 72006, 72007, 74001, 74002, 74003, 76001, 76002, 78001, 78002, 78003, 78004, 78005, 78006, 78007, 80001, 80002, 80003, 80004, 80005, 82001, 82002, 82003, 84002, 860101, 860102, 88002, 88004, 95001, 95002, 97002, 97004, 99001, 101001, 103001, 109001, 111001, 111003, 113001, 115001, 115002, 117001; Residential population from the U.S. Bureau of the Census, Census 2010 (data accessed in March 2010), Employment population from reverse-journey-to-work data in the 2000 Census Transportation Planning Package.

² Based on six employees per 1,000 square feet of commercial (office, retail, and hotel) space and an average household size of 1.68 persons per household as stated in the *Western Rail Yard Draft Environmental Impact Statement*.





- QM24 Express Bus Routes (New York City Transit, MTA Bus Company, and Atlantic Express)
- New York Waterway Bus Route
- Academy Bus
- New York Waterway East River Shuttle



34th Street Select Bus Service

The Port Authority of New York and New Jersey provides PATH heavy-rail services from its terminal at 33rd Street and Sixth Avenue to Hoboken and Newark via Jersey City. Ferry terminals at the Hudson River (Pier 79/West 39th Street) and the East River (East 34th Street) provide commuter and special event service to the Bronx, Brooklyn, Queens, and New Jersey. New York Waterway compliments its ferry services with shuttle buses that operate throughout Midtown Manhattan. NYCT, MTA Bus, Westchester County Bee-Line Bus System, Academy Bus, and Atlantic Express provide express bus service between the 34th Street and neighborhoods in the Bronx, Brooklyn, Queens, Staten Island, Westchester County, and New Jersey.

1-2-2 PROBLEM DEFINITION

Commuter rail lines, subways, express buses, and ferries make 34th Street easily accessible from far-reaching destinations, and the north-south subway and bus routes provide convenient service to the area from uptown and downtown Manhattan. However, only NYCT's M34 and M34A³ bus routes provide east-west local service along the 34th Street corridor.

The existing crosstown bus service along 34th Street operates at slow speeds with substantial delays in route, resulting in long travel times and increased operating costs, wasted fuel, and negative effects on air quality. These problems and associated costs will escalate as M34 and/or M34A bus service frequencies are increased to meet future demand. Furthermore, pedestrian congestion will increase at key locations along 34th Street as new development and transportation projects, including 17 million square feet of planned office space and more than 12,000 planned dwelling units, will attract more people to the area. Combined, these projects will generate nearly 3,500 new bus riders during the weekday AM (8 AM to 9 AM) and PM (5 PM to 6 PM) peak commuter hours (see **Table 1-2** below). Improved, high-capacity transit service is needed to alleviate the operating deficiencies of existing crosstown bus service on 34th Street and to ensure that future riders can be fully accommodated.

Recognizing the need for improved transit service on the corridor, in 2008 NYCDOT installed curbside bus lanes along 34th Street from the FDR Drive to Twelfth Avenue (Route 9A). These curbside bus lanes are for the exclusive use of buses and right turning vehicles, and are typically in effect from 7AM to 7PM on weekdays. This project has improved crosstown bus speeds on the corridor by 17 percent, but bus speeds are still slow, around 4.3 miles per hour. The project had minimal improvements for express buses and for pedestrians on the corridor. In the fall of 2011, NYCT implemented off-board fare collection on the M34 and M34A, which has also improved bus speeds. Persistent traffic congestion, however, continues to slow bus service and cause bus bunching.

1-2-2-1 NYCT BUS OPERATIONS (M34/M34A)

The M34A operates between West 42nd Street and Ninth Avenue (Port Authority Bus Terminal) and the FDR Drive and 25th Street (Waterside Plaza) and travels on 34th Street between Eighth/Ninth Avenue and FDR Drive Service Road/Second Avenue⁴.

³ On November 13, 2011, MTA NYCT renamed the M16 bus route M34A.

⁴ When traveling westbound/northbound, the M34A uses the FDR Drive Service Road and Eighth Avenue. When traveling eastbound/southbound, the M34A uses Second Avenue and Ninth Avenue.

The M34 travels the length of 34th Street operating between the Javits Center and the FDR Drive. Both bus services run from approximately 5AM to 1AM on weekdays and approximately 6AM to midnight on weekends⁵.

In 2010, average weekday ridership on the M34 and M34A bus routes was approximately 9,430 and 8,600 passengers, respectively (see **Table 1-1**). On Saturdays, the average ridership was approximately 3,760 passengers on the M34A and 4,230 passengers on the M34. The Sunday average daily ridership was approximately 3,060 passengers for the M34A and approximately 3,120 passengers for the M34.

Table 1-1
Average Weekday and Weekend Ridership on the M34 and M34A Bus Routes (December 2009 to December 2010)

Route	Average Weekday	Average Saturday	Average Sunday
M 34	9,434	4,227	3,123
M 34A	8,598	3,761	3,061

Sources: New York City Transit (May 2011)

The M34 operates the full-length of 34th Street while the M34A serves only the portion of 34th Street between Eighth/Ninth Avenues and FDR Drive Service Road/Second Avenue. While passengers traveling between Second and Eighth Avenues have the option of either bus, the M34 is the only choice for passengers traveling the length of 34th Street. Because this study will analyze transit operations for the full east/west corridor, the discussion below focuses on M34 operations.

In 2007, a New York City transit advocacy group ranked the M34 as the second slowest bus route in the city⁶. A survey conducted in 2008 by NYCDOT and NYCT showed an average one-way, end-to-end trip time of 36 minutes, translating to an average speed of 3.3 miles per hour. Subsequently, NYCDOT and NYCT implemented roadway and operational improvements to reduce travel times for the M34. In 2008, NYCDOT introduced curbside bus only lanes and adjusted traffic signals. NYCT replaced the M34 fleet with low-floor vehicles, removed a stop at Dyer Avenue, shortened the route at the Javits Center, and adjusted schedules. As a result, run times of the M34 have improved, and in May 2009, the average one-way, end-to-end travel time was 28 minutes with an average speed of 4.3 miles per hour.

Prior to the implementation of off-board fare collection in the fall of 2011, the M34 required an average of 28 minutes to make the two mile one-way end-to-end trip. As a point of comparison, at an average human walking speed of 3 to 4 miles per hour, a pedestrian could make the trip in approximately 40 minutes⁷. Even with the bus improvements implemented in the fall of 2012, walking is a viable alternative for shorter trips, especially on the most congested portions of the route between Eighth and

⁵ www.mta.info, March 2011.

⁶ NYPRIG Straphangers Campaign and Transportation Alternatives, *2007 Pokey Awards*, October 2007.

⁷ The New York City Department of Transportation typically assumes an average walking speed of 3 to 4 miles per hour for pedestrian analysis prepared pursuant to City Environmental Quality Review.

34th Street Select Bus Service

Lexington Avenues. For longer trips, taxis often provide a quicker connection between destinations than the M34 or M34A.

Prior to November 2011, only 40 percent of the M34's total travel time was spent in motion. Of the 60 percent in stopped time, approximately 22 percent was for waiting at traffic signals, and 38 percent was to board and alight passengers (dwell time). Stoppage time has likely been reduced since the introduction of off-board fare collection.

The slow travel speed of the M34 reduces its efficiency and attractiveness. Furthermore, when stopped at traffic signals or stuck in traffic, buses idle and burn fuel, which wastes energy and can negatively affect air quality.

1-2-2-2 EXPRESS BUS OPERATIONS

The 34th Street corridor provides east-west access in Manhattan for express buses seven days a week. Express bus service is most heavily concentrated in the weekday AM (8AM to 9AM) and PM (5PM to 6PM) peak hours. During the weekday AM peak hour, approximately 100 express bus trips are scheduled to operate on 34th Street, and the average weekday ridership on these routes exceeds 16,000 passengers per day.

Presently, express buses share the curbside bus lanes used by the M34 and M34A routes but have dedicated stops. Express buses are prone to the same congestion problems that impede the operation of the M34 and M34A local bus routes.

1-2-2-3 PEDESTRIAN CONGESTION

The many attractions along 34th Street bring scores of pedestrians to the corridor. Madison Square Garden, Penn Station, Macy's and the surrounding shopping district, and the Empire State Building are located along and near the three blocks of 34th Street between Fifth and Eighth Avenues. For example, more than 5,000 people per hour cross the intersection of Sixth Avenue and Broadway during peak weekday and weekend periods, and this area ranks as one of the busiest pedestrian corridors in New York City. As a result, pedestrian congestion is a frequent occurrence as sidewalks become so crowded that people walk in the traffic lanes. Problems are even more pronounced near intersections where pedestrians queue to board buses and to cross the street. At the corners of Sixth, Seventh, and Eighth Avenues, subway stairways and the passengers ascending and descending them further crowd street-level pedestrian space. The congestion along this portion of 34th Street creates challenges for both pedestrian safety and comfort.

1-2-2-4 FUTURE DEVELOPMENT AND CROSSTOWN TRANSIT DEMAND

Future development projects will generate substantial new demand for crosstown transit service. As shown in **Table 1-2**, Moynihan Station, the Eastern and Western Rail Yards, and the First Avenue Properties projects will generate more than 3,600 AM peak hour (8AM to 9AM) riders and nearly 3,500 PM peak hour (5PM to 6PM) riders on the 34th Street crosstown bus routes.

Table 1-2

Demand for M34/M34A Bus Service from Future Development Projects

PEAK HOUR AND DIRECTION OF TRAVEL		NEW M34/M34A BUS RIDERS				ADDITIONAL BUS TRIPS REQUIRED
		MOYNIHAN STATION	EASTERN AND WESTERN RAIL YARDS	FIRST AVENUE PROPERTIES	TOTAL	
AM Peak Hour (8AM – 9AM)	Eastbound	60	1,107	237	1,404	22
	Westbound	185	1,967	50	2,202	34
	Combined	245	3,074	287	3,606	34
PM Peak Hour (5PM – 6PM)	Eastbound	158	1,748	86	1,992	31
	Westbound	115	1,165	218	1,498	24
	Combined	273	2,913	304	3,490	31

Notes:
Consistent with analysis presented in the Western Rail Yard Draft Environmental Impact Statement, the capacity of the M34 and M34A routes was assumed as 65 passengers per bus.

Sources:
Empire State Development Corporation, *Farley Post Office—Moynihan Station Redevelopment Project Final Environmental Impact Statement*, August 2006.
Metropolitan Transportation Authority and New York City Planning Commission, *No. 7 Subway Extension—Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement (CEQR No.: 03DCP031M)*, November 2004.
Metropolitan Transportation Authority and New York City Planning Commission, *Western Rail Yard Draft Environmental Impact Statement (CEQR No.: 09DCP007M)*, May 2009.
New York City Department of City Planning, *First Avenue Properties Rezoning, Final Supplemental Environmental Impact Statement (CEQR No.: 06DCP039M)*, January 2008.

The Penn Station Access Study is currently evaluating alternatives for new Metro-North Railroad service to Penn Station for its east of Hudson commuter rail lines (New Haven, Harlem, and Hudson Lines). New Metro-North service to Penn Station would generate new transit riders in the 34th Street area. However, this increase will be somewhat offset by a shift of Long Island Rail Road customers to Grand Central Terminal upon completion of the East Side Access Project. Since the specific effects of Penn Station Access and East Side Access on ridership are still being developed; these projects are not identified in **Table 1-2**.

Without any change in existing operations, NYCT will need to operate 34 additional bus trips in the AM peak hour (8AM to 9AM) and 31 additional buses bus trips in the PM peak hour (5PM to 6PM) on the 34th Street crosstown bus routes to accommodate this new demand. As most new development will be west of Eighth Avenue and east of Second Avenue, the M34 will absorb much of the new ridership. To fully meet demand, headways on the M34 will be less than 2 minutes, and the new bus service will be subject to the same or even worse inefficiencies described above for existing service.

1-3 PROJECT GOALS AND OBJECTIVES

Based on the problems identified above, NYCDOT, in collaboration with NYCT and with MTA Bus, developed goals and objectives for the Proposed Project. These goals were vetted with the public during the project's alternatives analysis phase and were updated to reflect public input. The project goals and objectives are as follows:

34th Street Select Bus Service

Improve Crosstown Mobility

- Reduce transit travel time for crosstown trips on the M34 and M34A bus routes;
- Improve reliability on the M34 and M34A bus routes;
- Improve express bus operations along 34th Street; and
- Accommodate future transit demand for both local and express bus service on 34th Street.

Improve Pedestrian Safety and Comfort

- Improve the pedestrian environment and safety by expanding sidewalks on the corridor, particularly at locations with high pedestrian congestion;
- Improve pedestrian safety by shortening crosswalk distances to the extent feasible;
- Provide for additional pedestrian queuing areas at bus stops to the extent feasible;
- Locate Select Bus Service (SBS) stations as close as possible to north-south avenues and connecting transit services; and
- Provide for passenger amenities to enhance transit operations.

Minimize Capital and Operating Concerns

- Implement the project at a reasonable cost and schedule;
- Be consistent with NYCT and MTA Bus operating procedures and bus stop placement guidelines;
- Avoid conflicts with traffic operations on Twelfth Avenue (Route 9A), the Lincoln Tunnel, the Queens-Midtown Tunnel, and the FDR Drive operations; and
- Avoid conflicts with critical roadway functions (i.e., emergency access).

Enhance Community Character

- Support existing and proposed development;
- Improve connection between residential, commercial, medical, and cultural destinations;
- Incorporate green design elements and new trees into the Proposed Project to the extent feasible and practical; and
- Accommodate curbside access (loading/unloading, passenger pick-up/drop-off, and parking) to the extent feasible.

Minimize adverse impacts on the built and natural environment:

- Avoid, minimize, or mitigate adverse impacts on historic resources;
- Minimize encroachment on view corridors;
- Maintain and improve access to existing and future uses on 34th Street;
- Avoid property acquisition to the maximum extent feasible;
- Reduce vehicular congestion, emissions, and noise;
- Minimize construction impacts to the extent feasible; and
- Avoid impacts on natural features and coastal waters.

*

2-1 INTRODUCTION

This chapter presents the two alternatives that are studied in this Project Analysis Report—the Proposed Project (34th Street Select Bus Service) and a No Build Alternative.

2-2 PROPOSED PROJECT

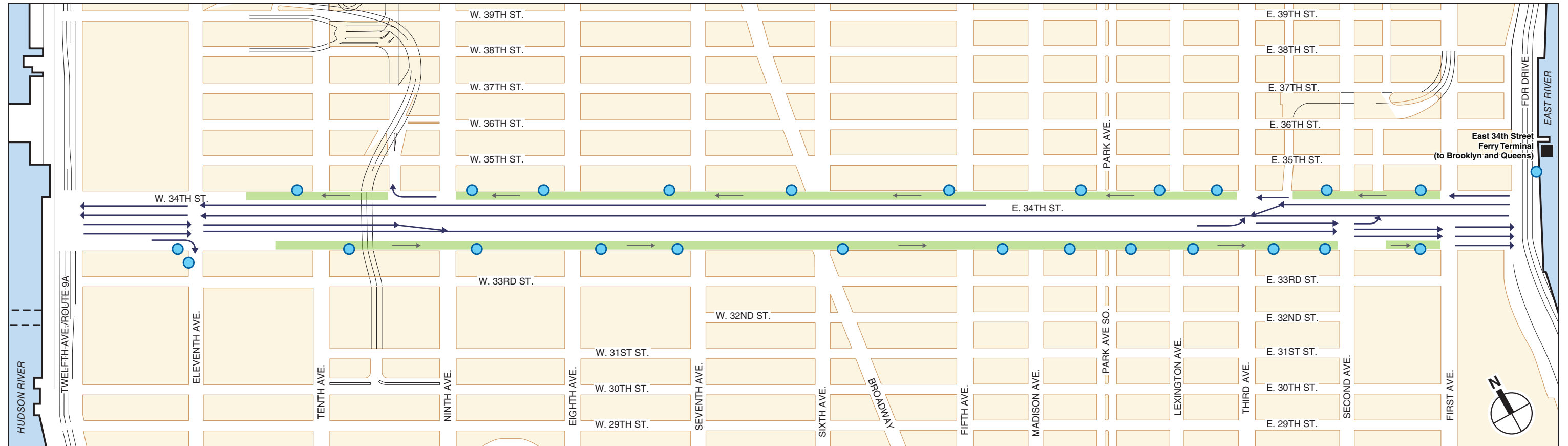
The 34th Street corridor is approximately 2 miles long from Twelfth Avenue (Route 9A) to the East River Ferry Terminal (FDR Drive). It consists of 14 city blocks that vary in length (see **Figure 2-1**). The width of the 34th Street roadbed varies from 52 feet to 60 feet with the wider sections of the roadway east of Third Avenue and west of Ninth Avenue and the narrower sections in between. The roadbed is flanked by public sidewalks that range in width from approximately 12 to 24 feet . From First Avenue to Eleventh Avenue, 34th Street has curbside bus lanes for the exclusive use of buses and right turn vehicles. These lanes are in effect from 7 AM to 7 PM weekdays.

The Proposed Project would improve the design of the existing exclusive bus lanes from First Avenue to Eleventh Avenue, while maintaining at least one, general traffic lane in each direction for the full length of 34th Street (see **Figure 2-2**). About two-thirds of these bus lanes would be offset from the curb lane, a design which is more effective than the existing curbside bus lanes as it reduces conflicts with standing and parked vehicles. At 11 intersections along 34th Street, the Proposed Project would include additional left-turn and/or right-turn lanes. The Proposed Project would also provide 24 Select Bus Service stations (consisting of shelters, fare payment kiosks, and informational signage), new or relocated stops for express buses, expanded pedestrian space at the majority of Select Bus Service station locations, signage and customer information systems, transit signal priority, and a curbside loading zone on each block.

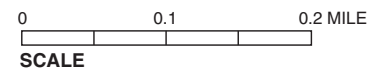
NYCT buses, MTA Bus express buses, private commuter and tour buses, paratransit vehicles, and emergency vehicles would be permitted to use the bus lanes. Near most intersections, general traffic would be allowed to enter the bus lane to cross over to right-turn bays. Where curbside loading zones would be provided, private vehicles could traverse the bus lane to reach the curb lane. Where the bus lanes would run along the curbside, private vehicles and taxis would be permitted to expeditiously drop-off or pick-up passengers from the bus lane, as per Chapter 4 of Title 34 of the Rules of the City of New York.

2-2-1 PROJECT ELEMENTS

The elements of the Proposed Project would be constructed within the street bed and sidewalks of 34th Street and would not require acquisition of private property. Project elements would consist of:

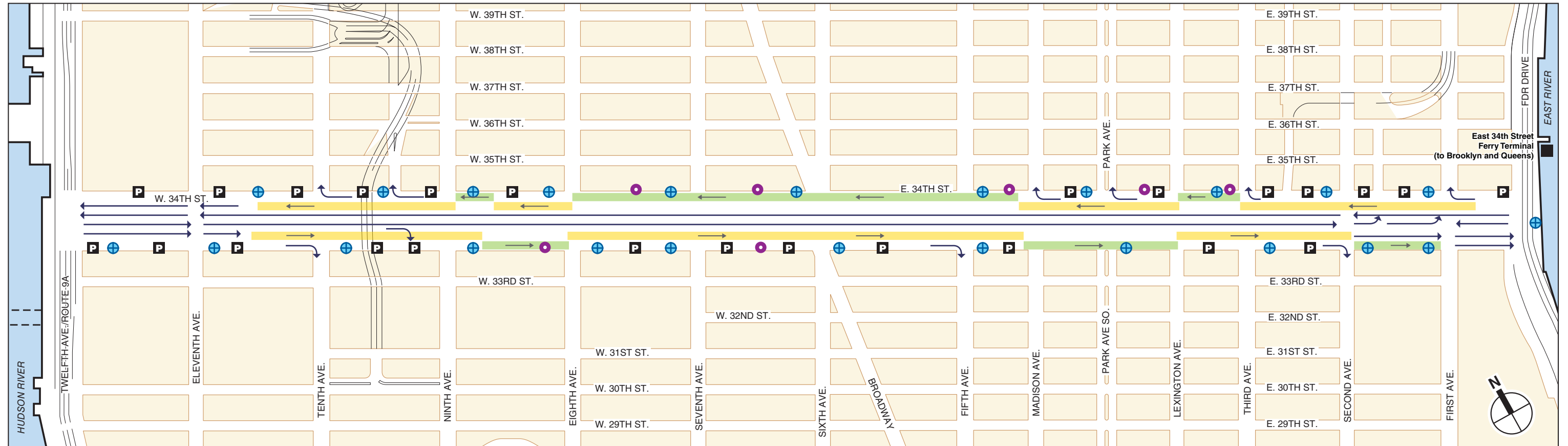









- Bus Stop
- Through Travel Lane
- ↪ Turning Lane
- Curbside Bus Lane

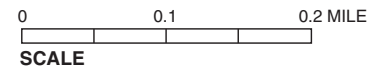


NOTE: EXPRESS BUS STOPS ARE CO-LOCATED WITH NYCT LOCAL BUS STOPS BETWEEN SECOND AVENUE AND NINTH AVENUE.

Existing Lane Configurations and Bus Stop Locations
Figure 2-1



-  Express Bus Stop
-  Select Bus Service Station
-  Curbside Loading and Parking Zone
-  Through Travel Lane
-  Turning Lane
-  Offset Bus Lane
-  Curbside Bus Lane



Proposed Lane Configurations and Select Bus Service Station and Express Bus Stop Locations
Figure 2-2

34th Street Select Bus Service

- Offset bus lanes to improve bus speeds;
- Curbside loading and unloading zones on every block of the corridor;
- 10 right turn bays at key intersections to reduce congestion;
- A new left-turn bay at First Avenue and East 34th Street;
- 24 new SBS stations, with new shelters, benches, signage, and passenger information;
- 14 sidewalk extensions (bulb outs) at a total of 18 SBS stations that will provide about 20,400 square feet of new pedestrian space;
- Seven express bus stops;
- Overhead and mounted signs;
- Transit signal priority equipment; and
- Adjustments to signal timings at certain intersections.

Construction of the project elements may also require the relocation or reconfiguration of street furniture, street trees, storm drains, and possibly utility conduits. Existing fare machines will be relocated as necessary.

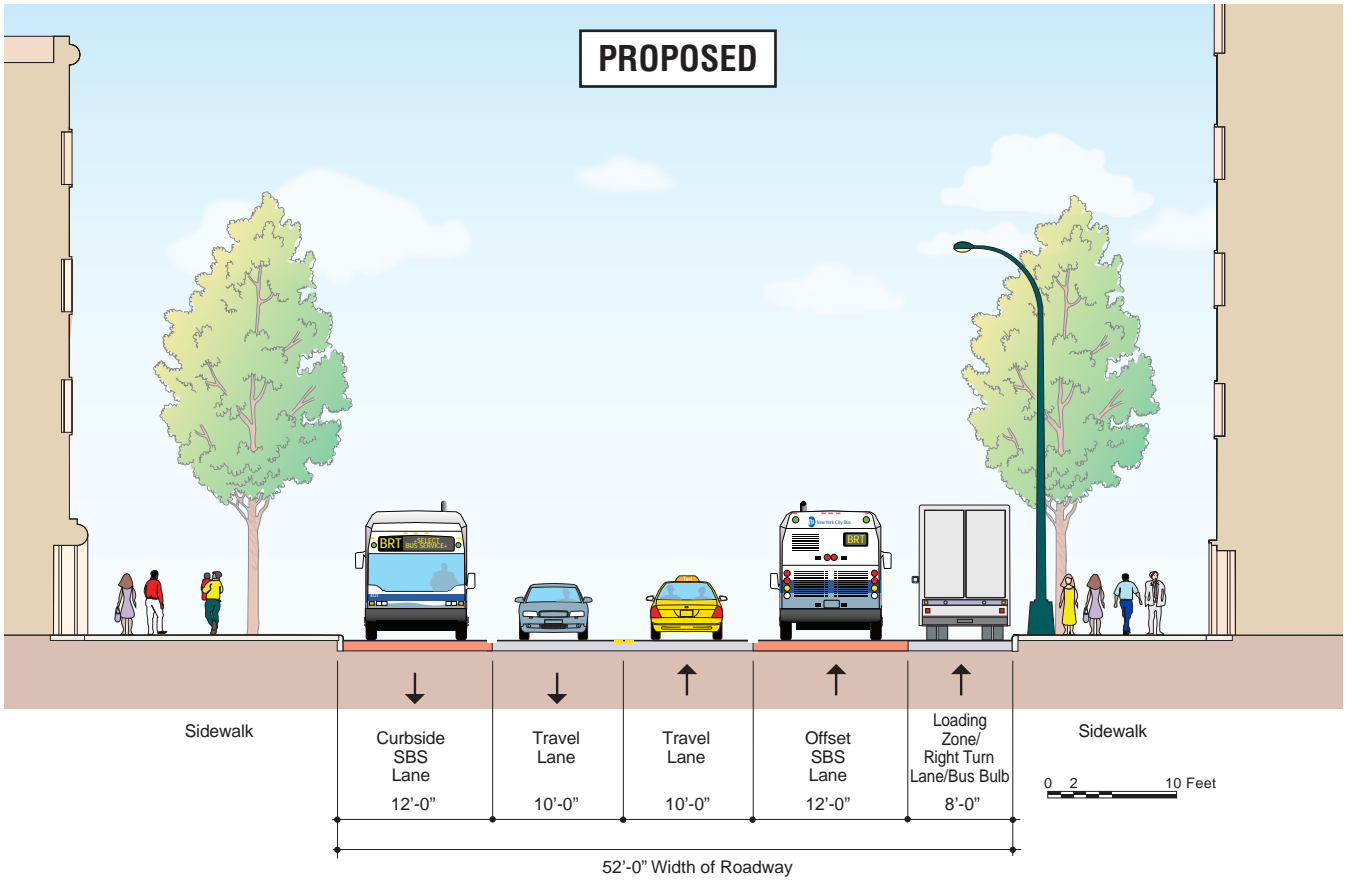
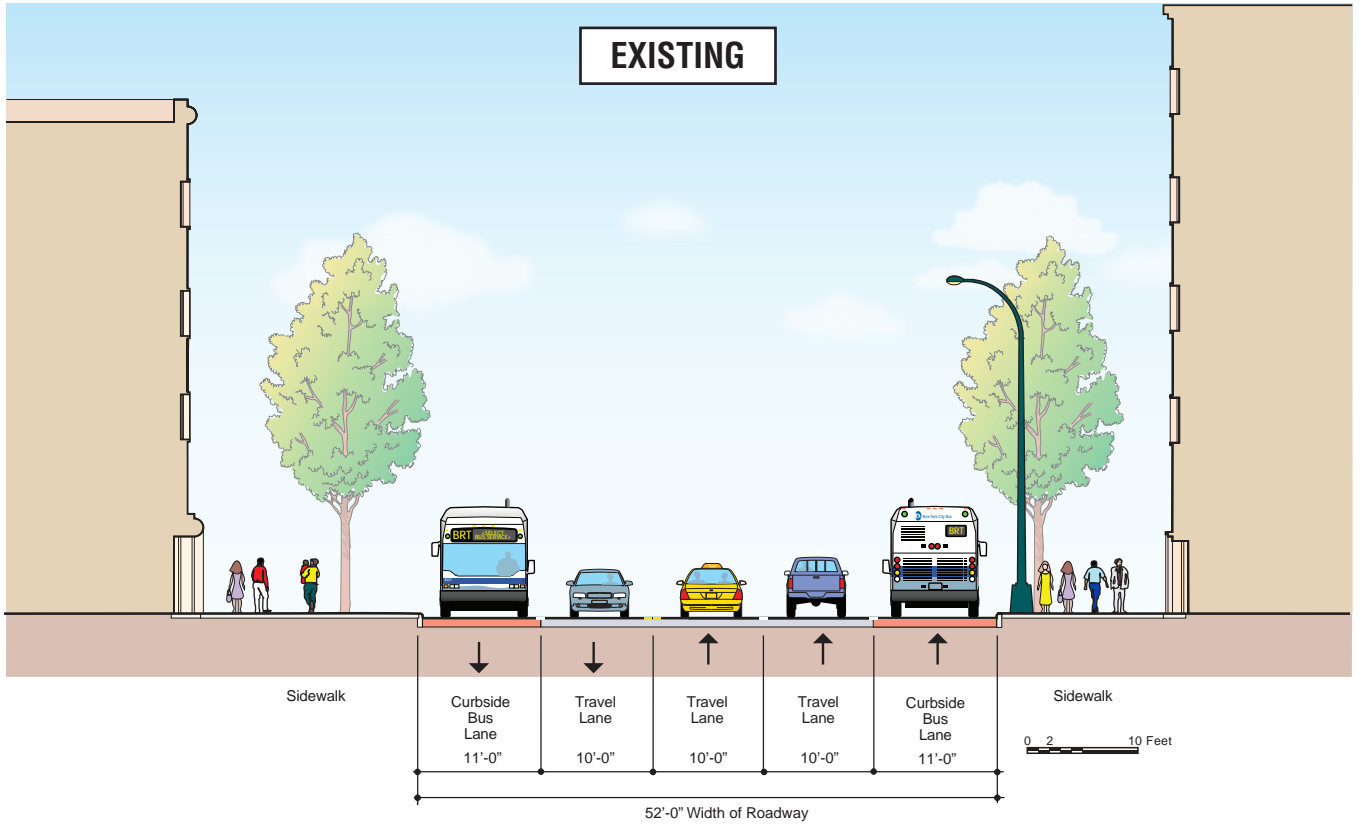
2-2-2 ROADWAY CONFIGURATION AND OPERATIONS

Presently, 34th Street serves two-way traffic. East of Third Avenue and West of Ninth Avenue, it generally operates as a six-lane roadway with four general traffic lanes (two in each direction) and two curbside bus lanes (see **Figure 2-1**). Between Third and Ninth Avenues, 34th Street generally operates with four to five lanes—two to three general traffic lanes (either one in each direction or two westbound lanes and one eastbound lane) and two curbside bus lanes. There are also exclusive left-turn and right-turn lanes at certain intersections along the corridor.

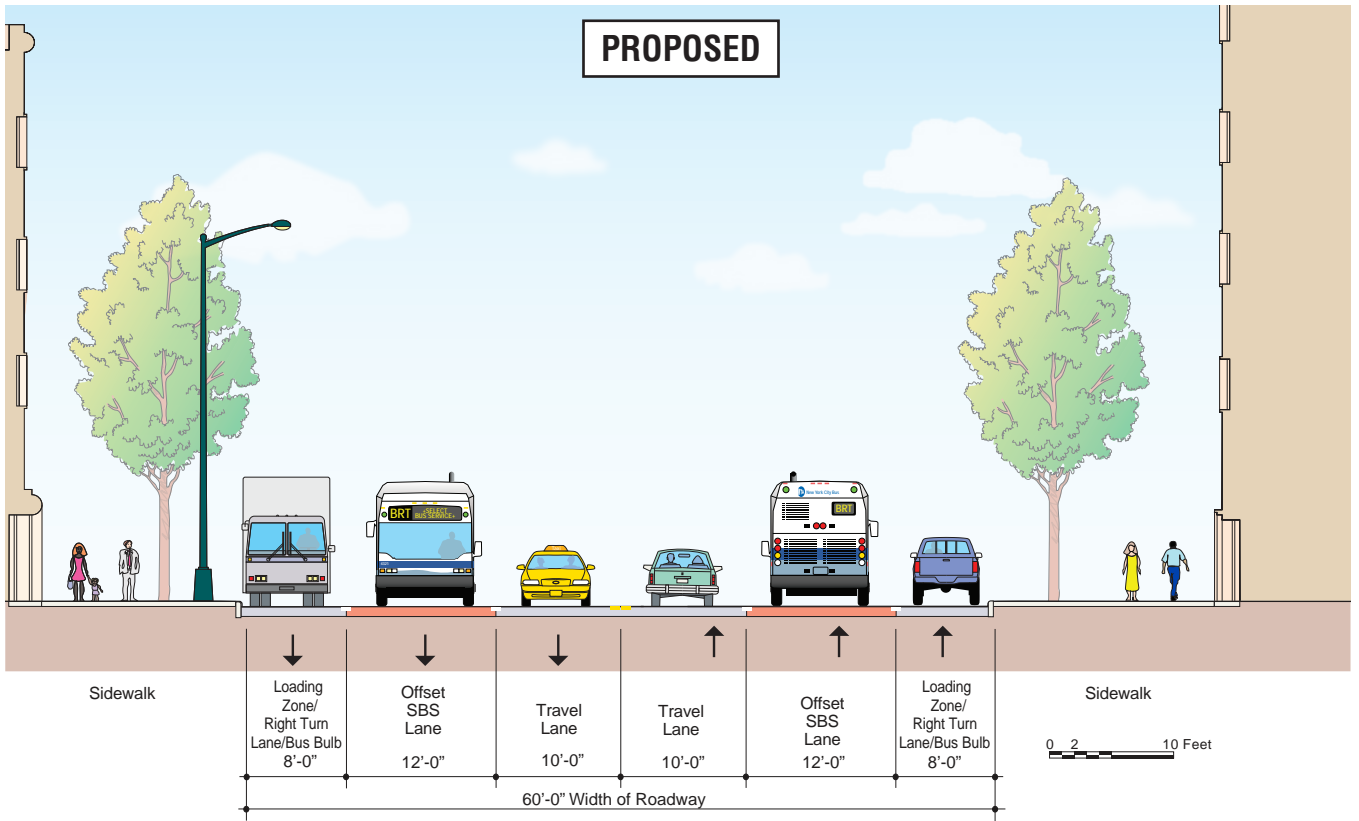
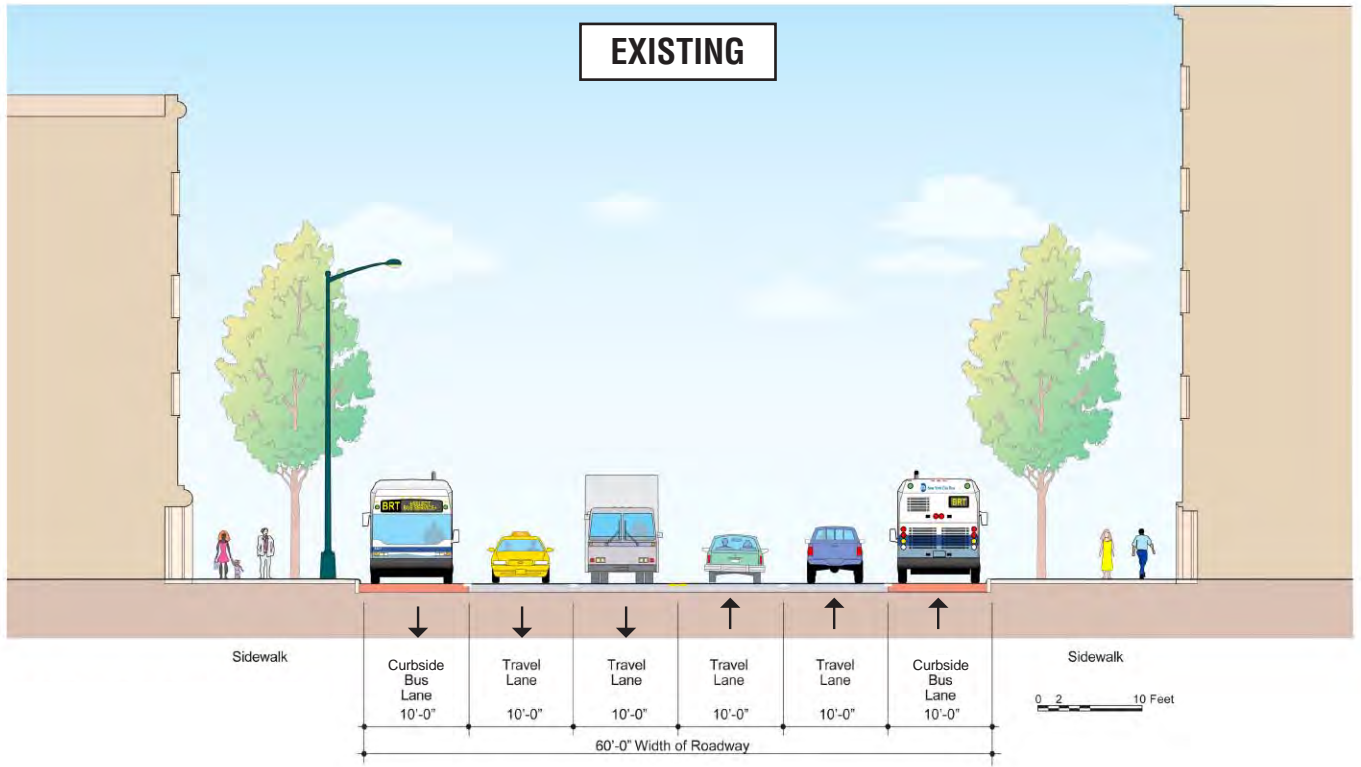
The Proposed Project would maintain two-way traffic flow along 34th Street. Where the roadway is 60-foot wide west of Ninth Avenue and east of Third Avenue, the Proposed Project would provide for 6 lanes—two general traffic lanes, two exclusive bus lanes, and two curbside loading/parking lanes (see **Figure 2-2**). Where the roadway is 52 feet wide between Third and Ninth Avenues, the Proposed Project would provide for 5 lanes—two general traffic lanes, two exclusive bus lanes, and one curbside loading/parking lane. **Figures 2-3 through 2-6** show cross sections and renderings of the 52 foot and 60 foot roadway sections.

The project would feature both offset and curbside bus lanes. Sixty-three (63) percent of the exclusive bus-lane-miles on the corridor would be offset from the curb. The offset design provides for loading at the curb, thereby reducing the frequency of bus lane blockages as compared with curbside bus lanes. The remaining 37 percent of exclusive bus-lane-miles on the corridor would be curbside.

Between Third and Ninth Avenues where the roadbed is 52 feet wide, Select Bus Service would operate in an offset bus lane in one direction and in a curbside bus lane in the other direction (see **Figure 2-7**). On the side of the street with the off set bus lane, an 8- to 9-foot wide bulb out would be provided for the Select Bus Service stations. Between the bulb out and the following intersection, an 8-foot wide curbside

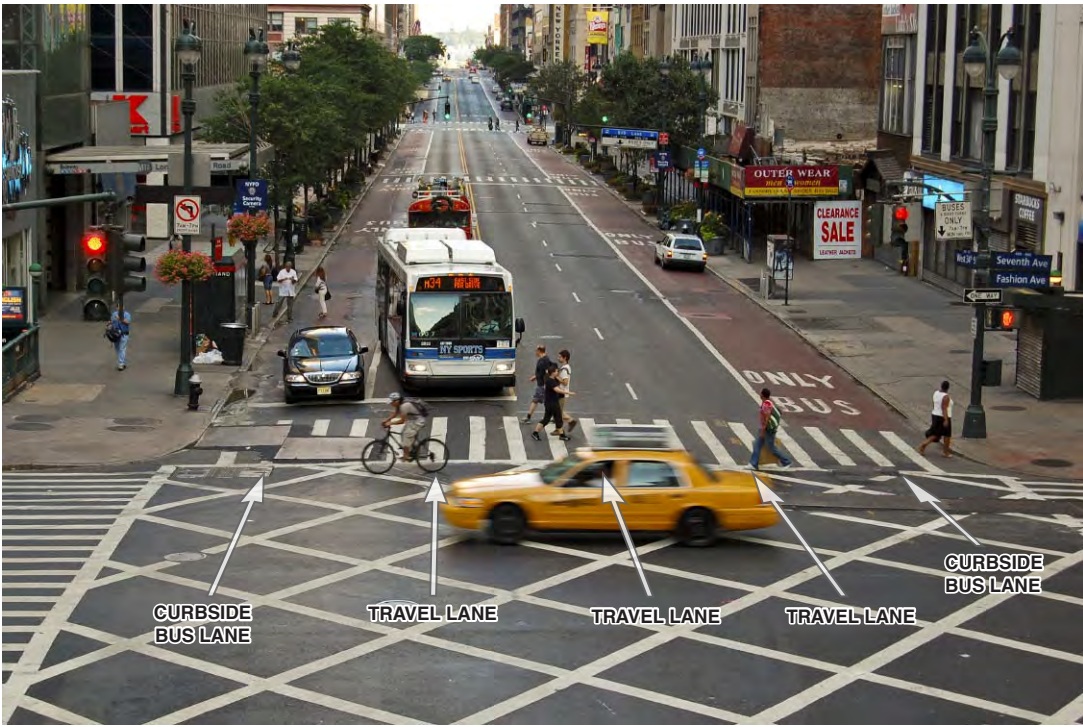


Existing and Proposed Cross Section at Non-Station Location
52-Foot Roadway Section

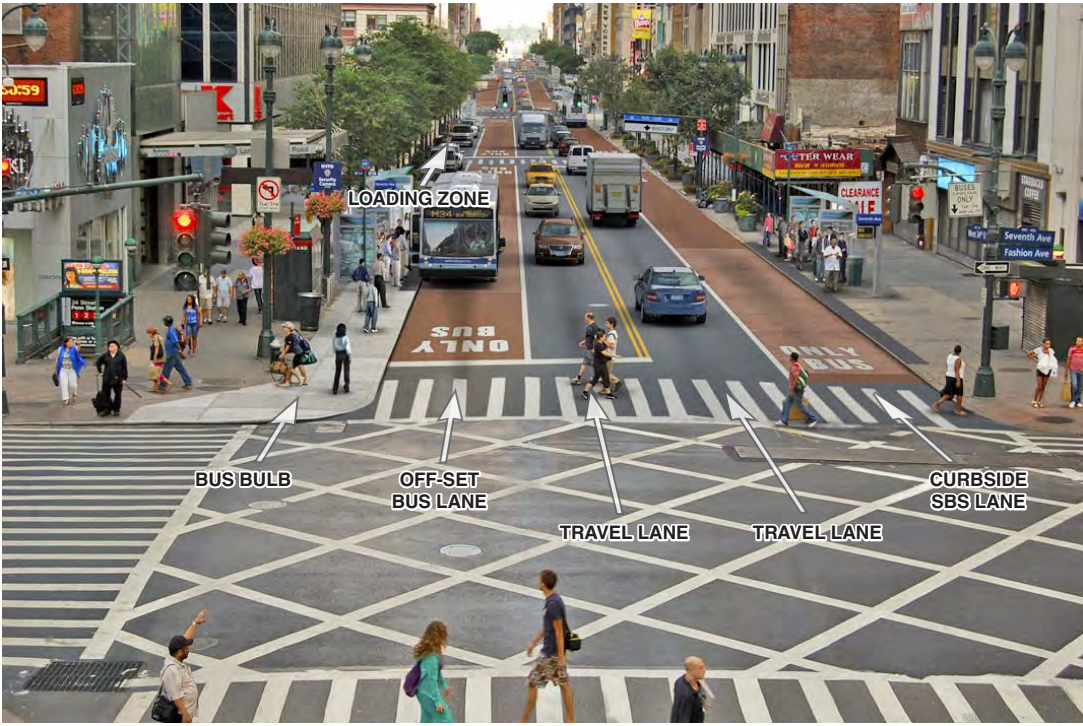


Existing and Proposed Cross Section at Non-Station Location
60-Foot Roadway Section

EXISTING



PROPOSED



Existing and Proposed Rendering at Station Location
52-Foot Roadway Section
Figure 2-5

EXISTING



CURBSIDE BUS LANE

TRAVEL LANE

TRAVEL LANE

TRAVEL LANE

TRAVEL LANE

CURBSIDE BUS LANE

PROPOSED



BUS BULB

LOADING ZONE

CURBSIDE SBS LANE

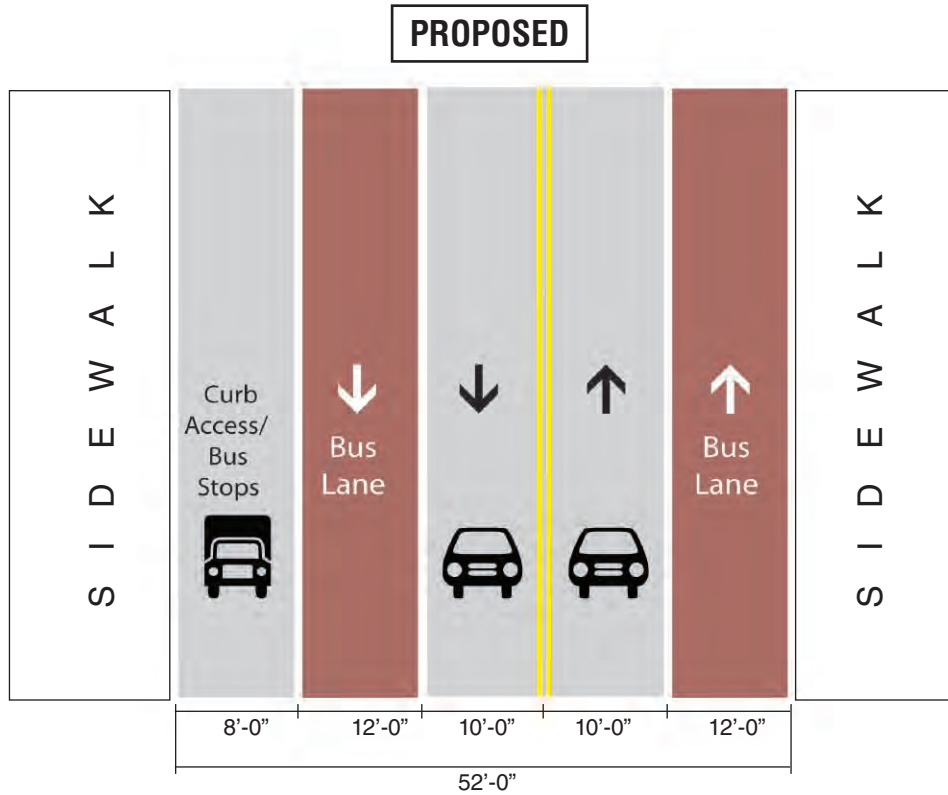
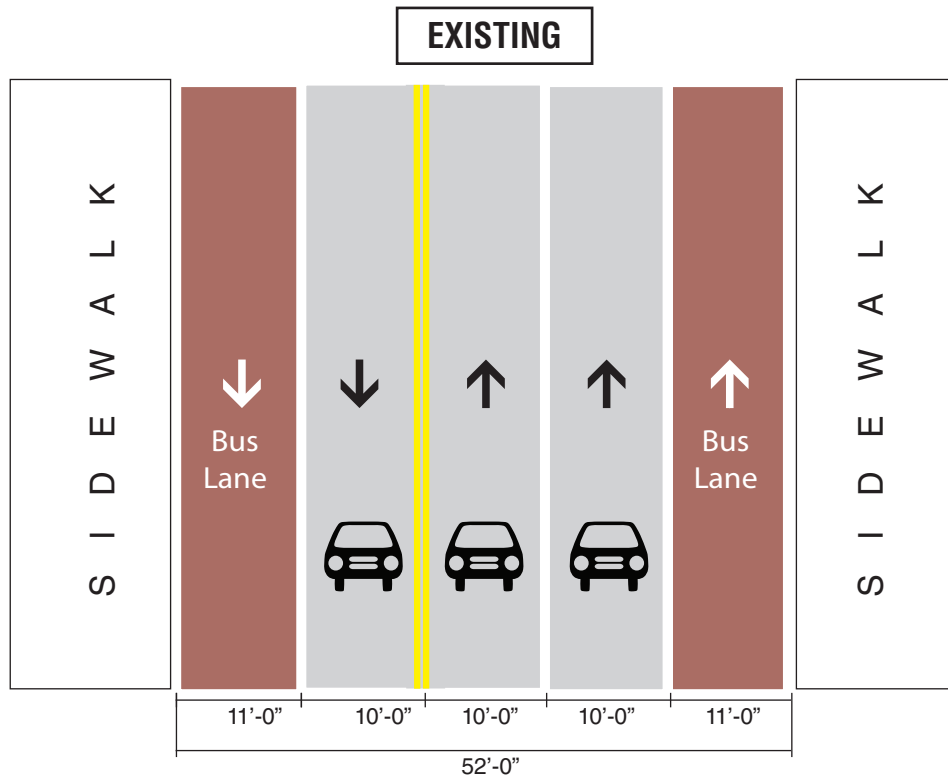
TRAVEL LANE

TRAVEL LANE

OFFSET SBS LANE

LOADING ZONE/
RIGHT TURN LANE/BUS BULB

Existing and Proposed Rendering at Non-Station Location:
60-Foot Roadway Section



Existing and Proposed Lane Configurations
52-Foot Roadway Section
Figure 2-7

lane would be provided for loading and parking. This lane would serve as a right-turn bay nearer to the intersection. Where the Select Bus Service would run in the curbside lane, stations would be located within the existing sidewalk.

