Lead Agency:
New York City Taxi & Limousine Commission

NYC
Taxi & Limousine
Commission

Taxi Medallion Increase

Final Environmental Impact Statement

October 2013

Prepared by:
Henningson, Durham & Richardson Architecture & Engineering, P.C.

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A. Project Description

Introduction

As allowed under New York State Legislation (Chapter 602 of the Laws of 2011 of the State of New York and Chapter 9 of the Laws of 2012 of the State of New York), the New York City Taxi & Limousine Commission (TLC) proposes to issue by public sale up to 2,000 fully-transferable taxicab licenses (medallions) in addition to those already in existence, provided that all of these new licenses will be required to be used with taxicab vehicles that are accessible to individuals who use wheelchairs. Sale of the additional medallions would be at the discretion of the Mayor of New York City through TLC, an action subject to review under the requirements of the State Environmental Quality Review Act (SEQRA) found in Article 8 of the New York State Environmental Conservation Law and the Rules of Procedure for City Environmental Quality Review (CEQR) published as Chapter 5 of Title 62 of the Rules of the City of New York. In conformance with those requirements, this ~~Draft~~Final Environmental Impact Statement (~~DEIS~~)FEIS considers the environmental impacts of this discretionary action. ~~This DEIS is an update to the DEIS previously issued by TLC in May 2012.~~

Project Identification

New York State Legislation (New York State Senate Bill S6118A-2011 and companion New York State Assembly Bill A8691A-2011) authorizes the City of New York to issue up to two thousand (2,000) new taxicab licenses to vehicles that are accessible to individuals ~~with disabilities~~ in wheelchairs ~~(defined in the legislation as persons in wheelchairs)~~.

The legislation separately authorizes these additional actions by the City:

- Issue eighteen thousand (18,000) HAIL vehicle licenses, three thousand six hundred (3,600) of which must be accessible to persons in wheelchairs ~~with disabilities~~;
- Issue up to four hundred fifty (450) base permits to for-hire base stations wishing to affiliate HAIL-licensed vehicles;

- Amend the tax law, the administrative code of the City of New York, and the traffic law in relation to taxicabs and HAIL licenses in New York City; and

- Repeal certain sections of Chapter 602 of the Laws of 2011 relating to livery permits in the City of New York.

Only the issuance of the additional 2,000 taxicab licenses is subject to SEQRA/CEQR review.

The sale of the 2,000 taxicab licenses to vehicles that are accessible to individuals in wheelchairs ~~with disabilities~~ would increase the number of yellow taxi licenses from the existing number of 13,237 licenses to a total of 15,237 licenses, an increase of approximately 15.1%. The legislation prescribes that the City of New York may, acting by the Mayor alone, administratively authorize the TLC or its successor agency to issue up to 2,000 additional taxicab medallion licenses provided that such licenses be restricted to vehicles capable of transporting persons in wheelchairs or that contain a physical device or alteration designed to permit access to and enable the transportation of persons in wheelchairs in accordance with the Americans with Disability Act (ADA), provided further that:

- Such additional medallion licenses are issued by public sale;

- The additional medallion licenses are fully transferable;

- No more than 400 of the taxicab medallion licenses authorized pursuant to the legislation, may be issued by TLC until a Disabled Accessibility Plan (DAP) is approved by the New York State Department of Transportation (NYSDOT); and

- Authorization for the public sale of the additional taxicab medallions is also conditioned upon the TLC making HAIL vehicle licenses available for issuance.

TLC anticipates that the public sale of the initial 400 taxicab licenses would occur by June 2014, and that the remaining 1,600 additional taxicab licenses would be issued by public sale through 2017, subject to approval of the DAP by NYSDOT.

Approvals Required

Although permitted to issue up to 2,000 additional licenses by the legislation, the actual issuance and sale of the additional taxicab medallion licenses would be a discretionary action by the City of New York under Subsection A of Chapter 65 (Sale of Taxicab Medallions) of the Rules of the TLC subject to review under SEQRA/CEQR requirements.

Project Purpose and Need

Fifty-four percent of New York City households do not own a car and rely heavily on public transportation, yellow taxis and other for-hire vehicles to make their daily trips. Yellow taxis are particularly essential to the 1.6 million residents of Manhattan, where only 24% of households own a car. Taxis are also used commonly by the 2.3 million people who work in Manhattan each day and the 48 million people who visit the City each year. New York City taxis provide approximately 500,000 trips each day. The projected increase in the population of the City to approximately 9.1 million residents by 2030, and the projected increase in the population to over 1.8 million residents in Manhattan in the same period, will increase the need for yellow taxicabs.

Additional yellow taxicabs will also be needed to serve the projected increase in employment in the City. Long-term occupational projections developed by the New York State Department of Labor indicate that employment in New York City will increase by 3.8% during the ten-year period between 2008 and 2018, a gain of over 150,000 new jobs.

Increases in the number of visitors to the City will also heighten the need for additional taxicab service. As documented by NYC & Company, visitation to the City has dramatically increased during the last twenty years from a total of 29.1 million visitors in 1991 to 35.2 million visitors in 2001 to 50.2 million in 2011. It is anticipated that the number of visitors to the City will continue to increase, as suggested by the increase in number of hotel rooms in the City. HVS Global Hospitality Services ("HVS" 2011 Manhattan Hotel Market Overview, June 2011) indicates that a total of 62 new hotels opened in Manhattan between March 2008 and February 2011, adding 11,285 rooms to the market (a 17.0% increase over the February 2008 level). By 2013, HVS projects an additional 8% increase in the number of hotel rooms over 2011 levels.

As compared to other cities that rely heavily on public transportation and taxi service, New York's taxi supply is relatively low. New York City's 8.4 million residents share 13,237 taxis, or one taxi for every 630 residents. In contrast, London has 22,000 black cabs that serve its 7.5 million residents, or one taxi for every 340 residents. Similarly, in Chicago, where the 71% household car ownership rate is significantly higher than New York City's 46% household car ownership rate, there is approximately one taxi for every 385 residents. Of course car services supplement the City's taxis in transporting the public; however, they cater to the prearranged rather than on-demand yellow taxi hail market.

The demand for taxis is reflected in the long hours of operation of the current taxi fleet. Approximately 75% of taxis in New York City currently operate two 12-hour shifts nearly every day, while the remaining 25% operate for one 12-hour shift nearly every day.

The demand for taxis is also reflected in the observed time that it takes to locate an unoccupied taxi. Passengers frequently report difficulty locating an unoccupied taxi when they need one. In particular, passengers report shortages in the late afternoon, weekend evenings and instances of bad weather. This observation is supported by global positioning system (GPS) data on taxi utilization. Since 2009 (when TLC began collecting GPS data for the existing taxi fleet), the number of trips per cab per day increased from approximately 36.9 trips per cab per day in the first quarter (Q1) of 2009 to 38.5 trips per cab per day in Q1 of 2010 and 39.0 trips per cab per day in Q1 of 2011. The average number of hours each day a cab was occupied also increased during the same period. In Q1 of 2009, each taxi was hired (i.e., was unavailable to receive a street hail) approximately 6.8 hours each day. By Q1 of 2011, the number of hours each day when a cab was hired increased 13% to 7.7 hours each day.

To address the observed shortage in the number of taxis, the Proposed Action would authorize the issuance of 2,000 new medallions, an increase of approximately 15.1% above the existing number of medallions, all of which would be required to be used with taxicab vehicles that are accessible to individuals who use wheelchairs. This would increase the supply of wheelchair-accessible medallions from 231 wheelchair-accessible vehicles to 2,231 wheelchair-accessible medallions. The increase in the number of medallions restricted for use with vehicles accessible to persons with disabilities would foster increased access, mobility and independence of persons with disabilities, a major goal of the City's transportation system.

B. Probable Impacts of the Proposed Action

Land Use, Zoning, and Public Policy

According to the *2012 CEQR Technical Manual*, projects that would affect land use or change the zoning on a site could result in significant adverse impacts to land use, zoning, or public policy. The proposed sale of 2,000 medallions would not directly displace any residential, commercial or other land use, would not accelerate a trend that would lead to the indirect displacement of any residential, commercial or other land use, and would not be inconsistent with any established public policy. Specifically, the Proposed Action would be consistent with PlaNYC 2030 Initiative 3 "Expand for-hire vehicle service throughout our neighborhoods". Furthermore, the Proposed Action is not a discretionary action requiring public review under ULURP. Therefore, the Proposed Action would not result in a significant adverse impact to land use, zoning, or public policy.

Socioeconomic Conditions

As defined in the *2012 CEQR Technical Manual*, the socioeconomic character of an area includes its population, housing, and economic activity. Socioeconomic changes may occur when a proposed action directly or indirectly changes any of these elements. Although socioeconomic changes may not result in impacts under CEQR, they are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of an area. According to the *2012 CEQR Technical Manual*, the five principal issues of concern with respect to socioeconomic conditions are whether a proposed action would result in significant adverse impacts due to: (1) direct residential displacement; (2) direct business and/or institutional displacement; (3) indirect residential displacement; (4) indirect business and/or institutional displacement; and (5) adverse effects on specific industries of importance to the City.

The *2012 CEQR Technical Manual* indicates that a detailed socioeconomic conditions analysis is not required if it can be demonstrated that a proposed action:

- Would not result in a significant direct or indirect displacement of residents, or businesses, and
- Would not have a significant adverse impact on an industry of importance to the City.

Since the Proposed Action would neither require any construction activities nor would result in any new development, it would not result in any direct or indirect displacement of residences or businesses. However, it could potentially result in an adverse effect on the yellow taxicab industry, the FHV industry, and industries that provide direct services to yellow taxicab and FHV businesses. All of these industries are of importance to the City. As a consequence, the socioeconomic conditions impact analysis includes an assessment of the impact of the Proposed Action on yellow taxicab businesses, livery car businesses (the FHV industry), and businesses that provide direct services to the yellow taxicab and livery businesses. Specifically, the socioeconomic conditions impact analysis includes assessments of the impact of the Proposed Action on the following:

- Value of a yellow taxicab medallion;
- Taxicab driver income;
- The livery car industry; and
- Overall New York City economy.

Since the Proposed Action has the potential to affect businesses throughout the City, the Study Area for the socioeconomic conditions impact assessment encompasses the entire City.

The Proposed Action would:

- Not have a significant adverse impact on the value of either an individual or mini-fleet medallion.
- Not have a significant adverse impact on the income of a yellow taxicab driver.
- Not have a significant adverse impact on the for-hire livery industry.
- Have an overall beneficial affect on the New York City economy.

These findings indicate that the Proposed Action would not result in a significant adverse impact on the New York City taxi and livery industry.

Value of a Yellow Taxicab Medallion

Under the worst case scenario, ~~T~~the Proposed Action would result in a small (less than 4%) decrease in the anticipated future value of an individual medallion and a smaller (less than 3%) decrease in the anticipated future value of a mini-fleet medallion. The most likely impact predicted for both categories of medallions is even smaller (approximately 2%).

Historically medallion prices have increased during periods of medallion sales in part due to fare increases that have accompanied medallion sales. During 2004, 590 medallions were sold. In 2006, an additional 308 medallions were sold with smaller sales taking place in 2007 and 2008 of 63 and 87 medallions respectively. Fares increased (an estimated) 26% in May 2004 and by (an estimated) 10.5% in 2006[1] while no fares increases were implemented in 2005 or in 2007 (until the fare increase in 2012). During these periods of medallion sales, individual medallion prices rose 22% in 2004 and another 22% in 2005 while mini-fleet medallion prices rose 22% and 21% in 2004 and 2005 respectively. In 2006, individual medallion prices rose approximately 14% while mini-fleet medallion prices rose approximately 27%. Medallion prices rose in 2007 as well by an approximate 11% for individual medallions and 19% for mini-fleet medallions. In fact medallion prices rose throughout periods when medallions have been sold since 2004.

Medallion prices are more impacted by economic factors, for example medallion prices declined in 2000 (only mini-fleet medallions) and then in 2001 (both mini-fleet and individual medallion) primarily due to the 2001 recession. Other factors such as interest rates also play an important role in determining medallion prices. The analysis indicates that there would be a small impact on the value of the medallion and prices would be slightly lower than they would otherwise have been due to the Proposed Action. The value is expected to increase with or without the Proposed Action, though the increase is expected to be smaller in the analysis year with the Proposed

[1] This fare increase was implemented by changing the charge incurred by passengers in slow moving or stopped traffic. Initial charge for the fare and the variable unit fare remained unchanged.

Action in place. Historic trends indicate that value continues to increase at a high rate in the years following the medallion sale. In other words, the analysis identified impacts in *relative* terms (relative to the value of the medallion without the Proposed Action). In *absolute* terms medallions might well appreciate in value as they have done in the past.

Taxicab Driver Income

Gross revenue of an individual medallion driver (leasing for a 2^{nd} shift) in the future (2017) with the 2,000 additional medallions is estimated to be approximately $297 per shift (in 2012 dollars, assuming medium impacts due to the introduction of the additional medallions), using an average of 20.0 revenue trips per shift at an average fare of $14.86 per trip. Net income of an individual medallion driver in the future (2017) with the 2,000 additional medallions is estimated to be approximately $162 after netting out the cost of fuel, and health care fees. Net income of an individual medallion driver (leasing for a 2nd shift) is estimated to be approximately 1.9% less in the future (2017) with the 2,000 additional medallions than without the 2,000 additional medallions.

Gross income in the future (2017) with the 2,000 additional medallions of a driver who drives as part of a mini-fleet is estimated to be approximately $297 (in 2012 dollars) per shift assuming the same average length of revenue trips as for the driver-owner operating arrangement. Net income in the future (2017) with the 2,000 additional medallions of a driver who drives as part of a mini-fleet is estimated to be approximately $143 per shift (in 2012 dollars) after netting out lease costs and the costs of health care and credit card fees. Net income per shift of drivers who lease a fleet vehicle is estimated to be approximately 2.1% less in the future (2017) with the 2,000 additional medallions than without the additional medallions that are to be added under the Proposed Action.

Livery Car Industry

An increase in the supply of yellow taxis could result in increased competition from yellow cabs for passengers now served by livery cars. However, because of the degree to which the two industries serve geographically distinct markets, and also provide different types of service (street hails vs. pre-arranged pick-ups), the effects of an increase in the supply of yellow taxis on the livery industry are likely to be limited – and in particular, limited to the relatively small number of neighborhoods that are served by both industries.

The Proposed Action would not result in an increase in the level of competition with the for-hire livery industry. The increase in yellow taxicab trips is estimated to account for only 2.3% of the trips currently serviced by the livery industry on a daily basis. Although the Proposed Action could result in a small increase in the level of competition overall, in roughly 15 neighborhoods out of the 188 neighborhoods in New York City, impacts might result in modest increases in competition for passengers. These include portions of northern Manhattan, certain Brooklyn neighborhoods and certain neighborhoods in Queens. Many of these identified neighborhoods however have experienced significant growth in population. The proposed increase in the number of yellow taxis would be mitigated by the continued growth in population, likely increases in industrial and commercial development in these specific neighborhoods[2], further development and growth in Brooklyn and Queens outside these specific neighborhoods[3] and the consequent demand for for-hire livery services in these areas (see Appendix C for details). In particular, the analysis does not take into account the impact of mode shift. Additional yellow taxicab trips might come from other modes such as subway or bus rather than livery vehicle trips. Given the small impact of additional yellow taxicab trips as a percentage of overall livery trips and their focus on a limited number of neighborhoods, it is most likely that livery cabs will increase service to other neighborhoods currently poorly served by yellow taxicabs and likely to remain poorly serviced by yellow taxicabs in the future (for example, currently 155 neighborhoods in New York City account for only 1.2% of yellow taxi cab trips). As a consequence, the Proposed Action would not result in a significant adverse impact on the for-hire livery industry in New York City.

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[2] These include for example, Columbia University's new Mahattanville campus and the development of Barclays Center in Brooklyn

[3] Examples of these include the revitalization of Coney Island, expansion of the Resorts World Casino and Flushing Commons and new developments in Flushing.

Overall New York City Economy

The Proposed Action would result in net overall benefits to the New York City economy as a consequence of the increase in income that would be derived by the additional drivers required to drive additional taxi vehicles that would be allowed under the Proposed Action, and the increase in economic activity that would be generated by the Proposed Action to medallion owners, medallion brokers, mechanics, and the broad range of businesses that support the taxicab industry. Based on these findings it is projected that the Proposed Action would not result in a significant adverse impact on the overall New York City economy.

Community Facilities and Services

The Proposed Action would not physically alter or displace any existing or planned community facility, nor would it add new populations that would create demand for services greater than the ability of existing facilities to provide those services. Therefore, in conformance with *2012 CEQR Technical Manual* screening criteria, it would not have the potential to result in a significant impact on community facilities and services, and a preliminary and detailed analysis was not undertaken to determine if the Proposed Action would result in a significant adverse impact to community facilities and services.

Open Space

The Proposed Action would not eliminate or alter any existing or planned open space, nor would it add new populations that would overtax open space. Therefore, in conformance with *2012 CEQR Technical Manual* screening criteria, it would not have the potential to result in a significant impact on open space, and a preliminary and detailed analysis was not undertaken to determine if the Proposed Action would result in a significant adverse impact to open space.

Shadows

According to the *2012 CEQR Technical Manual*, projects that would either result in (a) new structures (or additions to existing structures including the addition of rooftop mechanical equipment) of 50 feet or more; or (b) be located adjacent to, or across the street from, a sunlight-sensitive resource could result in significant adverse impacts related to shadows. The proposed sale of 2,000 medallions would not result in any site specific development or a new structure. Therefore, the Proposed Action would not result in a significant adverse impact related to shadows.

Historic and Cultural Resources

According to the *2012 CEQR Technical Manual*, projects that require in-ground disturbance, construction of new structures, or the alteration of existing structures, could result in significant adverse impacts to historic and cultural resources. The Proposed Action would not result in any in-ground disturbance that could potentially affect archaeological resources. Nor would the Proposed Action result in:

- New construction, demolition, or significant physical alteration to any building, structure, or object;
- A change in scale, visual prominence, or visual context of any building, structure, or object or landscape feature;
- Construction, including but not limited to, excavating vibration, subsidence, dewatering, and the possibility of falling objects;
- Additions to or significant removal, grading, or replanting of significant historic landscape features;
- Screening or elimination of publicly accessible views; or
- Introduction of significant new shadows or significant lengthening of the duration of existing shadows on an historic landscape or on an historic structure.

Therefore, in conformance with the *2012 CEQR Technical Manual*, the Proposed Action would not result in a significant impact on historic and cultural resources.

Urban Design and Visual Resources

According to the *2012 CEQR Technical Manual*, projects with the potential for a pedestrian to observe, from the street level, a physical alteration allowed by existing zoning, including modification of yard, height, and setback requirements; or an increase in built floor area beyond what would be allowed as-of-right or in future without the proposed project, could result in a significant adverse impacts on urban design and visual resources. The proposed sale of 2,000 medallions would not require the construction of any new structure or the alteration of an existing structure. No modifications to the existing zoning, or changes in bulk and form would occur. Therefore, the Proposed Action would not result in a significant adverse impact to urban design and visual resources.

Natural Resources

The Proposed Action would not directly or indirectly affect natural resources since it consists of the addition of 2,000 taxis that would primarily operate on City roadways. Therefore, in conformance with *2012 CEQR Technical Manual* screening criteria, it would not have the potential to result in a significant impact on natural resources, and neither a preliminary or detailed analysis is required to determine if the Proposed Action would result in a significant adverse impact to natural resources.

Hazardous Materials

According to the *2012 CEQR Technical Manual*, projects that would increase hazardous materials exposure to people or the environment would require impacts to be studied and mitigated or avoided. The proposed sale of 2,000 medallions would not require any new construction or result in in-ground disturbance that would lead to human or environmental exposure. Consequently, the Proposed Action would not result in a significant adverse impact regarding hazardous materials.

Water and Sewer Infrastructure

According to the *2012 CEQR Technical Manual*, projects that would affect the City's water supply, wastewater treatment, and stormwater management infrastructure could result in significant adverse impacts to the water and sewer infrastructure. The proposed sale of 2,000 medallions would not affect these systems and would not result in a significant adverse impact to the City's water and sewer infrastructure.

Solid Waste and Sanitation Services

According to the *2012 CEQR Technical Manual*, projects that would affect land use or change the zoning on a site could result in significant adverse impacts to land use, zoning, or public policy. The proposed sale of 2,000 medallions would not result in solid waste generation associated with residential, institutional, commercial, and industrial uses, and would not affect the City's SWMP or any state policy related to the City's integrated solid waste management system. Therefore, the Proposed Action would not result in a significant adverse impact to solid waste and sanitation services in the City.

Energy

According to the *2012 CEQR Technical Manual*, projects that would could result in the need to provide additional generation capacity or changes to electrical transmission and distribution systems could require an energy impact assessment. The proposed sale of 2,000 medallions would not result in the need for additional electricity generation capacity nor would it affect the electrical transmission systems. Therefore, the Proposed Action would not result in a significant adverse impact to energy.

Transportation

Traffic

Significant adverse traffic impacts were identified by comparing the level of delay and LOS with and without the Proposed Action and comparing them to the criteria for identifying significant adverse traffic impacts in the *2012 CEQR Technical Manual.* The CEQR impact thresholds for signalized intersection operations are:

1. A lane group that operates at LOS A through C in the without Proposed Action condition and deteriorates under the with Proposed Action condition to worse than mid-LOS D (greater than 45 seconds/vehicle) should be considered a significant impact.;

2. A lane group that operates at LOS D in the without Proposed Action condition and is projected to have a delay increase of 5.0 seconds/vehicle or more should be considered a significant impact if the with Proposed Action delay exceeds 45.0 seconds/vehicle;

3. A lane group that operates at LOS E in the without Proposed Action condition and is projected to have a delay increase of 4.0 seconds/vehicle or more in the Proposed Action condition should be considered a significant impact.

4. A lane group that operates at LOS F in the without Proposed Action condition and is projected to have a delay increase of 3.0 seconds/vehicle or more in the Proposed Action condition should be considered a significant impact.

The results of this assessment indicate that, in 2014, 21 of the 54 study intersections would have significant adverse traffic impacts in the AM peak hour, in 2015, 29 of the 54 study intersections would have significant adverse traffic impacts in the AM peak hour, in 2016, 35 of the 54 study intersections would have significant adverse traffic impacts in the AM peak hour, and, in 2017, 37 of the 54 study intersections would have significant adverse traffic impacts in the AM peak hour. The number of significant adverse traffic impacts also varies by peak hour. For example, in 2014, 15 of the 54 study intersections would have significant adverse traffic impacts in the midday peak hour and 12 of the 54 study intersections would have significant adverse traffic impacts in the PM peak hour.

Measures to mitigate identified significant adverse impacts were evaluated for each intersection at which a significant adverse impact was projected to occur. The goal of the mitigation measures is to reduce the impacts to a non-significant level, while not causing new impacts at other locations. Mitigation measures were developed for each individual year and peak period. The analysis took into consideration the affect that a proposed mitigation measure would have on nearby intersections. For example, timing changes at one location can affect downstream operations at subsequent locations. For this study, only signal timing changes (without phasing changes) were considered for the project mitigation measures. There are a number of locations, however, where signal timing improvements were either not possible, or were not sufficient to mitigate the identified impacts. If full mitigation could not be achieved, improvements were proposed to decrease impact to the extent possible. Locations that would be either unmitigatable or could not be fully mitigated are identified in Chapter 15: Transportation.

Parking

The Proposed Action is not expected to have a large effect on parking in the study area. Nearly all of the new taxis would be in active operation throughout the day, with very few taxis parked during the peak demand hours in the study area. Furthermore, it is anticipated that the few parked taxis would be spread around the city and not located in one area. Given the demand for taxis, and the need for taxi drivers to circulate looking for a fare, taxis in operation would spend little time standing and waiting curbside. Therefore, no significant parking impacts are expected because taxis would mainly be on the roadways and any parking or standing would be staggered and dispersed, allowing them to be absorbed by the available taxi-dedicated or other parking facilities.

Pedestrians and Bicycles

The Proposed Action would not generated sufficient pedestrian trips to meet the minimum CEQR threshold of 200 or more new pedestrian trips for preparation of a detailed pedestrian analysis. Furthermore, pedestrian trips required to gain access to the taxis included in the Proposed Action would be dispersed throughout the study area. The Proposed Action would not generate any new bicycle trips. Therefore, no significant pedestrian or bicycle impacts would occur with the Proposed Action.

Transit

The Proposed Action would not result in 200 or more new transit trips of any type (rail or bus), so, as indicated in the *2012 CEQR Technical Manual,* a detailed transit analysis of the impact of the Proposed Action was not required. Therefore, no significant adverse transit impacts would occur with the Proposed Action.

Safety

There were 25 intersections in the study area that would exceed the CEQR threshold of five or more pedestrian/bicyclist related accidents during any one year of the most recent 3-year period. There are number of changes in the study area in the past 3 years that have the potential to effect pedestrian and bicycle accident rates, including implementation of the Green Light for Midtown project being conducted by the NYCDOT to improve mobility and safety in the Midtown core area (Broadway from Columbus Circle to 42nd Street and from 35th Street to 26th Street). New crosswalks and new plaza spaces in the Times Square area and simplified crossings in Herald Square have resulted in noticeable improvements in the safety of motorists, pedestrians and cyclists. The Green Light for Midtown project includes safety features such as simplified intersections, shortened crosswalks, organized and defined traffic lanes and separation of conflicting movements. Additionally, NYCDOT has begun to implement a Safe Streets for Seniors campaign to increase safety by increasing pedestrian crossing time at wide avenues (to allow more green time for slow walkers to safely transverse the roadway), installing high visibility crosswalks and advance stop bars, and installing refuge islands and investigating the use of leading pedestrian intervals at selected locations. Lastly, NYCDOT is also planning to implement a bicycle protection system along Eighth and Ninth Avenues.

The proposed project would incorporate geometric/physical improvements that would enhance the overall operation of the study locations as well as overall safety along the corridors that include the study locations. Recommended improvements, combined with the measures that are being implemented by NYCDOT, are anticipated to improve pedestrian and bicyclist safety in the study area such that the Future Conditions with the Proposed Action would not be expected to result in a significant increase in accidents in the study area.

Air Quality

The results of the detailed microscale analysis for the Proposed Action were below the applicable state and federal ambient air quality standards and CEQR thresholds for CO, PM_{10} and 24 hour $PM_{2.5}$, and ~~above for~~ annual $PM_{2.5}$ neighborhood. ~~However, transportation mitigation would bring the annual~~ ~~$PM_{2.5}$ neighborhood levels below the significant thresholds. Additional analysis~~

~~will be undertaken before the FEIS in order to further refine the results.~~ In addition, the Proposed Action is not expected to significantly impact NO_x and NO_2 concentrations in New York City. Therefore, the proposed addition of 2,000 taxicab medallions would not result in a significant adverse impact to air quality with the proposed traffic mitigation.

Greenhouse Gas Emissions

The proposed addition of 2,000 taxicab medallions would result in approximately 902,950 tons of CO_2e emissions, compared to the 784,430 tons of CO_2e emitted under Existing Conditions and Future Conditions without the Proposed Action. GHG emissions in the future with the Proposed Action would be approximately eight percent of the estimated 11.7 million tons of GHG emissions generated from the on-road vehicles in the City and less than two percent of the total 58.3 millions tons of total GHG emissions generated in the City, based on a 2005 emissions inventory.[4] Furthermore, the increase in GHG emissions of approximately 118,520 tons per year due to the Proposed Action would result in an increase of one percent to the 11.7 million tons of GHG emissions generated from on-road vehicles in the City and 0.2 percent to the 58.3 million tons of total GHG emissions generated in the City.

Noise

According to the *2012 CEQR Technical Manual*, projects that would generate any mobile or stationary noise sources and/or be located in an area with high existing ambient noise levels could result in significant adverse impacts to sensitive noise receptors, including residential, commercial and institutional uses. The proposed sale of 2,000 taxi medallions would introduce mobile sources of noise to the City's roadways. However, the Proposed Action would not trigger the need for a detailed noise analysis since the existing noise PCE's would not be doubled by the project-generated traffic. Therefore, the Proposed Action would not result in a significant adverse impact to noise sensitive receptors.

[4] Source: Inventory of New York City's Greenhouse Gas Emissions, April 2007, Mayor's Office of Operations, Office of Long Term Planning and Sustainability. http://www.nyc.gov/html/om/pdf/ccp_report041007.pdf

Public Health

According to the *2012 CEQR Technical Manual*, a public health assessment is not warranted if a project is not expected to result in significant adverse impacts related to air quality, water quality, hazardous materials, or noise, on public health. Since the proposed sale of 2,000 taxicab licenses would not result in a significant adverse impact related to these CEQR analysis categories, the Proposed Action would not result in a significant adverse impact on public health.

Neighborhood Character

According to the *2012 CEQR Technical Manual*, projects with the potential to result in a significant adverse impact, or combined moderate adverse effects, on defining elements that contribute a neighborhood's character could result in a significant adverse impact on neighborhood character. The proposed sale of 2,000 medallions is a City-wide action, and not neighborhood or site specific. As described in this ~~DEIS~~FEIS, no significant or "moderate" effects, i.e., effects considered reasonably close to the significant adverse impact threshold for a particular technical analysis area, on the following CEQR analysis areas would occur: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; air quality; and noise. Traffic ~~and air-~~ related significant adverse impacts and related mitigation measures, where applicable, are described in Chapters 15~~,~~ ~~16~~ and 25. However, traffic ~~and air~~ alone ~~do~~does not contribute to major characteristics that define New York City neighborhoods. Therefore, since the proposed sale of 2,000 medallions would not affect defining features of New York City neighborhoods, no significant adverse impact on neighborhood character would occur.

Alternatives

A No Action Alternative to the Proposed Action was considered. Under this alternative, the sale of 2,000 additional taxi medallions accessible to persons with disabilities would not be authorized. The No Action alternative would not result in significant adverse impacts to land use, zoning, and public policy; socioeconomic conditions; community facilities and services; open space; shadows; historic and cultural resources; urban design and visual resources; natural resources; hazardous materials; water and sewer infrastructure; solid waste and sanitation services; energy; transportation; air quality; greenhouse gas emissions; noise; public health; and neighborhood character.

A sale of fewer medallions alternative was also considered. Under this alternative, 400 additional medallions would be sold rather than the 2,000 additional medallions that would be allowed under the Proposed Action. This alternative would also incorporate the changes from existing conditions included in the No Action alternative.

As detailed in Chapter 15, traffic conditions in the future with this Alternative were evaluated with the same analytical techniques as with the evaluation of the proposed project. Traffic volumes were estimated by adding the increased number of vehicles that would occur with 400 additional medallions to the traffic volumes in the future without the Proposed Action, a 3.0% increase over the number of existing medallions. This percent increase was applied to each peak hour turning movement at each study intersection. The greatest increases in traffic volume increases with the addition of 400 taxis are projected to occur on Third Avenue, where there would be a projected increase of up to 35 vehicles at certain intersections, and on Seventh Avenue, where there would be a projected increase of up to 40 vehicles at certain intersections.

Based on traffic impact criteria included in the *2012 CEQR Technical Manual*, the addition of 400 taxis to the Study Area roadway network would result in one or more impacts at a total of 48 Study Area intersections. This would be a decrease of 63 impacts from the projected one or more impacts of 111 Study Area intersections with 2,000 additional medallions. When considering all lane groups, the addition of 400 taxis would result in a decrease of 123 Study Area intersections at which there would be impacts from 181 intersections with 2,000 additional medallions to 58 intersections with 400 additional medallions.

As summarized in Chapter 16, the proposed project ~~would result in potential PM2.5 impacts at four representative intersections in the project Study Area identified as having the greatest potential for air quality impacts, but~~ would not result in any air quality impacts from any ~~other~~ pollutant for which a NAAQS has been established. ~~As further disclosed in Chapter 25: Mitigation, these predicted $PM_{2.5}$ impacts would be fully mitigated by adopting a series of routine traffic mitigation measures identified in this DEIS.~~ It is conservatively assumed that the same, if not fewer, air impacts would result under this Alternative~~, and it is expected that any potential air quality impacts would also be fully mitigated by utilizing the same range of mitigation measures discussed in Chapter 25~~. ~~Between issuance of the Draft and Final EIS, additional analysis will be undertaken in order to refine the range of impacts and mitigation measures anticipated under this Alternative.~~

Unavoidable Adverse Impacts

An impact is not considered to be significant if in the future with the Proposed Action condition if the movement operates at mid-LOS D (45.0 seconds of delay) or better or if the increase from conditions in the future without Proposed Action is below the CEQR impact thresholds. As described in Chapter 25: Mitigation, the following intersections have approaches or overall intersection that could not be mitigated with reasonable mitigation measures.

- #1 – Third Avenue and 54th Street (2015 Midday, 2016 AM/Midday, 2017 Midday)
- #2 – Third Avenue and 55th Street (2017 AM)
- #3 – Third Avenue and 56th Street (2014 Midday/PM, 2015 Midday/PM, 2016 Midday/PM, 2017 Midday/PM)
- #4 – Third Avenue and 57th Street (2015 Midday, 2016 Midday/PM, 2017 Midday/PM)
- #5 – Third Avenue and 58th Street (2015 Midday, 2016 Midday, 2017 Midday)
- #6 – Third Avenue and 59th Street (2015 Midday, 2016 Midday, 2017 Midday)
- #7 – Third Avenue and 60th Street (2014 AM/Midday, 2015 AM/Midday, 2016 AM/Midday, 2017 AM/Midday)
- #8 – Second Avenue and 57th Street (2014 Midday, 2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #9 – Lexington Avenue and 57th Street (2015 Midday, 2016 Midday, 2017 Midday)
- #12 – Seventh Avenue and 33rd Street (2014 AM, 2015 AM/PM, 2016 AM/PM, 2017 AM/Midday/PM)
- #13 – Seventh Avenue and 34th Street (2014 AM , 2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)

- #14 – Seventh Avenue and 35th Street (2014 AM/Midday, 2015 AM/Midday, 2016 AM/Midday, 2017 AM/Midday)
- #15 – Seventh Avenue and 36th Street (2016 Midday, 2017 AM/Midday)
- #17 – Sixth Avenue and 34th Street (2014 PM, 2015 Midday/PM, 2016 Midday/PM, 2017 Midday/PM)
- #20 – Madison Avenue and 40th Street (2015 AM, 2016 AM/Midday, 2017 AM/Midday)
- #21 – Madison Avenue and 41st Street (2016 AM/Midday, 2017 AM/Midday)
- #22 – Madison Avenue and 42nd Street (2014 AM/Midday, 2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #23 – Madison Avenue and 43rd Street (2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #24 – Madison Avenue and 44th Street (2014 Midday, 2015 Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #25 – Madison Avenue and 45th Street (2014 Midday, 2015 AM/Midday, 2016 AM/Midday, 2017 AM/Midday)
- #26 – Fifth Avenue and 42nd Street (2014 PM, 2015 PM, 2016 PM, 2017 PM)
- #29 – Eighth Avenue and 33rd Street (2016 Midday/PM, 2017 Midday/PM)
- #30 – Eighth Avenue and 31st Street (2017 PM)
- #31 – Eighth Avenue and 41st Street (2014 PM, 2015 PM, 2016 AM/PM, 2017 AM/PM)
- #32 – Eighth Avenue and 42nd Street (2015 AM, 2016 AM, 2017 AM/Midday)
- #36 – Seventh Avenue and Central Park South (2014 AM /PM, 2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #37 – Sixth Avenue and 23rd Street (2015 AM, 2016 AM, 2017 AM/Midday)
- #39 – Sixth Avenue and 42nd Street (2014 PM, 2015 PM, 2016 PM, 2017 PM)
- #41 – Sixth Avenue and Central Park South (2014 PM, 2015 PM, 2016 Midday/PM, 2017 AM/Midday/PM)
- #43 – Fifth Avenue and 57th Street (2014 AM, 2015 AM, 2016 AM, 2017 AM)

- #44 – Fifth Avenue and Central Park South (2014 AM, 2015 AM/PM, 2016 AM/PM, 2017 AM/PM)
- #45 – Madison Avenue and 57th Street (2016 PM, 2017 PM)
- #47 – Second Avenue and 36th Street (2017 AM)
- #49 – Queens Plaza S and Northern Boulevard (2015 PM, 2016 PM, 2017 AM/PM)
- #50 – Tillary Street and Adams Street (2015 PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #52 – Tillary Street and Flatbush Avenue (2016 AM /PM, 2017 PM)

Growth Inducing Aspects

The term "growth-inducing aspects" generally refers to the potential for a proposed project to trigger additional development in areas outside the project site that would otherwise not have such development without the proposed project. The *2012 CEQR Technical Manual* indicates that an analysis of the growth-inducing aspects of a proposed project is appropriate when the project:

- Adds substantial new land use, new residents, or new employment that could induce additional development of a similar kind or of support uses, such as retail establishments to serve new residential uses; and/or
- Introduces or greatly expands infrastructure capacity.

The Proposed Action is City-wide in scope and would not introduce new land use or add new residents. As described in Chapter 4: Socioeconomic Conditions, the Proposed Action authorizes the sale of 2,000 taxi medallions and would not alter existing economic patterns in New York City. As such, the Proposed Action would not "induce" new growth in New York City.

Irreversible and Irretrievable Commitment of Resources

The Proposed Action would authorize the sale of 2,000 taxi medallions in New York City. There are a number of resources, both natural and built, that would be expended in the manufacturing, repurposing, and operation of the additional taxicabs that would operate on New York City streets. These resources include the materials used in automobile manufacturing and/or repurposing of vehicles for taxicab use, energy in the form of gas and electricity consumed during manufacturing, repurposing, and operation of taxicabs, and the human effort (i.e., time and labor) required to manufacture and/or repurpose automobiles for taxicab use, and operate taxicabs. However, these resources could potentially be reused for purposes other than those related to the Proposed Action.

CHAPTER 1 – PROJECT DESCRIPTION

1.1 Introduction

As allowed under New York State Legislation (Chapter 602 of the Laws of 2011 of the State of New York and Chapter 9 of the Laws of 2012 of the State of New York), the New York City Taxi & Limousine Commission (TLC) proposes to issue by public sale up to 2,000 fully-transferable taxicab licenses (medallions) in addition to those already in existence, provided that all of these new licenses will be required to be used with taxicab vehicles that are accessible to individuals who use wheelchairs. Sale of the additional medallions would be at the discretion of the Mayor of New York City through TLC, an action subject to review under the requirements of the State Environmental Quality Review Act (SEQRA) found in Article 8 of the New York State Environmental Conservation Law and the Rules of Procedure for City Environmental Quality Review (CEQR) published as Chapter 5 of Title 62 of the Rules of the City of New York. In conformance with those requirements, this ~~Draft~~Final Environmental Impact Statement (~~DEIS~~FEIS) considers the environmental impacts of this discretionary action. This ~~DEIS~~FEIS is an update to the DEIS previously issued by TLC in May 2012.

1.2 Project Identification

Background. Taxis are a vital part of the New York City transportation network. In 2011, the 13,237 yellow medallion taxicabs currently in service provided approximately 500,000 rides each day to travelers in New York City. Yellow taxicabs are a primary ground carrier between Manhattan and LaGuardia Airport and provide a substantial number of trips between Manhattan and John F. Kennedy International Airport.

The number of yellow taxicabs has been limited since 1937 under the requirements of an ordinance sponsored by City Board of Alderman Lew Haas (the "Haas Act"), which established the medallion system for New York City taxicabs that is still in use today. The number of yellow taxicab medallions has changed a number of times since the enactment of the Haas Act. The most recent change in the number of medallions occurred during the period 2003 thru 2008, when the number of yellow taxicab medallions was increased through public auction to its current level, as authorized under State and City legislation in 2003.

These additional medallion licenses included a percentage of licenses earmarked for use only by alternative fuel vehicles, or by wheelchair-accessible vehicles.

In addition to the changes in the number of taxicab medallions over the years, the type of yellow taxicab vehicle has changed over the years. Even before the late 1960s, when all medallion taxicabs were first required to be painted yellow to clearly differentiate the medallion fleet from the "gypsy" cabs of the era, taxicabs were often painted yellow. The TLC regulates the type of vehicle that can be used as a yellow taxicab in the City. Since the 1960s, a number of different vehicles have dominated the taxicab market in the City. The most notable is the iconic Checker taxicab, the last of which was retired in 1999. By the 1990s, the Chevrolet Caprice was the mainstay of the fleet. By the first decade of the 21st Century, the "stretch" version of the Ford Crown Victoria (the production of which ended in 2011) was the workhorse of the fleet of yellow taxicabs. Since approved for taxicab use by the TLC in 2005, hybrid and other vehicles also entered the fleet. Most notably, the Ford Escape and the Toyota Sienna, have grown to become approximately 30% of the 13,237 yellow taxicabs that currently comprise the overall fleet of medallion vehicles.

In 2007, City officials convened a group of stakeholders, including representatives of taxi drivers, owners and passengers, to create a set of goals for the next New York City taxicab. The project was called the "Taxi of Tomorrow." In December 2009, the TLC issued a Request for Proposals that invited auto manufacturers and designers to submit proposals for a "purpose-built" vehicle to serve as a New York City taxicab. On May 3, 2011, Mayor Bloomberg announced that the NV200, designed by Nissan North America, Inc., had been chosen as the winner of the Taxi of Tomorrow (ToT) competition. Replacement of the existing fleet of yellow taxicabs with the ToT is anticipated to be completed by the year 2020. Replacement of the existing fleet with the ToT is an action entirely independent of the proposed increase in the number of yellow taxicab medallions and a Negative Declaration for the project was issued in September 2012.

In addition to the yellow taxicabs, the TLC regulates other "For-Hire Vehicles (FHV)." An FHV is defined under City law as a vehicle seating fewer than nine passengers (in addition to the driver) that provides services under prior arrangement from a base station that dispatches the vehicle. The FHV industry is segmented into community car services (also known as livery vehicles), black cars and limousines. Livery vehicles provide service City-wide and in most neighborhoods outside of the Manhattan core. They are the primary form of FHV service for most residents who live outside the Manhattan Core. Black cars are defined by the TLC as FHVs that operate from bases organized as either a franchise or cooperative, and where at least 90% of customers pay by a method other than cash. Black cars primarily serve corporate clients with luxury cars. Limousines are the segment of the FHV industry that generally uses stretch vehicles. There are over 40,000 FHVs operating in the City, including over 21,000 livery vehicles.

As described below, the Proposed Action would increase the number of yellow taxicab medallion licenses and provide for a substantial increase in the number of wheelchair accessible vehicles in the City.

Proposed Action. New York State Legislation (New York State Senate Bill S6118A-2011 and companion New York State Assembly Bill A8691A-2011) authorizes the City of New York to issue up to two thousand (2,000) new taxicab licenses to vehicles that are accessible to individuals with disabilities (defined in the legislation as persons in wheelchairs).

The legislation separately authorizes these additional actions by the City:

- Issue eighteen thousand (18,000) HAIL vehicle licenses, three thousand six hundred (3,600) of which must be accessible to persons with disabilities;

- Issue up to four hundred fifty (450) base permits to for-hire base stations wishing to affiliate HAIL-licensed vehicles;

- Amend the tax law, the administrative code of the City of New York, and the traffic law in relation to taxicabs and HAIL licenses in New York City; and

- Repeal certain sections of Chapter 602 of the Laws of 2011 relating to livery permits in the City of New York.

Only the issuance of the additional 2,000 taxicab licenses is subject to SEQRA/CEQR review.

Sale of Additional Yellow Taxicab Medallions. The sale of the 2,000 taxicab licenses to vehicles that are accessible to individuals with disabilities would increase the number of yellow taxi licenses from the existing number of 13,237 licenses to a total of 15,237 licenses, an increase of approximately 15.1%. The legislation prescribes that the City of New York may, acting by the Mayor alone, administratively authorize the TLC or its successor agency to issue up to 2,000 additional taxicab medallion licenses provided that such licenses be restricted to vehicles capable of transporting persons in wheelchairs or that contain a physical device or alteration designed to permit access to and enable the transportation of persons in wheelchairs in accordance with the Americans with Disability Act (ADA), provided further that:

- Such additional medallion licenses are issued by public sale;
- The additional medallion licenses are fully transferable;
- No more than four hundred of the taxicab medallion licenses authorized pursuant to the legislation, may be issued by TLC until a Disabled Accessibility Plan (DAP) is approved by the New York State Department of Transportation (NYSDOT); and
- Authorization for the public sale of the additional taxicab medallions is also conditioned upon the TLC making HAIL vehicle licenses available for issuance.

TLC anticipates that the public sale of the initial 400 taxicab licenses would occur by June 2014, and that the remaining 1,600 additional taxicab licenses would be issued by public sale through 2017, subject to approval of the DAP by NYSDOT.

Although permitted to issue up to 2,000 additional licenses by the legislation, the actual issuance and sale of the additional taxicab medallion licenses would be a discretionary action by the City of New York under Subsection A of Chapter 65 (Sale of Taxicab Medallions) of the Rules of the TLC subject to review under SEQRA/CEQR requirements.

Issuance of 18,000 HAIL Vehicle Licenses. As indicated in the Legislation, the City of New York, acting through the TLC, is also authorized to issue up to eighteen thousand (18,000) HAIL vehicle licenses, subject to the procedures and limitations of the Legislation. A HAIL vehicle is an FHV licensed by the TLC that may pick up passengers by street hail outside of the Manhattan Core (i.e. Bronx, Brooklyn, Staten Island, Manhattan N. or E.96th St. and W. of 110th St. and Queens excluding airports). These vehicles may also make prearranged pickups anywhere in New York City except for the Manhattan Core. The Legislation exempts the issuance of the 18,000 HAIL licenses from environmental review under SEQRA and/or CEQR.

TLC Consideration of Potential Change in the Fare Structure for Taxicabs. The yellow taxicab fare structure has remained substantially unchanged since 2006. On May 21, 2012, the TLC announced its intention to hold a public hearing on the maximum lease rates for taxicabs, known as "lease caps," pursuant to section 58-21 of the TLC rules. In its notice, the TLC requested that comments, testimony and evidence relevant to the setting of lease caps and other matters in Section 2304(c) of the New York City Charter. The public hearing was held on May 31, 2012 for the purpose of allowing the TLC to hear testimony and receive evidence regarding both matters and the rule was passed on July 12, 2012. The fare rules took effect on September 4, 2012 and the lease cap rules took effect on September 30, 2012. The impact of the potential change in the taxicab fare structure is not considered as part of this ~~DEIS~~FEIS since it is an independent action that is separate from the potential sale of the additional medallions that would be allowed under the Proposed Action.

1.3 Required Approvals

The Proposed Action would require the discretionary action by TLC of the issuance and public sale of up to 2,000 taxicab licenses. This action is subject to review pursuant to SEQRA and CEQR. No discretionary federal or State approvals are required to implement the Proposed Action beyond passage of the legislation described in Section 1.1.

1.4 Purpose and Need of the Proposed Action

Fifty-four percent of New York City households do not own a car and rely heavily on public transportation, yellow taxis and other for-hire vehicles to make their daily trips. Yellow taxis are particularly essential to the 1.6 million residents of Manhattan, where only 24% of households own a car. Taxis are also used commonly by the 2.3 million people who work in Manhattan each day and the 48 million people who visit the City each year. New York City taxis provide approximately 500,000 trips each day. The projected increase in the population of the City to approximately 9.1 million residents by 2030, and the projected increase in the population to over 1.8 million residents in Manhattan in the same period, will increase the need for yellow taxicabs.

Additional yellow taxicabs will also be needed to serve the projected increase in employment in the City. Long-term occupational projections developed by the New York State Department of Labor indicate that employment in New York City will increase by 3.8% during the ten-year period between 2008 and 2018, a gain of over 150,000 new jobs.

Increases in the number of visitors to the City will also heighten the need for additional taxicab service. As documented by NYC & Company, visitation to the City has dramatically increased during the last twenty years from a total of 29.1 million visitors in 1991 to 35.2 million visitors in 2001 to 50.2 million in 2011. It is anticipated that the number of visitors to the City will continue to increase, as suggested by the increase in number of hotel rooms in the City. HVS Global Hospitality Services ("HVS" 2011 Manhattan Hotel Market Overview, June 2011) indicates that a total of 62 new hotels opened in Manhattan between March 2008 and February 2011, adding 11,285 rooms to the market (a 17.0% increase over the February 2008 level). By 2013, HVS projects an additional 8% increase in the number of hotel rooms over 2011 levels.

As compared to other cities that rely heavily on public transportation and taxi service, New York's taxi supply is relatively low. New York City's 8.4 million residents share 13,237 taxis, or one taxi for every 630 residents. In contrast, London has 22,000 black cabs that serve its 7.5 million residents, or one taxi for every 340 residents. Similarly, in Chicago, where the 71% household car ownership rate is significantly higher than New York City's 46% household car ownership rate, there is approximately one taxi for every 385 residents. Of course car services supplement the City's taxis in transporting the public; however, they cater to the prearranged rather than on-demand yellow taxi hail market.

The demand for taxis is reflected in the long hours of operation of the current taxi fleet. Approximately 75% of taxis in New York City currently operate two 12-hour shifts nearly every day, while the remaining 25% operate for one 12-hour shift nearly every day.

The demand for taxis is also reflected in the observed time that it takes to locate an unoccupied taxi. Passengers frequently report difficulty locating an unoccupied taxi when they need one. In particular, passengers report shortages in the late afternoon, weekend evenings and instances of bad weather. This observation is supported by global positioning system (GPS) data on taxi utilization. Since 2009 (when TLC began collecting GPS data for the existing taxi fleet), the number of trips per cab per day increased from approximately 36.9 trips per cab per day in the first quarter (Q1) of 2009 to 38.5 trips per cab per day in Q1 of 2010 and 39.0 trips per cab per day in Q1 of 2011. The average number of hours each day a cab was occupied also increased during the same period. In Q1 of 2009, each taxi was hired (i.e., was unavailable to receive a street hail) approximately 6.8 hours each day. By Q1 of 2011, the number of hours each day when a cab was hired increased 13% to 7.7 hours each day.

To address the observed shortage in the number of taxis, the Proposed Action would authorize the issuance of 2,000 new medallions, an increase of approximately 15.1% above the existing number of medallions, all of which would be required to be used with taxicab vehicles that are accessible to individuals who use wheelchairs. This would increase the supply of wheelchair-accessible vehicles from 231 wheelchair-accessible vehicles to 2,231 wheelchair-accessible vehicles. The increase in the number of medallions restricted for use with vehicles accessible to persons with disabilities would foster increased access, mobility and independence of persons with disabilities, a major goal of the City's transportation system.

CHAPTER 2 – ANALYSIS FRAMEWORK

2.1 Overview

This chapter discusses the framework for the analyses provided in this ~~DEIS~~FEIS, including the proposed Analysis Years (2014, 2015, 2016 and 2017) and describes the future development scenarios (No-Action scenario and With-Action scenarios) assessed in the ~~DEIS~~FEIS. Each impact category includes a description of existing conditions, conditions in the Analysis Years with the Proposed Action ("Future Action" scenario), and conditions in the Analysis Years without the Proposed Action ("Future No Action" scenario). Significant adverse impacts of the Proposed Action are disclosed by comparing conditions in the Analysis Years without the Proposed Action to conditions in the Analysis Years with the Proposed Action based on criteria provided in the *CEQR Technical Manual. 2012 Edition (Revised 6/5/13)* (*2012 CEQR Technical Manual*). Measures to mitigate identified significant adverse impacts are identified, as necessary.

2.2 Analysis Approach

The identification of potential significant adverse impacts of the Proposed Action is based on an assessment of the incremental change to the environmental setting that would occur with the Proposed Action based on a comparison of conditions in the future with and without the Proposed Action. In describing the Future No Action conditions for each impact area, the ~~DEIS~~FEIS incorporates the effects of generalized growth and the effects of development projects that would be completed independently of the Proposed Action in the Analysis Years, based on coordination with the New York City Department of City Planning and the New York City Department of Transportation.

Based on a review of the description of the Proposed Action, its purpose and need and the potential impact of the Proposed Action on each impact category, a reasonable worst-case scenario is considered for assessing the impacts of the Proposed Action, including anticipated temporal distribution of potential impacts of the Proposed Action on traffic and air quality, and the potential effects of the Proposed Action on the value of a yellow cab medallion. The No-Action scenario incorporates background growth in existing traffic volumes and the incremental changes in traffic that would result from other projects that would be in place by the Analysis Years.

The No-Action scenario incorporates anticipated changes to the yellow taxicab fleet that would occur due to the replacement of the existing fleet of yellow taxicab vehicles with the ToT. The replacement of the existing fleet of yellow taxicabs with the ToT is a separate and independent action from the Proposed Action. As described in Chapter 1 of this ~~DEIS~~FEIS, the TLC entered into an agreement with Nissan North America, Inc. (Nissan), to develop and provide the Nissan NV200 (NV200) as the ToT vehicle for purchase for use as a taxi over the period 2013 through 2020. It is anticipated that the replacement of the existing yellow taxi fleet with the Taxi of Tomorrow would occur in three phases: 1) a maximum period of four years during which the vehicle would be under development; 2) a ten-year period beginning in 2013 during which the manufacturer would sell vehicles into the New York City taxi market; and 3) a period of five years, beginning at the conclusion of the ten-year selling period, during which Nissan would provide agreed-upon service and parts support for vehicles previously sold. The TLC would not purchase vehicles; rather, TLC would adopt rules--primarily through changes to Chapter 67 of the TLC rules--that will identify Nissan as the only authorized provider of non-accessible Taxi of Tomorrow vehicles. As such, the existing taxi fleet will be replaced with Taxi of Tomorrow vehicles beginning in 2013. Taxi of Tomorrow would not increase or decrease the number of medallions in service.

The TLC approved, on April 19, 2012, the issuance of up to 18,000 HAIL licenses to allow livery vehicles to accept riders by street hail in areas of the City not predominately served today by yellow taxis. These areas include the Brooklyn, Queens, Staten Island, the Bronx, and the area of Manhattan north of West 110th Street and East 96th Street in Manhattan, but exclude the Manhattan Core and the airports. Up to 6,000 of these HAIL licenses can be issued during the first year of the program. The socioeconomic analysis in this ~~DEIS~~FEIS considers the potential effects of the HAIL licenses on the value of a medallion, income of a taxicab driver, conditions in the livery industry and overall City economy in the future without the Proposed Action scenario.

2.3 Analysis Year

TLC anticipates that the public sale of the initial 400 taxicab licenses would occur no later than June 2014, and that the remaining 1,600 additional taxicab licenses would be issued by public sale through 2017. Therefore, 2014, 2015, 2016 and 2017 have been selected as the Analysis Years (i.e., the first full years of operation of the expanded taxi vehicle fleet after each incremental sale of medallions).

2.4 Study Area

The proposed project would be implemented City-wide. Appropriate study areas differ depending on the technical area being analyzed are identified, in conformance with the *2012 CEQR Technical Manual*, in the ~~DEIS~~FEIS.

2.5 Public Review Process

Pursuant to the SEQRA and its implementing regulations, New York City has established rules for its own environmental quality review procedure, abbreviated as CEQR. The environmental review process provides a means for decision-makers to systematically consider environmental effects along with other aspects of project planning and design, to propose reasonable alternatives, and to identify, and when practicable, mitigate significant adverse environmental effects. CEQR rules guide environmental review, as follows.

Establishing a Lead Agency. Under CEQR, the "lead agency" is the public entity responsible for conducting the environmental review. Usually, the lead agency is also the entity principally responsible for carrying out, funding, or approving the proposed actions. In accordance with CEQR rules (62 RCNY §5-03), TLC assumed lead agency status and indicated it was initiating the CEQR review in a letter dated March 19, 2012.

Determination of Significance. TLC has reviewed the Proposed Action and has determined that it has the potential to result in one or more significant adverse impacts on the environment based on criteria included in the *2012 CEQR Technical Manual*, and completion of a CEQR Environmental Assessment Statement (EAS). A copy of the completed EAS is included as Appendix A to this ~~DEIS~~FEIS. TLC issued a Positive Declaration, indicating the need to prepare a DEIS on March 19, 2012.

Scoping. "Scoping," is the process used to identify the scope of environmental impact analyses to be included in the EIS, including the key issues to be studied and the methodologies and study areas to be used. CEQR requires that a public scoping meeting be held as part of the process. A public scoping meeting was held on the Proposed Action and DEIS Draft Scope of Work on April 19, 2012. Based on the comments received during the public comment period, TLC issued a Final Scope of Work on May 22, 2012.

DEIS. This DEIS was prepared in accordance with the Final Scope of Work. TLC has reviewed all aspects of the document, based on coordination with other City agencies as appropriate. A Notice of Completion of the DEIS and its availability for public review was issued in the Environmental Notice Bulletin by TLC on September 13, 2013.

Public Review. Publication of the DEIS and issuance of the Notice of Completion signals the start of the public review period. During this time, the public has the opportunity to review and comment on the DEIS either in writing or at a public hearing convened for the purpose of receiving such comments. The lead agency must publish a notice of the hearing at least 14 days before it takes place, and must accept written comments for at least 10 days following the close of the hearing. All substantive comments received during the public comment period become part of the CEQR record and must be summarized and responded to in the Final EIS (FEIS). A public notice of the availability of the DEIS for public review was issued by TLC on September ~~12~~13, 2013. A Public Hearing was held on October 3, 2013 and the public comment period continued ~~Comments received prior to~~ until October 15, 2013. No comments were received on the DEIS during the public comment period. ~~will be considered by TLC in preparation of a FEIS.~~

FEIS. After the close of the public comment period for the DEIS, TLC will prepare an FEIS. This FEIS will incorporate relevant comments on the DEIS, both in a separate chapter and in changes to the body of the text, graphics, and tables. Once TLC determines that the FEIS is complete, it will issue a Notice of Completion and circulate the FEIS. As previously noted, the FEIS must be issued (with the notice of completion) at least 10 days before the decision-maker can issue a Statement of Findings and make a final decision on the Proposed Action.

CHAPTER 3 - LAND USE, ZONING, AND PUBLIC POLICY

3.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, a preliminary land use, zoning, and public policy assessment should be provided for projects that would affect land use or change the zoning on a site. Examples of discretionary actions that may affect land use or zoning include zoning map changes, zoning text changes, zoning special permits, BSA variances or special permits, and park mapping actions. The Proposed Action is not site specific and would be implemented City-wide. It is limited to the authorization of the TLC to publicly sell 2,000 new taxicab licenses and does not require a change in land use, zoning, or an officially adopted and promulgated public policy. The Proposed Action is not a discretionary action subject to public review under the City's Uniform Land Use Review Procedure (ULURP). No significant adverse impacts to land use, zoning, or public policy would occur as a result of the Proposed Action.

3.2 Analysis/Methodologies

Under CEQR, a land use analysis characterizes the uses and development trends in the area that may be affected by a proposed project, and determines whether a proposed project is either compatible with those conditions or whether it may affect them. Similarly, the analysis considers the project's compliance with, and effect on, the area's zoning and other applicable public policies. A preliminary assessment, which includes a basic description of existing and future land uses and zoning, is required for projects that would affect land use or would change the zoning on a site, regardless of the project's anticipated effects.

Additionally, the preliminary assessment should include a basic description of the project facilitated by the proposed actions in order to determine whether a more detailed assessment of land use would be appropriate. Often, a preliminary assessment provides enough information necessary to conduct these technical analyses. However, for some projects, such as generic or areawide zoning map amendments, more detailed land use, zoning or public policy information is necessary to sufficiently inform other technical reviews and determine whether changes in land use could affect conditions analyzed in those technical areas. If the preliminary assessment cannot succinctly describe land use conditions in the study area, or if a detailed assessment is required in the technical analyses of socioeconomic conditions, neighborhood character, traffic and transportation, air quality, noise, infrastructure, or hazardous materials, a detailed land use assessment is appropriate. The detailed analysis builds upon the preliminary assessment and involves a more thorough analysis of existing land uses within the rezoning boundaries and the broader study area in light of changes proposed with the project.

The proposed sale of 2,000 taxi medallions is not site specific and would be implemented City-wide. No changes in land use, zoning or public policy are required to implement the Proposed Action. Furthermore, since the Proposed Action would not affect the land use of the City, it is not a discretionary action subject to public review under ULURP. Therefore, though a detailed City-wide assessment of socioeconomic conditions, traffic and air quality has been provided in this ~~DEIS~~FEIS, given the nature of the Proposed Action—as described above—a land use, zoning, and policy analysis can be screened out based on guidance in the *2012 CEQR Technical Manual*. Consequently, a preliminary or detailed assessment of land use, zoning, and public policy is not required.

3.3 Existing Conditions

As noted above, in conformance with the *2012 CEQR Technical Manual*, a land use, zoning, and public policy assessment is not required since the Proposed Action would not affect land use or change the zoning on a site.

3.4 Future Conditions without the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a land use, zoning, and public policy assessment is not required since the Proposed Action would not affect land use or change the zoning on a site.

3.5 Future Conditions with the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a land use, zoning, and public policy assessment is not required since the Proposed Action would not affect land use or change the zoning on a site.

3.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects that would affect land use or change the zoning on a site could result in significant adverse impacts to land use, zoning, or public policy. The proposed sale of 2,000 medallions would not directly displace any residential, commercial or other land use, would not accelerate a trend that would lead to the indirect displacement of any residential, commercial or other land use, and would not be inconsistent with any established public policy. Specifically, the Proposed Action would be consistent with PlaNYC 2030 Initiative 3 "Expand for-hire vehicle service throughout our neighborhoods". Furthermore, the Proposed Action is not a discretionary action requiring public review under ULURP. Therefore, the Proposed Action would not result in a significant adverse impact to land use, zoning, or public policy.

3.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to land use, zoning, or public policy would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 4 – SOCIOECONOMIC CONDITIONS

4.1 INTRODUCTION

Provided in this chapter is an assessment of the impact of the Proposed Action on socioeconomic conditions. As defined in the *2012 CEQR Technical Manual,* the socioeconomic character of an area includes its population, housing, and economic activity. Socioeconomic changes may occur when a proposed action directly or indirectly changes any of these elements. Although socioeconomic changes may not result in impacts under CEQR, they are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of an area.

As indicated in the *2012 CEQR Technical Manual*, the five issues of concern with respect to socioeconomic conditions are whether a proposed action would result in significant adverse impacts due to: (1) direct displacement of residences; (2) direct displacement of businesses; (3) indirect displacement of residences; (4) indirect displacement of businesses; and/or (5) adverse effects on specific industries of importance to the City. As defined in the *2012 CEQR Technical Manual*, direct displacement is the involuntary displacement of residences or businesses from a site or sites directly affected by a proposed action, while indirect displacement is the involuntary displacement of residences or businesses that results from a change in socioeconomic conditions created by a proposed action.

The *2012 CEQR Technical Manual* indicates that a detailed analysis of the impact of a proposed action on socioeconomic conditions is not required if it can be demonstrated that the proposed action would not result in significant direct displacement of residents or businesses, significant indirect displacement of residences or businesses, or a significant impact on an industry of importance to the City.

Since the Proposed Action would not involve any clearing of land or construction activities, it would not have the potential to result in the direct displacement of any residences or businesses.

In addition, the Proposed Action would not:

- Add to, or create, a retail concentration that would draw a substantial amount of sales from existing businesses within an area to the extent that certain categories of business would close and vacancies in the area increase, thus resulting in a potential for disinvestment on local retail streets, or
- Result in substantial new development that is markedly different from the existing uses, type of development or type of activities within any neighborhood that would be affected by the Proposed Action

As a consequence, the Proposed Action would not have the potential to result in the indirect displacement of any residences or businesses, and a detailed analysis of the impact of the Proposed Action on the direct or indirect displacement of residences or businesses is not warranted.

However, the increase in the number of medallions included as part of the Proposed Action would have the potential to affect the value of a taxi medallion, the incomes of taxi drivers, and would potentially increase competition for riders that currently use alternative transportation modes, including for-hire livery vehicles. As a consequence, included in this chapter is a detailed analysis of the impact of the Proposed Action on the New York City taxi and livery industry, including a detailed analysis of the impact of the Proposed Action on the value of a taxi medallion, taxicab driver income, and the for-hire livery car industry.

Also included is an assessment of the impact of the Proposed Action on the overall City economy that incorporates the economic benefits that would result from the increase in the number of taxicab drivers that would result from the Proposed Action and the economic effect of the Proposed Action on businesses that provide support to the NYC taxi and livery industry.

4.2 SUMMARY OF FINDINGS

As summarized in this chapter and detailed in Appendix B (Technical Appendix: Socioeconomic Impacts of 2000 Additional Medallions), the Proposed Action would:

- Not have a significant adverse impact on the value of either an individual or mini-fleet medallion.
- Not have a significant adverse impact on the income of a yellow taxicab driver.
- Not have a significant adverse impact on the for-hire livery industry.
- Have an overall beneficial affect on the New York City economy.

These findings indicate that the Proposed Action would not result in a significant adverse impact on the New York City taxi and livery industry.

4.3 ANALYSIS METHODOLOGY

4.3.1 Analysis Year and Study Area

The evaluation of the impact of the Proposed Action on socioeconomic conditions is completed for the year 2017, the first full year after the sale of all 2,000 medallions allowed under the Proposed Action. Since the Proposed Action could potentially affect conditions throughout the City, the Study Area for the assessment includes all of New York City.

4.3.2 Overview

Included in this section are descriptions of the methodologies used to assess the impact of the Proposed Action on the New York City taxi and livery industry, including the impact of the Proposed Action on (1) the value of a taxi medallion, (2) taxi driver income, (3) the for-hire livery car industry, and (4) the overall NYC economy.

The analysis also incorporates the effects of the replacement of the existing taxi fleet with the Taxi of Tomorrow (ToT)[1].

[1] The Taxi and Limousine Commission has voted to adopt the Nissan NV200 as the primary taxi vehicle in New York City. Starting in late 2013, any vehicle newly hacked up for taxicab use must be an NV200 (other than certain accessible vehicles).

4.3.3 Change in Value of a Taxi Medallion

The Proposed Action could potentially affect the value of a taxi medallion due to reduction in fare revenue as a consequence of increased competition for taxi pick-ups due to the increase in the number of taxi medallions. A statistical analysis was conducted to quantify the likely impacts of this increased competition on fare revenue.

The analysis considered the impacts on fare revenue and the impacts on medallion value were assessed for the two types of taxicab medallions (or licenses) currently available for sale in New York City: individual medallions and mini-fleet medallions. As defined by TLC rules, an individual medallion is a class of medallion taxicab license, the owner of which may only own one medallion and has an obligation to drive a minimum number of shifts annually, while a mini-fleet medallion is a class of medallion taxicab license that must be owned in groups of at least two. The business and operating arrangements of these two types of medallions differ from one another (see additional details provided in Appendix B, Section 3). As a result, the impact of the Proposed Action on the value of a medallion is anticipated to be different for the two types of medallions.

The owners of mini-fleet medallions own multiple medallions and many maintain a fleet of taxi vehicles that are leased to drivers on a per shift basis. Medallion owners under this arrangement pay for medallion purchase, vehicle purchase, insurance and maintenance. Under recently passed rules (2012) medallion owners are also responsible for paying credit card fees. Medallion owners may charge additional fees in return for providing fuel (additional details are provided in Appendix B, Section 3).

In completing this analysis, mini-fleet medallions are assumed to be comprised of two operating structures, fleets and Driver-owned vehicles ("DOVs").[2] Under the "DOV" operating scenario, drivers own their vehicle but lease the medallion from a medallion owner. Medallion owners

[2] This is a simplifying assumption. TLC estimates that about a third of medallions are operated by owner-drivers, a third operate as fleets and another third are operated as DOVs. About 58% of all medallions are classified as mini-fleet and 45% of those mini-fleet medallions are assumed to operate as DOVs while the remainder (55 percent) is assumed to operate as fleets.

who operate under this arrangement authorize an agent to manage the medallion on their behalf[3]. Under this operating arrangement drivers pay the cost to lease the medallion to the owner of the medallion but are responsible for all vehicle-related costs, including cost of acquisition, fuel, insurance, and maintenance costs. Medallion owners are also assumed to be responsible for credit card fees (due to credit card transactions).

Owners of individual medallions typically operate as owner-drivers who both own the medallion and the taxi vehicle. Medallion-owners operating under this arrangement pay the cost for acquiring a medallion and are responsible for all other vehicle-related costs, including the cost of acquisition, fuel, insurance, and maintenance costs. Many of these owner-drivers are required, under TLC rules, to drive a minimum number of annual shifts themselves. Typically, these owner-drivers also lease their medallion to a second driver for additional (lease) income, and any fuel costs for the additional shift are the responsibility of the lessee.

As a consequence, the impact of the Proposed Action on the value of a medallion would be different for the two the types of medallions since they differ in their business and operating arrangements.

In completing this assessment, the change in the values of individual and mini-fleet medallions was based on an estimate of the change in the net stream of revenues that would accrue through ownership of an individual or mini-fleet medallion adjusted by using a discount rate that accounts for the cost of financing the acquisition of a medallion. The change in the values of the individual and mini-fleet medallions was then calculated through a standard procedure for estimating the effects of the revenue earning potential of an asset on the value of an asset, which can be conceptually summarized as follows (see Appendix B, Section 3 for details)[4]:

Change in medallion value ($) = Change in annual net revenue ($) / discount rate

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[3] For simplicity it is assumed that owners pay a fee to an agent. In actuality lease fees are collected by the agent and the agent pays a fixed fee to the owner as payment for the privilege of leasing the medallion.

[4] *Investment Valuation* A. Damodoran 2012, pg. 12, and pg. 776

In completing this assessment, the impact of the Proposed Action on the number of revenue trips (trips with a fare paying passenger) was based on the observed change in the number of revenue trips that occurred as a consequence of the last increase in the number of medallions that occurred during the 2004-2008 period, accounting for the effects of changes in taxi fares and overall economic conditions in the City (estimates were quantified using a statistical analysis). The analysis was completed for the period June 2004 through December 2011, and compared the number of revenue trips that occurred before, during and after the period during which the number of medallions increased by approximately 6%, from 12,487 medallions in April 2004 to the current level of 13,237 medallions in 2009 (details are presented in Appendix B, Section 2).

The projected change in revenue that would occur with the Proposed Action was then used in a financial model to estimate the change in the value of mini-fleet and individual medallions. This assessment included, where appropriate, the effects of operating costs, lease costs, maintenance costs, annual management expense, insurance costs, license renewal fees, the salvage value of a taxi, vehicle depreciation and investment in new vehicles (along with assumptions about frequency of vehicle replacement), and medallion amortization (details are presented in Appendix B, Section 3).

In completing this assessment, it is recognized that there is some uncertainty in the analysis given the multiple assumptions used in completing the analysis, and the significant amount of data that was applied in assessing the effect of the change in the number of revenue trips on medallion value that occurred with the last increase in the number of medallions. Since prediction of the actual sale price of an individual or mini-fleet medallion depends on a number of variables in addition to the number of revenue trips, including the availability and cost of taxi medallion financing, level of consumer confidence, the anticipated rate of return on investment compared to other investment options, and the perceived overall strength of the regional economy, the assessment of the impact of the Proposed Action is limited to assessing the change in the value of an individual or mini-fleet medallion and did not attempt to estimate actual future sales price.

4.3.4 Change in Taxicab Driver Income

The impact on driver income was based on an estimate of the change in the number of revenue trips that would occur during a shift in the future (2017) with the Proposed Action compared to the number of revenue trips that would occur during a shift in the future (2017) without the Proposed Action. In completing this analysis, it was assumed that there would be no change in the average length of a revenue trip from existing conditions. Since taxicab driver income varies depending on the business and working arrangements under which the driver operates, separate estimates were completed for drivers who lease a medallion from the owner of an individual medallion owner (for a 2nd shift), and drivers who lease from fleet medallion owners.

Drivers who lease from an owner of an individual medallion are responsible for the lease cost and the cost of the taxi vehicle, including fuel. Recently introduced TLC rules will result in a charge to drivers of $0.06 per trip for a driver healthcare fund once the driver health care program is in place.

Drivers who lease from a fleet are responsible for paying lease costs, which includes the vehicle and medallion. As part of the lease fee, TLC allows medallion owners to provide and charge for fuel and requires them to pay credit card processing fees. Drivers will still pay the $0.06 per trip health fee once the driver health care program is in place.

4.3.5 Impact on For-Hire Livery Businesses

The issuance of 2,000 additional medallions could potentially result in an impact on the economics of the for-hire livery industry, which is the primary provider of for-hire transportation services in the Bronx, Brooklyn, Queens, and Staten Island and in Manhattan north of East 96th and West 110th Streets. The analysis of the potential impact of the increase in the number of medallions considered the extent to which the markets for yellow taxi and for hire livery services currently overlap, particularly in areas where service is predominantly provided by for-hire livery vehicles, and the extent to which they differ in service patterns.

The evaluation was based on TLC Taxicab Passenger Enhancement Project (T-PEP) data that identified the locations of pick-up points for all yellow taxi trips that occurred in New York City on a randomly-chosen day in 2011 and the geographic distribution of livery car services within New York City. Particular attention was given to the number of taxi pick-ups that occurred in the area of Manhattan north of East 96th and West 110th Streets, and in the four "Outer" boroughs. No attempt was made to incorporate the impact of the issuance of the 18,000 HAIL licenses allowed under State legislation, which created a new class of livery vehicle that can accept street hails in all areas of the City except at the City airports and in Manhattan south of East 96th and West 110th Streets.

4.3.6 Impact on Overall New York City Economy

The impact of the Proposed Action on the overall New York City economy was evaluated through the application of the Regional Industrial Multiplier System (RIMS) Input-Output Model, which accounts for inter-industry economic relationships within the region, and allows for the estimation of the effect of a change in a specific part of the regional economy (in this case a change in the New York City Taxi and Livery Industry) on overall regional employment and expenditures. The RIMS Input-Output Model has been used extensively to evaluate the impact of changes in business conditions on other businesses in the New York region. The assessment incorporated New York City-specific RIMS II "multipliers" that allow for the estimation of the inter-industry economic impact of changes in the New York City Taxi and Livery Industry.

4.4 OVERVIEW OF NYC TAXI & LIVERY INDUSTRY

4.4.1 Scale of NYC Taxi & Livery Industry

The taxi and livery industry in New York City is comprised of three forms of services:

- 13,237 "Yellow" Taxi Cabs
- Approximately 16,000 for-hire "Black" Cars - a segment of the for-hire vehicle industry that primarily serves business clientele with luxury cars and luxury limousines

- Approximately 24,000 for-hire Livery Cars, defined in City law as a vehicle seating fewer than nine passengers (in addition to the driver)

These services represent a vital part of the New York City economy. During the period October 2011 through September 2012, yellow medallion taxicabs provided nearly 500,000 trips on the average day, with an average fare of approximately $12.72 per trip, including estimated cash tips. The average fare increased to approximately $14.86 per trip by the end of the period due an increase in taxi fares in 2012 (a weighted average of $13.25 per trip was used in the analysis for the average fare per trip in 2012). An over $2 billion per year industry, which includes drivers, owners, brokers, mechanics, and a broad range of supportive businesses, taxis are vital to the day-to-day functioning of the City, and meet a critical transportation need of its residents, businesses and visitors. While detailed records of trips made by for-hire livery vehicles are not available, based on dispatch records, the TLC estimates that livery vehicles account for another 225,000 trips per day.

4.4.2 Overview of Taxi Industry

Yellow taxicabs with medallions are the only vehicles authorized to pick up passengers by street hail anywhere in New York City. Livery vehicles and other for hire vehicles can only pick up passengers by prearrangement, except, as described in Section 4.4.3, a new class of livery vehicles established by State law that are allowed to accept street hails everywhere in New York City except the City airports and Manhattan south of East 96th Street and West 110th Street.

As described in Section 4.3.3, the owners of mini-fleet and individual medallions operate under a number of business and operating arrangements (these include fleets, Driver-Owned Vehicles and owner-operators). The owners of mini-fleet medallions own multiple medallions and maintain a fleet of taxi vehicles that are leased to drivers on a per shift basis. Owners of individual medallions are assumed to operate as Owner-drivers who own both the medallion and the taxi vehicle that they drive (individual medallion owners may also lease the use of their medallions to other drivers); and Driver-owned vehicles (“DOVs”) in which the driver owns his own vehicle, but leases the medallion from others and pays vehicle costs.

Lease rates for a taxi medallion only are currently capped by TLC at $1072/week for conventional vehicles and at $1114/week for hybrid vehicles. Lease rates for the medallion and vehicles are capped on a per shift basis at $115 for all 12-hour day shifts and vary from $125 to $139 for 12 hour night shifts and $2.00 to $3.00 is added to the lease cap per shift for any hybrid depending on the day of the week.

Income for owners of an individual medallion are derived from the fares and tips received from passengers when owners drive their own vehicle and income derived from leasing the medallion and vehicle to other drivers, less the cost of maintaining and operating the vehicle. Incomes for owners of medallions who lease to DOVs are based on lease fees less any management or agent costs for managing medallions. Incomes for fleet owners are derived from lease fees less the cost of operating and maintaining the vehicle (fuel costs under this arrangement are borne by the driver).

Meters installed in taxis determine the fare, which is set by TLC. The fare is based on an initial charge of $2.50 and a variable component that changes in increments of $0.50[5]. Tips from passengers average between approximately 15 and 20 percent of the fare. Riders are also charged an MTA taxi of $.50 per ride.

The fare for a trip between Manhattan and John F. Kennedy International Airport is set at a flat fare of $52.00 (increased from $45.00 in 2012) plus any intervening tolls. There are also special fares for trips to Westchester County, Nassau County and Newark Airport.

Taxi fleet operators either own multiple mini-fleet medallions themselves or manage them for their owners. Fleet operators generally own the taxi vehicles and lease both the vehicles and the medallions to taxi drivers on a per-shift basis. Drivers collect and keep fares and tips from customers, pay for fuel out of their fare income, and pay the lease fees, which are regulated by the TLC. Lease rates vary between $115 per shift and $139 per shift for conventional vehicles

[5] The variable charge is based on a “unit fare”, which is defined as $0.50 per one-fifth of a mile when the taxicab is travelling at 6 miles an hour or $0.50 per each 60 seconds when taxi is not in motion or travelling at less than 6 miles per hour. Additional surcharges also apply, which include a night surcharge of $0.50 between 8pm and 6am and a weekday surcharge of $1.00 Monday – Friday during 4pm and 8pm.

and between $118 per shift and $141 per shift for hybrid vehicles[6]. Fleet operators are responsible for expenses related to the vehicle, including initial vehicle hack-up, insurance, maintenance, and repair costs, in addition to initial purchase costs. Beginning in September 2012, fleet operators also became responsible for paying credit card processing fees for transactions that take place with credit cards. Additionally, fleet operators have the option to provide the driver with a full fuel tank and charge additional fees (details are provided in Appendix B, Section 3.3).

Most individual medallion owners are owner-drivers and own the medallion as well as the vehicle and pay for vehicle purchase costs as well as operating costs (primarily fuel), and other costs, including vehicle insurance, maintenance and repair costs. Many individual medallion owners are required to personally drive a minimum of 180 (9-hour) shifts per year. Analysis conducted by TLC indicates that over 70% of individual owners lease the medallion (or the vehicle and medallion) to a second driver. As required under TLC fare rules passed in July 2012, $0.06 of the fare earned on each trip is dedicated to a health and disability fund for taxi drivers.

Taxicabs currently provide nearly 500,000 trips to fare-paying riders each day. Total annual taxi "revenue" trips increased from approximately 177.5 million trips in 2010 (considering trips during the period October 2009 thru September 2010) to approximately 181.8 million trips in 2012 (October 2011 to September 2012), an increase of approximately 2.4%.

Taxi utilization, defined as the average number of taxis on the road compared to total outstanding number of medallions, has been consistently very high. The average percent of taxis on the road for the period January 2009 thru September 2012 ranged between approximately 94% to almost 98% on any given day. This consistently high utilization rate indicates a high demand for the lease of taxi medallions throughout the year (see Appendix B, Section 3.3.3 for details).

[6] TLC rules indicate that TOTs will pay the regular lease cap until they are available in the micro-hybrid from. The micro-hybrid version of the NV200 will arrive sometime between July 1, 2014 at the earliest and December 31st, 2015 at the latest.

4.4.3 Overview of livery industry

As described in Section 4.4.1, the livery industry is composed of for-hire black cars and limousines, and for-hire livery vehicles. All for-hire vehicles (FHVs) are affiliated with FHV bases, which provide off-street parking for at least half of the vehicles that work for the base, and are responsible for dispatching FHVs and for handling complaints about the services provided by FHVs. Fares charged by FHVs are typically based on a zone system, a time based hourly system or a distance based mileage system. The 24,000 livery vehicles operate out of nearly 500 livery bases in New York City. Livery vehicles provide local or neighborhood services primarily in the outer boroughs and the portion of Manhattan outside of the Manhattan Core. Nearly 16,000 black cars and luxury limousine vehicles operate out of 81 black car bases and over 250 luxury car bases that provide "stretch vehicles" and other luxury limousines throughout the City.

As allowed under the State legislation that authorized the City to increase the number of taxi medallions, the TLC, on April 19, 2012, approved the issuance of up to 18,000 HAIL licenses for a new class of vehicles, "street hail liveries", that are allowed to accept street hail trips everywhere in the City, except the City airports and Manhattan south of East 96th and West 110th Streets. These street hail livery vehicles are also prohibited from accepting prearranged trips in Manhattan south of East 96th and West 110th Streets.[7]

4.5 MEDALLION VALUE

4.5.1 Analysis Methodology

As described in Section 4.3.3, the impact of the Proposed Action on the value of an individual and mini-fleet medallion was completed through a two-step process that first estimated (through a statistical analysis) the change in the net stream of revenues based on the change in trips that

[7] The legislation authorizing the issuance of the HAIL licenses was challenged in litigation. On June 6, 2013, the New York State Court of Appeals found the statute constitutional, thereby allowing for the issuance of the HAIL licenses. On June 6, 2013, TLC began accepting applications from drivers and livery base operators seeking street HAIL licenses.

would occur as a consequence of the Proposed Action and, second, the application of a financial model to estimate how the change in revenue stream affects the value of a medallion.

A statistical analysis was conducted that concluded that the introduction of 2000 additional medallions would result in a range of 0.3% to 1.8% decline in trips per taxi, with a most likely impact of 1% decline in trips per taxi. This decline in trips per taxi was input into a financial analysis and used to calculate impacts on the value of the medallion (see Appendix B, Section 2 for additional details).

Provided below is a description of the existing value of an individual and mini-fleet medallion, and estimates of the value of an individual and mini-fleet medallion in the future (2017) with and without the Proposed Action.

4.5.2 Existing Conditions

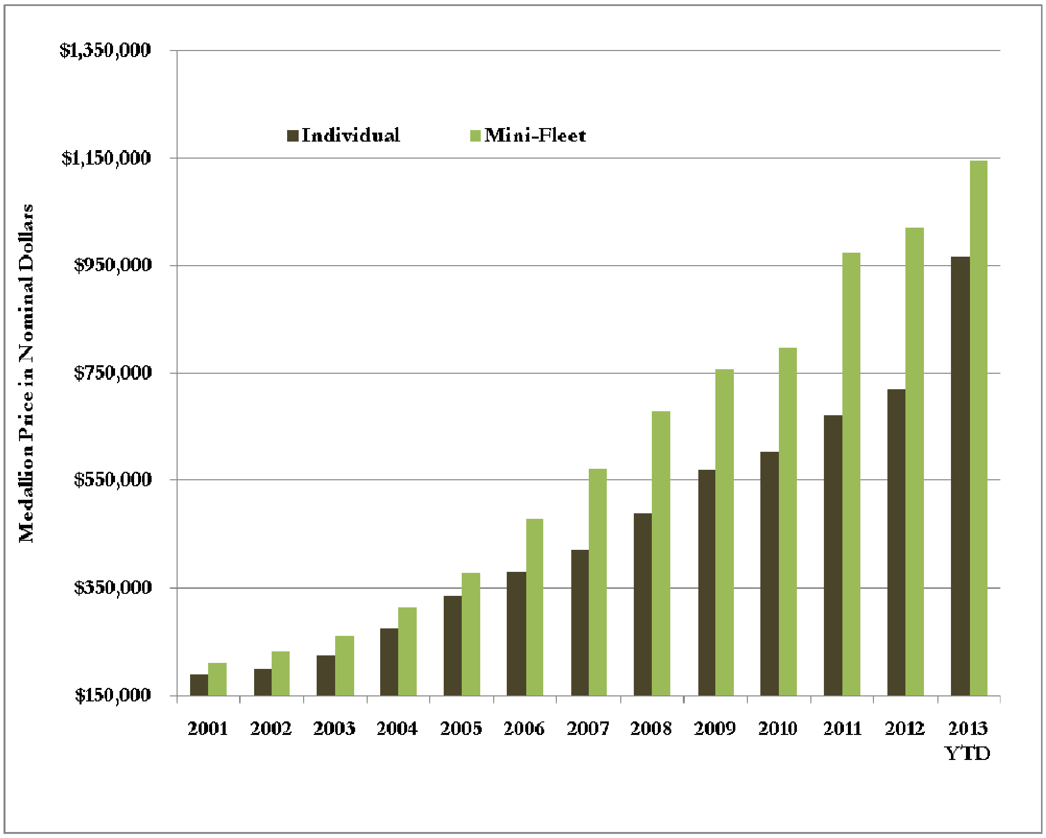
Until the mid 1930s the tax industry in New York City was comprised of unregulated companies in competition with one another for the riding public. There was no regulation on the number of taxi cabs or the fares that could be charged by a taxi driver. This changed dramatically in 1937 with the enactment of the Haas Act. The Haas Act established:

- A set limit of 16,900 taxi licenses or "medallions" (the number was reduced to 11,787 after World War II, and remained unchanged until 1996 when the number of medallions was increased by 133 medallions to 11,900),
- The two types of medallions in use today - individual and mini-fleet medallions, and
- A nominal "60/40" ratio of mini-fleet to individual medallions.

As previously noted, the value of a medallion depends on a number of factors, including taxi fares and tips, the demand for taxi service, the availability and cost of taxicab medallion financing, the market for the medallion, and the anticipated return on the investment to acquire a medallion. The value of a medallion when it first began to be traded after World War II under the Haas Act averaged $2,500. The value of a medallion has shown significant growth since then. Historical prices of individual and mini-fleet medallions bought on the market are summarized in Figure 4-5. Nominal prices of medallions have increased significantly over the past decade with the average annual price of individual medallions increasing 281% between 2001 and 2012, while the average annual price of mini-fleet medallions has increased approximately 386% over the same period.

The value of a mini-fleet medallion is significantly greater than the value of an individual medallion; in 2013, the average price of an individual medallion (approximately $967,000) was about 84% of the average price of a mini-fleet medallion (approximately $1,150,000). TLC data indicate that approximately 58% of the existing medallions are mini-fleet medallions while 42% of the existing medallions are individual medallions.

Figure 4-5: Average Annual Nominal Medallion Price for the Period 2001-2013[8]



Source: TLC (http://www.nyc.gov/html/tlc/html/misc/avg_med_price.shtml)

[8] Prices are shown correct as of June 2013. For the calculation of the medallion price, transfers that took place significantly below the market price were excluded from the calculation. Stock transfers (representing ownership of shares) of medallions have not been included in the analysis. Primarily these consist of "zero-dollar sales" or sales of nominal amounts which are indicative of transfers between family members and represent transactions that have not been conducted at arm's length.

4.5.3 Conditions in the Future (2017) Without the Proposed Action

The calculated value of a mini-fleet medallion in 2017 without the proposed action (based on the methodology outlined above and detailed in Appendix B, Section 2 and Section 3) is estimated to be approximately $1.1 million in 2012 dollars. The value of an individual medallion in 2017 is estimated to be approximately $947,000 in 2012 dollars. These prices are in real dollars and do not include any estimate of the change in medallion prices (without the Proposed Action) due to changes in economic conditions.

4.5.4 Conditions in the Future (2017) With the Proposed Action

The calculated value of a mini-fleet medallion in 2017 with the Proposed Action (based on the methodology outlined above and detailed in Appendix B, Section 2 and Section 3) is estimated to be approximately $1.09 million in 2012 dollars (a decrease in value of 1.5% compared to the Future Without the Proposed Action), while the value of an individual medallion in 2017 with the Proposed Action is estimated to be approximately $928,000 in 2012 dollars (a decrease in value of 2.0% compared to the Future Without the Proposed Action). The statistical analysis indicated revenue trips per medallion (due to the additional medallions) would decline by a most likely 1%, ranging from a low of 0.3% to a high of 1.8%. Due to the reduction in revenue trips per medallion, the predicted decline in mini-fleet medallion value is expected to range from a low impact of 0.4% to a high impact of 2.7%. The predicted decline in individual medallion value is expected to range from a low impact of 0.5% to a high impact of 3.6%.

4.5.5 Identification of Potential Impacts on Medallion Value

As summarized above, the Proposed Action would result in a small (less than 4%) decrease in the anticipated future value of an individual medallion and a smaller (less than 3%) decrease in the anticipated future value of a mini-fleet medallion. The most likely impact predicted for both categories of medallions is even smaller (approximately 2%).

Historically medallion prices have increased during periods of medallion sales in part due to fare increases that have accompanied medallion sales. During 2004, 590 medallions were sold. In 2006, an additional 308 medallions were sold with smaller sales taking place in 2007 and 2008 of 63 and 87 medallions respectively. Fares increased (an estimated) 26% in May 2004 and by (an estimated) 10.5% in 2006[9] while no fares increases were implemented in 2005 or in 2007 (until the fare increase in 2012). During these periods of medallion sales, individual medallion prices rose 22% in 2004 and another 22% in 2005 while mini-fleet medallion prices rose 22% and 21% in 2004 and 2005 respectively. In 2006, individual medallion prices rose approximately 14% while mini-fleet medallion prices rose approximately 27%. Medallion prices rose in 2007 as well by an approximate 11% for individual medallions and 19% for mini-fleet medallions. In fact medallion prices rose throughout periods when medallions have been sold since 2004.

Medallion prices are more impacted by economic factors, for example medallion prices declined in 2000 (only mini-fleet medallions) and then in 2001 (both mini-fleet and individual medallion) primarily due to the 2001 recession. Other factors such as interest rates also play an important role in determining medallion prices. The analysis indicates that there would be a small impact on the value of the medallion and prices would be slightly lower than they would otherwise have been due to the Proposed Action. The value is expected to increase with or without the Proposed Action, though the increase is expected to be smaller in the analysis year with the Proposed Action in place. Historic trends indicate that value continues to increase at a high rate in the years following the medallion sale. In other words, the analysis identified impacts in *relative* terms (relative to the value of the medallion without the Proposed Action). In *absolute* terms medallions might well appreciate in value as they have done in the past.

The *2012 CEQR Technical Manual* provides that a proposed action may be considered significant and adverse when that action would substantially impair the ability of a specific industry to continue operating within the City. Based on consultation with the Taxi and Limousine Commission (the lead agency) and with the concurrence of the Department of City Planning, the relatively small impacts identified here would not be considered to be a significant adverse impact on the value of either an individual or mini-fleet medallion, as they would not reasonably be expected to substantially impair the ability of the taxi industry to continue operating within the City.

[9] This fare increase was implemented by changing the charge incurred by passengers in slow moving or stopped traffic. Initial charge for the fare and the variable unit fare remained unchanged.

4.6 TAXICAB DRIVER INCOME

4.6.1 Analysis Methodology

As described in Section 4.3.4, the impact on driver income was based on an estimate of the change in the number of revenue trips that would occur during a taxi driver shift in the future (2017) with the Proposed Action compared to the number of revenue trips that would occur during a taxi driver shift in the future (2017) without the Proposed Action. The length of revenue trips were assumed to be the same in both the existing and future conditions based on an assumption that the Proposed Action would have no impact on a trip's average length.

As summarized in Section 4.3.4 and detailed in Appendix B, a statistical analysis was conducted that concluded that the introduction of additional medallions would result in a range of 0.3% to 1.8% decline in trips per taxi, with a most likely impact of 1% decline in trips per taxi. This decline in trips per taxi was used to calculate impacts on the income of taxi drivers (see Appendix B for additional details). Since taxicab driver income varies depending on the business and operating arrangements under which the driver operates, separate estimates were completed for drivers who lease for a 2nd shift from owner-drivers and drivers who lease from a fleet medallion owner. Included in this section is a description of existing taxicab driver income, and an assessment of the impact of the Proposed Action on taxicab driver income for each of the business and operating arrangements described above.

4.6.2 Existing Conditions

Gross taxi driver income is derived from the fares and tips received by a driver during each driver shift. Fares and tips, in turn, depend on the number and length of fare paying ("revenue") trips completed for a given amount of driving.

Net driver income depends on the business and operating arrangement under which the driver is operating. As described in Section 4.4.2, these arrangements vary, ranging from a driver who is driving a taxicab as part of a fleet, or as driver-owner who drives a vehicle of his own ownership with a medallion he owns (an "owner-driver" arrangement), or as a driver who drives a vehicle of his own ownership with a medallion he leases from a separate medallion owner (a "DOV").

Since owner-drivers are in reality medallion owners, impacts are shown for drivers leasing for a 2nd shift from individual driver owners. Impacts on fleet medallion drivers who lease on per shift basis are shown as well.

As shown in Table 4-1 the gross revenue per shift for a driver of an individual medallion (leasing for a 2nd shift) is estimated to be $273, based on an assumption of 20.6 revenue trips per shift. Fares are based on an estimated average fare paid in 2012 of $13.25/trip. Lease fees for fleet and individual medallion drivers are different since for fleet drivers the fuel cost is included in the lease cost and fleet medallion owner can charge small premium for providing fuel. Additionally, lease costs for individual medallion drivers (leasing for a 2nd shift) are lower since these are estimated based on the weekly long term lease rate rather than a per shift lease rate typical for fleet medallion drivers. Net revenue per shift for driver-owner of an individual medallion is estimated to be approximately $139 per shift, after netting out the cost of fuel, lease and health care fee costs.

Table 4-1: Taxi Driver Incomes Per Shift (in 2012)

Metric / Driver Type	Individual Drivers Leasing for Second Shift	Fleet
Revenues		
Trips Per Shift	20.6	20.6
Fare per Trip[10]	$13.25	$13.25
Revenues Per Shift	**$ 273.00**	**$273.00**
Costs		
Average Miles per Shift	106	106
Fuel Gallons per Shift	4.95	
2012 Gas Price	$3.82	
Fuel Cost	$18.92	
Lease Costs	$113.74	
Total Lease + Fuel Costs	**$132.67**	**$140.69**
Health Care Fees[11]	$1.20	$1.20
Total Costs	**$133.90**	**$141.93**
Net Income per Shift		
Driver Net Income Per Shift	**$139.10**	**$131.07**

[10] Weighted average fare for 2012, based on TPEP estimates of $12.72 prior to fare increase in 2012 and $14.86 after the fare increase in 2012, based on estimates from TLC.

[11] Health care fees based on a $0.06 per trip have been approved by TLC in July 2012. Collections to the health care fund will be authorized in 2013 – 14. For consistency (with the future analyses), health care fees have been included in existing conditions.

Also as shown in Table 4-1 the gross revenue per shift for a driver who drives as part of a mini-fleet is estimated to be $273.00 per shift, based on the same assumed number of revenue trips and trip length. Net revenue for these drivers is estimated to be $131.00 per shift, after netting out lease costs, and the other expenses identified in Table 4-1.

4.6.3 Conditions in the Future (2017) Without the Proposed Action

In the future (2017), gross income of an individual medallion driver (leasing for a 2nd shift) without the 2,000 additional medallions is estimated to be approximately $300 per shift (in 2012 dollars) as shown in Table 4-2. This estimate was based on an average of 20.2 revenue trips per shift at an estimated fare of $14.86/trip for 2013 onwards. Net income of an individual medallion driver (leasing for a 2nd shift) in the future (2017) without the 2,000 additional medallions is estimated to be approximately $165 /shift after netting out the cost of fuel and health care fees (in 2012 dollars).

Table 4-2: 2017 Taxi Driver Income Per Shift (without Proposed Action in 2012 dollars)

Metric / Driver Type	**Individual Medallion Drivers (leasing for 2nd Shift)**	**Fleet Drivers**
Revenues		
Trips Per Shift – Action	20.2	20.2
Fare per Trip	$14.86	$14.86
Revenues Per Shift	**$300.38**	**$300.38**
Costs		
Average Miles per Shift	106	
Fuel Gallons per Shift[12]	3.69	
2017 Gas Price ($ 2012 dollars)[13]	$4.90	
Fuel Cost	$18.08	
Lease Costs	$115.75	$152.70
Total Lease + Fuel Costs	**$133.83**	$152.70
Health Care Fees	$1.2	$1.2
Total Costs	**$135.04**	**$153.91**
Net Income per Shift		
Driver Net Income Per Shift	**$165.34**	**$146.47**

[12] Average fuel gallons per shift are estimated based on projections of the future taxi fleet. As Ford Crown Victoria vehicles retire from the fleet and are replaced with the more fuel efficient ToT, fuel efficiency is anticipated to improve.

[13] High gas prices are conservatively assumed here.

Gross income in the future (2017) without the 2,000 additional medallions of a driver who drives as part of a fleet is estimated to be approximately $300.00 per shift assuming the same average number and length of revenue trips as an individual medallion driver. Net income in the future (2017) without the 2,000 additional medallions of a driver who drives as part of a fleet is estimated to be approximately $146/shift after netting out lease costs and the costs of health care fees.

4.6.4 Conditions in the Future (2017) With the Proposed Action

As shown in Table 4-3 (see Appendix B for details), gross revenue of an individual medallion driver (leasing for a 2nd shift) in the future (2017) with the 2,000 additional medallions is estimated to be approximately $297 per shift (in 2012 dollars, assuming medium impacts due to the introduction of the additional medallions), using an average of 20.0 revenue trips per shift at an average fare of $14.86 per trip. Net income of an individual medallion driver in the future (2017) with the 2,000 additional medallions is estimated to be approximately $162 after netting out the cost of fuel, and health care fees. Net income of an individual medallion driver (leasing for a 2nd shift) is estimated to be approximately 1.9% less in the future (2017) with the 2,000 additional medallions than without the 2,000 additional medallions.

Gross income in the future (2017) with the 2,000 additional medallions of a driver who drives as part of a mini-fleet is estimated to be approximately $297 (in 2012 dollars) per shift assuming the same average length of revenue trips as for the driver-owner operating arrangement. Net income in the future (2017) with the 2,000 additional medallions of a driver who drives as part of a mini-fleet is estimated to be approximately $143 per shift (in 2012 dollars) after netting out lease costs and the costs of health care and credit card fees. Net income per shift of drivers who lease a fleet vehicle is estimated to be approximately 2.1% less in the future (2017) with the 2,000 additional medallions than without the additional medallions that are to be added under the Proposed Action.

Table 4-3: 2017 Taxi Driver Incomes Per Shift (with Proposed Action in 2012 dollars)

Metric / Driver Type	Individual Medallion Drivers (leasing for 2nd Shift)	Fleet Drivers
Revenues		
Trips Per Shift – Action	20.0	20.0
Fare per Trip	$14.86	$14.86
Revenues Per Shift	**$297.27**	**$297.27**
Costs		
Average Miles per Shift	106	
Fuel Gallons per Shift	3.69	
2017 Gas Price ($ 2012 dollars)[14]	$4.90	
Fuel Cost	$ 18.08	
Lease Costs	$115.75	$152.70
Total Lease + Fuel Costs	**$133.83**	**$152.70**
Health Care Fees	$1.2	$1.2
Total Costs	**$135.03**	**$153.91**
Net Income per Shift		
Driver Net Income Per Shift	**$162.24**	**$143.37**

4.6.5 Identification of Potential Impacts on Driver Income

As summarized in Section 4.6.1 and detailed in Appendix B, the small (0.3% to 1.8%, with a most likely estimate of 1%) decline in trips per taxi would be associated with a decline in taxi driver income estimated to occur in the future (2017) due to the Proposed Action. As shown in Table 4-4, impacts are expected to range from a decline in driver incomes per shift of 0.5 % to 3.7 % with a most likely impact of 2.1% (for fleet drivers). Impacts for individual medallion drivers (leasing for a 2nd shift) would decline similarly, ranging from a low impact of 0.5% to a high impact of 3.3% with a most likely impact of 1.9%. Even at the high end of the impact range it is not anticipated that the decline in taxi driver income for both fleet and second shift individual medallion drivers under the Proposed Action would result in a significant adverse impact. Based on the criteria set in the *2012 CEQR Technical Manual*, and in consultation with the Taxi and Limousine Commission (the lead agency) and with the concurrence of the

[14] High gas prices are conservatively assumed here.

Department of City Planning, these impacts are not considered to be significant as they are not reasonably expected to substantially impair the ability of the taxi industry to continue operating within the City.

Table 4-4: Taxi Driver Incomes for Fleet Drivers Per Shift in 2017 (in 2012 dollars)

Estimated Impact Range	Under Future Conditions without Additional Medallions	Under Future Conditions with Additional Medallions	Impact in %
Low	$146.47	$145.73	-0.5%
Medium	$146.47	$143.37	-2.1%
High	$146.47	$141.01	-3.7%

4.7 FOR-HIRE LIVERY INDUSTRY

4.7.1 Analysis Methodology

As described in Section 4.3.5, the potential impact of the increase in the number of medallions on the for-hire livery industry considered the extent to which and at what locations markets for the two types of services currently overlap, in particular areas where service is predominately provided by for-hire livery vehicles, taking into consideration differences in service patterns between yellow taxis and for-hire livery cars. Provided in this section is a description of the existing geographic distribution of for-hire livery services in the city and their level of competition with taxicab services, and an assessment of the potential that the 2,000 additional medallions allowed under the Proposed Action would result in a significant impact on for-hire livery services in the City. A detailed description of this assessment is provided in Appendix C.

In completing this assessment, no consideration was given to the potential beneficial effect on the for-hire livery industry that would accrue with the issuance of up to 18,000 HAIL licenses that would allow for-hire livery vehicles to accept street hails anywhere in New York City except at the City airports and the area of Manhattan south of East 96th and West 110th Streets.

4.7.2 Existing Conditions

For-hire livery vehicles currently represent the dominant mode of for-hire vehicle service in all areas of New York City except for Manhattan south of East 96th and West 110th Streets (the "Manhattan Core"). TLC data indicate that yellow taxicab pick-ups are largely concentrated in the Manhattan Core and at LaGuardia and John F. Kennedy International Airports. Together, these locations account for nearly 95% of all yellow taxicab pick-ups in the City.

T-PEP data on the pick-up points of all yellow taxi trips that occurred in New York City on a single, randomly-chosen day in 2011 indicate that there were approximately 467,450 yellow taxicab trips on that day. Pick-ups outside of the Manhattan Core or at the two New York City airports represented approximately 5.3% (approximately 24,800 trips) that day. Approximately 77% of the 24,800 yellow taxicab pick-ups outside of the Manhattan Core and the City airports occurred in 15 neighborhoods close to the Manhattan Core of the 188 neighborhoods in the City as defined by the New York City Department of City Planning. These neighborhoods were clustered in three areas:

- Neighborhoods just north of the Manhattan Core
- Brooklyn neighborhoods near Manhattan.
- Neighborhoods in western Queens.

Yellow taxicab pick-ups in the remaining 155 New York City neighborhoods accounted for only 1.2 percent of all yellow taxicab pick-ups City-wide.

The dominance of for-hire livery vehicle service in areas of the City other than the Manhattan Core and the City airports is reflected in the number and geographic distribution of local for-hire livery bases. Provided in Table 4-5 is a summary of the number of for-hire livery vehicle base stations and number of associated for-hire livery vehicles in the top 20 neighborhoods in the City as ranked by the total number of cars affiliated with base stations in the identified neighborhoods. This data on the distribution of for-hire livery bases and associated for-hire livery cars highlight the degree to which yellow taxicab and for-hire livery car services tend to serve geographically distinct markets.

Table 4-5: Top 20 Neighborhoods by Number of Livery Cars Affiliated With Local Base Stations

Borough	Neighborhood	# Livery Base Stations	# Livery Cars
Manhattan	Washington Heights South	8	859
Brooklyn	North Side - South Side	7	674
Manhattan	Washington Heights North	3	635
The Bronx	University Heights - Morris Heights	3	629
Brooklyn	Park Slope – Gowanus	9	600
Manhattan	Hamilton Heights	4	585
Manhattan	Marble Hill – Inwood	2	576
The Bronx	Mount Hope	2	558
Brooklyn	East New York (part A)	7	479
The Bronx	Belmont	2	467
Manhattan	East Harlem North	4	465
The Bronx	Morrisania – Melrose	4	463
Brooklyn	Clinton Hill	4	412
Brooklyn	Sunset Park East	9	405
Queens	Corona	6	386
The Bronx	Norwood	2	381
The Bronx	Soundview – Bruckner	2	381
Queens	Ridgewood	6	368
Queens	Queensbridge-Ravenswood-Long Island City N.	7	368
Queens	South Ozone Park	13	366

Source: NYC Taxi and Limousine Commission

4.7.3 Conditions in the Future (2017) Without the Proposed Action

Conditions in the for-hire livery industry in the future (2017) without the Proposed Action would be the same as existing conditions, except for the potential beneficial increase in for-hire livery vehicle use that would occur as a consequence of issuance of up to 18,000 HAIL licenses that would allow for-hire livery vehicles to accept street hails everywhere in the City except at the City airports and Manhattan south of East 96th and West 110th Streets.

4.7.4 Conditions in the Future (2017) With the Proposed Action

An increase in the supply of yellow taxis could result in increased competition from yellow cabs for passengers now served by livery cars. However, because of the degree to which the two industries serve geographically distinct markets, and also provide different types of service (street hails vs. pre-arranged pick-ups), the effects of an increase in the supply of yellow taxis on the livery industry are likely to be limited – and in particular, limited to the relatively small number of neighborhoods that are served by both industries.

An increase in the number of yellow taxi pick-ups in any given area does not necessarily mean a commensurate increase in direct competition with livery services. Passengers who are shifting from modes of transportation other than livery services may account for some portion of the increase in yellow taxi pick-ups; and increased demand resulting from population growth and commercial and institutional development may also absorb part of the increased supply of yellow taxi service.

As further detailed in Appendix C (Impacts on Livery Industry), based on a conservative assumption that the share of yellow taxicab pick-ups that occur outside of the Manhattan Core and at the City airports would be 50% greater for the incremental yellow taxis that would be generated by the Proposed Action, it is estimated that yellow taxicab pick-ups in the area outside of the Manhattan Core and at the City airports would account for 7.95% of all additional trips resulting from the 2,000 additional taxi medallions. Assuming a 1% reduction in the average number of taxi revenue trips per day (based on the statistical analysis conducted as part of the sale of additional medallions)[15] with the Proposed Action, it is estimated that approximately 5,200 of the additional yellow taxicab pick-ups with the Proposed Action would occur outside the Manhattan core and at the City airports. This would be equivalent to approximately 2.3% of the estimated 225,000 for-hire livery car trips that occur each day in New York City. These additional yellow taxicab trips are expected to be limited to a few neighborhoods.

Given the currently observed geographic distribution of yellow taxicab pick-ups outside of the Manhattan Core and at the City airports, the impact of the increase in number of yellow taxicabs with the Proposed Action would be greatest in the 15 northern Manhattan, Brooklyn and Queens neighborhoods in which yellow taxicab pick-ups primarily occur. In summary, it is estimated that, there would be approximately:

[15] See Appendix B, Section 2 for details.

- 2,230 additional yellow taxicab pick-ups per day in the neighborhoods north of the Manhattan Core, or approximately 14.1% of the estimated 15,770 daily trips made by for-hire livery cars in this area

- 1,027 additional yellow taxicab pick-ups per day in the Brooklyn neighborhoods that currently account for the overwhelming majority of yellow taxicab pick-ups in the Borough, or approximately 7.5% of the estimated 13,660 daily trips made by for-hire livery cars in those neighborhoods

- 727 additional yellow taxicab pick-ups per day in the Queens neighborhoods that currently account for the overwhelming majority of yellow taxicab pick-ups in the Borough, or approximately 4.8% of the estimated 15,100 daily trips made by for-hire livery cars in those neighborhoods.

While this analysis indicates some potential neighborhood level livery industry impacts exist, as discussed further below in 4.7.5, the livery industry as a whole is not expected to experience significant adverse impacts. Furthermore, these estimates do not account for other factors that are not attributable to the Proposed Action including: the diversion of trips from other competing modes, increases in population growth and/or economic activity in the affected areas, or the effects of the issuance of up to 18,000 HAIL licenses to for-hire livery vehicles that would allow for street hails by for-hire livery vehicles in the affected areas.

4.7.5 Identification of Potential Adverse Impacts on the For-Hire Livery Industry

As summarized above, the Proposed Action would not result in an increase in the level of competition with the for-hire livery industry. The increase in yellow taxicab trips is estimated to account for only 2.3% of the trips currently serviced by the livery industry on a daily basis. Although the Proposed Action could result in a small increase in the level of competition overall, in roughly 15 neighborhoods out of the 188 neighborhoods in New York City, impacts might result in modest increases in competition for passengers. These include portions of northern Manhattan, certain Brooklyn neighborhoods and certain neighborhoods in Queens. Many of these identified neighborhoods however have experienced significant growth in population. The proposed increase in the number of yellow taxis would be mitigated by the continued growth in population, likely increases in industrial and commercial development in these specific neighborhoods[16], further development and growth in Brooklyn and Queens outside these specific neighborhoods[17] and the consequent demand for for-hire livery services in these areas (see Appendix C for details). In particular, the analysis does not take into account the impact of mode shift. Additional yellow taxicab trips might come from other modes such as subway or bus rather than livery vehicle trips. Given the small impact of additional yellow taxicab trips as a percentage of overall livery trips and their focus on a limited number of neighborhoods, it is most likely that livery cabs will increase service to other neighborhoods currently poorly served by yellow taxicabs and likely to remain poorly serviced by yellow taxicabs in the future (for example, currently 155 neighborhoods in New York City account for only 1.2% of yellow taxi cab trips). As a consequence, the Proposed Action would not result in a significant adverse impact on the for-hire livery industry in New York City.

4.8 OVERALL NEW YORK CITY ECONOMY

4.8.1 Analysis Methodology

As described in Section 4.3.6, the impact of the Proposed Action on the overall New York City economy was completed through the application of the Regional Industrial Multiplier System (RIMS) Input-Output Model for New York City, which accounts for inter-industry economic relationships within the region, and allows for the estimation of the effect of a change in a specific part of the regional economy (in this case, a change in the Taxi and Livery Industry) on overall regional employment and expenditures. Provided in this section is a description of the overall scale of the New York City economy, an estimate of the portion of the New York City economy represented by the NYC taxi and livery industry, and an assessment of the impact of the Proposed Action on the overall New York City economy.

[16] These include for example, Columbia University's new Mahattanville campus and the development of Barclays Center in Brooklyn

[17] Examples of these include the revitalization of Coney Island, expansion of the Resorts World Casino and Flushing Commons and new developments in Flushing.

4.8.2 Existing Conditions

According to the Bureau of Economic Analysis (BEA), the economy of the New York Metropolitan Statistical Area (MSA) was estimated to be approximately $1,277 billion dollars in 2011. On average yellow taxis provide 500,000 trips per day with an average fare of $14.86 per trip. While detailed records of trips for livery vehicles are not available, based on dispatch records TLC estimates that livery vehicles account for another 225,000 trips per day. On an annual basis the yellow taxi market accounts for approximately $2.7 billion in gross revenue per year. Average fare per trip for livery vehicles and the number of trips per shift are estimated to be lower than yellow taxi vehicles[18]. Overall, the taxi and livery industry accounts for a small portion (less than 0.5%) of the total New York MSA economy.

During 2012 total non-farm employment in New York City was estimated to be approximately 3.88 million employees, according to data from the Bureau of Labor Statistics. Based on an average of 660 shifts per medallion per year for the13,237 yellow taxicabs currently in operation, there are approximately 8.74 million driver shifts annually which provides full time employment for nearly 33,600 taxi drivers (assuming a taxi driver works 260 shifts per year). Based on TLC data on taxi medallion driver licenses issued, approximately 50,000 TLC drivers licenses are currently active in a given two year period (however not all licensed drivers actively drive yellow taxis, on average the TLC estimates that 30,000 are active drivers in a given month). Drivers employed in the FHV industry require separate license with approximately 57,000 active licensees. Based on these assumptions the direct employment of taxi and livery car drivers accounts for less than 2.5 % of total employment in New York City.

4.8.3 Conditions in the Future (2017) Without the Proposed Action

According to the New York State Department of Labor, long term employment projections for New York City indicate that employment is likely to increase from 4.103 million (in 2008) to 4.257 million (in 2018) or an average of 0.4% per annum. Based on this estimate, total employment in New York City over the period is anticipated to increase by about

[18] A small survey conducted by TLC showed a median fare of $8 with approximately 15 trips per shift.

154,000 employees. Without the Proposed Action, employment in the taxi and livery industry is projected to remain at current levels.

4.8.4 Conditions in the Future (2017) With the Proposed Action

As detailed in Appendix B, application of the RIMS Input-Output Model indicates that the Proposed Action would result in:

- The employment of 5,077 additional taxicab drivers
- An increase in total earnings for yellow taxicab drivers of $149.4 million per year
- An increase in total City-wide earnings of approximately $226.4 million per year
- A City-wide increase of 6,200 person years of employment, including increases in employment required to hack up the additional 2,000 taxi vehicles that would result from the issuance of the additional medallions

Together, these indicate that the Proposed Action would result in an overall net benefit to the City economy.

4.8.5 Identification of Potential Adverse Impacts on the New York City Economy

As summarized above, the Proposed Action would result in net overall benefits to the New York City economy as a consequence of the increase in income that would be derived by the additional drivers required to drive additional taxi vehicles that would be allowed under the Proposed Action, and the increase in economic activity that would be generated by the Proposed Action to medallion owners, medallion brokers, mechanics, and the broad range of businesses that support the taxicab industry. Based on these findings it is projected that the Proposed Action would not result in a significant adverse impact on the overall New York City economy.

4.9 SUMMARY ASSESSMENT OF THE IMPACT OF THE PROPOSED ACTION ON THE NYC TAXI & LIVERY INDUSTRY

The Proposed Action would not result in a significant adverse impact on the value of an individual and mini-fleet medallion, the income of yellow taxicab drivers, or the for-hire livery car industry. In addition, it would result in overall increases in the numbers of employed drivers and total earnings of yellow taxicab drivers leading to benefits to New York City's economy as a whole. These findings indicate that the Proposed Action would not result in a significant adverse socioeconomic impact on the New York City taxi and livery industry and that no mitigation would be required to address any identified significant adverse impacts.

CHAPTER 5 – COMMUNITY FACILITIES AND SERVICES

5.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, community facilities are public or publicly funded schools, libraries, child care centers, health care facilities and fire and police protection. A project would have a potential impact on community facilities and services if the project would create demand for services greater than the ability of existing facilities to provide those services. A community facilities assessment is necessary if a project would affect a community facility:

- directly through physical alteration by displacing the facility or by causing other physical change(s) to the facility; or
- indirectly by adding new populations to an area, thereby creating demand for services greater than the ability of existing facilities to provide those services.

The Proposed Action would not physically alter or displace any existing or planned community facility, nor would it add new populations that would create demand for services greater than the ability of existing facilities to provide those services. Therefore, as indicated in the EAS, no significant adverse impacts to community facilities and services would occur as a result of the Proposed Action.

5.2 Analysis/Methodologies

Under CEQR, a community facilities analysis is needed if there would be potential direct or indirect effects on a community facility. Projects that typically require a community facilities analysis are residential projects because of the increase in demand on community facilities caused by the introduction of new residents to the area. Projects resulting in a direct effect to community facilities, either through displacement or other physical alteration, require an assessment of the service delivery of the facility and the potential effect that the physical change may have on that service delivery. A preliminary analysis must be performed for projects adding new population to an area. The preliminary analysis would consist of comparing the project's residential units to threshold values for the number of public school children (elementary, intermediate and high school), eligible child care children, library use and police/fire services and health care facilities. If the preliminary analysis concludes that a detailed analysis is required, the detailed analysis would consist of delineating the study area, determining, the potentially affected community facilities, gathering information on current and future utilization levels and expansion plans of the community facilities, and assessing the potential impact of the project on community facilities.

The proposed sale of 2,000 taxi medallions is not site specific and would be implemented City-wide. The Proposed Action would not physically alter or displace any existing or planned community facility, nor would it add new populations that would create demand for services greater than the ability of existing facilities to provide those services. Therefore, a community facilities and services analysis can be screened out based on guidance in the *2012 CEQR Technical Manual*. Consequently, a preliminary or detailed assessment of community facilities and services is not required.

A detailed assessment of fire and police protection is typically conducted if a project would physically affect the physical operations of, or access to and from, a station house or precinct house, respectively, or where a project would add a sizeable new neighborhood where none existed before. Although the Proposed Action would not trigger a detailed assessment of fire and police protection, the addition of the 2,000 taxi medallions to the taxi fleet may increase delays at selected intersections in the City. However, delays to emergency services would not occur since emergency vehicles are provided priority in traversing roadways and intersections during emergencies.

5.3 Existing Conditions

As noted above, in conformance with the *2012 CEQR Technical Manual*, a community facilities and services assessment is not required since the Proposed Action would not directly or indirectly affect community facilities and services.

5.4 Future Conditions without the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a community facilities and services assessment is not required since the Proposed Action would not directly or indirectly affect community facilities and services.

5.5 Future Conditions with the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a community facilities and services assessment is not required since the Proposed Action would not directly or indirectly affect community facilities and services.

5.6 Identification of Significant Adverse Environmental Impacts

The Proposed Action would not physically alter or displace any existing or planned community facility, nor would it add new populations that would create demand for services greater than the ability of existing facilities to provide those services. Therefore, in conformance with *2012 CEQR Technical Manual* screening criteria, it would not have the potential to result in a significant impact on community facilities and services, and a preliminary and detailed analysis was not undertaken to determine if the Proposed Action would result in a significant adverse impact to community facilities and services.

5.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to community facilities and services would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 6 – OPEN SPACE

6.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, a project would have a potential impact on open space if the project would have a direct impact resulting from the elimination or alteration of open space and/or an indirect impact resulting from the introduction of a large population to an area which would overtax an existing open space. The Proposed Action would not eliminate or alter any existing or planned open space, nor would it add new populations that would overtax open space. Therefore, as indicated in the EAS, no significant adverse impacts to open space would occur as a result of the Proposed Action.

6.2 Analysis/Methodologies

An open space is a publicly or privately owned land that is a publicly accessible and operates, functions, or is available for leisure, play or sport or set aside for the protection and/or enhancement of the natural environment. Under CEQR, an open space analysis is needed if there would be potential direct or indirect effects on open space. A proposed project would potentially have a direct effect on open space if it would significantly:

- encroach on, or cause a loss of, open space;
- modify facilities within an open space that resulting in that facility no longer serving the same user population;
- limit public access;
- change the type and amount of public open space; and
- add nuisances such as noise, air pollutant emissions, odors or shadows on public open space thereby altering its usability.

A proposed project would potentially have an indirect effect on open space if it would add population that overtaxes the capacity of existing open space so that their service to the future population of the affected area would be substantially or noticeably diminished.

Most projects require a preliminary or detailed assessment if they have a potential direct effect on open space. However, a preliminary or detailed assessment of the project's potential indirect effect must be performed for projects adding:

- 50 residents or 125 workers or more in an underserved area; or
- 350 residents or 750 workers or more to a well-served area; or
- 200 residents or 500 employees or more to an area not located within an underserved or well-served area.

Underserved areas have a high population density and are generally located the greatest distance from parkland and the available open space per 1000 residents is currently less than 2.5 acres. Well-served areas have an open space ratio above 2.5 acres per 1000 residents or are located within 0.25 miles from developed and publicly accessible portions of regional parks. The *2012 CEQR Technical Manual* provides maps for underserved and well-served areas within the City.

The proposed sale of 2,000 taxi medallions is not site specific and would be implemented City-wide. Consistent with guidance in the *2012 CEQR Technical Manual*, the Proposed Action would not have the potential to result in either direct or indirect impacts on open spaces. The Proposed Action would not result in direct impacts on open space resources because:

- The Proposed Action would not result in a physical loss of public open space by encroaching on an open space or displacing an open space;
- The Proposed Action would not change the use of an open space so that it no longer serves the same user population;
- The Proposed Action would not limit public access to an open space;
- The Proposed Action would not cause increased odors or shadows on public open space that would affect its usefulness, whether on a permanent or temporary basis. As documented in the air quality and noise impact analyses included in this ~~DEIS~~FEIS, the Proposed Action would also not result in a significant adverse impact on noise or air pollutant levels.

The Proposed Action would also not result in indirect impacts on open space resources because:

- The Proposed Action would not generate any additional residents or 125 workers in an underserved area;
- The Proposed Action would not generate any additional residents or 750 workers in a well-served area; and
- The Proposed Action would not generate any additional residents or 500 employees in an area outside of an undeserved or well-served area.

Therefore, an open space analysis can be screened out based on guidance in the *2012 CEQR Technical Manual*. Consequently, a preliminary or detailed assessment of open space is not required.

6.3 Existing Conditions

As noted above, in conformance with the *2012 CEQR Technical Manual*, an open space assessment is not required since the Proposed Action would not directly or indirectly affect open space.

6.4 Future Conditions without the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, an open space assessment is not required since the Proposed Action would not directly or indirectly affect open space.

6.5 Future Conditions with the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, an open space assessment is not required since the Proposed Action would not directly or indirectly affect open space.

6.6 Identification of Significant Adverse Environmental Impacts

The Proposed Action would not eliminate or alter any existing or planned open space, nor would it add new populations that would overtax open space. Therefore, in conformance with *2012 CEQR Technical Manual* screening criteria, it would not have the potential to result in a significant impact on open space, and a preliminary and detailed analysis was not undertaken to determine if the Proposed Action would result in a significant adverse impact to open space.

6.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to open space would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 7 – SHADOWS

7.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, a shadows assessment is required to assess whether new structures may cast shadows on sunlight sensitive publicly-accessible resources or other resources of concern such as natural resources, and to assess the significance of their impact. The Proposed Action does not require the construction of any new structures, and is limited to the authorization of the TLC to publicly sell 2,000 new taxi medallions. As a consequence, as identified in the EAS, no significant adverse impacts due to shadows on sunlight sensitive resources would occur as a result of the Proposed Action.

7.2 Analysis/Methodologies

The shadows assessment considers projects that result in new shadows long enough to reach a sunlight-sensitive resource. Therefore, a shadow assessment is required only if the project would either result in (a) new structures (or additions to existing structures including the addition of rooftop mechanical equipment) of 50 feet or more or (b) be located adjacent to, or across the street from, a sunlight-sensitive resource. However, where a project's height increase is ten feet or less and it is located adjacent to, or across the street from, a sunlight-sensitive open space resource, which is not a designated New York City Landmark or listed on the State/National Registers of Historic Places or eligible for these programs, the lead agency may determine, in consultation with New York City Department of Parks and Recreation (DPR), whether a shadow assessment is required in that case.

The shadow assessment begins with a preliminary screening assessment to ascertain whether a project's shadow may reach any sunlight-sensitive resources at any time of the year. If the screening assessment does not eliminate this possibility, a detailed shadow analysis is required in order to determine the extent and duration of the incremental shadow resulting from the project. The detailed shadow analysis provides the necessary information for the assessment of shadow impacts, which describes the effect of shadows on the sunlight-sensitive resources and their degree of significance.

The proposed sale of 2,000 taxi medallions is not site specific and would not result in any new structure. Therefore, a shadows assessment can be screened out based on guidance in the *2012 CEQR Technical Manual.*

7.3 Existing Conditions

As noted above, in conformance with *2012 CEQR Technical Manual*, a shadows assessment is not required since the Proposed Action is not site specific and would not result in any new structure.

7.4 Future Conditions without the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, a shadows assessment is not required since the Proposed Action is not site specific and would not result in any new structure.

7.5 Future Conditions with the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, a shadows assessment is not required since the Proposed Action is not site specific and would not result in any new structure.

7.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects that would either result in (a) new structures (or additions to existing structures including the addition of rooftop mechanical equipment) of 50 feet or more; or (b) be located adjacent to, or across the street from, a sunlight-sensitive resource could result in significant adverse impacts related to shadows. The proposed sale of 2,000 medallions would not result in any site specific development or a new structure. Therefore, the Proposed Action would not result in a significant adverse impact related to shadows.

7.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact related to shadows would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 8 – HISTORIC AND CULTURAL RESOURCES

8.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, a historic and cultural resources assessment is required for projects that may affect the following resources:

- Designated New York City Landmarks, Interior Landmarks, Scenic Landmarks, and properties within designated New York City Historic Districts.
- Resources calendared for consideration as one of the above by New York City Landmarks Preservation Commission (LPC).
- Resources listed on, or formally determined eligible for inclusion on, the State and/or National Register of Historic Places, or contained within a district listed on, or formally determined eligible for listing on, the State and/or National Register of Historic Places.
- Resources recommended by the New York State Board for listing on the State and/or National Registers of Historic Places.
- National Historic Landmarks.
- Resources not identified by one of the programs listed above, but that meet their eligibility requirements.

The Proposed Action is limited to the authorization of the TLC to publicly sell 2,000 new taxi medallions and would not involve any new construction or alteration that could affect architectural resources, and would not result in any in-ground disturbance that could potentially affect archaeological resources. As a consequence, no significant adverse impacts to historic and cultural resources would occur as a result of the Proposed Action.

8.2 Analysis/Methodologies

Archaeological resources usually need to be assessed for projects that would result in any in-ground disturbance. In-ground disturbance is any disturbance to an area not previously excavated, including new excavation that is deeper and/or wider than previous excavation on the same site. Examples of projects that typically require assessment are:

- Above-ground construction resulting in-ground disturbance, including construction of temporary roads and access facilities, grading, or landscaping.
- Below-ground construction, such as installation of utilities or excavation, including that for footings or piles.

Analysis of archaeological resources typically is not necessary in the following circumstances:

- Projects that would not result in-ground disturbance.
- Projects that would result in disturbance only of areas that have already been recently excavated for other purposes, such as basements, concourses, sunken plazas, etc. However, if the area proposed to be excavated exceeds the previous disturbance in depth or footprint, archaeological assessment may be appropriate.
- Generally, architectural resources should be surveyed and assessed if the proposed project would result in any of the following, whether or not any known historic resources are located near the site of the project:
- New construction, demolition, or significant physical alteration to any building, structure, or object.
- A change in scale, visual prominence, or visual context of any building, structure, or object or landscape feature.
- Construction, including but not limited to, excavating vibration, subsidence, dewatering, and the possibility of falling objects.
- Additions to or significant removal, grading, or replanting of significant historic landscape features.
- Screening or elimination of publicly accessible views.
- Introduction of significant new shadows or significant lengthening of the duration of existing shadows on an historic landscape or on an historic structure if the features that make the structure significant depend on sunlight.

The Proposed Action is limited to the authorization of the TLC to publicly sell 2,000 new taxi medallions and would not involve any new construction or alteration that could affect architectural resources, and would not result in any in-ground disturbance that could potentially affect archaeological resources. Therefore, an historic and cultural resources assessment can be screened out based on guidance in the *2012 CEQR Technical Manual*.