For the blocks between Ninth and Eleventh Avenues and between First and Third Avenues where the roadbed is 60 feet wide, Select Bus Service would operate in offset bus lanes in each direction and include 8- to 9-foot wide sidewalk extensions (bulb outs) at the Select Bus Service stations (see **Figure 2-8**). Between the bulb out and the following intersection, 8-foot wide curbside lanes would be provided for loading and parking. These lanes would serve as right-turn bays nearer to the intersection.

With the Proposed Project, new loading zones would be created on every block of 34th Street from the FDR service road to Twelfth Avenue (Route 9A). The zones are provided, in part, in response to residents, businesses, and commercial building owners regarding the need for more loading space on the corridor. These stakeholders requested more curbside access for deliveries, moving vans, oil trucks, and other vehicles, especially during midday hours. The current configuration of 34th Street provides curb access for deliveries from 7PM to 7AM on weekdays and at varying hours on weekends, but residents and business owners expressed that the restrictive regulations have a negative impact on quality of life and increases the difficulty of deliveries to businesses and buildings. In response to these concerns, NYCDOT has added midday loading zones to the Proposed Project. The loading zones would provide for a total of about 240 curbside loading spaces (based on a measurement of 20 feet per space) during the morning and early evening periods. Even more spaces are provided during midday and late evening hours. Parking would be permitted at these spaces on weeknights and weekends.

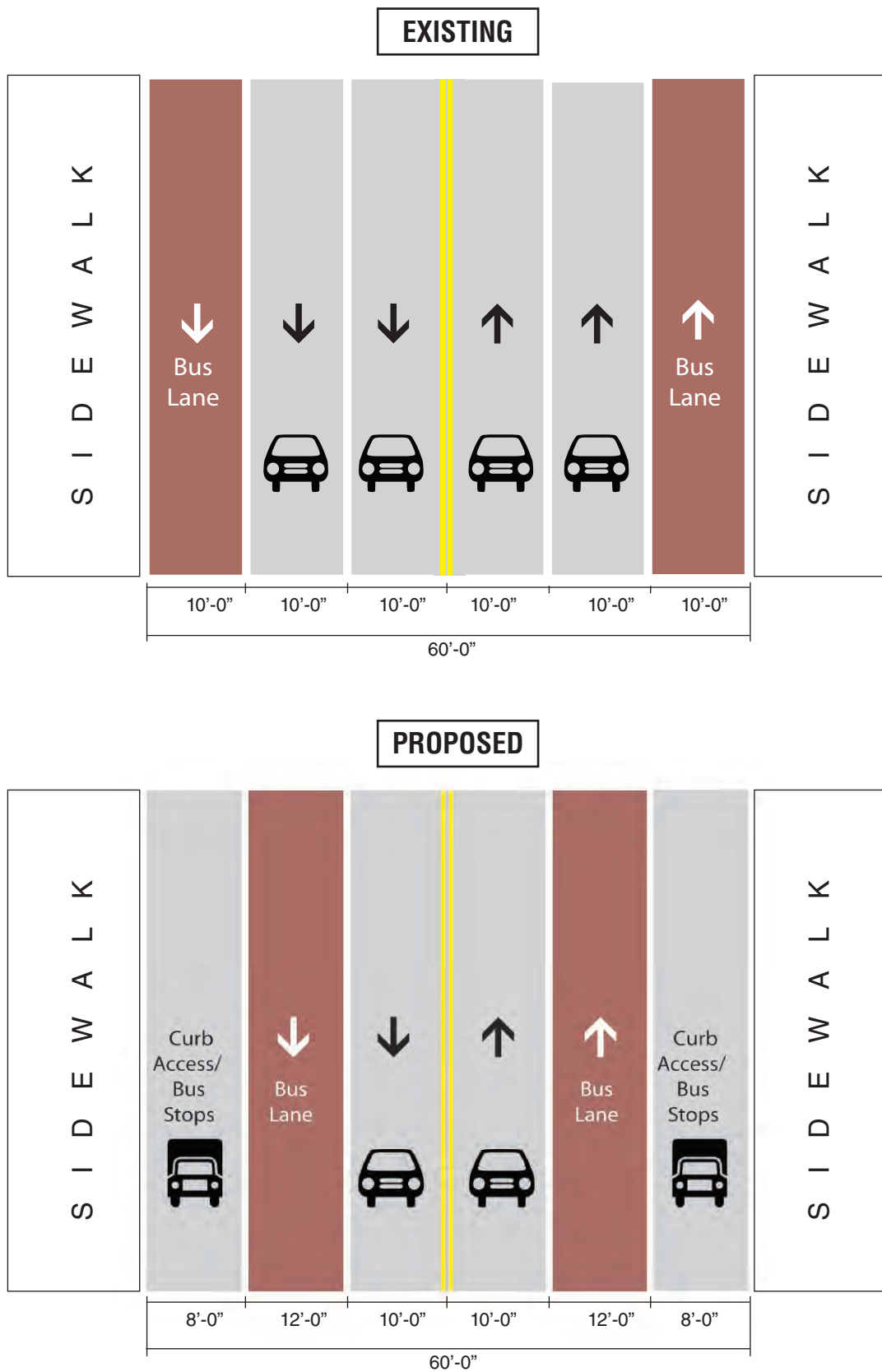
2-2-3 BUS STATIONS

The Proposed Project includes a total of 24 Select Bus Service stations (12 each in the eastbound and westbound directions). There would generally be one eastbound and one westbound station between each of the north-south avenues. Select Bus Service stations would be 140 feet length to accommodate two, 60-foot buses at one time except at six stations where a 140-foot long station cannot be provided due to geometric constraints or traffic considerations. The Select Bus Service stations would consist of one or two shelters, ticket vending machines, and informational signage.

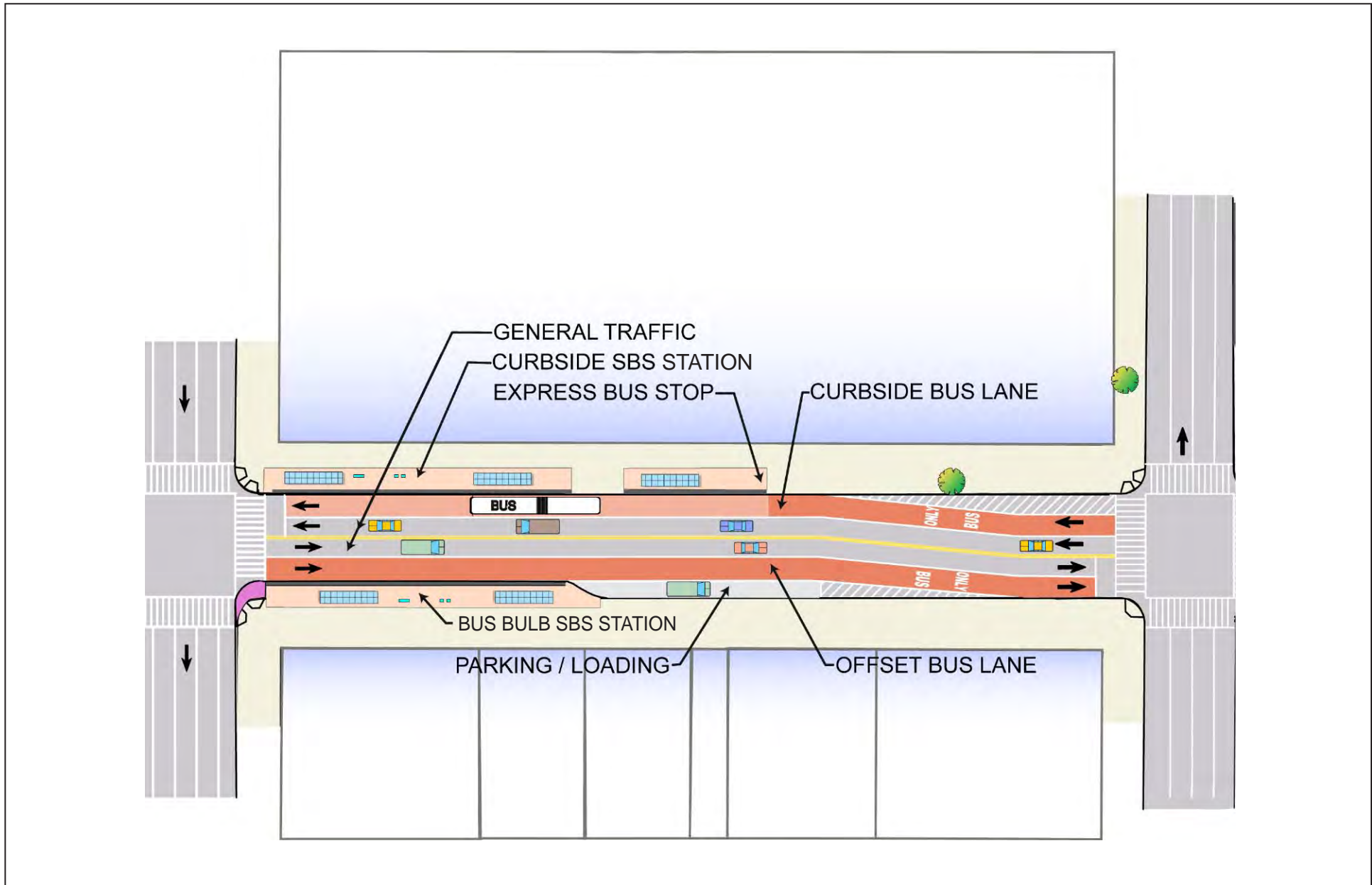
NYCDOT has developed two design concepts for Select Bus Service stations, one for curbside stations and one for bus bulb stations. Where the Select Bus Service lane would run curbside, the stations would be constructed on the existing sidewalk. Where there would be an offset Select Bus Service lane, the station would be constructed on new, 8-to 9-foot-wide sidewalk extensions (bulb outs). (see **Figure 2-9**, which provides a diagram of both design concepts).

Presently, there are ten express bus stops along 34th Street, all of which are co-located with NYCT local bus stops (see **Figure 1-4**). Four express bus stops serve Staten Island express buses and are only for passenger drop-off. The remaining six stops are for pick-up and drop-off and serve buses from Queens and Brooklyn.

The Proposed Project includes seven express bus stops (two westbound and five eastbound). Unlike current conditions, these new express bus stops would be for the



Existing and Proposed Lane Configurations
60-Foot Roadway Section
Figure 2-8



34th Street Select Bus Service

exclusive use by express buses.¹ These stops would include passenger amenities such as shelters and information signage and would be up to 100 feet long to accommodate two express buses at a time, except where roadway geometry or traffic considerations necessitate a shorter stop. The westbound stops would be located between Broadway and Seventh Avenue and between Eighth and Ninth Avenues. The eastbound bus stops would be located between Seventh Avenue and Eighth Avenue, Broadway and Seventh Avenue, Madison Avenue and Fifth Avenue, Lexington Avenue and Park Avenue, and Third Avenue and Lexington Avenue. The Proposed Project would also provide a tour bus loading area along the eastbound curbside between Fifth and Sixth Avenues near the Empire State Building, a major tourist destination.

2-2-4 PEDESTRIAN CIRCULATION IMPROVEMENTS

As previously described, NYCDOT would construct sidewalk extensions (14 bus bulbs) at Select Bus Service stations where there would be an offset bus lane. Each bus bulb would include a neck down, which extends the curb line into the roadway at the location of a crosswalk. Neck downs can enhance pedestrian safety by reducing crossing distance and can relieve sidewalk crowding. The bulb outs would provide for a total of about 20,400 square feet of additional pedestrian circulation space. These features would allow for the safe boarding and alighting of passengers and would also shorten the north-south crossing distance of 34th Street.

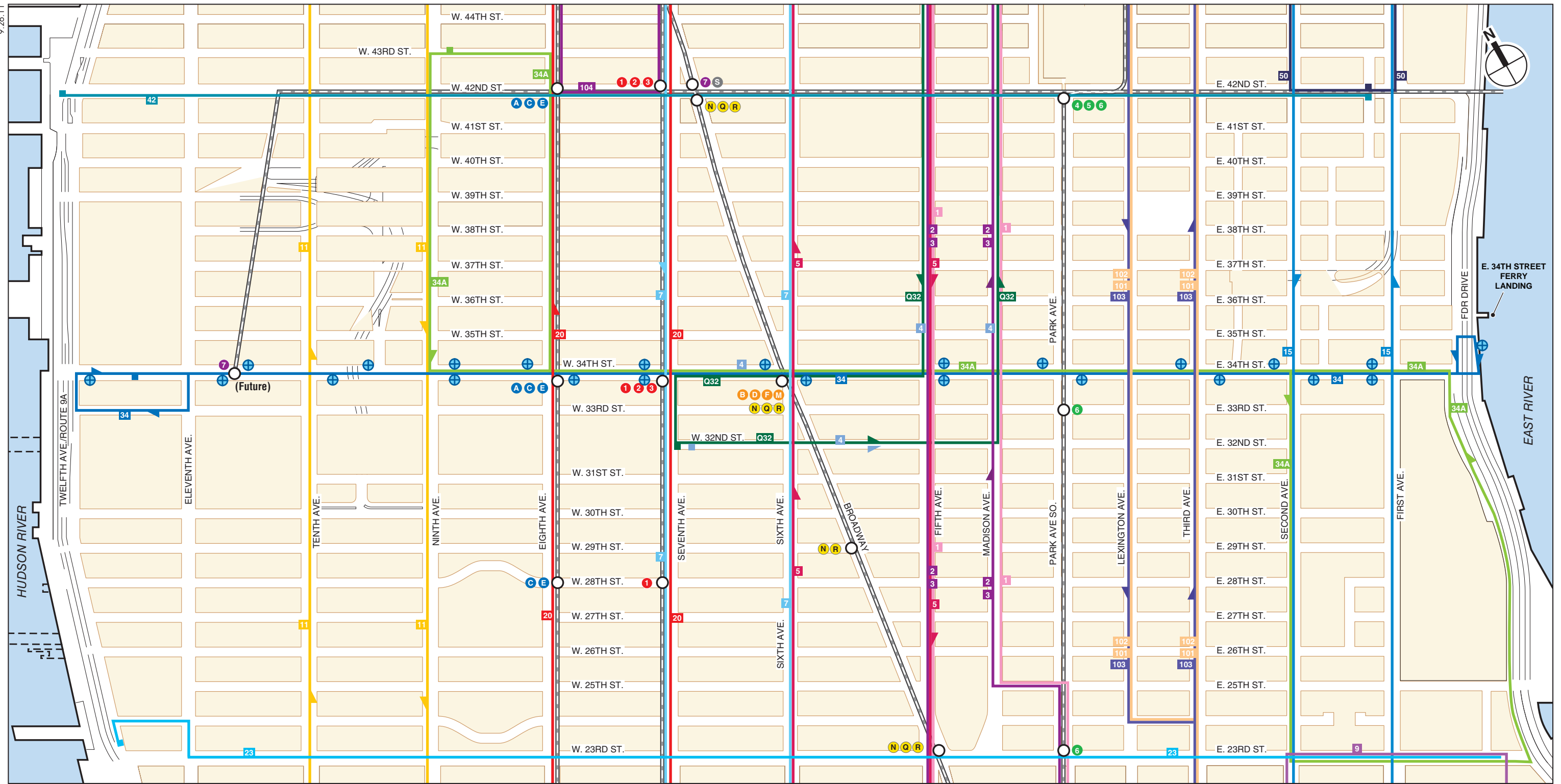
2-2-5 BUS OPERATIONS

The Proposed Project's new stations would be served by the M34 and M34A Select Bus Service, which already operate along 34th Street. The express bus stops would be served by existing NYCT and MTA Bus routes. **Figure 2-10** is a map of transit services on 34th Street with completion of the Proposed Project.

The M34 would continue to operate between Twelfth Avenue and the East 34th Street Ferry Terminal. Westbound buses would traverse 34th Street to Eleventh Avenue. They would then turn south onto Eleventh Avenue, west onto 33rd Street, north onto Twelfth Avenue, and east onto 34th Street to terminate on the block between Twelfth and Eleventh Avenues across the street from the Jacob Javits Center. Eastbound buses traverse 34th Street from the terminal across the street from the Javits Center to the terminal at the 34th Street Ferry Terminal between 34th and 35th Streets. To resume their westbound route, buses would turn south onto the FDR Service Road and west onto 34th Street. Select Bus Service would continue to operate on weekdays from 5:30 AM to 1 AM and weekends from 6 AM to 12:15 AM.

The M34A would continue to operate between Waterside Plaza (FDR Drive between East 23rd and East 28th Streets) and the Port Authority Bus Terminal. Northbound buses would travel via the FDR Drive service road to 34th Street, westbound across 34th Street to Eighth Avenue, northbound on Eighth Avenue to West 43rd Street, and westbound on West 43rd Street to terminate near the intersection of Ninth Avenue. Southbound buses would begin their route at West 43rd Street and Ninth Avenue and travel southbound on Ninth Avenue to 34th Street, eastbound on 34th Street to Second Avenue, southbound on Second Avenue to East 23rd Street and then eastbound on

¹ The proposed stop locations for New York Waterway Buses has yet to be determined. NYCDOT will engage NY Waterway in a discussion of bus stop location options.



- M34A SBS Route Stops along 34th Street and Terminus
- M34 SBS Route Stops along 34th Street and Terminus
- Other NYCT Bus Route and Terminus
- Bus Route Number
- Subway Route and Station
- Select Bus Service Station

0 0.1 0.2 MILES
SCALE

Proposed Select Bus Service Routes and Connecting Transit Services
Figure 2-10

East 23rd Street to terminate at Waterside Plaza. Along 34th Street, the M34A Select Bus Service would share stations with the M34 Select Bus Service. NYCT and NYCDOT do not propose any changes in the M34A route or location of its stops where it operates on other streets (i.e., FDR Service Drive, Second Avenue, Eighth Avenue, and Ninth Avenue). The M34A Select Bus Service would continue to operate on weekdays from 5 AM to 12:30 AM and weekends from 4:45 AM to 1 AM. The M34 and M34A would continue to employ off-board fare collection.

The Proposed Project would not change the current routing or schedule of express buses that traverse 34th Street. However, the express bus stops would shift slightly east or west of their current location.

2-2-6 TRAFFIC SIGNAL MODIFICATIONS

As part of the Proposed Project, NYCDOT would implement changes in the timing of traffic signals on 33rd, 34th, and 35th Streets. The proposed adjustments were determined based on detailed traffic analysis for the AM (8AM to 9AM) and PM (5PM to 6PM) peak hours. Generally, these adjustments would increase the amount of green signal time for east-west traffic and reduce the amount of green signal time for north-south traffic. These timing modifications would ensure that traffic operations are not adversely impacted by the Proposed Project. Signal timing modifications are proposed at the following locations:

- First Avenue and East 34th Street (AM and PM Peak Hours)
- Queens Midtown Tunnel Approach Road and East 34th Street (AM Peak Hour)
- Second Avenue and East 34th Street (PM Peak Hour)
- Lexington Avenue and East 33rd Street (AM Peak Hour)
- Third Avenue and East 34th Street (AM and PM Peak Hours)
- Madison Avenue and East 34th Street (AM Peak Hour)
- Park Avenue and East 34th Street (PM Peak Hour)
- Fifth Avenue and East 35th Street (AM Peak Hour)
- Sixth Avenue and West 34th Street (PM Peak Hour)
- Seventh Avenue and West 34th Street (PM Peak Hour)
- Seventh Avenue and West 35th Street (AM and PM Peak Hour)
- Ninth Avenue and West 34th Street (AM and PM Peak Hours)
- Tenth Avenue and West 34th Street (AM Peak Hour)

Although the above list notes timing changes in the AM (8AM to 9AM) and/or PM (5PM to 6PM) peak hours that would be implemented as part of the project, NYCDOT would monitor the need for future signal timing modifications to address traffic flow, consistent with its operating practices. In general the AM peak hour adjustments would extend from 6AM to 11AM and the PM peak hour adjustments would extend from 2PM to 8PM. Where a new signal phase is proposed (i.e., left-turn phase at First Avenue and 34th Street), the new phase would be implemented at all times, but the timing of individual signal phases could vary throughout the day.

2-2-7 CONSTRUCTION IMPLEMENTATION & SEQUENCING

Construction of the Proposed Project would commence in the summer of 2012. The Proposed Project would be constructed in three segments.

- Segment I is located from the FDR Drive Service Road to Third Avenue. Construction along this segment would be coordinated by the New York City Department of Design and Construction in tandem with their ongoing work on City Water Tunnel No. 3.
- Segment II is located from Third Avenue to Tenth Avenue and would be coordinated by NYCDOT.
- Segment III is located from Tenth Avenue to Twelfth Avenue (Route 9A). Construction of this segment would be coordinated by the Hudson Yards Development Corporation in tandem with ongoing work on the No. 7 Train Extension and the Hudson Yards park and boulevard projects.

Most construction work would be completed by the late fall of 2012. However, the construction of Segment III would be delayed until approximately late 2013 to avoid conflicts with ongoing work for the No. 7 Train Extension and the Hudson Yards park and boulevard projects.

2-2-8 COST AND AGENCY COORDINATION

The capital costs for most of the corridor are being jointly funded by the Federal Transit Administration and the City of New York. The Hudson Yards Development Corporation would fund the project elements on the block between Eleventh and Tenth Avenues (please see Segment III below). NYCT would procure new buses through its capital program, as needed. However, the Proposed Project can be implemented with the existing NYCT bus fleet and does not depend on the purchase of new buses.

Operating and maintenance costs would be funded by NYCT and the City of New York for the elements under their respective jurisdictions. NYCT would operate and maintain the Select Bus Service while NYCDOT and other city agencies would be responsible for the ongoing maintenance of the roadway. MTA Bus and other operators would be responsible for the operating and maintenance costs of their respective fleets. Overall, the Proposed Project would have minimal, if any, change in operating and maintenance costs as compared to existing conditions.

2-3 NO BUILD ALTERNATIVE

The No Build Alternative reflects conditions in 2012 and serves as the baseline to assess the potential environmental effects of the Proposed Project.

Under the No Build Alternative, 34th Street will continue to serve two-way traffic. East of Third Avenue and West of Ninth Avenue, 34th Street will continue to operate with four to five lanes—two to three general traffic lanes and two curbside bus lanes. There will also continue to be exclusive left-turn and right-turn lanes at certain intersections along the corridor. (Refer to the existing conditions drawings, cross sections, and renderings in **Figures 2-1, 2-3, 2-4, 2-5, 2-6, 2-7, and 2-8** for a representation of the proposed continued operation of 34th Street under the No Build Alternative.)

The M34, M34A (formerly known as the M16), and express bus routes will continue to operate along 34th Street and serve existing bus stops. (Refer to **Figures 1-3** and **1-4** for the proposed continued operation of routes on and near 34th Street under the No Build Alternative.) The No Build Alternative will include the previously implemented service enhancements:

- In 2008, NYCDOT painted curbside, “bus only” lanes on 34th Street. The “bus only” lanes run from approximately Eleventh Avenue to approximately First Avenue. From the hours of 7AM to 7PM, general traffic is prohibited from using these lanes.
- In 2009, NYCDOT and NYCT installed a Customer Information System that provides real time information on bus arrivals at select locations along 34th Street. Bus arrival information is displayed on LED signs mounted at the bus stop shelters, along with the temperature and the time of day.
- In 2010, New York State Governor David Paterson signed legislation allowing for camera enforcement of bus lane rules. The legislation allows NYCDOT and NYCT to install either stationary cameras on street poles or mobile cameras on buses and requires signage that informs drivers of camera enforcement. NYCDOT and NYCT began the use of both stationary and mobile cameras on 34th Street in 2011.
- In 2011, NYCT renamed the M16 bus route as the M34A.
- In 2011, NYCT installed off-board fare collection equipment at stops for the M34 and M34A bus routes. Off-board fare collection is already in use for the M15 Select Bus Service, which operates on First and Second Avenues in Manhattan, and the Bx12 Select Bus Service, which operates on Fordham Road and Pelham Parkway in the Bronx. It allows customers to pay their fare before boarding the bus and issues a paper ticket as proof of payment.
- To communicate the introduction of off-board fare collection on the M34 and M34A bus routes, NYCT rebranded them as Select Bus Service in the fall of 2011. Select Bus Service is NYCT’s brand name for bus rapid transit in New York City and is already used for the Bx12 and M15 bus routes. NYCT has a special livery and color scheme for Select Bus Service to make the SBS vehicles and routes identifiable to the public.

Consistent with their individual operating practices, NYCT, MTA Bus, and other transit operators may adjust bus service levels (headways) based on ridership changes. NYCT reviews ridership levels and adjusts service to meet its guideline capacity requirements on a biannual basis. MTA Bus implements a similar practice although formal guidelines have not been adopted. Other transit services (subway, commuter rail, and ferry) in the vicinity of 34th Street are expected to operate essentially as they do today.

Construction is underway on a number of projects along and near 34th Street. The following projects may be operational or continue to be under development in 2012 and are assumed as part of the No Build Alternative. All of these projects are included in the New York Metropolitan Transportation Council (NYMTC) long range plan.

- **No. 7 Train Extension:** The Metropolitan Transportation Authority/Capital Construction (MTA/CC), Hudson Yards Development Corporation, and the City of New York are continuing construction on an extension of the No. 7 subway line from Times Square to 34th Street and Eleventh Avenue with tail tracks extending to 28th

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Street. The No. 7 subway line extension is expected to open for regular passenger service in the summer of 2014.

- Hudson Yards: Several of the development sites identified as part of the Hudson Yards rezoning and development program are in the early stages of construction, including the demolition of numerous existing buildings and construction staging activities. The construction sites include the Eastern Rail Yard site between West 30th and West 33rd Streets and Tenth and Eleventh Avenues, and sites between West 34th and West 36th Streets and Tenth and Eleventh Avenues. There are also scattered construction sites related to the Hudson Yards project between West 38th and West 39th Streets and Eighth and Ninth Avenues, and at Tenth Avenue and 37th Street. Construction activities will continue through 2012.
- Moynihan Station Redevelopment: The Moynihan Station Redevelopment Corporation recently broke ground on the refurbishment of the James A. Farley Post Office to serve as a new rail terminal for Amtrak. Construction will be ongoing through 2012 with an estimated completion in 2016.
- A new 4-story retail building is currently under construction at 213-223 West 34th Street, between Seventh and Eighth Avenues.
- 15 Penn Plaza: In August 2010, the New York City Council approved plans for 15 Penn Plaza, a new high-rise office building on Seventh Avenue between 32nd and 33rd Streets. Construction activities, which will include demolition of the Hotel Pennsylvania, may commence by 2012.
- New York City Water Tunnel #3: The New York City Department of Environmental Protection (DEP) is constructing a third tunnel to provide New York City with water from its supply in Upstate New York. Construction activities include building distribution mains to connect to the new tunnel and water delivery shafts to the surface. The Manhattan section of the tunnel construction, which includes sections near 34th Street, began in 2002.
- NYU Medical Center: New York University continues construction activities at the Langone Medical Center as part of its long-term vision for campus modernization and revitalization. A major renovation of the emergency department is ongoing as is the development of clinical and research facilities. Construction activities will continue through 2012.

*

3-1 INTRODUCTION

The following chapters of this Project Analysis Report examine the potential effects of the Proposed Project on the built and natural environment.

3-2 METHODOLOGY

This document provides an analysis of the impacts of the Proposed Project. It is provided for informational purposes and to further public understanding of the Proposed Project. In preparing this document, NYCDOT followed the guidelines of the *CEQR Technical Manual*. However, as stated above, this document is being provided for informational purposes and is not intended to be an official environmental document.

To assist applicants and New York City agencies in the preparation and review of documents required by CEQR, the Mayor's Office of Environmental Coordination published the *CEQR Technical Manual*. The most recent edition of the *CEQR Technical Manual* was released in May 2010 and provides methodologies and guidance for collecting data, for quantifying or qualifying the potential impacts of an action, for determining whether impacts are considered significant and require mitigation, and for identifying mitigation measures to alleviate significant impacts. The guidance and methodologies set forth in the *CEQR Technical Manual* reflect local environmental conditions, the City's environmental priorities and concerns, and impact thresholds. The CEQR guidance was developed among agencies to conform to federal, state, and local environmental laws.

As described in Chapter 2, "Project Alternatives," the Proposed Project would be substantially complete by late fall 2012. Therefore, 2012 is identified as the build year for the analyses that follow.

The study areas for each individual analysis issue area have been defined to describe the affected environment and identify the potential impacts of the Proposed Project. Where potential impacts could result from ground disturbance (i.e., archaeological resources, utilities, and hazardous materials), the study area is defined as the limits of the construction zone (the streetbed and adjacent sidewalks of 34th Street). Where further context is needed to identify the Proposed Project's potential effects, the study area is larger. For the historic resources, air quality, noise, and natural resources assessment, the study areas were defined consistent with federal, state, and local guidance. For other studies (social conditions and transportation), the study area is generally delineated as ¼ mile north and south of 34th Street from the Hudson River to the East River. One-quarter mile is a typical study area under CEQR. *

4-1 INTRODUCTION

This chapter examines the potential impacts on social conditions in the study area. It examines physical effects on the built environment and identifies potential benefits and impacts on population, employment, and business operations. This chapter addresses several areas of analysis outlined in the *CEQR Technical Manual* (Mayor's Office of Environmental Coordination, 2010). Specifically, this chapter includes the following sections of analysis:

- Land Use, Zoning, and Public Policy;
- Socioeconomic Conditions;
- Community Facilities and Services;
- Open Space;
- Urban Design and Visual Resources, including shadows;
- Public Health; and
- Neighborhood Character.

The analysis follows guidance set forth in the *CEQR Technical Manual*. The study area for the topics covered in this chapter encompasses the area approximately ¼ mile north and south of 34th Street from the Hudson River to the East River.

This chapter concludes that the Proposed Project would not result in any significant adverse impacts on social conditions. The Proposed Project would enhance transit in the land use study area, and therefore, would support its high density urban character. It would permanently occupy only public right-of-way and would not otherwise constitute new development or a change from the existing or planned uses in the surrounding area. In addition, improved transit access and pedestrian circulation along the 34th Street corridor would benefit the population within the area, and the Proposed Project would not substantially change the arrangement, orientation, functionality, or appearance of 34th Street in a manner that would substantially impact its urban design context or neighborhood character.

4-2 LAND USE, ZONING, AND PUBLIC POLICY**4-2-1 LAND USE**

Overall, the land use study area is composed of a variety of high-density uses which are reliant upon and supported by a robust transit system. Transportation (Lincoln Tunnel, surface parking lots and garages, and open rail cuts), convention (Jacob K. Javits Convention Center), and low- and medium-density commercial uses are dominant in the western portion of the land use study area, particularly west of Ninth

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Avenue. There is also a cluster of residential uses on the block between Ninth and Tenth Avenues. High density commercial (office and retail) uses are dominant in the central portion of the study area, between Eighth and Park Avenues. Residential and medical uses, including a number of high-rise buildings, are most prevalent east of Park Avenue (see **Figure 4-1**).

Currently, there are a few projects under construction along and near 34th Street (see Chapter 2, “Project Alternatives”): The No. 7 Subway Extension and Hudson Yards Park and Boulevard, which will add a subway station at 34th Street and Eleventh Avenue, the Moynihan Station development, the New York University (NYU) Langone Medical Center expansion, and a few residential, retail, and hotel buildings. However, these projects are not expected to substantially alter the land use characteristics of the study area by the Proposed Project’s build year.

The Proposed Project would enhance transit in the land use study area, and therefore, would support its high density urban character. The Proposed Project would only permanently occupy public right-of-way and would not otherwise constitute any new development or change from the existing or planned uses in the surrounding area. Therefore, it would not result in any significant adverse impacts to land use.

4-2-2 ZONING

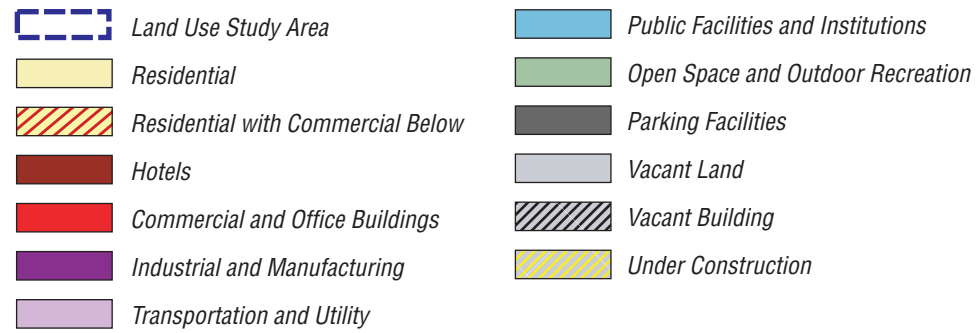
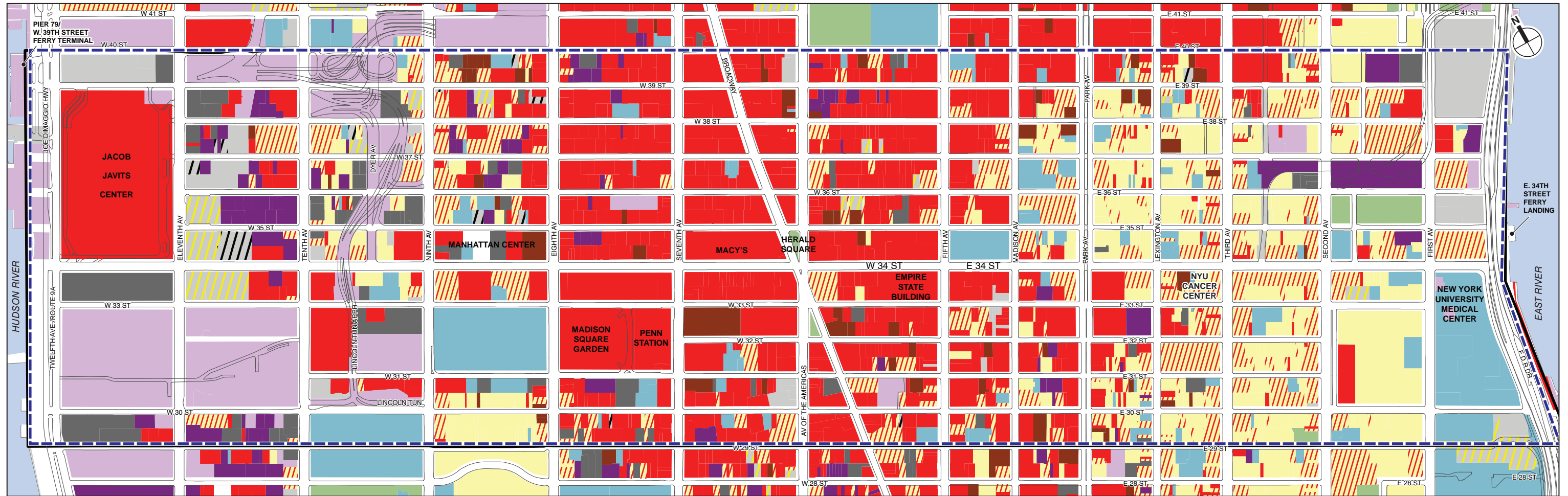
There are a number of zoning districts within the land use study area, most of which allow for high density residential and commercial development (see **Figure 4-2**). Portions of the study area fall within special districts, which are zoning districts defined by the City Planning Commission to direct development according to specific zoning requirements in order to preserve designated areas’ distinctive qualities. Within the land use study area, the special districts include the Special Hudson Yards District, the Special Garment Center District, and a small portion of the Special Midtown District. No changes to the zoning affecting the Proposed Project site or the 34th Street corridor are anticipated by 2012.

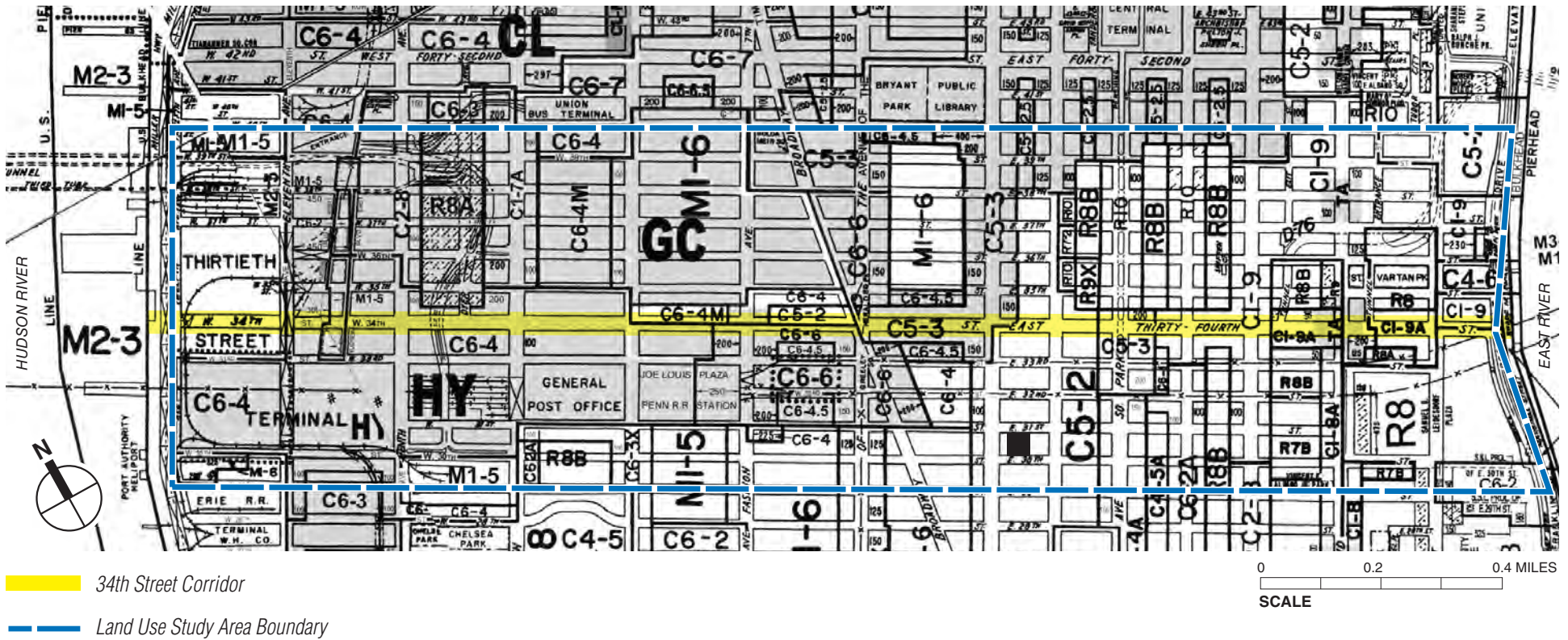
The Proposed Project complies with the study area’s underlying zoning. Furthermore, it would only occupy public right-of-way and would not otherwise constitute any new development or changes to the existing zoning in the surrounding area. Therefore, the Proposed Project would not result in any significant adverse impacts to zoning.

4-2-3 PUBLIC POLICY

There are a number of public policy initiatives that apply to the land use study area or to the transit-oriented nature of the Proposed Project. Some policies, such as PlaNYC, are citywide initiatives while others are more localized undertakings. The following are the policies that are specific to the corridor or relevant to the Proposed Project as well as general citywide initiatives that apply to either:

- **Bus Rapid Transit (BRT) Phase I Program:** The New York City Department of Transportation (NYCDOT) and MTA New York City Transit (NYCT) have a joint program to plan and implement BRT routes throughout New York City. The first phase of this program includes five routes, which were identified based on an analysis of transit service needs. Two BRT routes, the Bx12 Select Bus Service (SBS) in the Bronx and the M15 SBS in Manhattan have been implemented. NYCDOT and NYCT continue the planning and community engagement for the





remaining three routes, the Proposed Project (34th Street), Nostrand and Rogers Avenues in Brooklyn, and Hylan Boulevard in Staten Island.

- **PlaNYC:** In 2007, the Mayor's Office of Long Term Planning and Sustainability released *PlaNYC: A Greener, Greater New York*. PlaNYC represents a comprehensive and integrated approach to planning for New York City's future. Elements of PlaNYC are organized into six categories—land, water, transportation, energy, air quality, and climate change—with corresponding goals and initiatives for each category. Improving bus service and expanding the City's BRT network are key *PlaNYC* goals. The Mayor's Office of Long Term Planning and Sustainability issued an update (*PlaNYC 2.0*) in April 2011.
- **Local Waterfront Revitalization Program:** In compliance with the federal Coastal Zone Management program, New York City and State have adopted policies aimed at protecting resources in the coastal zone. The eastern and western edges of the land use study area are within City and State's designated coastal zone, which is further described in Chapter 3.8, "Natural Resources."

The public policies described above are expected to continue to guide growth in the land use study area. No changes to the public policies affecting the Proposed Project site or the land use study area are anticipated by 2012.

The Proposed Project would enhance transit service in the land use study area, which is consistent with the goals of policies outlined above. Therefore, the Proposed Project would not result in any significant adverse impacts to public policy.

4-3 SOCIOECONOMIC CONDITIONS

4-3-1 DISPLACEMENT AND RELOCATION

The Proposed Project would be constructed entirely within public right-of-way (streetbeds and adjacent sidewalks). No newsstands would be eliminated as part of the Proposed Project, but some may require relocation within their immediate vicinity. Street vendors would continue to be subject to policies of the New York City Police Department and the New York City Department of Consumer Affairs. Therefore, the Proposed Project would not require land acquisition nor would it result in the displacement and/or relocation of residences or employees.

4-3-2 POPULATION AND EMPLOYMENT

Population and employment statistics were gathered for the land use study area, which was defined as ¼ mile north and south of 34th Street. More than 234,000 people work within this area, and more than 46,000 live within this area¹. Residents and employees

¹ Total residents and employees for the following Manhattan Census Block Groups: 62001, 62002, 70001, 70002, 70003, 70004, 70005, 70006, 72001, 72002, 72003, 72004, 72005, 72006, 72007, 74001, 74002, 74003, 76001, 76002, 78001, 78002, 78003, 78004, 78005, 78006, 78007, 80001, 80002, 80003, 80004, 80005, 82001, 82002, 82003, 84002, 860101, 860102, 88002, 88004, 95001, 95002, 97002, 97004, 99001, 101001, 103001, 109001, 111001, 111003, 113001, 115001, 115002, 117001; Residential population from the U.S. Bureau of the Census, Census 2010 (data accessed in March 2010); Residential modal split from the journey-to-work data in the 2000 Census Transportation Planning Package (2010 data not available as of this writing); Employment population and modal split from reverse-journey-to-work data in the 2000 Census Transportation Planning Package.

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of the land use study area have a very high propensity for transit use. As identified in the 2000 U.S. Census, the most recent period where such data was available, 41 percent of residents commute to work by transit (while 41 percent walk), and only 21 percent own an automobile¹. A majority of employees in the area also commutes by transit (61 percent). The Proposed Project would enhance transit service in the land use study area and is supportive of the travel characteristics of its residents and employees. Therefore, the Proposed Project would not result in significant adverse impacts on population or employment.

4-3-3 BUSINESS EFFECTS

Numerous businesses line 34th Street, including small stores, restaurants, and national retail establishments, single- and multi-tenant office buildings, medical services and offices, and paid parking lots and garages. The Proposed Project would enhance transit service along 34th Street, which would better serve customers and employees of these businesses.

The Proposed Project would improve curbside access for deliveries to businesses and buildings. Presently, midday loading is not permitted on 34th Street but is allowed at nights and on weekends. With the Proposed Project, a new midday loading zone would be created on every block of 34th Street from the First Avenue to Twelfth Avenue (Route 9A), resulting in 257 midday loading spaces (based on a measurement of 20 feet per space). At the same time, the Proposed Project would maintain access to all existing curb cuts on 34th Street, including driveways to parking garages and loading docks. Therefore, the Proposed Project would not result in significant adverse impacts to businesses.

4-4 COMMUNITY FACILITIES AND SERVICES

Impacts on community facilities and services (i.e., schools, daycare centers, hospitals, libraries, and police, fire, and emergency management services) could occur if a Proposed Project would: 1) physically displace or alter access to a facility that provides such services, or 2) would introduce a substantial number of new residents or employees that could overburden the provision of such services.

A number of community facilities are present along 34th Street, including educational buildings (i.e., Public School 116, Norman Thomas High School, City University of New York (CUNY) Graduate Center, and Yeshiva University), hospitals and medical uses (i.e., NYU Langone Medical Center, NYU Clinical Cancer Center, and various medical office buildings), and public libraries (New York Public Library—Science, Business, and Industry Library). The Proposed Project would not directly displace any of these community facilities. The Proposed Project would also not introduce a new population to the study area, and therefore, would not overburden the provision of community services.

Emergency vehicles (i.e., police vehicles, fire trucks, and ambulances) would be permitted within the Proposed Project's bus lanes. This could improve response times as such vehicles could bypass general traffic. Furthermore, the addition of loading zones as part of the Proposed Project would improve access to a number of community

¹ U.S. Bureau of the Census, 2000, Summary File 3, table H44.

facilities, including NYU Clinical Cancer Center and other medical offices. Therefore, vehicular access to community facilities would be maintained or improved, and at the same time, transit access would be improved. Overall, the Proposed Project would not result in significant adverse impacts on the operation or provision of community facilities and services.

4-5 OPEN SPACE

As shown in **Figure 4-3**, the study area is adjacent to a number of public parklands (the East River Esplanade, Hudson River Park), and plazas (Herald Square and Greeley Square). However, the Proposed Project would not temporarily or permanently occupy any of these public open spaces.

The Project would consist of pavement markings, signage, and passenger amenities typical of Midtown Manhattan, and these elements would not impair the visual quality of nearby open space resources. Enhanced transit service would improve access for open space users, but the Proposed Project itself is not expected to generate substantial new patronage that would diminish the quantity or quality of parklands in the surrounding area.

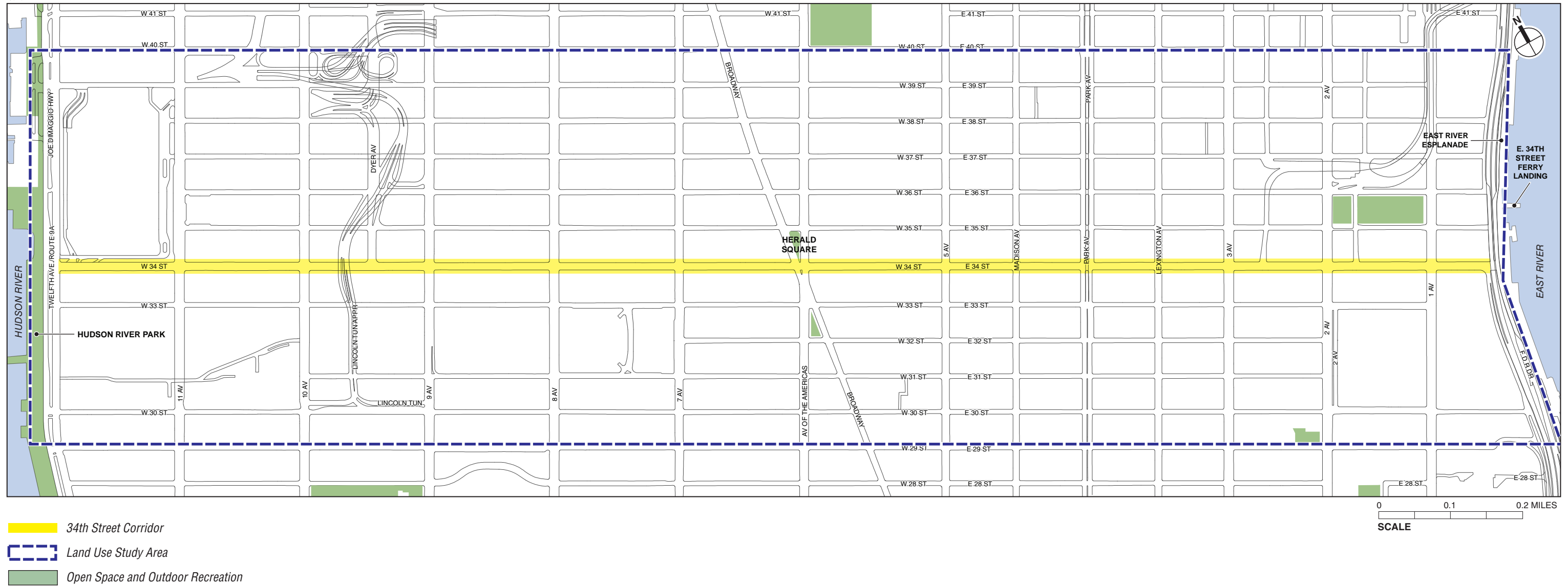
Therefore, the Proposed Project would not result in significant adverse impacts on open space.

4-6 URBAN DESIGN AND VISUAL RESOURCES

4-6-1 URBAN DESIGN

Urban design is made up of a number of components of the built environment that affect the pedestrian's experience. These include streets and their arrangement, orientation; plantings and street furniture located along them; and how they create blocks; buildings, including street walls, setbacks, size and shape; open spaces including parks, yards, and plazas; and natural features such as vegetation, outcroppings, and water bodies. An assessment of urban design considers how a project might change the pedestrian experience and focuses on the components of a project that have the potential to alter the arrangement, appearance, and functionality of the built environment. 34th Street is a busy, crosstown thoroughfare intersected by north-south avenues. It presently operates with two-way traffic and curbside bus lanes. Along much of its length, 34th Street provides wide sidewalks (12 feet or greater). Street furniture, including benches, bicycle racks, planters, bus stops and shelters, newsstands, and curbside signage, is provided along its length. Buildings that line 34th Street are generally mid- and high-rise structures with ground-level retail frontage and building access.

The Proposed Project would not alter block shapes, prominent open spaces, natural features, or the buildings that line the street. For the most part, the Proposed Project would not alter the width of 34th Street, but it would reconfigure its operation to provide for an offset bus lane at certain locations, widened sidewalks at certain bus stop locations to create bus bulbs, and curbside loading and parking lanes at certain locations. The Proposed Project would also provide improved amenities for transit passengers (i.e., additional bus shelters and informational signage, using standard designs that have already been approved by the New York City Design Commission). While elements of the Proposed Project would alter the physical geometry and the



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operation of 34th Street as compared to the existing and future no build conditions, it would not substantially change the arrangement, orientation, functionality, or appearance of 34th Street in a manner that would substantially impact its urban design context. Therefore, the Proposed Project would not result in significant adverse impacts on urban design.

4-6-2 VISUAL RESOURCES

A visual resource is the connection from the public to a prominent natural or built feature, including views of the waterfront, public parks, landmark structures or districts, distinct buildings or groups of buildings, or natural features. A number of prominent visual resources exist along 34th Street, such as the Empire State Building, Macy's and Herald Square, the Javits Center, and views toward the Hudson River and East River. The Proposed Project would include pavement markings, bus shelters, and signage that would blend with the urban fabric of 34th Street, and these features would not significantly impact views of the prominent visual resources along the corridor.

4-6-3 SHADOWS

Buildings and structures cast shadows, and as the city continuously develops, the extent and duration of shadows has increasingly diminished exposure to direct sunlight for people and nature. A shadows assessment considers new shadows from a project that are long enough to reach a sunlight-sensitive resource (i.e., parklands, water bodies, natural habitats, and historic structures where sunlight plays a prominent role in their architecture). CEQR guidance states that a shadows assessment is typically appropriate for new structures or additions to existing structures: 1) of 50 feet or more in height; or 2) adjacent to, or across the street from, a sunlight-sensitive resource.

The Proposed Project would not result in substantial new shadows. Although sunlight-sensitive resources are present along 34th Street, including churches with stained-glass windows and public parks, new structures associated with the Proposed Project would be approximately 25 feet tall or less, have a minimal footprint, and would typically be adjacent to taller structures with a much greater extent and duration of shadow. Therefore, a full assessment of potential shadow impacts is not necessary, and the Proposed Project would not result in significant adverse impacts on sunlight-sensitive resources.

4-7 PUBLIC HEALTH

Public health is the effort of society to protect and improve the health and well-being of its population. The CEQR guidance states that a public health assessment is typically appropriate if a project would result in significant unmitigated adverse impacts on air quality, water quality, hazardous materials, or noise. As described in this Project Analysis Report, the Proposed Project would not result in significant unmitigated adverse impacts for any areas of technical analysis. Therefore, a full assessment of potential impacts on public health is not necessary, and the Proposed Project would not result in significant adverse impacts on public health.

4-8 NEIGHBORHOOD CHARACTER

A neighborhood character assessment considers how elements of the environment combine to create the context and feeling of a neighborhood and how a project may

affect that context and feeling. This neighborhood character assessment focuses on the study area defined above for land use, which is bounded by the Hudson River to the west, 29th Street to the south, the East River to the east, and 40th Street to the north.

34th Street is a busy corridor in Midtown Manhattan and serves as a boundary between neighborhoods (i.e., Chelsea and Clinton on the west and Kips Bay and Murray Hill on the east). 34th Street is a hub for transit services, tourism, medical services, and residential, retail and office uses in New York City resulting in its character as a busy thoroughfare for multiple purposes. Although generally thought of as a busy commercial corridor, residential uses occupy the blocks east of Park Avenue and between Ninth Avenue and Tenth Avenue.

The Proposed Project would support the overall character of 34th Street by providing transit service for its residents, employees, and visitors. The Proposed Project would build on bus services already provided along the corridor and provide for enhancements in operations and passenger amenities. Furthermore, the Proposed Project would improve access to residential, commercial, and institutional uses along 34th Street by expanding curbside access for deliveries. As mentioned in section 4-3-3, "Business Effects", the Proposed Project would include a new midday loading zone on every block for a total of 257 midday loading spaces (based on a measurement of 20 feet per space).

The Proposed Project would provide enhanced bus service along 34th Street that would benefit its residents and workers. At the same time, the Proposed Project would maintain two-way traffic on 34th Street, and new midday, curbside loading areas and overnight parking would improve vehicular access to buildings. Overall, the improved access along the corridor would foster the continued enterprise of office, retail, and residential uses and would not negatively impact their real estate value.

The CEQR guidance identifies that a project has the potential to result in adverse impacts on neighborhood character if it would also result in significant adverse impacts on land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources, including shadows; transportation; or noise. As described in this Project Analysis Report, the potential impacts of the Proposed Project on traffic operations would be mitigated with standard engineering practices, and otherwise, the Proposed Project would not result in significant adverse impacts. Therefore, the Proposed Project would not result in significant adverse impacts on neighborhood character and a detailed assessment is not necessary. *

5-1 INTRODUCTION

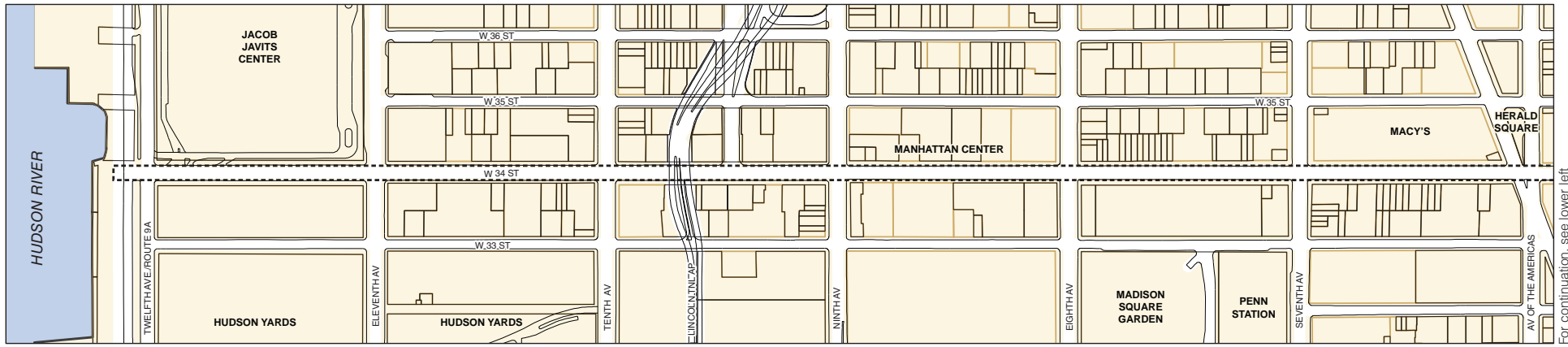
This chapter assesses the potential effects of the Proposed Project on historic and cultural resources. The Proposed Project would consist of a number of transportation and pedestrian improvements within the street bed and adjacent sidewalks of 34th Street including new offset bus lanes, new bus stations, shortened crosswalk distances, extended sidewalks at bus station locations, and new curbside loading zones on each block.

Historic resources include both archaeological and historic architectural resources. Areas of Potential Effect (APEs) were established for the Proposed Project to identify and evaluate potential impacts on historic resources. The APE for archaeological resources is the project site itself, which is the area that could be disturbed by its construction (see **Figure 5-1**). APEs for architectural resources are determined based on the potential for direct (physical) and indirect (contextual) effects (see **Figure 5-2**).

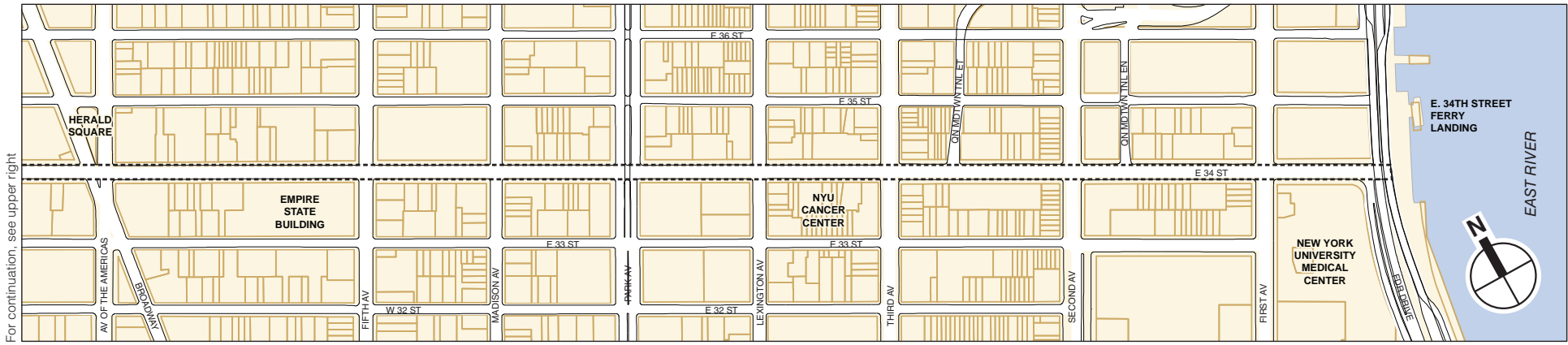
Direct effects include demolition of a resource and alterations to a resource that cause it to become a different visual entity. A resource could also be damaged from construction vibration and additional damage from adjacent construction that could occur from falling objects, subsidence, collapse, or damage from construction machinery. Adjacent construction is defined as any construction activity that would occur within 90 feet of an architectural resource, as defined in the *New York City Department of Buildings (DOB) Technical Policy and Procedure Notice (TPPN) #10/88*.¹

The APE for indirect effects is usually a larger area to account for visual or contextual impacts, which can include isolation of a historic resource from its setting or visual relationships with the streetscape, changes to a resource's visual prominence, elimination or screening of publicly accessible views of a historic resource, introduction of significant new shadows or significant lengthening of the duration of existing shadows on sun-sensitive historic resources, and introduction of incompatible visual, audible, or atmospheric elements to a resource's setting. Since the physical improvements would be limited to the street bed and sidewalks, they would not be visible or have potential indirect effects beyond the buildings that front 34th Street. Therefore, the APE for architectural resources has been defined as structures within 90 feet of project site.

¹ TPPN #10/88 was issued by DOB on June 6, 1988, to supplement Building Code regulations with regard to historic structures. TPPN #10/88 outlines procedures for the avoidance of damage to historic structures resulting from adjacent construction, defined as construction within a lateral distance of 90 feet from the historic resource.



Western Portion



Eastern Portion

 Area of Potential Effect (APE)

Area of Potential Effect (APE) for Archaeological Resources
Figure 5-1

Historic architectural resources include National Historic Landmarks (NHLs), properties listed on or determined eligible for listing on the State and National Registers of Historic Places (S/NR) and properties listed on or pending designation as New York City Landmarks (NYCLs) or Historic Districts (NYCHDs). In addition, previously conducted historic resources surveys along the project corridor were reviewed, and the APE was surveyed to assess whether there could be any properties that may meet the criteria for S/NR listing but have not yet been officially reviewed for eligibility by the New York State Historic Preservation Office (SHPO).¹

The chapter concludes that the Proposed Project would not result in adverse effects on archaeological or architectural resources.

5-2 ARCHAEOLOGICAL RESOURCES

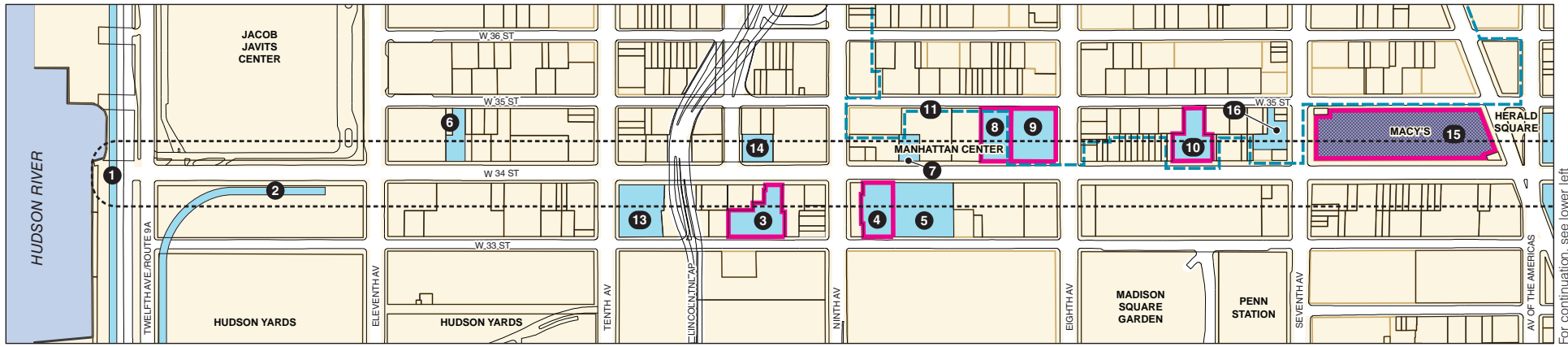
In March 2011, URS Corporation analyzed the potential archaeological sensitivity of the project site in a study entitled, *Archaeological Assessment for the 34th Street Select Bus Service Project, Borough of Manhattan, New York City, New York*. The report concluded that the original landscape of the street bed has been substantially altered as a result of urban development, including the construction of buildings and streets. Isolated development in this portion of Manhattan began in the early 19th century. Following the installation of water and sewer lines within the street bed in the mid-19th century, the area was rapidly developed.

The study concluded that because of the substantial landscape transformation that has occurred within and in the vicinity of the project site, there is little potential that undisturbed precontact (i.e. Native American) archaeological resources are present. With respect to archaeological resources dating to the historic period, the study concluded that such resources would have been disturbed by road and sidewalk construction and the installation of utilities and rail lines. The study determined that the project site is sufficiently disturbed and that there is little to no potential that undisturbed archaeological resources remain in tact. Therefore, no additional analysis is recommended, and the Proposed Project would have no adverse effect on archaeological resources.

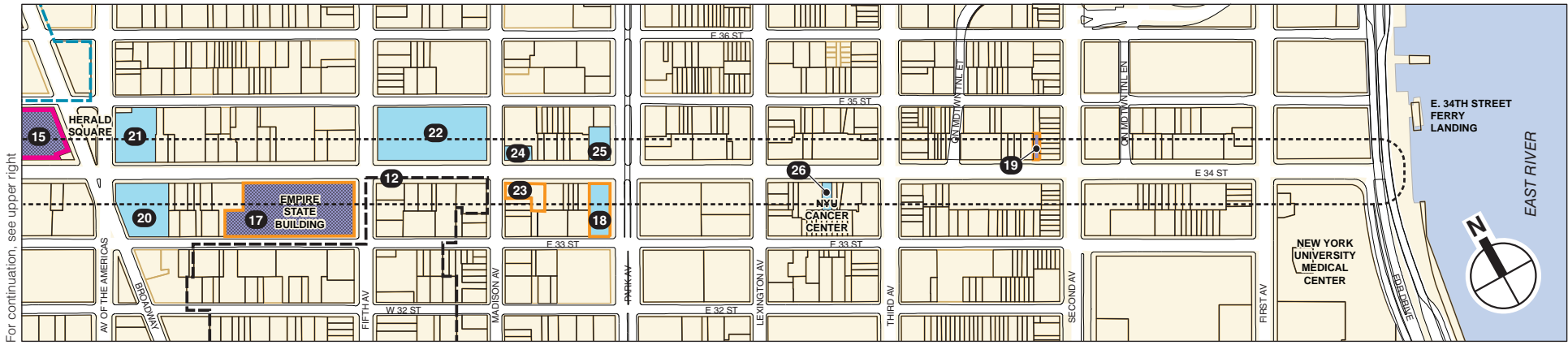
5-3 ARCHITECTURAL RESOURCES

There are 26 known architectural resources located in the APE. Three are properties that were identified as potential architectural resources and for which SHPO made determinations of S/NR-eligibility as part of their review of the Proposed Project. These architectural resources are shown in **Table 5-1** and mapped in **Figure 5-2**.

¹ Surveys were previously undertaken between the Hudson River and Madison Avenue and between First Avenue and the FDR Drive have been reviewed and resources identified have been compiled into the inventory of architectural resources presented in **Table 5-1**.



Western Portion



Eastern Portion

- Area of Potential Effect (APE) (90-Foot Perimeter)
- Known Architectural Resource
- S/NR-Eligible (Individual)
- NYCL-Eligible (Individual)
- S/NR-Listed (Individual)
- NYCL - Designated (Individual)
- S/NR-Listed (District)
- NYCL - Eligible (District)
- National Historic Landmark

Area of Potential Effect (APE) for Architectural Resources
Figure 5-2

Chapter 5: Historic and Cultural Resources

**Table 5-1
Architectural Resources in the Area of Potential Effect (APE)**

Map Ref. #	Name/Type	Address	S/NR	NYCL	S/NR-eligible	NYCL-eligible	Notes
1	Hudson River Bulkhead	The Battery to West 59th Street along the Hudson River waterfront			X		
2	High Line	30th Street from Tenth to Twelfth Avenues, and Twelfth Avenue from 30th to 34th Streets			X		
3	St. Michael's RC Church Complex	414-424 West 34th Street and 409-429 West 33rd Street			X	X	
4	William F. Sloan Memorial YMCA	360 West 34th Street			X	X	
5	Former J.C. Penney Co.	331-343 West 33rd Street; 330 West 34th Street			X		
6**	Former Gledhill Wall Paper Company	541-545 West 34th Street; 546-548 West 35th Street			X		
7	West Side Jewish Center	347 West 34th Street			X		
8	Former Manhattan Opera House	311 West 34th Street			X	X	
9	New Yorker Hotel	481-497 Eighth Avenue			X	X	
10	Pennsylvania Building	225 West 34th Street			X	X	
11	Garment Center Historic District	Sixth to Ninth Avenues from 41st to 34th Streets	X				
12	Madison Square North Historic District Extension	29th to 34th Street from Madison Avenue to Broadway				X	
13	Master Printers Building	406-416 Tenth Avenue			X		
14	Webster Apartments	419 West 34th Street			X		
15	R.H. Macy & Co. Store*	151 West 34th Street	X			X	
16	Nelson Tower	446-455 Seventh Avenue	X			X	
17	Empire State Building*	350 Fifth Avenue	X	X			
18	Della Robbia Bar (The Crypt)	4 Park Avenue		X	X		
19	Civic Club (Estonian House)	243 East 34th Street	X	X			
20	Hotel McAlpin	1282-1300 Broadway			X		
21	Marbridge Building	1328 Broadway			X		
22	B. Altman & Co. Department Store (New York Public Library)	355-371 Fifth Avenue; 188-198 Madison Avenue		X	X		
23	Madison Belmont Building	183 Madison Avenue; 44 East 34th Street		X			
24	Cameron Building	185 Madison; 41 East 34th Street			X***		16-story brick and stone office building designed by Clinton & Russell, built in 1910.
25	Residential building	10 Park Avenue			X***		26-story building built as apartment hotel with church, designed by Hemle & Corbett, built in 1931.
26	Armenian Evangelical Church	154 East 34th Street			X***		Two-story former 19th Ward Bank, designed by William Emerson, built in 1907.

Notes:
 SR: New York State Register of Historic Places.
 NR: National Register of Historic Places.
 S/NR Eligible: Site has been found eligible for listing on the New York State and National Registers of Historic Places.
 NYCL: New York City Landmark.
 NYCL Eligible: LPC has determined that the site appears eligible for NYCL designation.
 * National Historic Landmark
 ** The building is slated for demolition as part of the Hudson Yards Development Project.
 *** The building was determined S/NR-eligible by SHPO on July 22, 2011 as part of SHPO's review of the proposed project.

34th Street Select Bus Service

Historic resources in the APE include below and above grade structures. Below-grade structures include the Hudson River bulkhead. Above-grade structures include the High Line; and buildings such as churches; institutional buildings; residential buildings and hotels, including the New Yorker Hotel; and commercial buildings and stores including the Empire State Building and the R.H. Macy & Co. Store. The buildings are primarily built to the sidewalk and are masonry and steel framed. A number of buildings are prominent visual landmarks and wayfinders, including the R.H. Macy & Co. Store and the Empire State Building, and are also designated as National Historic Landmarks.

The Proposed Project would not result in the demolition or alteration of any known or potential architectural resource. To avoid inadvertent adverse effects from adjacent construction, the New Department of Transportation would implement a Construction Protection Plan (CPP) would to protect the 23 known architectural resources and three potential architectural resources located within the APE. The CPP would be developed in consultation with SHPO and implemented by a professional engineer before any excavation and construction. The CPP would comply with the procedures set forth in DOB's *Technical Policy and Procedure Notice (TPPN) #10/88*, and as appropriate with the National Park Service's *Preservation Tech Notes, Temporary Protection #3: Protecting a Historic Structure during Adjacent Construction*, and the *New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark and Protection Programs for Landmark Buildings*. (For more information on potential construction-period effects on historic resources, see Chapter 13, "Construction Impacts.")

The Proposed Project would not result in any indirect adverse effects on known or potential architectural resources. The Proposed Project would reconfigure lanes, create loading areas, and modify pedestrian crossings within an existing roadway. The construction of new bus shelters and associated signage would not be expected to be substantially different in visual character or prominence than is already present on 34th Street. As such, the Proposed Project would not isolate an architectural resource from its setting or its visual relationship with the streetscape, or otherwise change a resource's visual prominence. The Proposed Project would also not eliminate or screen publicly accessible views of an architectural resource as most work would be at grade with the exception of bus shelters and signage. As such, the Proposed Project would not introduce any substantial new shadows or significant lengthening of the duration of existing shadows on sun-sensitive architectural resources, which include stained glass church windows. The Proposed Project would not introduce incompatible visual, audible, or atmospheric elements to an architectural resource's setting or otherwise cause a change in the resource that qualifies it for listing on the S/NR or NYCL designation.

Therefore, the Proposed Project would have no adverse effect on known or potential historic architectural resources. *

6-1 INTRODUCTION

This chapter presents a discussion on the potential impacts of the Proposed Project on traffic, transit service, pedestrian circulation, and parking, as well as safety and security. The guidelines provided by the *City Environmental Quality Review (CEQR) Technical Manual* (Mayor's Office of Environmental Coordination, 2010) were used to determine the potential impacts of the Proposed Project.

Per CEQR guidelines, a proposed project resulting in fifty (50) peak hour vehicle trips or two hundred (200) peak hour pedestrian or transit trips requires a Level 2 Screening Analysis. A Level 2 Screening Analysis assigns project generated trips to specific intersections, parking facilities, subway and bus routes, or pedestrian crosswalks, corners, and sidewalks en route from their origin to their destination. Prevailing vehicular, transit, and pedestrian traffic volume patterns in the area need were reviewed and used as a guide in developing the origin-destination patterns. The effects of new and/or diverted trips are then assessed using methodologies set forth in the CEQR guidance and conditions with and without the Proposed Project are compared to determine whether the action would significantly impact transportation infrastructure or services.

As outlined in the following sections, no significant impacts are expected by the Proposed Project on traffic, transit service, pedestrian circulation, and parking, as well as safety and security.

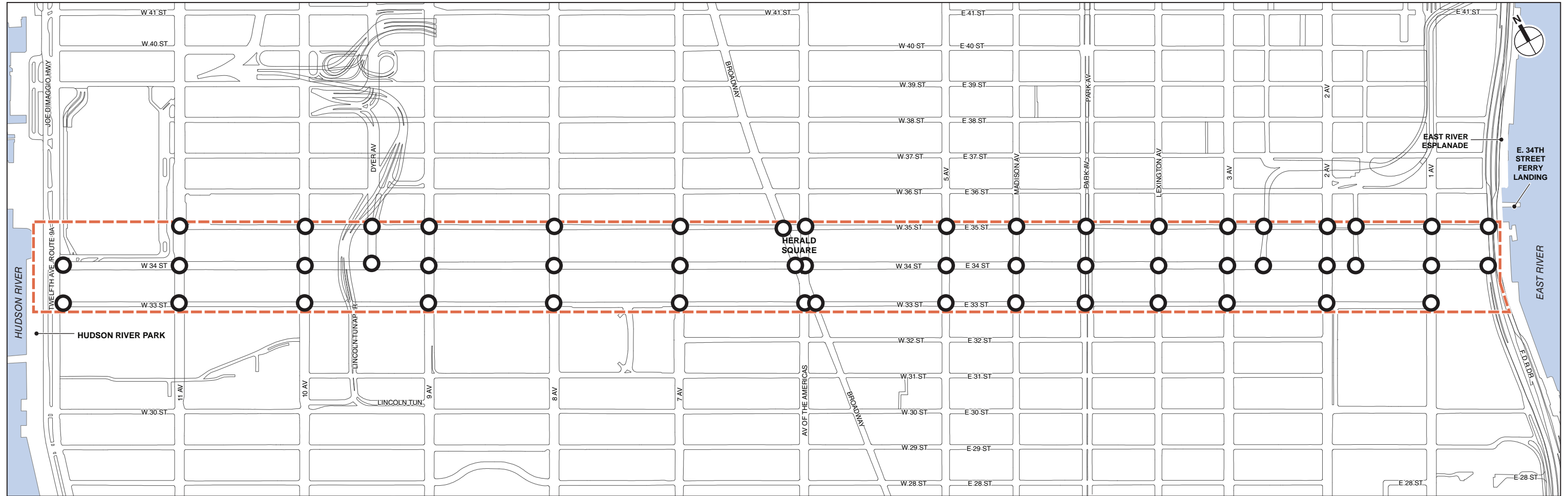
6-2 TRAFFIC

Per CEQR guidelines, this analysis considers current traffic conditions, as well as projected future traffic conditions in the study area with and without the Proposed Project, called the "Build" and "No Build" conditions respectively. The traffic analysis assumes that the construction of the Proposed Project would commence in summer 2012 and be completed by late fall of 2012. The 34th Street Select Bus Service would become operational at that time, therefore the future traffic condition analyses were performed for the year 2012. NYCDOT analyzed traffic flow within the study area for the 2009 Existing condition, the 2012 No Build condition, and the 2012 Build condition to determine the impacts of the Proposed Project.

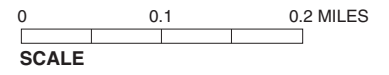
6-2-1 METHODOLOGY

Though the Proposed Project does not generate new passenger car trips, it will cause a diversion of current traffic from 34th Street to adjacent streets. Hence, an analysis was undertaken to determine the impacts of the Proposed Project.

The study area (**Figure 6-1**) for the traffic analysis extends from Twelfth Avenue/Route 9A on the West Side to FDR Drive Service Road on the East Side and from 35th Street



- Intersections Analyzed
- ▭ Traffic Study Area Boundary



34th Street Select Bus Service

in the north to 33rd Street in the south. This area includes fifty (50) signalized intersections and one (1) unsignalized intersection (at Twelfth Avenue/Route 9A and 33rd Street).

Based on data collected, traffic and pedestrian activity peaks during the weekday commuter hours. Thus, the following weekday peak hours were used for the traffic analysis:

- 8:00 AM – 9:00 AM
- 5:00 PM – 6:00 PM.

As recommended by the *CEQR Technical Manual*, the traffic analysis was conducted using procedures outlined in the Highway Capacity Manual (HCM) developed by Transportation Research Board (TRB). The HCM Version 2000 was used for the analysis. The traffic analysis was performed using traffic analysis software Synchro, and the outputs were analyzed using the HCM level of service (LOS) methodology for the fifty one (51) study area intersections.

LOS for signalized intersections is based on the average control delay time per vehicle for the various lane groups (grouping of movements in one or more travel lanes) within an intersection. This delay is the basis for an LOS determination for individual lane groups, the approaches, and the overall intersection. The levels of service as per 2000 HCM procedures are defined as follows:

LOS	Average Control Delay
A	≤ 10.0 seconds
B	>10.0 and ≤ 20.0 seconds
C	>20.0 and ≤ 35.0 seconds
D	>35.0 and ≤ 55.0 seconds
E	>55.0 and ≤ 80.0 seconds
F	>80.0 seconds

Source: Transportation Research Board. *Highway Capacity Manual*, 2000.

The New York City Department of Transportation (NYCDOT) considers a mid-LOS D or better (45.0 seconds of delay or less) to be an acceptable operating condition. Conditions that are worse than mid-LOS D (greater than 45.0 seconds of delay) are considered unacceptable. Following the criteria presented in the *CEQR Technical Manual*, impacts of the Proposed Project are considered significant and require examination of mitigation if they result in an increase of delay in a lane group over No Build levels of

- Five (5) or more seconds beyond mid-LOS D (delay greater than 45 seconds per vehicle);
- Four (4) or more seconds for LOS E; and
- Three (3) or more seconds for LOS F.

LOS for unsignalized intersections is based on the same criteria as signalized intersections. For a minor approach to trigger significant impacts however, 90 passenger cars equivalents (PCE's) must be identified in the Build conditions in any peak hour.

6-2-2 EXISTING CONDITIONS

A street inventory and traffic counts were conducted by NYCDOT in 2009. To determine how traffic currently flows in the study area, these traffic volumes were fed into the Synchro software, along with the signal timings and roadway geometry, to create the existing conditions analysis. The traffic volume networks for the existing conditions are shown in **Appendix A, Figure 1 to 4**.

Tables 6-1 and 6-2 show the existing delay and LOS for the analysis locations. Although most intersections in the traffic study area currently operate at an overall mid-LOS D or better during the AM and PM peak hours, individual lane groups at numerous intersections operate at mid-LOS D (delay of 45.0 seconds per vehicle) or worse. Of the 179 lane groups analyzed in the AM peak hour, 34 approach movements would operate at mid-LOS D or worse. Of the 174 approach movements analyzed in the PM peak hour, 35 approaches operate at mid-LOS D or worse.

6-2-3 2012 NO BUILD CONDITIONS

The 2012 No Build condition reflects background growth and changes in traffic operations or new development that will be realized absent the Proposed Project. To model future traffic conditions, the *CEQR Technical Manual* recommends an annual background growth rate of 0.25 percent a year for Manhattan. The planned future development projects listed in Chapter 2, "Project Alternatives," will not be completed by the year 2012, and therefore, are not included in the 2012 No Build condition. However, to account for the traffic generated by the reoccupation of some vacant buildings and storefronts in the area, a higher growth rate of 0.5 percent per year was used to develop the No Build traffic volumes. The 2012 No Build traffic volume networks are shown in **Appendix A, Figures 5 to 9**.

In addition to background traffic growth, three projects have resulted in changes in signal timings and roadway operations in the traffic study area: M15 Select Bus Service, Eighth Avenue bicycle lanes, and the midblock crossing on 34th Street between Eighth and Ninth Avenues. The resultant changes in traffic operations are reflected in the 2012 No Build condition. It should be noted that these projects result in additional intersection lane groups as compared to existing conditions.

Tables 6-1 and 6-2 show the No Build delay and LOS for the analysis locations. Of the 185 lane groups analyzed during the AM peak hour, 41 operate at mid-LOS D or worse. In the PM peak hour, of the 179 lane groups, 39 lane groups operate at mid-LOS D or worse. As compared to existing conditions, seven (7) and four (4) additional lane groups would operate at mid-LOS D or worse in the 2012 No Build AM and PM peak hours, respectively.

6-2-4 2012 BUILD CONDITIONS

The Proposed Project would result in changes in traffic operations on 34th Street as well as new signal timings at locations along 33rd, 34th, and 35th Street. As part of the Proposed Project, some turning movements off of 34th Street would be restricted.

- The Proposed Project would prohibit left-turn movements from westbound 34th Street to southbound Ninth Avenue. For the 2012 Build condition, that traffic is primarily expected to re-route to southbound Eleventh Avenue via 34th Street, by remaining on 34th Street by going through at Ninth Avenue, or to access

34th Street Select Bus Service

southbound Ninth Avenue via 35th Street. Re-routed traffic onto 35th Street is anticipated to turn right from Fifth Avenue to travel westbound instead of turning onto 34th Street. Westbound traffic diverted from 34th Street would use Madison Avenue, Park Avenue and Third Avenue to turn left onto 35th Street.

- The Proposed Project would prohibit the right-turn movement from westbound 34th Street to northbound Eighth Avenue except for buses. For the 2012 Build condition, the right-turn traffic is primarily expected to re-route to northbound Tenth Avenue and Route 9A or to turn right onto Eighth Avenue from 35th Street. Re-routed right turns using 35th Street are expected to turn left onto the street from northbound Madison Avenue, Park Avenue and Third Avenue after turning off of 34th Street.
- The Proposed Project would prohibit left-turn movements from eastbound 34th Street to northbound Madison Avenue except for buses and to northbound Third Avenue for all vehicles. To accommodate traffic diversions due to those prohibitions, the eastbound 34th Street left turn at First Avenue, which was previously removed as part of the First Avenue/Second Avenue Select Bus Service project, would be reinstated. A portion of the re-routed left turns would travel back westbound along 35th Street from First Avenue to Third Avenue, while left turns with destinations further north would remain on First Avenue.

Also part of the Proposed Project, right turn bays at key intersections and one left turn bay at First Avenue and East 34th Street is provided for general traffic.

To model the traffic impacts of the proposed project, NYCDOT redistributed traffic in the 2012 Build Traffic Volumes to account for traffic diversions as a result of the above-described turn regulations. The 2012 Build traffic volumes are shown in **Appendix A, Figures 9 to 12.**

A 2012 Build LOS analysis was performed using Synchro software. The Proposed Project's new lane configuration, signal timing and phasing changes, and turn restrictions were incorporated into the 2012 Build analysis. **Tables 6-1 and 6-2** present the LOS analysis results.

The proposed changes in roadway operations and signal timings result in more lane groups than analyzed in the No Build condition. Of the 186 lane groups analyzed in the 2012 Build AM peak hour, 30 groups would operate at mid-LOS D or worse. Of the 184 lane groups analyzed in the 2012 Build PM peak hour, 31 groups would operate at mid-LOS D or worse. As compared to the 2012 No Build conditions, eleven (11) and eight (8) fewer lane groups would operate at mid-LOS D or worse in the 2012 Build AM and PM peak hours, respectively.

The 2012 Build capacity and LOS analysis were compared to the 2012 No Build analysis to determine the impacts of the Proposed Project. For locations that operate at a Build mid-LOS D or worse, the net change in delay as compared to No Build conditions was calculated and compared to CEQR impact thresholds. The impact analysis is shown in **Tables 6-1 and 6-2.** Some lane groups are expected to incur increases in delays beyond the CEQR impact thresholds. However, consistent with CEQR impact assessment, these impacts are not considered significant since the Proposed Project would generate less than five (5) vehicles at these locations during the peak hour of analysis. Overall, therefore, the Proposed Project would not result in significant adverse impacts on traffic operations.