8.3 Existing Conditions

As noted above, in conformance with *2012 CEQR Technical Manual*, a historic and cultural resources assessment is not required since the Proposed Action would not involve any new construction or alteration that could affect architectural resources, and would not result in any in-ground disturbance that could potentially affect archaeological resources.

8.4 Future Conditions without the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, a historic and cultural resources assessment is not required since the Proposed Action would not involve any new construction or alteration that could affect architectural resources, and would not result in any in-ground disturbance that could potentially affect archaeological resources.

8.5 Future Conditions with the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, a historic and cultural resources assessment is not required since the Proposed Action would not involve any new construction or alteration that could affect architectural resources, and would not result in any in-ground disturbance that could potentially affect archaeological resources.

8.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects that require in-ground disturbance, construction of new structures, or the alteration of existing structures, could result in significant adverse impacts to historic and cultural resources. The Proposed Action would not result in any in-ground disturbance that could potentially affect archaeological resources. Nor would the Proposed Action result in:

- New construction, demolition, or significant physical alteration to any building, structure, or object;
- A change in scale, visual prominence, or visual context of any building, structure, or object or landscape feature;

- Construction, including but not limited to, excavating vibration, subsidence, dewatering, and the possibility of falling objects;
- Additions to or significant removal, grading, or replanting of significant historic landscape features;
- Screening or elimination of publicly accessible views; or
- Introduction of significant new shadows or significant lengthening of the duration of existing shadows on an historic landscape or on an historic structure.

Therefore, in conformance with the *2012 CEQR Technical Manual*, the Proposed Action would not result in a significant impact on historic and cultural resources.

8.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to historic and cultural resources would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 9 – URBAN DESIGN AND VISUAL RESOURCES

9.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, an urban design assessment considers whether and how a project may change the experience of a pedestrian in the project area. The assessment focuses on the components of a proposed project that may have the potential to alter the arrangement, appearance, and functionality of the built environment. The Proposed Action is limited to the authorization of the TLC to publicly sell 2,000 new taxi medallions, and would not result in the construction of a new structure or alteration of an existing structure, nor would it require any zoning change. Consequently, as indicated in the EAS, no significant adverse impacts to urban design and visual resources would occur as a result of the Proposed Action.

9.2 Analysis/Methodologies

According to the *2012 CEQR Technical Manual*, an urban design is the totality of components that may affect a pedestrian's experience of public space. Elements that play an important role in that experience include: streets, buildings, visual resources, open space, natural features, and wind. In general, an assessment is needed when a project may have effects on one or more of these elements. There is no need to conduct an urban design analysis if a proposed project would be constructed within existing zoning envelopes, and would not result in physical changes beyond the bulk and form permitted as-of-right. A preliminary assessment is appropriate when there is the potential for a pedestrian to observe, from the street level, a physical alteration allowed by existing zoning, including the following:

1. Projects that permit the modification of yard, height, and setback requirements;
2. Projects that result in an increase in built floor area beyond what would be allowed as-of-right or in future without the proposed project.

A detailed assessment could be needed if the preliminary assessment cannot determine that a change to the pedestrian experience is minimal and unlikely to disturb the vitality, the walkability, or the visual character of the area. Examples of projects requiring a detailed assessment include projects that could potentially obstruct view corridors, compete with icons in the skyline, or make substantial alterations to the streetscape of a neighborhood by noticeably changing the scale of buildings.

The Proposed Action is limited to the authorization of the TLC to publicly sell 2,000 new taxi medallions and does not require a change in the built environment. The Proposed Action does not require any construction activities that would result in changes in bulk and form, or to the existing zoning, as described in Chapter 2 "Land Use, Zoning, and Public Policy." Therefore, an urban design and visual resources analysis can be screened out based on guidance in the *2012 CEQR Technical Manual*. Consequently, a preliminary or detailed assessment of urban design and visual resources is not required.

9.3 Existing Conditions

As noted above, in conformance with *2012 CEQR Technical Manual*, an urban design and visual resources assessment is not required since the Proposed Action would not require changes to the existing zoning, and would not result in changes to the bulk or form of the physical environment.

9.4 Future Conditions without the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, an urban design and visual resources assessment is not required since the Proposed Action would not require changes to the existing zoning, and would not result in changes to the bulk or form of the physical environment.

9.5 Future Conditions with the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, an urban design and visual resources assessment is not required since the Proposed Action would not require changes to the existing zoning, and would not result in changes to the bulk or form of the physical environment.

9.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects with the potential for a pedestrian to observe, from the street level, a physical alteration allowed by existing zoning, including modification of yard, height, and setback requirements; or an increase in built floor area beyond what would be allowed as-of-right or in future without the proposed project, could result in a significant adverse impacts on urban design and visual resources. The proposed sale of 2,000 medallions would not require the construction of any new structure or the alteration of an existing structure. No modifications to the existing zoning, or changes in bulk and form would occur. Therefore, the Proposed Action would not result in a significant adverse impact to urban design and visual resources.

9.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to urban design and visual resources would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 10 – NATURAL RESOURCES

10.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, natural resources include:

- plants, wildlife and other organisms;
- any aquatic or terrestrial areas capable of providing suitable habitat to sustain the life processes of plants, wildlife and other organisms; and
- any areas capable of functioning in support of the ecological systems that maintain the City's environmental stability.

As indicated in the *2012 CEQR Technical Manual,* a project would have a potential impact on natural resources if there is a natural resource on or near the project site and the project would disturb that natural resource. The Proposed Action consists of the addition of 2,000 taxi medallions that would primarily operate on New York City roadways, and not result in any ground disturbance or new construction. Therefore, it would not result in an effect on plants, wildlife or other organisms, would not affect any aquatic or terrestrial areas capable of providing suitable habitat to sustain the life processes of plants, wildlife or other organisms, and would not affect any areas capable of functioning in support of the ecological systems that maintain the City's environmental stability. Consequently, the Proposed Action would not result in a significant adverse impact to natural resources.

10.2 Analysis/Methodologies

Natural resources include ground water, soils and geologic features, natural and human-created aquatic and terrestrial habitats (including wetlands, dunes, beaches, grasslands, woodlands, landscaped areas, gardens, parks and built structures) and many areas used by wildlife. However, species classified as sensitive, vulnerable rare, special concern, threatened, endangered, or otherwise worthy of protection are to be given individual consideration.

Guidance in the *2012 CEQR Technical Manual* indicates that if the following are all true for a given project, then no natural resources assessment is necessary:

- The site of the project and the immediate adjacent area is substantially devoid of natural resources. Or, the project site either contains, or is near or contiguous to, natural resources or important subsurface conditions, but no activity associated with the project would disturb them, either directly or indirectly, as defined in the *2012 CEQR Technical Manual*.
- The project site contains no "built resource" that is known to contain or may be used as a habitat by a protected species as defined in the Federal Endangered Species Act (50 CFR 17) or the State's Environmental Conservation Law (6 NYCRR Parts 182 and 193).
- The project site contains no subsurface conditions, the disruption of which might affect the function or value of an adjacent or nearby natural resource.
- As determined by satisfying all of the above criteria, the proposed project involves the disturbance of a natural resource, but that disturbance has been deemed insignificant by a government agency with jurisdiction over that resource and conditions have not changed significantly since the permit was issued.

If the project does not meet all of these conditions or if it is unknown whether the project meets one or more of these conditions, some assessment of natural resources is appropriate.

The proposed sale of 2,000 taxi medallions is not site specific and would not result in any ground disturbance, would not result in use of any water body, or result in any structure that could potentially affect any natural resource. Any additional taxicabs resulting from the Proposed Action would primarily operate on City roadways. Therefore, the Proposed Action would not:

- either contain, or be near or contiguous to, natural resources or important subsurface conditions;
- contain any "built resource" that is known to contain or may be used as a habitat by a protected species as defined in the Federal Endangered Species Act (50 CFR 17) or the State's Environmental Conservation Law (6 NYCRR Parts 182 and 193); or
- contain any subsurface conditions.

Therefore, as indicated in the *2012 CEQR Technical Manual,* an assessment of the Proposed Action on natural resources is not required.

10.3 Existing Conditions

As noted above, in conformance with the *2012 CEQR Technical Manual*, a natural resources assessment is not required since the Proposed Action would not directly or indirectly affect a natural resource.

10.4 Future Conditions without the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a natural resources assessment is not required since the Proposed Action would not directly or indirectly affect a natural resource.

10.5 Future Conditions with the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a natural resources assessment is not required since the Proposed Action would not directly or indirectly affect a natural resource.

10.6 Identification of Significant Adverse Environmental Impacts

The Proposed Action would not directly or indirectly affect natural resources since it consists of the addition of 2,000 taxis that would primarily operate on City roadways. Therefore, in conformance with *2012 CEQR Technical Manual* screening criteria, it would not have the potential to result in a significant impact on natural resources, and neither a preliminary or detailed analysis is required to determine if the Proposed Action would result in a significant adverse impact to natural resources.

10.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to natural resources would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 11 – HAZARDOUS MATERIALS

11.1 Introduction and Study Area Delineation

Per the *2012 CEQR Technical Manual*, a hazardous materials assessment is warranted for projects which may increase the exposure of people or the environment to hazardous materials. Significant impacts to people or the environment can occur when:

- elevated levels of hazardous materials exist on a site and the project would increase human or environmental exposure;
- a project would introduce new activities or processes using hazardous materials and the risk of human or environmental exposure is increased; or
- a project would introduce potential human or environmental exposure from off-site sources.

The Proposed Action is not site specific, and would result in an additional 2,000 taxicabs operating on New York City roadways, therefore, as indicated in the EAS, the Proposed Action would not increase exposure to hazardous materials or result in any significant adverse impact on hazardous materials.

11.2 Analysis/Methodologies

Hazardous materials, as defined in the *2012 CEQR Technical Manual*, are substances that pose a threat to human health and the environment including, but not limited to, heavy metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), methane, polychlorinated biphenyls (PCBs), pesticides, polychlorinated dibenzodioxins and dibenzofurans (commonly referred to as dioxins), and other hazardous wastes. Hazardous wastes are defined under the regulations promulgated by the Resource Conservation and Recovery Act (RCRA) as solid waste that meets at least one of the four characteristics: ignitability, corrosivity, reactivity, and/or toxicity, or as identified in NYCRR Part 371.4.

Guidance provided in the *2012 CEQR Technical Manual* for a hazardous materials assessment begins with a study area delineation, which includes the project site, any excavation areas, and areas that might currently or may in the future affect the project site. A Phase I Environmental Site Assessment (ESA), in accordance with standards defined by the American Society of Testing and Materials (ASTM), is the next step. The Phase I ESA consists of a site specific qualitative evaluation on the environmental conditions present based on review of available information, site observations and interviews. During a Phase I ESA, potential Recognized Environmental Condition (REC) might be identified, for instance spilling or leaking of contaminants into soil or ground water, dispersed into soil vapor, ambient air, or contained in fugitive dust. If a potential REC is identified, a Phase II ESA follows where a building and subsurface investigation is then conducted to confirm the presence and extent of contamination.

The Proposed Action would entail the sale of 2,000 taxi medallions which would be implemented City-wide, and would not be a site specific project. As such, the Proposed Action would not result in any ground disturbance, nor would it increase exposure of the public or environment to hazardous materials. Consequently, a preliminary or detailed hazardous materials assessment is not warranted for the Proposed Action.

11.3 Existing Conditions

As previously noted, in conformance with the *2012 CEQR Technical Manual*, a hazardous materials assessment is not required since the Proposed Action is not site specific and would not increase exposure to hazardous materials.

11.4 Future Conditions without the Proposed Action

As previously noted, in conformance with the *2012 CEQR Technical Manual*, a hazardous materials assessment is not required since the Proposed Action is not site specific and would not increase exposure to hazardous materials.

11.5 Future Conditions with the Proposed Action

The Proposed Action is not site specific and entails the authorization of the TLC to publicly sell up to 2,000 new medallions. The Proposed Action would not require any new construction or in-ground disturbance. Consequently, the Proposed Action would not increase pathways to human or environmental exposure on a site with elevated levels of hazardous materials; introduce new activities or processes using hazardous materials causing the risk of human or environmental exposure to be increased; or introduce a population to potential human or environmental exposure from off-site sources.

Therefore, in conformance with *2012 CEQR Technical Manual* screening criteria, the Proposed Action would not have the potential to result in a significant impact on hazardous materials and a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact on hazardous materials.

11.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects that would increase hazardous materials exposure to people or the environment would require impacts to be studied and mitigated or avoided. The proposed sale of 2,000 medallions would not require any new construction or result in in-ground disturbance that would lead to human or environmental exposure. Consequently, the Proposed Action would not result in a significant adverse impact regarding hazardous materials.

11.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since the Proposed Action is not anticipated to result in significant adverse impacts associated with hazardous materials, no mitigation measures were identified.

CHAPTER 12 – WATER AND SEWER INFASTRUCTURE

12.1 Introduction and Study Area Delineation

This chapter provides an evaluation of the potential effect of the Proposed Action on the City's water supply, wastewater treatment, and stormwater management infrastructure. Per the *2012 CEQR Technical Manual*, the following types of projects require a preliminary infrastructure assessment and may require a detailed infrastructure analysis based on the conclusions of the preliminary assessment:

- Projects that would result in an exceptionally high demand for water (e.g., those that are projected to use more than one million gallons per day such as power plants, very large cooling systems, or large developments);
- Projects would be located in an area that experiences low water pressure;
- Projects that would greatly increase population density; or
- Projects that would substantially increase impervious surfaces.

The Proposed Action is not site specific, and would result in an additional 2,000 taxicabs operating on New York City roadways. Consequently, as indicated in the EAS, the Proposed Action would not result in significant adverse impacts to infrastructure systems.

12.2 Analysis/Methodologies

Per guidance established in the *2012 CEQR Technical Manual*, the first step in a water and wastewater infrastructure assessment is to identify the study area. The study area consists of the project site and extent of the water supply system it may affect, and the waste water treatment plant (WWTP) and the conveyance system comprising that plant's drainage basin and affected sewer system. The water supply preliminary assessment consist of identifying and describing existing water distribution system, existing water usage on the project site and predicting future no action and action water usage using established generation rates based on the predicted uses the project. The wastewater and stormwater preliminary assessment consists of identifying the existing wastewater and stormwater conveyance systems and the WWTP in the study area, determining existing and future sanitary flows and treated wastewater flows of the proposed project, and determining existing and future changes to the surfaces and drainage patterns in the study area.

The proposed sale of 2,000 taxi medallions is not site specific and would be implemented City-wide. No changes to the City's water supply or wastewater and stormwater systems would be required to implement the Proposed Action. Therefore, based on guidance in the *2012 CEQR Technical Manual,* a water and sewer infrastructure analysis is not required. Consequently, a preliminary or detailed hazardous materials assessment is not warranted for the Proposed Action.

12.3 Existing Conditions

As previously noted, in conformance with the *2012 CEQR Technical Manual*, a water and sewer infrastructure assessment is not required since the Proposed Action is not site specific and would not affect the City's water supply or wastewater and stormwater systems.

12.4 Future Conditions without the Proposed Action

As previously noted, in conformance with the *2012 CEQR Technical Manual*, a water and sewer infrastructure assessment is not required since the Proposed Action is not site specific and would not affect the City's water supply or wastewater and stormwater systems.

12.5 Future Conditions with the Proposed Action

The Proposed Action is not site specific and would result in up to 2,000 additional taxicabs that would primarily operate on New York City roadways. Regarding water supply, the Proposed Action would not result in an exceptionally large demand for water; nor does it involve a project site that is located in an area that experiences low water pressure. Regarding the demand on wastewater and stormwater conveyance and treatment, the Proposed Action would not increase population density; nor would it increase impervious surfaces. Therefore, in conformance with *2012 CEQR Technical Manual* screening criteria, a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact to water and sewer infrastructure.

12.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects that would affect the City's water supply, wastewater treatment, and stormwater management infrastructure could result in significant adverse impacts to the water and sewer infrastructure. The proposed sale of 2,000 medallions would not affect these systems and would not result in a significant adverse impact to the City's water and sewer infrastructure.

12.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to water and sewer infrastructure would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 13 – SOLID WASTE AND SANITATION SERVICES

13.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, a solid waste analysis should be provided for projects that would cause a substantial increase in solid waste production that would overburden available waste management capacity or otherwise be inconsistent with New York City's Solid Waste Management Plan (SWMP) or with state policy related to the City's integrated solid waste management system. The Proposed Action is not site specific and would be implemented City-wide. It is limited to the authorization of the TLC to publicly sell 2,000 new taxi medallions and would not result in solid waste generation associated with residential, institutional, commercial or industrial uses. In addition, it would not affect the City's SWMP or any state policy related to the City's integrated solid waste management system. Consequently, as indicated in the EAS, no significant adverse impacts to solid waste and sanitation services would occur as a result of the Proposed Action.

13.2 Analysis/Methodologies

Under CEQR, a solid waste and sanitation services analysis characterizes the waste management features of the project and determines the solid waste and service demand to be generated by a project. A preliminary assessment, which includes the quantification of solid waste generated by the project using City-wide average rates for waste generation provided in the *2012 CEQR Technical Manual*, is required for projects that would cause a substantial increase in solid waste production.

A detailed analysis is required if the Proposed Action would result in excess of 50 tons (100,000 pounds) of solid waste generated per week. The detailed analysis would be used to determine whether additional trucks or other sanitation services would be required as a result of the Proposed Action.

Regardless of the quantity of solid waste generated by a Proposed Action, a detailed discussion is required if a project would affect any of the goals or elements of the SWMP. This includes changes to any type of regulated solid waste management facility, DSNY district garage or borough repair shop, or change to regulations concerning private waste collection, processing, recycling or disposal activity.

The proposed sale of 2,000 taxi medallions is not site specific and would be implemented City-wide. No changes in solid waste and sanitation services would be required to implement the Proposed Action. Therefore, based on guidance in the *2012 CEQR Technical Manual,* an analysis of the impact of the Proposed Action on solid waste and sanitation services analysis would not be required.

13.3 Existing Conditions

As noted above, in conformance with the *2012 CEQR Technical Manual*, a solid waste and sanitation services assessment is not required since the Proposed Action would not generate solid waste or affect waste management services in the City.

13.4 Future Conditions without the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a solid waste and sanitation services assessment is not required since the Proposed Action would not generate solid waste or affect waste management services in the City.

13.5 Future Conditions with the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a solid waste and sanitation services assessment is not required since the Proposed Action would not generate solid waste or affect waste management services in the City.

13.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects that would affect land use or change the zoning on a site could result in significant adverse impacts to land use, zoning, or public policy. The proposed sale of 2,000 medallions would not result in solid waste generation associated with residential, institutional, commercial, and industrial uses, and would not affect the City's SWMP or any state policy related to the City's integrated solid waste management system. Therefore, the Proposed Action would not result in a significant adverse impact to solid waste and sanitation services in the City.

13.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to solid waste and sanitation services would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 14 – ENERGY

14.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, an energy assessment should be provided for projects that would affect energy transmission or generation. An assessment is typically conducted of the energy sources used in a project's operation, including electricity, fossil fuels, nuclear power and hydroelectric power. The Proposed Action is not site specific and would not involve any facility or structure which would affect the transmission or generation of energy. The Proposed Action is limited to the authorization of the TLC to publicly sell 2,000 new taxi medallions and would not require the generation of any additional energy or affect any energy transmission and distribution network. Therefore, as indicated in the EAS, no significant adverse impacts to energy would occur as a result of the Proposed Action.

14.2 Analysis/Methodologies

Under CEQR, an energy assessment characterizes a project's consumption of energy and potential effects on the transmission of energy as a result of the project. An energy assessment includes a calculation of the net operational energy consumed annually as a result of the project. Energy consumption can either be estimated or modeled using an energy modeling tool. Once the project's net energy consumption has been calculated, it may be necessary to confirm with the energy supplier that there would be no problems providing the additional load or installing service connections.

The proposed sale of 2,000 taxi medallions is not site specific and would be implemented City-wide. No new buildings would be constructed or operated as part of the Proposed Action, and therefore there would be no changes in energy transmission system or require the generation of additional electrical energy. Consequently, as indicated in guidance provided in the *2012 CEQR Technical Manual,* an assessment of the impact of the Proposed Action on energy is not required.

14.3 Existing Conditions

As noted above, in conformance with the *2012 CEQR Technical Manual*, an energy assessment is not required since the Proposed Action would not involve any facility that would affect the transmission or generation of energy.

14.4 Future Conditions without the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, an energy assessment is not required since the Proposed Action would not involve any facility that would affect the transmission or generation of energy.

14.5 Future Conditions with the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, an energy assessment is not required since the Proposed Action would not involve any facility that would affect the transmission or generation of energy.

14.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects that would could result in the need to provide additional generation capacity or changes to electrical transmission and distribution systems could require an energy impact assessment. The proposed sale of 2,000 medallions would not result in the need for additional electricity generation capacity nor would it affect the electrical transmission systems. Therefore, the Proposed Action would not result in a significant adverse impact to energy.

14.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to energy would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 15 – TRANSPORTATION

Provided in this chapter is an assessment of the potential impacts of the Proposed Action on transportation conditions. This assessment was conducted in accordance with the *2012 CEQR Technical Manual* and addresses the impact of the Proposed Action on traffic, parking, pedestrians, transit, and vehicular and pedestrian safety. Included are descriptions of Existing (2011) Conditions, Future (2017) Conditions without the Proposed Action, and Future (2017) Conditions with the Proposed Action, an assessment of whether the Proposed Action would result in any significant adverse transportation impacts as defined in the *2012 CEQR Technical Manual*, and the identification, as necessary, of measures to mitigate identified impacts. Since the medallions will be sold incrementally over three years, impact assessments were also completed for three intermediate analysis years (2014, 2015 and 2016).

15.1 Study Area

As depicted in Figure 15-1, the Study Area for the transportation analysis focuses on major areas of taxi activity in Lower Manhattan and the Midtown Manhattan CBD, as well as portals with high taxi volumes in Brooklyn and Queens. While taxis operate in all five boroughs, these locations were selected in coordination with New York City Department of Transportation (NYCDOT) and New York City Department of Environmental Protection (NYCDEP) as representative of the intersections with taxi volumes with the greatest potential to exceed the *2012 CEQR Technical Manual* threshold of 50 trips or more per hour. The *2012 CEQR Technical Manual* sets the baseline threshold for a detailed traffic analysis at 50 new project-related vehicle trips per hour traveling through an intersection. The sale of 2,000 new taxi medallions would increase the taxi fleet by approximately 15.1%. Assuming approximately equal percentage growth system-wide, this 15.1% increase would result in over 50 new taxis in one hour at a number of key intersections. In order to identify a set of critical study locations, TLC in coordination with NYCDOT and NYCDEP reviewed hourly taxi pick-up/drop-off data summarized by Census blocks for three traffic analysis periods: AM, Midday, and PM peak periods. Taxi Global Positioning System (GPS) data was also used to identify blocks (links) for a representative day with 50 or more pick-up/drop-off activities during the AM, Midday and PM peak periods. Furthermore, the prior Taxi Medallion EIS [CEQR #03TLC001Y] was reviewed

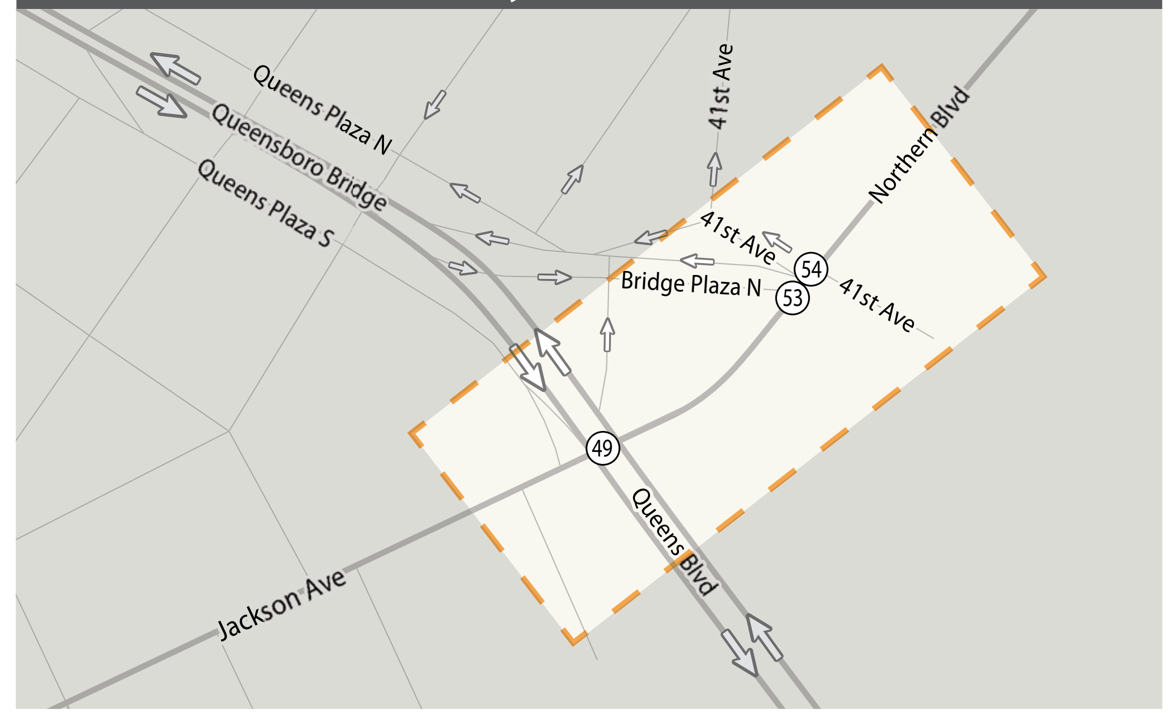
Taxi Medallion Increase - FEIS

FIGURE 15-1 | **Study Location Map**

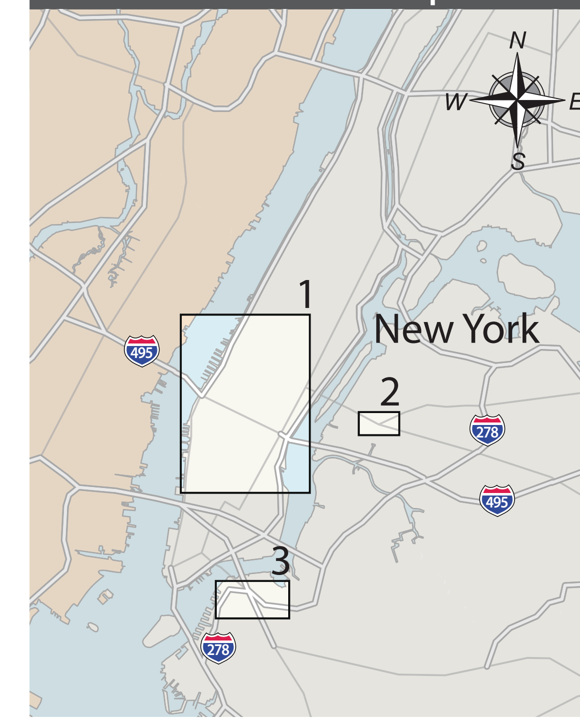
HDR NYC Taxi and Limousine Commission

1 – Manhattan Study Intersection Locations

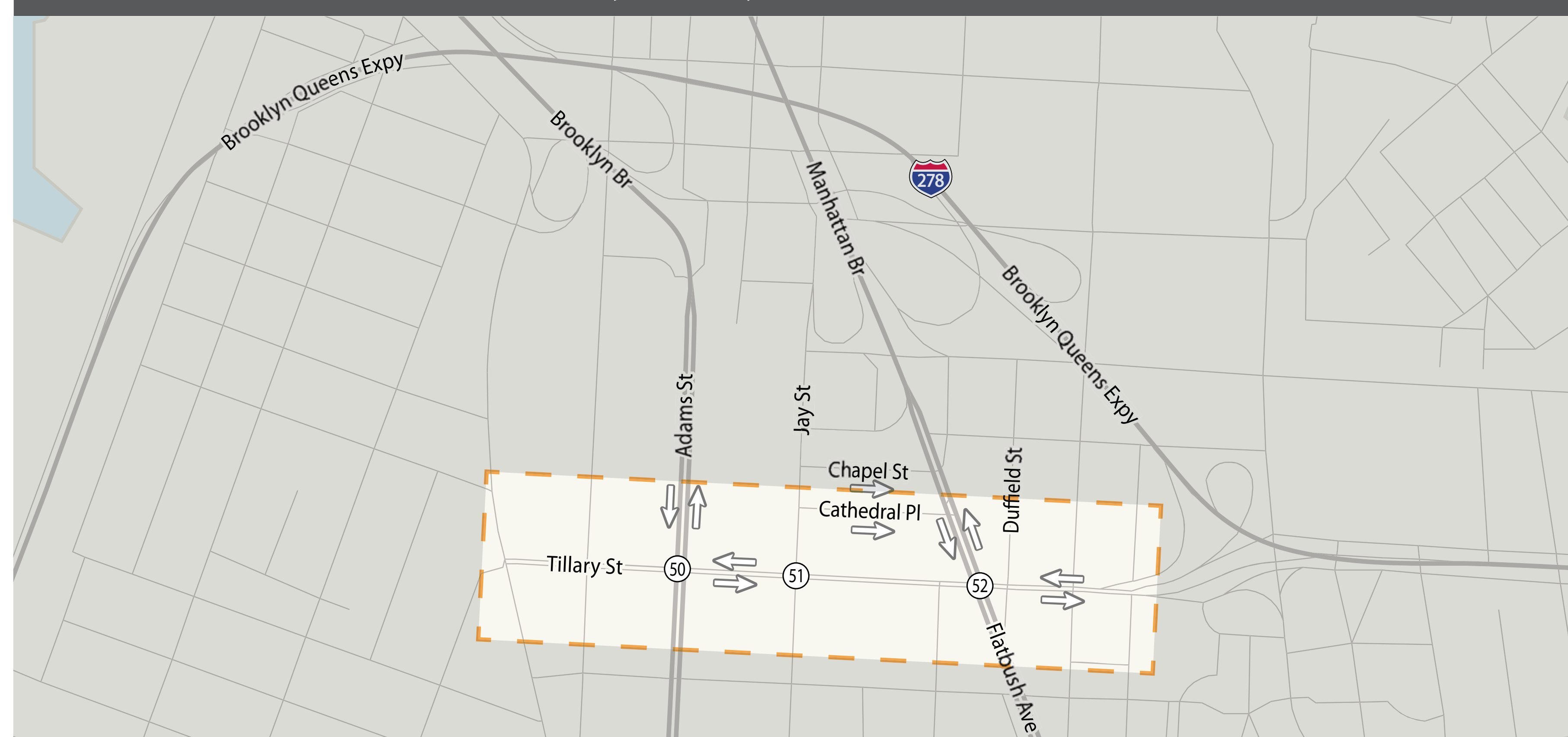
2 – Queens Study Intersection Locations



Location Map



3 – Brooklyn Study Intersection Locations



to verify the locations where traffic or air-quality impacts were identified. Finally, the following attributes were considered in the selection of the representative study intersections:

- Major origins/destinations (i.e., Penn Station, Grand Central Terminal, PA Bus Terminal, etc.);
- Intersections next to areas with the greatest concentration of taxi pick-up/drop-off volumes;
- High percentage of taxi cabs in baseline traffic;
- Taxi stands; and
- Portals with high taxi volumes (Brooklyn, Manhattan and Queens Borough Bridges).

Based on coordination with NYCDOT and NYCDEP, and review of the additional sources described above, 54 representative intersections were selected for the transportation impact analysis.

15.2 Traffic

The traffic analysis follows the *2012 CEQR Technical Manual* guidelines and conforms to NYCDOT standard protocols with regard to data collection, traffic forecasting, and intersection capacity analysis. With regard to the future with Proposed Action forecasts, the expected increase in taxi traffic due to the sale of the new medallions was estimated assuming the continuation of existing travel patterns with the Proposed Action, and a uniform 15.1% increase in taxi volumes throughout the roadway network. The following sections describe the detailed traffic impact analysis.

15.2.1 Data Collection

The description of Existing (2011) Conditions was based on data available from NYCDOT and additional field data collected for this ~~DEIS~~FEIS (See Appendix D). Data provided by NYCDOT included:

1. Manual Turning Movement Counts (MTMC) – Count data was provided for all 54 study intersections (see Table 15-1) for the time periods listed below. Included were separate

counts of taxis, commercial trucks, and other vehicles. Pedestrian crossing counts were also provided. The vehicular counts were collected in 15-minute increments on typical weekdays over a two-week period.

- Weekday AM Peak Period – 7:00AM to 10:00 AM
- Weekday Midday Peak Period – 11:00 AM to 2:00 PM
- Weekday PM Peak Period – 4:00 PM to 7:00 PM

2. Automatic Traffic Recorder Counts (ATRs) – Concurrent with the collection of the MTMC data collection, ATR counts were conducted at 42 locations, including both major streets and side streets throughout the study area. ATR count locations are identified in Figure 15-2.

3. Official Signal Timing – NYCDOT provided official signal timing sheets for the study intersections. The official signal timing was compared to the field signal timing and discrepancies were brought to the attention of NYCDOT for resolution.

4. Field Inventory – A field inventory sheet was provided for each intersection that illustrated lane widths, sign text and location, striping, and general physical geometry.

5. Speed Run Data -- NYCDOT provided speed run data for several of the major corridors within the study area.

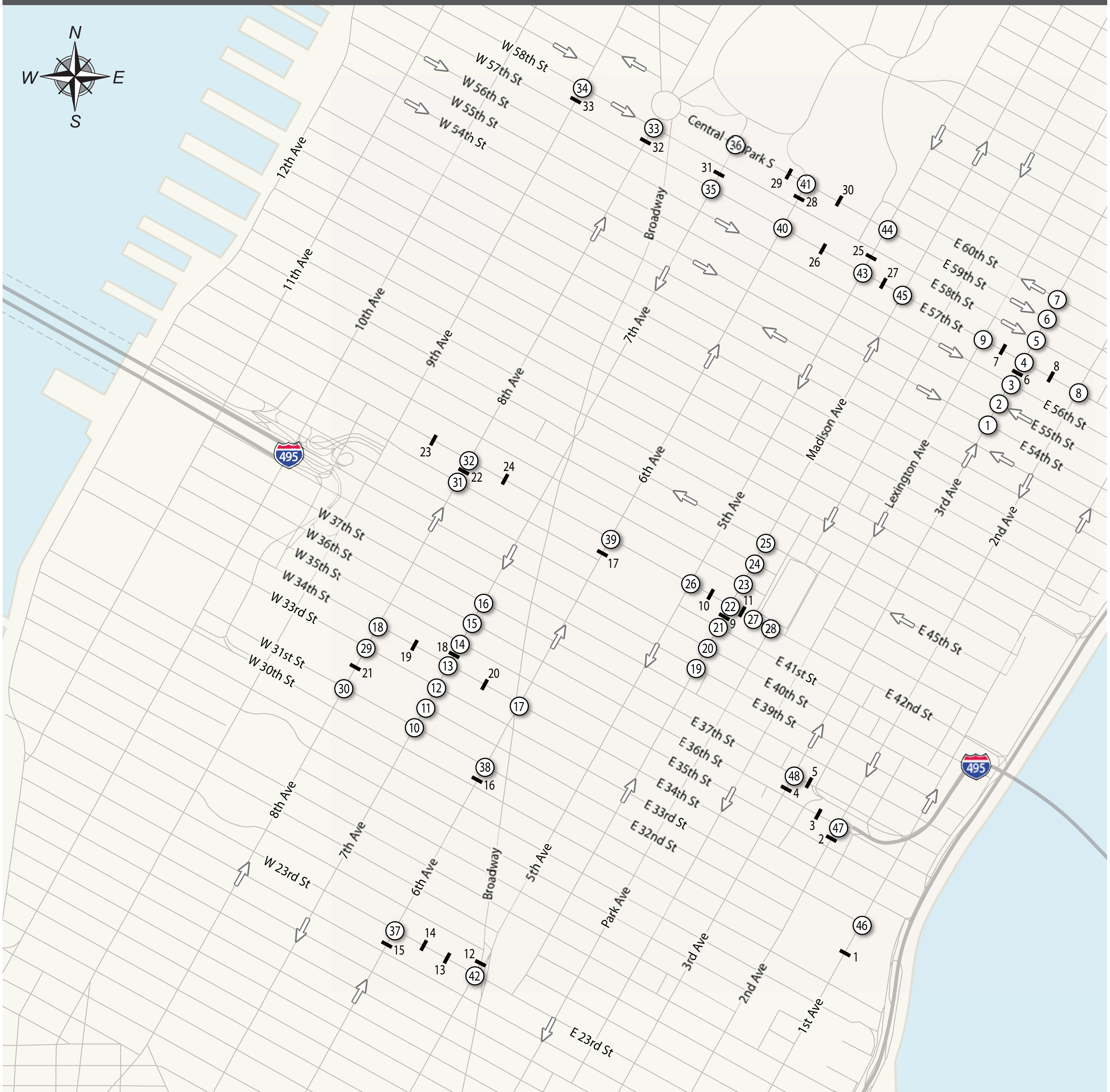
Table 15-1: List of Study Intersections

No.	Intersection Name	No.	Intersection Name
1	3rd Avenue and 54th Street	28	Park Avenue and 42nd Street
2	3rd Avenue and 55th Street	29	8th Avenue and 33rd Street
3	3rd Avenue and 56th Street	30	8th Avenue and 31st Street
4	3rd Avenue and 57th Street	31	8th Avenue and 41st Street
5	3rd Avenue and 58th Street	32	8th Avenue and 42nd Street
6	3rd Avenue and 59th Street	33	8th Avenue and 58th Street
7	3rd Avenue and 60th Street	34	9th Avenue and 58th Street
8	2nd Avenue and 57th Street	35	7th Avenue and 57th Street
9	Lexington Avenue and 57th Street	36	7th Avenue and Central Park South
10	7th Avenue and 31st Street	37	6th Avenue and 23rd Street
11	7th Avenue and 32nd Street	38	6th Avenue and 31st Street
12	7th Avenue and 33rd Street	39	6th Avenue and 42nd Street
13	7th Avenue and 34th Street	40	6th Avenue and 57th Street
14	7th Avenue and 35th Street	41	6th Avenue and Central Park South
15	7th Avenue and 36th Street	42	5th Avenue and 23rd Street
16	7th Avenue and 37th Street	43	5th Avenue and 57th Street
17	6th Avenue and 34th Street	44	5th Avenue and Central Park South
18	8th Avenue and 34th Street	45	Madison Avenue and 57th Street
19	Madison Avenue and 39th Street	46	1st Avenue and 33rd Street
20	Madison Avenue and 40th Street	47	2nd Avenue and 36th Street
21	Madison Avenue and 41st Street	48	3rd Avenue and 37th Street
22	Madison Avenue and 42nd Street	49	Queens Plaza S and Northern Boulevard
23	Madison Avenue and 43rd Street	50	Tillary Street and Adams Street
24	Madison Avenue and 44th Street	51	Tillary Street and Jay Street
25	Madison Avenue and 45th Street	52	Tillary Street and Flatbush Avenue
26	5th Avenue and 42nd Street	53	Queens Plaza N and Northern Boulevard
27	Vanderbilt Avenue and 42nd Street	54	41st Avenue and Northern Boulevard

2011 Taxi Medallion Increase - FEIS

FIGURE 15-2 | **Existing MTMC and ATR Location Map**

Manhattan Location Map



LEGEND:

- MTMC Locations
- ATR Locations

In addition to the data supplied by NYCDOT, the following data was collected for this ~~DEIS~~FEIS:

1. Field observations – Peak period field observations were performed to verify actual intersection operations including queues, loading, parking, presence of traffic officers, and estimated levels of service.

2. Field signal timing – Signal timing data was collected for intersections where differences between the official signal timing and signal timing data provided for this ~~DEIS~~FEIS by NYCDOT could not be readily resolved.

15.2.2 Peak Hour Determination

The traffic analysis peak hours were determined based on detailed evaluations of the manual turning movement and automatic traffic recorder counts and general knowledge of traffic patterns in the study areas. The manual turning movement and automated traffic recorder counts were conducted in 15-minute intervals, allowing for the calculation of rolling 60-minute traffic volumes. Rolling 60-minute values were summed for all intersections within each Borough to identify the peak traffic hours. Upon review by NYCDOT, it was determined that an assessment of traffic impacts would be completed for the following time periods.

- 8:00 – 9:00 AM (AM Peak Hour)
- 12:00 – 1:00 PM (Midday Peak Hour)
- 5:00-6:00 PM (PM Peak Hour)

Estimates of traffic volumes entering and leaving the 54 intersections selected for study for all three time periods were used to develop “balanced roadway networks.” The traffic data source that indicated the highest traffic volumes was used to estimate volumes through each intersection.

15.2.3 Levels of Service and CEQR Impact Thresholds

Level of service (LOS) describes the level of congestion at an intersection or on a roadway based on an A-through-F letter rating system. For an intersection, LOS A describes traffic operations with little or no intersection delay (few vehicles stop). Delay is progressively higher for LOS B and C, though delay is still modest and many vehicles do not stop at the intersection. LOS D indicates noticeable congestion, longer delays, and higher volume/capacity ratios. LOS E describes a condition very near capacity with heavy congestion, long delays, and high volume/capacity ratios. LOS F indicates an over capacity condition, with arriving traffic exceeding the lane group and/or intersection capacity. LOS F conditions result in significant delays and long queues.

For signalized intersections, the delay values associated with LOS are:

LOS A: ≤ 10 seconds of average vehicle control delay
LOS B: > 10 – 20 seconds of average vehicle control delay
LOS C: > 20 – 35 seconds of average vehicle control delay
LOS D: > 35 – 55 seconds of average vehicle control delay
LOS E: > 55 – 80 seconds of average vehicle control delay
LOS F: > 80 seconds of average vehicle control delay

The *2012 CEQR Technical Manual* identifies mid-level LOS D or better (45.0 seconds of delay or less) as an acceptable LOS for signalized intersections. The *2012 CEQR Technical Manual* also indicates that a significant adverse traffic impact is considered to occur if a proposed action results in any the following:

- A lane group that operates at LOS A through C in the Without Proposed Action condition and deteriorates under the With Proposed Action condition to worse than mid-LOS D (greater than 45 seconds/vehicle delay).
- A lane group that operates at LOS D in the Without Proposed Action condition and is projected to have a delay increase of 5.0 seconds/vehicle or more if the With Proposed Action delay exceeds 45.0 seconds/vehicle.
- For a lane group that operates at LOS E in the Without Proposed Action condition, a delay increase of 4.0 seconds or more.
- For a lane group that operates at LOS F in the Without Proposed Action condition, a delay increase of 3.0 seconds or more.

15.2.4 Existing (2011) Traffic Volumes

To describe existing (2011) volumes on the roadway network, estimates were prepared quantifying the number of taxis, other vehicles and total vehicles that would pass through each intersection in the network during the AM, Midday, and PM peak hours. The volumes at adjacent intersections were adjusted to be consistent with each other, taking into account the location of parking garages or other "sinks" or "sources" on intervening roadway segments. Available 3-weekday average ATR data was also examined where there were large differences between intersection turning movement volumes and ATR volumes. If adjacent intersections were counted on different days, often the larger traffic volume was used; however, an average traffic volume may have been used, depending on what was more reasonable for balancing the rest of the traffic network. Resulting Existing Conditions "balanced" volume roadway network diagrams for each peak hour were reviewed and approved by NYCDOT.

15.2.5 Preliminary Existing Calibrations

The balanced existing traffic volume data and the other supporting data (geometrics, official signal timing, detailed field inventory information, etc.) were used to develop preliminary existing peak hour Synchro files. Capacity analyses were conducted for the study intersections to determine the existing traffic operating conditions within the Study Area. This study used the Synchro (Version 7) intersection analysis software to calculate vehicular delay at the study intersections. Synchro reports two types of vehicles delays: control delay and queue delay. It also reports the combined total delay. Control delays are used for analyzing the effects of coordination, actuation, and congestion. It is the component of delay caused by the downstream control device and does not include queue delay (effects of queues and blocking on short links and short turning bays).

These initial Synchro files were examined to identify intersections that clearly did not match the observed field conditions or showed unreasonable volume-to-capacity ratios (>1.05). The identified locations were calibrated to provide more accurate results. This effort included adjusting a number of key factors, such as parking activity, lane utilization, saturation flow, bus activity, extension of effective green, speeds, lane use assumptions, and others. All of these changes were made cooperatively with NYCDOT Division of Traffic Operations.

15.2.6 Existing Conditions

Existing (2011) Conditions include traffic flow patterns on major roadways and a presentation of the current delay and levels of service at the 54 study intersections. To facilitate the discussion and analysis, the Manhattan study area has been subdivided into three major areas (north, east, and west). Intersections in Brooklyn and Queens are addressed under the individual borough.

15.2.6.1 Peak Hour Traffic Volumes and Geometry

Manhattan-North (See Figure 15-3)

Third Avenue (54th Street to 60th Street) – Third Avenue is a north-south principal arterial that begins at 6th Street near New York University in the south and runs one-way north to Harlem (128th Street) and beyond. In the study area, Third Avenue has between four and seven northbound through lanes depending on the peak period and location. At 59th Street two lanes turn east to provide direct access to the Queensboro Bridge. Further south in the vicinity of 54th Street to 56th Street there is a single northbound bus lane. Parking and loading/standing are restricted on some blocks during certain times of the day. Traffic volumes on Third Avenue are between 1,650 and 2,200 in the AM peak hour; between 1,450 and 1,900 in the Midday peak hour; and between 1,500 and 1,950 in the PM peak hour. The northbound through taxi volumes and percentages on Third Avenue are shown in Table 15-2b.

57th Street (Seventh Avenue to Second Avenue) – 57th Street is an east-west principal arterial crossing Manhattan just south of Central Park. It provides an important cross connection route from Twelfth Avenue (Joe DiMaggio Hwy) to the Queensboro Bridge ramps and vicinity. Within the study area, 57th Street is a two-direction six-lane roadway with one lane in each direction designated as a bus-only lane during the morning and afternoon peak periods

These outside lanes are typically used for parking and loading during the Midday. This reduces it to a four-lane roadway with right-turn lanes for non-bus traffic. Traffic volumes on 57th Street are between 1,350 and 1,900 in the AM peak hour; between 950 and 1,800 in the Midday peak hour; and between 1,100 and 1,900 in the PM peak hour. Traffic drops off east of Second Avenue and is generally highest west of Seventh Avenue. The eastbound and westbound through taxi volumes and percentages on 57th Street are shown in Table 15-2a.

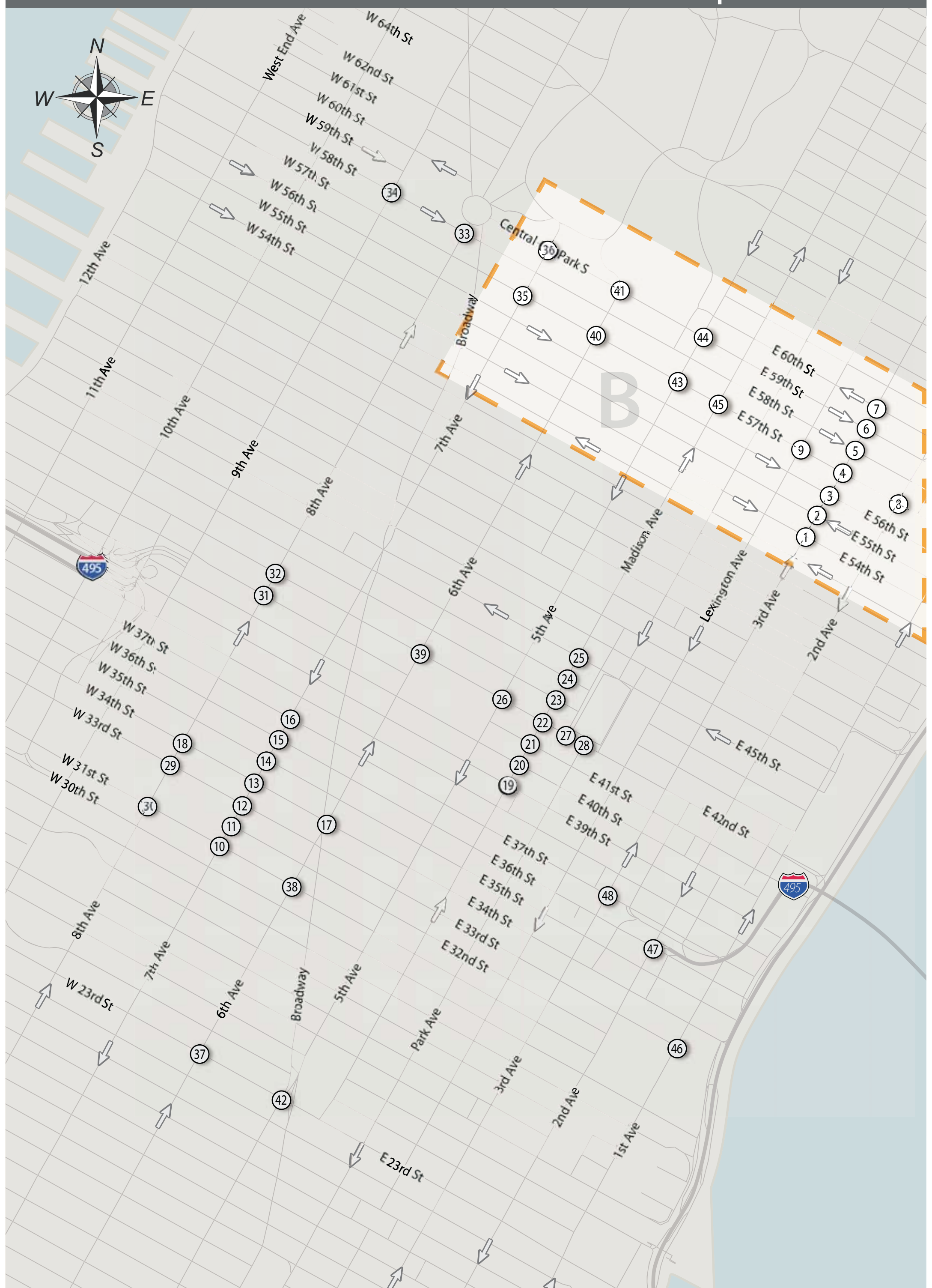
2011 Taxi Medallion Increase - FEIS

FIGURE 15-3 | Existing AM, Midday, and PM Peak Hour Volumes (Manhattan-North)

HDR

NYC Taxi and Limousine Commission

Manhattan-North Location Map



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#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes

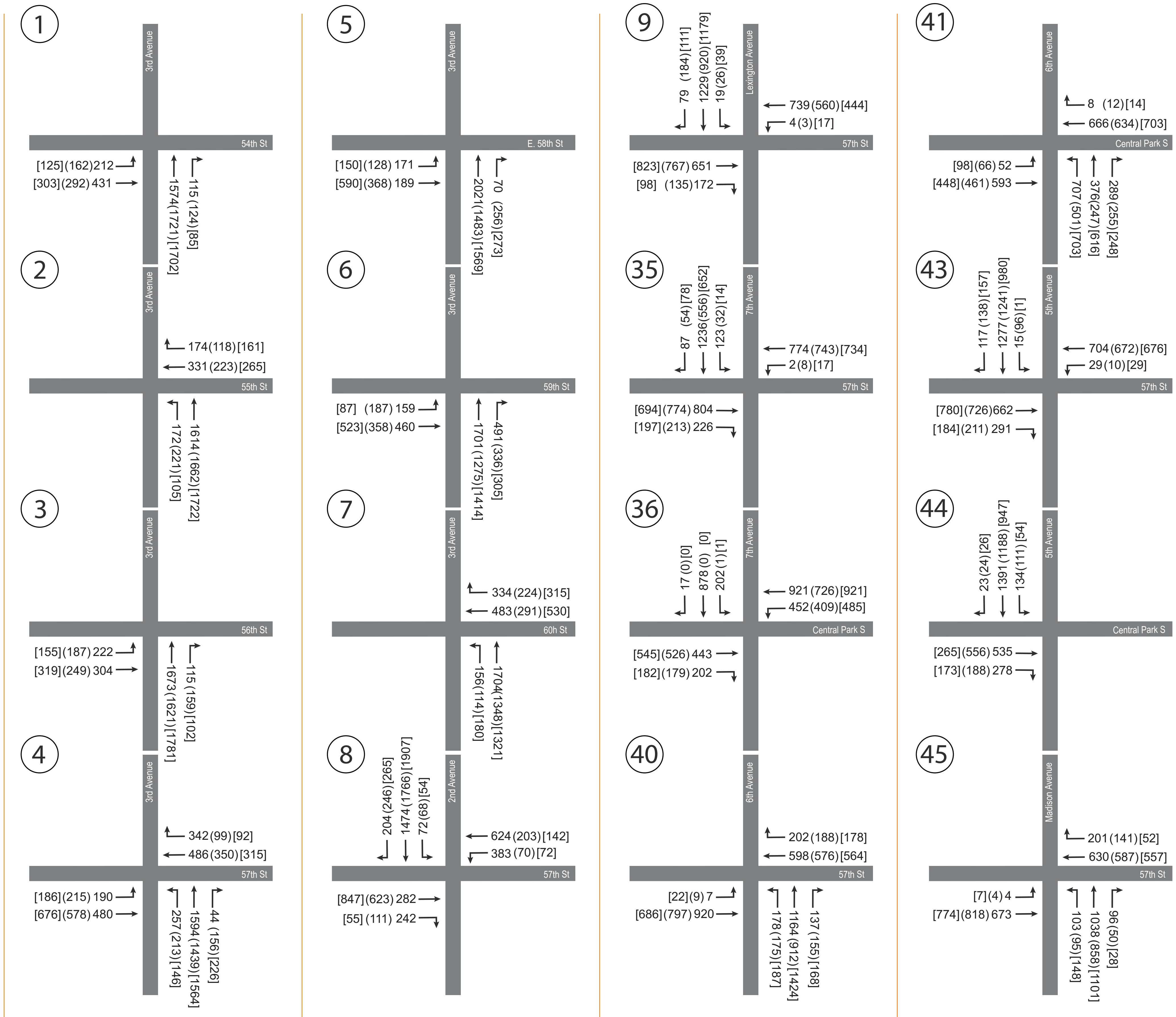


Table 15-2a: Existing Taxi Volumes and Percentages (East-West)

Corridor / Intersection Name	Intersection ID	AM Peak Hour				MIDDAY Peak Hour				PM Peak Hour			
		Eastbound		Westbound		Eastbound		Westbound		Eastbound		Westbound	
		Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage
34th Street													
6th Avenue	17	34	7%	189	31%	46	11%	252	35%	77	19%	172	24%
7th Avenue	13	34	7%	179	33%	46	11%	252	36%	77	19%	172	24%
8th Avenue	18	32	7%	121	30%	37	11%	135	28%	45	15%	84	17%
42nd Street													
Park Avenue	28	185	39%	394	52%	303	43%	386	46%	229	42%	347	43%
Vanderbilt Avenue	27	342	49%	389	52%	303	43%	301	45%	229	42%	332	43%
Madison Avenue	22	299	47%	385	52%	262	42%	296	46%	221	44%	328	43%
5th Avenue	26	299	46%	398	53%	262	42%	300	46%	221	44%	334	43%
6th Avenue	39	214	39%	284	52%	217	38%	200	45%	131	32%	185	36%
8th Avenue	32	86	20%	128	38%	96	26%	119	33%	48	21%	61	20%
57th Street													
2nd Avenue	8	60	21%	105	17%	175	28%	66	33%	90	11%	40	28%
3rd Avenue	4	116	24%	72	15%	168	29%	53	15%	87	13%	45	14%
Lexington Avenue	9	137	21%	181	24%	214	28%	129	23%	103	13%	79	18%
Madison Avenue	45	292	39%	184	29%	235	29%	175	30%	153	20%	174	31%
5th Avenue	43	282	38%	224	32%	205	28%	219	33%	153	20%	222	33%
6th Avenue	40	421	46%	151	25%	288	36%	157	27%	229	30%	176	28%
7th Avenue	35	339	42%	252	33%	271	35%	229	31%	228	30%	227	28%
59th Street													
3rd Avenue	6	29	6%	0	0%	38	11%	0	0%	50	10%	0	0%
5th Avenue	44	222	41%	0	0%	205	37%	0	0%	31	12%	0	0%
6th Avenue	41	255	43%	222	33%	188	41%	276	44%	168	38%	236	34%
7th Avenue	36	187	42%	502	55%	235	45%	381	52%	223	41%	436	47%
23rd Street													
5th Avenue	42	311	46%	169	38%	189	35%	149	32%	231	41%	174	35%
6th Avenue	37	305	47%	126	35%	166	34%	120	30%	207	40%	149	33%
Tillary													
Flatbush Avenue	52	9	1%	15	2%	16	2%	11	2%	23	3%	25	4%
Jay Street	51	42	5%	35	4%	36	5%	21	3%	30	3%	64	6%
Adams Street	50	23	7%	10	3%	14	4%	3	1%	16	5%	16	3%
North Boulevard													
41st Avenue	54	68	7%	37	4%	57	7%	23	3%	210	14%	164	15%
Bridge Plaza N	53	20	5%	5	2%	13	4%	2	1%	37	11%	7	3%
Queens Boulevard	49	21	5%	4	1%	9	4%	2	1%	54	16%	4	2%

Table 15-2b: Existing Taxi Volumes and Percentages (North-South)

Corridor/Intersection Name	Intersection ID	AM Peak Hour				MIDDAY Peak Hour				PM Peak Hour			
		Northbound		Southbound		Northbound		Southbound		Northbound		Southbound	
		Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage	Taxi Through Volumes	Taxi Percentage
3rd Avenue													
59th Street	6	760	45%	0	0%	531	42%	0	0%	512	36%	0	0%
57th Street	4	658	41%	0	0%	462	32%	0	0%	527	34%	0	0%
Madison Avenue													
57th Street	45	601	58%	0	0%	446	52%	0	0%	363	33%	0	0%
42nd Street	22	587	47%	0	0%	660	58%	0	0%	456	39%	0	0%
7th Avenue													
Central Park S	36	0	0%	565	64%	0	0%	0	0%	0	0%	0	0%
57th Street	35	0	0%	712	58%	0	0%	256	46%	0	0%	325	50%
34th Street	13	0	0%	1087	63%	0	0%	899	52%	0	0%	1104	58%
8th Avenue													
42nd Street	32	907	56%	0	0%	713	49%	0	0%	591	41%	0	0%
34th Street	18	566	45%	0	0%	619	49%	0	0%	679	50%	0	0%

Central Park South / 59th Street (Seventh Avenue to Fifth Avenue) – This principal arterial runs along the southern edge of Central Park between Columbus Circle and Grand Army Plaza. From Grand Army Plaza it continues one-way to the east as 59th Street. Along the edge of the park, the roadway has two through lanes and some left and right turn lanes in each direction. Parking, loading, and bus stops typically occupy the curb lanes in both directions. Traffic volumes on Central Park South between Fifth Avenue and Seventh Avenue are between 1,550 and 2,050 in the AM peak hour; between 1,350 and 1,700 in the Midday peak hour; and between 1,400 and 2,000 in the PM peak hour. The eastbound and westbound through taxi volumes and percentages on Central Park South / 59th Street are shown in Table 15-2a.

Manhattan-West (See Figure 15-4)

Seventh Avenue (Fashion Avenue) – This is a one-way southbound principal arterial connecting Central Park South to West Houston Street (Hudson Square area). In the Study Area, Seventh Avenue serves the Garment District and passes east of Penn Station. Seventh Avenue in this area has four southbound through lanes. Additional roadway width is used for a bus only lane on the west side as well as parking, loading, and taxi activity. The bus only lane is not present in front of Penn Station and in fact is replaced for a short distance by a taxi only lane. Traffic volumes on Seventh Avenue are typically 1,400 to 1,900 during the three study peak hours, with the PM peak hour volumes being slightly higher than the other two peaks. The southbound through taxi volumes and percentages on Seventh Avenue are shown in Table 15-2b.

West 34th Street – West 34th Street is an east-west primary arterial crossing Manhattan from Twelfth Avenue to the East River. In the Study Area it runs one block north of Penn Station and is an imbalanced roadway with two westbound through lanes and one eastbound through lane for general traffic. There are also single lane bus lanes in each direction during all three peak periods. Traffic volumes on 34th Street between Eighth Avenue and Sixth Avenue are approximately 1,000 to 1,200 during the three peak hours. The eastbound and westbound through taxi volumes and percentages on 34th Street are shown in Table 15-2a.