Table 6-1
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—AM (8AM to 9AM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
Route 9A & 34th Street	NB (Route 9A)	T	0.69	26.8	C	T	0.70	27.1	C	T	0.70	27.1	C			
		R	0.24	19.7	B	R	0.25	19.8	B	R	0.25	19.8	B			
	SB (Route 9A)	L	0.59	62.4	E	L	0.59	62.7	E	L	0.59	62.7	E	0.0 sec.	+4.0 sec	No
		T	0.94	23.7	C	T	0.95	25.5	C	T	0.95	25.5	C			
	WB (34th St)	LR	0.44	55.3	E	LR	0.44	55.4	E	LR	0.44	55.4	E	0.0 sec.	+4.0 sec	No
		R	0.43	36.0	D	R	0.43	36.2	D	R	0.43	36.2	D			
11th Avenue & 34th Street	SB (11th Ave)	LT	0.66	11.8	B	LT	0.67	11.9	B	LT	0.67	12.5	B			
		R	0.27	7.4	A	R	0.27	7.3	A	R	0.27	7.6	A			
	EB (34th St)	L	0.36	18.7	B	L	0.37	18.9	B	LTR	0.65	23.7	C			
		T	0.66	36.0	D	T	0.67	36.5	D							
	WB (34th St)	R	0.26	26.9	C	R	0.27	27.0	C							
		L	0.70	43.6	D	L	0.72	45.5	D	L	0.80	37.5	D			
WB (34th St)	TR	0.51	21.6	C	TR	0.51	22.2	C	TR	0.87	42.4	D				
10th Avenue & 34th Street	NB (10th Ave)	LTR	0.71	9.7	A	LTR	0.72	9.8	A	LTR	0.85	16.0	B			
	EB (34th St)	LT	0.56	36.4	D	LT	0.57	36.8	D	LT	0.89	41.5	D			
	WB (34th St)	T	0.45	23.2	C	T	0.46	23.4	C	T	0.73	26.4	C			
		R	0.44	26.2	C	R	0.44	26.5	C	R	0.52	20.6	C			
Dyer Avenue & 34th Street	SB (Dyer Ave)	LR	0.86	50.8	D	LR	0.87	52.7	D	LR	0.87	52.7	D	0.0 sec	+5.0 sec	No
		R	0.82	64.4	E	R	0.84	66.8	E	R	0.84	66.7	E	-0.1 sec	+4.0 sec	No
	EB (34th St)	T	0.25	16.1	B	T	0.26	16.3	B	T	0.41	18.2	B			
	WB (34th St)	T	0.25	7.4	A	T	0.25	7.5	A	T	0.54	10.5	B			
R		0.15	14.1	B	R	0.16	13.9	B	R	0.16	12.9	B				
9th Avenue & 34th Street	SB (9th Ave)	DefL	0.86	55.9	E	DefL	0.87	57.8	E	DefL	0.87	58.1	E	+0.3 sec	+4.0 sec	No
		TR	0.88	40.9	D	TR	0.90	50.7	D	TR	0.96	36.3	D			
	EB (34th St)	TR	0.96	53.0	D	TR	0.96	54.8	D	T	0.36	5.4	A			
		R	0.88	55.0	E	R	0.89	57.3	E	R	0.78	24.2	C			
	WB (34th St)	LT	0.54	8.8	A	LT	0.55	6.4	A	-	-	-	-			
8th Avenue & 34th Street	NB (8th Ave)	LTR	0.82	9.0	A	L	0.35	7.7	A	L	0.31	7.2	A			
						TR	0.76	7.2	A	TR	0.76	7.3	A			
	EB (34th St)	LT	0.87	43.4	D	LT	0.88	28.0	C	LT	0.58	14.5	B			
	WB (34th St)	TR	0.60	6.9	A	TR	0.61	7.2	A	T	0.65	7.5	A			
									R	0.13	7.1	A				

Table 6-1 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—AM (8AM to 9AM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
7th Avenue & 34th Street	SB (7th Ave)	LT	0.72	6.3	A	LT	0.73	6.4	A	LT	0.79	10.2	B			
	EB (34th St)	T	1.02	81.4	F	T	1.04	84.6	F	T	0.60	39.3	D			
		R	0.20	39.0	D	R	0.20	39.2	D	R	0.17	35.2	D			
6th Avenue/Broadway & 34th Street	WB (34th St)	LT	0.90	21.1	C	LT	0.91	23.2	C	LT	0.99	44.9	D			
	NB (6th Ave)	TR	0.69	1.8	A	TR	0.70	1.9	A	TR	0.70	1.9	A			
	EB (34th St)	T	0.94	50.7	D	T	0.95	51.9	D	T	0.69	53.2	D	+1.3 sec	+5.0 sec	No
WB (34th St)		TR	0.84	32.4	C	TR	0.86	33.4	C	T	0.82	32.3	C			
5th Avenue & 34th Street	SB (5th Ave)	L	0.55	12.1	B	L	0.56	12.5	B	L	0.56	11.0	B			
		T	0.93	17.5	B	T	0.94	19.9	B	T	0.94	18.5	B			
		R	0.59	11.9	B	R	0.59	12.3	B	R	0.39	6.6	A			
	EB (34th St)	T	0.72	32.7	C	T	0.73	33.0	C	T	0.42	25.2	C			
		R	0.66	36.2	D	R	0.68	36.6	D	R	0.68	41.9	D			
	WB (34th St)	LT	0.58	18.8	B	LT	0.59	18.9	B	LT	0.73	33.7	C			
Madison Avenue & 34th Street	NB (Madison Ave)	LTR	0.65	7.4	A	LTR	0.66	7.6	A	LTR	0.74	8.6	A			
	EB (34th St)	L	0.83	87.3	F	L	0.86	93.8	F	L	0.45	39.8	D			
		T	0.74	40.7	D	T	0.75	41.1	D	T	0.60	33.9	C			
	WB (34th St)	T	0.89	44.9	D	T	0.91	45.3	D	T	0.55	30.9	C			
R		0.38	30.7	C	R	0.39	30.7	C	R	0.61	36.6	D				
Park Avenue & 34th Street	NB (Park Ave)	LTR	0.60	9.9	A	LTR	0.60	10.0	B	LTR	0.60	10.1	B			
	SB (Park Ave)	LTR	0.82	11.6	B	LTR	0.83	12.1	B	LTR	0.84	12.4	B			
	EB (34th St)	LT	0.77	32.4	C	LT	0.78	32.8	C	LT	0.76	37.2	D			
		R	0.34	21.5	C	R	0.35	21.6	C	R	0.36	26.6	C			
	WB (34th St)	LT	0.99	47.3	D	LT	1.01	50.0	D	LT	0.83	33.9	C			
R		0.33	16.7	B	R	0.34	16.8	B	R	0.47	22.6	C				
Lexington Avenue & 34th Street	SB (Lexington Ave)	DefL	1.01	87.8	F	DefL	1.02	89.3	F	DefL	1.02	89.3	F	0.0 sec	+3.0 sec	No
		T	0.97	24.2	C	T	0.99	28.1	C	T	0.99	27.0	C			
		R	0.14	2.6	A	R	0.14	2.6	A	R	0.14	2.6	A			
	EB (34th St)	T	0.68	33.9	C	T	0.69	34.1	C	T	0.71	35.1	D			
		R	0.45	31.0	C	R	0.45	31.0	C	R	0.47	31.3	C			
	WB (34th St)	LT	1.00	65.6	E	LT	1.02	66.2	E	LT	0.87	51.6	D	-14.6 sec	+5.0 sec	No

Table 6-1 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—AM (8AM to 9AM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
3rd Avenue & 34th Street	NB (3rd Ave)	LT	0.68	10.6	B	LT	0.69	10.7	B	LT	0.69	12.3	B			
		DefR	0.72	24.7	C	DefR	0.73	25.4	C	DefR	0.73	26.4	C			
	EB (34th St)	L	0.45	18.7	B	L	0.47	22.1	C	-	-	-	-			
		T	0.78	14.8	B	T	0.79	15.7	B	T	0.91	37.1	D			
	WB (34th St)	TR	0.87	44.0	D	TR	0.93	57.8	E	T	0.80	26.7	C			
										R	0.25	7.2	A			
QMT Exit & 34th Street	SB (QMT Exit)	LR	0.31	24.0	C	LR	0.31	24.2	C	L	0.65	41.5	D			
		R	0.32	10.3	B	R	0.33	10.4	B	R	0.3	16.7	B			
	EB (34th St)	T	0.34	8.2	A	T	0.35	8.4	A	T	0.67	8.2	A			
	WB (34th St)	T	0.60	34.2	C	T	0.63	26.6	C	T	0.75	39.5	D			
2nd Avenue & 34th Street	SB (2nd Ave)	L	0.94	56.9	E	L	0.53	11.9	B	L	0.46	10.8	B			
		LT	0.97	51.8	D	T	0.95	77.5	E	T	0.95	77.4	E	-0.1 sec	+4.0 sec	No
		R	0.61	17.4	B	R	0.58	17.0	B	R	0.72	26.8	C			
	EB (34th St)	T	0.76	25.6	C	T	0.70	18.8	B	T	0.69	25.4	C			
		R	0.89	63.5	E	R	0.81	45.4	D	R	0.81	48.3	D	+ 2.9 sec	+5.0 sec	No
	WB (34th St)	LT	0.72	15.8	B	-	-	-	-	-	-	-	-			
QMT Entrance & 34th Street	EB (34th St)	L	0.63	28.4	C	L	0.66	29.4	C	L	0.61	20.8	C			
		LT	0.67	8.5	A	LT	0.68	13.5	B	T	0.89	44.7	D			
	WB (34th St)	TR	1.03	83.0	F	TR	0.93	46.0	D	T	0.65	10.1	B			
										R	0.46	7.2	A			
1st Avenue & 34th Street	NB (1st Ave)	LTR	0.80	9.6	A	L	0.27	15.8	B	L	0.56	32.1	C			
						T	0.68	3.6	A	T	0.91	26.0	C			
						R	0.57	5.6	A	R	0.63	11.4	B			
	EB (34th St)	LT	1.04	64.3	E	-	-	-	-	L	0.88	44.5	D			
						T	1.03	69.2	E	T	1.06	66.0	E	- 3.2 sec	+4.0 sec	No
	WB (34th St)	T	0.60	22.4	C	T	0.58	21.7	C	T	0.92	27.3	C			
R		0.60	26.0	C	R	0.83	36.7	D	R	0.74	23.8	C				
FDR Drive Service Road & 34th Street	NB (FDR Service Rd.)	L	1.05	80.7	F	L	1.06	85.6	F	L	1.06	85.6	F	0.0 sec.	+3.0 sec	No
		TR	0.39	8.6	A	TR	0.40	8.7	A	TR	0.40	8.7	A			
	SB (FDR Service Rd.)	TR	0.94	24.4	C	TR	0.95	25.7	C	TR	0.99	23.1	C			
	EB (34th St)	L	0.95	55.6	E	L	1.09	105.9	F	L	0.92	56.9	E	-49.0 sec	+3.0 sec	No
						TR	0.82	37.4	D	TR	0.84	35.4	D			
	WB (Heliport Exit)	R	0.88	34.4	C	R	0.89	33.6	C	R	0.89	35.6	D			
	TR	0.09	26.3	C	TR	0.09	26.3	C	TR	0.09	26.3	C				

Table 6-1 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—AM (8AM to 9AM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
11th Avenue & 35th Street	NB (11th Ave)	T	0.07	16.3	B	T	0.07	16.4	B	T	0.07	13.5	B			
	SB (11th Ave)	T	0.46	18.6	B	T	0.47	18.7	B	T	0.47	18.7	B			
	WB (35th St)	L	0.19	24.7	C	L	0.20	24.7	C	L	0.21	25.5	C			
		R	0.27	26.4	C	R	0.27	26.4	C	R	0.27	26.7	C			
10th Avenue & 35th Street	NB (10th Ave)	LT	0.55	5.8	A	LT	0.56	5.9	A	LT	0.57	5.9	A			
	WB (35th St)	TR	0.84	46.0	D	TR	0.86	47.1	D	TR	0.88	48.6	D	+1.5 sec	+5.0 sec	No
Dyer Avenue & 35th Street	NB (Dyer Ave)	R	0.07	3.4	A	R	0.07	3.5	A	R	0.07	6.5	A			
	SB (Dyer Ave)	T	0.70	42.3	D	T	0.71	43.6	D	T	0.71	43.6	D			
		R	0.55	37.1	D	R	0.55	37.6	D	R	0.55	37.6	D			
	WB (35th St)	LTR	0.88	44.5	D	LTR	0.89	46.3	D	LTR	0.91	49.2	D	+2.4 sec	+5.0 sec	No
9th Avenue & 35th Street	SB (9th Ave)	TR	0.57	16.1	B	TR	0.58	16.5	B	TR	0.58	16.5	B			
	WB (35th St)	L	0.39	24.7	C	L	0.39	25.1	C	L	0.69	41.3	D			
		T	0.52	23.2	C	T	0.53	23.7	C	T	0.55	28.8	C			
8th Avenue & 35th Street	NB (8th Ave)	LT	0.53	3.9	A	LT	0.54	3.7	A	LT	0.51	1.9	A			
	WB (35th St)	T	0.46	13.0	B	T	0.47	13.0	B	T	0.60	11.7	B			
		R	0.62	26.8	C	R	0.63	27.5	C	R	0.87	42.8	D			
7th Avenue & 35th Street	SB (7th Ave)	TR	0.69	32.8	C	TR	0.70	37.2	D	TR	0.70	37.2	D			
		R	0.67	72.4	E	R	0.68	75.6	E	R	0.68	75.6	E	0.0 sec	+4.0 sec	No
	WB (35th St)	L	0.98	64.7	E	L	1.00	68.3	E	L	0.81	27.2	C			
Broadway & 35th Street	SB (Broadway)	R	0.69	43.3	D	R	0.71	44.6	D	R	0.71	44.6	D			
		T	0.65	10.3	B	T	0.66	10.6	B	T	0.83	27.7	C			
	WB (35th St)	T	0.73	25.5	C	T	0.74	25.8	C	T	0.95	42.7	D			
6th Avenue & 35th Street	NB (6th Ave)	LT	0.65	4.5	A	LT	0.66	4.5	A	LT	0.66	4.6	A			
	WB (35th St)	T	0.73	25.5	C	T	0.74	25.8	C	T	0.95	42.7	D			
		R	0.95	60.9	E	R	0.97	63.2	E	R	0.97	58.3	E	-4.3 sec	+4.0 sec	No
5th Avenue & 35th Street	SB (5th Ave)	TR	0.79	5.4	A	TR	0.80	5.6	A	TR	0.84	8.1	A			
	WB (35th St)	L	0.99	89.4	F	L	1.01	92.0	F	L	0.87	59.1	E	-32.9 sec	+3.0 sec	No
		T	0.85	38.4	D	T	0.86	38.8	D	T	0.95	44.6	D			
Madison Avenue & 35th Street	NB (Madison Ave)	LT	0.73	13.3	B	LT	0.74	13.7	B	LT	0.78	15.7	B			
	WB (35th St)	T	0.90	37.5	D	T	0.91	38.7	D	T	0.95	42.5	D			
		R	0.65	42.6	D	R	0.66	42.7	D	R	0.66	42.0	D			
Park Avenue & 35th Street	NB (Park Ave)	LT	0.95	30.9	C	LT	0.96	33.3	C	LT	0.99	40.8	D			
	SB (Park Ave)	TR	0.75	23.8	C	TR	0.76	24.3	C	TR	0.76	24.3	C			
	WB (35th St)	LTR	0.83	34.6	C	LTR	0.84	35.3	D	LTR	0.85	39.5	D			

Table 6-1 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—AM (8AM to 9AM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
Lexington Avenue & 35th Street	SB (Lexington Ave)	TR	0.81	22.3	C	TR	0.83	23.0	C	TR	0.83	23.0	C	+1.6 sec	+3.0 sec	No
	WB (35th St)	L	0.96	86.7	F	L	0.97	89.3	F	L	0.97	90.9	F			
3rd Avenue & 35th Street	NB (3rd Ave)	LT	0.59	3.9	A	LT	0.61	4.5	A	LT	0.61	4.5	A			
	WB (35th St)	T	0.66	34.3	C	T	0.67	36.5	D	T	0.67	27.2	C			
QMT Exit & 35th Street	SB (QMT Exit)	R	0.48	42.1	D	R	0.49	42.2	D	R	0.58	41.6	D			
		L	0.86	34.0	C	L	0.87	35.4	D	L	0.87	35.4	D			
	LTR	0.87	35.7	D	LTR	0.88	37.3	D	LTR	0.88	37.3	D				
	R	0.76	45.8	D	R	0.77	54.1	D	R	0.77	29.4	C				
WB (35th St)	LT	0.66	30.6	C	LT	0.67	31.8	C	LT	0.71	33.2	C				
2nd Avenue & 35th Street	SB (2nd Ave)	T	0.79	26.4	C	T	0.81	39.5	D	T	0.81	40.7	D			
		R	0.85	41.1	D	R	0.86	42.1	D	R	0.86	45.6	D	+3.5 sec	+5.0 sec	No
	EB (35th St)	R	0.99	42.2	D	R	1.01	45.7	D	R	1.01	45.7	D	0.0 sec	+5.0 sec	No
WB (35th St)	LT	0.45	4.5	A	LT	0.59	29.9	C	LT	0.62	28.2	C				
QMT Entrance & 35th Street	NB (QMT Entrance)	LT	0.19	15.7	B	LT	0.34	21.5	C	LT	0.34	16.7	B			
	WB (35th St)	TR	0.41	12.8	B	TR	0.42	12.7	B	TR	0.44	14.1	B			
1st Avenue & 35th Street	NB (1st Ave)	LT	0.68	5.3	A	L	0.30	4.0	A	L	0.35	5.9	A			
		T	0.58	34.0	C	T	0.75	5.1	A	T	0.83	7.6	A			
	WB (35th St)	R	0.51	33.1	C	R	0.57	34.8	C	R	0.51	20.6	C			
FDR Drive Service Road & 35th Street	NB (FDR Service Rd.)	L	0.67	23.5	C	L	0.73	23.8	C	L	0.68	19.2	B			
		T	0.28	6.6	A	T	0.31	6.5	A	T	0.27	4.7	A			
	SB (FDR Service Rd.)	TR	0.99	60.1	E	TR	1.01	67.0	E	TR	1.01	55.6	E	-11.4 sec	+4.0 sec	No
Route 9A & 33rd Street*	WB (33rd St)	R	0.32	18.2	C	R	0.33	18.6	C	R	0.33	18.6	C			
11th Avenue & 33rd Street	SB (11th Ave)	TR	0.42	4.9	A	TR	0.43	5.0	A	TR	0.45	4.5	A			
	WB (33rd St)	L	0.37	28.4	C	L	0.38	28.3	C	L	0.38	28.3	C			
10th Avenue & 33rd Street	LT	0.37	28.8	C	LT	0.38	28.8	C	LT	0.38	28.8	C				
	NB (10th Ave)	LT	0.55	14.3	B	LT	0.56	14.4	B	LT	0.56	14.6	B			
9th Avenue & 33rd Street	WB (33rd St)	TR	0.44	23.9	C	TR	0.44	24.0	C	TR	0.44	24.0	C			
	SB (9th Ave)	TR	0.59	16.8	B	TR	0.60	18.7	B	TR	0.58	10.7	B			
8th Avenue & 33rd Street	WB (33rd St)	LT	0.63	46.1	D	LT	0.64	45.4	D	LT	0.67	47.1	D	+1.7 sec	+5.0 sec	No
	NB (8th Ave)	LT	0.80	67.7	E	L	0.75	53.2	D	L	0.79	57.3	E	+4.1 sec	+5.0sec	No
8th Avenue & 33rd Street	WB (33rd St)	T	0.11	12.3	B	T	0.72	39.1	D	T	0.71	38.1	D			
		R	0.27	15.8	B	R	0.27	15.8	B	R	0.27	15.7	B			

Table 6-1 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—AM (8AM to 9AM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
7th Avenue & 33rd Street	SB (7th Ave)	TR	0.68	2.2	A	TR	0.69	2.2	A	TR	0.69	2.3	A			
	WB (33rd St)	LT	0.87	76.6	E	LT	0.89	78.3	E	LT	0.89	78.3	E	0.0 sec	+4.0 sec	No
6th Avenue & 33rd Street	NB (6th Ave)	L	0.67	37.2	D	L	0.67	45.7	D	L	0.67	45.7	D	0.0 sec	+5.0 sec	No
		T	0.66	45.1	D	T	0.68	41.0	D	T	0.68	41.0	D			
Broadway & 33rd Street	WB (33rd St)	L	0.93	70.7	E	L	0.94	72.2	E	L	0.94	72.2	E	0.0 sec	+4.0 sec	No
5th Avenue & 33rd Street	SB (5th Ave)	T	0.74	8.2	A	T	0.76	9.8	A	T	0.76	9.8	A			
		R	0.66	13.1	B	R	0.67	13.2	B	R	0.67	13.2	B			
Madison Avenue & 33rd Street	WB (33rd St)	LT	0.88	58.0	E	LT	0.89	59.6	E	LT	0.89	59.6	E	0.0 sec	+4.0 sec	No
	NB (Madison Ave)	LT	0.68	19.4	B	LT	0.69	19.8	B	LT	0.69	19.8	B			
Park Avenue & 33rd Street	WB (33rd St)	TR	0.43	22.2	C	TR	0.43	22.3	C	TR	0.43	22.4	C			
		T	0.55	16.2	B	T	0.56	16.3	B	T	0.56	16.3	B			
		TR	0.88	12.9	B	TR	0.90	13.7	B	TR	0.90	13.7	B			
Lexington Avenue & 33rd Street	SB (Lexington Ave)	R	0.82	28.2	C	R	0.83	28.7	C	R	0.83	32.6	C			
		TR	0.80	7.7	A	TR	0.81	8.9	A	TR	0.84	7.3	A			
		LT	0.92	44.9	D	LT	0.93	46.9	D	LT	0.88	51.6	D	+4.7 sec	+5.0 sec	No
3rd Avenue & 33rd Street	NB (3rd Ave)	LT	0.52	12.3	B	LT	0.53	12.4	B	LT	0.53	12.4	B			
		TR	0.81	42.6	D	TR	0.82	44.3	D	TR	0.82	36.9	D			
2nd Avenue & 33rd Street	SB (2nd Ave)	T	0.89	22.4	C	T	0.88	7.1	A	T	0.88	7.1	A			
		R	0.57	6.0	A	R	0.58	4.5	A	R	0.58	4.5	A			
		L	0.51	36.1	D	L	0.52	34.8	C	L	0.52	37.0	D			
1st Avenue & 33rd Street	NB (1st Ave)	T	0.36	32.2	C	T	0.37	31.4	C	T	0.37	33.4	C			
		LT	0.99	24.4	C	L	0.98	63.2	E	L	0.98	63.2	E	0.0 sec	+4.0 sec	No
		T	0.85	21.1	C	T	0.85	25.1	C	T	0.85	25.1	C			

Notes:
 * Stop-sign controlled intersection.
Bold values indicate a mid-LOS D (45.0 seconds of delay or more), LOS E, or LOS F operating condition.
 NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound
 DefL = Defacto Left-turn; L = Left-turn; T = Through; R = Right-turn
 A Defacto Left-turn is an intersection operating condition in which a shared lane (i.e., left-turn / through lane) effectively operates as an exclusive left-turn lane.
Sources:
 City Environmental Quality Review Technical Manual (Mayor's Office of Environmental Coordination, 2010)
 New York City Department of Transportation

Table 6-2
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—PM (5PM to 6PM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
Route 9A & 34th Street	NB (Route 9A)	T	0.83	25.3	C	T	0.84	25.9	C	T	0.84	25.9	C			
		R	0.22	13.5	B	R	0.22	13.5	B	R	0.22	13.5	B			
	SB (Route 9A)	L	0.96	111.0	F	L	0.97	114.3	F	L	0.97	114.3	F	0.0 sec	+3.0 sec	No
		T	0.89	19.7	B	T	0.91	20.7	C	T	0.91	20.7	C			
	WB (34th St)	LR	0.50	56.3	E	LR	0.51	56.5	E	LR	0.54	57.4	E	+0.9 sec	+4.0 sec	No
		R	0.46	45.1	D	R	0.47	45.2	D	R	0.51	46.6	D	+1.4 sec	+5.0 sec	No
11th Avenue & 34th Street	SB (11th Ave)	LT	0.52	11.5	B	LT	0.53	11.6	B	LT	0.54	12.1	B			
		R	0.20	8.0	A	R	0.21	8.0	A	R	0.21	8.3	A			
	EB (34th St)	L	0.35	18.2	B	L	0.36	18.4	B	LTR	0.59	20.7	C			
		T	0.60	33.8	C	T	0.61	34.0	C							
	WB (34th St)	R	0.23	26.5	C	R	0.23	26.6	C							
		L	0.23	17.1	B	L	0.23	17.2	B	L	0.56	20.0	B			
TR	0.45	23.2	C	TR	0.46	23.4	C	TR	0.89	40.2	D					
10th Avenue & 34th Street	NB (10th Ave)	LTR	0.63	8.4	A	LTR	0.64	8.5	A	LTR	0.66	8.7	A			
	EB (34th St)	LT	0.45	49.8	D	LT	0.46	50.0	D	LT	0.91	54.9	D	+4.9 sec	+5.0 sec	No
		TR	0.91	46.7	D	TR	0.92	48.7	D	T	0.88	45.0	D	-3.7 sec	+5.0 sec	No
R	0.86	52.9	D										+4.2 sec	+5.0 sec	No	
Dyer Avenue & 34th Street	SB (Dyer Ave)	LR	0.64	33.5	C	LR	0.65	34.2	C	LR	0.65	34.2	C			
		R	0.75	55.2	E	R	0.76	56.9	E	R	0.76	56.9	E	0.0 sec	+4.0 sec	No
	EB (34th St)	T	0.21	14.0	B	T	0.22	14.3	B	T	0.35	20.3	C			
		T	0.18	4.9	A	T	0.18	4.9	A	T	0.44	6.1	A			
WB (34th St)	R	0.27	16.0	B	R	0.28	15.8	B	R	0.29	15.2	B				
	R	0.27	16.0	B	R	0.28	15.8	B	R	0.29	15.2	B				
9th Avenue & 34th Street	SB (9th Ave)	DefL	0.84	81.8	F	DefL	0.87	86.3	F	DefL	0.87	86.1	F	-0.2 sec	+3.0 sec	No
		TR	0.80	22.2	C	TR	0.82	22.8	C	TR	0.84	23.7	C			
	EB (34th St)	T	0.75	30.8	C	T	0.76	31.2	C	T	0.45	7.3	A			
		R	0.72	41.4	D	R	0.73	42.0	D	R	0.51	11.3	B			
	WB (34th St)	LT	0.65	12.8	B	LT	0.66	9.7	A	-	-	-	-			
		T	0.71	7.5	A											
8th Avenue & 34th Street	NB (8th Ave)	LT	0.92	16.2	B	L	0.46	10.1	B	L	0.41	9.2	A			
		DefR	0.86	104.1	F	DefR	0.86	117.0	F	DefR	0.86	117.0	F	0.0 sec	+3.0 sec	No
	EB (34th St)	LT	0.67	42.3	D	LT	0.68	21.1	C	LT	0.56	11.9	B			
		T	0.73	7.6	A											
	WB (34th St)	TR	0.61	6.3	A	TR	0.62	6.8	A	R	0.08	5.9	A			

Table 6-2 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—PM (5PM to 6PM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
7th Avenue & 34th Street	SB (7th Ave)	LT	0.66	5.3	A	LT	0.67	5.4	A	LT	0.73	7.5	A			
	EB (34th St)	TR	1.00	84.4	F	TR	1.01	86.8	F	T	0.67	43.0	D			
		R	0.05	32.2	C											
6th Avenue/Broadway & 34th Street	WB (34th St)	LT	0.86	12.5	B	LT	0.88	13.2	B	LT	1.02	44.8	D			
	NB (6th Ave)	TR	0.62	1.5	A	TR	0.63	1.6	A	TR	0.67	3.9	A			
	EB (34th St)	T	0.83	47.9	D	T	0.84	45.7	D	T	0.62	47.2	D	+1.5 sec	+5.0sec	No
WB (34th St)		TR	0.88	35.3	D	TR	0.89	36.9	D	T	0.90	40.6	D			
5th Avenue & 34th Street	SB (5th Ave)	L	0.50	12.1	B	L	0.51	12.2	B	L	0.51	12.2	B			
		T	0.84	12.7	B	T	0.85	13.3	B	T	0.86	13.6	B			
		R	0.57	15.0	B	R	0.57	15.0	B	R	0.51	12.5	B			
	EB (34th St)	TR	0.94	56.1	E	TR	0.95	57.2	E	T	0.40	28.3	C			
		R	0.58	39.9	D											
	WB (34th St)	LT	0.52	17.6	B	LT	0.52	17.7	B	LT	0.65	26.6	C			
Madison Avenue & 34th Street	NB (Madison Ave)	LTR	0.71	9.0	A	LTR	0.72	9.2	A	LTR	0.72	9.2	A			
	EB (34th St)	L	0.20	25.0	C	L	0.21	25.3	C	L	0.03	25.5	C			
		T	0.78	38.0	D	T	0.79	38.4	D	T	0.75	44.4	D			
	WB (34th St)	T	0.91	45.8	D	T	0.92	46.7	D	T	0.63	34.4	C			
R		0.42	29.5	C	R	0.43	29.6	C	R	0.70	44.6	D				
Park Avenue & 34th Street	NB (Park Ave)	LTR	0.60	8.7	A	LTR	0.61	8.8	A	LTR	0.62	9.6	A			
	SB (Park Ave)	LTR	0.75	11.8	B	LTR	0.76	12.0	B	LTR	0.78	13.0	B			
	EB (34th St)	LT	0.90	40.4	D	LT	0.91	41.9	D	LT	0.92	43.7	D			
		R	0.18	17.2	B	R	0.19	17.3	B	R	0.19	16.9	B			
	WB (34th St)	LT	0.91	38.9	D	LT	0.92	40.0	D	LT	0.70	26.2	C			
R		0.48	21.7	C	R	0.49	21.7	C	R	0.58	26.0	C				
Lexington Avenue & 34th Street	SB (Lexington Ave)	LTR	0.75	8.6	A	LTR	0.76	8.7	A	LTR	0.76	8.7	A			
	EB (34th St)	T	0.78	37.2	D	T	0.79	37.5	D	T	0.83	39.9	D			
		R	0.32	26.7	C	R	0.32	26.7	C	R	0.33	27.1	C			
	WB (34th St)	LT	0.88	44.9	D	LT	0.89	46.0	D	LT	0.73	21.0	C			

Table 6-2 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—PM (5PM to 6PM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
3rd Avenue & 34th Street	NB (3rd Ave)	LT	0.86	15.4	B	LT	0.87	15.9	B	LT	0.86	15.9	B	+0.3 sec	+4.0 sec	No
		R	0.94	55.1	E	R	0.95	58.3	E	R	0.95	58.6	E			
	EB (34th St)	L	0.49	19.8	B	L	0.51	23.0	C	-	-	-	-			
		T	0.54	4.8	A	T	0.55	5.0	A	T	0.69	4.9	A			
	WB (34th St)	TR	0.69	24.1	C	TR	0.75	27.0	C	T	0.53	14.4	B			
										R	0.45	14.9	B			
QMT Exit & 34th Street	SB (QMT Exit)	LR	0.31	23.7	C	LR	0.32	23.9	C	L	0.49	44.1	D			
		R	0.31	10.1	B	R	0.31	10.3	B	R	0.32	20.3	C			
	EB (34th St)	T	0.33	5.7	A	T	0.34	5.8	A	T	0.71	13.0	B			
	WB (34th St)	T	0.38	31.4	C	T	0.41	29.6	C	T	0.61	34.3	C			
2nd Avenue & 34th Street	SB (2nd Ave)	L	0.88	41.7	D	L	0.31	7.8	A	L	0.52	11.9	B			
		LT	0.88	20.2	C	T	0.93	46.4	D	T	0.99	31.8	C			
		R	0.41	10.3	B	R	0.40	10.2	B	R	0.42	9.6	A			
	EB (34th St)	T	0.62	22.4	C	T	0.57	18.5	B	T	0.63	20.5	C			
		R	0.60	32.9	C	R	0.54	25.6	C	R	0.50	24.2	C			
	WB (34th St)	LT	0.41	2.2	A	-	-	-	-	-	-	-	-			
					T	0.26	27.2	C	T	0.41	21.2	C				
QMT Entrance & 34th Street	EB (34th St)	L	0.15	4.3	A	L	0.22	8.6	A	L	0.23	6.3	A			
		LT	0.60	6.7	A	LT	0.55	10.1	B	LT	0.94	41.8	D			
	WB (34th St)	TR	1.05	73.1	E	T	0.79	40.0	D	T	0.68	20.7	C			
						R	1.01	83.9	F	R	1.01	63.8	E			
1st Avenue & 34th Street	NB (1st Ave)	L	0.38	14.5	B	L	0.67	39.4	D	L	0.67	39.4	D			
		T	0.72	3.0	A	T	0.89	32.8	C	T	0.89	32.8	C			
		R	0.52	2.6	A	R	0.54	18.9	B	R	0.54	18.9	B			
	EB (34th St)	LT	0.93	45.1	D	-	-	-	-	L	0.92	53.8	D			
						T	0.90	49.8	D	T	1.00	54.2	D			
	WB (34th St)	T	0.57	22.0	C	T	0.56	21.9	C	T	0.93	40.5	D			
R		0.47	23.9	C	R	0.53	25.5	C	R	0.51	22.5	C				
FDR Drive Service Road & 34th Street	NB (FDR Service Rd.)	L	0.98	57.3	E	L	0.99	58.9	E	L	0.99	58.9	E	0.0 sec	+4.0 sec	No
		TR	0.28	7.5	A	TR	0.29	7.6	A	TR	0.29	7.6	A			
	SB (FDR Service Rd.)	TR	0.70	11.9	B	TR	0.69	11.1	B	TR	0.71	12.7	B			
	EB (34th St)	L	0.80	41.2	D	L	0.92	55.5	E	L	0.81	40.9	D			
		LT	0.82	43.8	D	LT	0.95	62.2	E	LT	0.84	44.6	D			
	WB (Heliport Exit)	R	0.92	41.0	D	R	0.93	42.5	D	R	0.93	42.0	D			
	TR	0.06	25.9	C	TR	0.06	25.9	C	TR	0.06	25.9	C				

Table 6-2 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—PM (5PM to 6PM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
11th Avenue & 35th Street	NB (11th Ave)	T	0.07	16.8	B	T	0.07	17.4	B	T	0.07	15.0	B			
	SB (11th Ave)	T	0.35	17.0	B	T	0.36	17.0	B	T	0.36	17.0	B			
	WB (35th St)	L	0.26	29.2	C	L	0.26	29.3	C	L	0.28	30.1	C			
		R	0.13	26.8	C	R	0.13	26.8	C	R	0.13	27.2	C			
10th Avenue & 35th Street	NB (10th Ave)	LT	0.51	5.6	A	LT	0.52	5.6	A	LT	0.52	6.1	A			
	WB (35th St)	TR	0.52	38.0	D	TR	0.53	38.2	D	TR	0.56	38.1	D			
Dyer Avenue & 35th Street	NB (Dyer Ave)	R	0.13	5.2	A	R	0.13	5.5	A	R	0.15	8.0	A			
	SB (Dyer Ave)	T	0.49	29.4	C	T	0.49	30.1	C	T	0.49	30.1	C			
		R	0.66	41.0	D	R	0.67	41.6	D	R	0.67	41.6	D			
	WB (35th St)	LTR	0.78	32.2	C	LTR	0.79	33.3	C	LTR	0.79	33.4	C			
9th Avenue & 35th Street	SB (9th Ave)	TR	0.43	12.6	B	TR	0.43	12.8	B	TR	0.43	12.8	B			
	WB (35th St)	L	0.77	46.5	D	L	0.79	47.9	D	L	0.83	52.8	D	+4.9 sec	+5.0 sec	No
		T	0.52	29.0	C	T	0.53	29.4	C	T	0.53	29.9	C			
8th Avenue & 35th Street	NB (8th Ave)	LT	0.50	4.3	A	LT	0.51	4.1	A	LT	0.46	1.6	A			
	WB (35th St)	T	0.67	15.6	B	T	0.68	15.6	B	T	0.72	15.6	B			
		R	0.66	23.4	C	R	0.67	23.8	C	R	0.88	39.1	D			
7th Avenue & 35th Street	SB (7th Ave)	TR	0.62	23.2	C	TR	0.63	25.1	C	TR	0.66	32.9	C			
	WB (35th St)	L	0.95	63.3	E	L	0.97	66.2	E	L	0.87	39.2	D			
		T	0.87	35.6	D	T	0.89	36.9	D	T	0.96	43.7	D			
Broadway & 35th Street	SB (Broadway)	R	0.86	65.8	E	R	0.87	68.1	E	R	0.87	68.1	E	0.0 sec	+4.0 sec	No
	WB (35th St)	T	0.66	24.5	C	T	0.67	27.4	C	T	0.76	13.3	B			
6th Avenue & 35th Street	NB (6th Ave)	LT	0.55	3.5	A	LT	0.56	3.6	A	LT	0.56	2.1	A			
	WB (35th St)	TR	0.98	61.9	E	TR	0.99	66.3	E	T	0.75	25.0	C			
		R	0.57	22.9	C											
5th Avenue & 35th Street	SB (5th Ave)	TR	0.67	30.4	C	TR	0.68	33.5	C	TR	0.68	33.5	C			
	WB (35th St)	L	0.95	94.5	F	L	0.97	97.9	F	L	0.97	94.9	F	-3.0 sec	+3.0 sec	No
		T	0.71	35.5	D	T	0.73	35.8	D	T	0.87	44.7	D			
Madison Avenue & 35th Street	NB (Madison Ave)	LT	0.69	13.6	B	LT	0.70	14.0	B	LT	0.73	14.5	B			
	WB (35th St)	T	0.71	27.6	C	T	0.72	27.8	C	T	0.77	29.7	C			
		R	0.59	41.3	D	R	0.60	41.5	D	R	0.67	43.9	D			
Park Avenue & 35th Street	NB (Park Ave)	LT	0.93	29.5	C	LT	0.95	33.3	C	LT	0.99	40.6	D			
	SB (Park Ave)	TR	0.61	18.0	B	TR	0.62	18.2	B	TR	0.62	18.3	B			
	WB (35th St)	LTR	0.70	27.8	C	LTR	0.72	28.1	C	LTR	0.76	28.9	C			

Table 6-2 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—PM (5PM to 6PM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
Lexington Avenue & 35th Street	SB (Lexington Ave)	TR	0.68	17.8	B	TR	0.69	18.1	B	TR	0.69	18.1	B			
	WB (35th St)	L	1.01	93.4	F	L	1.02	94.5	F	L	1.02	93.5	F	-1.0 sec	+3.0 sec	No
3rd Avenue & 35th Street	NB (3rd Ave)	LT	0.62	3.6	A	LT	0.64	4.1	A	LT	0.66	3.3	A			
	WB (35th St)	T	0.96	59.3	E	T	0.98	64.4	E	T	0.98	64.1	E	-0.3 sec	+4.0 sec	No
QMT Exit & 35th Street	SB (QMT Exit)	R	0.50	34.7	C	R	0.51	34.9	C	R	0.59	38.1	D			
		L	0.83	31.5	C	L	0.84	32.7	C	L	0.84	32.7	C			
2nd Avenue & 35th Street	SB (2nd Ave)	LTR	0.85	33.9	C	LTR	0.86	37.0	D	LTR	0.86	36.9	D			
		R	0.85	35.2	D	R	0.86	38.2	D	R	0.86	38.1	D			
QMT Entrance & 35th Street	WB (35th St)	LT	0.39	37.8	D	LT	0.40	37.6	D	LT	0.43	37.0	D			
		T	0.71	54.5	D	T	0.71	55.9	E	T	0.71	55.9	E	0.0 sec	+4.0 sec	No
1st Avenue & 35th Street	SB (35th St)	R	1.02	96.6	F	R	1.03	100.6	F	R	1.03	100.6	F	0.0 sec	+3.0 sec	No
		R	1.01	49.2	D	R	1.03	52.9	D	R	1.03	52.9	D	0.0 sec	+5.0 sec	No
FDR Drive Service Road & 35th Street	WB (35th St)	LT	0.00	1.3	A	LT	0.04	25.7	C	LT	0.06	31.0	C			
		LT	0.17	10.8	B	LT	0.19	9.5	A	LT	0.20	9.6	A			
Route 9A & 33rd Street*	NB (QMT Entrance)	TR	0.04	17.0	B	TR	0.04	17.0	B	TR	0.04	17.0	B			
		T	0.62	4.3	A	T	0.74	3.8	A	T	0.82	7.5	A			
11th Avenue & 33rd Street	WB (35th St)	R	0.90	65.0	E	R	0.98	80.2	F	R	0.91	66.9	E	-13.3 sec	+3.0sec	No
		L	0.50	22.5	C	L	0.56	22.7	C	L	0.51	22.8	C			
10th Avenue & 33rd Street	NB (FDR Service Rd.)	T	0.29	5.5	A	T	0.32	5.4	A	T	0.30	5.5	A			
		TR	0.80	29.8	C	TR	0.79	29.6	C	TR	0.79	29.5	C			
9th Avenue & 33rd Street	WB (33rd St)	R	0.63	34.2	D	R	0.65	36.3	E	R	0.65	36.3	E	0.0 sec	+4.0 sec	No
		TR	0.30	2.8	A	TR	0.30	2.9	A	TR	0.33	3.0	A			
8th Avenue & 33rd Street	WB (33rd St)	L	0.29	22.3	C	L	0.29	22.4	C	L	0.29	22.4	C			
		LT	0.48	26.9	C	LT	0.48	27.0	C	LT	0.48	27.0	C			
9th Avenue & 33rd Street	NB (10th Ave)	LT	0.52	13.7	B	LT	0.52	13.9	B	LT	0.52	13.8	B			
		TR	0.45	23.7	C	TR	0.45	23.8	C	TR	0.45	23.8	C			
8th Avenue & 33rd Street	WB (9th Ave)	T	0.52	10.5	B	T	0.53	10.7	B	T	0.51	5.9	A			
		R	0.89	46.5	D	R	0.91	49.8	D	R	0.91	45.8	D	-4.0 sec	+5.0 sec	No
8th Avenue & 33rd Street	WB (33rd St)	L	0.70	51.4	D	L	0.71	52.9	D	L	0.71	53.0	D	+0.1 sec	+5.0 sec	No
		T	0.73	43.5	D	T	0.74	44.5	D	T	0.74	44.6	D			
8th Avenue & 33rd Street	NB (8th Ave)	DefL	0.99	86.3	F	L	0.91	65.2	E	L	0.91	65.2	E	0.0 sec	+4.0 sec	No
		T	0.83	111.2	F	T	0.69	32.5	C	T	0.69	32.5	C			
8th Avenue & 33rd Street	WB (33rd St)	T	0.34	15.3	B	T	0.34	15.3	B	T	0.34	15.5	B			
		R	0.30	16.6	B	R	0.30	16.5	B	R	0.30	16.7	B			

Table 6-2 (continued)
Existing, No Build, and Build Traffic Level of Service (LOS) Analysis Results—PM (5PM to 6PM) Peak Hour

Intersection	Approach	2009 Existing Conditions				2012 No Build Conditions				2012 Build Conditions				Impact Assessment		
		Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Lane Group	V/C	Delay	LOS	Change in Delay (Build - No Build)	CEQR Impact Threshold	Significant Impact
7th Avenue & 33rd Street	SB (7th Ave)	TR	0.65	2.3	A	TR	0.66	2.4	A	TR	0.66	3.1	A			
	WB (33rd St)	LT	0.83	66.3	E	LT	0.84	67.2	E	LT	0.84	67.2	E	0.0 sec	+4.0 sec	No
6th Avenue & 33rd Street	NB (6th Ave)	L	0.73	50.3	D	L	0.74	51.2	D	L	0.74	51.2	D	0.0 sec	+5.0 sec	No
		T	0.61	22.2	C	T	0.62	23.8	C	T	0.62	23.8	C			
Broadway & 33rd Street	WB (33rd St)	L	0.79	56.1	E	L	0.80	56.8	E	L	0.80	57.0	E	+0.2 sec	+4.0 sec	No
5th Avenue & 33rd Street	SB (5th Ave)	TR	0.69	5.7	A	TR	0.71	6.2	A	TR	0.71	5.7	A			
		R	0.68	36.5	D	R	0.68	35.6	D	R	0.69	38.7	D			
	WB (33rd St)	LT	0.62	39.9	D	LT	0.63	40.0	D	LT	0.63	40.1	D			
Madison Avenue & 33rd Street	NB (Madison Ave)	LT	0.68	19.7	B	LT	0.69	20.1	C	LT	0.69	20.1	C			
	WB (33rd St)	TR	0.39	22.0	C	TR	0.40	22.2	C	TR	0.40	22.5	C			
Park Avenue & 33rd Street	NB (Park Ave)	T	0.55	16.2	B	T	0.56	16.3	B	T	0.56	16.4	B			
		TR	0.63	6.2	A	TR	0.64	6.4	A	TR	0.64	6.1	A			
		R	0.48	19.1	B	R	0.49	19.3	B	R	0.49	19.3	B			
Lexington Avenue & 33rd Street	SB (Lexington Ave)	TR	0.74	6.4	A	TR	0.75	6.6	A	TR	0.76	6.6	A			
	WB (33rd St)	LT	0.65	21.8	C	LT	0.66	22.3	C	LT	0.66	22.2	C			
3rd Avenue & 33rd Street	NB (3rd Ave)	LT	0.61	13.4	B	LT	0.61	13.6	B	LT	0.61	13.8	B			
		TR	0.77	39.8	D	TR	0.78	41.0	D	TR	0.78	44.3	D			
2nd Avenue & 33rd Street	SB (2nd Ave)	T	0.89	12.5	B	T	0.87	4.8	A	T	0.87	6.3	A			
		R	0.45	4.0	A	R	0.46	2.9	A	R	0.46	2.3	A			
	WB (33rd St)	L	0.49	35.0	D	L	0.62	38.3	D	L	0.62	44.1	D			
		T	0.31	31.5	C	T	0.32	30.4	C	T	0.32	33.3	C			
1st Avenue & 33rd Street	NB (1st Ave)	L	0.94	28.6	C	L	0.78	29.5	C	L	0.78	29.5	C			
		T				T	0.96	32.1	C	T	0.96	36.1	D			

Notes:
 * Stop-sign controlled intersection.
Bold values indicate a mid-LOS D (45.0 seconds of delay or more), LOS E, or LOS F operating condition.
 NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound
 DefL = Defacto Left-turn; L = Left-turn; T = Through; R = Right-turn
 A Defacto Left-turn is an intersection operating condition in which a shared lane (i.e., left-turn / through lane) effectively operates as an exclusive left-turn lane.
Sources:
 City Environmental Quality Review Technical Manual (Mayor's Office of Environmental Coordination, 2010)
 New York City Department of Transportation

6-3 TRANSIT

The Proposed Project would provide for one bus lane in either direction from First Avenue to Eleventh Avenue, while maintaining at least one general traffic lane in each direction for the full length of 34th Street. About two-thirds of these bus lanes would be offset from the curb lane, a design which is more effective than the existing curbside bus lanes as it reduces conflicts with standing and parked vehicles. The Proposed Project would also provide new Select Bus Service stations (consisting of shelters, fare payment kiosks, and informational signage), new or relocated stops for express buses, expanded pedestrian space at many Select Bus Service station locations, upgraded signage and customer information systems, transit signal priority, and new curbside loading zones to help keep the bus lanes clear.