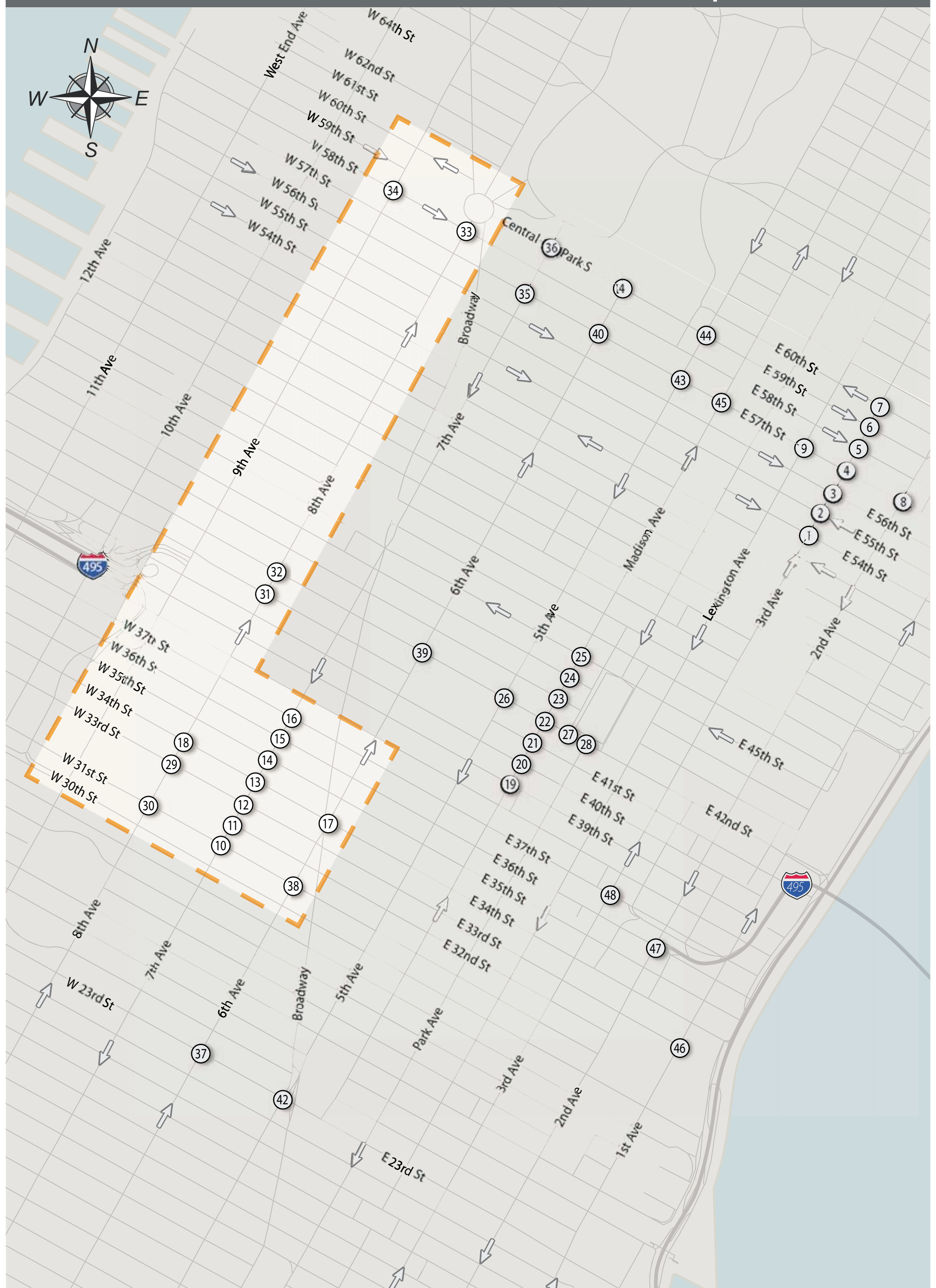
Eighth Avenue – This is a one-way northbound principal arterial connecting the West Village area with Columbus Circle and beyond. In the Study Area it passes through the Garment District and runs west of Penn Station. It has four northbound through lanes in the vicinity of Penn

2011 Taxi Medallion Increase – FEIS

FIGURE 15-4 | Existing AM, Midday, and PM Peak Hour Volumes (Manhattan-West)

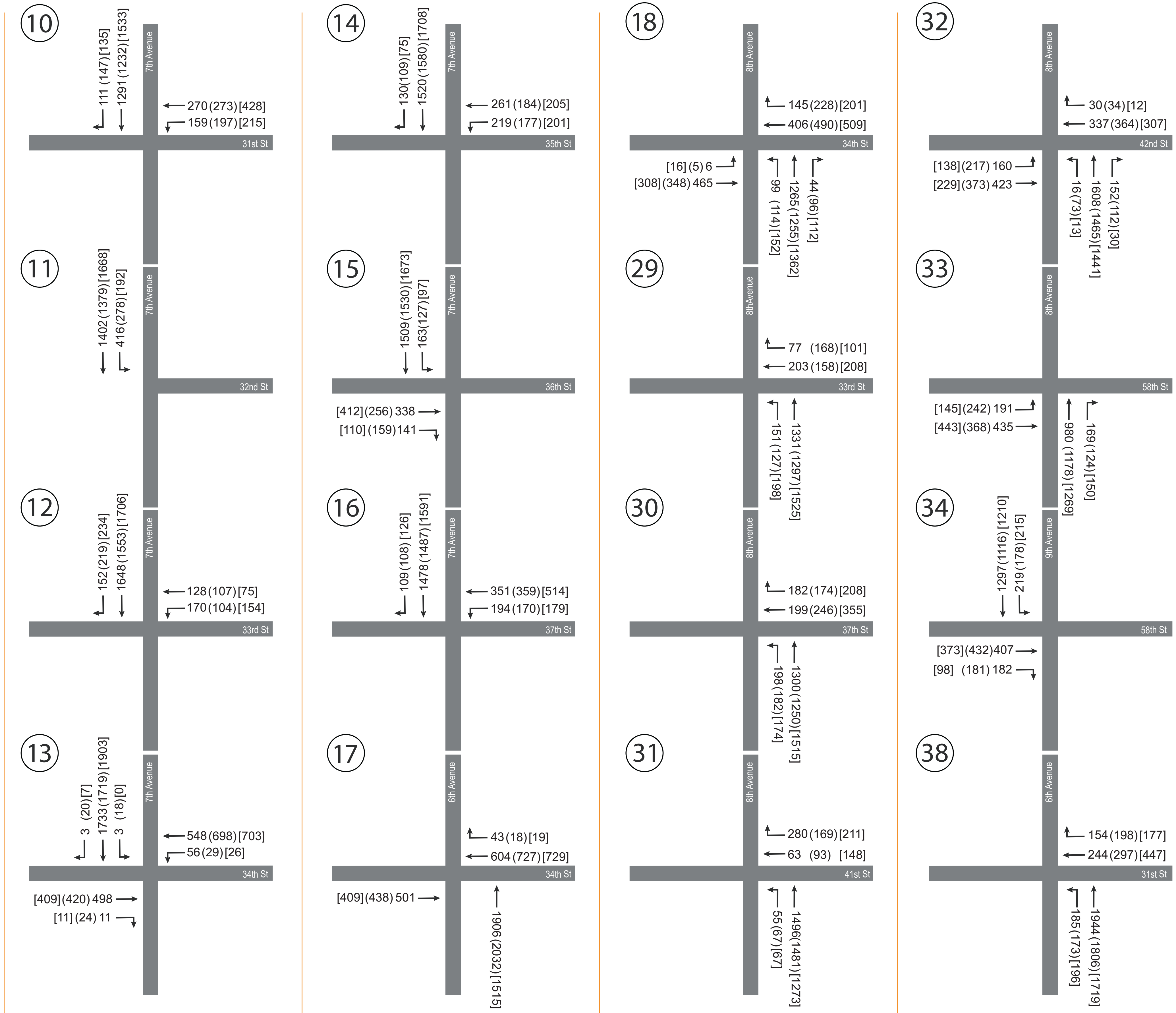
HDR | NYC Taxi and Limousine Commission

Manhattan-West Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



Station (near 34th Street). At 41st Street, Eighth Avenue has five northbound through lanes; however, the two left lanes are designated for taxi traffic only. One of these taxi only lanes becomes an exclusive left-turn lane at 42nd Street. Parking, loading, and bike lanes are present throughout the corridor using the additional pavement width. Peak hour traffic volumes on Eighth Avenue north of 33rd Street are 1,400 to 1,700, with the higher volumes in the PM peak hour. South of 42nd Street, the peak hour volumes on Eighth Avenue are 1,450 to 1,800, with the higher volumes in the AM peak hour. The northbound through taxi volumes and percentages on Eighth Avenue are shown in Table 15-2b.

Sixth Avenue (Avenue of the Americas) – This is a one-way northbound primary arterial. The Study Area has four through lanes with parking, loading, and a bike lane on one or both sides. Traffic volumes are approximately 1,900 to 2,200 in the three peak hours, though they are lower in the PM peak hour near 34th Street.

Other Locations – The last two locations in this portion of Manhattan are Ninth Avenue and 58th Street and Eighth Avenue and 58th Street. Eighth Avenue is a northbound principal arterial with four through lanes and Ninth Avenue is a southbound principal arterial with four through lanes. 58th Street is an eastbound minor arterial with one to two through lanes and parking. The two intersections are located near Columbus Circle. The approach volumes on the Avenues exceed one thousand during all three peak hours. The volume on 58th Street between the two intersections is approximately 600 vehicles per hour during all three peak hours.

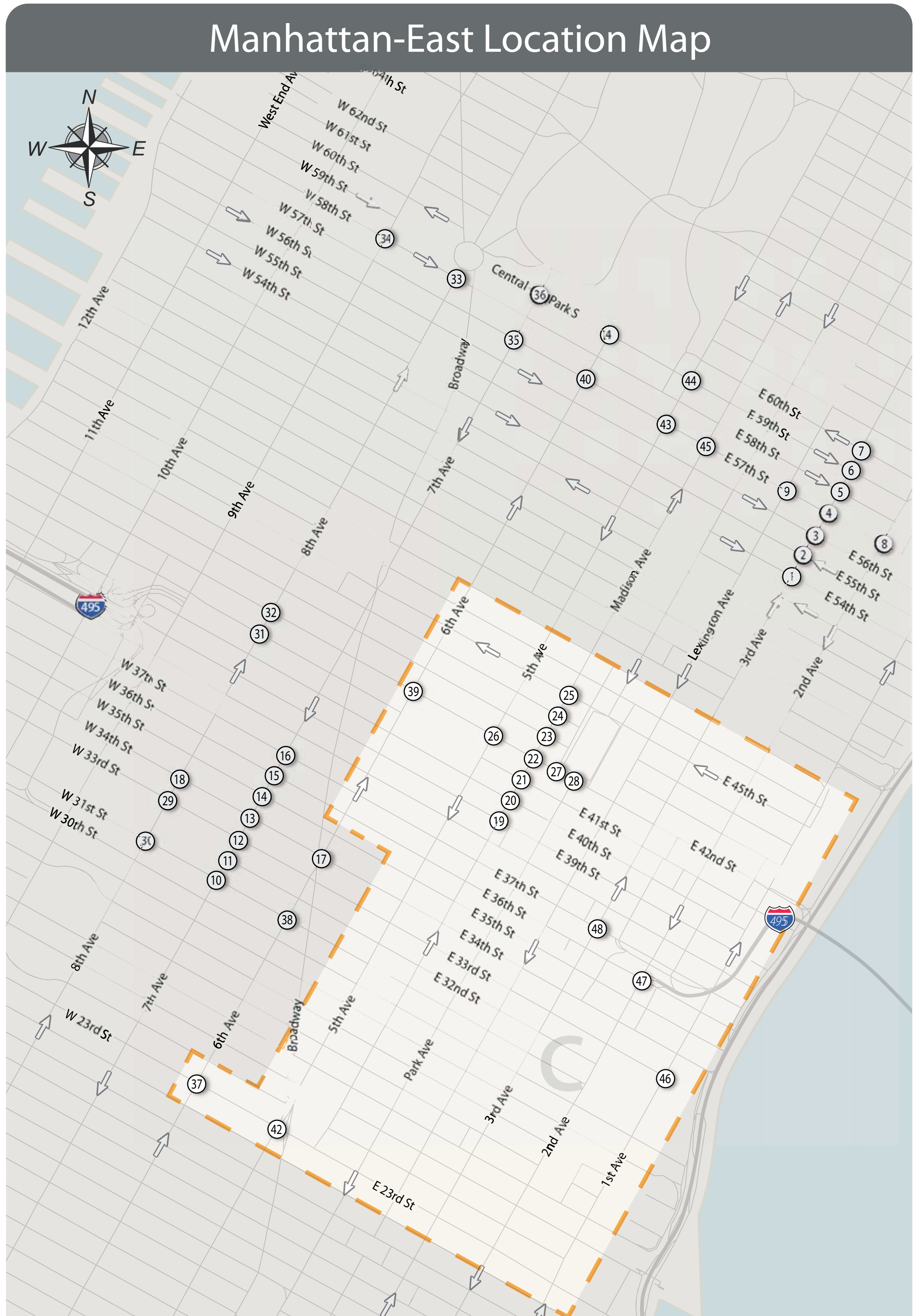
Manhattan-East (See Figure 15-5)

East 42nd Street – This east-west primary arterial runs from Hell's Kitchen in the west to Tudor City in the east, connecting the Port Authority Bus Terminal, Grand Central Station and the United Nations. 42nd Street has two through lanes in each direction, as well as outside bus lanes in effect during the AM and PM peak periods (on many of the study blocks). There is often parking or loading when (and where) the bus lanes are not in effect. Traffic volumes on 42nd Street between Fifth Avenue and Madison Avenue are approximately 1,400 in the AM peak hour and 1,300 during the Midday and PM peak hours. Traffic in this location tends to be slightly heavier in the westbound direction. The eastbound and westbound through taxi volumes and percentages on East 42nd Street are shown in Table 15-2a.

2011 Taxi Medallion Increase - FEIS

FIGURE 15-5 | Existing AM, Midday, and PM Peak Hour Volumes (Manhattan-East)

HDR NYC Taxi and Limousine Commission



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Study Intersection Location ID

000(000)[000] AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

Madison Avenue – Madison Avenue is a northbound minor arterial that begins in the Flatiron District (Madison Square Park) and continues north the length of Manhattan. In the Study Area, it intersects with 42nd Street. It typically has three or four general traffic through lanes depending on the location and peak hour. Two bus-only lanes are in operation north of 42nd Street during the PM peak hour. There is parking and standing/loading activity on one or both sides on different blocks depending on the peak hour. Traffic volumes on Madison Avenue between 39th Street and 45th Street are generally between 1,100 and 1,500 vehicles per hour with the highest volumes just north of 44th Street (most blocks are between 1,200 and 1,300 vehicles per hour during all three peak hours). The northbound through taxi volumes and percentages on Madison Avenue are shown in Table 15-2b.

23rd Street – This roadway is an east-west principal arterial with 2 or 3 lanes in each direction depending on the location and peak hour. Traffic volumes between Fifth and Sixth Avenues are approximately 1,200 to 1,300 vehicles per hour during the three peak hours. The eastbound and westbound through taxi volumes and percentages on 23rd Street are shown in Table 15-2a.

Other Intersections – The three remaining intersections in the Manhattan East portion of the Study Area are located on First, Second and Third Avenues on east side of Manhattan. Two are heavily travelled intersections near the Queens Midtown Tunnel and the other is near the United Nations complex. Of the three intersections, the traffic volumes at the Second Avenue and 36th Street intersection are the highest with over 3,300 entering vehicles per hour in the AM and PM peak hours.

Brooklyn (See Figure 15-6)

Tillary Street – This east-west principal arterial runs along the north edge of Downtown Brooklyn. It both serves and is traversed by traffic headed to and from the Brooklyn Bridge and Manhattan Bridge. It also provides a critical connection to and between Brooklyn Heights (Cadman Plaza) and the Brooklyn Queens Expressway. In the Study Area, Tillary Street has two or three through lanes in each direction (depending on location) and numerous left and right turn lanes. Parking is allowed on many of the blocks and there are bike lanes west of Jay Street on the north side of the roadway. Traffic on Tillary Street is highest between Adams Street

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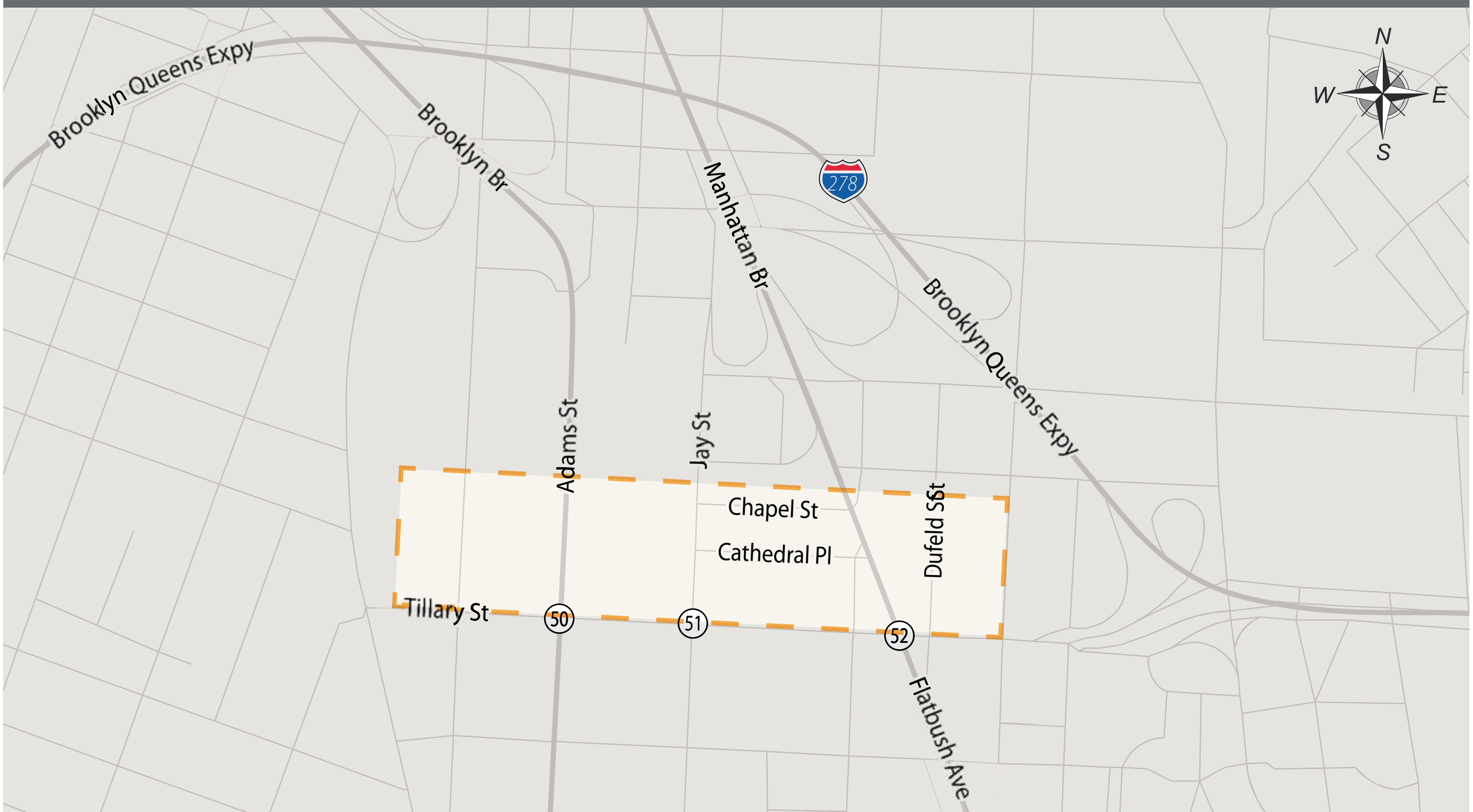
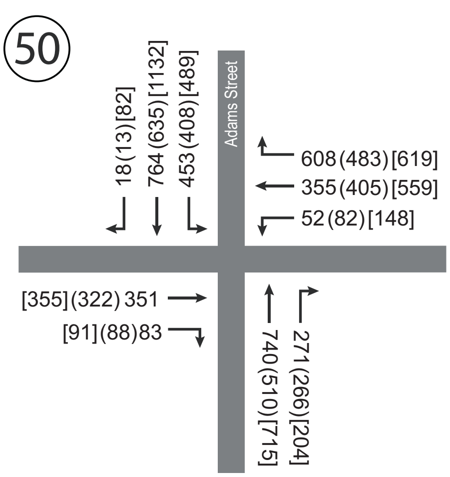
FIGURE 15-6 | **Existing AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

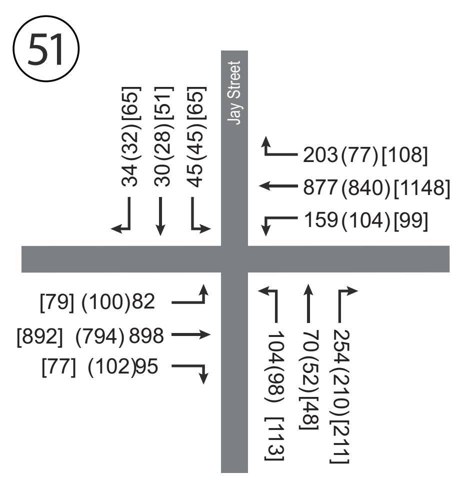
Brooklyn Location Map

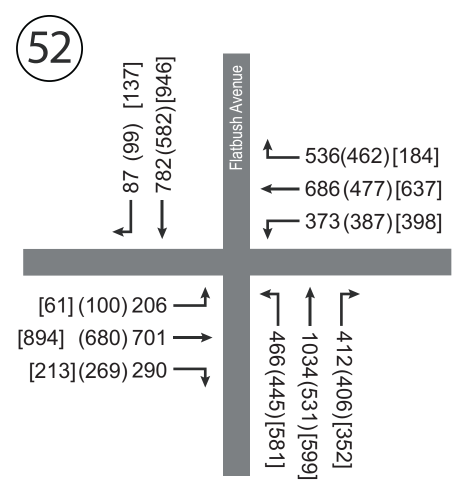


LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







HDR

NYC Taxi and Limousine Commission

(connection to the Brooklyn Bridge) and Flatbush Avenue (connection to the Manhattan Bridge). Just east of Jay Street (minor arterial) two-way volumes are approximately 2,400 in the AM peak hour, 2,100 in the Midday peak hour, and 2,500 in the PM peak hour as shown in Figure 15-6.

The main intersection crossings are Flatbush Avenue (primary arterial) and Adams Street (primary arterial). The volumes on Flatbush Avenue north of Tillary Street are approximately 2,600 in the AM peak hour, 1,800 in the Midday peak hour, and 1,900 in the PM peak hour. The volumes on Adams Street north of Tillary Street are approximately 2,600 in the AM peak hour, 2,100 in the Midday peak hour, and 3,100 in the PM peak hour. The eastbound and westbound through taxi volumes and percentages on Tillary Street are shown in Table 15-2a.

Queens (See Figure 15-7)

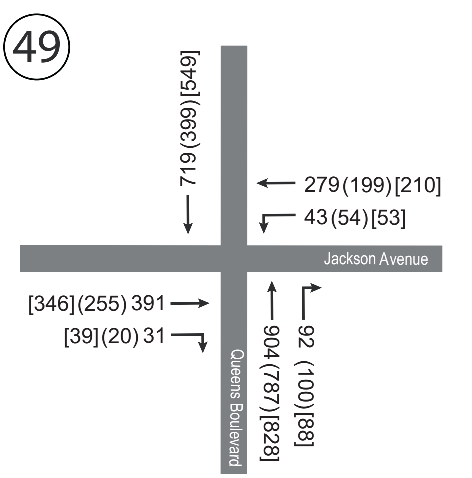
Jackson Avenue / Northern Boulevard – This northeast-southwest primary arterial intersects with Queens Plaza North and South/Queens Boulevard, which are both also primary arterials. Jackson Avenue runs southwest from the Queens Plaza area, while Northern Boulevard runs to the northeast. Queens Plaza North and South provide connections to and from the Bridge to Manhattan. The three study intersections in this area are made more complex due to the presence of piers supporting the overhead rail lines through the area. Parking is also allowed on some of the blocks. Traffic volumes on Jackson Avenue south of Queens Plaza South are modest at approximately 1,300, 900, and 1,000 during the AM, Midday, and PM peak hours respectively. Volumes on Northern Boulevard north of Queens Plaza North are higher at approximately 2,100, 1,800, and 2,700 during the AM, Midday, and PM peak hours respectively. The intersecting volumes on Queens Plaza South and Queens Boulevard are also substantial as shown in Figure 15-7. The through taxi volumes and percentages on Jackson Avenue and Northern Boulevard are shown in Table 15-2a.

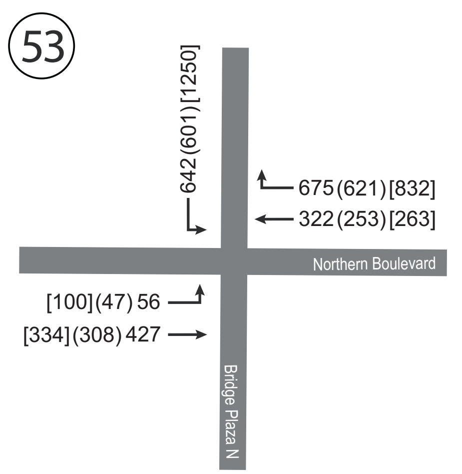
FIGURE 15-7 | **Existing AM, Midday, and PM Peak Hour Volumes (Queens)**

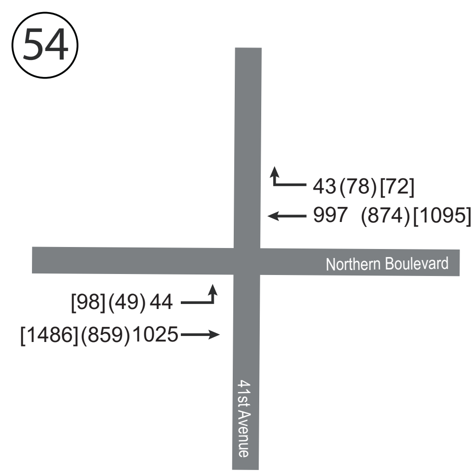
Queens Location Map

LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (**8-9AM**), Midday (**12-1 PM**), PM (**5-6 PM**) Peak Hour Volumes







15.2.6.2 Peak Hour Traffic Operations and Level of Service

A review of the results of the assessment under Existing Conditions indicate that most intersections currently operate at an acceptable LOS. However, a sizeable subset have one or more lane groups that operate above the CEQR defined delay threshold during one or more peak hours. Table 15-3 provides a summary of the results. Lane groups, approaches, and whole intersections with average delay values above the CEQR threshold are highlighted in the table.

Peak Hour Summary

During the AM peak hour, 15 of the 54 intersections operate with overall intersection average vehicle delay values above the delay threshold of 45.0 seconds per vehicle (marginally acceptable LOS) identified in the *2012 CEQR Technical Manual.* An additional 22 intersections have one or more lane groups that exceed the 45.0 seconds per vehicle delay threshold. Thus a total of 37 of the 54 intersections currently exceed the threshold in the AM peak hour.

During the Midday peak hour, 6 of the 54 intersections operate with overall intersection average vehicle delay values above the CEQR threshold of 45.0 seconds per vehicle (marginally acceptable LOS D). An additional 27 intersections have one or more lane groups that exceed the 45.0 seconds per vehicle delay threshold set by CEQR. Thus a total of 33 of the 54 intersections currently exceed the CEQR threshold in the Midday peak hour.

During the PM peak hour, 13 of the 54 intersections operate with overall intersection average vehicle delay values above the CEQR threshold of 45.0 seconds per vehicle (marginally acceptable LOS D). An additional 21 intersections have one or more lane groups that exceed the 45.0 seconds per vehicle delay threshold set by CEQR. Thus a total of 34 of the 54 intersections currently exceed the CEQR threshold in the PM peak hour.

The detailed LOS results by Study Area section are presented below for reference. (Please note that where the text refers to "high LOS D" this indicates that the delay value is above the CEQR threshold of 45.0 seconds of average vehicle control delay.)

Table 15-3: Existing Delay and Level of Service

			AM				MD				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.05	111.4	F	L	0.94	87.0	F	L	0.62	47.0	D
			T	0.82	30.2	C	T	0.63	21.7	C	T	0.57	19.4	B
		NB 3rd Avenue	T	0.74	29.1	C	T	0.83	29.4	C	T	0.64	23.2	C
			R	0.59	34.5	C	R	1.04	119.5	F	R	0.49	29.9	C
		INTERSECTION			37.1	D			37.9	D			24.3	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.87	49.9	D	T	0.80	46.5	D	T	0.86	51.0	D
			R	0.75	43.4	D	R	0.87	73.4	E	R	0.87	63.2	E
		NB 3rd Avenue	LT	0.80	19.1	B	LT	0.78	7.4	A	LT	0.56	3.2	A
		INTERSECTION			25.1	C			15.5	B			14.6	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.87	40.8	D	LT	1.02	78.3	E	LT	0.80	34.9	C
		NB 3rd Avenue	T	0.92	12.7	B	T	0.97	25.6	C	T	0.97	23.7	C
			R	0.47	6.9	A	R	0.81	29.2	C	R	0.49	10.8	B
		INTERSECTION			17.9	B			34.8	C			25.0	C
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.03	43.4	D	LT	0.99	23.6	C	LT	0.92	18.7	B
		WB 57th Street	TR	0.92	49.4	D	T	0.56	28.1	C	T	0.42	20.1	C
			R	0.90	58.9	E	R	0.54	33.1	C	R	0.31	20.3	C
		NB 3rd Avenue	LTR	1.05	131.5	F	LTR	1.00	56.1	E	LTR	1.04	68.7	E
			R	0.20	19.5	B	R	0.85	37.4	D	R	1.05	75.9	E
		INTERSECTION			92.7	F			43.3	D			51.7	D
5	3rd Avenue and 58th Street	EB 58th Street	L	0.39	19.9	B								
			T	0.40	19.8	B	LT	0.97	57.5	E	LT	0.74	25.5	C
		NB 3rd Avenue	TR	1.04	59.1	E	TR	0.97	24.9	C	TR	1.04	45.4	D
		INTERSECTION			53.6	D			32.2	C			40.2	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.68	24.0	C	LT	0.98	56.7	E	LT	0.69	25.2	C
		NB 3rd Avenue	T	1.04	58.7	E	T	0.78	17.2	B	T	0.91	18.5	B
			R	1.05	58.6	E	R	1.04	65.0	E	R	1.04	52.7	D
		INTERSECTION			51.4	D			34.6	C			24.8	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.59	20.8	C	T	0.47	20.1	C	TR	0.52	18.9	B
			R	1.00	94.3	F	R	1.05	112.6	F	R	0.99	91.3	F
		NB 3rd Avenue	LT	1.04	44.7	D	LT	0.78	41.4	D	LT	0.68	2.8	A
		INTERSECTION			44.2	D			44.9	D			16.0	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.89	55.4	E	T	1.05	68.6	E	T	1.05	72.6	E
			R	1.03	93.6	F	R	0.80	47.2	D	R	0.44	42.3	D
		WB 57th Street	LT	1.00dl	29.8	C	LT	0.33	20.0	B	LT	0.25	19.6	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.20	18.4	B
			T	1.03	58.5	E	T	1.05	62.2	E	T	1.02	51.6	D
			R	0.88	61.6	E	R	0.76	39.5	D	R	1.04	92.2	F
		INTERSECTION			50.8	D			56.5	E			56.6	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.87	36.1	D	T	0.95	46.0	D	T	0.88	36.0	D
			R	0.57	28.2	C	R	0.46	25.1	C	R	0.41	24.0	C
		WB 57th Street	LT	0.95	36.0	D	LT	0.91	39.0	D	LT	0.88	36.7	D
		SB Lexington Avenue	LT	0.74	22.3	C	LT	0.95	40.5	D	LT	0.74	22.2	C
			R	0.25	16.2	B	R	0.73	36.5	D	R	0.42	20.2	C
		INTERSECTION			29.6	C			40.8	D			29.1	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.57	24.8	C	LT	0.60	23.7	C	LT	0.76	27.7	C
		SB 7th Avenue	T	0.60	7.5	A	T	0.56	3.9	A	T	0.66	7.1	A
			R	0.48	9.8	A	R	0.39	5.6	A	R	0.48	9.6	A
		INTERSECTION			11.9	B			9.5	A			13.3	B

Table 15-3: Existing Delay and Level of Service

			AM				MD				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
11	7th Avenue and 32nd Street	SB 7th Avenue	LT	0.89	7.7	A	LT	0.79	4.0	A	LT	0.80	4.2	A
		INTERSECTION			7.7	A			4.0	A			4.2	A
12	7th Avenue and 33rd Street	WB 33rd Street	L	1.05	118.5	F	L	0.68	50.6	D	L	1.04	114.5	F
			T	0.59	38.8	D	T	0.46	33.2	C	T	0.33	29.7	C
		SB 7th Avenue	TR	0.65	2.4	A	TR	0.64	2.3	A	TR	0.64	1.9	A
			R	1.02	67.4	E	R	1.04	64.5	E	R	1.03	58.2	E
		INTERSECTION			19.0	B			12.7	B			17.0	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.04	70.6	E	T	1.04	89.2	F	T	0.97	72.4	E
			R	0.07	14.6	B	R	0.20	33.9	C	R	0.10	33.2	C
		WB 34th Street	LT	1.05	57.6	E	LT	0.88	16.0	B	LT	0.85	17.7	B
		SB 7th Avenue	LTR	0.91	49.9	D	LTR	0.95	58.1	E	LTR	0.98	28.8	C
		INTERSECTION			54.9	D			51.9	D			32.3	C
14	7th Avenue and 35th Street	WB 35th Street	L	1.03	94.3	F	L	0.91	72.6	E	L	0.59	31.5	C
			T	0.90	57.8	E	T	0.62	33.6	C	T	0.60	31.8	C
		SB 7th Avenue	T	0.97	29.3	C	T	0.96	27.7	C	T	0.65	3.1	A
			R	1.05	92.2	F	R	0.99	72.1	E	R	0.57	14.1	B
		INTERSECTION			43.0	D			34.0	C			9.5	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.86	43.0	D	TR	0.75	35.0	D	TR	0.80	36.1	D
		SB 7th Avenue	LT	0.79	12.3	B	LT	0.86	22.8	C	LT	0.76	8.3	A
		INTERSECTION			18.9	B			25.1	C			15.0	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.88	43.2	D	LT	0.84	40.4	D	LT	0.98	59.6	E
		SB 7th Avenue	T	0.63	15.7	B	T	0.63	15.8	B	T	0.61	15.4	B
			R	0.59	26.7	C	R	0.51	21.6	C	R	0.58	25.3	C
		INTERSECTION			23.5	C			22.3	C			29.0	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.05	59.6	E	T	0.96	55.3	E	T	0.86	45.0	D
		WB 34th Street	T	0.71	30.2	C	T	0.86	38.2	D	T	0.97	53.1	D
			R	0.39	31.9	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.83	5.4	A	T	0.99	25.8	C	T	1.03	36.1	D
		INTERSECTION			19.3	B			32.1	C			42.0	D
18	8th Avenue and 34th Street	EB 34th Street	LT	0.86	39.6	D	LT	0.67	26.3	C	LT	0.62	24.8	C
		WB 34th Street	T	0.39	10.4	B	T	0.46	9.6	A	T	0.47	33.9	C
			R	0.45	11.1	B	R	0.84	25.2	C	R	0.72	44.3	D
		NB 8th Avenue	L	0.53	11.9	B	L	0.56	13.2	B	L	0.73	45.1	D
			T	1.04	42.4	D	T	0.96	21.6	C	T	1.03	59.2	E
			R	0.74	54.9	D	R	0.64	19.8	B	R	0.81	56.2	E
		INTERSECTION			33.2	C			19.8	B			47.9	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.66	27.3	C	T	0.78	33.7	C	T	0.82	35.8	D
			R	0.60	48.2	D	R	0.67	50.8	D	R	0.22	16.1	B
		NB Madison Avenue	LT	0.87	28.2	C	LT	0.74	21.5	C	LT	0.64	19.0	B
		INTERSECTION			29.4	C			26.8	C			22.8	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.69	57.0	E	L	0.63	51.2	D	L	0.59	50.0	D
			T	0.77	34.8	C	T	0.64	27.3	C	T	0.54	24.5	C
		NB Madison Avenue	TR	1.03	40.9	D	TR	1.02	42.2	D	TR	0.91	17.8	B
		INTERSECTION			40.8	D			40.1	D			20.6	C

Table 15-3: Existing Delay and Level of Service

			AM				MD				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43.0	D	L	0.41	42.8	D	L	0.35	41.2	D
			T	0.36	20.0	C	T	0.22	17.6	B	T	0.22	17.4	B
		NB Madison Avenue	TR	0.95	26.6	C	TR	0.95	31.4	C	TR	0.97	20.7	C
		INTERSECTION			26.6	C			31.1	C			21.2	C
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.04	68.7	E	LT	0.44	22.2	C	LT	0.63	32.0	C
		WB 42nd Street	T	1.05	57.1	E	TR	0.83	24.1	C	T	0.89	26.0	C
			R	0.10	18.0	B					R	0.14	15.6	B
		NB Madison Avenue	LT	1.04	44.2	D	LT	1.02	31.0	C	LT	1.00	25.0	C
			R	0.20	7.0	A	R	0.22	7.1	A	R	0.16	7.0	A
		INTERSECTION			53.3	D			26.3	C			26.5	C
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.50	25.5	C	T	0.56	27.2	C	T	0.59	27.9	C
			R	0.81	51.3	D	R	0.73	40.7	D	R	0.87	67.7	E
		NB Madison Avenue	LT	0.98	36.9	D	LT	0.96	20.3	C	LT	0.92	21.4	C
		INTERSECTION			36.9	D			23.5	C			26.3	C
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.75	34.3	C	LT	0.91	54.0	D	LT	0.90	57.4	E
		NB Madison Avenue	TR	0.94	35.6	D	TR	0.88	14.5	B	T	0.98	27.6	C
											R	0.12	5.4	A
		INTERSECTION			35.4	D			22.7	C			32.3	C
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.84	37.7	D	TR	0.97	55.4	E	TR	0.52	23.6	C
		NB Madison Avenue	LT	0.97	32.7	C	LT	1.01	28.0	C	LT	0.91	24.2	C
		INTERSECTION			34.0	C			36.2	D			24.1	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.73	32.0	C	T	0.65	32.3	C	T	0.52	33.7	C
			R	0.26	26.2	C	R	0.13	23.9	C	R	0.12	27.3	C
		WB 42nd Street	LT	0.88	30.1	C	LT	0.69	30.1	C	LT	1.00	56.7	E
		SB 5th Avenue	LT	0.82	22.5	C	LT	0.75	20.2	C	LT	1.04	55.9	E
			R	0.11	13.6	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			26.2	C			24.7	C			52.5	D
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	0.94	18.9	B	T	0.80	21.0	C	T	0.73	8.6	A
		WB 42nd Street	TR	0.88	19.5	B	TR	0.90	20.9	C	TR	0.89	22.6	C
		INTERSECTION			19.2	B			21.0	C			16.7	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.36	14.0	B	T	0.50	9.4	A	T	0.43	8.6	A
			R	1.01	64.2	E	R				R			
		WB 42nd Street	LT	0.72	21.8	C	T	0.76	21.4	C	T	0.64	19.1	B
		NB Park Avenue	LR	0.26	24.0	C	LR	0.27	24.4	C	LR	0.35	26.0	C
			R	0.38	28.6	C	R	0.40	29.7	C	R	0.51	33.9	C
		INTERSECTION			25.4	C			17.1	B			16.4	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.65	16.8	B	TR	0.86	29.7	C	TR	0.81	136.4	F
		NB 8th Avenue	L	0.96	69.5	E	L	0.94	68.3	E	L	1.01	75.3	E
			T	0.82	14.6	B	T	0.76	13.8	B	T	0.85	16.8	B
		INTERSECTION			19.9	B			21.6	C			43.1	D
30	8th Avenue and 31st Street	WB 31st Street	T	0.45	26.8	C	T	0.52	28.1	C	T	0.85	45.4	D
			R	0.51	29.2	C	R	0.44	26.6	C	R	0.67	38.0	D
		NB 8th Avenue	L	0.96	78.9	E	L	0.88	63.1	E	L	1.03	107.1	F
			T	0.65	21.4	C	T	0.62	20.8	C	T	0.69	22.0	C
		INTERSECTION			29.0	C			26.6	C			34.2	C

Table 15-3: Existing Delay and Level of Service

			AM				MD				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
31	8th Avenue and 41st Street	WB 41st Street	T	0.15	12.2	B	T	0.24	13.5	B	T	0.37	15.6	B
			R	1.05	90.6	F	R	0.74	37.4	D	R	1.03	90.7	F
		NB 8th Avenue	LT	0.76	27.7	C	LT	0.75	27.7	C	LT	1.00	58.6	E
		INTERSECTION			36.8	D			27.8	C			58.8	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.75	22.7	C	LT	0.88	32.1	C	LT	0.50	14.8	B
		WB 42nd Street	TR	0.61	10.0	A	TR	0.66	10.3	B	TR	0.47	6.5	A
		NB 8th Avenue	L	0.09	8.4	A	L	0.45	12.7	B	L	0.08	9.8	A
			LT	1.05	46.8	D	LT	0.95	19.4	B	LT	0.99	31.7	C
			R	0.74	25.9	C	R	0.67	21.4	C	R	0.15	9.8	A
		INTERSECTION			35.9	D			20.8	C			25.1	C
33	8th Avenue and 58th Street	EB 58th Street	LT	0.67	19.6	B	LT	0.84	27.1	C	LT	0.75	30.1	C
		NB 8th Avenue	TR	0.55	16.7	B	TR	0.60	17.4	B	TR	0.65	18.3	B
		INTERSECTION			17.7	B			20.8	C			21.8	C
34	9th Avenue and 58th Street	EB 58th Street	T	0.77	37.7	D	T	0.86	47.5	D	T	1.04	87.9	F
			R	0.74	46.0	D	R	0.74	47.3	D	R	0.55	39.0	D
		SB 9th Avenue	LT	0.68	15.5	B	LT	0.62	14.4	B	LT	0.58	13.5	B
		INTERSECTION			22.2	C			24.1	C			31.0	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.81	31.4	C	T	0.77	30.0	C	T	0.82	32.8	C
			R	0.81	45.2	D	R	0.77	43.5	D	R	0.79	46.0	D
		WB 57th Street	LT	1.00	56.7	E	LT	0.82	32.4	C	LT	0.88	34.6	C
		SB 7th Avenue	L											
			T	0.61	18.5	B	LT	0.29	13.6	B	LT	0.32	13.9	B
			R				R				R			
		INTERSECTION			33.0	C			27.6	C			28.8	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.87	48.0	D	T	0.84	44.8	D	T	0.86	46.6	D
			R	0.57	28.9	C	R	0.61	31.4	C	R	0.51	27.1	C
		WB Central Park South	L	1.05	77.3	E	L	1.05	86.3	F	L	1.05	79.3	E
			T	0.59	14.3	B	T	0.97	45.2	D	T	1.01	44.9	D
		SB Central Park Driveway	L	1.05	113.1	F	L	0.01	29.0	C	L	0.01	30.0	C
			TR	1.02	71.2	E	TR				TR			
		INTERSECTION			51.5	D			51.8	D			50.7	D
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.02	76.2	E	LT	0.95	64.3	E	LT	0.95	62.9	E
		WB 23rd Street	TR	1.04	104.6	F	TR	1.01	74.6	E	TR	0.95	79.6	E
		NB 6th Avenue	LT	0.91	27.9	C	LT	0.96	34.0	C	LT	0.77	20.9	C
			R	0.49	21.3	C	R	0.69	32.3	C	R	0.49	21.3	C
		INTERSECTION			48.7	D			44.9	D			38.9	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.55	24.5	C	TR	0.71	29.3	C	TR	0.81	33.3	C
		NB 6th Avenue	LT	0.93	29.9	C	LT	0.83	23.2	C	LT	0.81	22.3	C
		INTERSECTION			29.0	C			24.5	C			25.1	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.81	29.4	C	LT	0.82	28.5	C	LT	0.61	27.4	C
		WB 42nd Street	T	0.68	25.1	C	T	0.78	23.4	C	T	0.89	10.3	B
			R	1.05	82.6	F	R	1.05	92.8	F	R	1.05	52.3	D
		NB 6th Avenue	LTR	0.82	20.2	C	LTR	0.58	14.6	B	LT	0.99	38.6	D
											R	0.42	16.7	B
		INTERSECTION			26.4	C			24.5	C			32.6	C

Table 15-3: Existing Delay and Level of Service

			AM				MD				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
40	6th Avenue and 57th Street	EB 57th Street	LT	1.05	72.7	E	LT	1.02	48.9	D	LT	1.05	58.5	E
		WB 57th Street	T	0.95	58.4	E	T	0.96	61.8	E	T	1.01	69.9	E
			R	0.78	52.3	D	R	0.70	49.9	D	R	0.97	77.9	E
		NB 6th Avenue	LT	0.70	20.6	C	LT	0.60	18.7	B	LT	0.60	18.3	B
			R	0.47	21.6	C	R	0.48	21.0	C	R	0.73	36.4	D
		INTERSECTION			44.4	D			38.0	D			42.7	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	28.6	C	L	0.60	27.7	C	L	0.85	50.8	D
			T	0.71	22.1	C	T	0.55	12.9	B	T	0.50	10.5	B
		WB Central Park South	TR	0.80	33.0	C	TR	0.75	30.8	C	TR	0.78	31.5	C
		NB 6th Avenue	L	1.05	91.1	F	L	1.00	84.6	F	L	1.02	78.9	E
			LTR	0.94dl	37.1	D	LTR	0.75	28.9	C	LTR	1.04	66.1	E
		INTERSECTION			39.7	D			32.5	C			49.3	D
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.75	36.4	D	T	0.70	20.4	C	T	0.72	33.6	C
			R	0.66	41.3	D	R	0.73	34.1	C	R	0.76	55.6	E
		WB 23rd Street	LT	0.38	17.4	B	LT	0.34	16.9	B	LT	0.34	17.0	B
		SB 5th Avenue	TR	0.69	22.8	C	TR	0.70	23.0	C	TR	0.78	25.5	C
		INTERSECTION			26.5	C			21.7	C			27.0	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.03	46.7	D	T	1.04	55.7	E	T	0.89	21.9	C
			R	1.03	61.3	E	R	0.84	33.6	C	R	0.64	18.7	B
		WB 57th Street	LT	1.05	72.1	E	LT	0.92	44.5	D	LT	0.99	49.1	D
		SB 5th Avenue	LT	1.04	57.1	E	LT	0.75	21.1	C	LT	0.70	20.1	C
			R	0.36	17.4	B	R	0.37	17.0	B	R	0.51	21.2	C
		INTERSECTION			56.7	E			36.1	D			27.9	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.1	C	T	0.91	28.1	C	T	0.41	6.0	A
			R	1.05	82.4	F	R	0.95	69.0	E	R	0.86	44.5	D
		SB 5th Avenue	LT	1.03	56.1	E	LT	0.76	23.4	C	LT	1.03	58.7	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17.0	B
		INTERSECTION			50.1	D			29.1	C			46.8	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.04	29.8	C	LT	0.99	16.7	B	LT	1.03	36.3	D
		WB 57th Street	T	0.83	34.2	C	T	0.64	26.2	C	T	0.91	44.9	D
			R	0.77	41.8	D	R	0.67	39.7	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.73	20.6	C	LTR	0.54	16.5	B	LT	0.92	32.8	C
											R	0.12	13.7	B
		INTERSECTION			27.9	C			19.9	B			36.2	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.53	17.3	B	L	0.74	27.1	C	L	0.48	16.2	B
			T	0.75	18.8	B	T	0.75	18.9	B	T	0.74	18.4	B
		INTERSECTION			18.5	B			20.4	C			18.1	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	0.95	56.0	E	TR	1.01	57.7	E	T	0.64	26.1	C
											R	0.48	30.2	C
		WB 36th Street	L	0.73	37.6	D								
		SB 2nd Avenue	L	1.05	79.7	E	L	0.01	10.4	B	L	0.11	11.2	B
			T	1.05	65.8	E	T	0.72	18.6	B	T	0.81	20.8	C
		INTERSECTION			62.5	E			33.8	C			22.1	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.51	15.2	B	TR	0.72	19.7	B	TR	0.68	18.5	B
			R	1.05	106.7	F	R	1.05	102.5	F	R	1.05	103.5	F
		NB 3rd Avenue	LT	0.78	26.5	C	LT	0.70	24.5	C	LT	0.62	22.9	C
		INTERSECTION			30.4	C			31.3	C			30.2	C

Table 15-3: Existing Delay and Level of Service

			AM				MD				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.69	54.6	D	T	0.34	30.0	C	T	0.52	46.3	D
		WB Jackson Avenue	T	0.36	0.9	A	T	0.19	1.2	A	T	0.27	0.2	A
		SB West Service Road	T	0.85	35.8	D	T	0.75	30.6	C	T	0.80	31.2	C
			R	1.02	66.2	E	R	1.05	82.9	F	R	0.99	64.6	E
		INTERSECTION			45.5	D			43.9	D			39.8	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.91	28.0	C	T	0.45	4.3	A	T	1.05	68.0	E
			R	0.18	1.4	A	R	0.09	0.7	A	R	0.16	1.1	A
		WB Northern Boulevard	LT	0.68	27.9	C	LT	0.35	22.6	C	LT	0.95	100.6	F
		NB Queens Plaza S	LTR	1.05	62.8	E	LTR	0.42	12.7	B	LTR	1.04	62.6	E
		SB Queens Plaza S	T	0.52	20.2	C	T	0.36	19.5	B	T	0.85	38.2	D
		INTERSECTION			40.4	D			14.1	B			60.8	E
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.59	41.5	D	TR	0.57	41.0	D	TR	0.66	43.6	D
		WB Tillary Street	L	0.49	48.5	D	L	0.65	48.1	D	L	1.05	99.8	F
			T	0.63	41.4	D	T	0.61	31.2	C	T	1.04	75.6	E
			R	1.04	71.7	E	R	0.78	39.3	D	R	1.05	65.4	E
		NB Adams Street	T	1.05	85.8	F	T	0.93	63.8	E	T	1.04	82.7	F
		SB Adams Street	L	1.05	98.3	F	L	1.02	90.0	F	L	1.05	97.0	F
			T	0.74	27.8	C	T	0.63	25.3	C	T	1.04	64.1	E
		NB Service Road	TR	1.02	96.8	F	TR	1.00	95.9	F	TR	0.73	50.3	D
		SB Service Road	TR	0.06	30.7	C	TR	0.04	30.3	C	TR	0.27	34.3	C
		INTERSECTION			59.4	E			46.7	D			71.5	E
51	Tillary Street and Jay Street	EB Tillary Street	L	0.36	34.8	C	L	0.39	32.2	C	L	0.31	36.9	D
			TR	0.73	37.1	D	TR	0.52	32.3	C	TR	0.76	36.1	D
		WB Tillary Street	L	0.73	51.2	D	L	0.40	42.3	D	L	0.45	31.9	C
			TR	0.86	57.4	E	TR	0.54	15.5	B	TR	1.05	65.7	E
		NB Jay Street	L	0.43	39.1	D	L	0.43	38.7	D	L	0.46	39.4	D
			T	0.17	31.5	C	T	0.14	31.2	C	T	0.13	31.0	C
			R	0.49	20.4	C	R	0.52	20.6	C	R	0.54	21.2	C
		SB Jay Street	L	0.21	33.5	C	L	0.27	35.6	D	L	0.40	39.9	D
			T	0.10	30.8	C	T	0.08	30.1	C	T	0.15	31.3	C
			R	0.17	32.7	C	R	0.16	32.4	C	R	0.26	34.0	C
		INTERSECTION			44.1	D			26.1	C			47.7	D
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.93	108.6	F	L	0.50	46.2	D	L	0.28	50.1	D
			TR	1.05	62.6	E	TR	0.97	72.9	E	TR	1.04	92.5	F
		WB Tillary Street	L	0.95	83.4	F	L	0.93	78.5	E	L	1.03	99.2	F
			TR	1.04	83.5	F	TR	0.98	73.4	E	TR	1.05	87.3	F
			R	1.04	100.5	F	R	1.04	106.8	F	R	0.63	48.9	D
		NB Flatbush Avenue	L	0.98	66.0	E	L	0.82	37.1	D	L	1.03	71.1	E
			T	0.95	49.3	D	T	0.48	25.4	C	T	0.53	26.3	C
			R	0.90	54.5	D	R	0.87	49.8	D	R	0.77	39.4	D
		SB Flatbush Avenue	T	0.99	68.7	E	T	0.50	36.3	D	T	0.99	65.4	E
			R	0.23	33.7	C	R	0.38	37.4	D	R	0.39	36.8	D
		INTERSECTION			68.7	E			58.1	E			69.7	E

Table 15-3: Existing Delay and Level of Service

			AM				MD				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.39	33.0	C	LT	0.23	14.6	B	LT	0.51	27.1	C
		WB Northern Boulevard	T	0.50	24.5	C	T	0.23	14.6	B	T	0.44	23.4	C
			R	1.05	75.6	E	R	0.40	22.8	C	R	1.05	74.1	E
		SB Queens Plaza N	L	0.99	67.8	E	L	1.05	80.6	F	L	1.05	155.5	F
		INTERSECTION			57.0	E			59.1	E			97.8	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.41	0.4	A	LTR	0.60	4.3	A	LTR	0.58	4.7	A
		WB Northern Boulevard	LTR	0.57	7.4	A	LTR	0.54	6.5	A	LTR	0.59	7.8	A
		INTERSECTION			4.1	A			5.4	A			6.2	A

Manhattan (North)

Third Avenue and 54th Street (#1)

- The eastbound left-turn operates at LOS F during the AM and Midday peak hours. It operates at a high LOS D during the PM peak hour.
- The northbound right-turn operates at LOS F during the Midday peak hour.

Third Avenue and 55th Street (#2)

- The westbound through lane group operates at a high LOS D during all three peak hours.
- The westbound right-turn operates at LOS E during the Midday and PM peak hours.

Third Avenue and 56th Street (#3)

- The eastbound shared left-through lane group operates at LOS E during the Midday peak hour.

Third Avenue and 57th Street (#4) - The intersection operates at LOS F overall in the AM peak hour, and at high LOS D during the PM peak hour.

- The westbound shared through-right lane group operates at high LOS D in the AM peak hour.
- The westbound right-turn operates at LOS E during the AM peak hour.

- The northbound shared left-through-right lane group operates at LOS F in the AM peak hour and LOS E in the Midday and PM peak hours.
- The northbound right-turn operates at high LOS E during the PM peak hour.

Third Avenue and 58th Street (#5) - The intersection operates at high LOS D overall in the AM peak hour.

- The northbound shared through-right lane group operates at LOS E in the AM peak hour and high LOS D in the PM peak hour.
- The eastbound shared left-through lane group operates at LOS E during the Midday peak hour.

Third Avenue and 59th Street (#6) - The intersection operates at LOS D overall in the AM peak hour.

- The eastbound shared left-through lane group operates at LOS E in the Midday peak hour.
- The northbound through lane group operates at LOS E in the AM peak hour.
- The northbound right-turn operates at LOS E in the AM and Midday peak hours and at high LOS D in the PM peak hour.

Third Avenue and 60th Street (#7)

- The westbound right-turn operates at LOS F in all three peak hours.

Second Avenue and 57th Street (#8) – The intersection operates at high LOS D in the AM peak hour and at LOS E during the Midday and PM peak hours.

- The eastbound shared through-right lane group operates at LOS E in the AM peak hour.
- The eastbound right-turn operates at LOS F in the AM peak hour and high LOS D in the Midday peak hour.
- The eastbound through lane group operates at LOS E in the Midday and PM peak hours.
- The southbound through lane group operates at LOS E during the AM and Midday peak hours and high LOS D in the PM peak hour.
- The southbound right-turn operates at LOS E in the AM peak hour and LOS F in the PM peak hour.

Lexington Avenue and 57th Street (#9)

- The eastbound through lane group operates at high LOS D in the Midday peak hour.

Seventh Avenue and 57th Street (#35)

- The eastbound right-turn operates at high LOS D in the AM and PM peak hours.
- The westbound shared left-through lane group operates at LOS E in the AM peak hour.

Seventh Avenue and Central Park South (#36) – The intersection operates at high LOS D during all three peak hours.

- The eastbound through lane group operates at high LOS D in the AM and PM peak hours.
- The westbound left-turn operates at LOS E in the AM and PM peak hours and LOS F during the Midday peak hour.
- The westbound through lane group operates at high LOS D during the Midday peak hour.
- The southbound left-turn operates at LOS F during the AM peak hour.
- The southbound through-right lane group operates at LOS E during the AM peak hour.

Sixth Avenue and 57th Street (#40)

- The eastbound shared left-through lane group operates at high LOS D in the Midday peak hour and at LOS E in the AM and PM peak hour.
- The westbound through lane group operates at LOS E in the AM, Midday, and PM peak hours.
- The westbound right-turn operates at high LOS D in the AM and Midday peak hours and at LOS E in the PM peak hour.

Sixth Avenue and Central Park South (#41) – The intersection operates at high LOS D in the PM peak hour.

- The eastbound left-turn operates at high LOS D in the PM peak hour.
- The northbound left-turn operates at LOS F in the AM and Midday peak hours and LOS E in the PM peak hour.
- The northbound shared left-through-right lane group operates at LOS E in the PM peak hour.

Fifth Avenue and 57th Street (#43) – The intersection operates at LOS E in the AM peak hour.

- The eastbound through lane group operates at high LOS D in the AM peak hour and LOS E in the Midday peak hour.
- The eastbound right-turn operates at LOS E in the AM peak hour.
- The westbound shared left-through lane group operates at LOS E in the AM peak hour and high LOS D in the PM peak hour.
- The southbound shared left-through lane group operates at LOS E in the AM peak hour.

Fifth Avenue and Central Park South (#44) – The intersection operates at high LOS D in the AM and PM peak hours.

- The eastbound right-turn operates at LOS F in the AM peak hour and LOS E in the Midday peak hour.
- The southbound shared left-through lane group operates at LOS E in the AM and PM peak hours.

Manhattan (West)

Seventh Avenue and 33rd Street (#12)

- The westbound left-turn operates at LOS F in the AM and PM peak hours and high LOS D in the Midday peak hour.
- The southbound right-turn operates at LOS E during all three peak hours.

Seventh Avenue and 34th Street (#13) – The intersection operates at high LOS D overall during the AM and Midday peak hours.

- The eastbound through lane group operates at LOS F in the Midday peak hour, and LOS E during the AM and PM peak hours.
- The westbound shared left-through lane group operates at LOS E during the AM peak hour.
- The southbound shared left-through-right lane group operates at high LOS D during the AM peak hour and LOS E in the Midday peak hour.

Seventh Avenue and 35th Street (#14)

- The westbound left-turn operates at LOS F in the AM peak hour and LOS E in the Midday peak hour.
- The westbound through lane group operates at LOS E in the AM peak hour.
- The southbound right-turn operates at LOS F in the AM peak hour and LOS E in the Midday peak hour.

Seventh Avenue and 37th Street (#16)

- The westbound shared left-through lane group operates at LOS E in the PM peak hour.

Sixth Avenue and 34th Street (#17)

- The eastbound through lane group operates at LOS E during the AM and Midday peak hours.

- The westbound through lane group operates at high LOS D in the PM peak hour.

Eighth Avenue and 34th Street (#18) – The intersection operates at high LOS D overall during the PM peak hour.

- The northbound left-turn operates at high LOS D in the PM peak hour.
- The northbound through lane group operates at LOS E in the PM peak hour.
- The northbound right-turn operates at high LOS D in the AM peak hour and LOS E in the PM peak hour.

Eighth Avenue and 33rd Street (#29)

- The westbound shared through-right lane group operates at LOS F in the PM peak hour.
- The northbound left-turn operates at LOS E in all three peak hours.

Eighth Avenue and 31st Street (#30)

- The westbound through lane group operates at high LOS D during the PM peak hour.
- The northbound left-turn operates at LOS E in the AM and Midday peak hours and LOS F in the PM peak hour.

#Eighth Avenue and 41st Street (#31) – The intersection operates at LOS E in the PM peak hour.

- The westbound right-turn operates at LOS F in the AM and PM peak hours.
- The northbound shared left-through lane group operates at LOS E in the PM peak hour.

Eighth Avenue and 42nd Street (#32)

- The northbound shared left-through lane group operates at high LOS D in the AM peak hour.

Ninth Avenue and 58th Street (#34)

- The eastbound through lane group operates at high LOS D in the Midday peak hour and LOS F in the PM peak hour.
- The eastbound right-turn operates at high LOS D during the AM and Midday peak hours.

Manhattan (East)

Madison Avenue and 39th Street (#19)

- The westbound right-turn operates at high LOS D during the AM and Midday peak hours.

Madison Avenue and 40th Street (#20)

- The eastbound left-turn operates at LOS E during the AM peak hour and high LOS D during the Midday and PM peak hours.

Madison Avenue and 42nd Street (#22) – The intersection operates at high LOS D overall during the AM peak hour.

- The eastbound shared left-through lane group operates at LOS E during the AM peak hour.
- The westbound through lane group operates at LOS E in the AM peak hour.

Madison Avenue and 43rd Street (#23)

- The westbound right-turn operates at high LOS D in the AM peak hour and LOS E in the PM peak hour.

Madison Avenue and 44th Street (#24)

- The eastbound shared left-through lane group operates at high LOS D in the Midday peak hour and LOS E in the PM peak hour.

Madison Avenue and 45th Street (#25)

- The westbound shared through-right lane group operates at LOS E in the Midday peak hour.

Fifth Avenue and 42nd Street (#26) – The intersection operates at high LOS D overall in the PM peak hour.

- The westbound shared left-through lane group operates at LOS E in the PM peak hour.
- The southbound shared left-through lane group operates at LOS E in the PM peak hour.

Park Avenue and 42nd Street (#28)

- The eastbound right-turn operates at LOS E in the AM peak hour.

Sixth Avenue and 23rd Street (#37) – The intersection operates at high LOS D in the AM peak hour.

- The eastbound shared left-through lane group operates at LOS E during all three peak hours.
- The westbound shared through-right lane group operates at LOS F in the AM peak hour and LOS E in the Midday and PM peak hours.

Sixth Avenue and 42nd Street (#39)

- The westbound right-turn operates at LOS F in the AM and Midday peak hours and high LOS D in the PM peak hour.

Fifth Avenue and 23rd Street (#42)

- The eastbound right-turn operates at LOS E in the PM peak hour.

Second Avenue and 36th Street (#47) – The intersection operates at LOS E in the AM peak hour.

- The eastbound shared through-right lane group operates at LOS E in the AM and Midday peak hours.
- The southbound left-turn operates at LOS E in the AM peak hour.
- The southbound through lane group operates at LOS E in the AM peak hour.

Third Avenue and 37th Street (#48)

- The westbound right-turn operates at LOS F during all three peak hours.

Brooklyn

Tillary Street and Adams Street (#50) – The intersection operates at LOS E in the AM and PM peak hours and high LOS D in the Midday peak hour.

- The westbound left-turn operates at high LOS D during the AM and Midday peak hours and at LOS F during the PM peak hour.
- The westbound through lane group operates at LOS E in the PM peak hour.
- The westbound right-turn operates at LOS E in the AM and PM peak hours.
- The Adams Street northbound through lane group operates at LOS F in the AM and PM peak hours and LOS E in the Midday peak hour.
- The Adams Street southbound left-turn operates at LOS F during all three peak hours.

- The Adams Street southbound through lane group operates at LOS E in the PM peak hour.
- The northbound Service Road shared through-right lane group operates at LOS F during the AM and Midday peak hours, and at high LOS D during the PM peak hour.

Tillary Street and Jay Street (#51) – The intersection operates at high LOS D in the PM peak hour.

- The westbound left-turn operates at high LOS D during the AM peak hour.
- The westbound shared through-right lane group operates at LOS E in the AM and PM peak hours.

Tillary Street and Flatbush Avenue (#52) – The intersection operates at LOS E during all peak hours.

- The eastbound left-turn operates at LOS F in the AM peak hour and high LOS D in the Midday and PM peak hours.
- The eastbound through-right lane group operates at LOS E and the AM and Midday peak hours and LOS F in the PM peak hour.
- The westbound left-turn operates at LOS F during the AM and PM peak hours and LOS E during the Midday peak hour.
- The westbound through-right lane group operates at LOS E during Midday peak hour, and at LOS F in the AM and PM peak hours.
- The westbound right-turn operates at LOS F in the AM and Midday peak hours and high LOS D in the PM peak hour.
- The northbound left-turn operates at LOS E in the AM and PM peak hours.
- The northbound through lane group operates at high LOS D in the AM peak hour.
- The northbound right-turn operates at high LOS D in the AM and Midday peak hours.
- The southbound through lane group operates at LOS E in the AM and PM peak hours.

Queens

Queens Plaza South and Northern Boulevard (#49) – The intersection operates at LOS E in the PM peak hour.

- The eastbound through lane group operates at LOS E during the PM peak hour.
- The westbound shared left-through lane group operates at LOS F in the PM peak hour.
- The northbound shared left-through-right lane group operates at LOS E in the AM and PM peak hours.

Jackson Avenue and West Service Road (west of #49) – The intersection operates at high LOS D in the AM peak hour.

- The eastbound through lane group operates at high LOS D during the AM and PM peak hours.
- The southbound right-turn operates at LOS F in the Midday peak hour and LOS E in the AM and PM peak hours.

Queens Plaza North and Northern Boulevard (#53) – The intersection operates at LOS E in the AM and Midday peak hours and LOS F in the PM peak hour.

- The westbound right-turn operates at LOS E during the AM and PM peak hours.
- The southbound left-turn operates at LOS E in the AM and LOS F during the Midday and PM peak hours.

15.2.7 Future Conditions Without the Proposed Action

15.2.7.1 Future Without Proposed Action Volume Development

The future traffic volumes without the Proposed Action were developed by combining the existing traffic volumes, background traffic growth using the growth rates provided in CEQR, and traffic from approved developments (unrelated to the Proposed Action) that would be in place prior to the 2017 Analysis Year and contribute additional traffic to the Study Area.