Consistent with their operating practices, NYCT, MTA Bus, and other transit operators may adjust bus service levels (headways) based on ridership changes. NYCT reviews ridership levels and adjusts service to meet its guideline capacity requirements on a biannual basis. MTA Bus implements a similar practice although formal guidelines have not been adopted. Other transit services (subway, commuter rail, and ferry) in the vicinity of 34th Street are expected to operate essentially as they do today.

The above elements of the Proposed Project would add a general benefit to the existing transit service on 34th Street and enhance both operation and visibility of the services. Examples from similar projects for Select Bus Service in New York City (BX12 in the Bronx, M15 in Manhattan) indicate a 10 percent increase in ridership and average travel time has decreased by 20 percent and 15 percent, respectively. Though both of these Select Bus Service routes are longer with bus stops further apart than the M34 and M34A¹ Select Bus Service routes, a similar level of reliability and comfort is expected for the Proposed Project.

Therefore, no negative impact on transit services on 34th Street is expected from the Proposed Project.

6-4 PEDESTRIANS

The Proposed Project is expected to alter some of the intersection layouts in regards to lengths of crosswalks. The effects of these changes are discussed in the following.

6-4-1 METHODOLOGY

A crosswalk analysis was performed at ten intersections along 34th Street. The pedestrian counts for the analysis were obtained from various previous studies and new field counts. The sources used to obtain the pedestrian counts are listed below:

- *Western Rail Yard Final Environmental Impact Statement*, CEQR No.: 09DCP007M (Metropolitan Transportation Authority and New York City Planning Commission, October 2009);
- *Access to the Region's Core (ARC) Final Environmental Impact Statement* (Federal Transit Administration, 2008);
- Data collection for the *M15 Select Bus Service*;

¹ On November 13, 2011 MTA NYCT renamed the M16 bus route M34A

34th Street Select Bus Service

- Data Collection for the *5th Avenue and Madison Avenue BRT Study*; and
- Original data collection for the 34th Street Select Bus Service and the *Manhattan Traffic Model (MTM)*.

The data collection for the projects listed above was performed during different times over the past three years. The study intersections along with the year the data was collected at each location are shown in **Table 6-3** and are mapped in **Figure 6-2**.

**Table 6-3
Pedestrian Analysis Locations**

Intersection	Count Year	Source
34th Street and 12th Avenue	2008	Western Rail Yard
34th Street and 11th Avenue	2008	Western Rail Yard
34th Street and 10th Avenue	2008	Western Rail Yard
34th Street and 9th Avenue	2009	MTM
34th Street and 8th Avenue	2010	ARC
34th Street and 7th Avenue	2010	ARC
34th Street and 6th Avenue/Broadway	2010	ARC
34th Street and 5th Avenue	2008	5th Avenue and Madison Avenue BRT Study
34th Street and Madison Avenue	2008	5th Avenue and Madison Avenue BRT Study
34th Street and 3rd Avenue	2009	MTM
34th Street and 2nd Avenue	2009	M15 Select Bus Service
34th Street and 1st Avenue	2009	M15 Select Bus Service

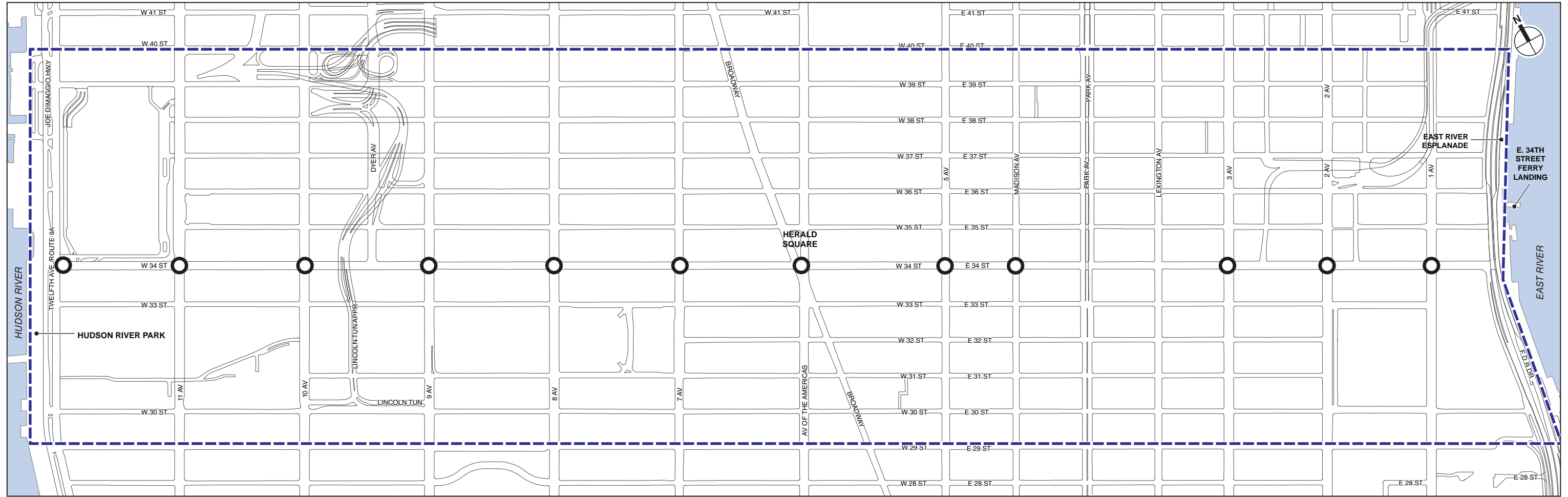
For this analysis, a pedestrian walking speed of 3.0 feet per second (ft/sec) was used for all intersections.

As discussed in Section 6-2-1 above, traffic and pedestrian activity peaks during the weekday commuter hours. Hence, the following weekday peak hours were used for the crosswalk pedestrian analysis:

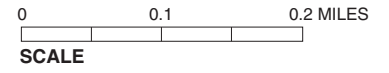
- 8:00 AM – 9:00 AM
- 5:00 PM – 6:00 PM.

The crosswalk pedestrian analysis was performed using the HCM 2000 methodology for the Existing, 2012 No Build, and 2012 Build conditions. As per HCM 2000, the Level of Service (LOS) for pedestrian crosswalks is based upon available space in square feet per pedestrian (ft²/p) and is defined as follows:

LOS	Square Feet per Person
A	> 60 SFP
B	> 40 and ≤ 60 SFP
C	> 24 and ≤ 40 SFP
D	> 15 and ≤ 24 SFP
E	> 8 and ≤ 15 SFP
F	≤ 8 SFP
Note:	SFP = square feet per pedestrian.
Source:	New York City Mayor's Office of Environmental Coordination, <i>CEQR Technical Manual</i> (May 2010).



○ Pedestrian Analysis Locations (Crosswalks)



The *CEQR Technical Manual* criteria for pedestrian analysis in a central business district (CBD) were used to determine if the crosswalks would be significantly impacted by the Proposed Project. A summary of the CEQR procedures to determine the impacts on crosswalks is listed below:

- If the average pedestrian space under the No-Build condition is greater than 21.6 square feet per pedestrian (ft²/p), then a decrease in pedestrian space under the Build condition to 19.5 ft²/p or less (mid-LOS D or worse) should be considered a significant impact.
- If the pedestrian space under the Build condition is greater than 19.5 ft²/p (better than mid-LOS D), the impact should not be considered significant.
- If the average pedestrian space under the No Build condition is between 5.1 and 21.6 ft²/p, a decrease in pedestrian space under the Build condition should be considered significant according to the sliding-scale formula in the Equation 16-7 or using Table 16-13 of the CEQR Manual. If the decrease in pedestrian space is less than the value calculated from the formula, or Table 16-13 of the CEQR Manual, the impact should not be considered significant.
- If the average pedestrian space under the No Build condition is less than 5.1 ft²/p, then a decrease in pedestrian space greater than or equal to 0.2 ft²/p should be considered significant.

6-4-2 EXISTING CONDITIONS

Currently, 34th Street has crosswalks at every intersection and almost every approach between the FDR Drive and Twelfth Avenue (Route 9A). Crosswalk lengths vary from one location to another depending on the cross-section of the intersection approach. Crosswalk widths vary between 15 feet (standard) and 23 feet (at Seventh Avenue). A LOS summary for existing conditions for AM and PM peak hours is provided in **Tables 6-4 and 6-5**. In the AM peak period, nine crosswalks in the pedestrian study area presently operate at mid-LOS D or worse (circulation area less than 19.5 ft²/p). In the PM peak hour, 11 crosswalks operate at mid-LOS D or worse.

6-4-3 2012 NO BUILD CONDITIONS

The pedestrian volumes utilized for the existing conditions analysis were grown using an annual background growth rate of 0.5 percent. This annual growth rate is the same as the annual background growth rate for traffic (see Section 6-2-3) and is 0.25% higher than the recommended growth rate for the Manhattan CBD in the CEQR Manual. The pedestrian analysis was performed using the resultant 2012 No Build pedestrian volumes and 2012 No Build traffic volumes. The pedestrian walking speeds, length and width of crosswalks were assumed to remain the same as existing conditions.

A LOS summary for 2012 No Build conditions for AM and PM peak hours is provided in **Tables 6-4 and 6-5**. In the 2012 No Build AM peak period, nine crosswalks in the pedestrian study area will continue to operate at mid-LOS D or worse (circulation area less than 19.5 ft²/p). In the 2012 No Build PM peak period, 11 crosswalks will continue to operate at mid-LOS D or worse.

6-4-4 2012 BUILD CONDITIONS

The Proposed Project would introduce sidewalk extensions (“bulb outs”) at some corners along 34th Street, which would decrease the lengths of crosswalks, the time to cross the street, and thus the conflict time between the pedestrians and vehicular traffic. Also, these bulb outs would provide pedestrian refuge along wider cross-sections and increase the pedestrian space along congested sidewalks.

As part of the Proposed Project, the crosswalk widths would be standardized to 15 feet along the 34th Street corridor. However, based on a preliminary analysis and in view of the current congested operating conditions, certain crosswalk widths would be made larger. The intersections with crosswalk widths proposed to be above the standard of 15 feet are listed below:

- The north, east, and south crosswalks at the intersection of 34th Street and Eighth Avenue;
- All crosswalks at the intersection of 34th Street and Seventh Avenue;
- All crosswalks at the intersection of 34th Street and Sixth Avenue; and
- The west crosswalk at the intersection of 34th Street and 5th Avenue.

Tables 6-4 and 6-5 show the LOS analysis results for the 2012 Build condition. The 2012 Build conditions were compared to 2012 No Build conditions to determine whether the Proposed Project would result in significant adverse impacts on crosswalk operations in the pedestrian study area. All crosswalks would continue to operate at acceptable levels (within mid-LOS D, with a minimum of 19.5 ft²/p for crosswalks and corners), or at similar levels as the No Build condition during the corresponding peak 15-minute periods.

Overall, therefore, the Proposed Project would not result in significant adverse impacts on pedestrian circulation.

Table 6-4
Existing, No Build, and Build Pedestrian Level of Service (LOS) Analysis—AM (8AM to 9AM) Peak Hour

Intersection	Approach	2009 EXISTING CONDITIONS					2012 NO-BUILD CONDITIONS					2012 BUILD CONDITIONS				
		Peak 15 Min Ped Volume	Length of Crosswalk (ft)	Effective Width of Crosswalk (ft)	Circulation Area per Pedestrian (ft ² /p)	LOS	Peak 15 Min Ped Volume	Length of Crosswalk (ft)	Effective Width of Crosswalk (ft)	Circulation Area per Pedestrian (ft ² /p)	LOS	Peak 15 Min Ped Volume	Length of Crosswalk (ft)	Effective Width of Crosswalk (ft)	Circulation Area per Pedestrian (ft ² /p)	LOS
Route 9A & 34th Street	East	1	60	21	19344.2	A	1	60	21	18908.8	A	1	60	15	13503.9	A
	South	9	120	15	194.6	A	9	120	15	190.0	A	9	120	15	190.0	A
11th Avenue & 34th Street	East	20	42	17	640.3	A	20	42	17	627.1	A	20	51	15	550.7	A
	North	38	73	18	150.9	A	39	73	18	147.5	A	39	73	15	122.6	A
	West	33	60	14	311.8	A	34	60	14	305.4	A	34	60	15	327.5	A
	South	33	73	18	159.2	A	34	73	18	155.4	A	34	73	15	122.8	A
10th Avenue & 34th Street	East	81	60	15	181.8	A	83	60	15	178.0	A	83	52	15	147.0	A
	North	39	70	18	159.6	A	40	70	18	155.9	A	40	70	15	208.2	A
	West	45	58	17	371.0	A	46	58	17	363.4	A	46	53	15	263.1	A
9th Avenue & 34th Street	South	160	70	15	37.6	C	163	70	15	36.8	C	163	70	15	57.7	B
	East	283	52	16	30.0	C	287	52	16	29.5	C	287	43	15	27.0	C
	North	240	70	20	69.1	A	244	70	20	68.0	A	244	70	15	50.0	B
	West	153	58	16	60.4	A	155	58	16	59.4	B	155	59	15	55.3	B
8th Avenue & 34th Street	South	283	72	20	23.0	D	287	72	20	22.6	D	287	70	15	38.0	C
	East	837	53	19	14.0	E	846	53	19	13.8	E	846	45	19	13.5	E
	North	463	70	21	36.3	C	467	70	21	35.8	C	467	21	21	37.4	C
	West	528	50	14	16.6	D	533	50	14	16.3	D	533	44	15	17.5	D
7th Avenue & 34th Street	South	658	70	21	25.8	C	664	70	21	25.5	C	664	70	21	25.5	C
	East	1046	52	20	14.8	E	1057	52	20	14.7	E	1057	46	22	14.3	E
	North	986	59	23	9.1	E	995	59	23	9.0	E	995	60	23	10.9	E
	West	1931	52	20	6.7	F	1950	52	20	6.6	F	1950	44	23	6.7	F
6th Avenue/Broadway & 34th Street	South	1650	59	23	4.5	F	1667	59	23	4.4	F	1667	60	23	5.5	F
	East	479	52	16	28.9	C	484	52	16	28.5	C	484	44	17	30.1	C
	North	518	52	18	12.6	E	523	52	18	12.4	E	523	60	18	12.1	E
	West	972	55	20	16.4	D	982	55	20	16.2	D	982	47	22	17.8	D
5th Avenue & 34th Street	South	618	44	17	10.2	E	624	44	17	10.0	E	624	49	17	10.0	E
	North	290	55	23	57.4	B	294	55	23	56.5	B	294	55	15	35.3	C
	West	464	51	23	32.4	C	471	51	23	31.9	C	471	53	23	32.5	C
Madison Avenue & 34th Street	East	188	53	14	61.2	A	191	53	14	60.2	A	191	53	15	55.2	B
	South	373	45	21	33.0	C	379	45	21	32.4	C	379	45	15	26.4	C
3rd Avenue & 34th Street	East	244	60	15	38.5	C	248	60	15	37.8	C	248	52	15	37.7	C
	North	108	70	14	33.0	C	110	70	14	31.4	C	110	70	15	94.8	A
	West	260	53	15	40.4	B	264	53	15	39.7	C	264	53	15	39.7	C
	South	297	70	14	29.1	C	301	70	14	28.6	C	301	70	15	33.4	C
2nd Avenue & 34th Street	East	68	45	16	187.1	A	69	45	16	185.8	A	69	60	15	184.7	A
	North	112	68	17	94.5	A	114	68	17	93.1	A	114	70	15	81.0	A
	West	147	60	15	100.7	A	149	60	15	99.1	A	149	51	15	98.8	A
	South	164	70	15	45.9	B	166	70	15	50.1	B	166	70	15	50.1	B
1st Avenue & 34th Street	East	105	60	16	163.6	A	107	60	16	160.9	A	107	60	15	103.5	A
	North	87	70	18.5	91.8	A	88	70	18.5	96.4	A	88	70	15	80.5	A
	West	91	60	15	77.3	A	92	60	15	79.4	A	92	51	15	78.1	A
	South	146	70	19	66.5	A	148	70	19	65.4	A	148	70	15	84.7	A

Table 6-5
Existing, No Build, and Build Pedestrian Level of Service (LOS) Analysis—PM (5PM to 6PM) Peak Hour

Intersection	Approach	2009 EXISTING CONDITIONS					2012 NO-BUILD CONDITIONS					2012 BUILD CONDITIONS				
		Peak 15 Min Ped Volume	Length of Crosswalk (ft)	Effective Width of Crosswalk (ft)	Circulation Area per Pedestrian (ft ² /p)	LOS	Peak 15 Min Ped Volume	Length of Crosswalk (ft)	Effective Width of Crosswalk (ft)	Circulation Area per Pedestrian (ft ² /p)	LOS	Peak 15 Min Ped Volume	Length of Crosswalk (ft)	Effective Width of Crosswalk (ft)	Circulation Area per Pedestrian (ft ² /p)	LOS
Route 9A & 34th Street	East	1	60	21	23426.5	A	1	60	21	22910.4	A	1	60	15	16362.2	A
	South	10	120	15	193.4	A	10	120	15	189.2	A	10	120	15	182.4	A
11th Avenue & 34th Street	East	21	42	17	621.6	A	21	42	17	608.8	A	21	51	15	533.2	A
	North	19	73	18	300.5	A	19	73	18	293.9	A	19	73	15	244.5	A
	West	10	60	14	1042.8	A	10	60	14	1021.5	A	10	60	15	1094.8	A
	South	25	73	18	233.1	A	26	73	18	227.9	A	26	73	15	168.6	A
10th Avenue & 34th Street	East	38	60	15	392.5	A	39	60	15	384.5	A	39	52	15	387.1	A
	North	36	70	18	173.1	A	37	70	18	168.9	A	37	70	15	136.6	A
	West	26	58	17	648.0	A	27	58	17	634.8	A	27	53	15	561.5	A
9th Avenue & 34th Street	South	90	70	15	68.9	A	92	70	15	67.5	A	92	70	15	67.5	A
	East	334	52	16	26.4	C	339	52	16	26.0	C	339	43	15	23.9	D
	North	250	70	20	66.1	A	254	70	20	65.1	A	254	70	15	47.9	B
	West	157	58	16	59.8	B	159	58	16	58.9	B	159	59	15	54.8	B
8th Avenue & 34th Street	South	332	72	20	20.3	D	337	72	20	19.9	D	337	70	15	33.2	C
	East	858	53	19	13.5	E	866	53	19	13.3	E	866	45	19	13.0	E
	North	786	70	21	19.8	D	793	70	21	19.6	D	793	70	21	20.7	D
	West	721	50	14	10.9	E	728	50	14	10.8	E	728	44	15	11.5	E
7th Avenue & 34th Street	South	791	70	21	20.9	D	799	70	21	20.7	D	799	70	21	20.7	D
	East	1438	52	20	9.9	E	1453	52	20	9.8	E	1453	46	22	9.5	E
	North	1891	59	23	3.8	F	1910	59	23	3.8	F	1910	60	23	4.7	F
	West	3382	52	20	3.0	F	3416	52	20	3.0	F	3416	44	23	2.9	F
6th Avenue/Broadway & 34th Street	South	2753	59	23	2.2	F	2780	59	23	2.2	F	2780	60	23	2.7	F
	East	971	52	16	12.3	E	981	52	16	12.2	E	981	44	17	11.5	E
	North	1693	52	18	2.7	F	1710	52	18	2.7	F	1710	60	18	3.2	F
	West	2251	55	20	5.5	F	2274	55	20	5.4	F	2274	47	22	5.3	F
5th Avenue & 34th Street	South	1362	44	17	3.5	F	1376	44	17	3.4	F	1376	49	17	4.1	F
	North	301	55	23	55.1	B	306	55	23	54.3	B	306	55	15	33.9	C
Madison Avenue & 34th Street	West	744	51	23	18.7	D	755	51	23	18.3	D	755	53	23	18.5	D
	East	260	53	14	41.9	B	264	53	14	41.2	B	264	53	15	44.5	B
3rd Avenue & 34th Street	South	390	45	21	31.3	C	396	45	21	30.8	C	396	45	15	20.8	D
	East	328	60	15	27.6	C	333	60	15	27.1	C	333	52	15	26.9	C
	North	172	70	14	18.9	D	175	70	14	18.0	D	175	70	15	56.4	B
	West	217	53	15	47.9	B	220	53	15	47.1	B	220	53	15	47.1	B
2nd Avenue & 34th Street	South	248	70	14	35.5	C	252	70	14	34.9	C	252	70	15	40.7	B
	East	84	45	16	170.7	A	85	45	16	171.7	A	85	60	15	151.5	A
	North	149	68	17	70.1	A	151	68	17	69.0	A	151	70	15	67.6	A
	West	160	60	15	92.5	A	162	60	15	91.0	A	162	51	15	83.8	A
1st Avenue & 34th Street	South	150	70	15	53.0	B	152	70	15	56.1	B	152	70	15	63.6	A
	East	109	60	16	158.8	A	111	60	16	156.2	A	111	60	15	107.7	A
	North	81	70	18.5	100.4	A	82	70	18.5	108.4	A	82	70	15	80.6	A
	West	106	60	15	63.4	A	108	60	15	65.7	A	108	51	15	64.3	A
	South	133	70	19	73.3	A	135	70	19	72.1	A	135	70	15	87.7	A

6-5 PARKING

The Proposed Project is not expected to generate any vehicular traffic and hence does not result in new parking demand. However the Proposed Project would alter the supply of curbside loading areas and parking spaces along 34th Street, which is described below.

6-5-1 METHODOLOGY

The parking study area includes all the blocks along 34th Street between Twelfth Avenue/Route 9A and the FDR Drive Service Road (see **Figure 6-2**). The 34th Street parking study area is primarily occupied by office and retail buildings, but has also residential buildings, especially east of Park Avenue and between Eighth Avenue and Ninth Avenue.

6-5-2 EXISTING CONDITIONS

Currently, 34th Street has curbside bus lanes between First Avenue and Eleventh Avenue in both directions and the following parking regulations are applied for the majority of blocks along 34th Street:

- A 'No Standing' regulation between 7AM and 7PM applicable from Monday to Friday and between 1PM and 7PM on Saturday and Sunday; and
- A 'No Parking' regulation between 7PM and Midnight applicable all days.

These regulations considerably restrict parking for the majority of blocks along 34th Street. The following number of parking spaces¹ is available for the different time periods during a day:

- Morning and Midday (7AM-1PM): up to 31 on weekdays; up to 314 on weekends;
- Afternoon (1PM-7PM): up to 31 on weekdays; up to 87 on weekends;
- Evening (7PM-Midnight): up to 56 on weekdays and weekends; and
- Night (Midnight-7AM): up to 367 on weekdays and weekends.

A block-by-block breakdown of parking regulations is provided in **Appendix A**.

6-5-3 2012 NO BUILD CONDITIONS

Under No Build condition, there will be no change in parking regulations, and the same number of parking spaces will be available.

6-5-4 2012 BUILD CONDITIONS

The design for the Proposed Project includes both offset bus lanes as well as curbside bus lanes. In areas where offset bus lanes are in place, loading/pick-up and drop-off zones would be available throughout the day. Between Midnight and 7AM on weekdays

¹ The number of parking spots has been derived from the block length available for loading/parking; curb cuts and fire hydrants were assumed to account for 10% of available curb space; 20 feet equals one (1) parking space.

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and on weekends, curb side bus lanes would serve as curbside parking as is the case in existing conditions.

Table 6-6 shows a comparison of parking space availability between the No Build and Build conditions. In the Build condition, there would be additional loading/pick-up and drop-off spaces during weekday daytime and evening hours. At night and on weekends, the Proposed Project would result in the availability of additional curbside parking spaces along 34th Street. The provision of new loading, pick-up and drop-off, and parking spaces would benefit residents and businesses along 34th Street, and the Proposed Project would not result in a significant adverse impact on parking.

Table 6-6
Comparison of Curbside Loading/Pick-up and Drop-off/Parking Spaces in the No Build and Build Conditions

Time Period		Number of Spaces		
		No Build	Build	Net Change (Build – No Build)
Weekday	Midnight - 7 AM	367	389	22
	7 AM - 10 AM	0	240	240
	10 AM - 4 PM	31	258	227
	4 PM - 7 PM	0	240	240
	7 PM - Midnight	56	240	184
Saturday	Midnight - 7 AM	367	389	22
	7 AM - 9 AM	283	389	106
	9 AM - 10 AM	281	389	108
	10 AM - 1 PM	312	389	77
	1 PM - 4 PM	85	389	304
	4 PM - 5 PM	54	389	335
	5 PM - 7 PM	56	389	333
7 PM - Midnight	56	389	333	
Sunday	Midnight - 7 AM	367	389	22
	7 AM - 10 AM	305	389	84
	10 AM - 1 PM	314	389	75
	1 PM - 4 PM	87	389	302
	4 PM - 7 PM	77	389	312
	7 PM - Midnight	56	389	333

6-6 SAFETY AND SECURITY

The Proposed Project will offer enhanced stations, consisting of transparent, well lit and highly visible shelters, limiting blind spots and concealed areas. In addition, fare payment kiosks and informational signage will provide a more attractive and secure station environment.

The Proposed Project will be compliant to existing security guidelines from New York City Police Department, New York City Fire Department, Metropolitan Transportation Authority, New York City Transit Authority, and other City agencies.

At the majority of Select Bus Service station locations, expanded pedestrian space will be available, allowing improved pedestrian circulation at bus stations. Furthermore, widened crosswalk widths and shortened crosswalk lengths, as well as reduced vehicular traffic, will improve pedestrian circulation at crosswalks.

While some intersections along 34th Street are ranked high citywide in the number of vehicle accidents and vehicle/pedestrian accidents, none of them are considered a high crash location as per *2010 CEQR Technical Manual*. A high crash location is one where there were 48 or more total crashes (reportable and non-reportable) or five or more pedestrian/bicycles injury crashes in any consecutive 12 months of the most recent 3-year period for which data is available.

Overall, the Proposed Project improves traffic operation, pedestrian access and accessibility, and provides a more attractive and secure sidewalk environment. The Proposed Project includes adequate provision for safe and secure operations, and is expected to improve the safety and security of transit riders. Therefore, the impacts on safety and security from the Proposed Project are expected to be beneficial.

7-1 INTRODUCTION

The Proposed Project would affect traffic patterns in the vicinity of 34th Street, and therefore, the potential for the Proposed Project to impact air quality was analyzed for the weekday morning (8 to 9 AM) and evening (5 to 6 PM) peak periods. The Proposed Project would not affect any other air pollutant sources such as stationary sources.

The primary pollutants of concern emitted by on-road vehicles include carbon monoxide (CO), particulate matter (PM, regulated in two size categories: PM_{2.5} and PM₁₀), volatile organic compounds (VOCs), and nitrogen oxides (nitric oxide, NO, and nitrogen dioxide, NO₂, collectively referred to as NO_x). Fine PM is also formed when emissions of NO_x, sulfur oxides (SO_x), ammonia, organic compounds, and other gases react or condense in the atmosphere. Ozone is formed in the atmosphere by complex photochemical processes that include NO_x and VOCs.

The chapter concludes that the Proposed Project would not result in any significant adverse air quality impacts.

7-2 MESOSCALE (REGIONAL) AIR QUALITY

The Proposed Project is not expected to significantly affect the amount or length of vehicle trips (including buses), and therefore the focus of this assessment is on local air quality impacts associated with changes in local traffic patterns. As described in Chapter 6, “Transportation”, the Proposed Project would divert some traffic to adjacent streets one block to the north and south of 34th Street—a potential minor increase in the length of trips. Therefore, region-wide vehicle miles traveled would not increase substantially, and as a result pollutant concentrations in the region would not be significantly affected by the Proposed Project. Furthermore, the Proposed Project is a component of a large and long-term effort by the City of New York and New York City Transit to improve and expand transit services, which would result in substantial air quality benefits citywide.

7-3 MICROSCALE (LOCAL) AIR QUALITY**7-3-1 METHODOLOGY**

The Proposed Project would result in changes in traffic patterns in the vicinity of 34th Street. The intersections in the study area were evaluated according to the screening method described in the *City Environmental Quality Review (CEQR) Technical Manual*.¹ For this area of New York City, the CEQR screening criteria state that a

¹ Mayor's Office of Environmental Coordination, 2010, City Environmental Quality Review Technical Manual.

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quantified CO emissions analysis be prepared when an action would result in more than 140 new vehicle trips at a location. For PM, the CEQR screening criteria state that a quantified analysis be prepared for locations that would realize an increase in vehicular PM emissions equivalent to 19 or more heavy duty diesel vehicles.

A review of the projected traffic diversions (see Chapter 6, “Transportation”) revealed that only one location within the traffic study area—First Avenue and East 35th Street—would exceed the screening thresholds. This location would also realize the greatest gain in traffic volumes of all of the locations analyzed and represents the reasonable worst-case for the potential air quality effects of the Proposed Project.

The analysis followed the procedures outlined in the *CEQR Technical Manual*, applying the US Environmental Protection Agency’s (USEPA) preferred models and guidance for modeling emissions and dispersion at intersections and included the evaluation of future CO and PM concentrations with and without the Proposed Project.

The primary pollutants of concern for microscale analysis include CO and PM. With the promulgation of the 2010 1-hour average standard for NO₂, local sources such as vehicular emissions may become of greater concern for this pollutant. However, it is unknown at this time whether or not 1-hour concentrations of NO₂ in New York City exceed the new standard because ground level concentrations have not yet been measured. Furthermore, procedures for estimating concentrations and a criterion for evaluating the significance of projected increases in concentrations are not available. Therefore, NO₂ emissions have not been quantified in this analysis, but it is estimated that the vehicle diversions associated with Proposed Project would result in a small increase in peak NO₂ concentrations at the worst-case location.

7-3-2 IMPACT ASSESSMENT

The future maximum predicted 8-hour average CO and 24-hour average PM₁₀ concentrations, as well as 24-hour and annual average PM_{2.5} concentration increments with and without the Proposed Project are presented in **Table 7-1**. These values represent the highest predicted concentrations at any location in the vicinity of the analysis site. The CO and PM₁₀ concentrations presented include ambient background concentrations. The future maximum predicted 24-hour and annual average PM_{2.5} concentration increments were calculated for comparison with the incremental criteria. Therefore, since impacts are assessed on an incremental basis, PM_{2.5} concentrations without the Proposed Project are not presented.

The results indicate that the Proposed Project would not result in any violations of the CO or PM₁₀ standards at First Avenue and East 35th Street. In addition, the increase in maximum 8-hour average CO concentration and in annual and 24-hour average PM_{2.5} concentrations at First Avenue and East 35th Street would not exceed the incremental thresholds set forth in the *CEQR Technical Manual*. Since changes in traffic volume at all other intersections within the traffic study area were projected to be less than at First Avenue and East 35th Street, changes in air pollutant concentrations at any other location in the traffic study area would be less than those projected for the analysis site and would also not exceed air quality standards or thresholds. Therefore, the Proposed Project would not result in any significant adverse air quality impacts.

**Table 7-1
Future Maximum Predicted Pollutant Concentration at
First Avenue and East 35th Street**

Pollutant	Unit	Averaging Period	Predicted Concentration			Criteria	
			No Build	Build	Increment	NAAQS	Threshold
CO	ppm	8-hour	3.2	3.5	0.3	9	2.9
PM ₁₀	µg/m ³	24-hour	74.0	75.1	1.1	150	N/A
PM _{2.5} ⁽³⁾	µg/m ³	24-hour	N/A	N/A	0.36	N/A	5/2 ⁽¹⁾
PM _{2.5} ⁽³⁾	µg/m ³	Annual	N/A	N/A	0.02	N/A	0.1 ⁽²⁾

Notes:

1. 24-hour PM_{2.5} interim guidance criterion, > 2 µg/m³ (5 µg/m³ not to exceed value), depending on the magnitude, frequency, duration, location, and size of the area of the predicted concentrations.
2. Annual PM_{2.5} interim guidance criterion, >0.1 µg/m³ for neighborhood-scale impacts.
3. PM_{2.5} increments only. Total PM_{2.5} concentrations, including background are not presented.

8-1 INTRODUCTION

This chapter was prepared in accordance with the New York State Department of Environmental Conservation policy document entitled *Assessing Energy Use and Greenhouse Gas Emissions in Environmental Impact Statements*, July 15, 2009 (NYSDEC policy), and also follows guidance in the 2010 *City Environmental Quality Review Technical Manual*¹. The Council on Environmental Quality's draft guidance entitled *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*, February 18, 2010, was consulted as well. Overall, since the Proposed Project is not expected to substantially effect energy consumption and greenhouse gas (GHG) emissions, the following discussion is qualitative.

8-2 BACKGROUND AND REGULATORY SETTING

There is general consensus in the scientific community that the global climate is changing as a result of increased concentrations of GHGs in the atmosphere. GHGs are emitted primarily from combustion of fossil fuels, as well as various other processes. Atmospheric concentrations of GHGs are increasing because the chemical removal processes are limited, and the rate of emission exceeds the rate of the natural removal processes. The increase in GHG concentrations since the beginning of the industrial age has led to a noticeable warming of the Earth's atmosphere, surface, and oceans, which, in turn, has and will result in myriad of complex climatic changes that will vary by geographic location, profoundly affecting human and natural systems.

While the contribution of any single project to climate change is infinitesimal, the combined GHG emissions from all human activity have a severe adverse impact on global climate. The nature of the impact dictates that all sectors address GHG emissions by identifying GHG sources and practicable means to reduce them. Therefore, this chapter does not identify specific contributions of the Proposed Project to climate impacts, but rather addresses the potential changes in GHG emissions associated with the Proposed Project as compared to the No Build Alternative.

Countries around the world have undertaken efforts to reduce emissions by implementing both global and local measures addressing energy consumption and production, land use, and other sectors. The U.S. has not ratified the international agreements that set emissions targets for GHGs, but in a step toward the development of national climate change regulation, the U.S. has committed to reducing emissions to 17 percent lower than 2005 levels by 2020 and to 83 percent lower than 2005 levels by 2050 (pending

¹ Mayor's Office of Environmental Coordination, *City Environmental Quality Review Technical Manual*, 2010.

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legislation) via the Copenhagen Accord.¹ Without legislation focused on this goal, the U.S. Environmental Protection Agency (USEPA) would be required to regulate GHGs under the Clean Air Act. USEPA has established various voluntary programs to reduce emissions and increase energy efficiency and has recently embarked on regulatory initiatives related to GHG emissions, including renewable fuel standards and corporate average fuel economy (CAFE) standards, and stationary source emissions reporting and controls.

There are also regional, state, and local efforts to reduce GHG emissions. In 2009, New York State Governor David Paterson issued Executive Order No. 24, establishing a goal of reducing GHG emissions in New York State by 80 percent, compared to 1990 levels, by 2050, and creating a Climate Action Council tasked with preparing a climate action plan. The climate action plan is currently underway and will outline the policies required to attain the GHG reduction goal. An interim draft plan has been published.²

The 2009 New York State Energy Plan³ outlines the state's energy goals and provides strategies and recommendations for meeting those goals. The state's goals include, among other measures, reducing vehicle miles traveled by expanding alternative transportation options.

New York City has also adopted goals and policies related to climate change. New York City's long-term sustainability program, *PlaNYC, A Greener, Greater New York* (PlaNYC 2030)⁴, includes GHG emissions reduction goals, specific initiatives that can result in emission reductions, and initiatives targeted at adaptation to climate change impacts.

Improving and expanding transit options are key components of the New York State Energy Plan and Climate Action Plan and of PlaNYC 2030. Select Bus Service (Bus Rapid Transit) is an explicit policy initiative included in PlaNYC 2030.

The potential effects of the Proposed Project have been evaluated in the context of their consistency with the objectives stated in federal, state, and city policies.

8-3 ENERGY, EMISSIONS, AND CLIMATE IMPACTS

The Proposed Project is not expected to significantly change the number, length, average speed, or location of vehicle trips. Some diversion of traffic would occur due to the lane changes on 34th Street, but this would only result in a minor change in vehicle miles traveled considering the limited number of diversions that are predicted.

In terms of bus trips, the Proposed Project would not directly influence the number of bus trips or bus engine technology. As part of New York City Transit's normal procurement program, air pollutant emissions and energy considerations have a high priority, and as a result its fleet includes many alternative fuel and advanced technology buses. However, since bus trip time would be reduced, especially idling time at bus

¹ Todd Stern, U.S. Special Envoy for Climate Change, letter to Mr. Yvo de Boer, UNFCCC, January 28, 2010.

² <http://www.nyclimatechange.us/>

³ New York State, *2009 New York State Energy Plan*, December 2009.

⁴ The City of New York, *PlaNYC: A Greener, Greater New York* (April 2011)

stops/stations, there would be some fuel savings and GHG emissions reductions associated with the 34th Street Select Bus Service.

It is important to note that the Proposed Project is only one component of a large and long-term effort on the part of the City of New York to improve and expand transit. New York City currently has the lowest per-capita carbon footprint of all large US cities and one of the lowest in the world, largely because of the energy efficient transit options it offers. PlaNYC 2030 identified numerous initiatives aimed at maintaining and further improving the transit system, including the introduction of Select Bus Service. In addition to the potential benefits of the Proposed Project, the implementation of all of the PlaNYC 2030 transit and transportation initiatives would, cumulatively, result in increased transit ridership and associated energy and emissions savings.

Therefore, the Proposed Project would be an integral part of PlaNYC 2030 and would be consistent with the New York State Climate Action Plan, State Energy Plan, and federal policies and initiatives aimed at reducing energy consumption and GHG emissions. Overall, the Proposed Project would have a benefit rather than any significant adverse impacts with respect to energy consumption and GHG emissions. *

9-1 INTRODUCTION

This chapter assesses the potential for noise and vibration impacts from the operation of the Proposed Project using Federal Transit Administration (FTA) and City Environmental Quality Review (CEQR) guidance and procedures. The chapter concludes that the Proposed Project would not result in any significant adverse noise or vibration impacts.

9-2 NOISE

A noise study area was defined that incorporates both the 34th Street Corridor, where the Proposed Project would be implemented, and adjacent streets where vehicle diversions could increase traffic volumes. The noise study area extends east-west from the East River to the Hudson River and north-south from 35th Street to 33rd Street (see **Figure 9-1**). The noise study area encompasses a variety of land uses, including residential, commercial, retail, institutional, and parklands.

9-2-1 EXISTING CONDITIONS

Six noise receptor locations within the noise study area were selected to represent the worst-case increase in noise levels that may result from the Proposed Project. The receptor sites are shown on **Figure 9-1**, and the existing measured noise levels are shown in **Table 9-1**. Noise levels are currently moderate to relatively high at the six receptor sites and reflect the high volumes of vehicular traffic on the roadways.

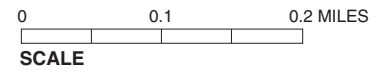
9-2-2 IMPACT ASSESSMENT

As described in Chapter 2, "Project Alternatives," there is limited development that will be completed in the noise study area by 2012. Therefore, absent the Proposed Project, traffic volumes would remain comparable to current conditions, and noise levels would not change substantially compared to today. Since the noise study area would continue to have large volumes of traffic, ambient noise levels would continue to be high.

In order to establish a uniform noise measurement that simulates people's perception of loudness and annoyance, the decibel measurement is weighted to account for those frequencies most audible to the human ear. This is known as the A-weighted sound level, or "dBA," and it is the most often used descriptor of noise levels for community noise. Future noise levels with the Proposed Project (i.e., the Build condition) in the year 2012 were calculated for the six receptor sites. At receptor site 1, there would be no change in traffic volumes with the Proposed Project so there would be no noise increase attributable to the project. At other locations, the noise increase level would range from about 54 dBA to 66 dBA. As shown in **Table 9-2**, the project noise exposure would be below the FTA's thresholds for moderate or severe impacts at each site.



- 1** Noise Receptor Location
- Noise Study Area Boundary



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Therefore, the Proposed Project would not result in significant adverse noise impacts using the FTA noise impact thresholds.

**Table 9-1
Existing Noise Levels (dBA)**

Noise Receptor Site	Location	FTA Land Use Category	Time	Noise Descriptor	Noise Level
1	East 33rd Street between First and Second Avenues	2 (Residential)	AM	L _{eq(1)}	66.1
			PM	L _{eq(1)}	65.0
			LN	L _{eq(1)}	65.1
			24-Hour	L _{dn} *	69.6
2	East 34th Street between Second and Third Avenues	2 (Residential)	AM	L _{eq(1)}	74.6
			PM	L _{eq(1)}	74.4
			LN	L _{eq(1)}	69.0
			24-Hour	L _{dn} *	74.8
3	East 35th Street between Third and Lexington Avenues	2 (Residential)	AM	L _{eq(1)}	74.5
			PM	L _{eq(1)}	75.4
			LN	L _{eq(1)}	64.2
			24-Hour	L _{dn} *	72.7
4	West 35th Street between Fifth and Sixth Avenues	2 (Residential)	AM	L _{eq(1)}	71.3
			PM	L _{eq(1)}	72.5
			LN	L _{eq(1)}	68.4
			24-Hour	L _{dn} *	73.5
5	West 33rd Street between Eighth and Ninth Avenues	2 (Residential)	AM	L _{eq(1)}	71.0
			PM	L _{eq(1)}	68.2
			LN	L _{eq(1)}	62.9
			24-Hour	L _{dn} *	69.3
6	West 34th Street between Ninth and Tenth Avenues	2 (Residential)	AM	L _{eq(1)}	75.0
			PM	L _{eq(1)}	73.2
			LN	L _{eq(1)}	67.6
			24-Hour	L _{dn} *	73.8
Notes: Field measurements were performed by AKRF, Inc. on June 1, 2, and 10, 2011					
* L _{dn} values were calculated from the measured AM, PM, and Late-Night values via the procedure described in Option 3 in Appendix D of the FTA guidance manual.					

**Table 9-2
2012 FTA Noise Impact Evaluation of Proposed Project**

Noise Receptor Site	FTA Impact Criteria for Project-Generated L _{dn} Noise Levels (dBA)*		Project Generated L _{dn} Noise Levels (dBA)	Impact Assessment
	Moderate Impact	Severe Impact		
1	64.1	69.2	0.0	No Impact
2	68.2	73.0	64.0	No Impact
3	66.5	71.4	60.5	No Impact
4	67.1	72.1	66.0	No Impact
5	63.8	69.0	54.1	No Impact
6	67.4	72.3	64.6	No Impact
Notes: * - Threshold of new noise levels at which a moderate impact or severe impact would occur based on existing noise levels. Compare to actual project-generated noise levels.				

In terms of the CEQR guideline, overall noise levels at the six noise receptor sites would remain in the “marginally acceptable” category. As shown in **Table 9-3**, there would be less than a 1 dBA increase in $L_{eq(1)}$ noise levels between the no build and build conditions, which would be imperceptible. Therefore, the Proposed Project would not result in significant adverse noise impacts based on CEQR noise impact thresholds.

Table 9-3
2012 Build $L_{eq(1)}$ Noise Levels (in dBA)

Site	Time	No Build* $L_{eq(1 \text{ hr})}$	2012 Build $L_{eq(1 \text{ hr})}$	Difference
1	AM	66.1	66.1	0.0
	PM	65.0	65.0	0.0
2	AM	74.6	74.8	0.2
	PM	74.4	74.8	0.4
3	AM	74.5	74.5	0.0
	PM	75.4	75.7	0.3
4	AM	71.3	72.0	0.7
	PM	72.5	73.1	0.6
5	AM	71.0	71.1	0.1
	PM	68.2	68.2	0.0
6	AM	75.0	75.1	0.1
	PM	73.2	73.7	0.5

Notes: *Existing noise levels have conservatively been used in place of No Build levels. Traffic noise, which is the dominant source of noise at all receptor sites, in the No Build condition is expected to be similar to that of the existing condition.