15.2.7.1.1 Background Traffic Growth

2012 CEQR annual growth rates (by area) were applied to the existing (2011) AM, Midday, and PM peak hour non-taxi volumes to develop non-taxi background growth forecasts for the 2017 Analysis Year and the three interim years (2014, 2015 and 2016). Consistent with CEQR Table 16-4, the following annual compounding growth rates were used for Manhattan - 0.25% per year for years 1-5 and 0.125% for year 6; Brooklyn - 0.50% per year for years 1-5 and 0.25% for year 6; and Queens - 0.50% per year for years 1-5 and 0.25% for year 6. The year 6 growth rates were required for the 2017 forecast year given a base year of 2011. It was assumed that taxi volumes in the future without the Proposed Action would be the same as the existing taxi volumes.

15.2.7.1.2 Without Proposed Action Development Traffic

A comprehensive list of major projects and developments (unrelated to the Proposed Action) that would be in place before the 2017 Analysis Year and would contribute traffic to the study areas in the four forecast years was developed for the Proposed Action. These projects were identified based on coordination with NYCDOT, NYCEDC, NYCTLC, NYCDCP, and the Mayor's Office of Environmental Coordination (OEC). The projects were identified in two stages. Initially, a list was created of documented EIS projects in or near the study areas that would influence the study intersections. There are 24 development projects in the first set that are likely to be constructed and occupied by 2017. A second set of future without Proposed Action developments was based on data and information provided by NYCDOT and NYCDCP from the Western Rail Yard EIS study. There are 9 projects in the second set that would potentially be constructed by 2017. The locations of these projects are illustrated in Figure 15-8a and Figure 15-8b and listed in Table 15-4 and Table 15-5.

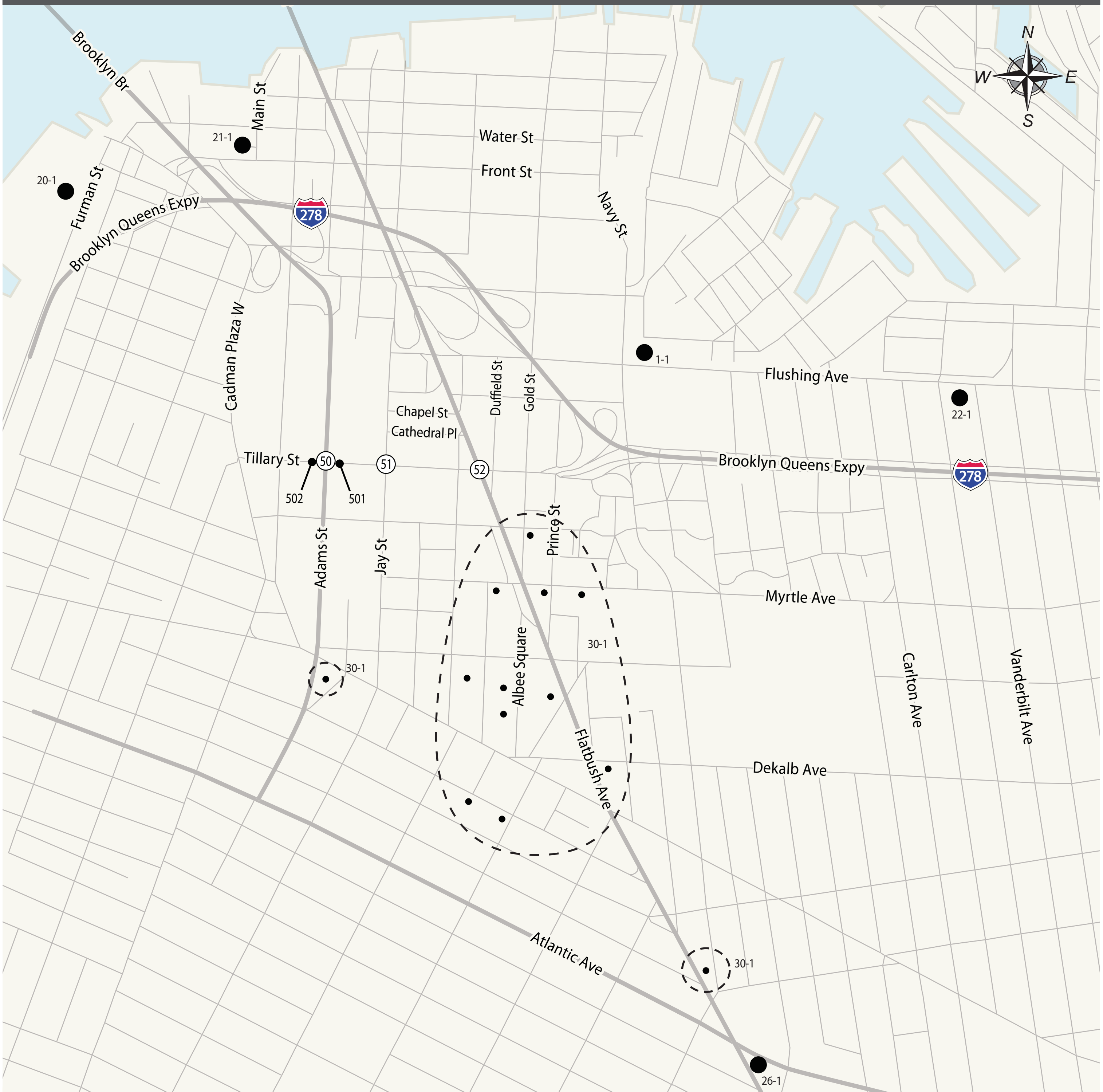
Taxi Medallion Increase – FEIS

FIGURE 15-8a | **Future Developments Location Map under Future Condition without the Proposed Action (Brooklyn)**

HDR

NYC Taxi and Limousine Commission

Brooklyn Location Map



LEGEND:

#	MTMC Locations
●	Development Locations

Taxi Medallion Increase – FEIS

FIGURE 15-8b | **Future Developments Location Map under Future Condition without the Proposed Action (Manhattan)**

HDR
NYC Taxi and Limousine Commission

Manhattan Location Map

LEGEND: # MTMC Locations ● Development Locations

Table 15-4: Future Developments under the Future Conditions without Proposed Action (Manhattan)

WRY Site ID	Project ID	Project Description	Set
	2-1	Saint Vincent's Campus Redevelopment	1
	3-1	UNDC Project	1
	4-1	Fordham University Lincoln Center Master Plan	1
	5-1	770 11th Ave Mixed-Use Development Rezoning	1
	6a-1	1st Ave Properties	1
	N1-1	50 UN Plaza	1
	N2/6-1	1st Ave Properties – School at 616 First St Ave Only	1
	N3/15-1	East River Science Park East Tower	1
	N4-1	UN Garage Entrance Relocation	1
	NEW-1	800 units development on 1st Avenue (626 1st Avenue)	1
	19b-1	53 West 53rd Street (worst-case development scenario)	1
	EE-1	Pier 97 (Pier 97 on the Hudson River)	1
	GG-1	Riverside Park South Phases 5-7 (Between Route 9A and Riverside Blvd from West 61st to West 65th Street)	1
	9-1	Taxi Garage Site: Tenth Avenue between W. 28th and W. 29th Streets (Block 700, Lots 27,42, 45, 32, 34, 38)	1
	15-1	Cambria Suites Madison Square Garden Hotel: 325 West 33rd Street – north side between Eighth and Ninth Avenues	1
	33-1	Bush Tower Annex: 140 W. 42nd Street (between 6th and 7th Avenue)	1
	BB-1	Boston Properties: 910-922 Eighth Avenue, 261-265 W. 55th Street	1
	23-1	610 Lexington Ave	1
1	1-2	Eastern Rail Yard: Between W. 30th and W. 33rd Streets and Tenth and Eleventh Avenues	2
7	7-2	Related Companies: Southwest corner of Tenth Avenue and W.30th Street (Block 701,Lots 30, 33, 36, 37, 42-44)	2
8	8-2	Avalon Bay Properties: Eleventh Avenue at W.28th Street, northeast corner (Block 700, Lots 1, 9, 18)	2
B	18-2	Moinian Group – Hudson Yards Site 18: Southside of W. 43rd Street between Eleventh and Twelfth Avenues	2
78	25-2	345 W. 35th Street between Eighth and Ninth Avenues	2
22	31-2	Sam Chang Hotels: 585 Eighth Avenue	2
46	41-2	855 Sixth Avenue, west side between W. 30th and W. 31st Streets	2
76	48-2	241-53 W. 28th Street	2
K	K-2	Helena II: 631 W. 57th Street (Block 1105, Lot 1, 5)	2

Table 15-5: Future Developments under the Future Conditions without Proposed Action (Brooklyn)

Project ID	Project Description	Set
1-1	Admirals Row Plaza	1
20-1	Brooklyn Bridge Park	1
26-1	Atlantic Yards	1
21-1	Dock Street DUMBO	1
22-1	Navy Green	1
30-1	Downtown Brooklyn Development	1

For the projects in the first set, trip generation and distribution information for each project was obtained from the relevant traffic studies and figures. The volumes were then compiled for use in this study. For the majority of the second set of projects, the Western Rail Yard Study no-action incremental volumes (all projects combined) were used. Then NYCDCP provided information regarding the timing of each project (e.g. would it be complete in 2017) as well as a list of the project sites, driveway locations, and the trip generation data for each project. Using this information a map was created with all of the Western Rail Yard area development projects that would potentially be constructed by 2017. The trip generation numbers were then assigned to the roadway network based on the no-action Western Rail Yard Study incremental volumes and existing traffic patterns. For four projects in the second set, the necessary trip generation and distribution information was not available. Therefore, this information was developed by HDR and approved by NYCDOT to use in the analysis.

15.2.7.1.3 Traffic Volumes in the Future (2014, 2015, 2016 and 2017) Without the Proposed Action

As indicated above, traffic volumes in the future without the Proposed Action for the years 2014, 2015, 2016 and 2017 for each peak hour were estimated by adding to existing traffic volumes, the background traffic growth and traffic that would be generated in the future by projects independent of the Proposed Action. The resulting 2014, 2015, 2016 and 2017 peak hour without Proposed Action volumes are presented in Figures 15-9a through 15-9d (Manhattan-North), Figures 15-10a through 15-10d (Manhattan-West), Figures 15-11a through 15-11d (Manhattan-East), Figures 15-12a through 15-12d (Brooklyn), and Figures 15-13a through 15-13d (Queens).

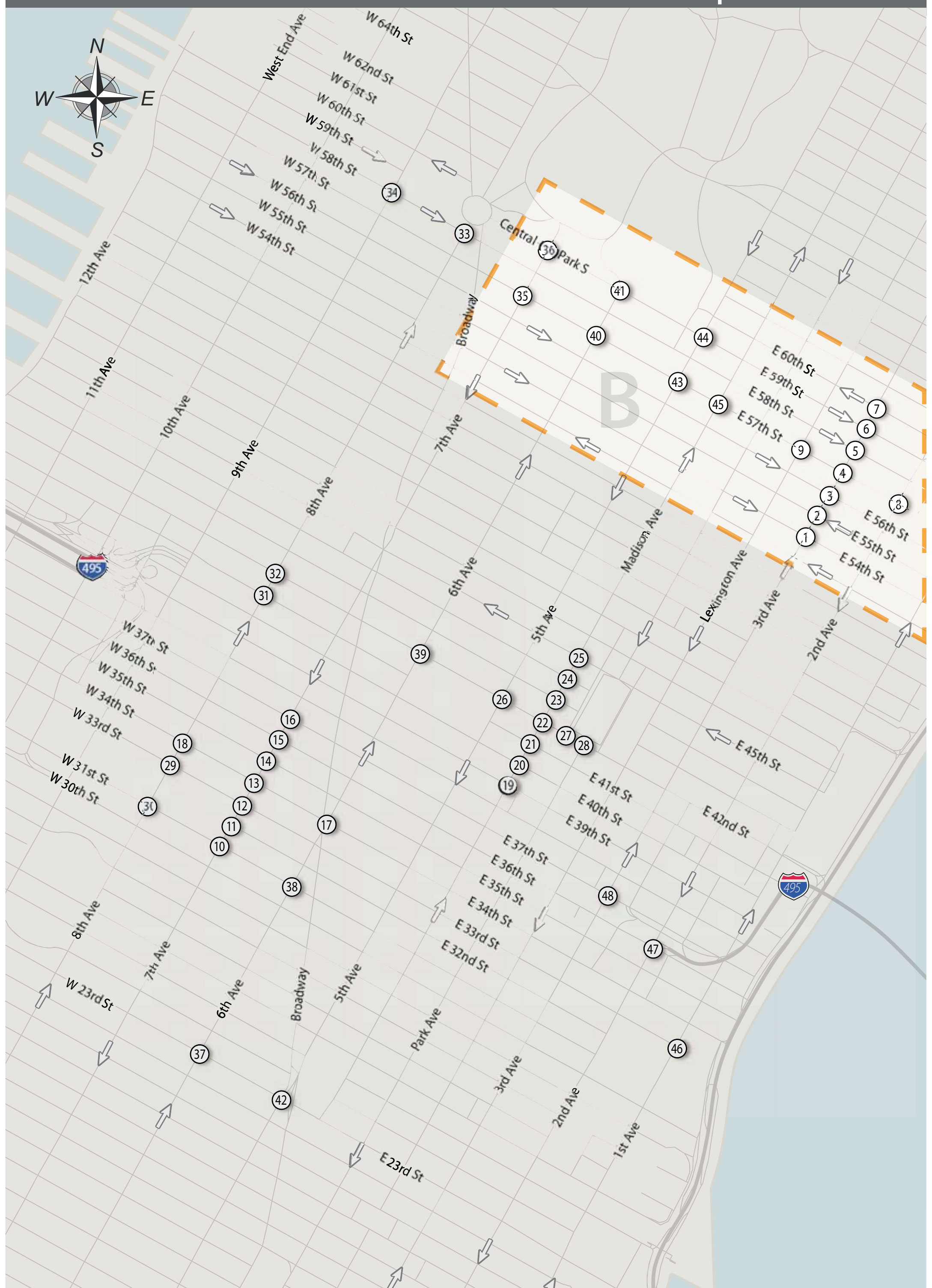
2014 Taxi Medallion Increase - FEIS

FIGURE 15-9a | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)

HDR

NYC Taxi and Limousine Commission

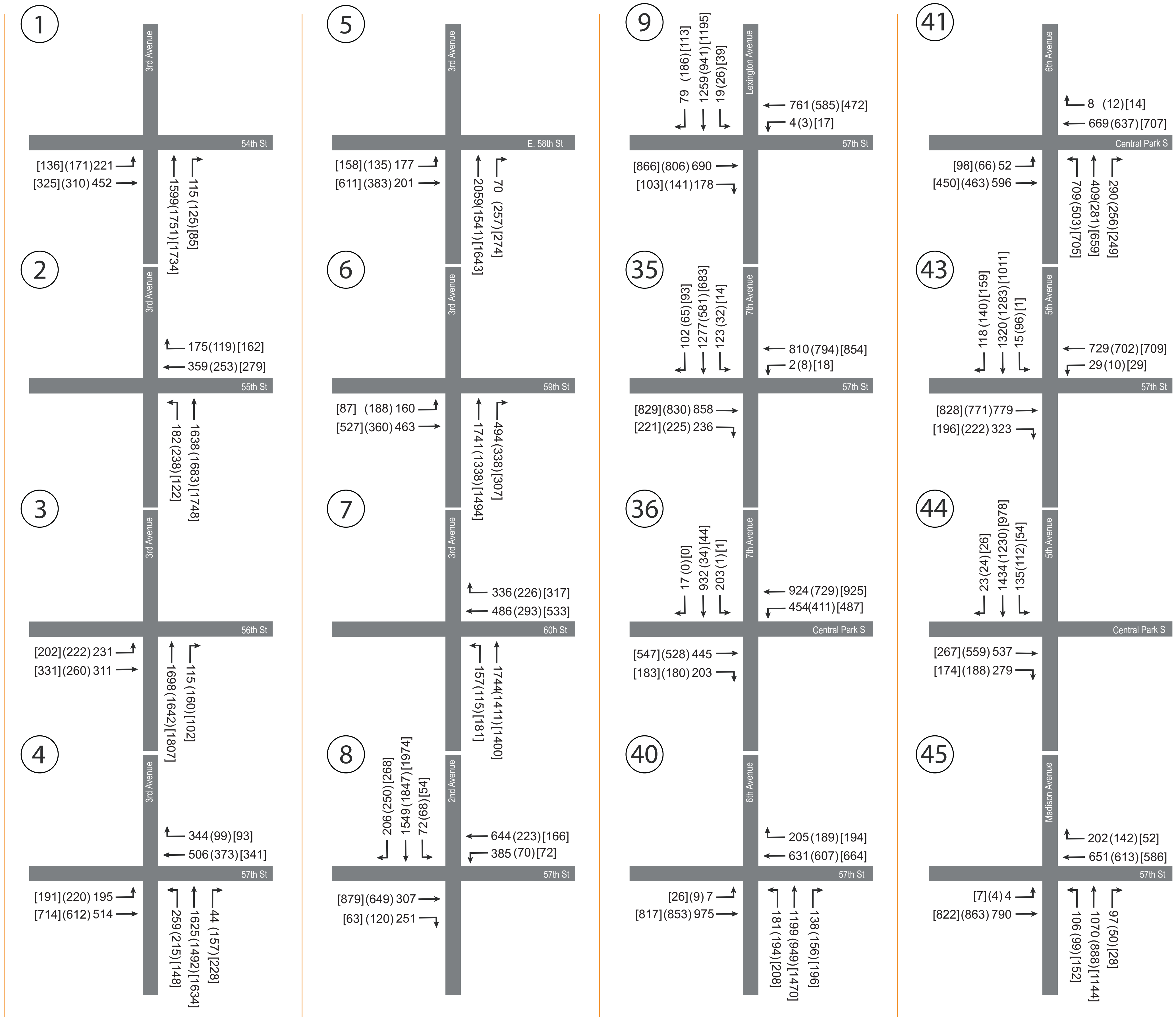
Manhattan-North Location Map



LEGEND:

\# Study Intersection Location ID

000(000)[000] AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

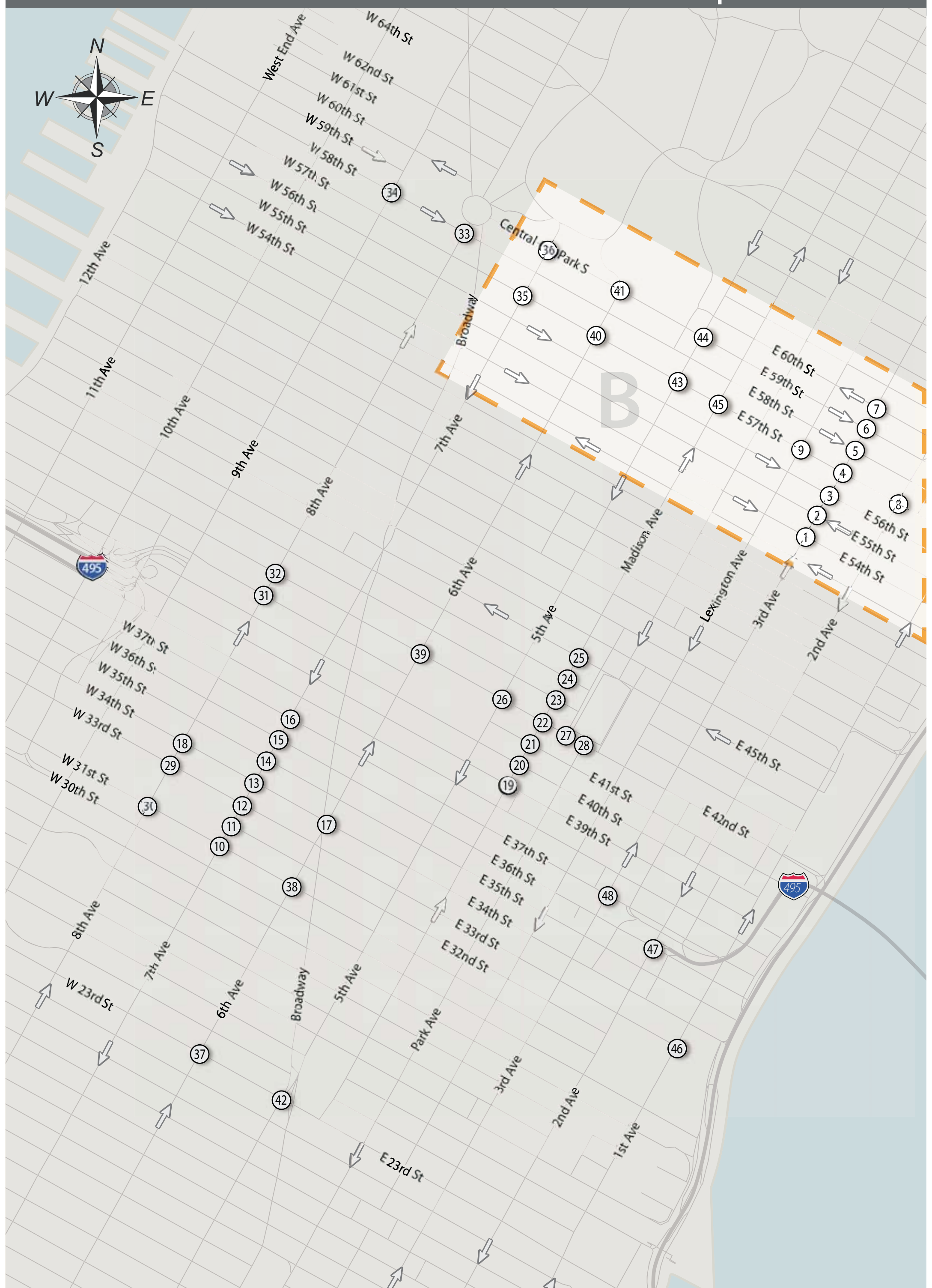


2015 Taxi Medallion Increase - FEIS

FIGURE 15-9b | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)

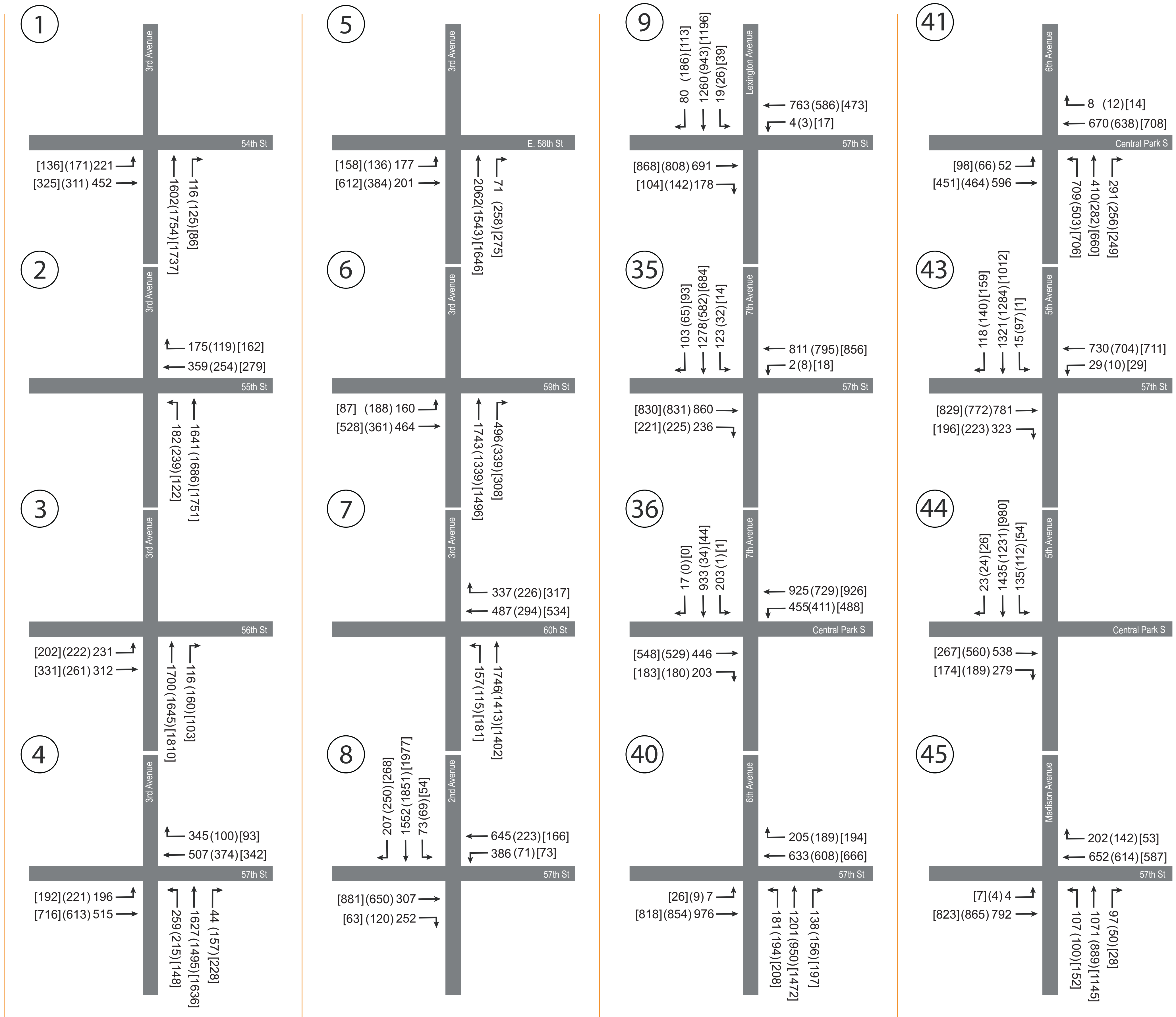
HDR NYC Taxi and Limousine Commission

Manhattan-North Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



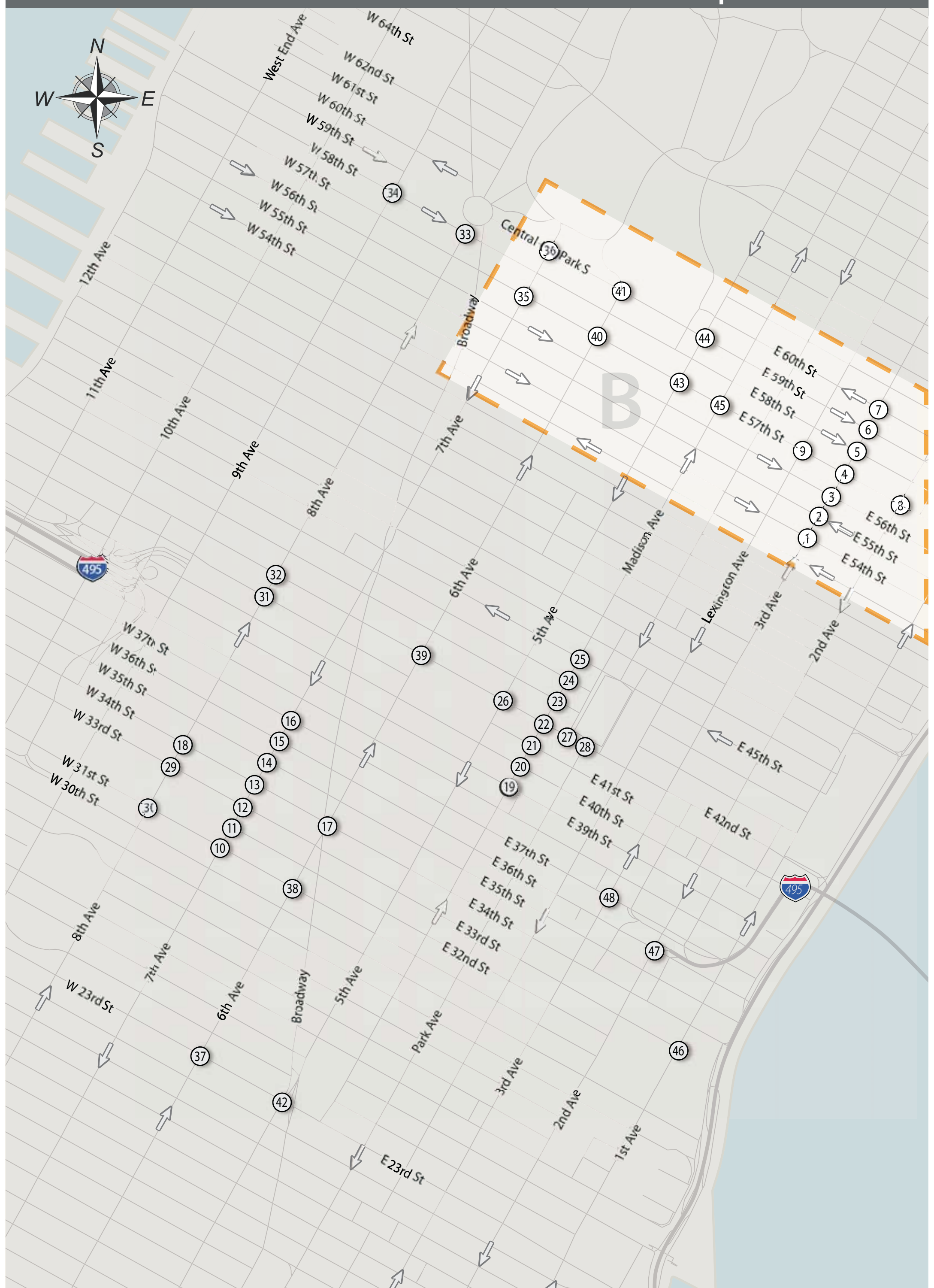
2016 Taxi Medallion Increase - FEIS

FIGURE 15-9c | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)

HDR

NYC Taxi and Limousine Commission

Manhattan-North Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

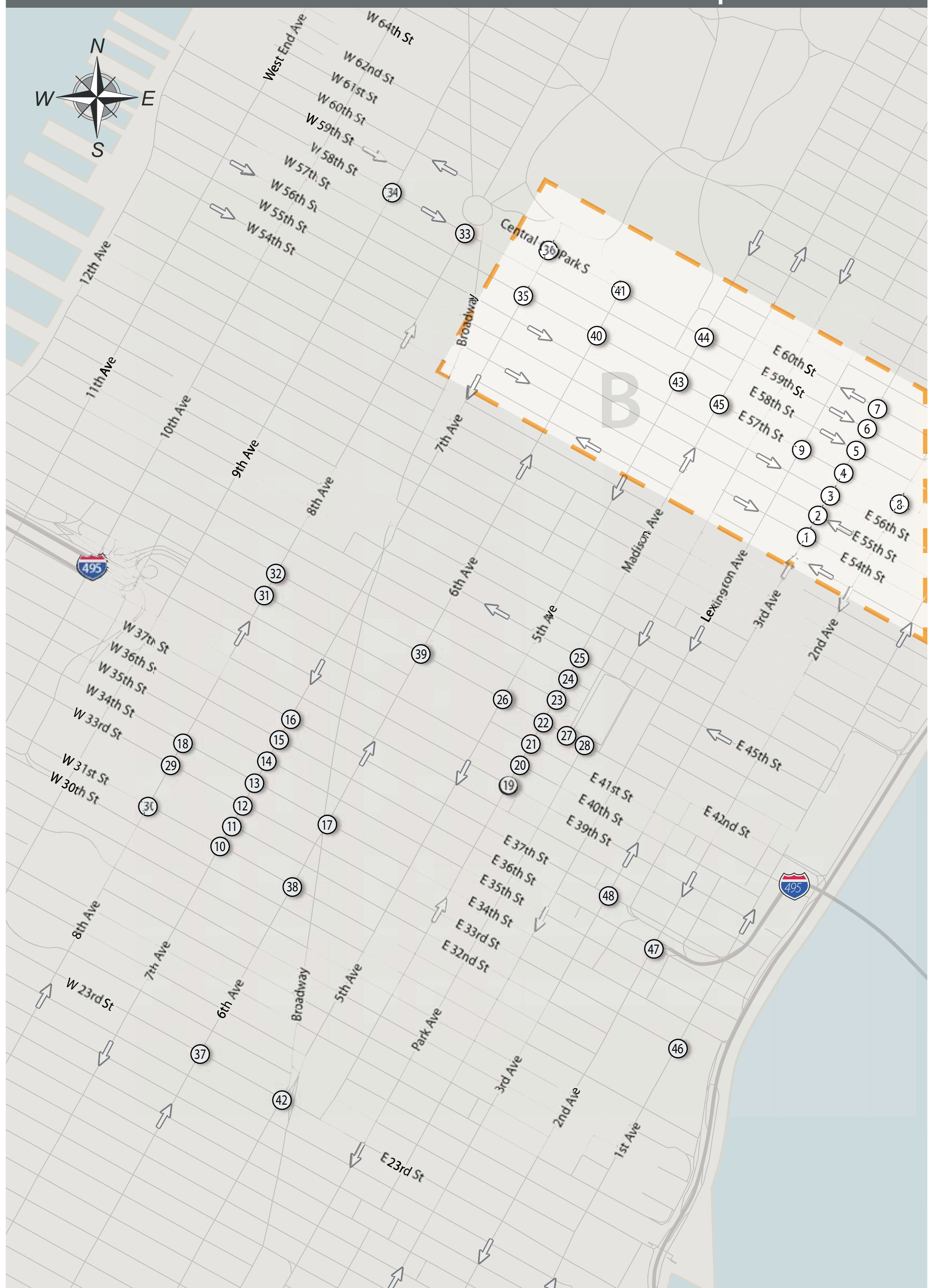
2017 Taxi Medallion Increase - FEIS

FIGURE 15-9d | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)

HDR

NYC Taxi and Limousine Commission

Manhattan-North Location Map



LEGEND:

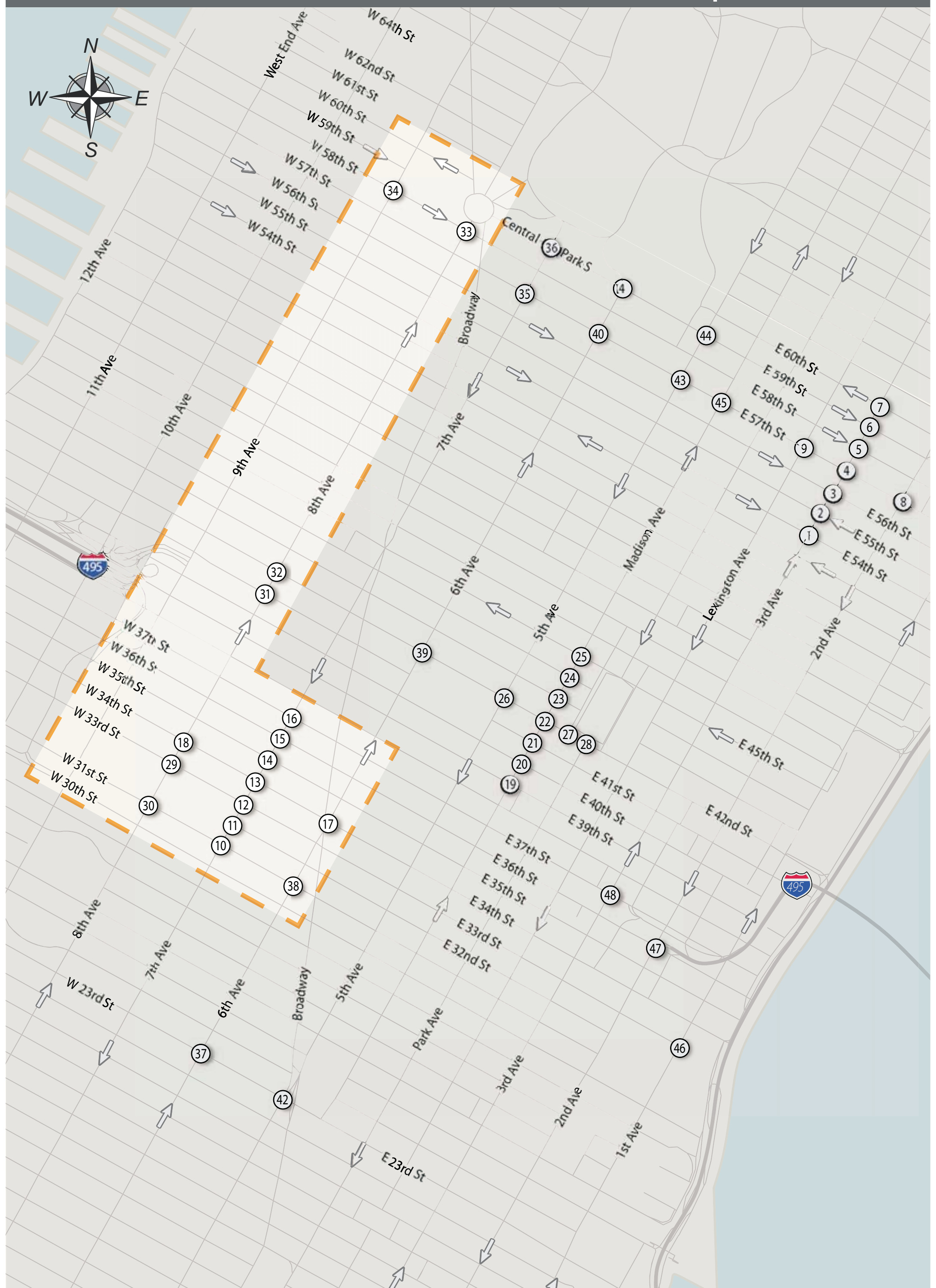
#	Study Intersection Location ID
000(000)[000]	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2014 Taxi Medallion Increase – FEIS

FIGURE 15-10a | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)

HDR NYC Taxi and Limousine Commission

Manhattan-West Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

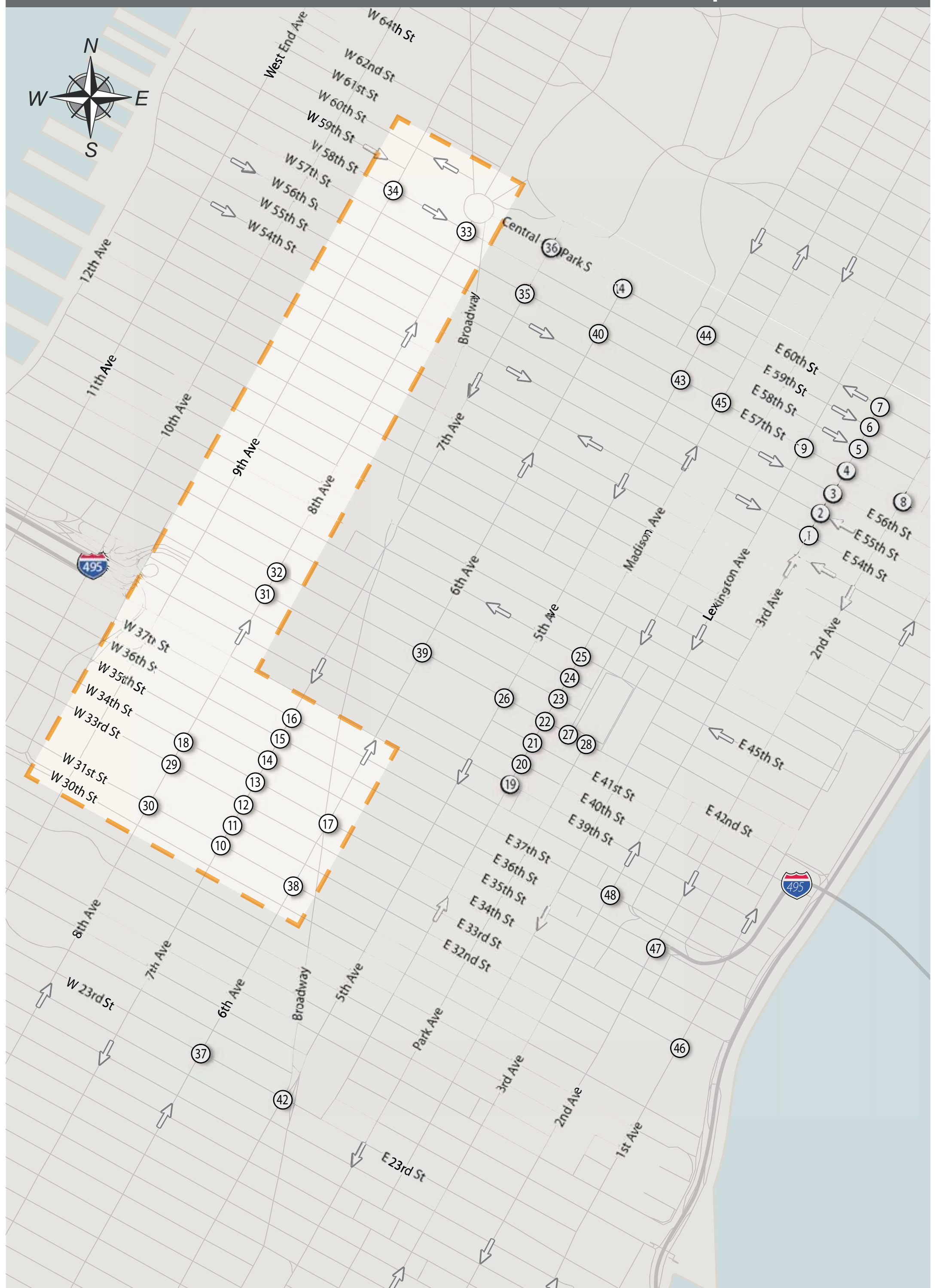
2015 Taxi Medallion Increase – FEIS

FIGURE 15-10b | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)

HDR

NYC Taxi and Limousine Commission

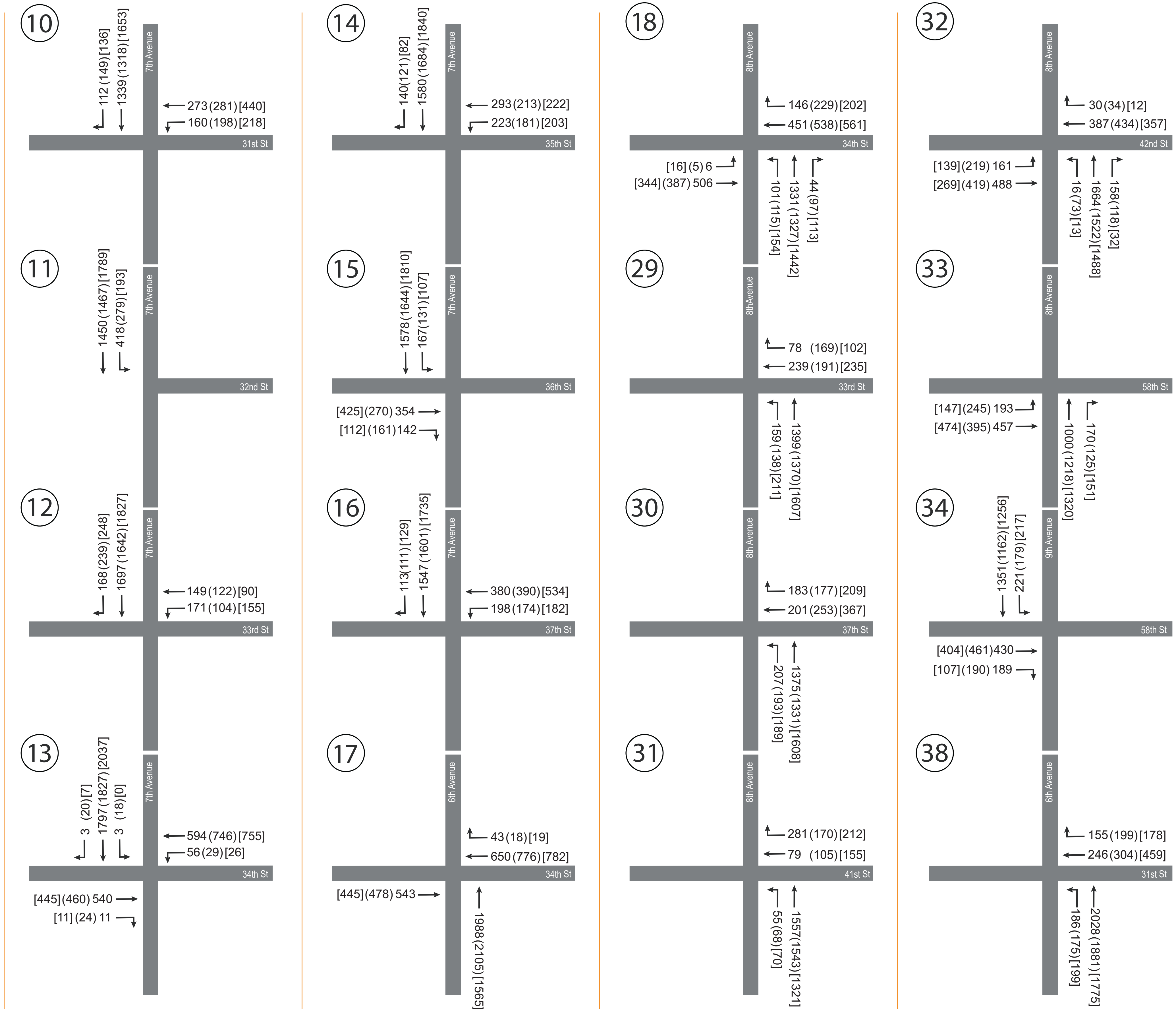
Manhattan-West Location Map



LEGEND:

\# Study Intersection Location ID

000(000)[000] AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

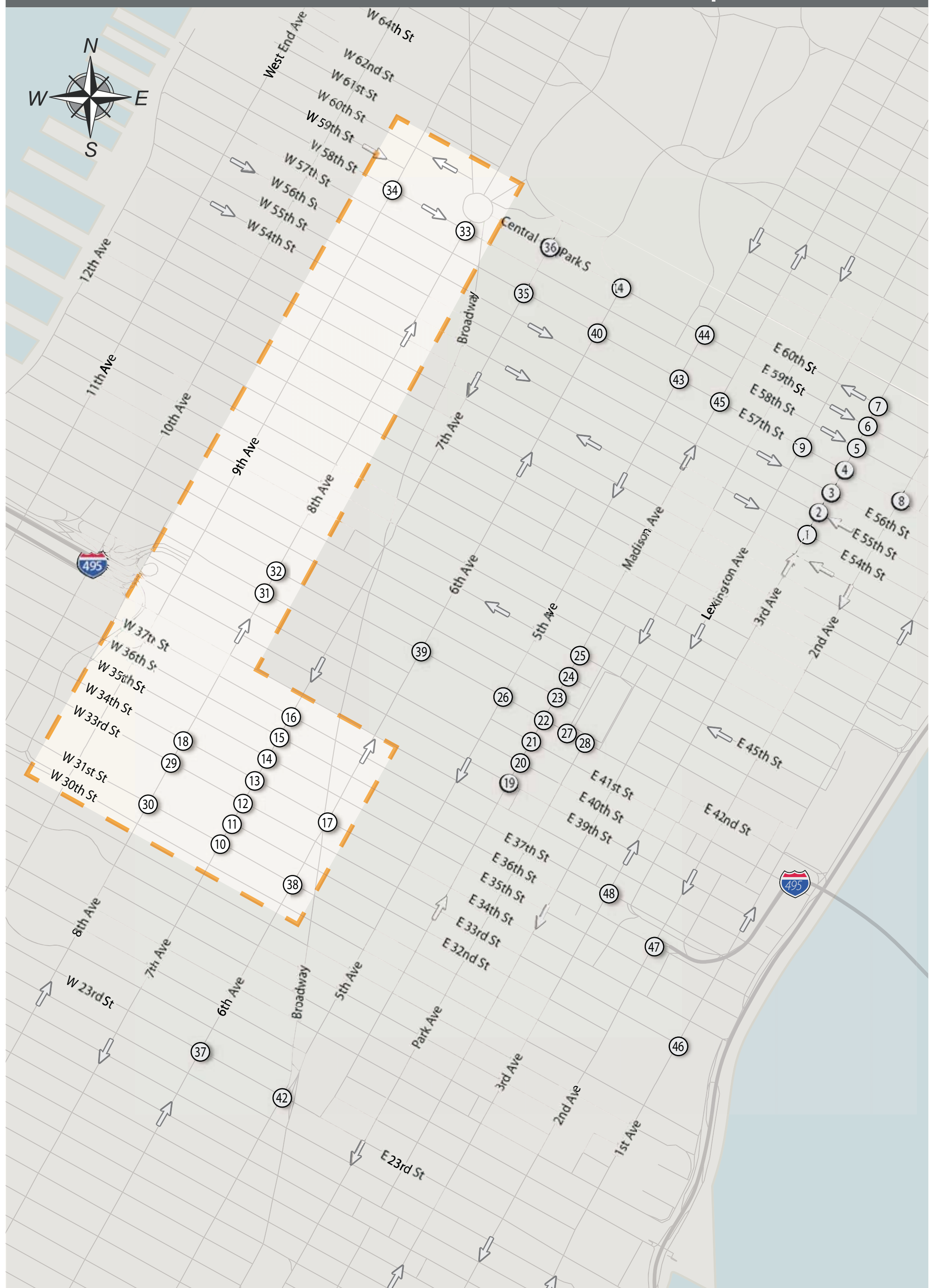


2016 Taxi Medallion Increase – FEIS

FIGURE 15-10c | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)

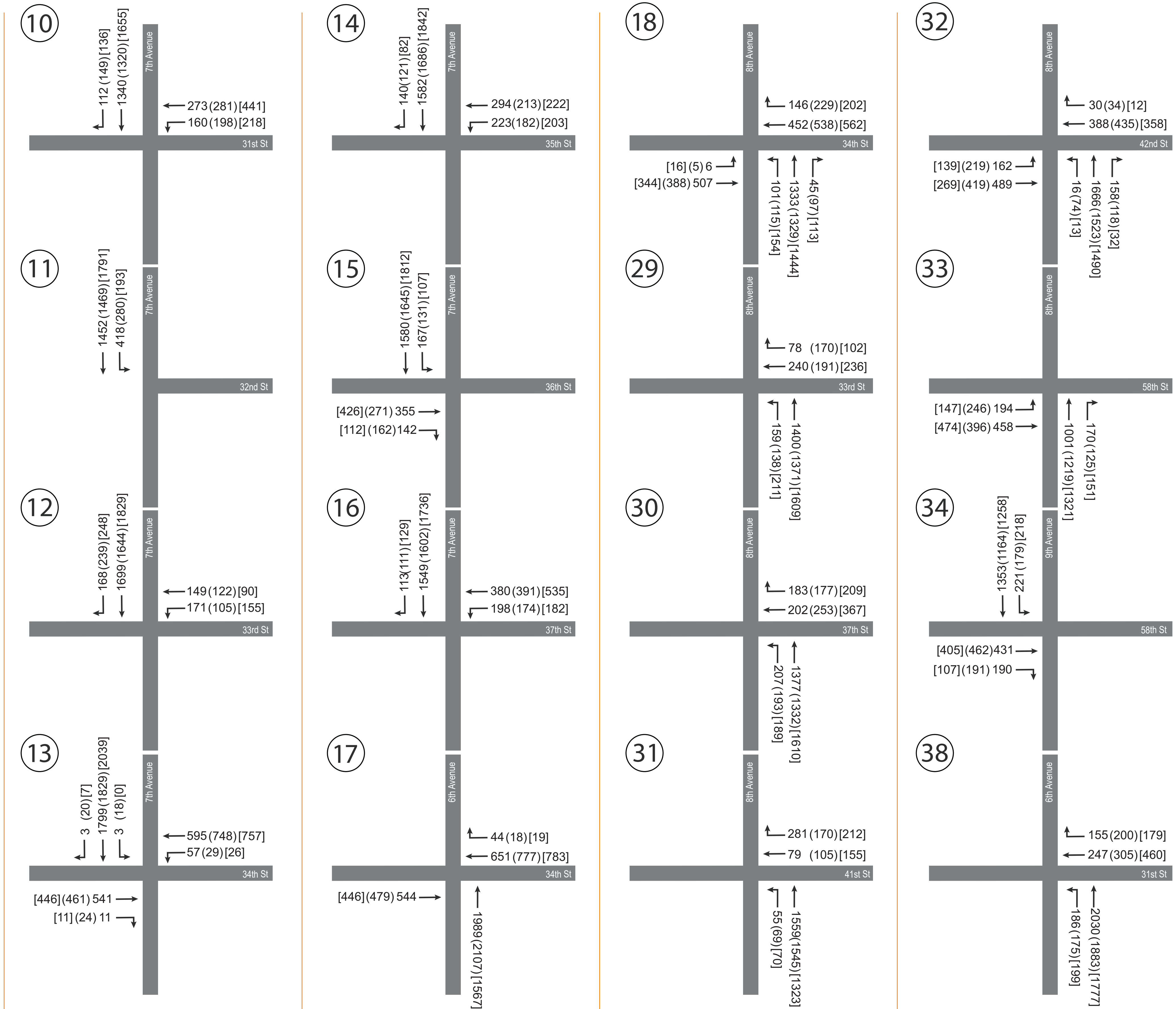
HDR | NYC Taxi and Limousine Commission

Manhattan-West Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



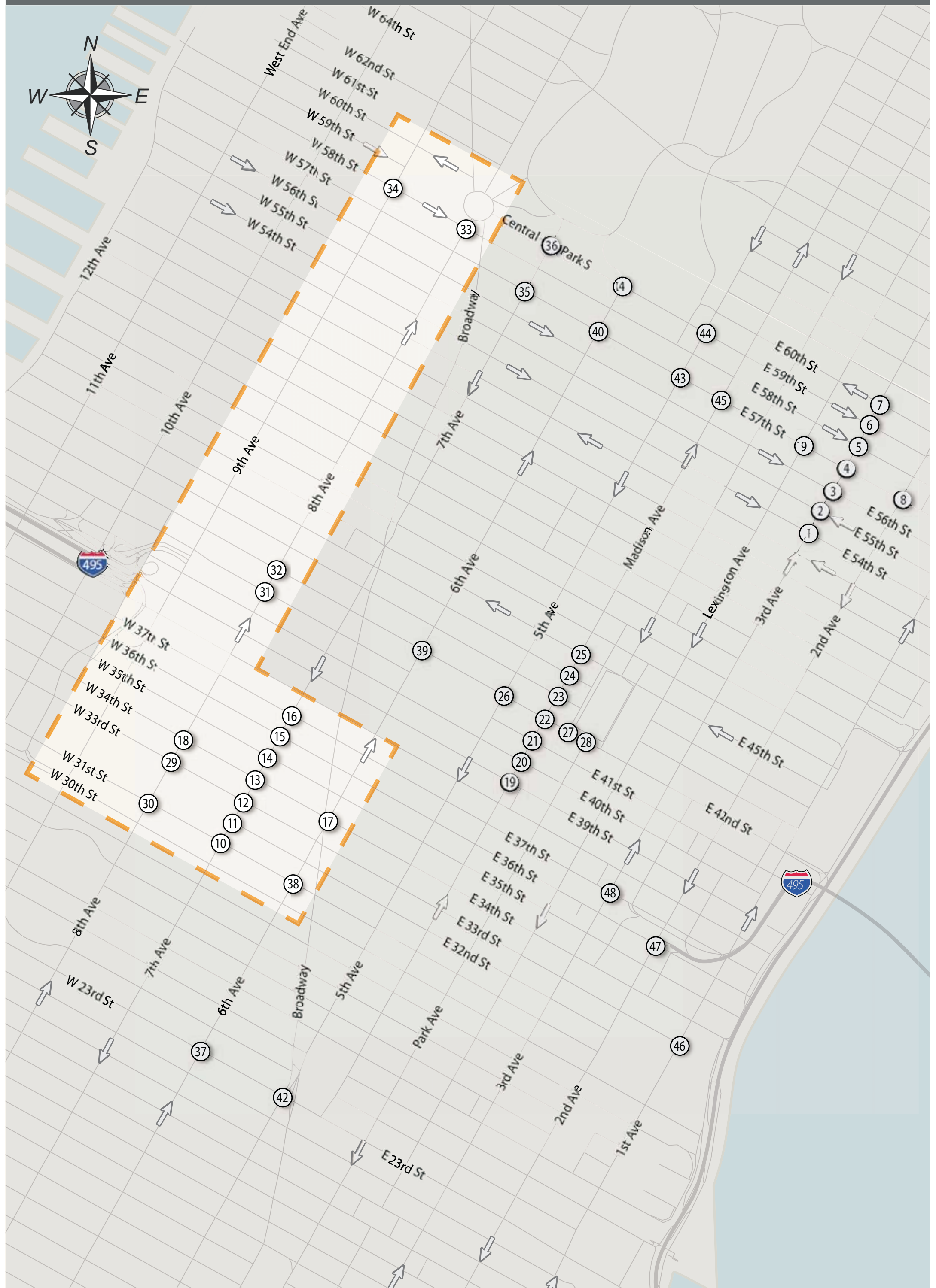
2017 Taxi Medallion Increase – FEIS

FIGURE 15-10d | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)

HDR

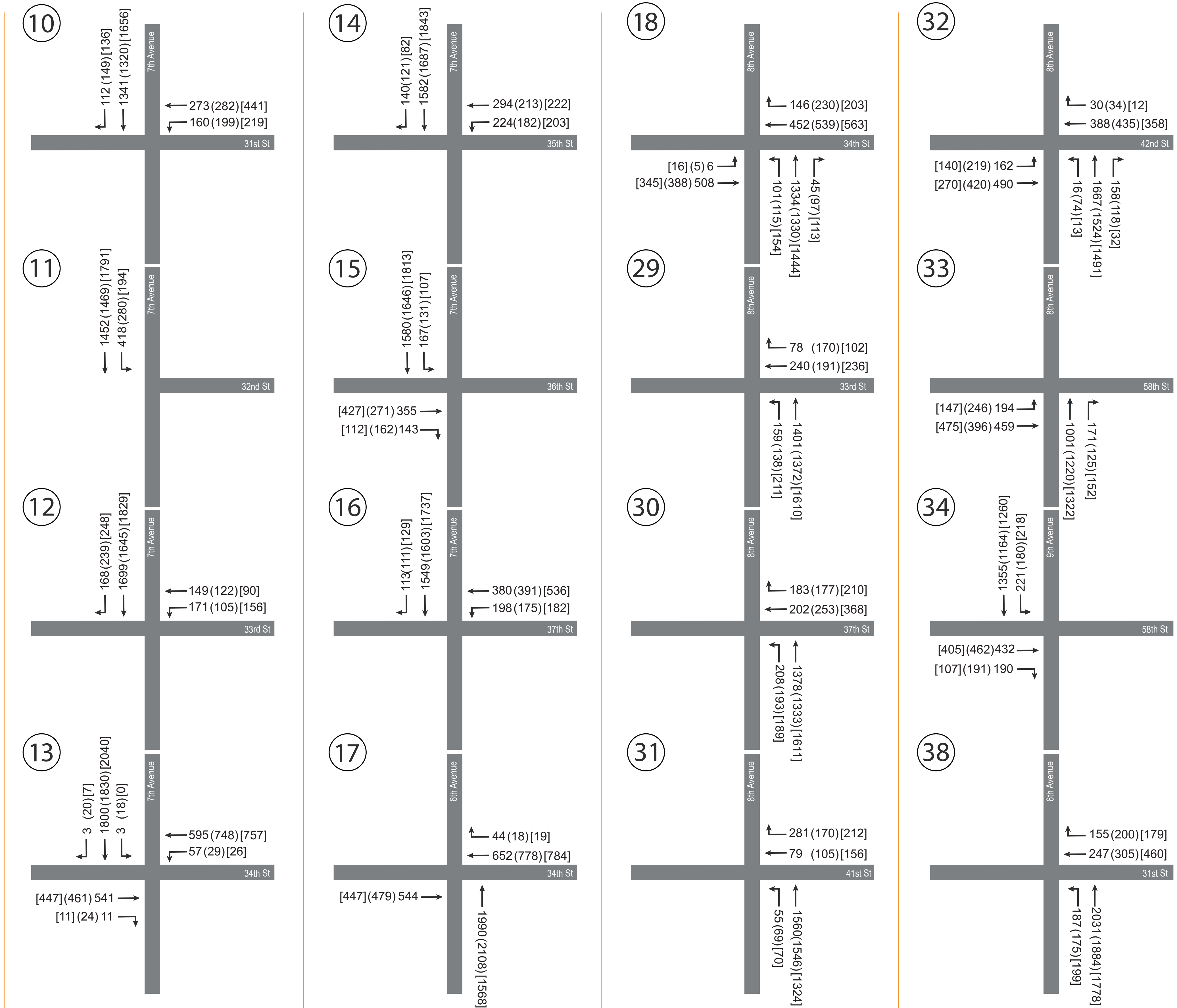
NYC Taxi and Limousine Commission

Manhattan-West Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

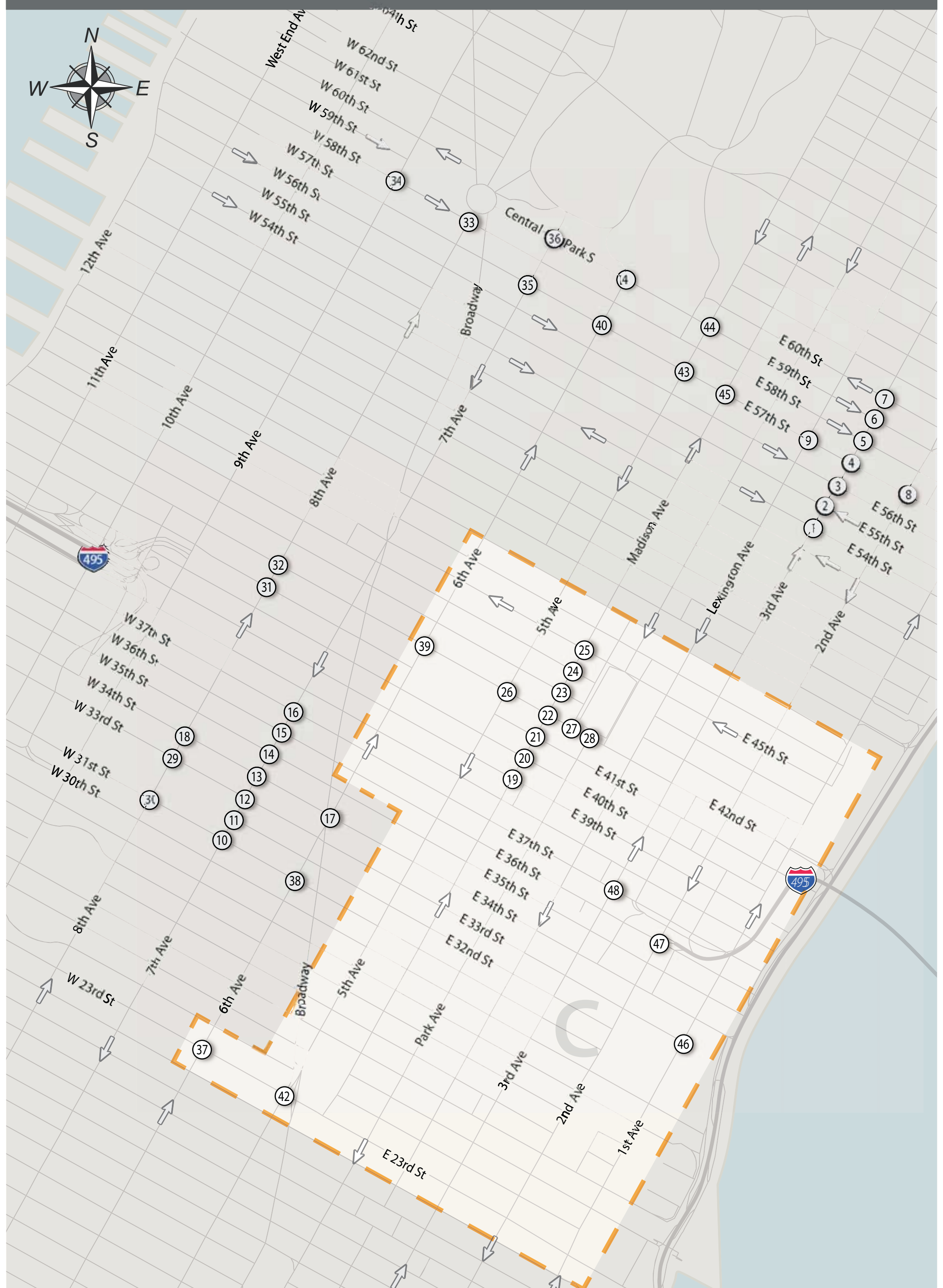


2014 Taxi Medallion Increase - FEIS

FIGURE 15-11a | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)