9-2-3 CONCLUSION

Project-generated vehicle diversions would result in less than a 1 dBA increase at six noise receptor sites. These increases would not result in significant adverse noise impacts based on both the FTA and CEQR noise impact thresholds.

9-3 VIBRATION

Operation of the Proposed Project would not produce any perceptible vibration levels. The rubber tires and suspension systems on buses and passenger vehicles provide for vibration isolation. With proper maintenance to prevent large potholes, bumps, or other poor pavement conditions, perceptible vibration levels are not expected from traffic operations along 34th Street. *

10-1 INTRODUCTION

This chapter documents whether the Proposed Project would impact utilities and solid waste and sanitation services. The Proposed Project would have minimal demand, if any, for water, sanitary sewer, and sanitation services; therefore, analysis focuses on potential impacts from changes in roadway operations. The chapter concludes that the Proposed Project would not result in any significant adverse impacts to infrastructure.

10-2 UTILITIES

A survey and field inspection identified public and private utilities along 34th Street. The New York City Department of Transportation (NYCDOT) conducted a preliminary evaluation of potential impacts on these utilities and other street furniture along the corridor to inform project development. Upon reviewing the existing surface objects and subsurface utility lines, the level of the potential impact of the Proposed Project was categorized as low, medium, or high, and the range of proposed mitigation was classified as remove, relocate, or build around the utility or obstruction. Certain objects that must be removed are amenities (benches) that may not be returned upon completion of the Proposed Project, and other obstructions would need to be relocated, (e.g. a bicycle rack). These obstructions would have a low level of impact on implementing the proposed bus stations. Utility grates are always considered to be a build around structure since avoiding their obstruction is necessary. Utility manholes and subway grates are examples of medium to high impacts due to the cost associated with relocating the utility and adjusting the manhole tops to accommodate new grades.

Where a high level of potential impact was identified, NYCDOT has explored design measures to avoid the utility or obstruction. During final design, a more thorough review would be conducted to identify any necessary relocation requirements. Given the dense development along 34th Street, subsurface construction activities are likely to encounter utilities and other infrastructure. Potential disruptions to such utilities would be primarily related to the construction of the 14 bus bulbs, which would involve shallow excavation. Some minor, temporary disruptions may occur to allow for the relocation of utilities from these areas. NYCDOT would coordinate with appropriate utility operators regarding all temporary infrastructure disruptions. All relocations would be completed in accordance with the procedures of their operators and applicable regulations, and as such, significant impacts to infrastructure are not anticipated.

The operation of the Proposed Project would have limited infrastructure demand, and any necessary utilities (electrical, telephone, and cable) would be supplied by existing providers in accordance with New York City Transit's (NYCT's) and MTA Bus's operating procedures. Therefore, the Proposed Project would not result in significant adverse impacts on infrastructure and utilities.

10-3 SOLID WASTE AND SANITATION SERVICES

The Proposed Project would generate minimal, if any, new demand for solid waste collection, and it would allow for the New York City Department of Sanitation and private carters to access the bus lanes to collect trash. Therefore, the Proposed Project would not result in significant adverse impacts to solid waste and sanitation services.

Chapter 11:

Hazardous Materials

A hazardous materials investigation was performed to determine the presence of documented contamination within the Proposed Project's construction zone, which is the roadbed and adjacent sidewalks of 34th Street. The evaluation included the following:

- A review of readily available state and federal environmental databases in accordance with the American Society for Testing and Materials (ASTM) Standard Practice E1527-05, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process: and
- A Site Reconnaissance to evaluate any sites identified by the environmental database review or to identify recognized environmental conditions not listed in the environmental database report that may impact the scope of the Project.

The data search resulted in 50 Recognized Environmental Conditions (RECs) within and near the Project Site, including contamination spills and leaking tanks. Forty-three (43) of the cases have been remediated and closed. The other seven (7) cases remain open and are listed in **Table 11-1**. It should be noted that the structures at 538 West 34th Street have been remediated and demolished as part of the Hudson Yards project; however, the cases have not yet been closed.

Table 11-1
Open Case Recognized Environmental Conditions (RECs) within the Project Site

Name	Address	Description
Hudson River PCBS	Not Available	Not Available
Historic Leaking Tank Site*	538 West 34th Street	Tank Over fill.
Federal Express*	538 West 34th Street	Soil contamination
BP Amoco Station #11248	436 10th Avenue	Contaminated groundwater
Con Edison 4566 Vault	12 Park Avenue	Dielectric fuel found in vault
Leaking Tank Site	208-210 East 34th Street	Tank test failed
Con Edison Pipeline	FDR Drive & East 33rd Street	Equipment failure. Vac truck recovered 1,500 gallons fuel oil.

Notes:
* The RECs at 538 West 34th Street have been remediated and the properties demolished for the future site of the Hudson Yards park and boulevard.

Source: Environmental Data Resources, Inc. March 2011

As part of the database review, several utility vaults and manholes were reported and are assumed to be located within the sidewalk or streetbed of 34th Street. In most cases, the spills were contained within a vault or manhole, cleaned up by responsible

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parties, and reported as closed. Based on the identified materials spilled, the closed status of the spill cases, and/or the location of the spill or release onto paved surfaces and within utility vaults and manholes, the potential for these sources of contamination to impact the Proposed Project is considered low.

The site reconnaissance also included a visual review of fill ports and vent pipes as possible evidence of undocumented fuel oil tanks throughout the concrete sidewalks surrounding 34th Street. A detailed evaluation was performed in areas where soil disturbance is expected to occur. In general, the observed fill ports do not appear to impact the bulb-out locations identified along the 34th Street Select Bus Service corridor. However, the following two proposed bus stations are located near fuel ports and vent pipes, and therefore, there is potential that underground storage tanks may be located beneath the sidewalk in proximity to these fill ports:

- The bus station west of Lexington Avenue near the Post Office, and
- The bus station located at the south side of 34th Street just east of 3rd Avenue.

During final design, the New York City Department of Transportation would identify the specific location of underground storage tanks within the station bulbout areas through a combination of technical analyses (ground penetrating radar), and interviews with property owners. If a tank is located in the area of construction, every effort will be made to modify designs to avoid the underground storage tanks. In the event that tanks cannot be avoided, they would be removed in accordance with local, state, and federal regulatory requirements.

In general, heavy metals and semivolatile organic compounds (SVOCs) may be present in the subsurface soils due to the likely presence of historic fill materials beneath 34th Street. Additionally, based on the date of construction of subsurface utilities, asbestos-containing materials (ACMs) and/or mercury switches may be present around utilities located beneath the roadway. In addition, Serpentinite, reported in soil between Tenth and Eleventh Avenues, is believed to contain naturally occurring asbestiform minerals, which if disturbed, could pose potential inhalation hazards during construction. However, based on the limited extent of subsurface construction required for the Proposed Project, these issues should not be of significant concern.

To avoid the potential for impacts from exposure to hazardous materials, all work would be conducted in accordance with existing, applicable regulatory requirements. Any subsurface work that involves the disturbance of soils would be conducted in accordance with a Project-specific Health and Safety Plan (HASP) to identify and manage any encountered hazardous materials to protect public health, worker safety, and the environment. The HASP would describe in detail the health and safety procedures to minimize exposure of hazardous materials to workers and the public. The HASP would be developed in accordance with Occupational Safety and Health Administration (OSHA) regulations and guidelines. The HASP is expected to include: designation of appropriate personnel to ensure that all of its requirements are implemented; required training; dust control and stockpiling procedures; contingency/emergency response plans; and agency notification requirements. The project specific HASP will be in place prior to any construction.

The Proposed Project's operation would not introduce new sources of hazardous materials. Buses would be stored, fueled, and cleaned at existing New York City Transit

Chapter 3-7: Hazardous Materials

(NYCT) and Metropolitan Transportation Authority Bus Company (MTA Bus) depots and would be undertaken in accordance with NYCT and MTA Bus policies and procedures. Street run-off has the potential to contain hazardous substances (i.e., oil and gasoline). The Proposed Project would not result in a substantial change in the amount of run-off and discharges would continue to be managed in accordance with the New York City Department of Environmental Protection's policies and procedures.

Overall, the Proposed Project would not result in significant adverse impacts from exposure to hazardous materials during its construction and operation.

12-1 INTRODUCTION

This chapter describes the existing conditions, regulatory requirements, and impacts of the Proposed Project on natural resources including geology, topography and soils; water resources (water quality, floodplains, wetlands, and coastal zone policies); vegetation and wildlife habitat; and threatened and endangered species. Field reconnaissance was performed in March 2011 to characterize existing natural resources in the vicinity of the Proposed Project. Available data sources, including the New York State Geographic Information System and aerial photographs were also reviewed to aid in the identification and description of natural features.

This chapter concludes that the Proposed Project would not result in significant adverse impacts on natural resources. The Proposed Project would involve construction activities within the roadbed and adjacent sidewalks of 34th Street. There is limited habitat along the corridor, and wildlife in this area is tolerant of urban conditions. The Proposed Project has the potential to remove or relocate street trees. Any trees that may be impacted would be relocated or replaced in consultation with the New York City Department of Parks and Recreation. While portions of the Proposed Project would be located within New York City's Coastal Zone Boundary, the Proposed Project would not involve in-water or over-water construction activities nor would it affect floodplains or the water quality of the Hudson and East Rivers.

12-2 GEOLOGY, TOPOGRAPHY, AND SOILS

The Proposed Project, which is located along the roadway and sidewalks of 34th Street between the East River and the Hudson River is depicted on the United States Geological Survey topographic quadrangle maps: Central Park, NY; Brooklyn, NY; Jersey City, NJ-NY and Weehawken, NJ-NY. 34th Street is at an elevation of about 50 feet above mean sea level at Fifth Avenue. Slight topographic relief is noted, with topography generally sloping to the west and east. At the Hudson River and the East River, 34th Street is about 10 feet above mean sea level.

34th Street is within the Manhattan Prong of the New England Upland physiographic province. Most of the area is underlain by schist of the Hartland Formation. A granitic intrusion has been mapped between Ninth and Twelfth Avenues between West 31st Street and West 40th Street. Serpentinite has been reported between Tenth and Eleventh Avenues, and at scattered locations as far south as West 26th Street.

The physical construction of the Proposed Project would involve the addition of wider pedestrian areas at bus station locations and installation of signage and pavement markings. Construction depths would be limited to a maximum of ten feet. As a result, the limited extent and nature of these activities would have no significant adverse impacts on the local geology, topography, or soils.

12-3 WATER RESOURCES

The proposed area of construction is fully developed and/or surrounded by paved surfaces, buildings, and small plazas and parks. There are no natural or manmade surface water bodies, streams, canals, drains, or special aquatic sites within this area. The Hudson and East Rivers are located at either end of 34th Street. There will be no changes to the Hudson River and East River as a result of the Proposed Project.

12-3-1 WATER QUALITY

Water quality is regulated under the Clean Water Act of 1977, as amended (33 USC 1251-1376). Generally, water quality in the 34th Street corridor is impaired by the urban and transportation uses in the corridor, but efforts by federal, state, and city agencies have and are expected to continue to improve conditions of the Hudson and East Rivers.

As part of an initiative to improve the quality and reduce the quantity of stormwater discharges, the New York City Department of Transportation and New York City Department of Environmental Protection are exploring Best Management Practices, including bioswales, tree pits, and planting areas for the construction of certain bus bulbouts. This initiative will be tested as a pilot for the new Select Bus Service on First and Second Avenues. If successful, these strategies would be incorporated into the design of the 34th Street bus bulbouts, on a station by station basis. These measures would be expected to improve water quality as compared to current conditions.

The Proposed Project would temporarily disturb less than an acre of ground surface; therefore, a New York State Department of Environmental Protection General Permit for Stormwater Discharges from Construction Activity (i.e., SPDES Permit) would not be necessary. However, in the interest of maintaining the quality of stormwater runoff during construction, the Proposed Project would include Best Management Practices. With these Best Management Practices, there would be little to no short term impact to stormwater quality during construction.

The Proposed Project would not involve in-water construction activities nor would it increase impervious area as it would occupy the existing streetbed and sidewalk of 34th Street. Therefore, the Proposed Project would not result in significant adverse impacts on water quality.

12-3-2 FLOODPLAINS

The east portion of the study area is within the 100-year flood plain from the East River to about First Avenue and the west portion is within the 100-year flood plain from about Eleventh Avenue to the Hudson River (FEMA Flood Insurance Rate Map, Panels 0038B and 0039B). The Proposed Project may include the widening of pedestrian areas in the form of pavement bulbouts within the 100 year floodplain; however impervious surfaces would not be increased as 34th Street is already entirely paved. Therefore, the Proposed Project would not result in significant adverse impacts to the floodplain.

12-3-3 WETLANDS

There are no New York State Department of Environmental Conservation (NYSDEC) regulated freshwater wetlands, NYSDEC tidal wetlands, or National Wetland Inventory

(NWI) mapped wetlands within the proposed area of construction. The Hudson River and the East River are mapped as tidal wetlands on the NYSDEC and NWI maps.

There are no wetlands within the proposed area of construction, and there would be no change in existing impervious surface or introduction of new surface run-off. Therefore, the Proposed Project would not result in significant adverse impacts on wetlands, including the Hudson and East Rivers.

12-3-4 NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM

The Federal Coastal Zone Management Act of 1972 (16 USC §§1451-1464) required states to establish coastal zone management programs to preserve, protect, develop and restore the coastal zone of the United States. One or two blocks on either end of the proposed project would be within New York City's coastal zone boundary. Therefore, the New York City's Local Waterfront Revitalization Program (LWRP), which has been approved by New York State, is applicable to the Proposed Project.

An assessment of this action's consistency with the City's LWRP policies was prepared and was approved by the New York City Department of City Planning and the New York State Department of State. The coastal zone assessment determined that the Proposed Project is consistent with the LWRP policies, and therefore, it would not result in significant adverse impacts to the City's coastal zone or waterfront.

12-4 VEGETATION AND WILDLIFE HABITAT

No naturally occurring vegetation is present within the 34th Street corridor. Trees in the area are limited to landscape plantings in above grade moveable planters and at grade tree pits along the sidewalk and roadway. These containerized trees include, but are not limited to maples, oaks and black locust. The moveable planters are owned and maintained by the 34th Street Partnership, a business improvement district along the corridor. The street trees are owned by the City of New York and maintained by the New York City Department of Parks and Recreation (NYCDPR).

Concrete planters closer to buildings and atriums were observed to be empty during field visits in March 2011. Additional reviews of the active tree pits in the vicinity of the proposed bulbout SBS and express bus stations, in August 2011, identified 28 trees, but none of them would be removed for construction.

During final design, every effort will be made to avoid impacts to trees by relocating SBS shelters. NYCDOT will coordinate with the 34th Street Partnership and NYCDPR regarding any impacts to planters and street trees prior to construction. As the above-grade vegetative planters are movable, the project will have no impacts to these planters. It is also anticipated that a variety of landscape plantings, predominantly flowers, will be added as spring time plantings. This vegetation offers limited habitat except for birds and small mammals typical of an urban setting.

No wildlife was observed within the proposed project area, except for pigeons and sparrows, which are typical of an urban environment. There are no natural settings to provide foraging, nesting or denning areas for wildlife species indigenous to the northeastern United States. The common avian species observed are expected to use the few landscape trees that are present along 34th Street, as well as the urban environment, including windowsills, roofs, awnings, and other structures for roosting and plazas, planters and streets and sidewalks for foraging.

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A review of the New York Natural Heritage Program (www.nynhp.org) showed that the entire island of Manhattan is identified as a generalized location of animals and plants that are rare in New York State, and the entire length of the Hudson River, south to the Arthur Kill and Kill Van Kull, is identified as a significant natural community. However, the 34th Street corridor consists almost entirely of impervious surfaces, and there are no ecological communities or suitable wildlife habitat present.

There is no natural habitat within the 34th Street project corridor; therefore, the Proposed Project would not impact vegetation or wildlife. In addition, as there would be no change in existing impervious surface or introduction of new surface run-off, the Proposed Project would not impact the significant natural communities of the Hudson and East Rivers.

12-5 THREATENED AND ENDANGERED SPECIES

An evaluation of threatened and endangered species was conducted in accordance with the requirements of the Endangered Species Act of 1973. Based on a review of data available through the New York Nature Explorer and correspondence from the NYS Natural Heritage Program the only protected species with the potential to exist in the proposed area of construction is the Peregrine Falcon (*Falco peregrinus*, NY Endangered). If present, this species would be accustomed to typical activity along the streets of Manhattan, including periodic roadway work and heavy bus, automobile and pedestrian traffic. Accordingly, the Proposed Project would not impact the Peregrine falcon or its habitat. Another species listed as both Federally and State endangered, the shortnose sturgeon (*Acipenser brevirostrum*) was identified by the New York State Natural Heritage Program as occurring in waters near 34th Street. However, this fish species would not be impacted by this Proposed Project since it would not result in in-water construction or any changes in water quality. Therefore, the Proposed Project would not result in significant adverse impacts to threatened or endangered species. *

13-1 INTRODUCTION

This chapter evaluates the temporary impacts that could occur during construction of the Proposed Project. Consistent with the *City Environmental Quality Review Technical Manual* (Mayor's Office of Environmental Coordination, 2010), the following resource areas are considered:

- Social Conditions (land use and neighborhood character, socioeconomic conditions, community facilities and services, and open space);
- Historic Resources;
- Transportation (vehicular traffic, parking, transit services, and pedestrian circulation);
- Air Quality;
- Noise and Vibration;
- Natural Resources;
- Hazardous Materials; and
- Infrastructure

13-2 DESCRIPTION OF PROPOSED CONSTRUCTION ACTIVITIES

The Proposed Project would involve construction within the roadbed and adjacent sidewalks of 34th Street. Construction activities would primarily involve repaving and restriping of the roadbed, the construction of bus bulbs and associated utility work, installation of signage and bus shelters, and changes in signal timings along and adjacent to 34th Street.

The entire length of 34th Street would be milled and repaved. Milling involves use of machinery to remove the upper layer of asphalt. (If the street were not milled, its height would increase each time it is repaved and would eventually exceed the height of adjacent sidewalks and curbs.) As the milling of sections of 34th Street is completed, a fresh layer of asphalt would be installed to result in a smooth street surface. The New York City Department of Transportation (NYCDOT) regularly mills and repaves streets in Manhattan, typically on a five-year schedule. 34th Street was mostly recently milled and repaved in 2008 when the existing bus lanes were installed.

The Proposed Project would result in 14 bus bulbs where the sidewalks would be extended approximately 8 to 9 feet into the existing curbside lane for a length of up to 140 feet. These areas would be excavated up to four feet. Street furniture, hydrants, and utilities would be relocated away from the bus bulbs. A subsurface concrete bus

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pad would be constructed as would a raised, 10½ inch platform (where feasible) with tactile warning strips to facilitate near-level boarding onto low-floor buses. Bus shelters, signage, and ticket machines would be constructed within the bus bulbs.

Where Select Bus Service stations and express bus stops are proposed within the existing sidewalk, new or relocated bus shelters, signage, and ticket machines would be provided. Street furniture and other sidewalk obstructions would either be removed or relocated outside of the proposed bus station or stop locations.

The proposed project would be constructed in three segments: from FDR Drive to Third Avenue, Third Avenue to Tenth Avenue, and Tenth Avenue to Twelfth Avenue (Route 9A). Construction of the segments between the FDR Drive and Third Avenue and between Third Avenue and Tenth Avenue would occur in 2012 and may be parallel or sequential. The total length of construction for these two segments would be less than 12 months. The construction of project elements between Tenth Avenue and Twelfth Avenue (Route 9A) would occur in 2013 in tandem with construction efforts for the No. 7 Train Extension and the Hudson Yards park and boulevard projects.

Construction activities would employ approximately 10 to 20 workers at any given time. Given the limited availability of parking in Midtown Manhattan, it is anticipated that most workers would arrive and depart by public transportation. However, workers that use City vehicles such as millers and pavers may drive to and park at the equipment yard during their shift. It should be noted that most of the workers undertake roadway projects throughout the city year-round and would be assigned to the Proposed Project as part of a normal rotation.

While most construction activities would be done during normal daylight hours (7AM to 6PM, Monday through Friday), certain activities such as paving and striping would be undertaken at night to minimize the effect on traffic operations. NYCDOT would seek the appropriate permits for these nighttime construction activities.

13-3 POTENTIAL CONSTRUCTION IMPACTS OF THE PROPOSED PROJECT

13-3-1 SOCIAL CONDITIONS

13-3-1-1 LAND USE AND NEIGHBORHOOD CHARACTER

All construction projects have the potential to result in temporary nuisances on the communities in which they occur. Changes in traffic and pedestrian patterns, increases in air quality emissions and noise, and the general visual quality of construction sites all have the potential to impair adjacent land uses and adversely affect community character. However, the level of impact varies greatly depending on the scope and duration of construction activities.

The overall duration of construction would be less than 12 months. It is anticipated that activities would be undertaken sequentially on a block-by-block basis. The total duration of construction activities (milling and repaving, lane striping, bus bulbs and stations, and finishes and signage) on any given block is expected to take less than one month, but individual activities could be undertaken in separate months. The types of construction activities to be undertaken for the Proposed Project are typical of roadway improvement projects throughout New York City. Given the short duration and types of construction

activities to be undertaken at any given location along the corridor, the temporary impacts on surrounding uses and the community in general would not be significant.

13-3-1-2 SOCIOECONOMIC CONDITIONS

During construction, businesses that operate along 34th Street may be temporarily inconvenienced by various elements of the construction process. The flow of traffic and access to all residences and businesses would be maintained, but there could be temporary sidewalk closures or the displacement or relocation of curbside parking and loading/unloading activities. NYCDOT would work with businesses to develop ways to minimize construction impacts as much as possible. Sidewalk closures would be kept to a minimum and announced as much in advance as possible; signage would be provided as necessary to direct customers to affected businesses; and construction of project elements on any given block is not expected to last for more than a month in total. Therefore, the construction of the Proposed Project would not result in significant adverse socioeconomic impacts.

13-3-1-3 COMMUNITY FACILITIES AND SERVICES

As described above, there would be temporary lane and sidewalk closures during construction. NYCDOT would work with the institutional uses (i.e., Public School 116, Norman Thomas High School, City University of New York School of Professional Services, Yeshiva University, New York University (NYU) Langone Medical Center, NYU Clinical Cancer Center, and the New York Public Library—Science, Business, and Industry Library) along 34th Street to maintain access to the maximum extent feasible during construction. Sidewalk closures would be kept to a minimum and would be announced as much in advance as possible. Signage would be provided to assist visitors in identifying alternative access to these facilities in the event that the adjacent sidewalk need be temporarily closed.

NYCDOT would maintain traffic flow along 34th Street during construction although there may be temporary lane closures. The Maintenance and Protection of Traffic (MPT) Plan would identify measures to ensure access along 34th Street for emergency services, including ambulances to and from New York University (NYU) Langone Medical Center and the other medical facilities along the corridor.

13-3-1-4 OPEN SPACE

Construction activities would not disrupt access or require temporary or permanent easements at any public open spaces. Therefore, the construction of the Proposed Project would not result in a significant adverse impact to open space resources.

13-3-2 HISTORIC RESOURCES

13-3-2-1 ARCHAEOLOGICAL RESOURCES

The Proposed Project would require shallow excavation for the construction of bus bulbs and utility relocation. As described in Chapter 5, "Historic Resources," a Phase 1A Archaeological Documentary Study determined that the project site is sufficiently disturbed and that there is little to no potential that undisturbed archaeological resources remain intact. Therefore, construction of the Proposed Project would have no adverse effect on archaeological resources.

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13-3-2 ARCHITECTURAL RESOURCES

As described in Chapter 5, “Historic Resources,” there are a number of historic, standing structures within 90 feet of the project site. To avoid inadvertent adverse effects on these resources from adjacent construction, the NYCDOT would implement a Construction Protection Plan (CPP), which would be developed in consultation with SHPO and implemented by a professional engineer before any excavation and construction. The CPP would comply with the procedures set forth in the New York City Department of Buildings Technical Policy and Procedure Notice (TPPN) #10/88, and as appropriate with the National Park Service’s *Preservation Tech Notes, Temporary Protection #3: Protecting a Historic Structure during Adjacent Construction*, and the *New York City Landmarks Preservation Commission Guidelines for Construction Adjacent to a Historic Landmark and Protection Programs for Landmark Buildings*. As a result, the construction of the Proposed Project would have no adverse effect on historic architectural resources.

13-3-3 TRANSPORTATION

A Maintenance and Protection of Traffic (MPT) Plan would be developed during final design and would indicate how the Proposed Project’s construction would be coordinated to maintain access along 34th Street. The plan would include details on how all modes (automobiles, transit, bicyclists and pedestrians) would be accommodated in each phase of construction. It would also address how access, parking, and loading/unloading operations would be provided or maintained. The MPT plan would also address the following NYCDOT priorities:

- Maintain one lane of automobile traffic in each direction during peak hours.
- Develop a comprehensive public information plan that would provide a continuous stream of information about the construction stages and access changes.

The impacts to the public would be temporary and could include extended travel times, reduced speeds, the temporary loss of on-street parking, modified loading/unloading areas, temporary relocation of bus stops, and reductions in sidewalk space. However, these effects would be minimized along the corridor since construction activities would be staged to occur on a block-by-block basis, and overall, construction of the Proposed Project would not result in significant adverse impacts on transportation services.

13-3-4 AIR QUALITY

According to the *City Environmental Quality Review Technical Manual* (Mayor’s Office of Environmental Coordination, 2010), a qualitative assessment of potential construction period effects is typically acceptable for project’s with a short duration, limited construction period traffic, and activities of limited intensity. Construction of the Proposed Project is expected to be complete in less than 12 months. Construction vehicle trip generation is expected to be minimal since activities would be undertaken on a block by block basis and because there would be minimal excavation or materials delivery for the Proposed Project. Therefore, the construction impacts on air quality are being evaluated qualitatively.

The construction of the Proposed Project would primarily include milling and repaving, roadway markings, construction of bus bulbs and stations, and installation of signage and finishings. During construction of the Proposed Project, emissions from on-site

construction equipment and on-road construction-related vehicles, and their effect on background traffic, have the potential to affect air quality. In general, most construction engines are diesel-powered, and produce relatively high levels of sulfur oxides (SO₂), nitrogen oxides (NO_x) and particulate matter (PM_{2.5} and PM₁₀). Construction activities also emit fugitive dust.

Technologies have been developed to substantially reduce SO₂ and PM emissions. These include ultra low-sulfur diesel fuel (ULSD), diesel particulate filters (DPFs), and Tier 1, 2, and 3 engines. These technologies must be used for public projects as required by Local Law 77 of 2003. Therefore, these technologies would be implemented for the Proposed Project. Furthermore, every effort would be made during the construction phase to limit disruption to through traffic, which would reduce potential increases in mobile source pollutants during construction.

All necessary measures would be implemented to ensure that the New York City Air Pollution Control Code regulating construction-related dust emissions is followed. Appropriate fugitive dust control measures, including watering of exposed areas and dust covers for trucks, would be employed, and to reduce the resulting concentration increments at sensitive receptors, large emissions sources and activities, such as concrete trucks and pumps, would be located away from operable windows and public open spaces to the extent feasible. Additional measures would be taken in accordance with applicable laws, regulations, and building codes. These include the restriction of on-site vehicle idle time to three minutes for all vehicles not using the engine to operate a loading, unloading, or processing device (e.g., concrete mixing trucks).

With these measures incorporated as part of the Proposed Project, its construction would not result in adverse air quality impacts.

13-3-5 NOISE AND VIBRATION

The potential noise and vibration impacts of construction activities for the Proposed Project have been evaluated qualitatively consistent with Chapter 12 of the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* (May 2006) and the *City Environmental Quality Review Technical Manual* (Mayor's Office of Environmental Coordination, May 2010).

13-3-5-1 NOISE

Many construction activities have the potential to generate noise, which can create a nuisance for the communities in which they occur. However, noise impacts from construction vary greatly depending on the duration and the complexity of a project. The *City Environmental Quality Review Technical Manual* (Mayor's Office of Environmental Coordination, 2010), which serves as New York City's guidance for completing environmental reviews of its actions, suggests that a detailed noise assessment is typically not warranted for projects with a construction duration of less than two years. The construction duration of the entire project is expected to be less than 12 months. Therefore, a qualitative assessment of construction noise is considered appropriate for the Proposed Project.

The following analysis is based on methodology outlined in Chapter 12 of FTA's *Noise and Vibration Impact Assessment* (May 2006).

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- **Duration:** The overall duration of construction would be less than 12 months. It is anticipated that activities would be undertaken sequentially on a block-by-block basis. The total duration of construction activities (milling and repaving, lane striping, bus bulbs and stations, and finishes and signage) on any given block is expected to take less than one month, but individual activities could be undertaken in separate months.
- **Equipment:** The construction equipment likely to be used for the Proposed Project would include jack hammers, a road milling machine, a small crane, an excavator, a concrete mixing truck, vibratory rollers, asphalt trucks, asphalt paving machines, and dump trucks. Noise emission levels and estimated levels of utilization during this type of construction are provided in **Table 13-1**.

Table 13-1
Construction Equipment Noise Characteristics

Type	FHWA/NYCDEP Reference Noise Level ¹ at 50 feet (dBA)	Utilization Percentage ¹	FTA Typical Noise Level ² at 50 feet (dBA)
Jack Hammer	85	20	88
Crane	85	16	83
Vibratory Roller	85	20	74
Excavator	85	40	82
Concrete Mixer Truck	85	40	85

Notes:

1. Based on Specification 721.56 L_{max} noise levels and utilization percentages provided in the USDOT FHWA RCNM and the NYCDEP Construction Noise Rules for the equipment listed.
2. Based on noise levels provided in the May 2006 FTA Noise and Vibration Impact Assessment Manual.

The delivery and removal of construction equipment and materials to and from the project site would also generate noise. However, due to the limited work to be undertaken and the short construction period, the expected number of construction related vehicles would be small, and therefore, not substantially perceptible given ambient noise levels along 34th Street.

- **Work Hours:** Title 15, Chapter 28 of the Rules of the City of New York limits the hours of construction to weekdays (Monday through Friday) from 7AM to 6PM. When nighttime or weekend work is necessary, a permit must be sought pursuant to Section 24-222 of the Administrative Code of the City of New York. As described in Section 3.9-2 above, nighttime or weekend work may be necessary for elements of the Proposed Project to maintain traffic operations. When such activities would be required, the NYCDOT would adhere to the permit requirements of the Section 24-222 of the Administrative Code of the City of New York.
- **Monitoring:** Title 15, Chapter 28 of the Rules of the City of New York designates responsibility for construction noise compliance to the New York City Department of Environmental Protection (NYCDEP). NYCDEP may send an inspector to a construction site as a matter of routine business or based on a citizen complaint. Upon inspection, the contractor must present the project-specific construction noise mitigation plan and demonstrate compliance with the plan. The inspector may issue a violation if conditions are not met, and the contract has three business days to

undertake corrective action. If a subsequent inspection finds that conditions are not met or that an alternative construction noise mitigation plan has not been filed, then a Notice of Violation would be issued with a recommended penalty or other course of action.

- **Public Outreach:** As required by Title 15, Chapter 28 of the Rules of the City of New York, NYCDOT would require its contractors to prepare a construction noise mitigation plan. The plan must be conspicuously posted and be publicly available for inspection. The plan would provide contact information and describe the duration of construction phases, the expected equipment to be used, work hours, and noise abatement measures.
- **Local Construction Noise Requirements:** Construction activities for the Proposed Project would be performed in accordance with Title 15, Chapter 28 of the Rules of the City of New York, which requires that contractor's implement specific noise reduction measures and technologies identified in the code. The following mitigation measures are required by Title 15, Chapter 28 of the Rules of the City of New York during construction and would reduce the referenced noise levels shown in **Table 13-1**:
 - Certifying that tools and equipment are regularly maintained;
 - Using appropriate manufacturer's noise reduction device(s), including a manufacturer's muffler;
 - Ensuring that the equipment internal combustion engine's housing doors are kept closed and using appropriate noise-insulating material mounted to the engine housing;
 - Covering portable compressors, generators, pumps and other such devices with noise insulating fabric;
 - Limiting all unnecessary idling of vehicles and non-road engines;
 - Using equipment with quieter back-up alarms;
 - When required by the New York City Department of Buildings and the site is within 75 feet of a receptor, constructing perimeter noise barriers (noise receptors would be identified in the design process);
 - Constructing and implementing a noise mitigation training program; and
 - Coordinating work schedule with community members to provide a forum for minimizing any noise impacts.

Given the short construction period, and measures required by regulation that would be applied to reduce noise levels, construction activities would not result in significant adverse noise impacts.

13-3-5-2 VIBRATION

The use of impact equipment on site, such as a jack hammer, for street and sidewalk demolition and the transport of material by heavy trucks have the potential to increase vibration levels. However, no high impact machinery (such as pile drivers) would be required. The equipment likely to be used for the Proposed Project would operate within the vibration criteria established in FTA's *Transit Noise and Vibration Impact Assessment* (2006).

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As described in Chapter 5, “Historic Resources,” there are a number of historic buildings in the area. To avoid inadvertent damage to these structures during construction, NYCDOT would implement a CPP, which will apply to all historic structures within 90 feet of the construction zone. The CPP would ensure that excavation and construction activities within 90 feet of these sensitive structures are not adversely impacted by construction vibration. As a result, the construction of the Proposed Project would not result in significant adverse vibration impacts.

13-3-6 HAZARDOUS MATERIALS

As described in Chapter 11, “Hazardous Materials,” sources of potential contamination have been identified in the study area for the Proposed Project. Asbestos-containing materials (ACMs) and/or mercury switches may be present around utilities located beneath the roadway. In addition, Serpentinite, reported in soil between Tenth and Eleventh Avenues, is believed to contain naturally occurring asbestiform minerals, which if disturbed, could pose potential inhalation hazards during construction. To avoid the potential for impacts from exposure to hazardous materials, all work would be conducted in accordance with existing, applicable regulatory requirements. Any subsurface work that involves the disturbance of soils would be conducted in accordance with a Health and Safety Plan (HASP) to identify and manage any encountered hazardous materials to protect public health, worker safety, and the environment. The HASP would describe in detail the health and safety procedures to minimize exposure of hazardous materials to workers and the public. The HASP would be developed in accordance with Occupational Safety and Health Administration (OSHA) regulations and guidelines. The HASP is expected to include: designation of appropriate personnel to ensure that all of its requirements are implemented; required training; dust control and stockpiling procedures; contingency/emergency response plans; and agency notification requirements.

13-3-7 NATURAL RESOURCES

As described in Chapter 12, “Natural Resources,” there are limited natural features along 34th Street, and the Proposed Project would not require in-water or over-water construction activities. The Proposed Project would temporarily disturb less than an acre of ground surface; therefore, a New York State Department of Environmental Protection General Permit for Stormwater Discharges from Construction Activity (i.e., SPDES Permit) would not be necessary. However, in the interest of maintaining the quality of stormwater runoff during construction, the Proposed Project would include Best Management Practices. With these Best Management Practices, there would be little to no short term impact to stormwater quality during construction.

Proposed bus stations would be located and designed to retain existing street trees. Wooden tree protection and tree wrap would be installed around existing trees to create a zone to prevent stockpiling under the tree and keep machinery from damaging the tree. Tree protection would remain intact until construction is complete. To minimize the potential construction impact to tree root zones, excavation within the root zone would use minimally invasive techniques, such as hand excavation and pneumatic excavation, while at all times protecting exposed roots from desiccation. Any removal of pavement or curb that might impact stability of a tree would be done under field supervision of a certified arborist.

13-3-8 INFRASTRUCTURE

Given the dense development along 34th Street, subsurface construction activities are likely to encounter utilities and other infrastructure. Potential disruptions to such utilities would be primarily related to the construction of the 14 bus bulbs, which would involve shallow excavation. Some minor, temporary disruptions may occur to allow for the relocation of utilities from these areas. NYCDOT would coordinate with appropriate utility operators regarding all temporary infrastructure disruptions. All relocations would be completed in accordance with the procedures of their operators and applicable regulations, and as such, significant impacts to infrastructure are not anticipated.

13-4 CONCLUSION

Construction of the Proposed Project would last less than 12 months. During this time, there is potential for temporary impacts on access and circulation through the 34th Street corridor, increases in emissions from construction vehicles and dust, and increases in noise from construction equipment. However, these and other potential impacts of construction would be minimized through compliance with construction laws and regulations, development of a Construction Protection Plan (CPP) and Maintenance and Protection of Traffic (MPT) Plan, and through communication with local residents and businesses. Overall, while construction activities may result in temporary nuisances in the surrounding community, the Proposed Project would not result in significant adverse construction impacts. *

Appendix A

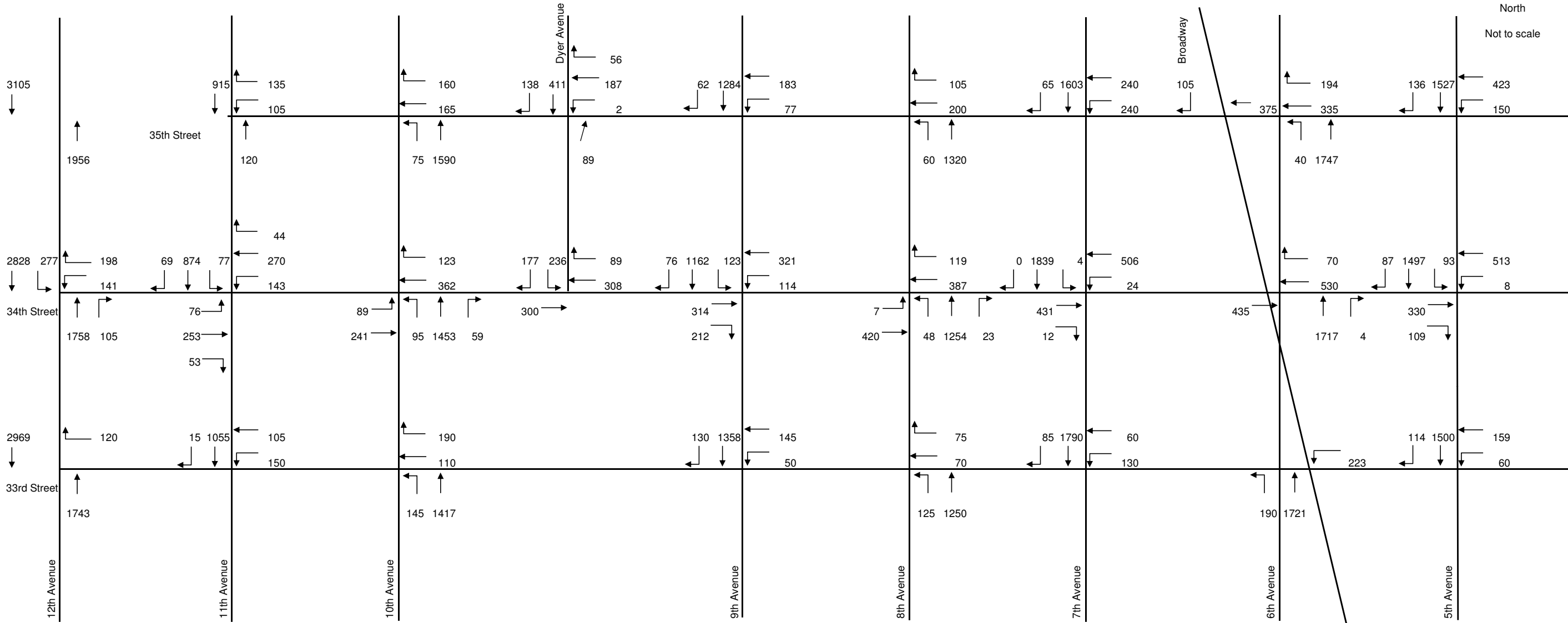
Transportation

Western Portion



North

Not to scale



NYCDOT 34th Street Select Bus Service

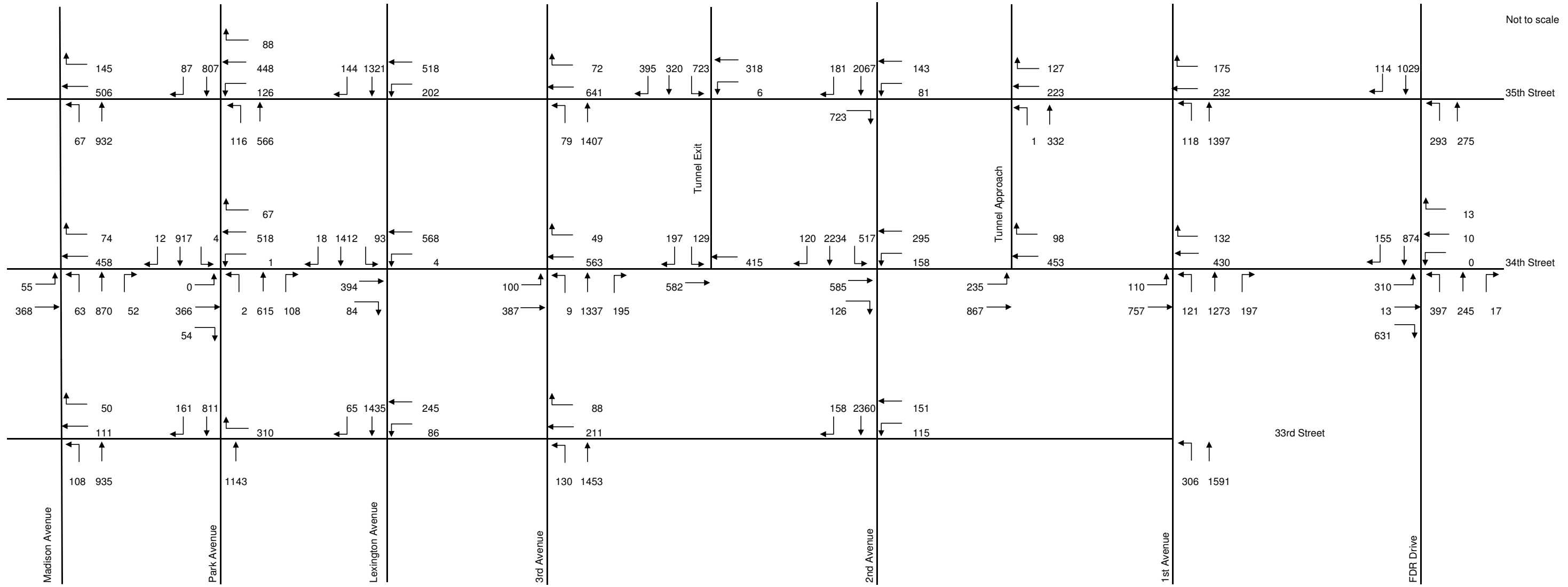
2009 Balanced Traffic Volumes
AM Peak Hour: 8:00 AM - 9:00 AM
Figure 6-1