HDR | NYC Taxi and Limousine Commission

Manhattan-East Location Map



LEGEND:

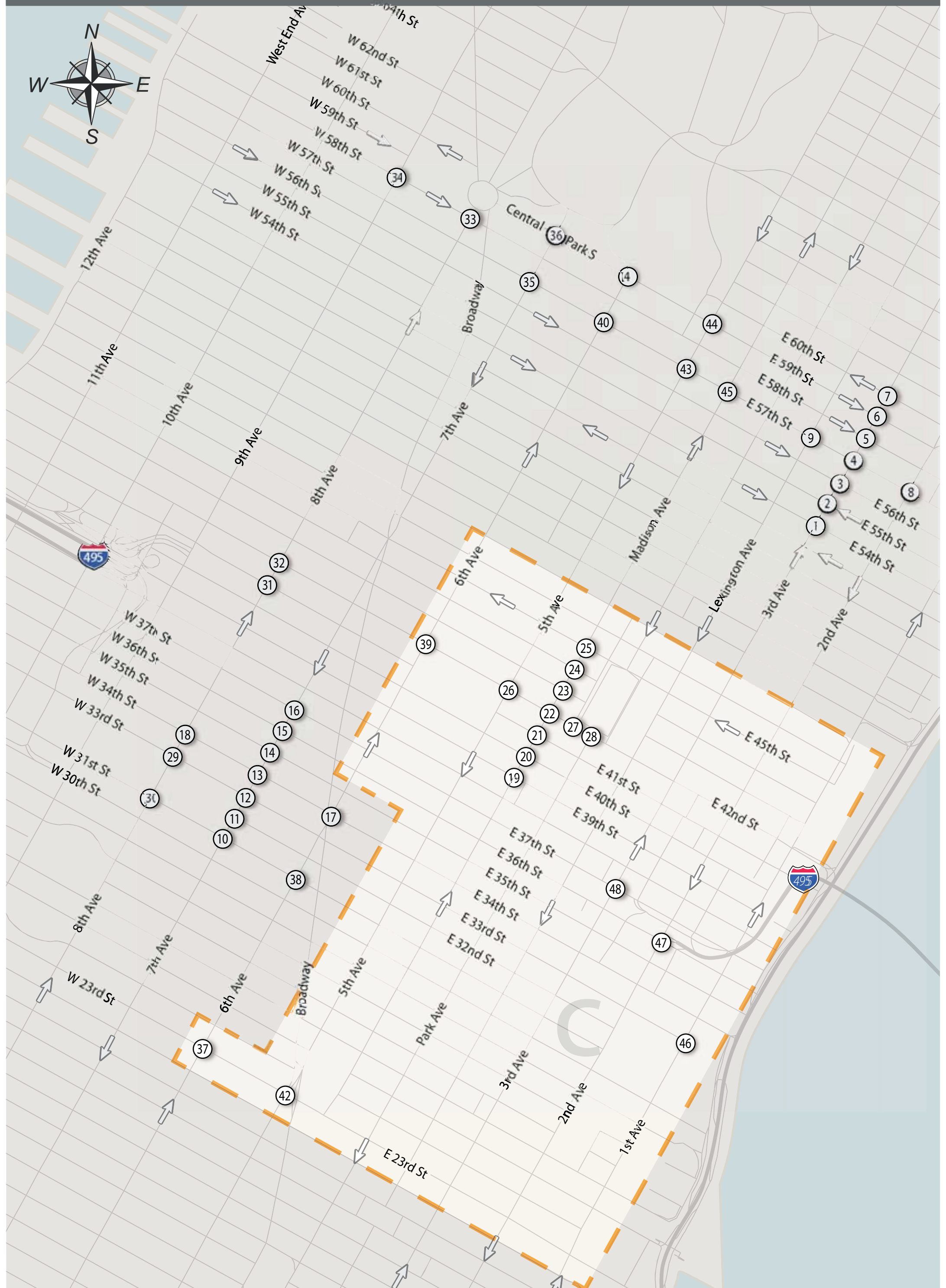
#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2015 Taxi Medallion Increase - FEIS

FIGURE 15-11b | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)

HDR
NYC Taxi and Limousine Commission

Manhattan-East Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

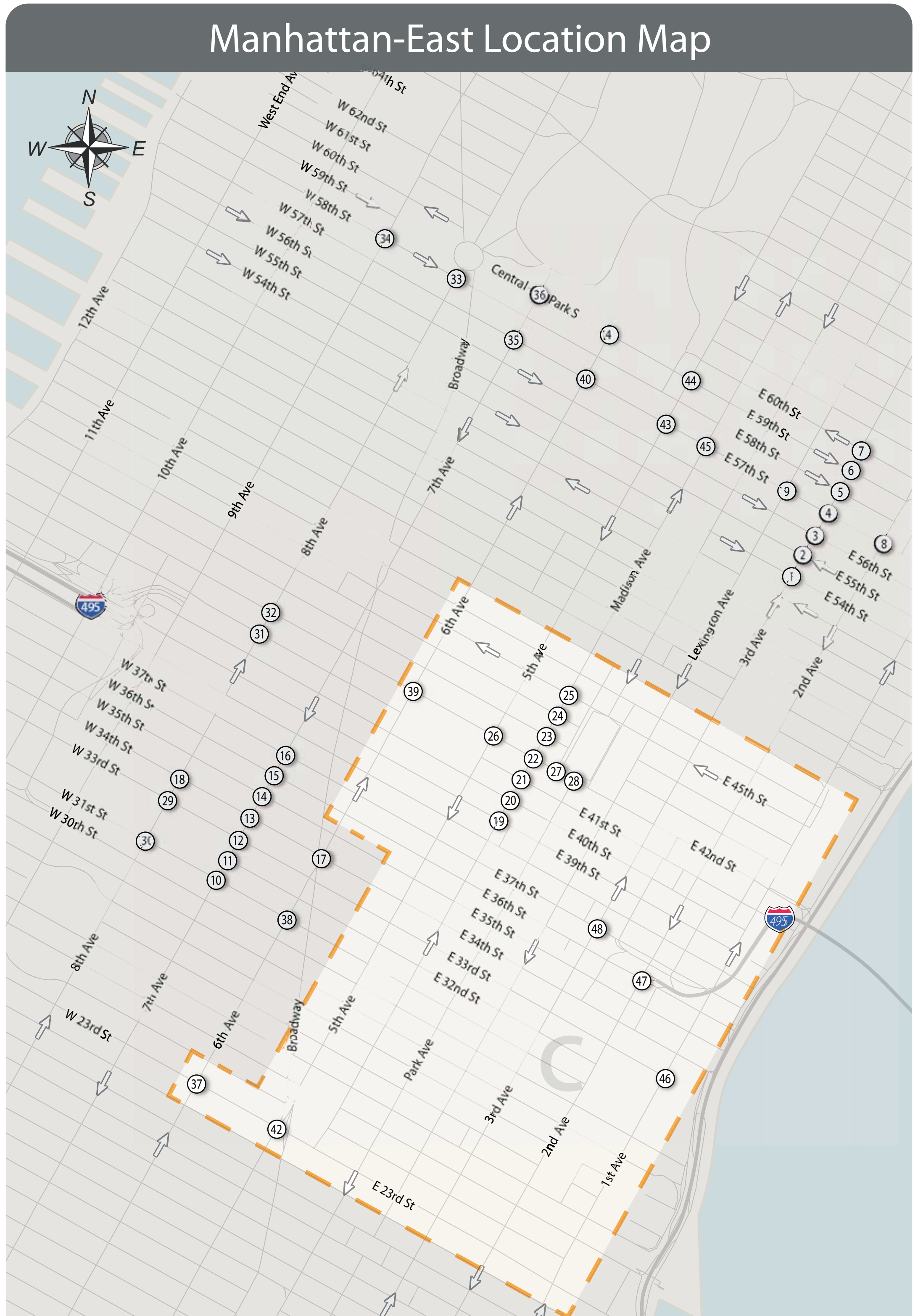
2016 Taxi Medallion Increase - FEIS

FIGURE 15-11c | **Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)**

HDR

NYC Taxi and Limousine Commission

Manhattan-East Location Map



LEGEND:

— Study Intersection Location ID

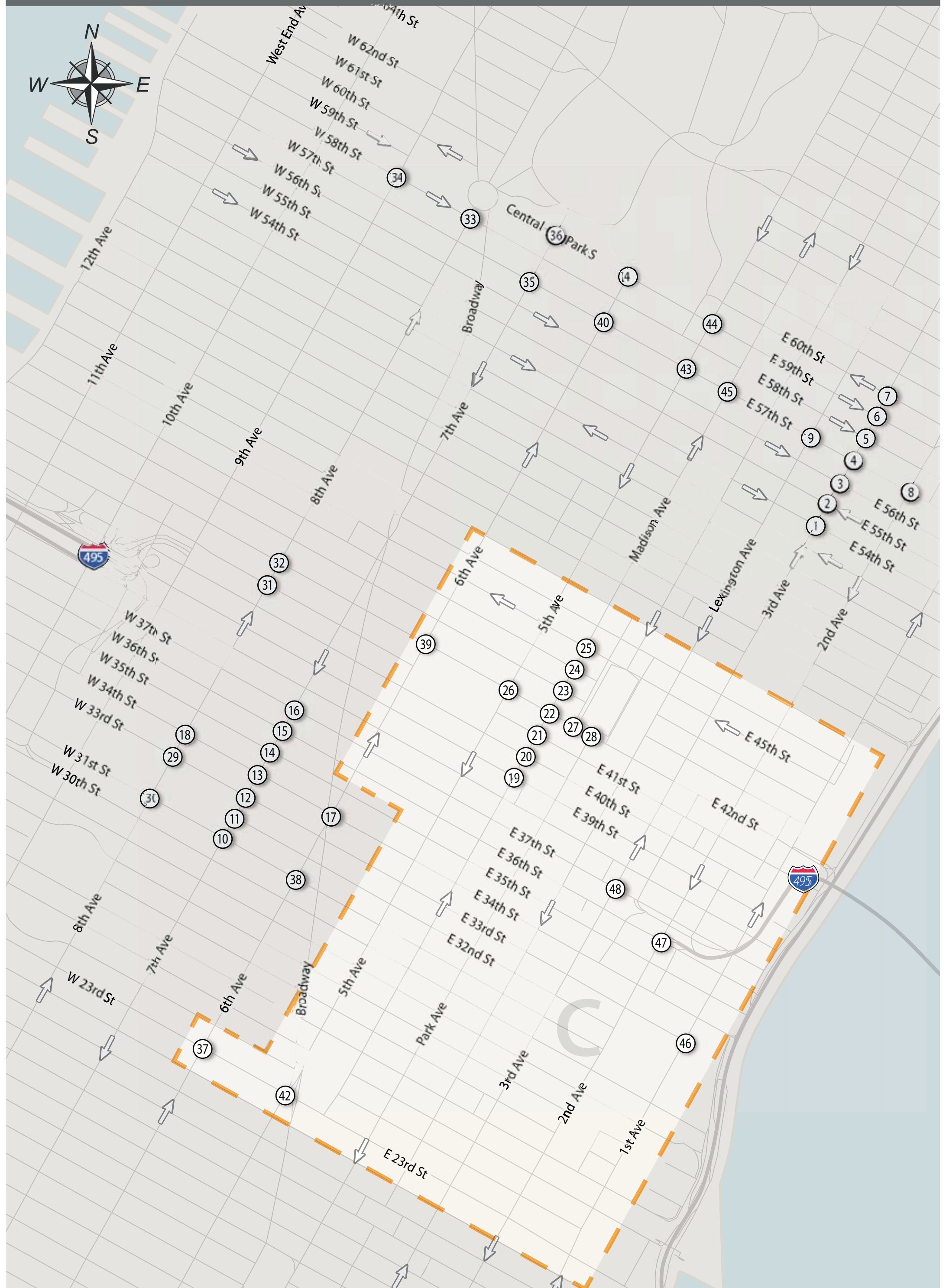
000(000)[000] — AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes

2017 Taxi Medallion Increase - FEIS

FIGURE 15-11d | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)

HDR NYC Taxi and Limousine Commission

Manhattan-East Location Map



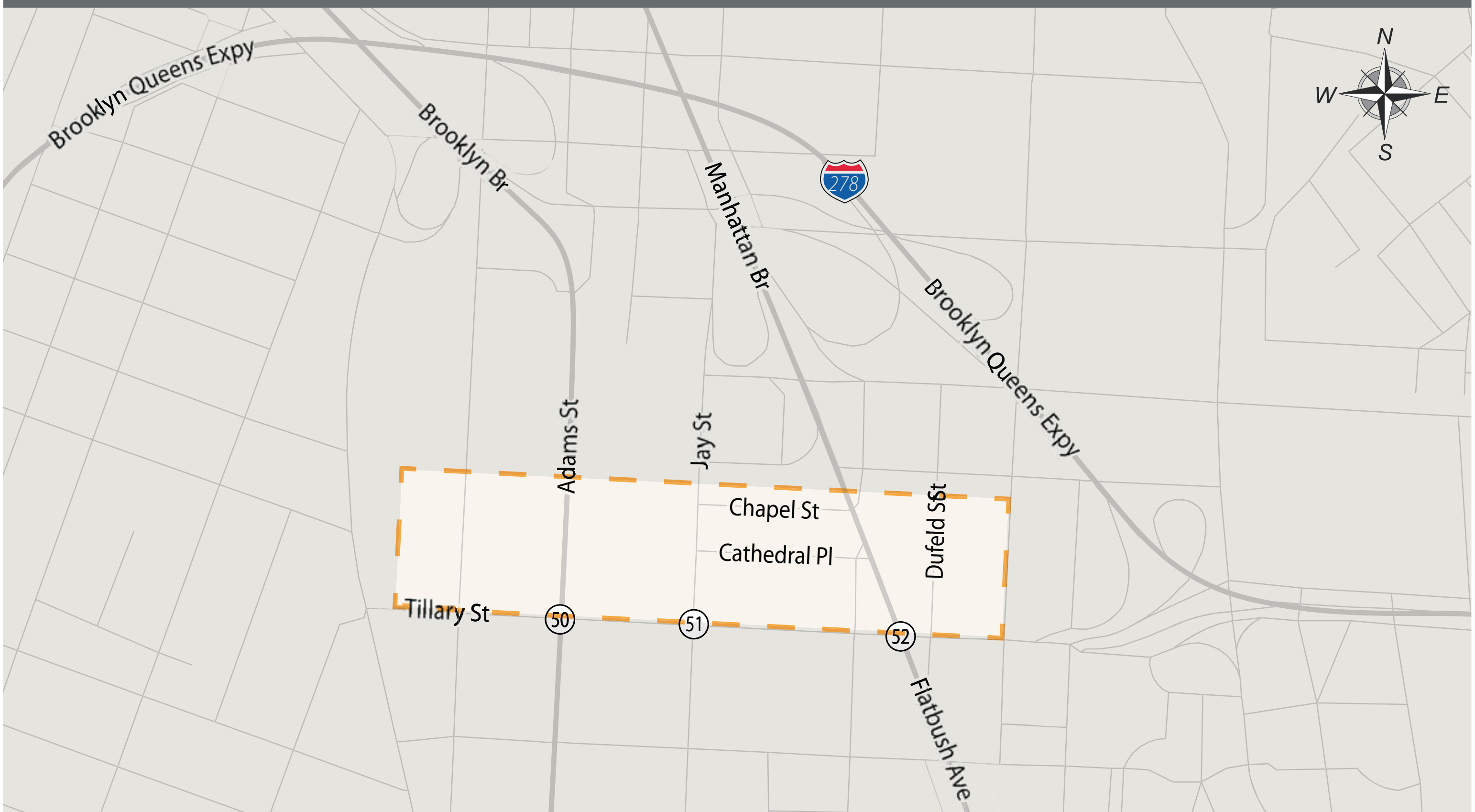
LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2014 Taxi Medallion Increase – FEIS

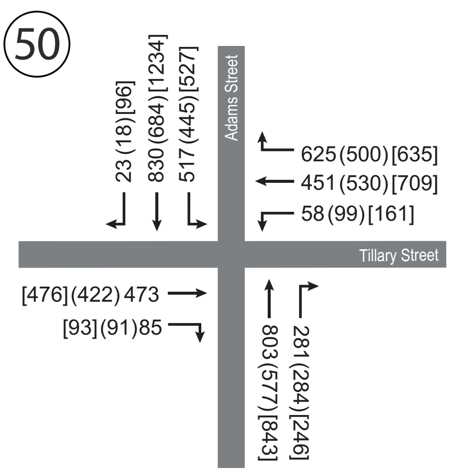
FIGURE 15-12a | **Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

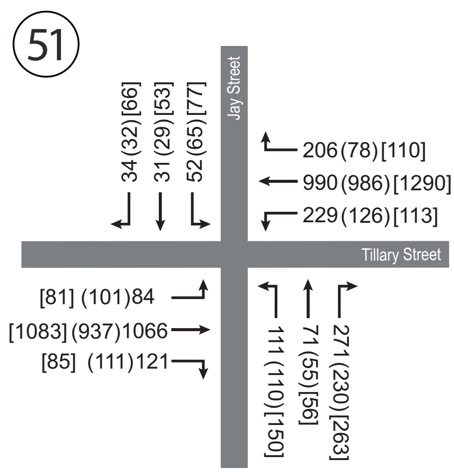
Brooklyn Location Map

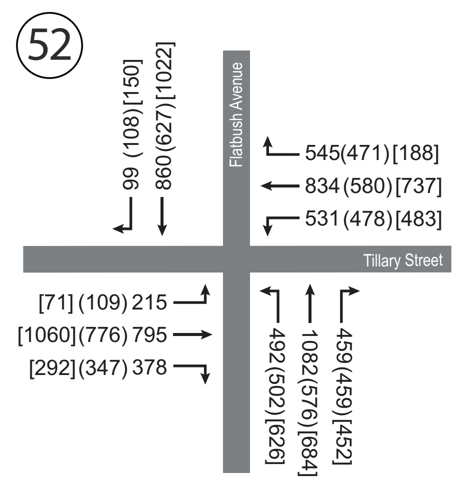


LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







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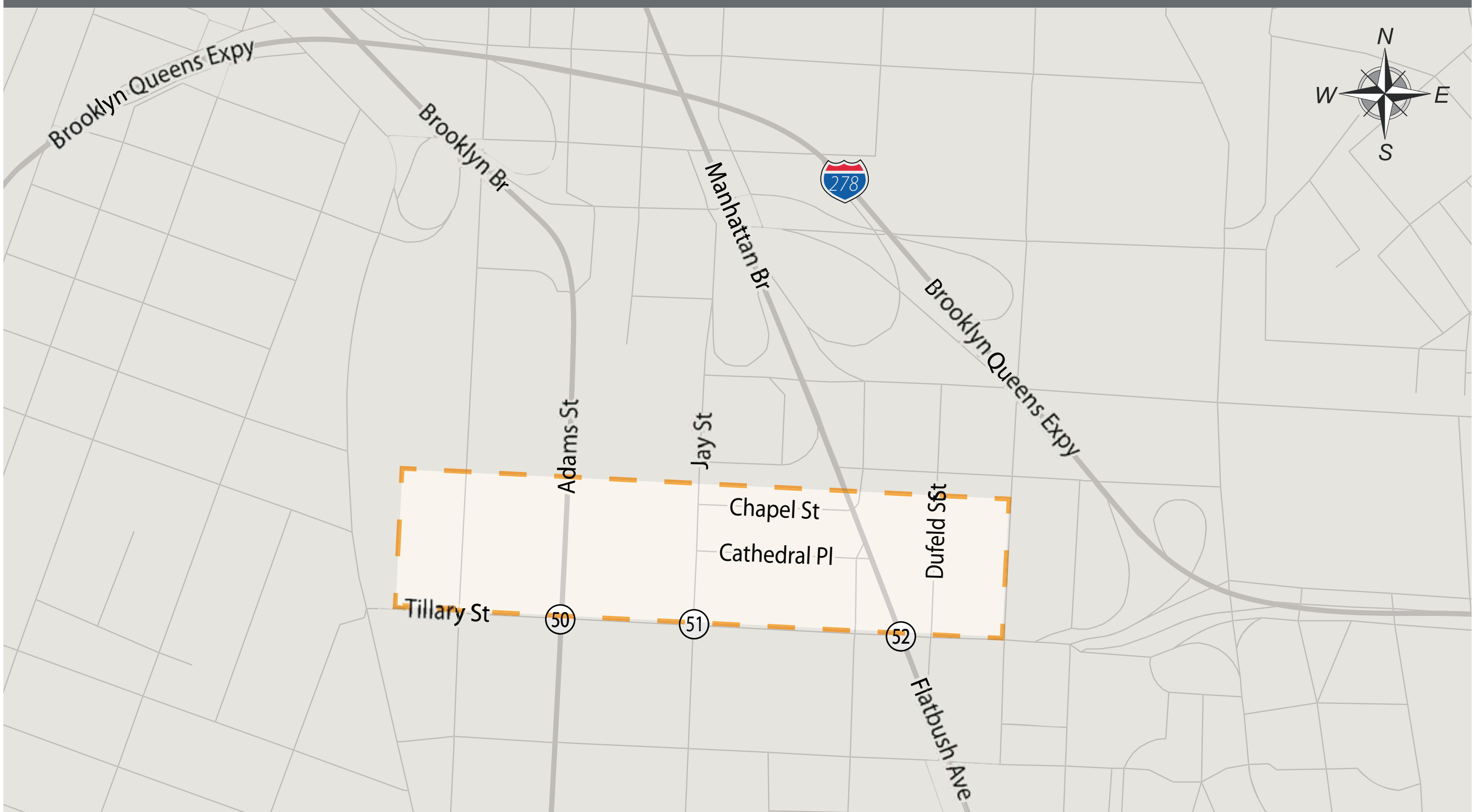
NYC Taxi and Limousine Commission

2015 Taxi Medallion Increase – FEIS

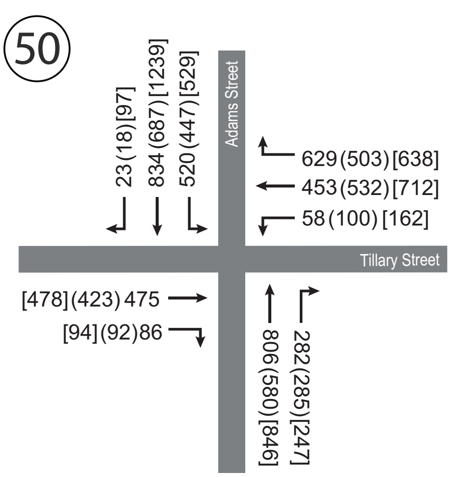
FIGURE 15-12b | **Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

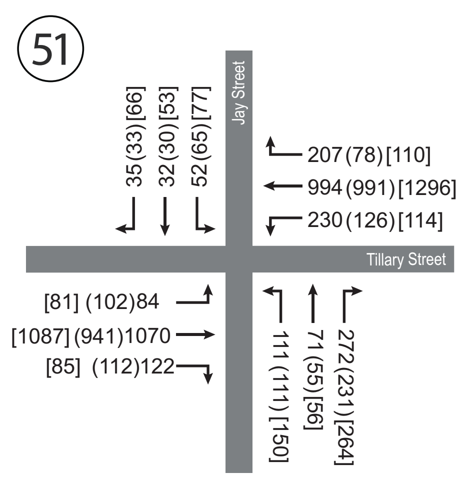
Brooklyn Location Map

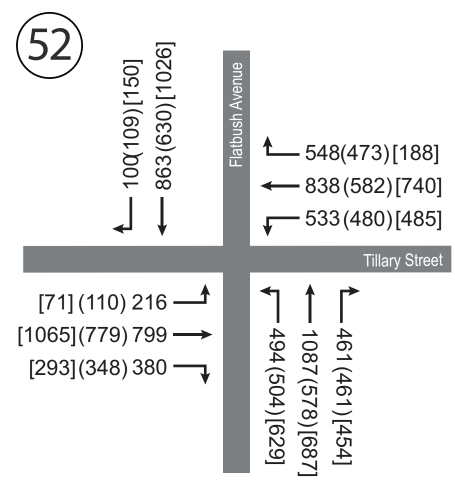


LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







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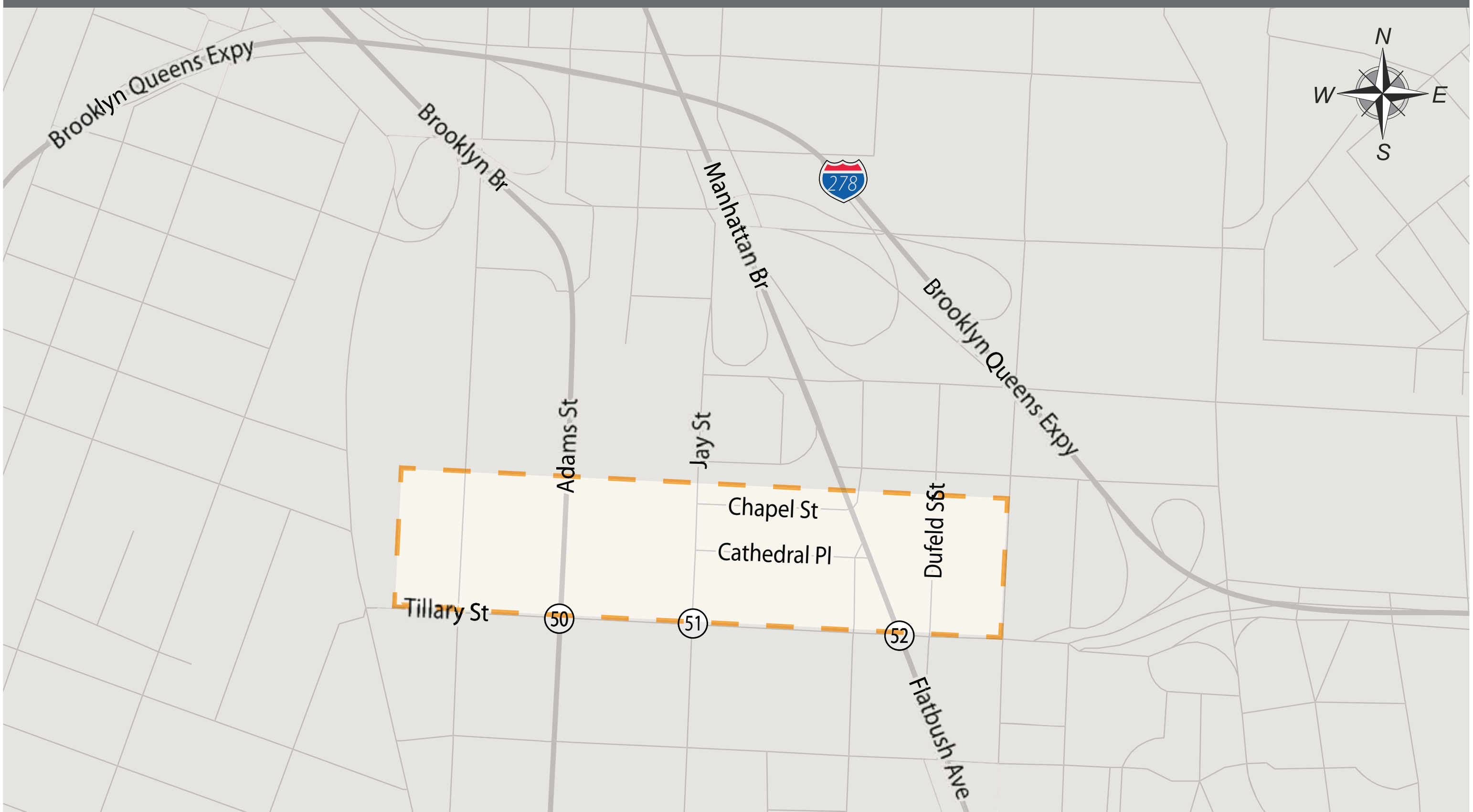
NYC Taxi and Limousine Commission

2016 Taxi Medallion Increase – FEIS

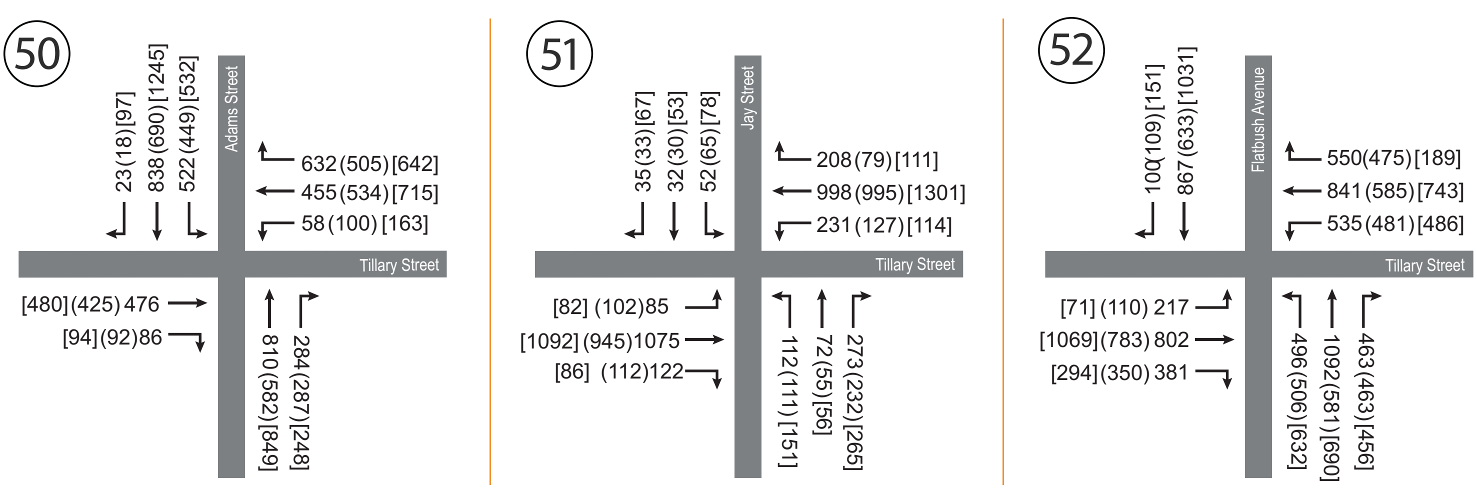
FIGURE 15-12c | **Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

Brooklyn Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



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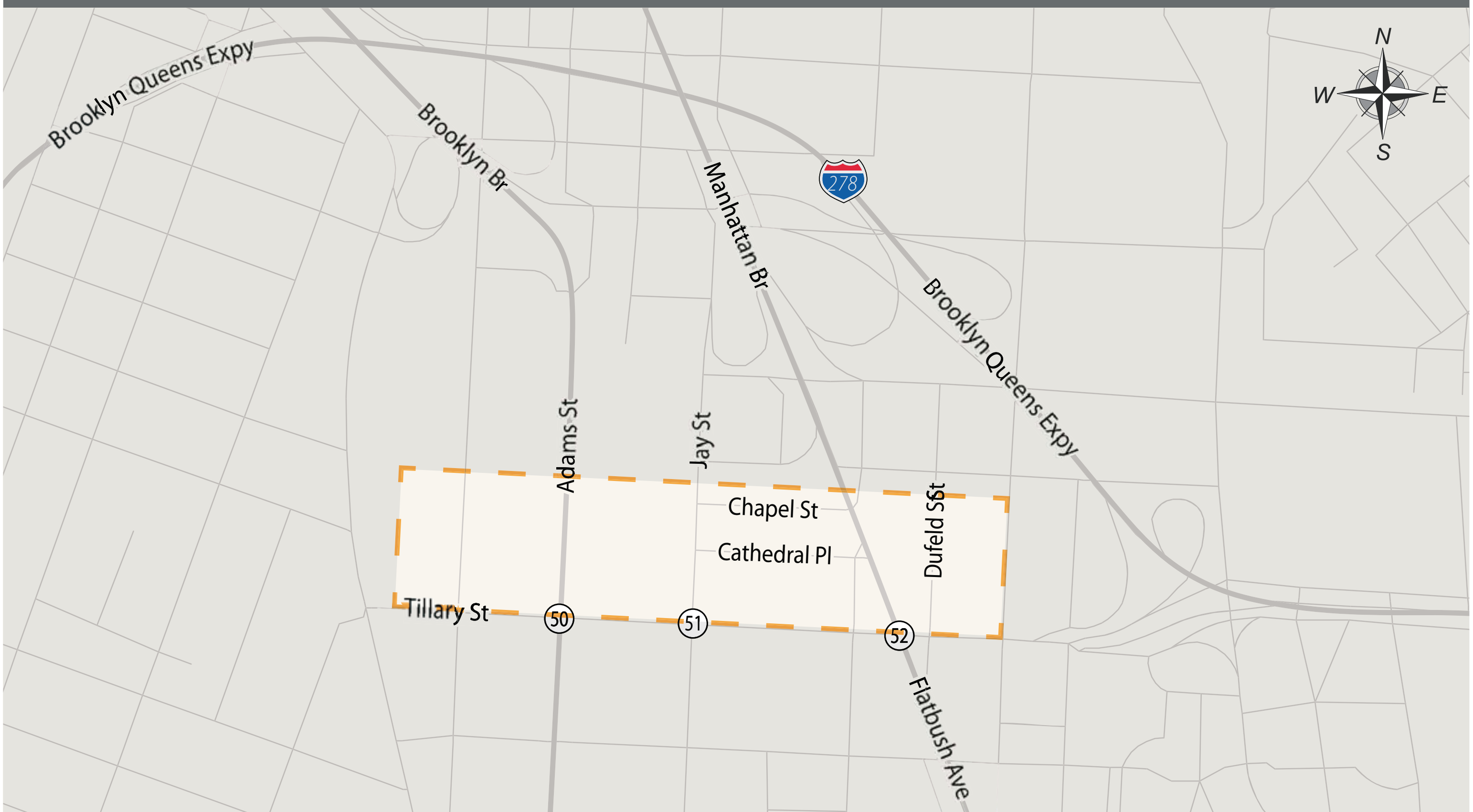
2017 Taxi Medallion Increase – FEIS

FIGURE 15-12d | **Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

Brooklyn Location Map



LEGEND:

#	Study Intersection Location ID
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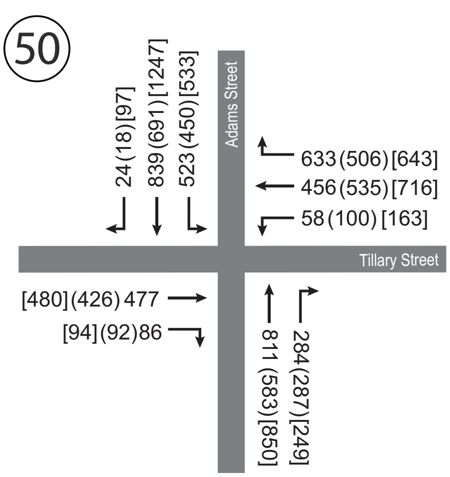

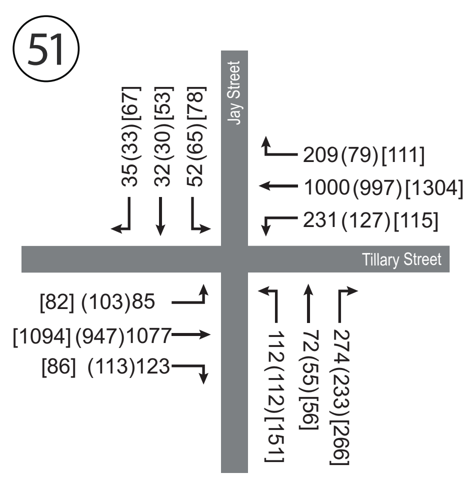

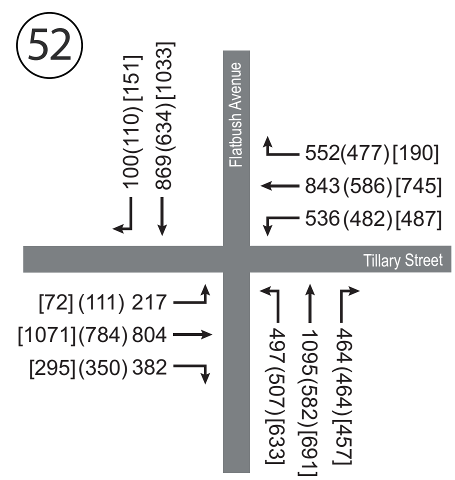

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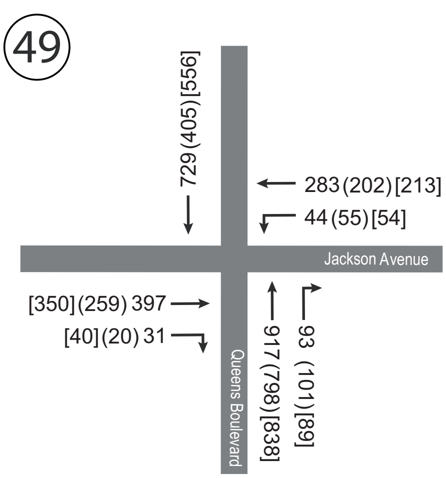
2014 Taxi Medallion Increase – FEIS

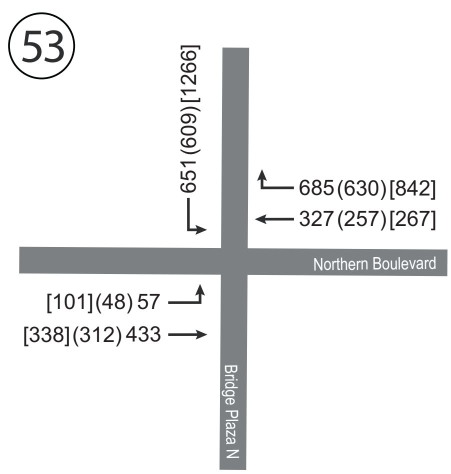
FIGURE 15-13a | Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)

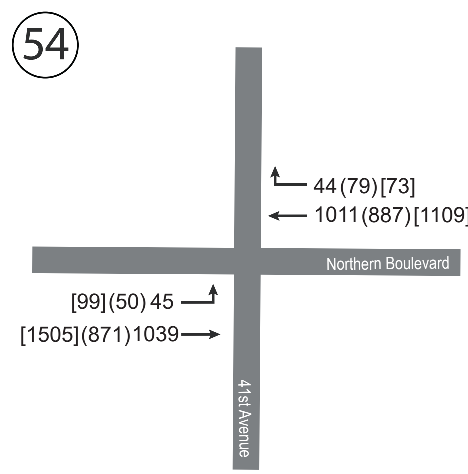
Queens Location Map

LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (**8-9AM**), Midday (**12-1 PM**), PM (**5-6 PM**) Peak Hour Volumes







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NYC Taxi and Limousine Commission

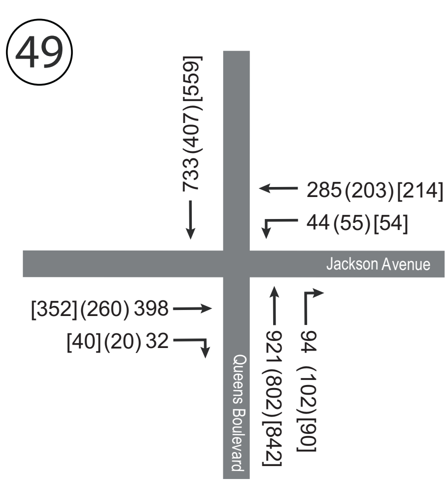
2015 Taxi Medallion Increase – FEIS

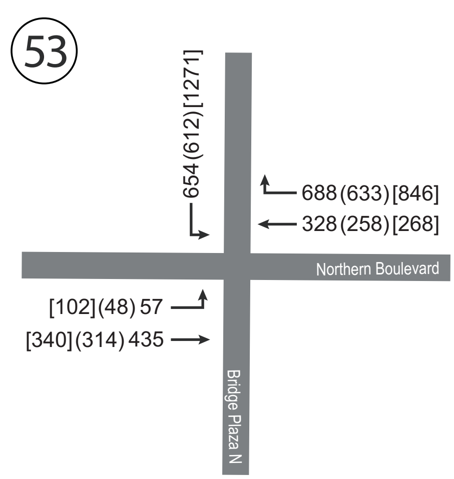
FIGURE 15-13b | **Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

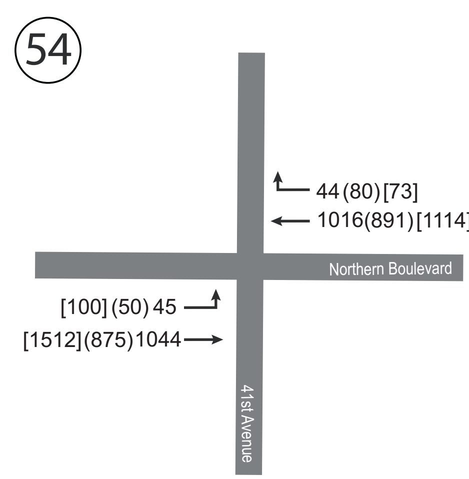
Queens Location Map

LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes







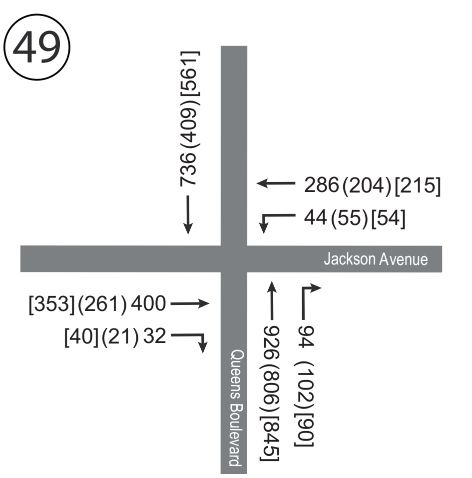
2016 Taxi Medallion Increase – FEIS

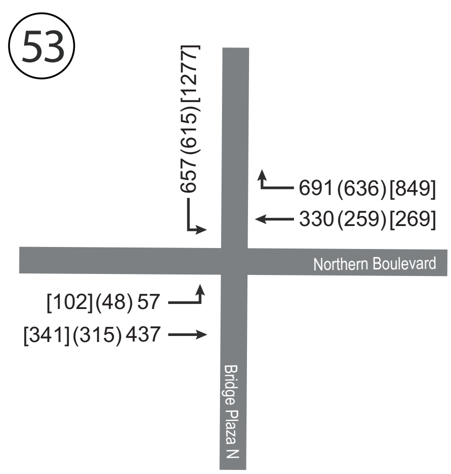
FIGURE 15-13c | **Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

Queens Location Map

LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes





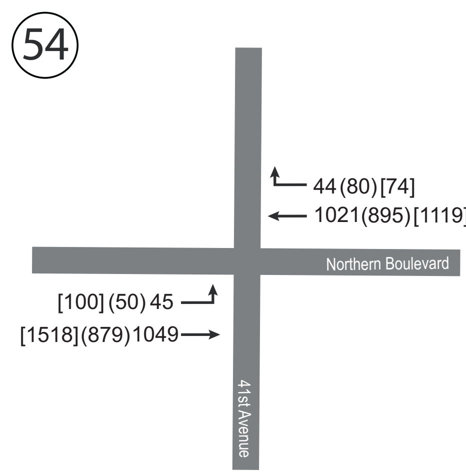


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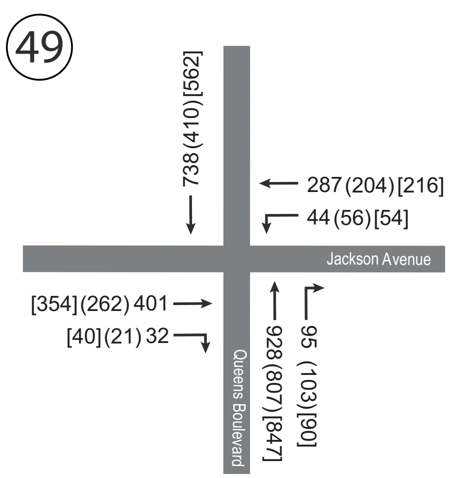
FIGURE 15-13d | **Future Conditions without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

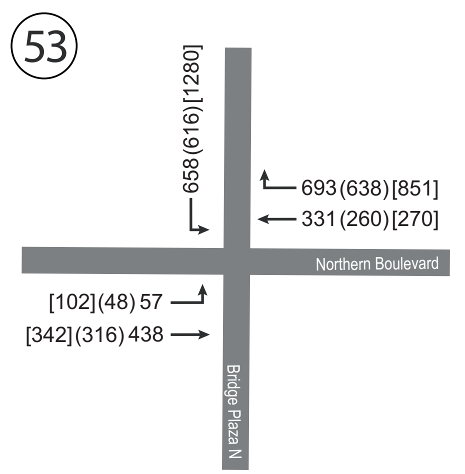
Queens Location Map

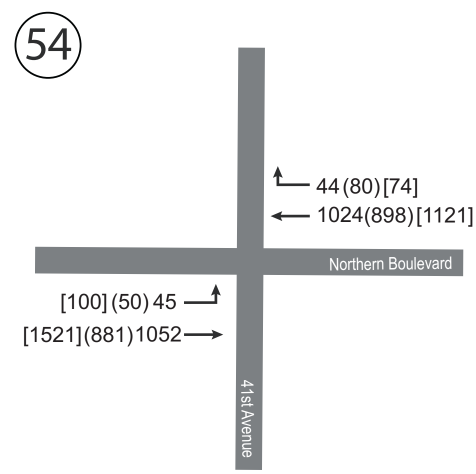
LEGEND:

(#) Study Intersection Location ID

000(000)[000] AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes







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As indicated in these figures, a number of the study intersections are projected to have substantial increases in traffic in the future without the Proposed Action compared to existing traffic levels. For example, in the 2017 AM peak hour, two-way traffic on 42nd Street is projected to increase by approximately 135 vehicles. Similarly, AM peak hour traffic on Seventh Avenue is expected to increase by approximately 65 vehicles compared to existing traffic levels, while traffic on Tillary Street will grow by nearly 400 vehicles just west of Flatbush Avenue compared to existing traffic levels. There are also a number of other corridors and intersections that have substantial AM peak hour increases in the future without the Proposed Action. In Manhattan, increases in the Midday and PM peak hours tend to be lower than increases in the AM peak hour at a number of locations. Increases in traffic volumes on Eighth Avenue in the PM peak hour are projected to increase by approximately 75 vehicles. On Tillary Street in Brooklyn, traffic volumes in the future without the Proposed Action are projected to increase by over 400 vehicles in the PM peak hour, while traffic volumes on Northern Boulevard near 41st Street, in Queens, are projected to increase by approximately 55 vehicles during both the AM and PM peak hours.

15.2.7.2 Intersection Improvements That Would Occur in the Future Without the Proposed Action

City land use and environmental reviews of a number of the major planned and approved developments that will contribute traffic to the Study Area roadway network included mandated changes to a number of the Study Area intersections to mitigate projected impacts of those projects. The majority of the changes are limited to signal timing adjustments; however, several include modifications of parking restrictions, motor vehicle standing regulations, and/or lane restriping. There were also some intersection operations changes made by NYCDOT independent of proposed new developments, such as changes to operations at 42nd Street and Vanderbilt Avenue to close Vanderbilt Avenue to westbound right turning traffic. These improvements were used to update the existing intersection geometry and traffic signal timing to a new without Proposed Action condition for use in the capacity analysis. These improvements were applied to all four future analysis years.

15.2.7.3 Peak Hour Traffic Operations and Level of Service

An intersection capacity analysis for conditions in the future (2014, 2015, 2016, and 2017) without the Proposed Action was completed for all 54 study intersections for the AM, Midday and PM peak hours. The resulting LOS and delay at each study intersection were compared against CEQR LOS and delay thresholds. As shown in Table 15-6, many of the 2017 intersections would operate with overall delays greater than the CEQR threshold of 45.0 seconds of delay. Additionally, there are numerous individual lane groups at each intersection that would operate above the threshold values. Of the 54 study intersections, 23 would have an overall delay value that would exceed the CEQR threshold in the 2017 AM peak hour, 17 for the 2017 Midday peak hour and 19 for the 2017 PM peak hour. The results for the interim years (2014, 2015 and 2016) are similar to those for 2017. The detailed LOS results for all four analysis years are provided in Tables 15-7 through 15-10.

Table 15-6: Without Proposed Action LOS Comparison to CEQR Threshold

		LOS	AM	Midday	PM
2014	Overall Intersections	High LOS D	6	6	7
		LOS E	11	10	7
		LOS F	5	2	4
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	17	18	18
		LOS E	35	26	28
		LOS F	38	26	29
	Total Number of Lane Groups Analyzed		276	276	276
2015	Overall Intersections	High LOS D	7	6	7
		LOS E	10	10	7
		LOS F	6	2	4
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	17	18	18
		LOS E	32	26	28
		LOS F	41	27	29
	Total Number of Lane Groups Analyzed		276	276	276
2016	Overall Intersections	High LOS D	7	6	7
		LOS E	10	10	8
		LOS F	6	2	4
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	17	18	18
		LOS E	32	25	27
		LOS F	41	28	30
	Total Number of Lane Groups Analyzed		276	276	276
2017	Overall Intersections	High LOS D	7	5	7
		LOS E	10	10	8
		LOS F	6	2	4
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	16	19	18
		LOS E	33	25	27
		LOS F	41	28	30
	Total Number of Lane Groups Analyzed		276	276	276

Notes:
High LOS D: > 45 – 55 seconds of average vehicle control delay
LOS E: > 55 – 80 seconds of average vehicle control delay
LOS F: > 80 seconds of average vehicle control delay
Intersection 491 is not counted as a separate intersection in the analysis

Table 15-7: 2014 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.09	124.3	F	L	0.99	99.7	F	L	0.67	50.5	D
			T	0.85	33.6	C	T	0.67	23.1	C	T	0.62	20.7	C
		NB 3rd Avenue	T	0.75	31.4	C	T	0.85	30.7	C	T	0.66	23.4	C
			R	0.59	34.5	C	R	1.05	121.4	F	R	0.49	29.9	C
		INTERSECTION			40.7	D			40.2	D			25.0	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.94	62.1	E	T	0.91	60.9	E	T	0.91	57.9	E
			R	0.75	43.7	D	R	0.88	74.5	E	R	0.87	63.9	E
		NB 3rd Avenue	LT	0.81	25.0	C	LT	0.80	9.2	A	LT	0.57	3.5	A
		INTERSECTION			31.6	C			19.2	B			16.0	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.89	44.1	D	LT	1.15	120.0	F	LT	0.92	48.1	D
		NB 3rd Avenue	T	0.94	14.1	B	T	0.98	20.7	C	T	0.98	107.4	F
			R	0.47	7.1	A	R	0.82	29.5	C	R	0.49	10.6	B
		INTERSECTION			19.6	B			39.5	D			92.2	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.12	76.3	E	LT	1.08	47.2	D	LT	1.00	30.9	C
		WB 57th Street	TR	0.98	59.2	E	T	0.62	30.8	C	T	0.47	22.6	C
			R	0.97	70.8	E	R	0.56	35.6	D	R	0.32	22.5	C
		NB 3rd Avenue	LTR	1.06	151.5	F	LTR	1.01	62.6	E	LTR	1.10	92.2	F
			R	0.20	19.7	B	R	0.66	25.5	C	R	1.07	80.6	F
		INTERSECTION			112.1	F			52.3	D			68.7	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.41	20.2	C								
			T	0.43	20.3	C	LT	1.02	68.9	E	LT	0.77	26.6	C
		NB 3rd Avenue	TR	1.06	66.4	E	TR	1.00	32.5	C	TR	1.08	52.4	D
		INTERSECTION			59.8	E			40.6	D			45.6	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.69	24.2	C	LT	0.98	57.7	E	LT	0.70	25.4	C
		NB 3rd Avenue	T	1.07	111.6	F	T	0.82	37.0	D	T	0.96	27.3	C
			R	1.05	59.4	E	R	1.05	57.9	E	R	1.05	55.5	E
		INTERSECTION			85.1	F			45.3	D			30.4	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.54	17.2	B	T	0.43	16.9	B	TR	0.48	15.7	B
			R	0.95	81.5	F	R	1.00	98.8	F	R	0.94	78.0	E
		NB 3rd Avenue	LT	1.18	114.5	F	LT	0.91	70.1	E	LT	0.79	9.3	A
		INTERSECTION			94.2	F			65.0	E			17.8	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.93	51.4	D	T	1.09	83.3	F	T	1.19	125.7	F
			R	1.10	97.1	F	R	0.86	52.0	D	R	0.50	41.5	D
		WB 57th Street	LT	1.02dl	30.7	C	LT	0.35	20.3	C	LT	0.28	19.9	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.20	18.4	B
			T	1.08	76.0	E	T	1.10	79.9	E	T	1.06	63.4	E
			R	0.89	62.9	E	R	0.78	40.7	D	R	1.05	96.0	F
		INTERSECTION			59.6	E			70.1	E			75.4	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.92	41.8	D	T	1.00	56.6	E	T	0.93	41.5	D
			R	0.59	28.9	C	R	0.48	25.7	C	R	0.43	24.7	C
		WB 57th Street	LT	0.98	40.8	D	LT	0.95	47.2	D	LT	0.95	49.8	D
		SB Lexington Avenue	LT	0.76	22.9	C	LT	0.97	44.3	D	LT	0.75	22.4	C
			R	0.25	16.2	B	R	0.74	37.0	D	R	0.42	20.3	C
		INTERSECTION			32.7	C			47.3	D			33.6	C
10	7th Avenue and 31st Street	WB 31st Street	LT	0.57	25.0	C	LT	0.61	24.2	C	LT	0.82	31.6	C
		SB 7th Avenue	T	0.62	8.0	A	T	0.60	4.7	A	T	0.68	5.5	A
			R	0.48	9.8	A	R	0.40	6.1	A	R	0.46	7.2	A
		INTERSECTION			12.2	B			10.0	B			13.0	B
11	7th Avenue and 32nd St.	SB 7th Avenue	LT	0.91	9.1	A	LT	0.82	4.5	A	LT	0.84	5.5	A
		INTERSECTION			9.1	A			4.5	A			5.5	A

Table 15-7: 2014 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
12	7th Avenue and 33rd Street	WB 33rd Street	L	1.02	107.2	F	L	0.63	44.2	D	L	0.96	93.4	F
			T	0.66	41.6	D	T	0.49	32.3	C	T	0.40	32.4	C
		SB 7th Avenue	TR	0.68	2.8	A	TR	0.70	3.5	A	TR	0.67	3.0	A
			R	1.16	111.4	F	R	1.20	121.2	F	R	1.07	57.9	E
		INTERSECTION			22.2	C			18.7	B			16.0	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.13	103.0	F	T	1.14	121.9	F	T	1.05	87.1	F
			R	0.07	22.5	C	R	0.20	39.1	D	R	0.10	28.8	C
		WB 34th Street	LT	1.16	101.7	F	LT	0.97	27.0	C	LT	0.95	21.2	C
		SB 7th Avenue	LTR	0.94	64.7	E	LTR	1.00	83.3	F	LTR	1.05	49.1	D
		INTERSECTION			79.5	E			74.7	E			47.8	D
14	7th Avenue and 35th Street	WB 35th Street	L	1.01	89.0	F	L	0.93	76.4	E	L	0.60	31.8	C
			T	0.98	72.9	E	T	0.72	38.8	D	T	0.64	33.7	C
		SB 7th Avenue	T	1.03	63.2	E	T	1.02	47.5	D	T	0.70	3.2	A
			R	1.18	135.0	F	R	1.10	98.7	F	R	0.62	15.3	B
		INTERSECTION			71.1	E			51.5	D			9.7	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	45.8	D	TR	0.78	36.4	D	TR	0.82	37.5	D
		SB 7th Avenue	LT	0.83	17.6	B	LT	0.92	54.2	D	LT	0.82	9.2	A
		INTERSECTION			23.7	C			50.9	D			15.8	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.92	49.0	D	LT	0.89	45.2	D	LT	1.01	66.6	E
		SB 7th Avenue	T	0.65	16.3	B	T	0.68	16.8	B	T	0.67	16.5	B
			R	0.61	28.1	C	R	0.52	22.1	C	R	0.60	26.2	C
		INTERSECTION			25.6	C			24.1	C			31.3	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.14	94.2	F	T	1.04	72.6	E	T	0.93	44.0	D
		WB 34th Street	T	0.76	32.2	C	T	0.92	44.4	D	T	1.04	70.2	E
			R	0.39	31.9	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.87	5.9	A	T	1.03	35.4	D	T	1.07	48.1	D
		INTERSECTION			25.8	C			42.1	D			53.7	D
18	8th Avenue and 34th Street	EB 34th Street	LT	0.93	49.9	D	LT	0.74	29.5	C	LT	0.69	27.1	C
		WB 34th Street	T	0.43	20.5	C	T	0.51	23.1	C	T	0.52	30.7	C
			R	0.45	21.0	C	R	0.84	35.5	D	R	0.73	38.0	D
		NB 8th Avenue	L	0.54	9.3	A	L	0.56	11.5	B	L	0.74	21.0	C
			T	0.85	8.2	A	T	0.79	8.4	A	T	0.85	9.7	A
			R	0.74	49.3	D	R	0.64	18.2	B	R	0.82	35.2	D
		INTERSECTION			19.8	B			17.7	B			19.8	B
19	Madison Avenue and 39th Street	WB 39th Street	T	0.68	28.2	C	T	0.80	35.0	D	T	0.83	37.1	D
			R	0.61	48.5	D	R	0.67	51.1	D	R	0.61	47.5	D
		NB Madison Avenue	LT	0.92	32.2	C	LT	0.77	22.5	C	LT	0.66	19.4	B
		INTERSECTION			32.5	C			27.7	C			25.4	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.74	64.0	E	L	0.68	56.8	E	L	0.65	55.2	E
			T	0.80	36.2	D	T	0.65	26.6	C	T	0.54	23.6	C
		NB Madison Avenue	TR	1.10	74.9	E	TR	1.08	68.7	E	TR	0.96	22.5	C
		INTERSECTION			67.3	E			60.6	E			24.4	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43.0	D	L	0.41	42.8	D	L	0.35	41.2	D
			T	0.37	20.2	C	T	0.22	17.6	B	T	0.22	17.4	B
		NB Madison Avenue	TR	0.99	41.5	D	TR	0.99	41.3	D	TR	0.99	24.9	C
		INTERSECTION			39.5	D			40.0	D			25.0	C

Table 15-7: 2014 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.19	121.9	F	LT	0.47	22.0	C	LT	0.69	33.0	C
		WB 42nd Street	T	1.13	85.8	F	TR	1.13	90.5	F	T	0.94	30.9	C
			R	0.15	18.7	B					R	0.31	17.0	B
		NB Madison Avenue	LT	1.09	79.7	E	LT	1.06	76.8	E	LT	1.03	42.2	D
			R	0.20	7.0	A	R	0.22	7.0	A	R	0.16	7.0	A
		INTERSECTION			90.5	F			67.3	E			35.6	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.52	26.0	C	T	0.60	28.2	C	T	0.62	29.1	C
			R	0.81	51.3	D	R	0.73	41.0	D	R	0.87	68.6	E
		NB Madison Avenue	LT	1.03	59.1	E	LT	1.08	63.1	E	LT	0.97	38.9	D
		INTERSECTION			54.5	D			56.2	E			39.9	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.76	35.0	D	LT	0.92	56.1	E	LT	0.91	59.8	E
		NB Madison Avenue	TR	0.99	30.2	C	TR	0.98	38.3	D	T	1.02	41.8	D
											R	0.12	5.2	A
		INTERSECTION			31.0	C			41.7	D			44.2	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.85	38.9	D	TR	0.99	60.3	E	TR	0.53	23.8	C
		NB Madison Avenue	LT	1.01	50.0	D	LT	1.11	63.4	E	LT	0.94	36.6	D
		INTERSECTION			47.2	D			62.5	E			33.8	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.80	33.8	C	T	0.70	32.7	C	T	0.57	34.4	C
			R	0.28	26.4	C	R	0.21	25.6	C	R	0.24	31.0	C
		WB 42nd Street	LT	0.94	32.5	C	LT	0.76	28.7	C	LT	1.06	71.7	E
		SB 5th Avenue	LT	0.83	23.0	C	LT	0.77	20.7	C	LT	1.08	69.8	E
			R	0.15	14.3	B	R	0.08	13.3	B	R	0.09	13.2	B
		INTERSECTION			27.5	C			24.9	C			64.3	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.02	42.7	D	T	0.86	25.7	C	T	0.79	10.7	B
		WB 42nd Street	T	0.91	23.6	C	T	0.67	7.2	A	T	0.86	16.8	B
		INTERSECTION			33.1	C			16.7	B			14.1	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.56	13.8	B	T	0.54	9.6	A	T	0.46	10.0	B
		WB 42nd Street	T	0.69	19.7	B	T	0.74	20.6	C	T	0.66	19.6	B
		INTERSECTION			16.9	B			15.5	B			15.2	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.72	31.2	C	TR	0.95	48.0	D	TR	0.91	43.0	D
		NB 8th Avenue	L	1.01	81.7	F	L	0.99	76.8	E	L	1.01	73.3	E
			T	0.86	17.2	B	T	0.78	13.9	B	T	0.85	14.7	B
		INTERSECTION			25.5	C			26.5	C			25.3	C
30	8th Avenue and 31st Street	WB 31st Street	T	0.45	26.9	C	T	0.50	26.3	C	T	0.84	39.5	D
			R	0.52	29.7	C	R	0.42	24.4	C	R	0.64	31.5	C
		NB 8th Avenue	L	1.00	89.2	F	L	0.99	88.6	F	L	1.26	188.2	F
			T	0.69	22.1	C	T	0.70	23.5	C	T	0.77	25.3	C
		INTERSECTION			30.6	C			30.4	C			40.8	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.18	12.6	B	T	0.27	14.0	B	T	0.39	15.9	B
			R	1.05	90.6	F	R	0.75	37.8	D	R	1.04	92.9	F
		NB 8th Avenue	LT	0.78	28.5	C	LT	0.78	28.7	C	LT	1.04	66.4	E
		INTERSECTION			37.0	D			28.6	C			65.1	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.84	28.8	C	LT	0.96	44.1	D	LT	0.55	15.7	B
		WB 42nd Street	TR	0.68	10.9	B	TR	0.77	12.3	B	TR	0.54	6.8	A
		NB 8th Avenue	L	0.09	7.1	A	L	0.45	11.1	B	L	0.08	5.8	A
			LT	1.09	60.3	E	LT	0.98	24.7	C	LT	1.02	41.9	D
			R	0.77	27.0	C	R	0.69	21.9	C	R	0.16	5.7	A
		INTERSECTION			44.8	D			26.7	C			31.6	C