Eastern Portion



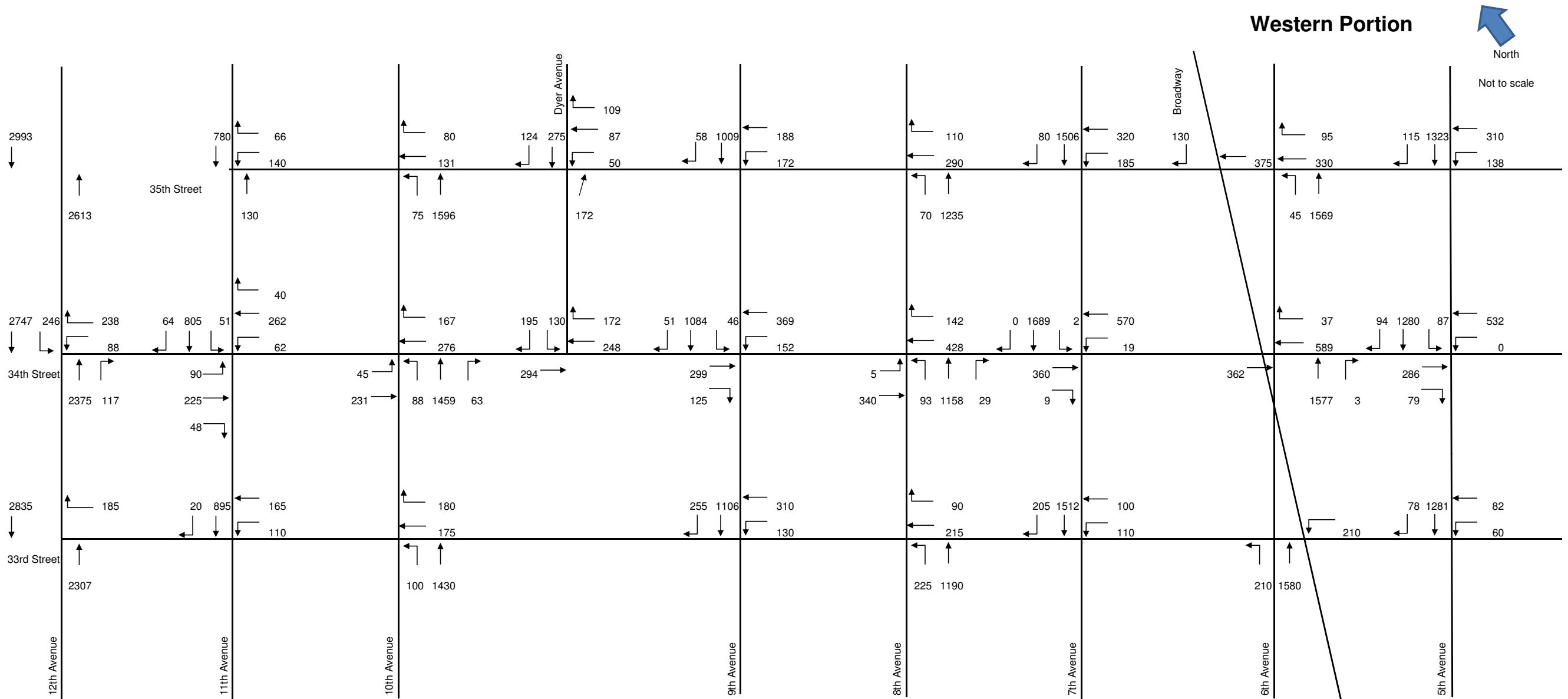
North

Not to scale



NYCDOT 34th Street Select Bus Service

2009 Balanced Traffic Volumes
 AM Peak Hour: 8:00 AM - 9:00 AM
 Figure 6-2



NYCDOT 34th Street Select Bus Service

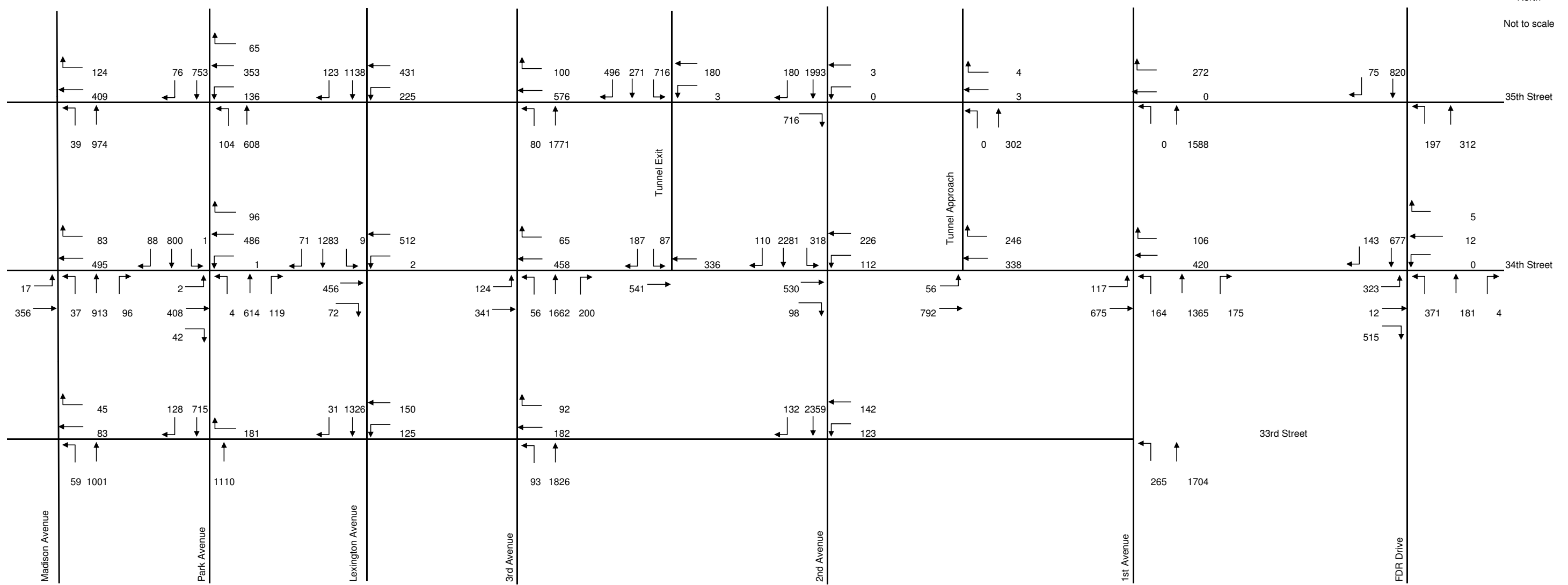
2009 Balanced Traffic Volumes
 PM Peak Hour: 5:00 PM - 6:00 PM
 Figure 6-3

Eastern Portion



North

Not to scale



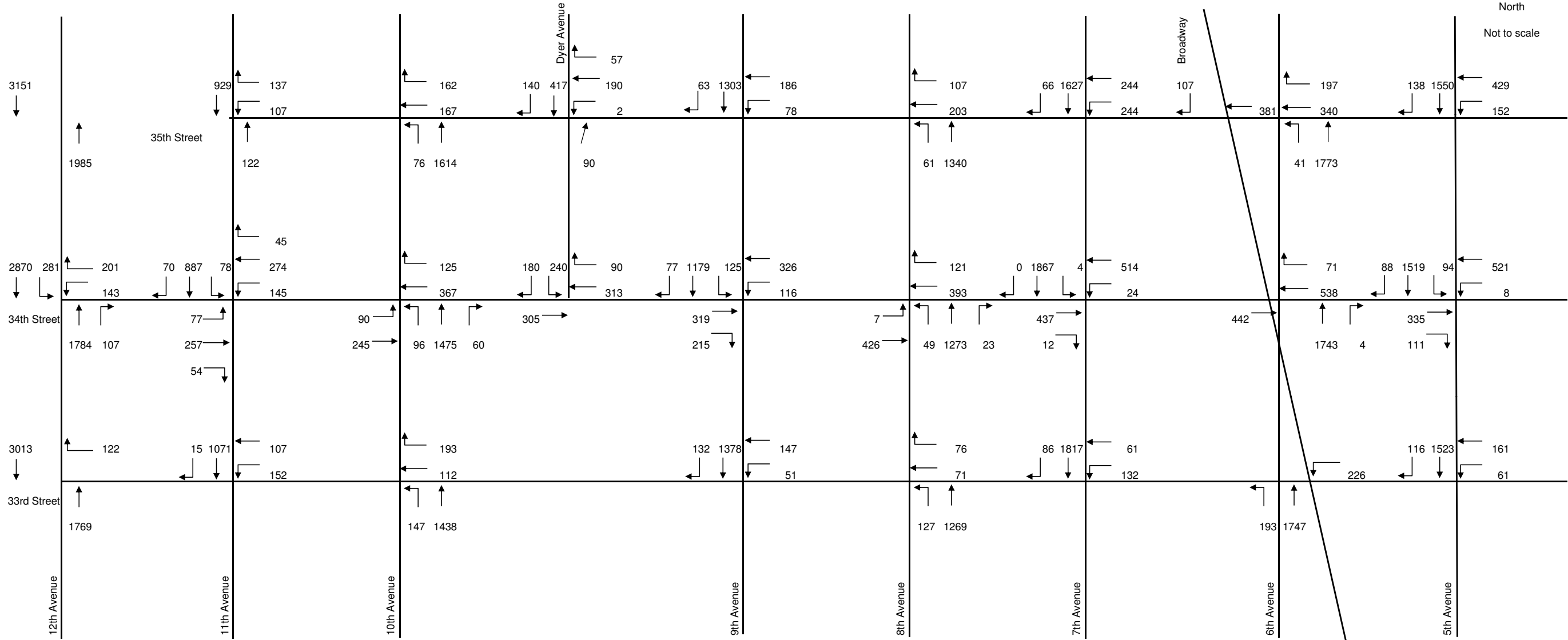
NYCDOT 34th Street Select Bus Service

**2009 Balanced Traffic Volumes
PM Peak Hour: 5:00 PM - 6:00 PM
Figure 6-4**

Western Portion



North
Not to scale



NYCDOT 34th Street Select Bus Service

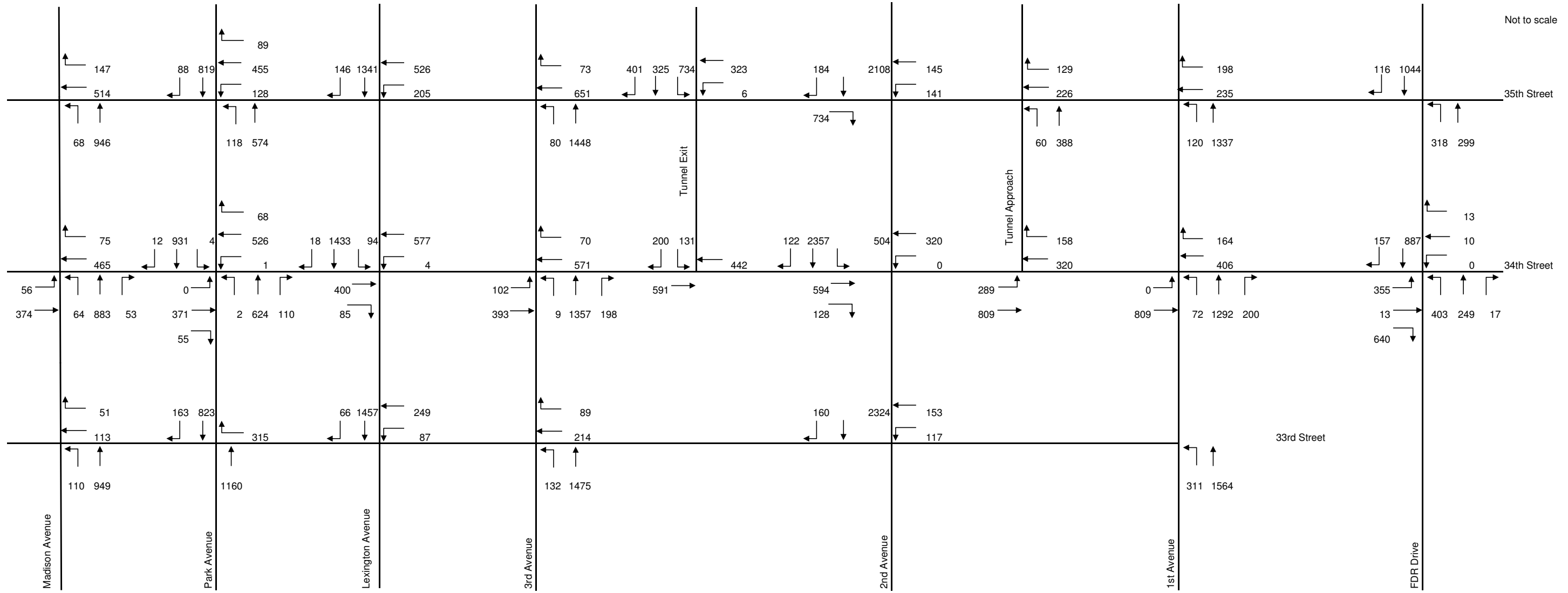
**2012 No-Build Traffic Volumes
AM Peak Hour: 8:00 AM - 9:00 AM
Figure 6-5**

Eastern Portion



North

Not to scale



NYCDOT 34th Street Select Bus Service

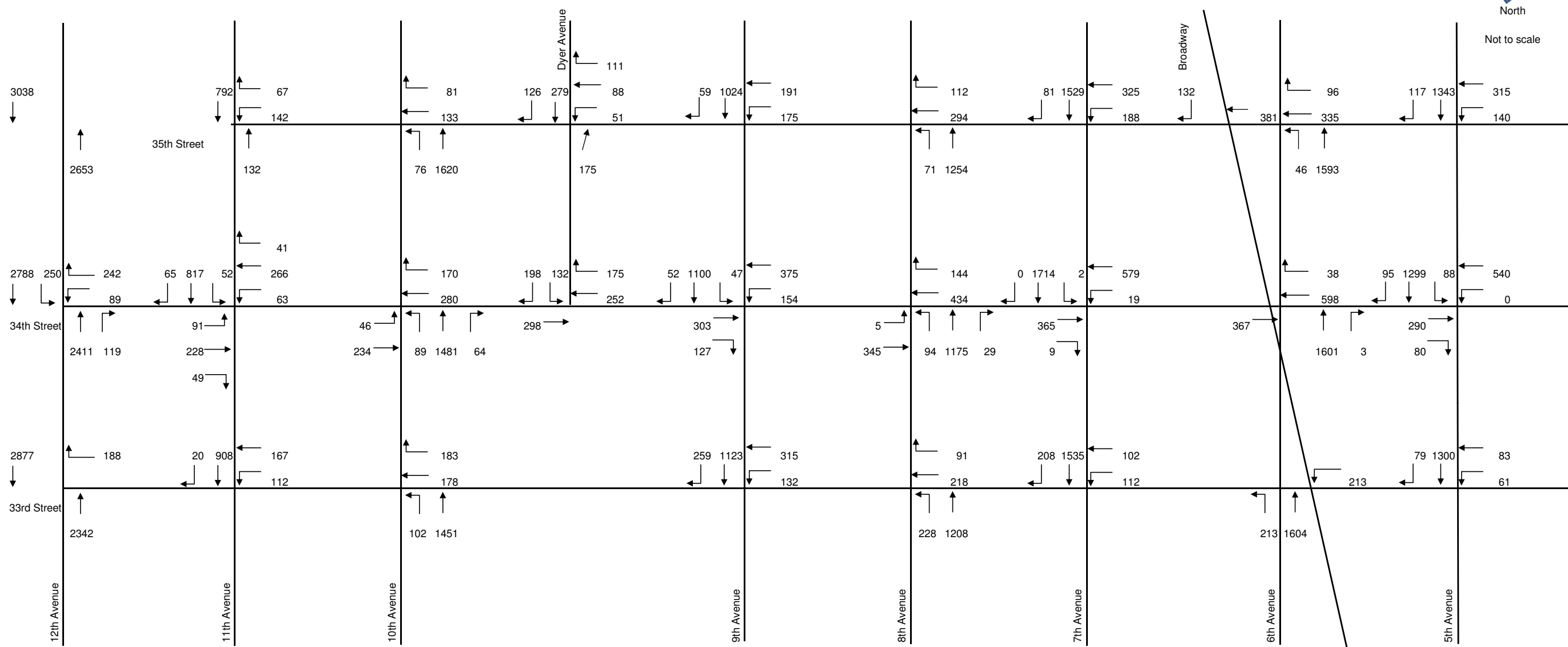
**2012 No-Build Traffic Volumes
AM Peak Hour: 8:00 AM - 9:00 AM
Figure 6-6**

Western Portion



North

Not to scale



NYCDOT 34th Street Select Bus Service

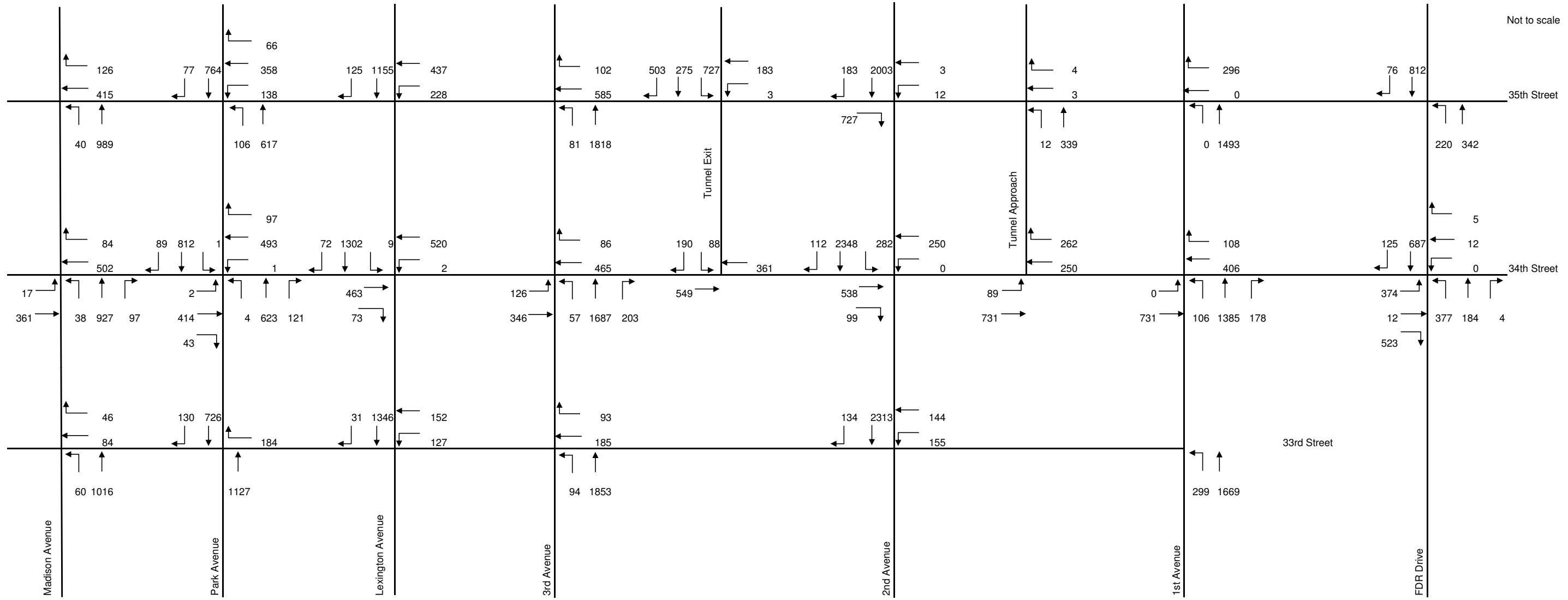
**2012 No-Build Traffic Volumes
PM Peak Hour: 5:00 PM - 6:00 PM
Figure 6-7**

Eastern Portion



North

Not to scale



NYCDOT 34th Street Select Bus Service

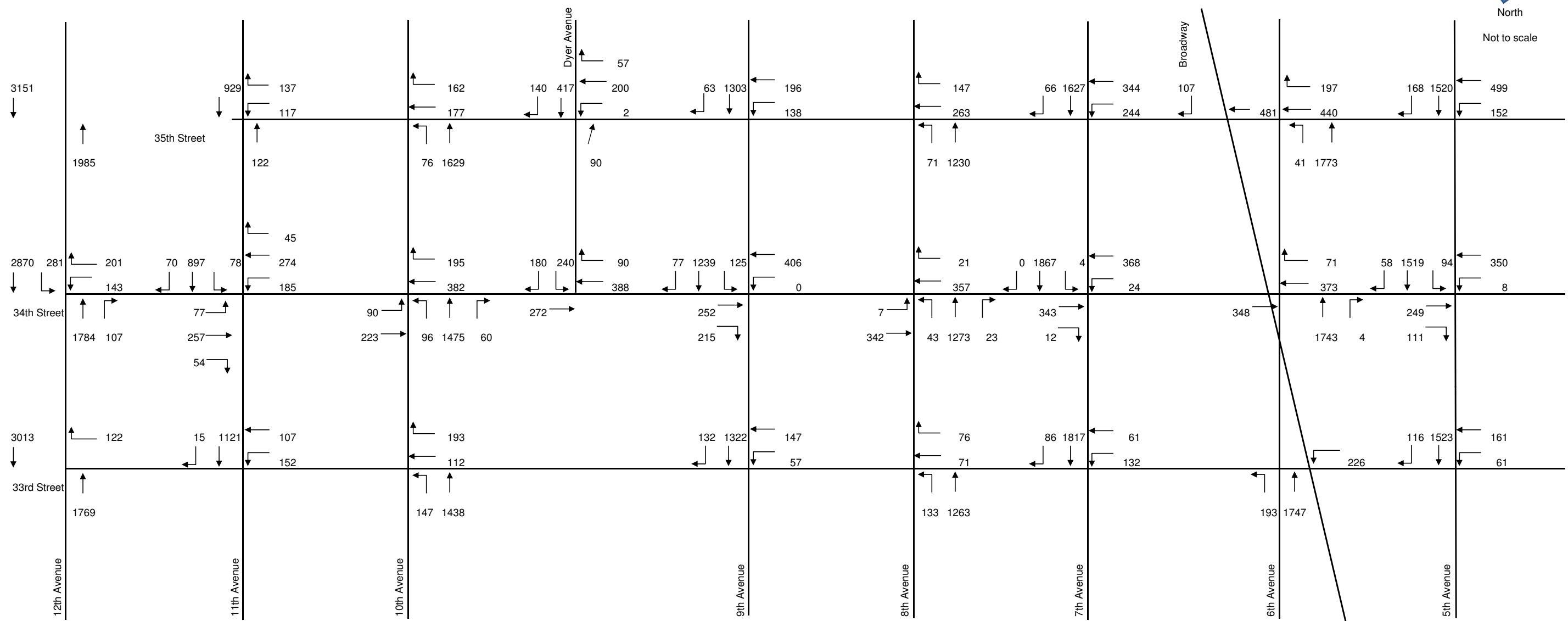
2012 No-Build Traffic Volumes
 PM Peak Hour: 5:00 PM - 6:00 PM
 Figure 6-8

Western Portion



North

Not to scale



NYCDOT 34th Street Select Bus Service

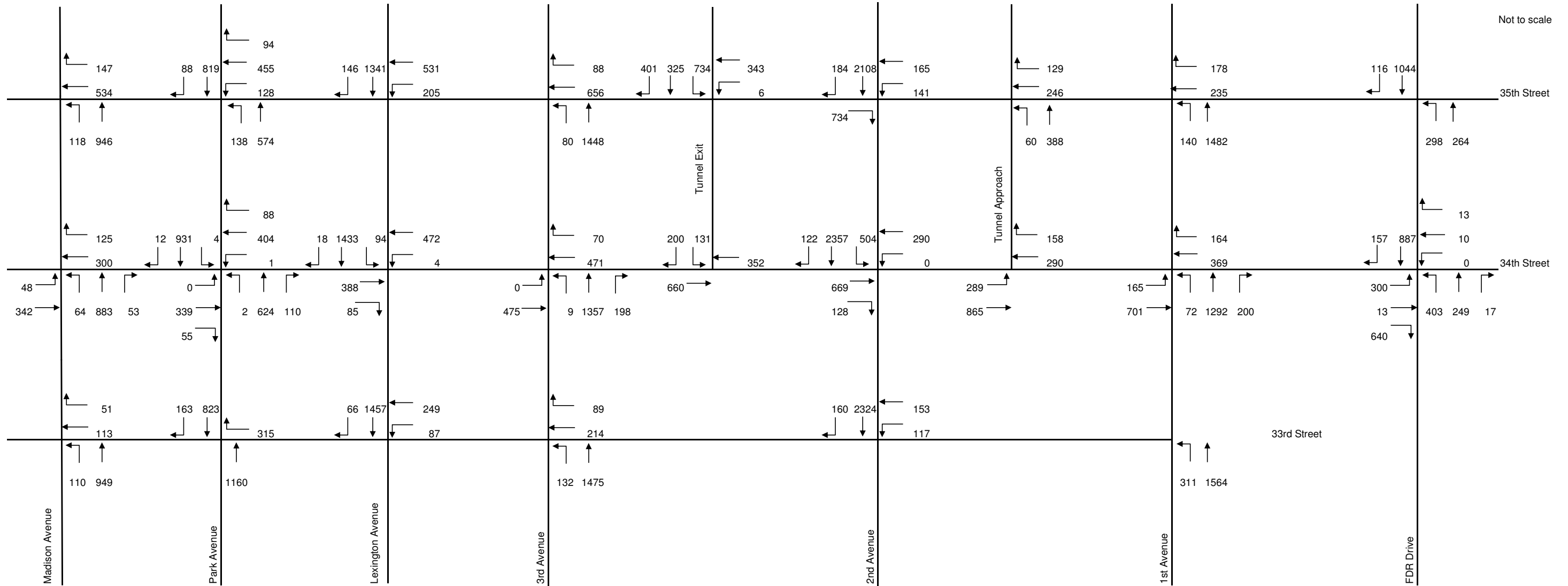
**2012 Build Traffic Volumes
AM Peak Hour: 8:00 AM - 9:00 AM
Figure 6-9**

Eastern Portion



North

Not to scale



NYCDOT 34th Street Select Bus Service

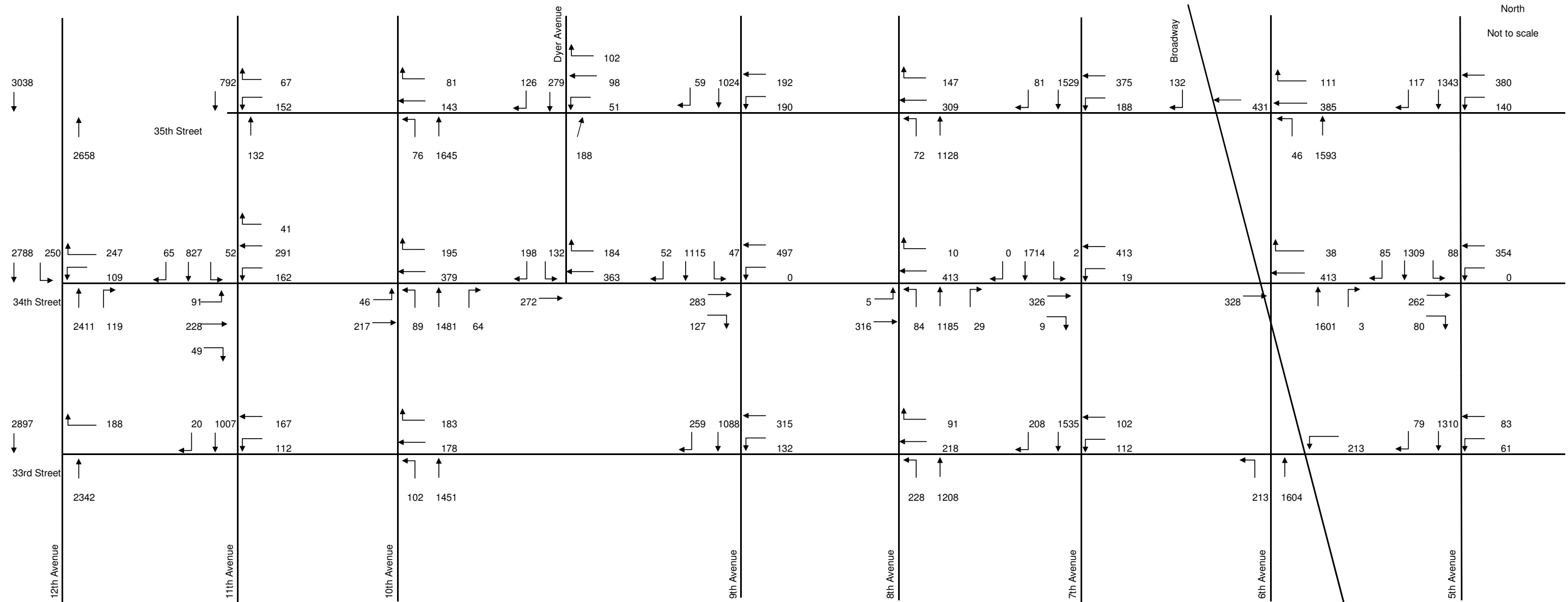
2012 Build Traffic Volumes
 AM Peak Hour: 8:00 AM - 9:00 AM
 Figure 6-10

Western Portion



North

Not to scale



NYCDOT 34th Street Select Bus Service

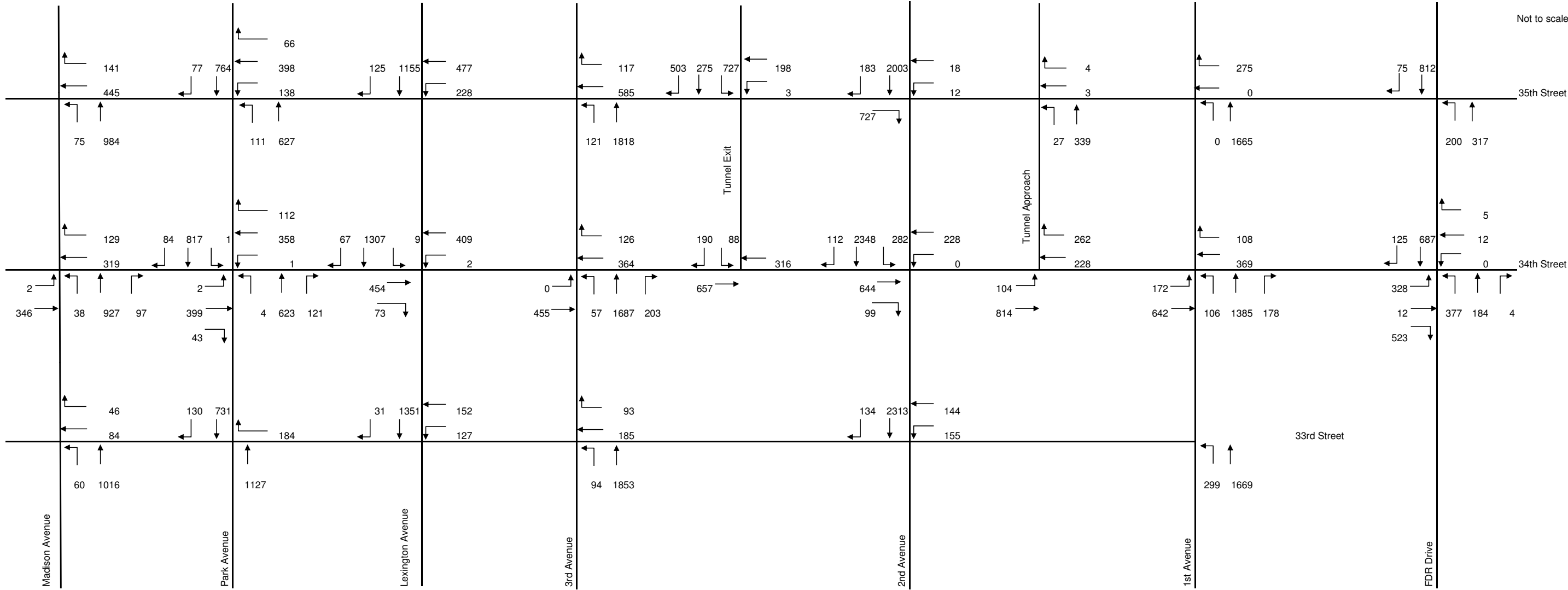
**2012 Build Traffic Volumes
PM Peak Hour: 5:00 PM - 6:00 PM
Figure 6-11**

Eastern Portion



North

Not to scale



NYCDOT 34th Street Select Bus Service

**2012 Build Traffic Volumes
PM Peak Hour: 5:00 PM - 6:00 PM
Figure 6-12**

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX __: LOS COMPARISON SUMMARY
AM PEAK PERIOD**

DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)									DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)											Signal Timing Changes							
Intersection Name	Approach	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Splits		Offset					
7th Avenue & W 34th Street	7th Avenue	SB	L	4					SB	L	4	LT	0.73	6.4	A	NI	0	0.06	3.80	4 s shift from 7th Av to 34th St.	No Change.						
			T	1867			T	1867																T	0		
			R	0			R	0																R	0		
	W 34th Street	EB	T	437	T	1.04	84.6	F	EB	T	343	T	0.60	39.3	D	NI	-94	-0.44	-45.30								
			R	12	R	0.20	39.2	D	EB	R	12	R	0.17	35.2	D	NI	0	-0.03	-4.00								
			WB	L	24	LT	0.91	23.2	C	WB	L	24	LT	0.99	44.9	D	NI	0	0.08			21.70					
T	514				T	368			T		-146																
6th Avenue/Broadway & W 34th Street	6th Avenue	NB	L	0					NB	L	0	TR	0.70	1.9	A	NI	0	0.00	0.00	No Change.	No Change.						
			T	1743			T	1743																T	0		
			R	4			R	4																R	0		
	W 34th Street	EB	T	442	T	0.95	51.9	D	EB	T	348	T	0.69	53.2	D	NI	-94	-0.26	1.30								
			R	538	TR	0.86	33.4	C	WB	T	373	T	0.82	32.3	C	NI	-165	-0.04	-1.10								
			R	71			R	71	R	0.70	44.2	D	NI	0	-0.16	10.80											
5th Avenue & 34th Street	5th Avenue	SB	L	94	L	0.56	12.5	B	SB	L	94	L	0.56	11.0	B	NI	0	0.00	-1.50	No Change.	No Change.						
			T	1519	T	0.94	19.9	B														NI	0	0.00	-1.40		
			R	88	R	0.59	12.3	B														NI	-30	-0.20	-5.70		
	34th Street	EB	T	335	T	0.73	33.0	C	EB	T	249	T	0.42	25.2	C	NI	-86	-0.31	-7.80								
			R	111	R	0.68	36.6	D	EB	R	111	R	0.68	41.9	D	NI	0	0.00	5.30								
			WB	L	8	LT	0.59	18.9	B	WB	L	8	LT	0.73	33.7	C	NI	0	0.14			14.80					
T	521				T	350			T		-171																
Madison Avenue & E 34th Street	Madison Avenue	NB	L	64					NB	L	64	LTR	0.66	7.6	A	NI	0	0.08	1.00	5 s shift from Madison Av to 34th St.	No Change.						
			T	883			T	883																T	0		
			R	53			R	53																R	0		
	E 34th Street	EB	L	56	L	0.86	93.8	F	EB	L	48	L	0.45	39.8	D	NI	-8	-0.41	-54.00								
			T	374	T	0.75	41.1	D	WB	T	342	T	0.60	33.9	C	NI	-32	-0.15	-7.20								
			R	465	T	0.91	45.3	D	WB	T	300	T	0.55	30.9	C	NI	-165	-0.36	-14.40								
	WB	R	75	R	0.39	30.7	C	WB	R	125	R	0.61	36.6	D	NI	50	0.22	5.90									
		Park Avenue & E 34th Street	Park Avenue	NB	L	2				NB	L	2	LTR	0.60	10.0	B	NI	0	0.00	0.10	No Change.	No Change.					
					T	624			T														624			T	0
R	110						R	110																R	0		
	SB		L	4				SB	L	4	LTR	0.83	12.1	B	NI	0	0.01	0.30									
			T	931			T												931					T	0		
			R	12			R												12					R	0		
E 34th Street	EB	L	0	LT	0.78	32.8	C	EB	L	0	LT	0.76	37.2	D	NI	0	-0.02	4.40									
		T	371			T	339			T	-32			NI	0	0.01	5.00										
		R	55	R	0.35	21.6	C	WB	R	55	R	0.36	26.6	C	NI	0	0.01	5.00									
	WB	L	1	LT	1.01	50.0	D	WB	L	1	LT	0.83	33.9	C	NI	0	-0.18	-16.10									
		T	526			T	404			T	-122			NI	-122	-0.18	-16.10										
		R	68	R	0.34	16.8	B	WB	R	88	R	0.47	22.6	C	NI	20	0.13	5.80									

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
AM PEAK PERIOD**

DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)									DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)											Signal Timing Changes															
Intersection Name	Approach	Direction	Movement	Volume	Lane		V/C	Delay	LOS	Direction	Movement	Volume	Lane		V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Signal Timing Changes													
					Group	V/C							Group	V/C								Splits	Offset												
Lexington Avenue & E 34th Street	Lexington Avenue	SB	L	94	DefL	1.02	89.3	F	SB	L	94	DefL	1.02	89.3	F	NI	0	0.00	0.00	No Change.	No Change.														
			T	1433	T	0.99	28.1	C														T	1433	T	0.99	27.0	C	0	0.00	-1.10					
			R	18	R	0.14	2.6	A														R	18	R	0.14	2.6	A	0	0.00	0.00					
	E 34th Street	EB	T	400	T	0.69	34.1	C	EB	T	388	T	0.71	35.1	D							NI	-12	0.02	1.00										
			R	85	R	0.45	31.0	C																		R	85	R	0.47	31.3	C	0	0.02	0.30	
			WB	L	4	LT	1.02	66.2																		E	WB	L	4	LT	0.87	51.6	D	NI	0
T	577	T		0.69	34.1	C	T	472	T	0.87	51.6	D																							
3rd Avenue & E 34th Street	3rd Avenue	NB	L	9	LT	0.69	10.7	B	NB	L	9	LT	0.69	12.3	B	NI	0	0.00	1.60	34th St EB protected phase eliminated; EB & WB 34th St equal permitted phase.	+20 s.														
			T	1357	T	0.73	25.4	C														T	1357	T	0.73	26.4	C	0	0.00	1.00					
			R	198	DefR	0.73	25.4	C														R	198	DefR	0.73	26.4	C	0	0.00	1.00					
	E 34th Street	EB	L	102	L	0.47	22.1	C	EB	L	0	-	-	-	-							NI	-102	0.12	21.40										
			T	393	T	0.79	15.7	B																		T	475	T	0.91	37.1	D	82	-0.13	-29.80	
			WB	T	571	TR	0.93	57.8																		E	WB	T	471	T	0.80	28.0	C	NI	-100
R	70	TR		0.93	57.8	E	R	70	R	0.25	7.8	A	0	-0.68	-50.00																				
Tunnel Exit Street & E 34th Street	Tunnel Exit Street	SB	L	131	LR	0.31	24.2	C	SB	L	131	LR	0.37	36.7	D	NI	0	0.06	12.50	No Change.	-10 s.														
			R	200	R	0.33	10.4	B																		R	200	R	0.34	18.2	B	0	0.01	7.80	
	E 34th Street	EB	T	591	T	0.35	8.4	A	EB	T	660	T	0.66	7.2	A							NI	69	0.31	-1.20										
			WB	T	442	T	0.63	26.6																		C	WB	T	352	T	0.72	38.5	D	NI	-90
	Second Avenue & E 34th Street	2nd Avenue	SB	L	504	L	0.53	11.9	B	SB	L	504	L	0.46	10.8											B	NI	0	-0.07	-1.10	No Change.	No Change.			
				T	2357	T	0.95	77.5	E																								T	2357	T
R				122	R	0.58	17.0	B	R							122	R	0.72	26.8	C	0												0.14	9.80	
E 34th Street		EB	T	594	T	0.70	18.8	B	EB	T	669	T	0.69	26.1	C	NI	75	-0.01	7.30																
			R	128	R	0.81	45.4	D												R	128	R	0.81	50.1	D	0							0.00	4.70	
			WB	L	0	-	-	-												-	WB	L	0	-	-	-							-	NI	0
T	320	T		0.47	32.5	C	T	290	T	0.73	32.5	C	-30	0.26	0.00																				
Tunnel Approach Street & E 34th Street	Tunnel Approach Street	(Receives traffic only)							(Receives t											NI	0	-0.05	-8.60	Shift 8 s from Barnes Dance to EB & WB 34th St permitted phase; shift 1 s from EB 34th St protected phase to EB & WB 34th St permitted phase.	-6 s.										
		E 34th Street	EB	L	289	L	0.66	29.4	C	EB	L	289	L	0.61	20.8											C	NI	56	0.21	31.20					
	T			809	LT	0.68	13.5	B	T							865	T	0.89	44.7												D	NI	-30		
	WB	T	320	TR	0.93	46.0	D	WB	T	290	T	0.65	10.1	B	NI	0	-0.47	-38.80																	
		R	158	TR	0.93	46.0	D												R							158					R	0.46	7.2	A	
	1st Avenue & E 34th Street	1st Avenue	NB	L	72	L	0.27	15.8	B	NB	L	72	L	0.56					32.1							C					NI	0	0.29	16.30	First Av split phase: 28 s (for NB T, R & bikes) & 13 s (for NB prot. L, T and R); EB 34th St protected phase re-instituted: 10 s; EB & WB 34th St permitted phase: 32 s; LPI: 7 s.
T				1292	T	0.68	3.6	A	T											1292	T	0.91	26.0	C	NI										
R				200	R	0.57	5.6	A	R											200	R	0.63	11.4	B	NI		0	0.06	5.80						
E 34th Street		EB	L	0	-	-	-	-	EB	L	165	L	0.88	44.5					D	NI	165	0.03	-3.20												
			T	809	T	1.03	69.2	E							T	701	T	1.06						66.0	E	NI	-108	0.34	5.60						
			WB	T	406	T	0.58	21.7							C	WB	T	369						T	0.92	27.3	C	NI	-37	-0.09					
R	164	R		0.83	36.7	D	R	164	R	0.74	23.8	C																							

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
AM PEAK PERIOD**

DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)									DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)											Signal Timing Changes									
Intersection Name	Approach	Direction	Movement	Volume	Lane		V/C	Delay	LOS	Direction	Movement	Volume	Lane		V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Signal Timing Changes							
					Group	V/C							Group	V/C								Splits	Offset						
FDR Drive Service Road & E 34th Street / Heliport Lot	FDR Drive Service Road	NB	L	403	L	1.06	85.6	F	NB	L	403	L	1.06	85.6	F	NI	0	0.00	0.00	No Change.	+10 s.								
			T	249	TR	0.40	8.7	A				T	249	TR	0.40							8.7	A	NI	0	0.00	0.00		
			R	17								R	17										NI	0	0.00	0.00			
	SB	L	0					SB	L	0					NI	0	0.04	-2.60											
		T	887	TR	0.95	25.7	C		T	887	TR	0.99	23.1	C					NI			0	0.00	-49.00					
		R	157						R	157				NI					0			0.00	6.30						
	E 34th Street	EB	L	355	L	1.09	105.9	F	EB	L	300	L	0.92	56.9	E	NI	-55	-0.17	-49.00										
			T	13	TR	0.84	35.4	D				T	13	TR	0.84							41.7	D	NI	0	0.00	2.00		
			R	640	R	0.89	33.6	C				R	640	R	0.89							35.6	D	NI	0	0.00	0.00		
Heliport Lot	WB	L	0				WB	L	0					NI	0	0.00	0.00												
		T	10	TR	0.09	26.3				C	T	10	TR					0.09	26.3	C	NI	0	0.00	0.00					
		R	13								R	13								NI	0	0.00	0.00						
35TH STREET CORRIDOR																													
11th Avenue & W 35th Street	11th Avenue	NB	T	122	T	0.07	16.8	B	NB	T	122	T	0.07	13.5	B	NI	0	0.00	-3.30	No Change.	No Change.								
			SB	T	929	T	0.47	18.7				B	SB	T	929							T	0.47	18.7	B	NI	0	0.00	0.00
	W 35th Street	WB	L	107	L	0.20	24.7	C	WB	L	117	L	0.21	25.5	C	NI	10	0.01	0.80										
			R	137	R	0.27	26.4	C				R	137	R	0.27							26.7	C	NI	0	0.00	0.30		
10th Avenue & W 35th Street	10th Avenue	NB	L	76	LT	0.56	5.9	A	NB	L	76	LT	0.57	5.9	A	NI	0	0.01	0.00	No Change.	No Change.								
			T	1614				T				1629										T	1629				NI	15	0.02
	W 35th Street	WB	T	167	TR	0.86	47.1	D	WB	T	177	TR	0.88	48.6	D	NI	10	0.02	1.50										
			R	162				R				162										R	162				NI	0	0.00
Dyer Avenue & W 35th Street	Dyer Avenue	NB	R	90	R	0.07	3.5	A	NB	R	90	R	0.07	6.5	A	NI	0	0.00	3.00	No Change.	No Change.								
			SB	T	417	T	0.71	43.6				D	SB	T	417							T	0.71	43.6	D	NI	0	0.00	0.00
			R	140	R	0.55	37.6	D				R	140	R	0.55							37.6	D	NI	0	0.00	0.00		
	W 35th Street	WB	L	2				WB	L	2				NI	0	0.02	2.90												
			T	190	LTR	0.89	46.3				D	T	200					LTR	0.91			49.2	D	NI	10	0.02	2.90		
			R	57							R	57										R	57				NI	0	0.00
9th Avenue & W 35th Street	9th Avenue	SB	T	1303	TR	0.58	16.5	B	SB	T	1303	TR	0.58	16.5	B	NI	0	0.00	0.00	No Change.	No Change.								
			R	63				R				63										R	63				NI	0	0.00
	W 35th Street	WB	L	78	L	0.39	25.1	C	WB	L	138	L	0.69	41.3	D	NI	60	0.30	16.20										
			T	186	T	0.53	23.7	C				T	196	T	0.55							28.8	C	NI	10	0.02	5.10		
8th Avenue & W 35th Street	8th Avenue	NB	L	61	LT	0.54	3.7	A	NB	L	71	LT	0.51	1.9	A	NI	10	-0.03	-1.80	No Change.	No Change.								
			T	1340				T				1230										T	1230				NI	-110	0.13
	W 35th Street	WB	T	203	T	0.47	13.0	B	WB	T	263	T	0.60	11.7	B	NI	60	0.13	-1.30										
			R	107	R	0.63	27.5	C				R	147	R	0.87							42.8	D	NI	40	0.24	15.30		
7th Avenue & W 35th Street	7th Avenue	SB	T	1627	TR	0.70	37.2	D	SB	T	1627	TR	0.70	37.2	D	NI	0	0.00	0.00	No Change.	No Change.								
			R	66	R	0.68	75.6	E				R	66	R	0.68							75.6	E	NI	0	0.00	0.00		
	W 35th Street	WB	L	244	L	1.00	68.3	E	WB	L	244	L	0.81	27.2	C	NI	0	-0.19	-41.10										
			T	244	T	0.58	14.9	B				T	344	T	0.82							23.4	C	NI	100	0.24	8.50		

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
AM PEAK PERIOD**

DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)									DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)											Signal Timing Changes			
Intersection Name	Approach	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Splits		Offset	
Broadway & W 35th Street	Broadway	SB	R	107	R	0.71	44.6	D	SB	R	107	R	0.71	44.6	D	NI	0	0.00	0.00	No Change.	No Change.		
	W 35th Street	WB	T	381	T	0.66	10.6	B	WB	T	481	T	0.83	27.7	C	NI	100	0.17	17.10				
6th Avenue & W 35th Street	6th Avenue	NB	L	41	LT	0.66	4.5	A	NB	L	41	LT	0.66	4.6	A	NI	0	0.00	0.10	No Change.	No Change.		
		T	1773					T	1773														
	W 35th Street	WB	T	340	T	0.74	25.8	C	WB	T	440	T	0.95	42.7	D	NI	100	0.21	16.90				
		R	197	R	0.97	63.2	E			R	197	R	0.97	58.3	E		0	0.00	-4.90				
5th Avenue & 35th Street	5th Avenue	SB	T	1550	TR	0.80	5.6	A	SB	T	1520	TR	0.84	8.1	A	NI	-30	0.04	2.50	2 s shift from Fifth Av to 35th St. Thru & Left phase.	-1 s.		
		R	138					R	168														
	35th Street	WB	L	152	L	1.01	92.0	F	WB	L	152	L	0.87	59.1	E	NI	0	-0.14	-32.90				
		T	429	T	0.86	38.8	D			T	499	T	0.95	44.6	D	NI	70	0.09	5.80				
Madison Avenue & E 35th Street	Madison Avenue	NB	L	68	LT	0.74	13.7	B	NB	L	118	LT	0.78	15.7	B	NI	50	0.04	2.00	No Change.	No Change.		
		T	946					T	946														
	E 35th Street	WB	T	514	T	0.91	38.7	D	WB	T	534	T	0.95	42.5	D	NI	20	0.04	3.80				
		R	147	R	0.66	42.7	D			R	147	R	0.66	42.0	D	NI	0	0.00	-0.70				
Park Avenue & E 35th Street	Park Avenue	NB	L	118	LT	0.96	33.3	C	NB	L	138	LT	0.99	40.8	D	NI	20	0.03	7.50	No Change.	No Change.		
		T	574					T	574														
		SB	T	819	TR	0.76	24.3	C	SB	T	819	TR	0.76	24.3	C	NI	0	0.00	0.00				
	R	88					R	88															
	E 35th Street	WB	L	128	LTR	0.84	35.3	D	WB	L	128	LTR	0.85	39.5	D	NI	0	0.01	4.20				
		T	455						T	455													
		R	89							R	94												
Lexington Avenue & E 35th Street	Lexington Avenue	SB	T	1341	TR	0.83	23.0	C	SB	T	1341	TR	0.83	23.0	C	NI	0	0.00	0.00	No Change.	No Change.		
		R	146					R	146														
	E 35th Street	WB	L	205	L	0.97	89.3	F	WB	L	205	L	0.97	90.9	F	NI	0	0.00	1.60				
		T	526	T	0.49	30.7	C			T	531	T	0.49	28.7	C	NI	5	0.00	-2.00				
3rd Avenue & E 35th Street	3rd Avenue	NB	L	80	LT	0.61	4.5	A	NB	L	80	LT	0.61	4.5	A	NI	0	0.00	0.00	No Change.	+24 s.		
		T	1448					T	1448														
	E 35th Street	WB	T	651	T	0.67	36.5	D	WB	T	656	T	0.67	27.2	C	NI	5	0.00	-9.30				
		R	73	R	0.49	42.2	D			R	88	R	0.58	41.6	D	NI	15	0.09	-0.60				
Tunnel Exit Street & E 35th Street	Tunnel Exit Street	SB	L	734	L	0.87	35.4	D	SB	L	734	L	0.87	35.4	D	NI	0	0.00	0.00	No Change.	No Change.		
		T	325	LTR	0.88	37.3	D	T	325	LTR	0.88	37.3	D	NI	0		0.00	0.00					
		R	401	R	0.77	54.1	D	R	401	R	0.77	29.4	C		NI	0	0.00	-24.70					
	E 35th Street	WB	L	6	LT	0.67	31.8	C	WB	L	6	LT	0.71	33.2	C	NI	0	0.04	1.40				
			T	323						T	343												
2nd Avenue & E 35th Street	2nd Avenue	SB	T	2108	T	0.81	39.5	D	SB	T	2108	T	0.81	40.7	D	NI	0	0.00	1.20	No Change.	No Change.		
		R	184	R	0.86	42.1	D	R	184	R	0.86	45.6	D	NI	0		0.00	3.50					
	E 35th Street	EB	R	734	R	1.01	45.7	D	EB	R	734	R	1.01	45.7	D	NI	0	0.00	0.00				
			L	141	LT	0.59	29.9	C	WB	L	141	LT	0.62	28.2	C	NI	0	0.03	-1.70				
			T	145						T	165												

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
AM PEAK PERIOD**

DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)									DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK AM HOUR (8:00 AM – 9:00 AM)											Signal Timing Changes			
Intersection Name	Approach	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Splits		Offset	
6th Avenue & W 33rd Street	6th Avenue	NB	L	193	L	0.68	41.0	D	NB	L	193	L	0.67	45.7	D	NI	0	-0.01	4.70	No Change.		No Change.	
			T	1747	T	0.67	45.7	D		T	1747	T	0.68	41.0	D								
Broadway & W 33rd Street	W 33rd Street	WB	L	226	L	0.94	72.2	E	WB	L	226	L	0.94	72.2	E	NI	0	0.00	0.00	No Change.		No Change.	
5th Avenue & 33rd Street	5th Avenue	SB	T	1523	T	0.76	9.8	A	SB	T	1523	T	0.76	9.8	A	NI	0	0.00	0.00	No Change.		No Change.	
			R	116	R	0.67	13.2	B		R	116	R	0.67	13.2	B								
	33rd Street	WB	L	61	LT	0.89	59.6	E	WB	L	61	LT	0.89	59.6	E	NI	0	0.00	0.00				
Madison Avenue & E 35th Street	Madison	NB	L	110	LT	0.69	19.8	B	NB	L	110	LT	0.69	19.8	B	NI	0	0.00	0.00	No Change.		No Change.	
			T	949	T	0.69	19.8	B		T	949	T	0.69	19.8	B								
	E 33rd Street	WB	T	113	TR	0.43	22.3	C	WB	T	113	TR	0.43	22.4	C	NI	0	0.00	0.10	No Change.		No Change.	
			R	51	R	0.43	22.3	C		R	51	R	0.43	22.4	C								
Park Avenue & E 33rd Street	Park Avenue	NB	T	1160	T	0.56	16.3	B	NB	T	1160	T	0.56	16.3	B	NI	0	0.00	0.00	No Change.		No Change.	
			SB	823	TR	0.90	13.7	B		SB	823	TR	0.90	13.7	B								
	E 33rd Street	WB	R	315	R	0.83	28.7	C	WB	R	315	R	0.83	32.6	C	NI	0	0.00	3.90				
Lexington Avenue & E 33rd Street	Lexington Avenue	SB	T	1457	TR	0.81	8.9	A	SB	T	1457	TR	0.84	7.3	A	NI	0	0.03	-1.60	2 s shift from Lexington Av to 33rd St.		-3 s.	
			R	66	R	0.81	8.9	A		R	66	R	0.84	7.3	A								
	E 33rd Street	WB	L	87	LT	0.93	46.9	D	WB	L	87	LT	0.88	51.6	D	NI	0	-0.05	4.70	No Change.		+34 s.	
			T	249	T	0.93	46.9	D		T	249	T	0.88	51.6	D								
3rd Avenue & E 33rd Street	3rd Avenue	NB	L	132	LT	0.53	12.4	B	NB	L	132	LT	0.53	12.4	B	NI	0	0.00	0.00	No Change.		+34 s.	
			T	1475	T	0.53	12.4	B		T	1475	T	0.53	12.4	B								
	E 33rd Street	WB	T	214	TR	0.82	44.3	D	WB	T	214	TR	0.82	36.9	D	NI	0	0.00	-7.40	No Change.		No Change.	
			R	89	R	0.82	44.3	D		R	89	R	0.82	36.9	D								
2nd Avenue & E 33rd Street	2nd Avenue	SB	T	2324	T	0.88	7.1	A	SB	T	2324	T	0.88	7.1	A	NI	0	0.00	0.00	No Change.		No Change.	
			R	160	R	0.58	4.5	A		R	160	R	0.58	4.5	A								
		WB	L	117	L	0.52	34.8	C	WB	L	117	L	0.52	37.0	D	NI	0	0.00	2.20				
			T	153	T	0.37	31.4	C		T	153	T	0.37	33.4	C		0	0.00	2.00	No Change.		+3 s.	
1st Avenue & E 33rd Street	1st Avenue	NB	L	311	L	0.98	63.2	E	NB	L	311	L	0.98	63.2	E	NI	0	0.00	0.00	No Change.		+3 s.	
			T	1564	T	0.85	21.1	C		T	1564	T	0.85	25.1	C								

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
PM PEAK PERIOD**

PM PEAK HOUR		DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)							DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)											Signal Timing Changes				
Intersection Name	Approach	Direction	Movement	Volume	Lane		V/C	Delay	LOS	Direction	Movement	Volume	Lane		V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Splits		Offset
					Group	V/C							Group	V/C								Splits	Offset	
34TH STREET CORRIDOR																								
Route 9A & W 34th Street	Route 9A	NB	T	2411	T	0.84	25.9	C	NB	T	2411	T	0.84	25.9	C	NI	0	0.00	0.00	No Change.	No Change.			
			R	119	R	0.22	13.5	B	R	119	R	0.22	13.5	B	NI	0	0.00	0.00						
		SB	L	250	L	0.97	114.3	F	SB	L	250	L	0.97	114.3	F	NI	0	0.00	0.00					
			T	2788	T	0.91	20.7	C	T	2788	T	0.91	20.7	C	NI	0	0.00	0.00						
W 34th Street	WB	L	89	LR	0.51	56.5	E	WB	L	109	LR	0.54	57.4	E	NI	20	0.03	0.90						
		R	242	R	0.47	45.2	D	R	247	R	0.51	46.6	D	NI	5	0.04	1.40							
11th Avenue & W 34th Street	11th Avenue	SB	L	52	LT	0.53	11.6	B	SB	L	52	LT	0.54	12.1	B	NI	0	0.01	0.50	No Change.	No Change.			
			T	817	R	0.21	8.0	A	T	827	R	0.21	8.3	A	NI	10	0.00	0.30						
		R	65	R	0.21	8.0	A	R	65	R	0.21	8.3	A	NI	0	0.00	0.30							
		L	91	L	0.43	20.2	C	L	91	L	0.43	20.2	C	NI	0	0.16	0.50							
	W 34th Street	EB	T	228	T	0.61	34.0	C	EB	T	228	T	0.59	20.7	C	NI	0	-0.02	-13.30					
			R	49	R	0.23	26.6	C	R	49	R	0.23	26.6	C	NI	0	0.36	-5.90						
		WB	L	63	L	0.23	17.2	B	WB	L	162	L	0.56	20.0	B	NI	99	0.33	2.80					
			T	266	TR	0.87	38.5	D	T	291	TR	0.89	40.2	D	NI	25	0.02	1.70						
R	L	41	TR	0.87	38.5	D	R	41	TR	0.89	40.2	D	NI	0	0.02	1.70								
	R	41	TR	0.87	38.5	D	R	41	TR	0.89	40.2	D	NI	0	0.02	1.70								
10th Avenue & W 34th Street	10th Avenue	NB	L	89	L	0.64	8.5	A	NB	L	89	L	0.66	8.7	A	NI	0	0.02	0.20	No Change.	No Change.			
			T	1481	LTR	0.64	8.5	A	T	1481	LTR	0.66	8.7	A	NI	0	0.02	0.20						
		R	64	R	0.64	8.5	A	R	64	R	0.66	8.7	A	NI	0	0.02	0.20							
	W 34th Street	EB	L	46	LT	0.46	50.0	D	EB	L	46	LT	0.91	54.9	D	NI	0	0.45	4.90					
			T	234	T	0.46	50.0	D	T	217	T	0.46	50.0	D	NI	-17	0.45	4.90						
		WB	T	280	TR	0.92	48.7	D	WB	T	379	T	0.88	45.0	D	NI	99	-0.04	-3.70					
R	170	R	0.92	48.7	D	R	195	R	0.86	52.9	D	NI	25	-0.06	4.20									
Dyre Avenue & W 34th Street	Dyre Avenue	SB	L	132	LR	0.65	34.2	C	SB	L	132	LR	0.65	34.2	C	NI	0	0.00	0.00	No Change.	No Change.			
			R	198	R	0.76	56.9	E	R	198	R	0.76	56.9	E	NI	0	0.00	0.00						
	W 34th Street	EB	T	298	T	0.22	14.3	B	EB	T	272	T	0.35	20.3	C	NI	-26	0.13	6.00					
			WB	T	252	T	0.18	4.9	A	WB	T	363	T	0.44	6.1	A	NI	111	0.26			1.20		
R	175	R	0.28	15.8	B	R	184	R	0.29	15.2	B	NI	9	0.01	-0.60									
9th Avenue & W 34th Street	9th Avenue	SB	L	47	DefL	0.87	86.3	F	SB	L	47	DefL	0.87	86.1	F	NI	0	0.00	-0.20	34th St WB protected phase eliminated; EB & WB 34th St equal permitted time.	No Change.			
			T	1100	TR	0.82	22.8	C	T	1115	TR	0.84	23.7	C	NI	15	0.02	0.90						
		R	52	R	0.82	22.8	C	R	52	R	0.84	23.7	C	NI	0	0.02	0.90							
	W 34th Street	EB	T	303	T	0.76	31.2	C	EB	T	283	T	0.45	7.3	A	NI	-20	-0.31	-23.90					
			R	127	R	0.73	42.0	D	R	127	R	0.51	11.3	B	NI	0	-0.22	-30.70						
		WB	L	154	LT	0.66	13.5	B	WB	L	0	-	-	-	-	NI	-154	-	-					
T	375	T	0.66	13.5	B	T	497	T	0.71	11.3	B	NI	122	0.05	-2.20									
8th Avenue & W 34th Street	8th Avenue	NB	L	94	L	0.46	10.1	B	NB	L	84	L	0.41	9.2	A	NI	-10	-0.05	-0.90	No Change.	No Change.			
			T	1175	T	0.81	10.5	B	T	1185	T	0.82	10.8	B	NI	10	0.01	0.30						
		R	29	DefR	0.86	117.0	F	R	29	DefR	0.86	117.0	F	NI	0	0.00	0.00							
		L	5	LT	0.68	42.4	D	L	5	LT	0.56	26.2	C	NI	0	-0.12	-16.20							
	W 34th Street	EB	T	345	T	0.68	42.4	D	EB	T	316	LT	0.56	26.2	C	NI	-29	-0.12	-16.20					
			WB	T	434	TR	0.62	6.8	A	WB	T	413	T	0.73	7.6	A	NI	-21	0.11	0.80				
		R	L	144	TR	0.62	6.8	A	R	10	R	0.08	5.9	A	NI	-134	-0.54	-0.90						
			R	144	TR	0.62	6.8	A	R	10	R	0.08	5.9	A	NI	-134	-0.54	-0.90						

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
PM PEAK PERIOD**

PM PEAK HOUR		DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)							DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)											Signal Timing Changes			
Intersection Name	Approach	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Splits		Offset	
7th Avenue & W 34th Street	7th Avenue	SB	L	2					SB	L	2									4 s shift from 7th Av to 34th St.	-1 s.		
			T	1714	LT	0.67	5.4	A	T	1714	LT	0.73	7.5	A	NI	0	0.06	2.10					
			R	0					R	0					NI	0							
	W 34th Street	EB	T	365	TR	1.01	86.8	F	T	326	T	0.67	43.0	D	NI	-39	-0.34	-43.80					
			R	9					R	9	R	0.05	32.2	C	NI	0	0.05	32.20					
			WB	L	19	LT	0.88	13.2	B	L	19	LT	1.02	44.8	D	NI	0	0.14	31.60				
T	579						T	413					NI	-166									
6th Avenue/Broadway & W 34th Street	6th Avenue	NB	L	0					NB	L	0									3 s shift from 6th Av to 34th St.	No Change.		
			T	1601	TR	0.63	1.6	A	T	1601	TR	0.67	3.9	A	NI	0	0.04	2.30					
			R	3					R	3					NI	0							
	W 34th Street	EB	T	367	T	0.84	45.7	D	T	328	T	0.62	47.2	D	NI	-39	-0.22	1.50					
			WB	T	598	TR	0.89	36.9	D	T	413	T	0.90	40.6	D	NI	-185	0.01	3.70				
				R	38					R	38	R	0.42	23.3	C	NI	0	-0.47	-13.60				
5th Avenue & 34th Street	5th Avenue	SB	L	88	L	0.51	12.2	B	SB	L	88	L	0.51	12.2	B	NI	0	0.00	0.00	No Change.	No Change.		
			T	1299	T	0.85	13.3	B	T	1309	T	0.86	13.6	B	NI	10	0.01	0.30					
			R	95	R	0.57	15.0	B	R	85	R	0.51	12.5	B	NI	-10	-0.06	-2.50					
	34th Street	EB	T	290	TR	0.95	57.2	E	T	262	T	0.40	28.3	C	NI	-28	-0.55	-28.90					
			R	80					R	80	R	0.58	39.9	D	NI	0	-0.37	-17.30					
			WB	L	0	LT	0.52	17.7	B	L	0	LT	0.65	26.6	C	NI	0	0.13	8.90				
T	540						T	354					NI	-186									
Madison Avenue & E 34th Street	Madison Avenue	NB	L	38					NB	L	38									No Change.	No Change.		
			T	927	LTR	0.72	9.2	A	T	927	LTR	0.72	9.2	A	NI	0	0.00	0.00					
			R	97					R	97					NI	0							
	E 34th Street	EB	L	17	L	0.21	25.3	C	L	2	L	0.03	25.5	C	NI	-15	-0.18	0.20					
			T	361	T	0.79	38.4	D	T	346	T	0.75	44.4	D	NI	-15	-0.04	6.00					
			WB	T	502	T	0.92	46.7	D	T	319	T	0.63	34.4	C	NI	-183	-0.29	-12.30				
R	84	R		0.43	29.6	C	R	129	R	0.70	44.6	D	NI	45	0.27	15.00							
Park Avenue & E 34th Street	Park Avenue	NB	L	4					NB	L	4									1 s shift from Park Av to 34th St.	No Change.		
			T	623	LTR	0.61	8.8	A	T	623	LTR	0.62	9.6	A	NI	0	0.01	0.80					
			R	121					R	121					NI	0							
	E 34th Street	SB	L	1					SB	L	1												
			T	812	LTR	0.76	12.0	B	T	817	LTR	0.78	13.0	B	NI	5	0.02	1.00					
			R	89					R	84					NI	-5							
E 34th Street	EB	L	2	LT	0.91	41.9	D	L	2	LT	0.92	43.7	D	NI	0	0.01	1.80						
		T	414					T	399					NI	-15								
		R	43	R	0.19	17.3	B	R	43	R	0.19	16.9	B	NI	0	0.00	-0.40						
WB	WB	L	1	LT	0.92	40.0	D	L	1	LT	0.70	26.2	C	NI	0	-0.22	-13.80						
		T	493					T	358					NI	-135								
		R	97	R	0.49	21.7	C	R	112	R	0.58	26.0	C	NI	15	0.09	4.30						

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
PM PEAK PERIOD**

PM PEAK HOUR		DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)							DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)											Signal Timing Changes							
Intersection Name	Approach	Direction	Movement	Volume	Lane	V/C	Delay	LOS	Direction	Movement	Volume	Lane	V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Splits		Offset					
					Group							Group								Splits	Offset						
Lexington Avenue & E 34th Street	Lexington Avenue	SB	L	9					SB	L	9					NI	0	0.00	0.00	No Change.	No Change.						
			T	1302	LTR	0.76	8.7	A				T	1307	LTR	0.76							8.7	A	-5			
			R	72								R	67														
	E 34th Street	EB	T	463	T	0.79	37.5	D	T	454	T	0.83	39.9	D	NI	-9	0.04	2.40									
			R	73	R	0.32	26.7	C	R	73	R	0.33	27.1	C	NI	0	0.01	0.40									
			WB	L	2	LT	0.89	46.0	D	L	2	LT	0.73	21.0	C	NI	0	-0.16	-25.00								
T	520						T	409																			
3rd Avenue & E 34th Street	3rd Avenue	NB	L	57	LT	0.87	15.9	B	NB	L	57	LT	0.86	15.9	B	NI	0	-0.01	0.00	34th St EB protected phase eliminated; EB & WB 34th St equal permitted phase.	+7 s.						
			T	1687				T				1687											0				
			R	203	R	0.95	58.3	E				R	203	R	0.95							58.6		E	NI	0	0.00
	E 34th Street	EB	L	126	L	0.51	23.0	C	L	0	-	-	-	-	NI	-126											
			T	346	T	0.55	5.0	A	T	455	T	0.69	4.2	A	NI	109	0.14	-0.80									
			WB	T	465	TR	0.75	27.0	C	T	364	T	0.53	15.0	B	NI	-101	-0.22	-12.00								
R	86						R	126	R	0.45	15.4	B	NI	40	-0.30	-11.60											
Tunnel Exit Street & E 34th Street	Tunnel Exit Street	SB	L	88	LR	0.32	23.9	C	SB	L	88	LR	0.32	44.8	D	NI	0	0.00	20.90	No Change.	-20 s.						
			R	190	R	0.31	10.3	B				R	190	R	0.31							22.4	C	NI	0	0.00	12.10
	E 34th Street	EB	T	549	T	0.34	5.8	A	T	657	T	0.71	9.8	A	NI	108	0.37	4.00									
			WB	T	361	T	0.41	29.6	C	WB	T	316	T	0.61	32.2	C	NI	-45	0.20			2.60					
	Second Avenue & E 34th Street	2nd Avenue	SB	L	282	L	0.31	7.8	A	SB	L	282	L	0.52	11.9	B	NI	0	0.21			4.10	3 s shift from 2nd Av to 34th St.	-2 s.			
				T	2348	T	0.93	46.4	D				T	2348	T	0.99									31.8	C	NI
R				112	R	0.40	10.2	B	R				112	R	0.42	9.6				A	NI				0	0.02	-0.60
E 34th Street		EB	T	538	T	0.57	18.5	B	T	644	T	0.63	19.8	B	NI	106	0.06	1.30									
			R	99	R	0.54	25.6	C	R	99	R	0.50	23.3	C	NI	0	-0.04	-2.30									
			WB	L	0	-	-	-	-	L	0	-	-	-	-	NI	0	-0.04	-2.30								
T	250	T		0.26	27.2	C	T	228	T	0.41	21.2	C	NI	-22	0.15	-6.00											
Tunnel Approach Street & E 34th Street	Tunnel Approach Street	(Receives traffic only)							(Receives traffic only)							No Change.	-4 s.										
		E 34th Street	EB	L	89	L	0.22	8.6	A	L	104	L	0.23	6.3	A			NI	15	0.01	-2.30						
	T			731	LT	0.55	10.1	B	T	814	LT	0.94	41.8	D	NI			83	0.39	31.70							
	WB	T	250	T	0.79	40.0	D	T	228	T	0.68	20.7	C	NI	-22			-0.11	-19.30								
		R	262	R	1.01	83.9	F	R	262	R	1.01	63.8	E	NI	0			0.22	23.80								
	1st Avenue & E 34th Street	1st Avenue	NB	L	106	L	0.38	14.5	B	NB	L	106	L	0.67	39.4			D	NI	0	0.29	24.90	First Av split phase: 29 s (for NB T, R & bikes) & 15 s (for NB prot. L, T and R); EB 34th St protected phase re-instituted: 10 s; EB & WB 34th St permitted phase: 30 s; LPI: 6 s.	+2 s.			
T				1385	T	0.72	3.0	A	T				1385	T	0.89	32.8	C	NI							0	0.17	29.80
R				178	R	0.52	2.6	A	R				178	R	0.54	18.9	B	NI							0	0.02	16.30
E 34th Street		EB	L	0	-	-	-	L	172	L	0.92	53.8	D	NI	172	0.02	4.00										
			T	731	T	0.90	49.8	D	T	642	T	1.00	54.2	D	NI	-89	0.10	4.40									
			WB	T	406	T	0.56	21.9	C	T	369	T	0.93	40.5	D	NI	-37	0.37	18.60								
R	108	R		0.53	25.5	C	R	108	R	0.51	22.5	C	NI	0	-0.02	-3.00											

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
PM PEAK PERIOD**

PM PEAK HOUR		DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)							DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)											Signal Timing Changes				
Intersection Name	Approach	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Splits		Offset		
																				No Change.		No Change.		
FDR Drive Service Road & E 34th Street / Heliport Lot	FDR Drive Service Road	NB	L	377	L	0.99	58.9	E	NB	L	377	L	0.99	58.9	E	NI	0	0.00	0.00	No Change.	No Change.			
			T	184	TR	0.29	7.6	A		T	184	TR	0.29	7.6	A		NI	0	0.00			0.00		
			R	4						R	4						NI	0	0.00			0.00		
		SB		L	0					SB	L	0					NI	0	0.02	1.60	No Change.	No Change.		
				T	687	TR	0.69	11.1	B		T	687	TR	0.71	12.7	B		NI	0	0.02			1.60	
				R	125						R	125						NI	0	0.00			-0.50	
	E 34th Street	EB		L	374	L	0.92	55.5	E	EB	L	328	L	0.81	40.9	D	NI	-46	-0.11	-14.60	No Change.	No Change.		
				T	12	LT	0.95	62.2	E		T	12	LT	0.84	44.6	D		NI	0	-0.11			-17.60	
				R	523	R	0.93	42.5	D		R	523	R	0.93	42.0	D		NI	0	0.00			-0.50	
Heliport Lot	WB		L	0					WB	L	0					NI	0	0.00	0.00	No Change.	No Change.			
			T	12	TR	0.06	25.9	C		T	12	TR	0.06	25.9	C		NI	0	0.00			0.00		
			R	5						R	5						NI	0	0.00			0.00		
35TH STREET CORRIDOR																								
11th Avenue & W 35th Street	11th Avenue	NB	T	132	T	0.07	16.7	B	NB	T	132	T	0.07	15.0	B	NI	0	0.00	-1.70	No Change.	No Change.			
			SB	T	792	T	0.36	17.0		B	SB	T	792	T	0.36		17.0	B	NI			0	0.00	0.00
	W 35th Street	WB	L	142	L	0.26	29.3	C	WB	L	152	L	0.28	30.1	C	NI	10	0.02	0.80	No Change.	No Change.			
			R	67	R	0.13	26.8	C		R	67	R	0.13	27.2	C		NI	0	0.00			0.40		
10th Avenue & W 35th Street	10th Avenue	NB	L	76	LT	0.52	5.6	A	NB	L	76	LT	0.52	6.1	A	NI	0	0.00	0.50	No Change.	No Change.			
			T	1620				T		1645				T	1645				NI			25	0.00	0.50
	W 35th Street	WB	T	133	TR	0.53	38.2	D	WB	T	143	TR	0.56	38.1	D	NI	10	0.03	-0.10	No Change.	No Change.			
			R	81				R		81				R	81				NI			0	0.00	-0.10
Dyer Avenue & W 35th Street	Dyer Avenue	NB	R	175	R	0.13	5.5	A	NB	R	188	R	0.15	8.0	A	NI	13	0.02	2.50	No Change.	No Change.			
			SB	T	279	T	0.49	30.1		C	SB	T	279	T	0.49		30.1	C	NI			0	0.00	0.00
			R	126	R	0.67	41.6	D		R	126	R	0.67	41.6	D		NI	0	0.00			0.00		
	W 35th Street	WB	L	51					WB	L	51					NI	0	0.00	0.00	No Change.	No Change.			
			T	88	LTR	0.79	33.3	C		T	98	LTR	0.79	33.4	C		NI	10	0.00			0.10		
			R	111						R	102						NI	-9	0.00			0.10		
9th Avenue & W 35th Street	9th Avenue	SB	T	1024	TR	0.43	12.8	B	SB	T	1024	TR	0.43	12.8	B	NI	0	0.00	0.00	No Change.	No Change.			
			R	59				R		59				R	59				NI			0	0.00	0.00
	W 35th Street	WB	L	175	L	0.79	47.9	D	WB	L	190	L	0.83	52.8	D	NI	15	0.04	4.90	No Change.	No Change.			
			T	191	T	0.53	29.4	C		T	192	T	0.53	29.9	C		NI	1	0.00			0.50		
8th Avenue & W 35th Street	8th Avenue	NB	L	71	LT	0.51	4.1	A	NB	L	72	LT	0.46	1.6	A	NI	1	-0.05	-2.50	No Change.	No Change.			
			T	1254				T		1128				T	1128				NI			-126	-0.05	-2.50
	W 35th Street	WB	T	294	T	0.68	15.6	B	WB	T	309	T	0.72	15.6	B	NI	15	0.04	0.00	No Change.	No Change.			
			R	112	R	0.67	23.8	C		R	147	R	0.88	39.1	D		NI	35	0.21			15.30		
7th Avenue & W 35th Street	7th Avenue	SB	T	1529	TR	0.63	25.1	C	SB	T	1529	TR	0.66	32.9	C	NI	0	0.03	7.80	2 s shift from Seventh Av to 35th St.	No Change.			
			R	81				R		81				R	81				NI			0	0.03	7.80
	W 35th Street	WB	L	188	L	0.97	66.2	E	WB	L	188	L	0.87	39.2	D	NI	0	-0.10	-27.00	No Change.	No Change.			
			T	325	T	0.89	36.9	D		T	375	T	0.96	43.7	D		NI	50	0.07			6.80		

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
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PM PEAK HOUR		DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)							DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)											Signal Timing Changes							
Intersection Name	Approach	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Splits		Offset					
Tunnel Approach Street & E 35th Street	Tunnel Approach Street	NB	L	12	LT	0.19	9.5	A	NB	L	27	LT	0.20	9.6	A	NI	15	0.01	0.10	No Change.	No Change.						
	E 35th Street	WB	T	3	TR	0.04	17.0	B	WB	T	3	TR	0.04	17.0	B	NI	0	0.00	0.00								
1st Avenue & E 35th Street	1st Avenue	NB	L	0	NOT PERMITTED DURING PM PEAK				NB	L	0	NOT PERMITTED DURING PM PEAK				NI	172	0.08	3.70	No Change.	No Change.						
	E 35th Street	WB	T	0	NOT PERMITTED DURING PM PEAK				WB	T	0	NOT PERMITTED DURING PM PEAK				NI	-21	-0.07	-13.30								
FDR Drive Service Road & E 35th Street	FDR Drive Service Road	NB	L	220	L	0.56	22.7	C	NB	L	200	L	0.51	22.8	C	NI	-20	-0.05	0.10	No Change.	No Change.						
		T	342	T	0.32	5.4	A	T	317	T	0.30	5.5	A	NI	-25	-0.02	0.10										
		SB	T	812	TR	0.79	29.6	C	SB	T	812	TR	0.79	29.5	C	NI	0	0.00	-0.10								
		R	76	R	0.98	80.2	F	R	75	R	0.91	66.9	E	R	-1												
33RD STREET CORRIDOR																											
Route 9A & W 33rd Street (STOP Controlled)	Route 9A	NB	Free-flow									NB	Free-flow														
	W 33rd Street	WB	R	188	R	0.65	36.3	E	WB	R	188	R	0.65	36.3	E	NI	0	0.00	0.00								
11th Avenue & W 33rd Street	11th Avenue	SB	T	908	TR	0.30	2.9	A	SB	T	1007	TR	0.33	3.0	A	NI	99	0.03	0.10	No Change.	No Change.						
	W 33rd Street	WB	L	112	L	0.29	22.4	C	WB	L	112	L	0.29	22.4	C	NI	0	0.00	0.00								
			T	167	LT	0.48	27.0	C		T	167	LT	0.48	27.0	C	NI	0	0.00	0.00								
10th Avenue & W 33rd Street	10th Avenue	NB	L	102	LT	0.52	13.9	B	NB	L	102	LT	0.52	13.8	B	NI	0	0.00	-0.10	No Change.	No Change.						
	W 33rd Street	WB	T	178	TR	0.45	23.8	C	WB	T	178	TR	0.45	23.8	C	NI	0	0.00	0.00								
			R	183	TR	0.45	23.8	C		R	183	TR	0.45	23.8	C	NI	0	0.00	0.00								
9th Avenue & W 33rd Street	9th Avenue	SB	T	1123	T	0.53	10.7	B	SB	T	1088	T	0.51	5.9	A	NI	-35	-0.02	-4.80	No Change.	No Change.						
		R	259	R	0.91	49.8	D		R	259	R	0.91	45.8	D	NI	0	0.00	-4.00									
	W 33rd Street	WB	L	132	L	0.71	52.9	D	WB	L	132	L	0.71	53.0	D	NI	0	0.00	0.10								
			T	315	T	0.74	44.5	D		T	315	T	0.74	44.6	D	NI	0	0.00	0.10								
8th Avenue & W 33rd Street	8th Avenue	NB	L	228	L	0.91	65.2	E	NB	L	228	L	0.91	65.2	E	NI	0	0.00	0.00	No Change.	No Change.						
		T	1208	T	0.69	32.5	C		T	1208	T	0.69	32.5	C	NI	0	0.00	0.00									
	W 33rd Street	WB	T	218	T	0.34	15.3	B	WB	T	218	T	0.34	15.5	B	NI	0	0.00	0.20								
			R	91	R	0.30	16.5	B		R	91	R	0.30	16.7	B	NI	0	0.00	0.20								
7th Avenue & W 33rd Street	7th Avenue	SB	T	1535	TR	0.66	2.4	A	SB	T	1535	TR	0.66	3.1	A	NI	0	0.00	0.70	No Change.	No Change.						
		R	208	R	0.66	2.4	A		R	208	R	0.66	3.1	A	NI	0	0.00	0.70									
	W 33rd Street	WB	L	112	LT	0.84	67.2	E	WB	L	112	LT	0.84	67.2	E	NI	0	0.00	0.00								
			T	102	LT	0.84	67.2	E		T	102	LT	0.84	67.2	E	NI	0	0.00	0.00								

**NYCDOT 34th STREET SELECT BUS SERVICE
APPENDIX ___: LOS COMPARISON SUMMARY
PM PEAK PERIOD**

PM PEAK HOUR		DRAFT - 2012 NO BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)							DRAFT - 2012 BUILD LEVEL OF SERVICE PEAK PM HOUR (5:00 PM – 6:00 PM)											Signal Timing Changes	
Intersection Name	Approach	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Direction	Movement	Volume	Lane Group	V/C	Delay	LOS	Impact?	Volume Change	V/C Change	Delay Change	Signal Timing Changes	
																				Splits	Offset
6th Avenue & W 33rd Street	6th Avenue	NB	L	213	L	0.74	51.2	D	NB	L	213	L	0.74	51.2	D	NI	0	0.00	0.00	No Change.	No Change.
			T	1604	T	0.62	23.8	C		T	1604	T	0.62	23.8	C						
Broadway & W 33rd Street	W 33rd Street	WB	L	213	L	0.80	56.8	E	WB	L	213	L	0.80	57.0	E	NI	0	0.00	0.20	No Change.	No Change.
5th Avenue & 33rd Street	5th Avenue	SB	T	1300	TR	0.71	6.2	A	SB	T	1310	TR	0.71	5.7	A	NI	10	0.00	-0.50	No Change.	No Change.
			R	79	R	0.68	35.6	D		R	79	R	0.69	38.7	D						
	33rd Street	WB	L	61	LT	0.63	40.0	D	WB	L	61	LT	0.63	40.1	D	NI	0	0.00	0.10		
Madison Avenue & E 35th Street	Madison	NB	L	60	LT	0.69	20.1	C	NB	L	60	LT	0.69	20.1	C	NI	0	0.00	0.00	No Change.	No Change.
			T	1016				T		1016											
	E 33rd Street	WB	T	84	TR	0.40	22.2	C	WB	T	84	TR	0.40	22.5	C	NI	0	0.00	0.30		
			R	46				R		46											
Park Avenue & E 33rd Street	Park Avenue	NB	T	1127	T	0.56	16.3	B	NB	T	1127	T	0.56	16.4	B	NI	0	0.00	0.10	No Change.	No Change.
			SB	T	726	TR	0.64	6.4		A	SB	T	731	TR	0.64						
		R	130					R	130						NI	5	0.00	-0.30			
	E 33rd Street	WB	R	184	R	0.49	19.3	B	WB	R	184	R	0.49	19.3	B	NI	0	0.00	0.00		
Lexington Avenue & E 33rd Street	Lexington Avenue	SB	T	1346	TR	0.75	6.6	A	SB	T	1351	TR	0.76	6.6	A	NI	5	0.01	0.00	No Change.	No Change.
			R	31				R		31											
	E 33rd Street	WB	L	127	LT	0.66	22.3	C	WB	L	127	LT	0.66	22.2	C	NI	0	0.00	-0.10		
			T	152					T	152											
3rd Avenue & E 33rd Street	3rd Avenue	NB	L	94	LT	0.61	13.6	B	NB	L	94	LT	0.61	13.8	B	NI	0	0.00	0.20	No Change.	No Change.
			T	1853				T		1853											
	E 33rd Street	WB	T	185	TR	0.78	41.0	D	WB	T	185	TR	0.78	44.3	D	NI	0	0.00	3.30		
			R	93					R	93											
2nd Avenue & E 33rd Street	2nd Avenue	SB	T	2313	T	0.87	4.8	A	SB	T	2313	T	0.87	6.3	A	NI	0	0.00	1.50	No Change.	-3 s.
			R	134	R	0.46	2.9	A		R	134	R	0.46	2.3	A						
		WB	L	155	L	0.62	38.3	D	WB	L	155	L	0.62	44.1	D	NI	0	0.00	5.80		
			T	144	T	0.32	30.4	C		T	144	T	0.32	33.3	C	NI	0	0.00	2.90		
1st Avenue & E 33rd Street	1st Avenue	NB	L	299	L	0.78	29.5	C	NB	L	299	L	0.78	29.5	C	NI	0	0.00	0.00	No Change.	+17 s.
			T	1669	T	0.96	32.1	C		T	1669	T	0.96	36.1	D						

**Table 1
No Build and Build Loading/Parking Spaces**

Street	From Street	To Street	Side	Block Length	No-Build Conditions			Proposed Conditions			
					Length of loading area (feet) ^	Time Restrictions	Comments	Length of loading area (feet)^	Additional Overnight Parking Length of loading area (feet) ^	Length of loading area (vehicles)^^	
E 34th St	FDR Dr	1st Ave	North	260	-	-	No Standing Anytime	65			-
E 34th St	1st Ave	QMT Ent	North	487	313	7AM-7PM M-F		160			8
E 34th St	QMT Ent	2nd Ave	North	154	-	-	No Standing Anytime	120			6
E 34th St	2nd Ave	QMT Exit	North	407	220	7AM-7PM M-F		200			10
E 34th St	QMT Exit	3rd Ave	North	191	-	-	No Standing Anytime	30			1
E 34th St	3rd Ave	Lexington Ave	North	450	166	7AM-7PM M-F 1PM-7PM Sa-Su	No Parking 7PM-Midnight including Sun	-	265	Parking between Midnight and 7AM	
E 34th St	Lexington Ave	Park Ave	North	442	223	7AM-7PM M-F 1PM-7PM Sa-Su	No Parking 7PM-Midnight including Sun	120			6
E 34th St	Lexington Ave	Park Ave	North	442	43	7AM-7PM M-F 9AM-5PM Sa	Reserved for US Postal Vans between 10AM-4PM M-F				
E 34th St	Park Ave	Madison Ave	North	445	238	7AM-7PM M-F 1PM-7PM Sa-Su	No Parking 7PM-Midnight including Sun	70			3
E 34th St	Madison Ave	5th Ave	North	461	291	7AM-7PM	No Parking 7PM-Midnight including Sun	-	170	Parking between Midnight and 7AM	-
W 34th St	5th Ave	6th Ave/Broadway	North	970	535	7AM-7PM M-F 1PM-7PM Sa-Su	No Parking 7PM-Midnight including Sun	-	815	Parking between Midnight and 7AM	-
W 34th St	6th Ave/Broadway	7th Ave	North	783	464	7AM-7PM M-F 1PM-7PM Sa-Su	No Parking 7PM-Midnight including Sun	-	470	Parking between Midnight and 7AM	-
W 34th St	7th Ave	8th Ave	North	839	494	7AM-7PM M-F 1PM-7PM Sa-Su	No Parking 7PM-Midnight including Sun	-	535	Parking between Midnight and 7AM	-
W 34th St	8th Ave	9th Ave	North	832	484	7-10AM; 4-7PM except Sun. 7PM-7AM incld Sun	3 HR metered parking 10AM-4PM except Sun	335			16
W 34th St	9th Ave	Dyer Ave	North	350	-	-	No Standing Anytime	115			5
W 34th St	Dyer Ave	10th Ave	North	420	322	7AM-7PM M-F	No Standing	75			3
W 34th St	10th Ave	Proposed Hudson Yards Blvd	North	833	207	7-10AM; 4-7PM incld Sun.	No Parking 7PM-Midnight including Sun.	185			9
W 34th St	Proposed Hudson Yards Blvd	11th Ave	North				Temp Const. Regulation for most of the block.	195			9
W 34th St	11th Ave	12th Ave	North	825	-	-	No Standing Anytime	524			26

Table 1 (continued)
No Build and Build Loading/Parking Spaces

Street	From Street	To Street	Side	Block Length	No-Build Conditions			Proposed Conditions			
					Length of loading area (feet)	Time Restrictions	Comments	Length of loading area (feet)^	Additional Overnight Parking Length of loading area (feet) ^	Length of loading area (vehicles)^^	
W 34th St	12th Ave	11th Ave	South	825	-	7AM-7PM	No Parking 7PM-Midnight including Sun	657		32	
W 34th St	11th Ave	Proposed Hudson Yards Blvd	South	834	834	7AM-7PM	No Parking 7PM-Midnight.	220		11	
W 34th St	Proposed Hudson Yards Blvd		10th Ave					South	285		14
W 34th St	10th Ave	9th Ave	South	842	544	7AM-7PM	No Parking 7PM-Midnight.	350		17	
W 34th St	9th Ave	8th Ave	South	833	365	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking 7PM-Midnight.	-		-	
W 34th St	8th Ave	7th Ave	South	845	570	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking 7PM-Midnight.	410		20	
W 34th St	7th Ave	6th Ave/Broadway	South	807	807	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking 7PM-Midnight.	520		26	
W 34th St	6th Ave/Broadway	5th Ave	South	966	289	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking 7PM-Midnight.	208		10	
E 34th St	5th Ave	Madison Ave	South	460	353	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking 7PM-Midnight.	47		2	
E 34th St	Madison Ave	Park Ave	South	442	240	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking 7PM-Midnight.	-	400	Parking between Midnight and 7AM	-
E 34th St	Park Ave	Lexington Ave	South	455	248	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking 7PM-Midnight.	-	250	Parking between Midnight and 7AM	-
E 34th St	Lexington Ave	3rd Ave	South	450	53	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking 7PM-Midnight.	255		12	
E 34th St	Lexington Ave	3rd Ave	South	450	81		Hotel Loading Zone				
E 34th St	Lexington Ave	3rd Ave	South	450	75	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Parking Anytime				
E 34th St	Lexington Ave	3rd Ave	South	450	69	7AM-7PM M-F; 1PM-7PM Sa-Su.	No Standing Except Pick Ups & Drop Offs				
E 34th St	3rd Ave	2nd Ave	South	642	313	7AM-7PM M-F.		178		8	
E 34th St	2nd Ave	1st Ave	South	684	347	7AM-7PM M-F.		-	410	Parking between Midnight and 7AM; Midday Loading (10AM - 4PM)	-
E 34th St	1st Ave	FDR Dr	South	260	-	-	No Standing Anytime	-		-	

Note:
All measurements for Proposed Conditions are estimates based on CAD files provided by NYCDOT 05/02/2011 and revised CAD files on 06/15/2011
^ Length of loading area (feet) does not take into account curb cuts and fire hydrants
^^ 20 foot = 1 vehicle