Table 15-7: 2014 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
33	8th Avenue and 58th Street	EB 58th Street	LT	0.69	20.0	C	LT	0.87	29.3	C	LT	0.79	19.7	B
		NB 8th Avenue	TR	0.56	16.8	B	TR	0.62	17.7	B	TR	0.67	18.7	B
		INTERSECTION			17.9	B			21.8	C			19.0	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.81	40.9	D	T	0.90	52.6	D	T	1.14	116.8	F
			R	0.77	48.6	D	R	0.74	46.6	D	R	0.50	34.2	C
		SB 9th Avenue	LT	0.70	16.0	B	LT	0.65	14.9	B	LT	0.61	14.2	B
		INTERSECTION			23.4	C			25.5	C			38.4	D
35	7th Avenue and 57th Street	EB 57th Street	T	0.89	37.9	D	T	0.83	32.9	C	T	0.88	37.5	D
			R	0.87	53.4	D	R	0.82	48.1	D	R	0.83	50.5	D
		WB 57th Street	LT	1.08	74.3	E	LT	0.88	34.0	C	LT	0.95	38.7	D
		SB 7th Avenue	L	0.28	15.2	B								
			T	0.62	17.7	B	LT	0.31	13.8	B	LT	0.34	14.1	B
			R	0.41	19.0	B	R	0.28	16.6	B	R	0.37	18.0	B
		INTERSECTION			39.4	D			29.5	C			32.1	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.91	54.4	D	T	0.8	41.4	D	T	0.83	42.7	D
			R	0.61	31.9	C	R	0.7	39.7	D	R	0.59	32.7	C
		WB Central Park South	L	1.14	108.3	F	L	1.14	114.4	F	L	1.14	108.4	F
			T	0.63	16.2	B	T	1.00	49.1	D	T	1.03	50.9	D
		SB Central Park Driveway	L	0.85	63.7	E	L	0.01	27.0	C	L	0.01	27.0	C
			TR	0.94	50.6	D	TR	0.05	27.0	C	TR	0.06	27.2	C
		INTERSECTION			48.8	D			58.5	E			58.4	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	0.79	35.3	D	LT	0.72	34.3	C	LT	0.72	33.8	C
		WB 23rd Street	TR	0.83	47.0	D	TR	0.77	35.5	D	TR	0.75	38.2	D
		NB 6th Avenue	LT	1.12	87.6	F	LT	1.18	113.4	F	LT	0.94	35.1	D
			R	0.60	31.7	C	R	0.90	67.4	E	R	0.63	34.2	C
		INTERSECTION			69.0	E			87.1	F			35.4	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.55	24.6	C	TR	0.72	29.6	C	TR	0.82	34.0	C
		NB 6th Avenue	LT	0.97	34.7	C	LT	0.87	24.7	C	LT	0.83	23.2	C
		INTERSECTION			33.1	C			25.7	C			26.0	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.91	34.3	C	LT	0.90	33.1	C	LT	0.70	29.7	C
		WB 42nd Street	T	0.75	27.1	C	T	0.89	33.1	C	T	0.96	11.7	B
			R	1.07	85.0	F	R	1.07	98.0	F	R	1.07	50.7	D
		NB 6th Avenue	LTR	0.86	21.8	C	LTR	0.61	15.0	B	LT	1.03	48.2	D
											R	0.42	16.7	B
		INTERSECTION			28.6	C			27.8	C			38.5	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1.11	78.3	E	LT	1.09	70.4	E	LT	1.16	99.4	F
		WB 57th Street	T	0.98	63.3	E	T	1.01	71.1	E	T	1.07	82.8	F
			R	0.78	51.2	D	R	0.70	49.4	D	R	0.98	73.9	E
		NB 6th Avenue	LT	0.73	21.2	C	LT	0.63	19.3	B	LT	0.63	18.8	B
			R	0.48	21.7	C	R	0.48	21.1	C	R	0.73	36.7	D
		INTERSECTION			47.3	D			45.9	D			54.5	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	27.4	C	L	0.61	26.0	C	L	0.85	52.0	D
			T	0.71	20.2	C	T	0.55	10.1	B	T	0.50	7.5	A
		WB Central Park South	TR	0.80	33.1	C	TR	0.76	30.9	C	TR	0.78	31.8	C
		NB 6th Avenue	L	1.08	98.4	F	L	1.04	95.7	F	L	1.04	84.3	F
			LTR	0.94dr	39.1	D	LTR	0.77	29.4	C	LTR	1.06	72.6	E
		INTERSECTION			41.1	D			33.7	C			52.5	D

Table 15-7: 2014 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.76	37.6	D	T	0.71	32.3	C	T	0.73	34.2	C
			R	0.66	44.6	D	R	0.73	48.0	D	R	0.76	59.1	E
		WB 23rd Street	LT	0.39	17.5	B	LT	0.35	13.6	B	LT	0.35	17.0	B
		SB 5th Avenue	TR	0.70	23.0	C	TR	0.82	29.5	C	TR	0.80	26.2	C
		INTERSECTION			27.1	C			27.7	C			27.6	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.09	67.0	E	T	1.11	78.3	E	T	0.95	25.4	C
			R	1.07	71.2	E	R	0.88	36.9	D	R	0.68	19.0	B
		WB 57th Street	LT	1.12	96.2	F	LT	0.96	51.5	D	LT	1.06	68.1	E
		SB 5th Avenue	LT	1.07	68.9	E	LT	0.77	21.8	C	LT	0.72	20.7	C
			R	0.37	17.5	B	R	0.38	17.1	B	R	0.51	21.4	C
		INTERSECTION			72.5	E			44.3	D			33.9	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.2	C	T	0.91	28.7	C	T	0.42	6.1	A
			R	1.06	83.2	F	R	0.95	68.9	E	R	0.86	44.9	D
		SB 5th Avenue	LT	1.06	65.9	E	LT	0.79	24.3	C	LT	1.06	68.0	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17.0	B
		INTERSECTION			56.6	E			29.6	C			53.5	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.10	56.2	E	LT	1.04	33.9	C	LT	1.09	58.2	E
		WB 57th Street	T	0.86	36.3	D	T	0.67	27.0	C	T	0.95	52.4	D
			R	0.77	42.0	D	R	0.67	40.0	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.75	21.2	C	LTR	0.55	16.8	B	LT	0.96	38.0	D
											R	0.12	13.7	B
		INTERSECTION			36.2	D			25.9	C			47.3	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.59	21.5	C	L	0.84	39.4	D	L	0.54	20.5	C
			T	0.84	24.5	C	T	0.84	24.8	C	T	0.83	23.9	C
		INTERSECTION			24.0	C			27.5	C			23.4	C
47	2nd Avenue and 36th Street	EB 36th Street	TR	0.99	64.2	E	TR	1.03	62.7	E	T	0.65	26.3	C
											R	0.51	31.1	C
		WB 36th Street	L	0.71	36.7	D								
		SB 2nd Avenue	L	1.07	85.4	F	L	0.02	10.6	B	L	0.12	11.2	B
			T	1.07	72.0	E	T	0.74	18.9	B	T	0.84	22.1	C
		INTERSECTION			68.0	E			35.8	D			23.1	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.53	15.5	B	TR	0.74	20.2	C	TR	0.69	18.8	B
			R	1.05	105.1	F	R	1.08	111.2	F	R	1.06	104.4	F
		NB 3rd Avenue	LT	0.79	26.8	C	LT	0.72	25.1	C	LT	0.63	23.1	C
		INTERSECTION			30.6	C			32.6	C			30.3	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.63	50.3	D	T	0.42	44.7	D	T	0.55	49.2	D
		WB Jackson Avenue	T	0.35	0.9	A	T	0.24	1.6	A	T	0.28	0.1	A
		SB West Service Road	T	0.89	41.3	D	T	0.58	22.3	C	T	0.79	30.5	C
			R	1.07	83.0	F	R	0.81	34.6	C	R	0.99	63.9	E
		INTERSECTION			52.2	D			28.1	C			40.0	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.85	18.9	B	T	0.56	6.6	A	T	1.11	90.6	F
			R	0.17	1.2	A	R	0.11	1.0	A	R	0.17	1.2	A
		WB Northern Boulevard	LT	0.63	24.1	C	LT	0.47	13.2	B	LT	1.02	117.0	F
		NB Queens Plaza S	LTR	1.09	79.0	E	LTR	0.36	10.4	B	LTR	1.04	61.3	E
		SB Queens Plaza S	T	0.55	21.8	C	T	0.28	16.0	B	T	0.85	37.2	D
		INTERSECTION			46.0	D			11.3	B			65.8	E

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50	Tillary Street and Adams Street	EB Tillary Street	TR	0.74	46.4	D	TR	0.70	44.3	D	TR	0.86	56.9	E
		WB Tillary Street	L	0.73	68.6	E	L	1.01	113.6	F	L	1.21	140.7	F
			T	0.80	49.1	D	T	0.80	36.9	D	T	1.41	221.1	F
			R	1.03	63.5	E	R	0.81	39.1	D	R	1.08	67.7	E
		NB Adams Street	T	1.17	127.9	F	T	1.05	91.4	F	T	1.16	122.2	F
		SB Adams Street	L	1.16	134.0	F	L	1.11	116.3	F	L	1.14	122.9	F
			T	0.81	30.8	C	T	0.68	26.8	C	T	1.09	82.4	F
		NB Service Road	TR	1.11	123.0	F	TR	1.01	95.7	F	TR	0.82	56.3	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.29	33.5	C
		INTERSECTION			72.7	E			58.3	E			112.8	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	33.9	C	L	0.35	27.0	C	L	0.32	34.1	C
			TR	0.87	40.4	D	TR	0.61	30.4	C	TR	0.88	36.7	D
		WB Tillary Street	L	1.05	89.2	F	L	0.43	45.2	D	L	0.51	30.9	C
			TR	0.95	61.9	E	TR	0.63	16.8	B	TR	1.12	87.4	F
		NB Jay Street	L	0.45	40.0	D	L	0.53	45.2	D	L	0.65	49.5	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	33.0	C
			R	0.52	21.3	C	R	0.56	21.7	C	R	0.70	28.6	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.50	46.1	D
			T	0.11	30.8	C	T	0.09	32.4	C	T	0.16	32.9	C
			R	0.17	32.7	C	R	0.18	35.1	D	R	0.28	36.0	D
		INTERSECTION			50.0	D			26.6	C			57.6	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	111.6	F	L	0.52	44.3	D	L	0.32	49.4	D
			TR	1.25	143.3	F	TR	1.16	125.1	F	TR	1.24	162.0	F
		WB Tillary Street	L	1.36	215.2	F	L	1.14	134	F	L	1.25	170.9	F
			TR	1.14	114.6	F	TR	1.08	97.9	F	TR	1.17	127.9	F
			R	1.18	145.2	F	R	1.15	138.5	F	R	0.63	47.8	D
		NB Flatbush Avenue	L	1.03	79.6	E	L	0.92	48.4	D	L	1.17	118.3	F
			T	0.99	58.4	E	T	0.52	26.2	C	T	0.61	28.9	C
			R	1.00	75.7	E	R	0.98	70.3	E	R	1.01	75.4	E
		SB Flatbush Avenue	T	1.09	96.0	F	T	0.57	39	D	T	1.07	86.9	F
			R	0.26	34.3	C	R	0.44	40.6	D	R	0.42	37.8	D
		INTERSECTION			111.8	F			84.9	F			109.4	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.39	28.9	C	LT	0.23	7.2	A	LT	0.52	26.8	C
		WB Northern Boulevard	T	0.51	24.7	C	T	0.40	22.9	C	T	0.45	23.5	C
			R	1.06	80.1	F	R	1.07	85.6	F	R	1.06	78.0	E
		SB Queens Plaza N	L	1.00	71.3	E	L	0.98	80.1	F	L	1.06	171.5	F
		INTERSECTION			58.8	E			61.6	E			106.0	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.42	0.4	A	LTR	0.61	3.8	A	LTR	0.59	5.1	A
		WB Northern Boulevard	LTR	0.58	7.9	A	LTR	0.55	6.7	A	LTR	0.59	8.3	A
		INTERSECTION			4.4	A			5.3	A			6.6	A

Please note that some intersection approaches and lane groups have the unexpected result of lower delay in later years. This is due to upstream metering, queue delay, and other factors inherent in the Synchro analysis methodology.

Table 15-8: 2015 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.09	124.3	F	L	0.99	99.7	F	L	0.67	50.5	D
			T	0.85	33.6	C	T	0.67	23.2	C	T	0.62	20.7	C
		NB 3rd Avenue	T	0.75	31.6	C	T	0.85	30.9	C	T	0.66	23.4	C
			R	0.59	34.8	C	R	1.05	121.4	F	R	0.50	30.3	C
		INTERSECTION			40.8	D			40.3	D			25.0	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.94	62.1	E	T	0.92	61.9	E	T	0.91	57.9	E
			R	0.75	43.7	D	R	0.88	74.5	E	R	0.87	63.9	E
		NB 3rd Avenue	LT	0.81	25.4	C	LT	0.80	9.5	A	LT	0.57	3.5	A
		INTERSECTION			32.0	C			19.5	B			16.0	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.89	44.3	D	LT	1.15	120.8	F	LT	0.92	48.1	D
		NB 3rd Avenue	T	0.94	14.2	B	T	0.98	21.2	C	T	0.98	109.3	F
			R	0.47	7.2	A	R	0.82	29.4	C	R	0.49	10.7	B
		INTERSECTION			19.8	B			40.0	D			93.6	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.13	79.0	E	LT	1.08	49.5	D	LT	1.00	31.7	C
		WB 57th Street	TR	0.98	59.7	E	T	0.62	30.8	C	T	0.47	22.7	C
			R	0.97	71.4	E	R	0.57	35.9	D	R	0.32	22.5	C
		NB 3rd Avenue	LTR	1.06	153.6	F	LTR	1.01	60.3	E	LTR	1.10	92.8	F
			R	0.20	19.6	B	R	0.66	23.7	C	R	1.07	80.4	F
		INTERSECTION			113.8	F			51.5	D			69.3	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.41	20.2	C								
			T	0.43	20.3	C	LT	1.02	69.7	E	LT	0.77	26.7	C
		NB 3rd Avenue	TR	1.06	66.9	E	TR	1.01	33.0	C	TR	1.09	53.5	D
		INTERSECTION			60.2	E			41.2	D			46.4	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.69	24.2	C	LT	0.98	57.7	E	LT	0.70	25.4	C
		NB 3rd Avenue	T	1.07	112.4	F	T	0.82	38.2	D	T	0.96	27.5	C
			R	1.06	60.7	E	R	1.05	59.7	E	R	1.05	56.5	E
		INTERSECTION			85.7	F			46.3	D			30.7	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.54	17.3	B	T	0.43	16.9	B	TR	0.48	15.8	B
			R	0.96	82.3	F	R	1.00	98.8	F	R	0.94	78.0	E
		NB 3rd Avenue	LT	1.19	115	F	LT	0.91	70.3	E	LT	0.79	9.3	A
		INTERSECTION			94.6	F			65.1	E			17.8	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.93	51.3	D	T	1.09	83.6	F	T	1.20	126.8	F
			R	1.11	99.4	F	R	0.86	51.5	D	R	0.50	41.4	D
		WB 57th Street	LT	1.02dl	30.8	C	LT	0.35	20.3	C	LT	0.28	19.9	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.20	18.4	B
			T	1.08	76.8	E	T	1.10	80.9	F	T	1.06	63.9	E
			R	0.89	63.5	E	R	0.78	40.7	D	R	1.05	96.0	F
		INTERSECTION			60.2	E			70.6	E			76.0	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.92	42.1	D	T	1.00	57.1	E	T	0.93	41.8	D
			R	0.59	28.9	C	R	0.48	25.8	C	R	0.43	24.7	C
		WB 57th Street	LT	0.98	41.4	D	LT	0.95	47.4	D	LT	0.95	50.2	D
		SB Lexington Avenue	LT	0.76	22.9	C	LT	0.97	44.8	D	LT	0.75	22.4	C
			R	0.26	16.2	B	R	0.74	37.0	D	R	0.42	20.3	C
		INTERSECTION			32.9	C			47.7	D			33.7	C
10	7th Avenue and 31st Street	WB 31st Street	LT	0.57	25.1	C	LT	0.61	24.2	C	LT	0.82	31.7	C
		SB 7th Avenue	T	0.62	8.0	A	T	0.60	4.7	A	T	0.68	5.5	A
			R	0.49	9.8	A	R	0.40	6.1	A	R	0.46	7.2	A
		INTERSECTION			12.2	B			10.1	B			13.0	B
11	7th Avenue and 32nd St.	SB 7th Avenue	LT	0.91	9.2	A	LT	0.82	4.5	A	LT	0.84	5.6	A
		INTERSECTION			9.2	A			4.5	A			5.6	A

Table 15-8: 2015 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
12	7th Avenue and 33rd Street	WB 33rd Street	L	1.02	107.2	F	L	0.63	44.2	D	L	0.96	93.4	F
			T	0.66	41.6	D	T	0.49	32.3	C	T	0.41	32.5	C
		SB 7th Avenue	TR	0.68	2.8	A	TR	0.70	3.5	A	TR	0.67	3.0	A
			R	1.16	111.3	F	R	1.21	123.4	F	R	1.08	59.7	E
		INTERSECTION			22.2	C			19.0	B			16.2	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.13	104.5	F	T	1.14	122.6	F	T	1.05	87.6	F
			R	0.07	22.5	C	R	0.20	39.1	D	R	0.10	28.8	C
		WB 34th Street	LT	1.17	103.1	F	LT	0.97	27.5	C	LT	0.95	21.4	C
		SB 7th Avenue	LTR	0.94	64.9	E	LTR	1.00	83.8	F	LTR	1.05	49.4	D
		INTERSECTION			80.3	F			75.2	E			48.2	D
14	7th Avenue and 35th Street	WB 35th Street	L	1.01	89.0	F	L	0.93	76.4	E	L	0.60	31.8	C
			T	0.98	72.9	E	T	0.72	39	D	T	0.64	33.8	C
		SB 7th Avenue	T	1.03	63.4	E	T	1.02	47.8	D	T	0.70	3.2	A
			R	1.18	135.0	F	R	1.10	98.6	F	R	0.62	15.3	B
		INTERSECTION			71.3	E			51.8	D			9.7	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	45.8	D	TR	0.78	36.4	D	TR	0.82	37.5	D
		SB 7th Avenue	LT	0.83	17.6	B	LT	0.92	55.3	E	LT	0.82	9.2	A
		INTERSECTION			23.6	C			51.8	D			15.8	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.92	49.2	D	LT	0.89	45.4	D	LT	1.01	66.9	E
		SB 7th Avenue	T	0.66	16.3	B	T	0.68	16.8	B	T	0.67	16.5	B
			R	0.61	28.1	C	R	0.52	22.1	C	R	0.60	26.2	C
		INTERSECTION			25.6	C			24.2	C			31.4	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.14	95.0	F	T	1.04	74.0	E	T	0.94	44.1	D
		WB 34th Street	T	0.77	32.3	C	T	0.92	44.5	D	T	1.04	71.2	E
			R	0.39	31.9	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.87	5.9	A	T	1.03	35.7	D	T	1.07	48.5	D
		INTERSECTION			26.0	C			42.4	D			54.2	D
18	8th Avenue and 34th Street	EB 34th Street	LT	0.93	50.2	D	LT	0.74	29.6	C	LT	0.69	27.2	C
		WB 34th Street	T	0.43	20.5	C	T	0.51	23.1	C	T	0.52	30.7	C
			R	0.45	21	C	R	0.84	35.4	D	R	0.73	37.9	D
		NB 8th Avenue	L	0.54	9.2	A	L	0.56	11.5	B	L	0.74	21	C
			T	0.85	8.2	A	T	0.79	8.4	A	T	0.85	9.9	A
			R	0.74	49.2	D	R	0.64	18.2	B	R	0.82	35.2	D
		INTERSECTION			19.9	B			17.7	B			19.9	B
19	Madison Avenue and 39th Street	WB 39th Street	T	0.69	28.3	C	T	0.80	35.2	D	T	0.84	37.5	D
			R	0.61	48.5	D	R	0.67	51.1	D	R	0.61	47.5	D
		NB Madison	LT	0.92	32.5	C	LT	0.77	22.6	C	LT	0.66	19.4	B
		INTERSECTION			32.7	C			27.8	C			25.5	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.75	65.3	E	L	0.69	57.2	E	L	0.65	55.2	E
			T	0.80	36.2	D	T	0.65	26.6	C	T	0.54	23.6	C
		NB Madison	TR	1.10	76.4	E	TR	1.08	70.3	E	TR	0.96	22.7	C
		INTERSECTION			68.5	E			61.8	E			24.6	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43.0	D	L	0.41	42.8	D	L	0.35	41.2	D
			T	0.37	20.2	C	T	0.22	17.7	B	T	0.22	17.4	B
		NB Madison	TR	0.99	42.1	D	TR	0.99	41.8	D	TR	1.00	25.4	C
		INTERSECTION			40.0	D			40.4	D			25.5	C

Table 15-8: 2015 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.19	121.8	F	LT	0.47	21.9	C	LT	0.69	33.0	C
		WB 42nd Street	T	1.13	86.3	F	TR	1.13	91.0	F	T	0.94	31.1	C
			R	0.15	18.6	B					R	0.31	17.0	B
		NB Madison Avenue	LT	1.09	80.4	F	LT	1.06	77.5	E	LT	1.03	43.4	D
			R	0.20	7.0	A	R	0.22	7.0	A	R	0.16	7.0	A
		INTERSECTION			90.9	F			67.7	E			36.2	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.52	26.0	C	T	0.60	28.2	C	T	0.62	29.1	C
			R	0.81	51.3	D	R	0.73	41.0	D	R	0.87	68.6	E
		NB Madison	LT	1.03	59.0	E	LT	1.08	63.7	E	LT	0.97	39.4	D
		INTERSECTION			54.5	D			56.7	E			40.3	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.76	35.0	D	LT	0.92	56.5	E	LT	0.92	60.8	E
		NB Madison Avenue	TR	0.99	30.2	C	TR	0.98	38.5	D	T	1.02	42.3	D
											R	0.12	5.2	A
		INTERSECTION			31.0	C			42.0	D			44.8	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.86	39.1	D	TR	0.99	60.9	E	TR	0.53	23.8	C
		NB Madison	LT	1.01	50.0	D	LT	1.11	63.7	E	LT	0.95	37.2	D
		INTERSECTION			47.3	D			62.9	E			34.4	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.81	33.8	C	T	0.70	32.7	C	T	0.57	34.4	C
			R	0.28	26.2	C	R	0.21	25.6	C	R	0.24	31	C
		WB 42nd Street	LT	0.94	32.5	C	LT	0.76	28.7	C	LT	1.06	72.4	E
		SB 5th Avenue	LT	0.83	23.0	C	LT	0.77	20.7	C	LT	1.08	70.4	E
			R	0.15	14.3	B	R	0.08	13.3	B	R	0.09	13.2	B
		INTERSECTION			27.6	C			24.9	C			64.8	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.03	43.7	D	T	0.86	25.8	C	T	0.79	10.7	B
		WB 42nd Street	T	0.91	24.0	C	T	0.67	7.3	A	T	0.86	16.8	B
		INTERSECTION			33.7	C			16.8	B			14.2	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.56	13.8	B	T	0.54	9.6	A	T	0.46	10.1	B
		WB 42nd Street	T	0.69	19.8	B	T	0.74	20.7	C	T	0.66	19.6	B
		INTERSECTION			16.9	B			15.5	B			15.3	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.72	31.4	C	TR	0.95	47.7	D	TR	0.91	42.8	D
		NB 8th Avenue	L	1.01	81.7	F	L	0.99	76.7	E	L	1.02	74.5	E
			T	0.86	17.2	B	T	0.78	13.9	B	T	0.85	14.8	B
		INTERSECTION			25.6	C			26.4	C			25.4	C
30	8th Avenue and 31st Street	WB 31st Street	T	0.45	26.9	C	T	0.51	26.4	C	T	0.84	39.6	D
			R	0.52	29.6	C	R	0.42	24.4	C	R	0.64	31.5	C
		NB 8th Avenue	L	1.00	90.3	F	L	1.00	91.1	F	L	1.27	190.7	F
			T	0.69	22.2	C	T	0.70	23.6	C	T	0.77	25.3	C
		INTERSECTION			30.7	C			30.7	C			41.1	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.18	12.7	B	T	0.27	14.0	B	T	0.39	15.9	B
			R	1.05	91.6	F	R	0.75	37.8	D	R	1.04	92.9	F
		NB 8th Avenue	LT	0.78	28.5	C	LT	0.78	28.7	C	LT	1.04	67.9	E
		INTERSECTION			37.1	D			28.7	C			66.3	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.84	28.8	C	LT	0.96	45.2	D	LT	0.55	15.7	B
		WB 42nd Street	TR	0.68	10.9	B	TR	0.77	12.3	B	TR	0.54	6.8	A
		NB 8th Avenue	L	0.09	6.9	A	L	0.45	11.1	B	L	0.08	5.9	A
			LT	1.09	60.7	E	LT	0.98	24.9	C	LT	1.02	43.3	D
			R	0.77	27.3	C	R	0.70	22.2	C	R	0.16	5.8	A
		INTERSECTION			45.1	D			27.1	C			32.6	C
33	8th Avenue and 58th Street	EB 58th Street	LT	0.69	20.0	C	LT	0.87	29.3	C	LT	0.79	19.8	B
		NB 8th Avenue	TR	0.56	16.8	B	TR	0.62	17.7	B	TR	0.67	18.7	B
		INTERSECTION			17.9	B			21.8	C			19.0	B

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			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
34	9th Avenue and 58th Street	EB 58th Street	T	0.81	41.0	D	T	0.90	52.6	D	T	1.14	116.8	F
			R	0.77	48.6	D	R	0.74	46.6	D	R	0.50	34.2	C
		SB 9th Avenue	LT	0.70	16.0	B	LT	0.65	14.9	B	LT	0.61	14.2	B
		INTERSECTION			23.4	C			25.5	C			38.4	D
35	7th Avenue and 57th Street	EB 57th Street	T	0.89	38.0	D	T	0.83	33.0	C	T	0.89	37.7	D
			R	0.87	53.4	D	R	0.82	48.1	D	R	0.83	50.5	D
		WB 57th Street	LT	1.08	75.1	E	LT	0.88	34.0	C	LT	0.95	38.9	D
		SB 7th Avenue	L	0.28	15.2	B								
			T	0.62	17.7	B	LT	0.31	13.8	B	LT	0.34	14.1	B
			R	0.41	19.1	B	R	0.28	16.6	B	R	0.37	18.0	B
		INTERSECTION			39.7	D			29.5	C			32.3	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.91	54.8	D	T	0.81	41.6	D	T	0.83	42.8	D
			R	0.61	31.9	C	R	0.70	39.7	D	R	0.59	32.7	C
		WB Central Park South	L	1.14	109.2	F	L	1.14	114.4	F	L	1.14	109.3	F
			T	0.63	16.3	B	T	1.00	49.0	D	T	1.03	51.5	D
		SB Central Park Driveway	L	0.85	63.7	E	L	0.01	27.0	C	L	0.01	27.0	C
			TR	0.94	50.8	D	TR	0.05	27.0	C	TR	0.06	27.2	C
		INTERSECTION			49.1	D			58.5	E			58.8	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	0.79	35.5	D	LT	0.72	34.4	C	LT	0.72	33.8	C
		WB 23rd Street	TR	0.83	47.0	D	TR	0.78	35.6	D	TR	0.75	38.2	D
		NB 6th Avenue	LT	1.12	88.0	F	LT	1.18	114.0	F	LT	0.94	35.2	D
			R	0.60	31.7	C	R	0.90	67.4	E	R	0.63	34.2	C
		INTERSECTION			69.3	E			87.5	F			35.5	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.55	24.6	C	TR	0.72	29.6	C	TR	0.82	34.1	C
		NB 6th Avenue	LT	0.97	34.8	C	LT	0.87	24.7	C	LT	0.84	23.2	C
		INTERSECTION			33.2	C			25.8	C			26.0	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.91	34.5	C	LT	0.90	33.0	C	LT	0.70	29.7	C
		WB 42nd Street	T	0.75	27.1	C	T	0.89	33.1	C	T	0.96	11.6	B
			R	1.07	84.9	F	R	1.07	97.9	F	R	1.07	50.7	D
		NB 6th Avenue	LTR	0.86	21.9	C	LTR	0.61	15.0	B	LT	1.03	48.4	D
											R	0.42	16.7	B
		INTERSECTION			28.7	C			27.8	C			38.6	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1.11	78.6	E	LT	1.09	70.9	E	LT	1.16	100.6	F
		WB 57th Street	T	0.99	63.8	E	T	1.01	71.4	E	T	1.07	83.6	F
			R	0.78	51.2	D	R	0.70	49.4	D	R	0.98	73.7	E
		NB 6th Avenue	LT	0.73	21.2	C	LT	0.64	19.3	B	LT	0.63	18.8	B
			R	0.48	21.7	C	R	0.48	21.1	C	R	0.74	37	D
		INTERSECTION			47.5	D			46.0	D			55	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	27.6	C	L	0.61	26.4	C	L	0.86	53.3	D
			T	0.71	20.1	C	T	0.55	10.2	B	T	0.50	7.5	A
		WB Central Park	TR	0.80	33.2	C	TR	0.76	31.0	C	TR	0.78	31.8	C
		NB 6th Avenue	L	1.08	98.4	F	L	1.04	95.7	F	L	1.04	84.3	F
			LTR	0.95dr	39.5	D	LTR	0.77	29.5	C	LTR	1.06	73.2	E
		INTERSECTION			41.3	D			33.7	C			52.8	D
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.76	37.6	D	T	0.71	32.3	C	T	0.73	34.1	C
			R	0.66	44.6	D	R	0.73	48.5	D	R	0.76	59.9	E
		WB 23rd Street	LT	0.39	17.6	B	LT	0.35	13.6	B	LT	0.35	17.0	B
		SB 5th Avenue	TR	0.70	23.0	C	TR	0.82	29.6	C	TR	0.80	26.2	C
		INTERSECTION			27.1	C			27.8	C			27.7	C

Table 15-8: 2015 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
43	5th Avenue and 57th Street	EB 57th Street	T	1.09	67.9	E	T	1.11	78.8	E	T	0.95	25.4	C
			R	1.07	71.1	E	R	0.89	37.2	D	R	0.68	19.0	B
		WB 57th Street	LT	1.12	97.3	F	LT	0.97	51.9	D	LT	1.06	69.3	E
		SB 5th Avenue	LT	1.07	68.9	E	LT	0.77	21.9	C	LT	0.73	20.7	C
			R	0.37	17.5	B	R	0.38	17.1	B	R	0.51	21.4	C
		INTERSECTION			72.9	E			44.6	D			34.3	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.3	C	T	0.91	28.9	C	T	0.42	6.1	A
			R	1.06	83.2	F	R	0.95	69.9	E	R	0.86	44.8	D
		SB 5th Avenue	LT	1.06	66.3	E	LT	0.79	24.3	C	LT	1.06	68.5	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17.0	B
		INTERSECTION			56.9	E			29.8	C			53.9	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.11	57.2	E	LT	1.05	35.2	D	LT	1.09	58.6	E
		WB 57th Street	T	0.86	36.4	D	T	0.67	27.0	C	T	0.96	52.9	D
			R	0.77	42.0	D	R	0.67	40.0	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.75	21.2	C	LTR	0.55	16.8	B	LT	0.96	38.1	D
											R	0.12	13.7	B
		INTERSECTION			36.5	D			26.4	C			47.6	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.59	21.6	C	L	0.84	39.4	D	L	0.54	20.6	C
			T	0.84	24.6	C	T	0.84	24.9	C	T	0.83	23.9	C
		INTERSECTION			24.1	C			27.6	C			23.4	C
47	2nd Avenue and 36th Street	EB 36th Street	TR	0.99	65.5	E	TR	1.03	63.4	E	T	0.65	26.4	C
											R	0.51	31.1	C
		WB 36th Street	L	0.71	36.7	D								
		SB 2nd Avenue	L	1.07	86.3	F	L	0.02	10.6	B	L	0.12	11.2	B
			T	1.07	72.6	E	T	0.74	18.9	B	T	0.85	22.2	C
		INTERSECTION			68.7	E			36.2	D			23.1	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.53	15.5	B	TR	0.74	20.3	C	TR	0.69	18.8	B
			R	1.05	106.1	F	R	1.08	112.2	F	R	1.06	105.3	F
		NB 3rd Avenue	LT	0.79	26.9	C	LT	0.72	25.2	C	LT	0.63	23.2	C
		INTERSECTION			30.7	C			32.8	C			30.4	C
491	Jackson Avenue and West Service Road (West of Intersection	EB Jackson	T	0.64	50.4	D	T	0.42	44.7	D	T	0.56	49.5	D
		WB Jackson	T	0.35	0.9	A	T	0.24	1.6	A	T	0.28	0.1	A
		SB West Service Road	T	0.89	41.9	D	T	0.59	22.4	C	T	0.80	30.7	C
			R	1.07	84.3	F	R	0.81	34.9	C	R	0.99	64.4	E
		INTERSECTION			52.8	D			28.2	C			40.2	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.85	19.0	B	T	0.56	6.7	A	T	1.12	92.5	F
			R	0.17	1.2	A	R	0.11	1.0	A	R	0.17	1.2	A
		WB Northern	LT	0.63	24.2	C	LT	0.47	13.3	B	LT	1.03	118.9	F
		NB Queens Plaza	LTR	1.10	81.2	F	LTR	0.36	10.4	B	LTR	1.04	62.9	E
		SB Queens Plaza	T	0.55	21.9	C	T	0.29	16.1	B	T	0.85	37.7	D
		INTERSECTION			47.0	D			11.3	B			67.2	E
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	46.7	D	TR	0.70	44.4	D	TR	0.87	58.1	E
		WB Tillary Street	L	0.73	69.6	E	L	1.03	118	F	L	1.21	143.7	F
			T	0.81	49.3	D	T	0.80	37.2	D	T	1.41	223.8	F
			R	1.04	65.5	E	R	0.82	39.5	D	R	1.08	69.7	E
		NB Adams Street	T	1.17	129.8	F	T	1.06	93.1	F	T	1.17	123.9	F
		SB Adams Street	L	1.17	136.4	F	L	1.11	117.8	F	L	1.14	124.4	F
			T	0.81	31.0	C	T	0.68	26.9	C	T	1.10	84.3	F
		NB Service Road	TR	1.11	124.1	F	TR	1.02	96.4	F	TR	0.83	56.6	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.30	33.5	C
		INTERSECTION			73.8	E			59.1	E			114.7	F

Table 15-8: 2015 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	33.9	C	L	0.36	26.9	C	L	0.32	34.1	C
			TR	0.87	40.8	D	TR	0.62	30.5	C	TR	0.88	36.8	D
		WB Tillary Street	L	1.05	90.9	F	L	0.43	45.1	D	L	0.51	31.1	C
			TR	0.95	62.3	E	TR	0.63	16.9	B	TR	1.12	89.6	F
		NB Jay Street	L	0.45	40.0	D	L	0.54	45.5	D	L	0.65	49.5	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	33.0	C
			R	0.52	21.3	C	R	0.56	21.8	C	R	0.70	28.7	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.50	46.1	D
			T	0.11	30.8	C	T	0.09	32.5	C	T	0.16	32.9	C
			R	0.18	32.9	C	R	0.18	35.2	D	R	0.28	36.0	D
		INTERSECTION			50.4	D			26.6	C			58.6	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	112.2	F	L	0.52	44.5	D	L	0.32	49.4	D
			TR	1.26	145.7	F	TR	1.16	126.8	F	TR	1.25	164	F
		WB Tillary Street	L	1.36	217	F	L	1.15	135.6	F	L	1.25	173.5	F
			TR	1.14	116.7	F	TR	1.08	99.3	F	TR	1.17	129.8	F
			R	1.19	147.2	F	R	1.15	139.6	F	R	0.63	47.8	D
		NB Flatbush Avenue	L	1.03	80.7	F	L	0.93	49.3	D	L	1.17	120.4	F
			T	1.00	59.7	E	T	0.52	26.2	C	T	0.61	29.0	C
			R	1.01	76.6	E	R	0.99	71.3	E	R	1.02	76.7	E
		SB Flatbush Avenue	T	1.09	97.4	F	T	0.57	39.1	D	T	1.07	88.0	F
			R	0.27	34.3	C	R	0.44	40.7	D	R	0.42	37.8	D
		INTERSECTION			113.5	F			85.9	F			110.9	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.40	28.9	C	LT	0.24	7.3	A	LT	0.52	26.9	C
		WB Northern Boulevard	T	0.51	24.7	C	T	0.40	22.9	C	T	0.45	23.5	C
			R	1.07	81.6	F	R	1.07	86.9	F	R	1.07	79.7	E
		SB Queens Plaza	L	1.01	72.5	E	L	0.99	82.6	F	L	1.06	176.9	F
		INTERSECTION			59.7	E			62.9	E			108.9	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.42	0.4	A	LTR	0.61	3.9	A	LTR	0.60	5.2	A
		WB Northern	LTR	0.58	8.1	A	LTR	0.55	6.8	A	LTR	0.59	8.5	A
		INTERSECTION			4.5	A			5.4	A			6.7	A

Please note that some intersection approaches and lane groups have the unexpected result of lower delay in later years. This is due to upstream metering, queue delay, and other factors inherent in the Synchro analysis methodology.

Table 15-9: 2016 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.09	124.3	F	L	0.99	99.7	F	L	0.67	50.5	D
			T	0.86	33.8	C	T	0.67	23.2	C	T	0.62	20.7	C
		NB 3rd Avenue	T	0.75	31.9	C	T	0.85	30.9	C	T	0.66	23.5	C
			R	0.59	34.8	C	R	1.05	121.4	F	R	0.50	30.3	C
		INTERSECTION			41.0	D			40.3	D			25.0	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.94	62.6	E	T	0.92	61.9	E	T	0.91	58.3	E
			R	0.75	43.7	D	R	0.88	74.5	E	R	0.87	63.9	E
		NB 3rd Avenue	LT	0.82	25.9	C	LT	0.80	9.7	A	LT	0.58	3.5	A
		INTERSECTION			32.4	C			19.7	B			16.0	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.89	44.3	D	LT	1.16	121.7	F	LT	0.92	48.3	D
		NB 3rd Avenue	T	0.94	14.5	B	T	0.98	21.6	C	T	0.99	110.9	F
			R	0.47	7.2	A	R	0.82	29.4	C	R	0.49	10.8	B
		INTERSECTION			20.0	B			40.5	D			94.9	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.13	79.6	E	LT	1.08	50.0	D	LT	1.01	31.8	C
		WB 57th Street	TR	0.98	60.0	E	T	0.62	30.8	C	T	0.47	22.6	C
			R	0.98	72.0	E	R	0.57	35.8	D	R	0.32	22.5	C
		NB 3rd Avenue	LTR	1.07	155.5	F	LTR	1.01	60.9	E	LTR	1.11	93.7	F
			R	0.20	19.7	B	R	0.66	23.8	C	R	1.08	81.7	F
		INTERSECTION			115.1	F			52.0	D			69.9	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.41	20.2	C								
			T	0.43	20.3	C	LT	1.03	70.1	E	LT	0.77	26.8	C
		NB 3rd Avenue	TR	1.06	67.7	E	TR	1.01	33.4	C	TR	1.09	54.1	D
		INTERSECTION			60.8	E			41.6	D			46.9	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.69	24.2	C	LT	0.98	58.0	E	LT	0.70	25.5	C
		NB 3rd Avenue	T	1.07	114	F	T	0.82	38.6	D	T	0.97	27.8	C
			R	1.06	61.2	E	R	1.06	60.6	E	R	1.05	57.5	E
		INTERSECTION			86.9	F			46.8	D			31.0	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.55	17.3	B	T	0.43	16.9	B	TR	0.48	15.8	B
			R	0.96	82.3	F	R	1.01	99.8	F	R	0.95	78.7	E
		NB 3rd Avenue	LT	1.19	115.7	F	LT	0.91	71.1	E	LT	0.79	9.4	A
		INTERSECTION			95.1	F			65.8	E			18.0	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.94	51.5	D	T	1.10	85.5	F	T	1.20	127.9	F
			R	1.11	99.4	F	R	0.86	51.6	D	R	0.50	41.4	D
		WB 57th Street	LT	1.03dl	30.9	C	LT	0.35	20.3	C	LT	0.28	19.9	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.20	18.5	B
			T	1.08	77.6	E	T	1.10	81.6	F	T	1.06	64.6	E
			R	0.89	63.5	E	R	0.78	41.0	D	R	1.06	97.0	F
		INTERSECTION			60.6	E			71.5	E			76.7	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.92	42.3	D	T	1.00	57.3	E	T	0.94	42.2	D
			R	0.59	28.9	C	R	0.48	25.8	C	R	0.43	24.7	C
		WB 57th Street	LT	0.98	41.5	D	LT	0.95	47.9	D	LT	0.95	50.8	D
		SB Lexington Avenue	LT	0.76	22.9	C	LT	0.97	45.0	D	LT	0.75	22.5	C
			R	0.26	16.2	B	R	0.75	37.6	D	R	0.42	20.3	C
		INTERSECTION			33.0	C			48.0	D			34.0	C
10	7th Avenue and 31st Street	WB 31st Street	LT	0.57	25.1	C	LT	0.61	24.2	C	LT	0.82	31.7	C
		SB 7th Avenue	T	0.62	8.0	A	T	0.60	4.7	A	T	0.68	5.5	A
			R	0.49	9.8	A	R	0.40	6.1	A	R	0.46	7.2	A
		INTERSECTION			12.2	B			10.0	B			13.0	B
11	7th Avenue and 32nd Street	SB 7th Avenue	LT	0.91	9.3	A	LT	0.82	4.6	A	LT	0.84	5.6	A
		INTERSECTION			9.3	A			4.6	A			5.6	A

Table 15-9: 2016 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
12	7th Avenue and 33rd Street	WB 33rd Street	L	1.02	107.2	F	L	0.63	44.6	D	L	0.96	93.4	F
			T	0.66	41.6	D	T	0.49	32.3	C	T	0.41	32.5	C
		SB 7th Avenue	TR	0.68	2.8	A	TR	0.70	3.6	A	TR	0.67	3.1	A
			R	1.16	111.2	F	R	1.21	123.3	F	R	1.08	59.7	E
		INTERSECTION			22.2	C			19.0	B			16.2	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.13	105.1	F	T	1.14	123.4	F	T	1.05	88.9	F
			R	0.07	22.5	C	R	0.20	39.2	D	R	0.10	28.8	C
		WB 34th Street	LT	1.18	106.6	F	LT	0.98	27.9	C	LT	0.95	21.7	C
		SB 7th Avenue	LTR	0.94	65.4	E	LTR	1.00	84.6	F	LTR	1.05	50.0	D
		INTERSECTION			81.5	F			75.9	E			48.7	D
14	7th Avenue and 35th Street	WB 35th Street	L	1.01	89.0	F	L	0.93	77.3	E	L	0.60	31.8	C
			T	0.98	73.6	E	T	0.72	39.0	D	T	0.64	33.8	C
		SB 7th Avenue	T	1.03	64.0	E	T	1.03	48.5	D	T	0.70	3.2	A
			R	1.18	134.9	F	R	1.10	98.5	F	R	0.62	15.3	B
		INTERSECTION			71.8	E			52.3	D			9.7	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	46.0	D	TR	0.78	36.7	D	TR	0.83	37.6	D
		SB 7th Avenue	LT	0.83	18.0	B	LT	0.92	55.5	E	LT	0.82	9.2	A
		INTERSECTION			24.0	C			52.0	D			15.8	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.92	49.2	D	LT	0.89	45.5	D	LT	1.01	67.2	E
		SB 7th Avenue	T	0.66	16.3	B	T	0.68	16.8	B	T	0.67	16.5	B
			R	0.61	28.1	C	R	0.52	22.1	C	R	0.60	26.2	C
		INTERSECTION			25.7	C			24.2	C			31.5	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.14	95.9	F	T	1.05	74.6	E	T	0.94	44.4	D
		WB 34th Street	T	0.77	32.4	C	T	0.92	44.7	D	T	1.04	71.5	E
			R	0.40	32.2	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.87	5.9	A	T	1.03	36.1	D	T	1.07	49.2	D
		INTERSECTION			26.2	C			42.8	D			54.7	D
18	8th Avenue and 34th Street	EB 34th Street	LT	0.94	50.5	D	LT	0.74	29.7	C	LT	0.69	27.2	C
		WB 34th Street	T	0.43	20.5	C	T	0.51	23.1	C	T	0.52	30.7	C
			R	0.45	21.0	C	R	0.84	35.2	D	R	0.73	37.8	D
		NB 8th Avenue	L	0.54	9.2	A	L	0.56	11.5	B	L	0.74	20.9	C
			T	0.85	8.3	A	T	0.79	8.5	A	T	0.85	9.9	A
			R	0.76	51.7	D	R	0.64	18.2	B	R	0.82	35.2	D
		INTERSECTION			20.0	C			17.7	B			19.9	B
19	Madison Avenue and 39th Street	WB 39th Street	T	0.69	28.3	C	T	0.80	35.2	D	T	0.84	37.6	D
			R	0.61	48.5	D	R	0.67	51.1	D	R	0.61	47.5	D
		NB Madison	LT	0.92	32.6	C	LT	0.77	22.6	C	LT	0.66	19.4	B
		INTERSECTION			32.8	C			27.8	C			25.5	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.75	65.3	E	L	0.69	57.2	E	L	0.65	55.2	E
			T	0.80	36.3	D	T	0.65	26.7	C	T	0.54	23.6	C
		NB Madison	TR	1.10	76.7	E	TR	1.08	71.5	E	TR	0.96	23.1	C
		INTERSECTION			68.7	E			62.8	E			25.0	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43.2	D	L	0.41	42.8	D	L	0.35	41.3	D
			T	0.37	20.2	C	T	0.22	17.7	B	T	0.22	17.4	B
		NB Madison	TR	0.99	42.6	D	TR	0.99	42.6	D	TR	1.00	25.9	C
		INTERSECTION			40.5	D			41.2	D			25.9	C

Table 15-9: 2016 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.19	122.4	F	LT	0.47	22.0	C	LT	0.69	33.0	C
		WB 42nd Street	T	1.13	86.2	F	TR	1.13	91.0	F	T	0.95	31.5	C
			R	0.15	18.5	B					R	0.31	17.0	B
		NB Madison Avenue	LT	1.09	80.8	F	LT	1.06	78.6	E	LT	1.03	43.3	D
			R	0.20	7.0	A	R	0.22	7.1	A	R	0.16	7.0	A
		INTERSECTION			91.2	F			68.2	E			36.3	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.52	26.0	C	T	0.60	28.2	C	T	0.62	29.1	C
			R	0.81	51.8	D	R	0.73	41.0	D	R	0.87	68.6	E
		NB Madison	LT	1.03	59.5	E	LT	1.08	64.1	E	LT	0.97	39.7	D
		INTERSECTION			55.0	D			57.0	E			40.5	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.76	35.0	D	LT	0.92	56.5	E	LT	0.92	60.8	E
		NB Madison Avenue	TR	0.99	30.8	C	TR	0.98	39.3	D	T	1.02	42.8	D
											R	0.12	5.2	A
		INTERSECTION			31.5	C			42.6	D			45.2	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.86	39.2	D	TR	0.99	61.9	E	TR	0.53	23.8	C
		NB Madison	LT	1.01	50.6	D	LT	1.11	63.8	E	LT	0.95	37.5	D
		INTERSECTION			47.8	D			63.3	E			34.6	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.81	33.8	C	T	0.70	32.7	C	T	0.57	34.5	C
			R	0.28	26.2	C	R	0.21	25.6	C	R	0.24	31.0	C
		WB 42nd Street	LT	0.94	32.6	C	LT	0.76	28.7	C	LT	1.06	73.0	E
		SB 5th Avenue	LT	0.83	23.1	C	LT	0.77	20.8	C	LT	1.08	70.7	E
			R	0.15	14.3	B	R	0.08	13.3	B	R	0.09	13.2	B
		INTERSECTION			27.6	C			24.9	C			65.2	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.03	43.7	D	T	0.86	25.9	C	T	0.79	10.7	B
		WB 42nd Street	T	0.92	24.0	C	T	0.67	7.3	A	T	0.86	17.0	B
		INTERSECTION			33.8	C			16.9	B			14.2	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.56	13.8	B	T	0.54	9.6	A	T	0.46	10.1	B
		WB 42nd Street	T	0.69	19.8	B	T	0.74	20.7	C	T	0.66	19.6	B
		INTERSECTION			17.0	B			15.5	B			15.3	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.73	31.5	C	TR	0.96	48.2	D	TR	0.91	43.2	D
		NB 8th Avenue	L	1.01	81.6	F	L	0.99	76.7	E	L	1.02	74.4	E
			T	0.86	17.2	B	T	0.78	13.9	B	T	0.85	14.8	B
		INTERSECTION			25.6	C			26.5	C			25.5	C
30	8th Avenue and 31st Street	WB 31st Street	T	0.46	26.9	C	T	0.51	26.4	C	T	0.84	39.6	D
			R	0.52	29.6	C	R	0.42	24.4	C	R	0.64	31.5	C
		NB 8th Avenue	L	1.00	90.3	F	L	1.00	91.1	F	L	1.27	190.7	F
			T	0.69	22.2	C	T	0.70	23.6	C	T	0.77	25.3	C
		INTERSECTION			30.8	C			30.7	C			41.1	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.18	12.7	B	T	0.27	14.0	B	T	0.39	15.9	B
			R	1.05	91.6	F	R	0.75	37.8	D	R	1.04	92.9	F
		NB 8th Avenue	LT	0.79	28.5	C	LT	0.78	28.8	C	LT	1.04	68.5	E
		INTERSECTION			37.1	D			28.7	C			66.7	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.85	29.1	C	LT	0.96	45.2	D	LT	0.55	15.7	B
		WB 42nd Street	TR	0.68	10.9	B	TR	0.77	12.3	B	TR	0.54	6.9	A
		NB 8th Avenue	L	0.09	6.9	A	L	0.46	11.2	B	L	0.08	5.9	A
			LT	1.09	61.2	E	LT	0.98	25.1	C	LT	1.02	43.8	D
			R	0.77	27.3	C	R	0.70	22.1	C	R	0.16	5.8	A
		INTERSECTION			45.4	D			27.1	C			32.9	C
33	8th Avenue and 58th Street	EB 58th Street	LT	0.69	20.1	C	LT	0.88	29.5	C	LT	0.79	19.8	B
		NB 8th Avenue	TR	0.56	16.8	B	TR	0.62	17.7	B	TR	0.67	18.7	B
		INTERSECTION			17.9	B			21.9	C			19.0	B

Table 15-9: 2016 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
34	9th Avenue and 58th Street	EB 58th Street	T	0.82	41.2	D	T	0.91	52.9	D	T	1.14	117.6	F
			R	0.77	49.0	D	R	0.74	46.9	D	R	0.50	34.2	C
		SB 9th Avenue	LT	0.70	16.0	B	LT	0.65	14.9	B	LT	0.61	14.2	B
		INTERSECTION			23.5	C			25.7	C			38.6	D
35	7th Avenue and 57th Street	EB 57th Street	T	0.89	38.1	D	T	0.83	33.0	C	T	0.89	37.9	D
			R	0.88	53.8	D	R	0.82	48.1	D	R	0.83	50.5	D
		WB 57th Street	LT	1.08	75.8	E	LT	0.88	34.1	C	LT	0.96	39.0	D
		SB 7th Avenue	L	0.28	15.2	B								
			T	0.62	17.7	B	LT	0.31	13.8	B	LT	0.34	14.1	B
			R	0.41	19.1	B	R	0.29	16.6	B	R	0.37	18.2	B
		INTERSECTION			39.9	D			29.6	C			32.4	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.91	54.8	D	T	0.81	41.7	D	T	0.83	42.9	D
			R	0.61	31.9	C	R	0.70	39.7	D	R	0.59	32.7	C
		WB Central Park South	L	1.14	109.2	F	L	1.14	115.3	F	L	1.14	109.2	F
			T	0.63	16.3	B	T	1.00	49.3	D	T	1.03	51.7	D
		SB Central Park Driveway	L	0.85	63.7	E	L	0.01	27.0	C	L	0.01	27.0	C
			TR	0.94	51.0	D	TR	0.05	27.0	C	TR	0.06	27.2	C
		INTERSECTION			49.1	D			58.9	E			58.9	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	0.79	35.5	D	LT	0.72	34.4	C	LT	0.72	33.9	C
		WB 23rd Street	TR	0.83	47.0	D	TR	0.78	35.7	D	TR	0.75	38.3	D
		NB 6th Avenue	LT	1.12	88.4	F	LT	1.18	114.4	F	LT	0.94	35.3	D
			R	0.60	31.7	C	R	0.90	67.4	E	R	0.63	34.2	C
		INTERSECTION			69.5	E			87.8	F			35.6	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.55	24.6	C	TR	0.73	29.8	C	TR	0.82	34.3	C
		NB 6th Avenue	LT	0.97	34.9	C	LT	0.87	24.8	C	LT	0.84	23.2	C
		INTERSECTION			33.3	C			25.9	C			26.1	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.91	34.5	C	LT	0.90	33.2	C	LT	0.70	29.7	C
		WB 42nd Street	T	0.75	27.1	C	T	0.89	33.2	C	T	0.96	11.7	B
			R	1.07	84.9	F	R	1.07	97.9	F	R	1.07	52.2	D
		NB 6th Avenue	LTR	0.86	21.9	C	LTR	0.61	15.0	B	LT	1.03	48.6	D
											R	0.42	16.7	B
		INTERSECTION			28.7	C			27.8	C			38.9	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1.11	79.0	E	LT	1.09	71.3	E	LT	1.17	102.4	F
		WB 57th Street	T	0.99	64.0	E	T	1.01	71.6	E	T	1.07	84.4	F
			R	0.78	51.2	D	R	0.70	49.4	D	R	0.98	73.5	E
		NB 6th Avenue	LT	0.73	21.3	C	LT	0.64	19.3	B	LT	0.63	18.8	B
			R	0.48	21.7	C	R	0.48	21.1	C	R	0.74	37.0	D
		INTERSECTION			47.7	D			46.2	D			55.5	E
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	27.7	C	L	0.61	26.3	C	L	0.87	54.6	D
			T	0.71	20.2	C	T	0.55	10.1	B	T	0.50	7.5	A
		WB Central Park	TR	0.81	33.4	C	TR	0.76	31.0	C	TR	0.79	31.8	C
		NB 6th Avenue	L	1.08	98.4	F	L	1.05	96.7	F	L	1.04	85.1	F
			LTR	0.95dr	39.5	D	LTR	0.77	29.5	C	LTR	1.07	74.0	E
		INTERSECTION			41.3	D			33.8	C			53.3	D
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.76	37.7	D	T	0.71	32.4	C	T	0.73	34.2	C
			R	0.66	44.6	D	R	0.73	48.5	D	R	0.76	59.9	E
		WB 23rd Street	LT	0.39	17.6	B	LT	0.35	13.6	B	LT	0.35	17.1	B
		SB 5th Avenue	TR	0.70	23.1	C	TR	0.82	29.6	C	TR	0.80	26.2	C
		INTERSECTION			27.1	C			27.8	C			27.7	C

Table 15-9: 2016 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
43	5th Avenue and 57th Street	EB 57th Street	T	1.09	68.8	E	T	1.11	80.2	F	T	0.95	25.6	C
			R	1.07	71.1	E	R	0.89	37.3	D	R	0.68	18.8	B
		WB 57th Street	LT	1.12	97.9	F	LT	0.97	52.1	D	LT	1.06	70.1	E
		SB 5th Avenue	LT	1.07	69.2	E	LT	0.77	21.9	C	LT	0.73	20.7	C
			R	0.37	17.5	B	R	0.38	17.1	B	R	0.51	21.4	C
		INTERSECTION			73.4	E			45.0	D			34.5	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.4	C	T	0.91	28.9	C	T	0.42	6.1	A
			R	1.06	83.1	F	R	0.95	69.9	E	R	0.86	44.8	D
		SB 5th Avenue	LT	1.07	66.7	E	LT	0.79	24.3	C	LT	1.06	69.4	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17.0	B
		INTERSECTION			57.2	E			29.8	C			54.5	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.11	57.7	E	LT	1.05	35.6	D	LT	1.10	59.3	E
		WB 57th Street	T	0.86	36.6	D	T	0.67	27.1	C	T	0.96	53.2	D
			R	0.77	42.0	D	R	0.67	40.0	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.75	21.3	C	LTR	0.55	16.8	B	LT	0.96	38.4	D
											R	0.12	13.7	B
		INTERSECTION			36.7	D			26.6	C			48.0	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.59	21.6	C	L	0.84	39.7	D	L	0.54	20.6	C
			T	0.84	24.6	C	T	0.84	24.9	C	T	0.83	24.0	C
		INTERSECTION			24.1	C			27.7	C			23.5	C
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.00	65.9	E	TR	1.03	63.9	E	T	0.65	26.4	C
											R	0.51	31.1	C
		WB 36th Street	L	0.71	36.8	D								
		SB 2nd Avenue	L	1.07	86.8	F	L	0.02	10.6	B	L	0.12	11.2	B
			T	1.07	73.2	E	T	0.74	18.9	B	T	0.85	22.2	C
		INTERSECTION			69.1	E			36.3	D			23.2	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.53	15.5	B	TR	0.74	20.3	C	TR	0.69	18.8	B
			R	1.05	106.1	F	R	1.08	112.2	F	R	1.06	106.3	F
		NB 3rd Avenue	LT	0.79	26.9	C	LT	0.72	25.2	C	LT	0.63	23.2	C
		INTERSECTION			30.7	C			32.8	C			30.6	C
491	Jackson Avenue and West Service Road (West of Intersection	EB Jackson	T	0.64	50.6	D	T	0.43	44.8	D	T	0.56	49.5	D
		WB Jackson	T	0.35	0.9	A	T	0.24	1.6	A	T	0.28	0.1	A
		SB West Service Road	T	0.90	42.3	D	T	0.59	22.5	C	T	0.8	30.9	C
			R	1.08	86.1	F	R	0.82	35.1	D	R	0.99	65.8	E
		INTERSECTION			53.6	D			28.4	C			40.7	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.85	19.5	B	T	0.56	6.6	A	T	1.12	93.4	F
			R	0.17	1.2	A	R	0.12	1.0	A	R	0.17	1.2	A
		WB Northern	LT	0.64	24.3	C	LT	0.47	13.3	B	LT	1.03	119.6	F
		NB Queens Plaza	LTR	1.10	83.5	F	LTR	0.37	10.5	B	LTR	1.04	63.8	E
		SB Queens Plaza	T	0.55	21.9	C	T	0.29	16.1	B	T	0.86	37.9	D
		INTERSECTION			48.1	D			11.3	B			67.8	E
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	46.8	D	TR	0.70	44.5	D	TR	0.87	58.5	E
		WB Tillary Street	L	0.73	69.4	E	L	1.03	118.1	F	L	1.22	146.6	F
			T	0.81	49.5	D	T	0.80	37.5	D	T	1.42	226.6	F
			R	1.04	66.7	E	R	0.82	39.7	D	R	1.09	72.5	E
		NB Adams Street	T	1.18	131.8	F	T	1.06	94.4	F	T	1.17	125.2	F
		SB Adams Street	L	1.17	138.0	F	L	1.12	119.3	F	L	1.15	126.6	F
			T	0.82	31.2	C	T	0.69	26.9	C	T	1.10	86.2	F
		NB Service Road	TR	1.12	126.2	F	TR	1.02	98.0	F	TR	0.83	57.1	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.30	33.5	C
		INTERSECTION			74.6	E			59.6	E			116.6	F

Table 15-9: 2016 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	34.0	C	L	0.36	26.9	C	L	0.32	34.2	C
			TR	0.88	41.0	D	TR	0.62	30.5	C	TR	0.89	37.2	D
		WB Tillary Street	L	1.06	91.8	F	L	0.44	45.1	D	L	0.51	31.1	C
			TR	0.95	62.5	E	TR	0.63	16.9	B	TR	1.13	91.5	F
		NB Jay Street	L	0.46	40.1	D	L	0.54	45.5	D	L	0.66	49.7	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	33.0	C
			R	0.53	21.4	C	R	0.56	21.9	C	R	0.7	28.9	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.51	46.7	D
			T	0.11	30.8	C	T	0.09	32.5	C	T	0.16	32.9	C
			R	0.18	32.9	C	R	0.18	35.2	D	R	0.29	36.2	D
		INTERSECTION			50.7	D			26.6	C			59.5	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	113.1	F	L	0.52	44.4	D	L	0.32	49.4	D
			TR	1.26	148.1	F	TR	1.17	129.2	F	TR	1.25	165.9	F
		WB Tillary Street	L	1.37	218.8	F	L	1.15	136.4	F	L	1.26	174.3	F
			TR	1.15	118.0	F	TR	1.08	100.6	F	TR	1.18	131.7	F
			R	1.19	149.2	F	R	1.16	142.0	F	R	0.63	48.0	D
		NB Flatbush Avenue	L	1.04	81.9	F	L	0.93	50.4	D	L	1.18	122.6	F
			T	1.00	60.7	E	T	0.52	26.3	C	T	0.62	29.0	C
			R	1.01	78.1	E	R	0.99	72.3	E	R	1.02	77.6	E
		SB Flatbush Avenue	T	1.10	99.2	F	T	0.57	39.1	D	T	1.08	89.9	F
			R	0.27	34.3	C	R	0.44	40.7	D	R	0.43	37.8	D
		INTERSECTION			115.0	F			87.1	F			112.3	F
53	Queens Plaza N and Northern Boulevard	EB Northern	LT	0.40	29.0	C	LT	0.24	7.3	A	LT	0.52	26.9	C
		WB Northern Boulevard	T	0.51	24.7	C	T	0.41	22.9	C	T	0.45	23.5	C
			R	1.07	83.2	F	R	1.08	88.6	F	R	1.07	81.0	F
		SB Queens Plaza	L	1.01	73.3	E	L	0.99	85.1	F	L	1.07	182.3	F
		INTERSECTION			60.5	E			64.4	E			111.7	F
54	41st Avenue and Northern Boulevard	EB Northern	LTR	0.43	0.4	A	LTR	0.61	4.0	A	LTR	0.60	5.3	A
		WB Northern	LTR	0.59	8.2	A	LTR	0.56	6.9	A	LTR	0.60	8.7	A
		INTERSECTION			4.5	A			5.5	A			6.9	A

Please note that some intersection approaches and lane groups have the unexpected result of lower delay in later years. This is due to upstream metering, queue delay, and other factors inherent in the Synchro analysis methodology.

Table 15-10: 2017 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.10	125.6	F	L	1.00	101.0	F	L	0.67	50.5	D
			T	0.86	33.8	C	T	0.67	23.3	C	T	0.62	20.7	C
		NB 3rd Avenue	T	0.75	31.9	C	T	0.85	31.0	C	T	0.66	23.5	C
			R	0.59	34.8	C	R	1.05	121.4	F	R	0.50	30.3	C
		INTERSECTION			41.3	D			40.5	D			25.0	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.94	62.6	E	T	0.92	61.9	E	T	0.91	58.3	E
			R	0.76	44.0	D	R	0.88	74.5	E	R	0.88	65.4	E
		NB 3rd Avenue	LT	0.82	26.2	C	LT	0.80	9.7	A	LT	0.58	3.5	A
		INTERSECTION			32.7	C			19.7	B			16.2	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.89	44.3	D	LT	1.16	121.7	F	LT	0.92	48.6	D
		NB 3rd Avenue	T	0.94	14.5	B	T	0.99	21.7	C	T	0.99	112.6	F
			R	0.47	7.2	A	R	0.82	29.4	C	R	0.49	10.7	B
		INTERSECTION			20.0	B			40.6	D			96.2	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.13	78.9	E	LT	1.09	50.6	D	LT	1.01	32.4	C
		WB 57th Street	TR	0.99	60.2	E	T	0.62	30.8	C	T	0.47	22.6	C
			R	0.98	71.9	E	R	0.57	35.8	D	R	0.32	22.5	C
		NB 3rd Avenue	LTR	1.07	157.3	F	LTR	1.01	61.4	E	LTR	1.11	94.2	F
			R	0.20	19.7	B	R	0.66	23.8	C	R	1.08	81.7	F
		INTERSECTION			116.0	F			52.4	D			70.3	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.41	20.2	C								
			T	0.43	20.3	C	LT	1.03	70.1	E	LT	0.77	26.8	C
		NB 3rd Avenue	TR	1.06	68.0	E	TR	1.01	33.9	C	TR	1.09	54.9	D
		INTERSECTION			61.1	E			42.0	D			47.5	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.69	24.3	C	LT	0.99	58.7	E	LT	0.70	25.5	C
		NB 3rd Avenue	T	1.07	114.5	F	T	0.82	22.6	C	T	0.97	28.1	C
			R	1.06	61.1	E	R	1.06	60.6	E	R	1.05	57.5	E
		INTERSECTION			87.2	F			37.3	D			31.2	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.55	17.3	B	T	0.43	16.9	B	TR	0.48	15.8	B
			R	0.96	82.3	F	R	1.01	99.8	F	R	0.95	78.7	E
		NB 3rd Avenue	LT	1.19	116.4	F	LT	0.91	71.3	E	LT	0.79	9.4	A
		INTERSECTION			95.6	F			66.0	E			18.0	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.94	51.5	D	T	1.10	85.4	F	T	1.20	127.9	F
			R	1.11	99.4	F	R	0.86	51.4	D	R	0.51	41.6	D
		WB 57th Street	LT	1.03dl	30.9	C	LT	0.35	20.3	C	LT	0.28	19.9	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.20	18.5	B
			T	1.09	78.0	E	T	1.10	82.0	F	T	1.06	65.1	E
			R	0.89	64.2	E	R	0.78	41.0	D	R	1.06	97.0	F
		INTERSECTION			60.9	E			71.7	E			77.0	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.92	42.4	D	T	1.00	57.5	E	T	0.94	42.3	D
			R	0.59	28.9	C	R	0.48	25.8	C	R	0.43	24.7	C
		WB 57th Street	LT	0.98	41.7	D	LT	0.95	48.1	D	LT	0.95	50.7	D
		SB Lexington Avenue	LT	0.76	22.9	C	LT	0.97	45.2	D	LT	0.75	22.5	C
			R	0.26	16.2	B	R	0.75	37.6	D	R	0.42	20.3	C
		INTERSECTION			33.1	C			48.2	D			34.0	C
10	7th Avenue and 31st Street	WB 31st Street	LT	0.57	25.1	C	LT	0.61	24.3	C	LT	0.82	31.8	C
		SB 7th Avenue	T	0.62	8.0	A	T	0.60	4.7	A	T	0.68	5.5	A
			R	0.49	9.8	A	R	0.40	6.1	A	R	0.46	7.2	A
		INTERSECTION			12.2	B			10.1	B			13.1	B
11	7th Avenue and 32nd Street	SB 7th Avenue	LT	0.91	9.3	A	LT	0.82	4.6	A	LT	0.85	5.6	A
		INTERSECTION			9.3	A			4.6	A			5.6	A

Table 15-10: 2017 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
12	7th Avenue and 33rd Street	WB 33rd Street	L	1.02	107.2	F	L	0.63	44.6	D	L	0.97	94.7	F
			T	0.66	41.6	D	T	0.49	32.3	C	T	0.41	32.5	C
		SB 7th Avenue	TR	0.68	2.8	A	TR	0.70	3.6	A	TR	0.67	3.1	A
			R	1.16	111.1	F	R	1.21	123.2	F	R	1.08	59.7	E
		INTERSECTION			22.2	C			19.0	B			16.3	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.13	105.1	F	T	1.14	123.4	F	T	1.06	89.4	F
			R	0.07	22.5	C	R	0.20	39.2	D	R	0.10	28.8	C
		WB 34th Street	LT	1.18	106.6	F	LT	0.98	27.9	C	LT	0.95	21.9	C
		SB 7th Avenue	LTR	0.95	65.9	E	LTR	1.00	84.9	F	LTR	1.05	50.1	D
		INTERSECTION			81.7	F			76.1	E			49.0	D
14	7th Avenue and 35th Street	WB 35th Street	L	1.01	89.9	F	L	0.93	77.3	E	L	0.60	31.8	C
			T	0.98	73.6	E	T	0.72	39.0	D	T	0.64	33.8	C
		SB 7th Avenue	T	1.03	640	E	T	1.03	48.7	D	T	0.70	3.2	A
			R	1.18	134.9	F	R	1.10	98.4	F	R	0.62	15.3	B
		INTERSECTION			71.9	E			52.5	D			9.7	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	46.6	D	TR	0.78	36.7	D	TR	0.83	37.8	D
		SB 7th Avenue	LT	0.83	18.0	B	LT	0.92	56.0	E	LT	0.82	9.2	A
		INTERSECTION			24.1	C			52.4	D			15.9	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.92	49.2	D	LT	0.89	45.7	D	LT	1.02	67.6	E
		SB 7th Avenue	T	0.66	16.3	B	T	0.68	16.8	B	T	0.67	16.6	B
			R	0.61	28.1	C	R	0.52	22.1	C	R	0.60	26.2	C
		INTERSECTION			25.7	C			24.3	C			31.6	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.14	95.9	F	T	1.05	74.6	E	T	0.94	44.5	D
		WB 34th Street	T	0.77	32.4	C	T	0.92	44.8	D	T	1.04	71.8	E
			R	0.40	32.2	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.87	5.9	A	T	1.03	36.2	D	T	1.07	49.4	D
		INTERSECTION			26.2	C			42.9	D			54.9	D
18	8th Avenue and 34th Street	EB 34th Street	LT	0.94	50.8	D	LT	0.74	29.7	C	LT	0.69	27.4	C
		WB 34th Street	T	0.43	20.5	C	T	0.51	23.1	C	T	0.52	30.7	C
			R	0.45	21.0	C	R	0.85	35.4	D	R	0.73	37.8	D
		NB 8th Avenue	L	0.54	9.2	A	L	0.56	11.5	B	L	0.74	21.0	C
			T	0.85	8.3	A	T	0.79	8.5	A	T	0.85	9.9	A
			R	0.76	51.6	D	R	0.64	18.2	B	R	0.82	35.2	D
		INTERSECTION			20.1	C			17.7	B			19.9	B
19	Madison Avenue and 39th Street	WB 39th Street	T	0.69	28.4	C	T	0.81	35.3	D	T	0.84	37.6	D
			R	0.61	48.5	D	R	0.68	51.4	D	R	0.61	47.5	D
		NB Madison Avenue	LT	0.92	32.7	C	LT	0.77	22.6	C	LT	0.66	19.4	B
		INTERSECTION			32.9	C			27.9	C			25.5	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.75	65.3	E	L	0.69	57.2	E	L	0.65	55.2	E
			T	0.80	36.3	D	T	0.65	26.7	C	T	0.54	23.6	C
		NB Madison Avenue	TR	1.10	77.6	E	TR	1.08	71.5	E	TR	0.96	23.2	C
		INTERSECTION			69.4	E			62.7	E			25.0	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43.2	D	L	0.41	42.8	D	L	0.35	41.3	D
			T	0.37	20.2	C	T	0.22	17.7	B	T	0.22	17.4	B
		NB Madison Avenue	TR	0.99	42.9	D	TR	0.99	42.5	D	TR	1.00	26.1	C
		INTERSECTION			40.8	D			41.1	D			26.1	C

Table 15-10: 2017 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.19	122.9	F	LT	0.47	22.0	C	LT	0.69	33.0	C
		WB 42nd Street	T	1.13	87.2	F	TR	1.14	91.4	F	T	0.95	31.6	C
			R	0.15	18.6	B					R	0.31	17.0	B
		NB Madison Avenue	LT	1.09	81.1	F	LT	1.07	79.0	E	LT	1.03	44.3	D
			R	0.20	7.0	A	R	0.22	7.1	A	R	0.16	7.0	A
		INTERSECTION			91.7	F			68.5	E			36.7	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.52	26.0	C	T	0.60	28.2	C	T	0.62	29.1	C
			R	0.81	51.8	D	R	0.73	41.0	D	R	0.87	68.6	E
		NB Madison Avenue	LT	1.03	59.5	E	LT	1.08	64.4	E	LT	0.97	40.2	D
		INTERSECTION			54.9	D			57.2	E			40.9	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.76	35.0	D	LT	0.92	56.5	E	LT	0.92	60.8	E
		NB Madison Avenue	TR	0.99	31.0	C	TR	0.98	39.3	D	T	1.02	43.3	D
											R	0.12	5.2	A
		INTERSECTION			31.7	C			42.6	D			45.6	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.86	39.2	D	TR	0.99	61.9	E	TR	0.53	23.8	C
		NB Madison Avenue	LT	1.02	50.6	D	LT	1.11	64.4	E	LT	0.95	38.0	D
		INTERSECTION			47.8	D			63.7	E			35.0	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.81	33.8	C	T	0.70	32.7	C	T	0.57	34.5	C
			R	0.28	26.3	C	R	0.21	25.5	C	R	0.24	31.0	C
		WB 42nd Street	LT	0.94	32.6	C	LT	0.76	28.7	C	LT	1.06	73.0	E
		SB 5th Avenue	LT	0.83	23.1	C	LT	0.77	20.8	C	LT	1.08	71.1	E
			R	0.15	14.3	B	R	0.08	13.3	B	R	0.09	13.2	B
		INTERSECTION			27.6	C			25.0	C			65.4	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.03	44.6	D	T	0.86	25.9	C	T	0.79	10.7	B
		WB 42nd Street	T	0.92	24.0	C	T	0.67	7.3	A	T	0.86	17.0	B
		INTERSECTION			34.2	C			16.9	B			14.2	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.56	13.8	B	T	0.54	9.6	A	T	0.46	10.1	B
		WB 42nd Street	T	0.69	19.8	B	T	0.74	20.7	C	T	0.66	19.6	B
		INTERSECTION			17.0	B			15.5	B			15.3	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.73	31.5	C	TR	0.96	48.2	D	TR	0.91	43.2	D
		NB 8th Avenue	L	1.01	81.6	F	L	0.99	76.7	E	L	1.02	74.4	E
			T	0.86	17.2	B	T	0.78	13.9	B	T	0.85	14.8	B
		INTERSECTION			25.6	C			26.5	C			25.5	C
30	8th Avenue and 31st Street	WB 31st Street	T	0.46	26.9	C	T	0.51	26.3	C	T	0.84	39.7	D
			R	0.52	29.6	C	R	0.42	24.4	C	R	0.65	31.5	C
		NB 8th Avenue	L	1.01	91.4	F	L	1.00	91.1	F	L	1.27	190.7	F
			T	0.69	22.2	C	T	0.70	23.6	C	T	0.77	25.3	C
		INTERSECTION			30.9	C			30.7	C			41.1	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.18	12.7	B	T	0.27	14.0	B	T	0.39	16.0	B
			R	1.05	91.6	F	R	0.75	37.8	D	R	1.04	92.9	F
		NB 8th Avenue	LT	0.79	28.5	C	LT	0.78	28.8	C	LT	1.04	68.7	E
		INTERSECTION			37.2	D			28.7	C			66.9	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.85	29.2	C	LT	0.96	45.5	D	LT	0.56	15.8	B
		WB 42nd Street	TR	0.68	10.9	B	TR	0.77	12.3	B	TR	0.54	6.8	A
		NB 8th Avenue	L	0.09	6.9	A	L	0.46	11.2	B	L	0.08	5.9	A
			LT	1.09	61.4	E	LT	0.99	25.2	C	LT	1.02	44.4	D
			R	0.77	27.3	C	R	0.70	22.1	C	R	0.16	5.8	A
		INTERSECTION			45.6	D			27.3	C			33.3	C

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			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
33	8th Avenue and 58th Street	EB 58th Street	LT	0.69	20.1	C	LT	0.88	29.5	C	LT	0.79	19.8	B
		NB 8th Avenue	TR	0.56	16.9	B	TR	0.62	17.7	B	TR	0.67	18.7	B
		INTERSECTION			18.0	B			21.9	C			19.1	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.82	41.3	D	T	0.91	52.9	D	T	1.14	117.6	F
			R	0.77	49.0	D	R	0.74	46.9	D	R	0.50	34.2	C
		SB 9th Avenue	LT	0.70	16.1	B	LT	0.65	14.9	B	LT	0.61	14.2	B
		INTERSECTION			23.6	C			25.7	C			38.6	D
35	7th Avenue and 57th Street	EB 57th Street	T	0.89	38.1	D	T	0.83	33.1	C	T	0.89	38.0	D
			R	0.88	53.8	D	R	0.82	48.1	D	R	0.83	50.5	D
		WB 57th Street	LT	1.08	75.8	E	LT	0.88	34.1	C	LT	0.96	39.1	D
		SB 7th Avenue	L	0.28	15.2	B								
			T	0.62	17.7	B	LT	0.31	13.8	B	LT	0.34	14.1	B
			R	0.41	19.1	B	R	0.29	16.6	B	R	0.37	18.2	B
		INTERSECTION			39.9	D			29.6	C			32.4	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.91	55.1	E	T	0.81	41.7	D	T	0.83	42.9	D
			R	0.61	31.9	C	R	0.70	39.7	D	R	0.59	32.7	C
		WB Central Park South	L	1.15	110.1	F	L	1.14	115.3	F	L	1.14	110.1	F
			T	0.63	16.3	B	T	1.00	49.8	D	T	1.03	52.0	D
		SB Central Park Driveway	L	0.85	63.7	E	L	0.01	27.0	C	L	0.01	27.0	C
			TR	0.94	51.0	D	TR	0.05	27.0	C	TR	0.06	27.2	C
		INTERSECTION			49.3	D			59.1	E			59.3	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	0.80	35.5	D	LT	0.72	34.4	C	LT	0.72	33.9	C
		WB 23rd Street	TR	0.83	47.3	D	TR	0.78	35.8	D	TR	0.75	38.3	D
		NB 6th Avenue	LT	1.12	88.8	F	LT	1.18	114.7	F	LT	0.94	35.4	D
			R	0.60	31.7	C	R	0.90	67.4	E	R	0.63	34.2	C
		INTERSECTION			69.8	E			87.9	F			35.6	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.55	24.6	C	TR	0.73	29.8	C	TR	0.82	34.3	C
		NB 6th Avenue	LT	0.97	35.1	D	LT	0.87	24.8	C	LT	0.84	23.3	C
		INTERSECTION			33.4	C			25.9	C			26.1	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.91	34.6	C	LT	0.91	33.2	C	LT	0.70	29.8	C
		WB 42nd Street	T	0.75	27.1	C	T	0.89	33.3	C	T	0.96	12.0	B
			R	1.08	86.3	F	R	1.08	100.9	F	R	1.07	52.2	D
		NB 6th Avenue	LTR	0.86	21.9	C	LTR	0.61	15.1	B	LT	1.03	48.9	D
											R	0.42	16.7	B
		INTERSECTION			28.8	C			28.1	C			39.1	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1.11	79.5	E	LT	1.09	71.7	E	LT	1.17	102.4	F
		WB 57th Street	T	0.99	63.9	E	T	1.01	71.9	E	T	1.07	84.3	F
			R	0.78	51.1	D	R	0.70	49.4	D	R	0.98	73.5	E
		NB 6th Avenue	LT	0.73	21.3	C	LT	0.64	19.3	B	LT	0.63	18.8	B
			R	0.48	21.7	C	R	0.48	21.1	C	R	0.74	37.0	D
		INTERSECTION			47.8	D			46.4	D			55.5	E
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	27.6	C	L	0.61	26.3	C	L	0.87	54.6	D
			T	0.71	20.2	C	T	0.55	10.2	B	T	0.50	7.5	A
		WB Central Park South	TR	0.81	33.4	C	TR	0.76	31.0	C	TR	0.79	31.8	C
		NB 6th Avenue	L	1.08	98.4	F	L	1.05	96.7	F	L	1.04	85.1	F
			LTR	0.95dr	39.5	D	LTR	0.77	29.5	C	LTR	1.07	74.0	E
		INTERSECTION			41.3	D			33.9	C			53.3	D

Table 15-10: 2017 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.76	37.7	D	T	0.71	32.4	C	T	0.74	34.3	C
			R	0.66	44.6	D	R	0.73	48.5	D	R	0.76	59.9	E
		WB 23rd Street	LT	0.39	17.6	B	LT	0.35	13.6	B	LT	0.35	17.1	B
		SB 5th Avenue	TR	0.70	23.1	C	TR	0.82	29.6	C	TR	0.80	26.3	C
		INTERSECTION			27.1	C			27.8	C			27.7	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.09	68.8	E	T	1.11	80.1	F	T	0.95	25.8	C
			R	1.07	72.1	E	R	0.89	37.2	D	R	0.68	18.9	B
		WB 57th Street	LT	1.12	98.9	F	LT	0.97	52.1	D	LT	1.06	70.1	E
		SB 5th Avenue	LT	1.07	69.6	E	LT	0.77	21.9	C	LT	0.73	20.7	C
			R	0.37	17.5	B	R	0.38	17.1	B	R	0.52	21.5	C
		INTERSECTION			73.9	E			45.0	D			34.6	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.4	C	T	0.91	29.0	C	T	0.42	6.1	A
			R	1.06	84.2	F	R	0.95	69.8	E	R	0.86	44.8	D
		SB 5th Avenue	LT	1.07	66.7	E	LT	0.79	24.3	C	LT	1.06	69.9	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17.0	B
		INTERSECTION			57.3	E			29.9	C			54.9	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.11	57.7	E	LT	1.05	36.0	D	LT	1.10	59.7	E
		WB 57th Street	T	0.86	36.6	D	T	0.67	27.1	C	T	0.96	53.2	D
			R	0.77	42.0	D	R	0.67	40.0	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.75	21.3	C	LTR	0.56	16.8	B	LT	0.96	38.5	D
											R	0.12	13.7	B
		INTERSECTION			36.7	D			26.7	C			48.2	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.59	21.6	C	L	0.84	39.7	D	L	0.54	20.6	C
			T	0.84	24.7	C	T	0.84	25.0	C	T	0.83	24.0	C
		INTERSECTION			24.2	C			27.8	C			23.5	C
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.00	65.9	E	TR	1.03	64.1	E	T	0.65	26.4	C
											R	0.51	31.1	C
		WB 36th Street	L	0.71	36.8	D								
		SB 2nd Avenue	L	1.07	87.2	F	L	0.02	10.6	B	L	0.12	11.2	B
			T	1.07	73.6	E	T	0.74	19.0	B	T	0.85	22.3	C
		INTERSECTION			69.4	E			36.5	D			23.2	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.53	15.5	B	TR	0.74	20.3	C	TR	0.69	18.9	B
			R	1.05	106.1	F	R	1.08	112.2	F	R	1.06	106.3	F
		NB 3rd Avenue	LT	0.79	26.9	C	LT	0.72	25.2	C	LT	0.63	23.2	C
		INTERSECTION			30.7	C			32.8	C			30.6	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.64	50.7	D	T	0.43	44.8	D	T	0.56	49.7	D
		WB Jackson Avenue	T	0.35	0.9	A	T	0.24	1.6	A	T	0.28	0.1	A
		SB West Service Road	T	0.90	42.6	D	T	0.59	22.5	C	T	0.80	31.1	C
			R	1.08	87.5	F	R	0.81	35.0	D	R	0.99	65.7	E
		INTERSECTION			54.2	D			28.4	C			40.7	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.85	19.6	B	T	0.57	6.7	A	T	1.12	94.4	F
			R	0.17	1.2	A	R	0.12	1.0	A	R	0.17	1.2	A
		WB Northern Boulevard	LT	0.64	24.3	C	LT	0.48	13.4	B	LT	1.04	120.3	F
		NB Queens Plaza S	LTR	1.10	84.5	F	LTR	0.37	10.5	B	LTR	1.05	64.6	E
		SB Queens Plaza S	T	0.55	21.9	C	T	0.29	16.1	B	T	0.86	38.0	D
		INTERSECTION			48.5	D			11.4	B			68.5	E

Table 15-10: 2017 Future Conditions without the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	46.9	D	TR	0.70	44.5	D	TR	0.87	58.5	E
		WB Tillary Street	L	0.73	69.3	E	L	1.04	120.7	F	L	1.22	146.6	F
			T	0.81	49.5	D	T	0.80	37.6	D	T	1.42	227.3	F
			R	1.04	67.5	E	R	0.82	39.7	D	R	1.09	73.1	E
		NB Adams Street	T	1.18	132.3	F	T	1.07	94.8	F	T	1.17	125.6	F
		SB Adams Street	L	1.18	138.8	F	L	1.12	120.8	F	L	1.15	127.4	F
			T	0.82	31.3	C	T	0.69	27.0	C	T	1.11	87.0	F
		NB Service Road	TR	1.12	126.2	F	TR	1.02	98.0	F	TR	0.83	57.4	E
		SB Service Road	TR	0.09	31.9	C	TR	0.06	30.6	C	TR	0.30	33.5	C
		INTERSECTION			75.0	E			60.0	E			117.1	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	34.0	C	L	0.36	27.1	C	L	0.32	34.2	C
			TR	0.88	41.3	D	TR	0.62	30.5	C	TR	0.89	37.4	D
		WB Tillary Street	L	1.06	91.1	F	L	0.44	45.1	D	L	0.52	31.2	C
			TR	0.96	62.7	E	TR	0.63	16.9	B	TR	1.13	92.6	F
		NB Jay Street	L	0.46	40.1	D	L	0.54	45.7	D	L	0.66	49.7	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	33.0	C
			R	0.53	21.4	C	R	0.57	21.9	C	R	0.70	29.0	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.51	46.7	D
			T	0.11	30.8	C	T	0.09	32.5	C	T	0.16	32.9	C
			R	0.18	32.9	C	R	0.18	35.2	D	R	0.29	36.2	D
		INTERSECTION			50.8	D			26.7	C			60.1	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	112.9	F	L	0.53	44.5	D	L	0.33	49.5	D
			TR	1.27	149.2	F	TR	1.17	129.9	F	TR	1.26	166.9	F
		WB Tillary Street	L	1.37	219.8	F	L	1.15	137.2	F	L	1.26	175.1	F
			TR	1.16	122.5	F	TR	1.09	101.6	F	TR	1.18	132.7	F
			R	1.18	145.2	F	R	1.16	143.2	F	R	0.64	48.3	D
		NB Flatbush Avenue	L	1.04	82.5	F	L	0.93	50.8	D	L	1.18	123.3	F
			T	1.01	61.3	E	T	0.52	26.3	C	T	0.62	29.0	C
			R	1.01	78.6	E	R	0.99	72.8	E	R	1.02	78.1	E
		SB Flatbush Avenue	T	1.10	99.9	F	T	0.57	39.2	D	T	1.08	90.5	F
			R	0.27	34.3	C	R	0.45	40.9	D	R	0.43	37.8	D
		INTERSECTION			116	F			87.6	F			113	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.40	29.0	C	LT	0.24	7.3	A	LT	0.53	27.0	C
		WB Northern Boulevard	T	0.51	24.7	C	T	0.41	22.9	C	T	0.46	23.5	C
			R	1.07	84.0	F	R	1.08	90.0	F	R	1.07	81.7	F
		SB Queens Plaza N	L	1.01	73.6	E	L	0.99	85.6	F	L	1.07	184.7	F
		INTERSECTION			60.8	E			65.1	E			113	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.43	0.4	A	LTR	0.61	4.0	A	LTR	0.60	5.3	A
		WB Northern Boulevard	LTR	0.59	8.3	A	LTR	0.56	7.0	A	LTR	0.60	8.8	A
		INTERSECTION			4.6	A			5.5	A			7.0	A
Please note that some intersection approaches and lane groups have the unexpected result of lower delay in later years. This is due to upstream metering, queue delay, and other factors inherent in the Synchro analysis methodology.														

15.2.8 Future Conditions with the Proposed Action

15.2.8.1 Estimation of Volumes in the Future With the Proposed Action

Traffic volumes in the future with the Proposed Action were estimated by adding the increased number of vehicles that would occur with the Proposed Action to traffic volumes in the future without the Proposed Action. Estimation of the traffic volumes in 2014, 2015, 2016 and 2017 were based on the existing taxi volumes and travel patterns. The yearly increases in taxi volumes were assumed to be directly proportional to the percentage increase in taxi medallions for each year. As outlined in the description of the Proposed Action, taxi medallions are expected to be sold at a public auction on the following schedule: 400 in Year One (2013), 550 in Year Two (2014), 500 in Year Three (2015), and 550 in Year Four (2016). The analysis year lags one year from the sales year to allow time for the new taxis to be fully integrated into the traffic flows.

Table 15-11 shows the percent increase in taxi medallions for each of the four study years. The percent increase was applied to each peak hour turning movement at each study intersection to derive the net increase in each turning movement at an intersection (e.g. a left-turn movement with 100 existing taxis would increase by 3 taxis in 2014, 7 taxis in 2015, 11 taxis in 2016, and 15 taxis in 2017). For 2017, the resulting net increase in peak hour taxi volumes is presented in Figures 15-14 through 15-18. For 2014, 2015 and 2016, the net increase in peak hour taxi volumes would be 20% (400/2000), 48% (950/2000) and 73% (1450/2000) of the 2017 net increase in peak hour taxi volumes, respectively.

Table 15-11: Projected Percentage Increase of Taxi Medallions

Time Period	Taxi Medallions Sold Each Year	Analysis Year	Cumulative Taxi Medallion Increase	Existing Taxi Medallions	Future Taxi Medallions	Percentage Increase
2013-2014	400	2014	400	13,237	13,637	3.0%
2014-2015	550	2015	950	13,237	14,187	7.2%
2015-2016	500	2016	1450	13,237	14,687	11.0%
2016-2017	550	2017	2000	13,237	15,237	15.1%

2017 Taxi Medallion Increase - FEIS

FIGURE 15-14 | **Volume Increase Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)**

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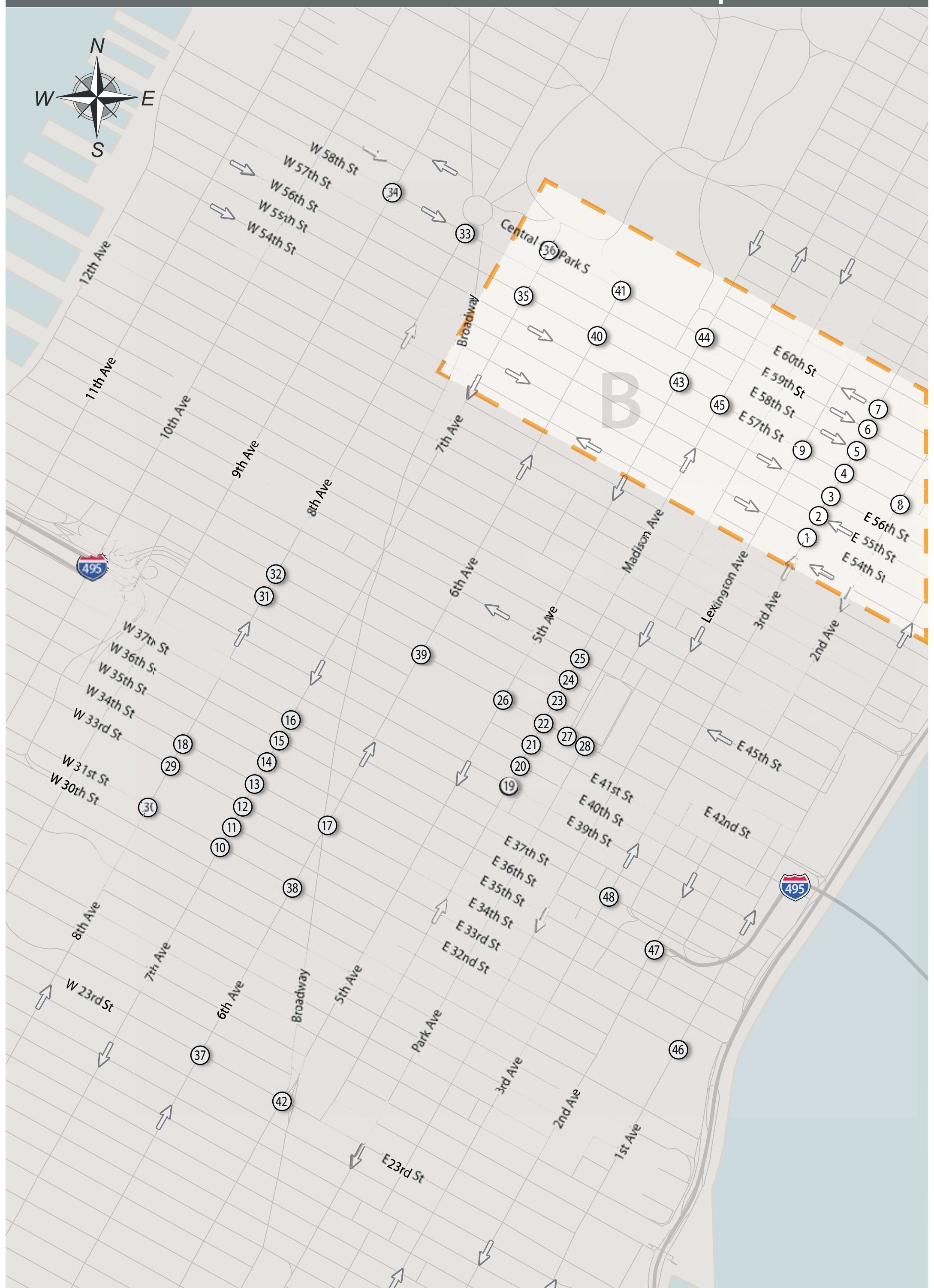
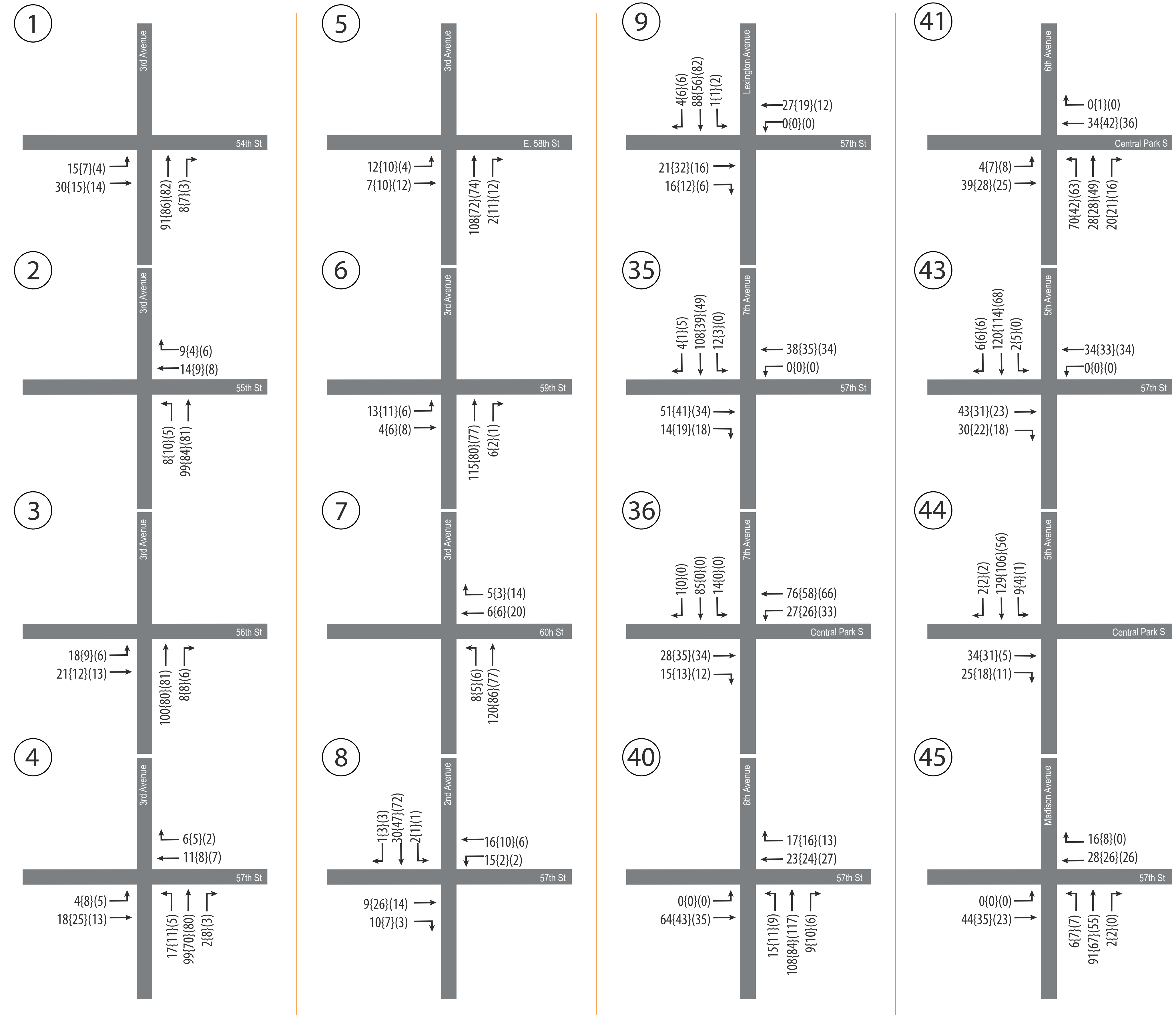
Manhattan-North Location Map



LEGEND:

#	Study Intersection Location ID
000{000}(000)	AM **(8-9AM)** , Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes

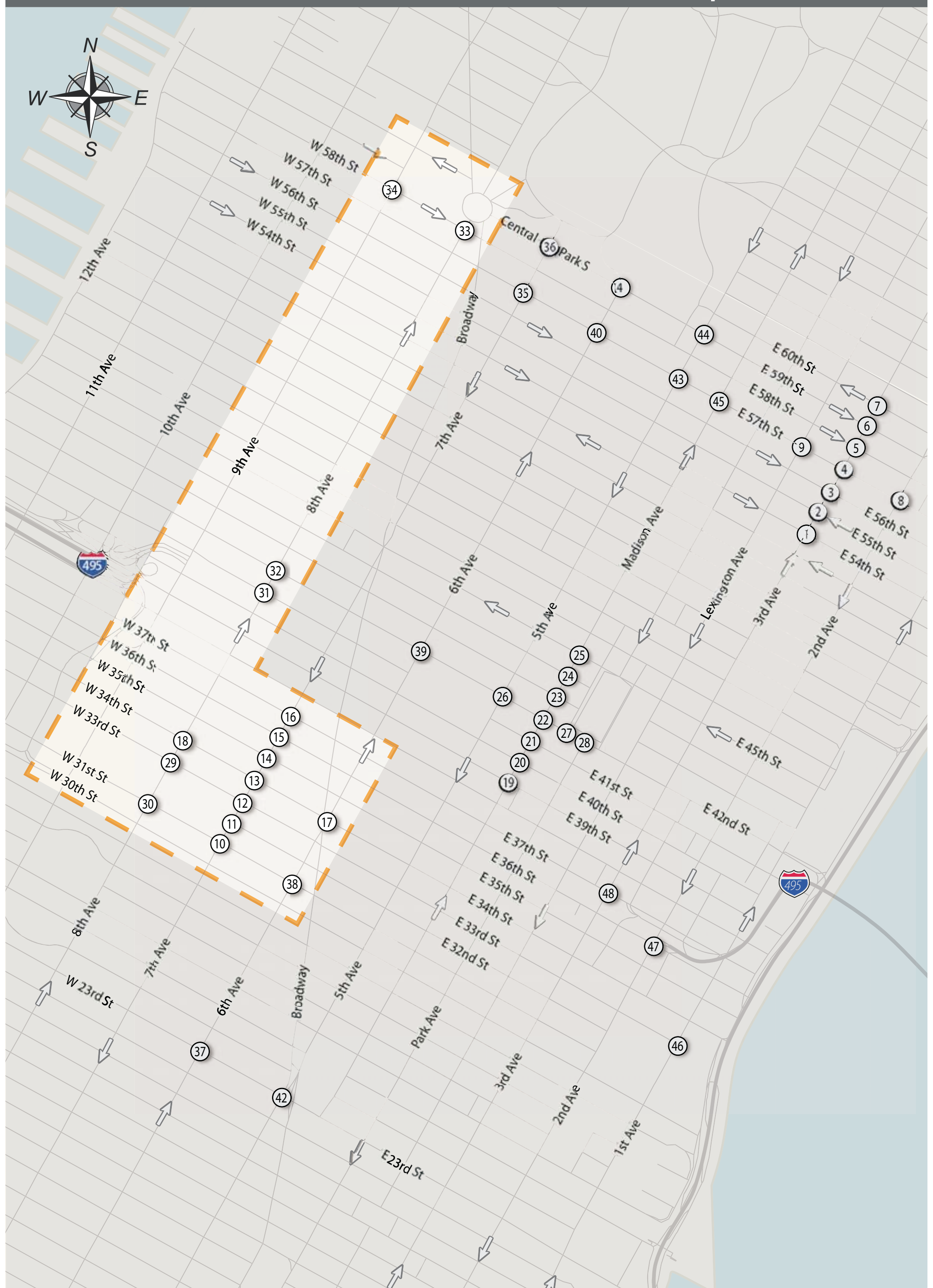


2017 Taxi Medallion Increase – FEIS

FIGURE 15-15 | **Taxi Medallion Volume Increase under Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)**

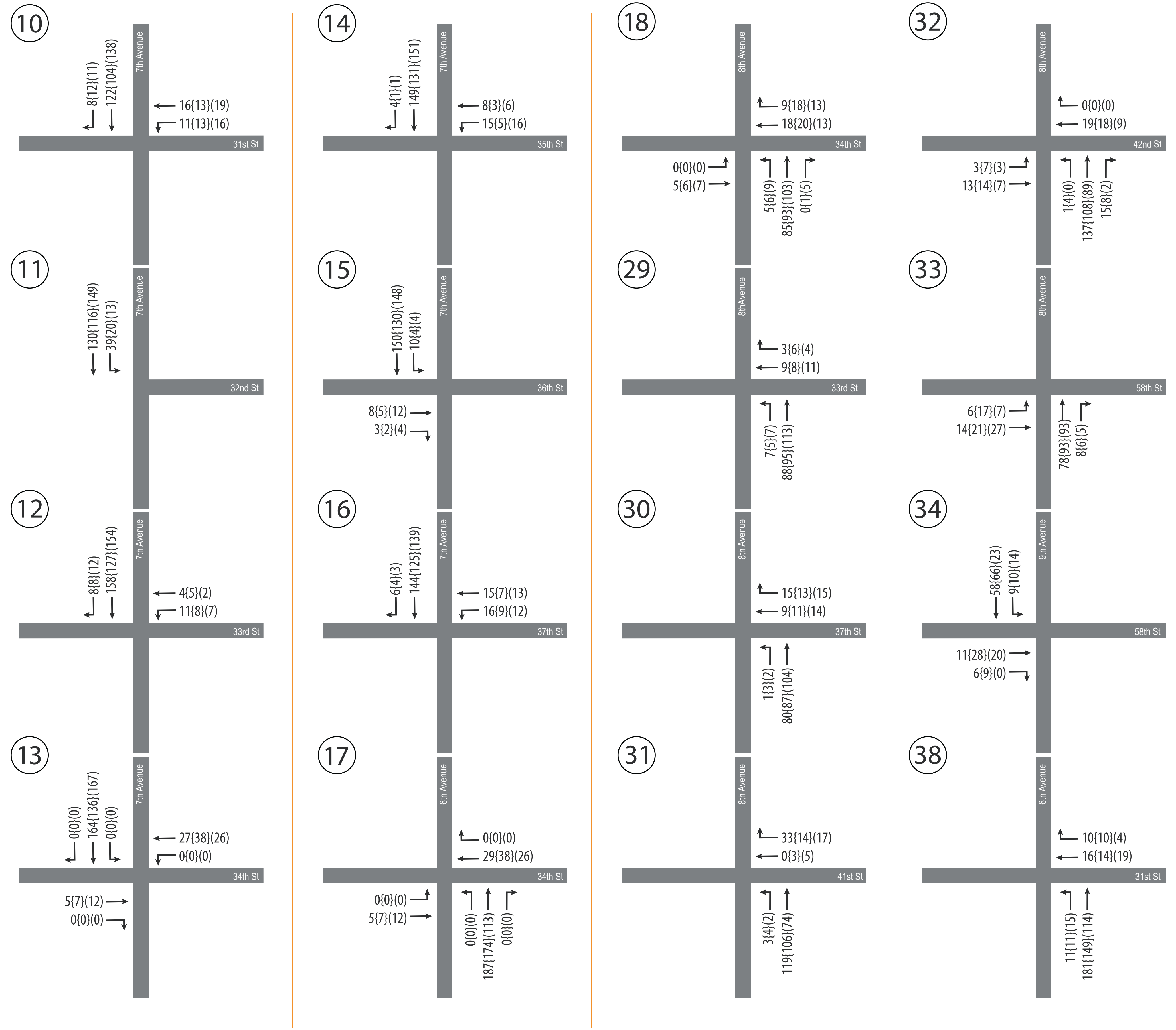
HDR NYC Taxi and Limousine Commission

Manhattan-West Location Map



LEGEND:

#	Study Intersection Location ID
000{000}(000)	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



2017 Taxi Medallion Increase - FEIS

FIGURE 15-16 | **Taxi Medallion Volume Increase under Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)**

HDR

NYC Taxi and Limousine Commission

Manhattan-East Location Map

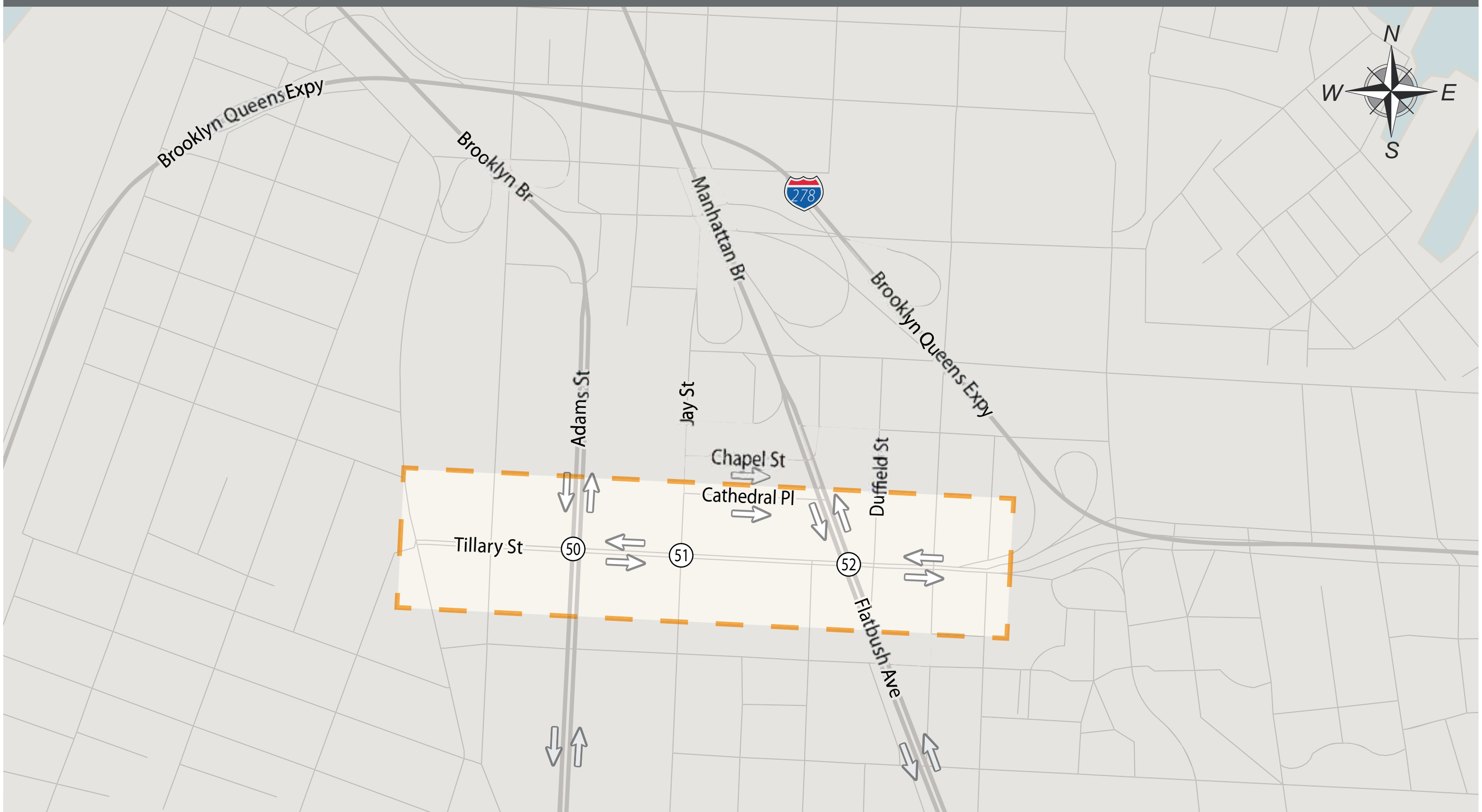
LEGEND:

#	Study Intersection Location ID
000{000}(000)	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2017 Taxi Medallion Increase – FEIS

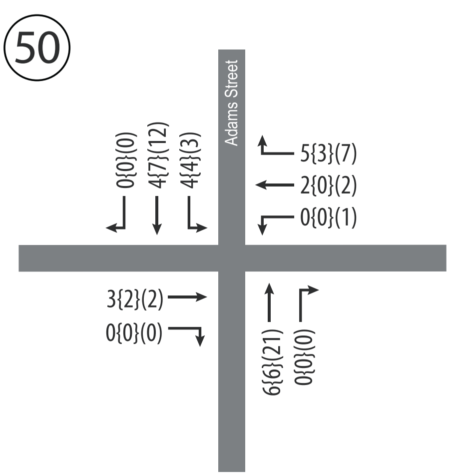
FIGURE 15-17 | **Volume Increase under Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

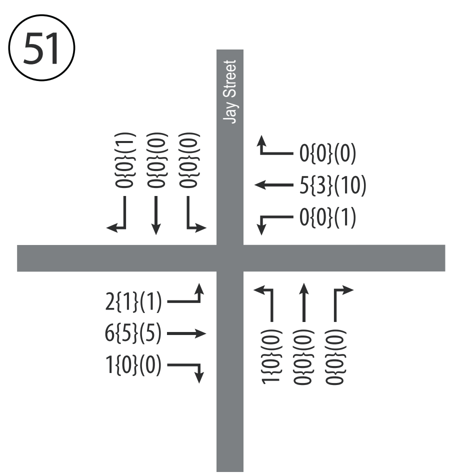
Brooklyn Location Map

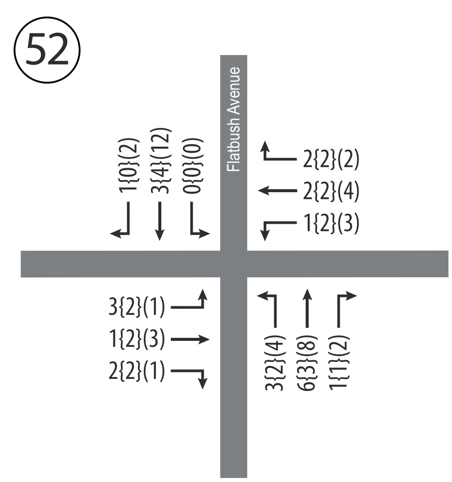


LEGEND:

#	Study Intersection Location ID
000{000}(000)	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes







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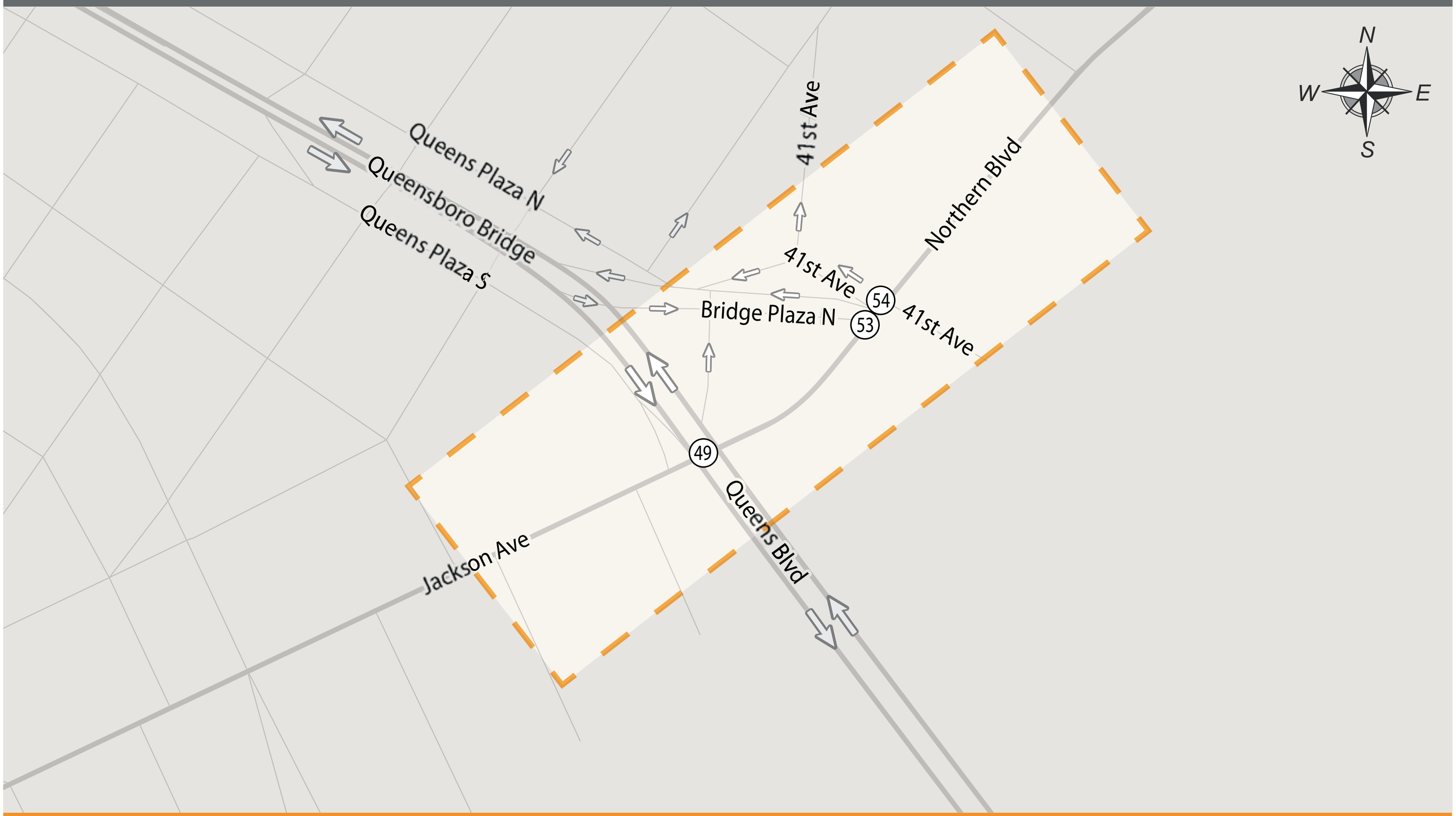
2017 Taxi Medallion Increase – FEIS

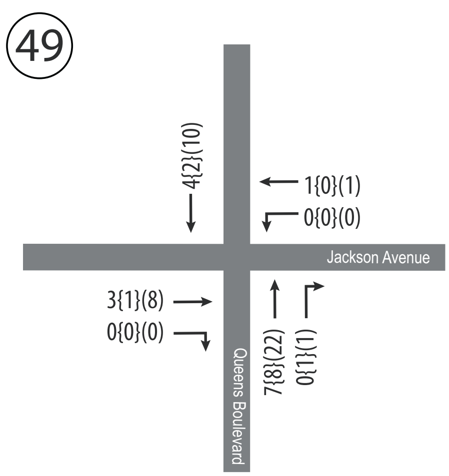
FIGURE 15-18 | **Volume Increase Under Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

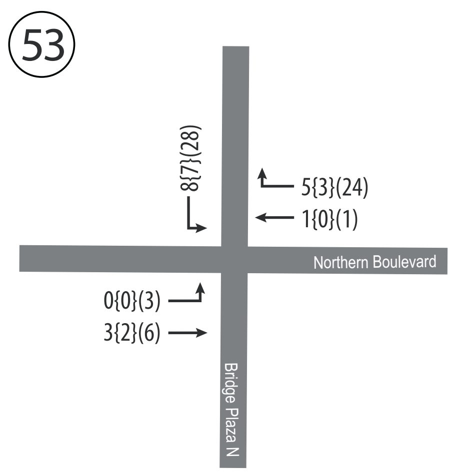
Queens Location Map

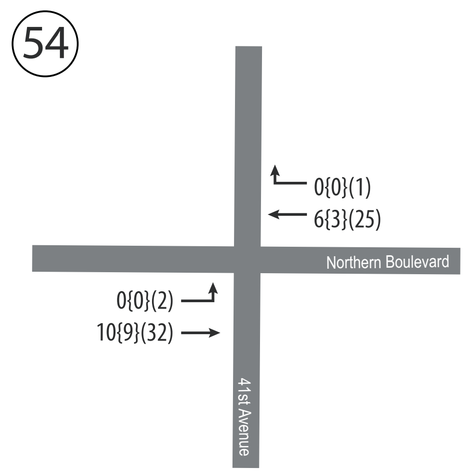


LEGEND:

#	Study Intersection Location ID
000{000}(000)	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes







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A review of the peak hour net increases in taxi traffic indicates that there are substantial increases in traffic volumes at a number of the study intersections. For example, during the 2017 AM peak hour, taxi volumes (at select locations) increase by around 100 vehicles on Madison Avenue; by over 100 vehicles on Third Avenue, Eighth Avenue, 42nd Street, 57th Street and Central Park South; and by over 150 vehicles on Sixth Avenue and Seventh Avenue. These locations are the locations of greatest net increase in taxi volumes in the Study Area. Other corridors would have lower net increases in taxi volumes.

During the 2017 Midday peak hour, the net increase in taxi volumes is under 100 vehicles on 57th Street, 42nd Street, and Third Avenue; 100 or more vehicles on Central Park South, Seventh Avenue, Eighth Avenue, and Madison Avenue, and over 150 vehicles on Sixth Avenue. In the 2017 PM peak hour condition, the net increase in taxi volumes is under 100 vehicles on Madison Avenue, 57th Street, 42nd Street, and Third Avenue; 100 or more vehicles on Central Park South, Sixth Avenue, and Eighth Avenue, and over 150 vehicles on Seventh Avenue. These Midday and PM peak hour volume increases range from very low to approximately 9% of the total new taxis on the roadway. In all three 2017 peak hour scenarios, the taxi increases on Tillary Street and Northern Boulevard would be modest (mainly below 20 vehicles for both directions combined). The one exception is on Northern Boulevard west of 41st Street in the PM peak hour, when the net increase reaches approximately 60 taxis.

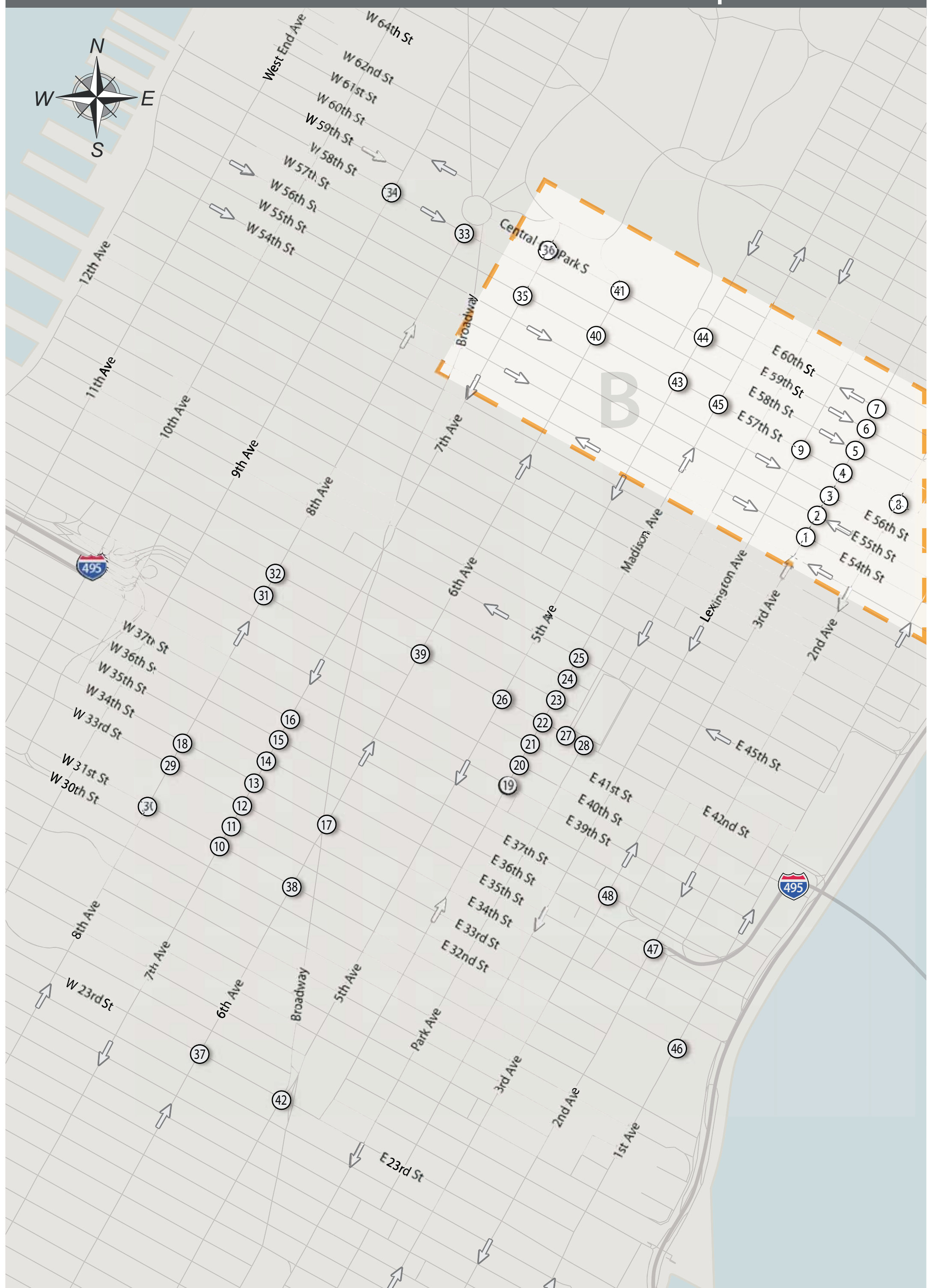
The net increase in peak hour taxi traffic was added to the traffic volumes in the future without the Proposed Action volumes (by year) to yield the estimate of traffic volumes in the future with Proposed Action. The resulting estimated peak hour traffic volumes in the future with the Proposed Action for 2014, 2015, 2016 and 2017 are presented in Figures 15-19a through 15-19d (Manhattan-North), Figures 15-20a through 15-20d (Manhattan-West), Figures 15-21a through 15-21d (Manhattan-East), Figures 15-22a through 15-22d (Brooklyn), Figures 15-23a through 15-23d (Queens).

2014 Taxi Medallion Increase - FEIS

FIGURE 15-19a | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)**

HDR NYC Taxi and Limousine Commission

Manhattan-North Location Map



LEGEND:

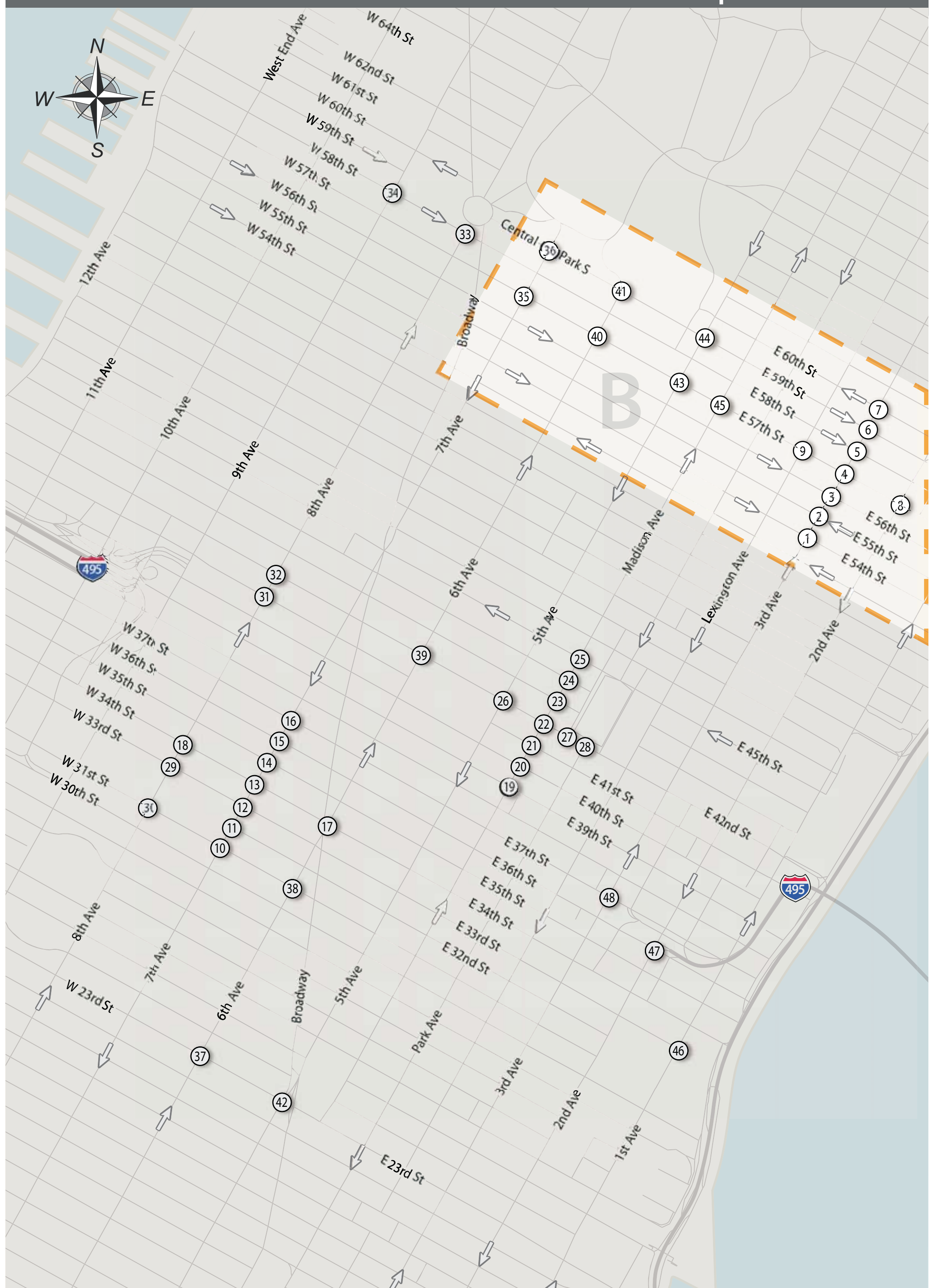
#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2015 Taxi Medallion Increase - FEIS

FIGURE 15-19b | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)

HDR
NYC Taxi and Limousine Commission

Manhattan-North Location Map



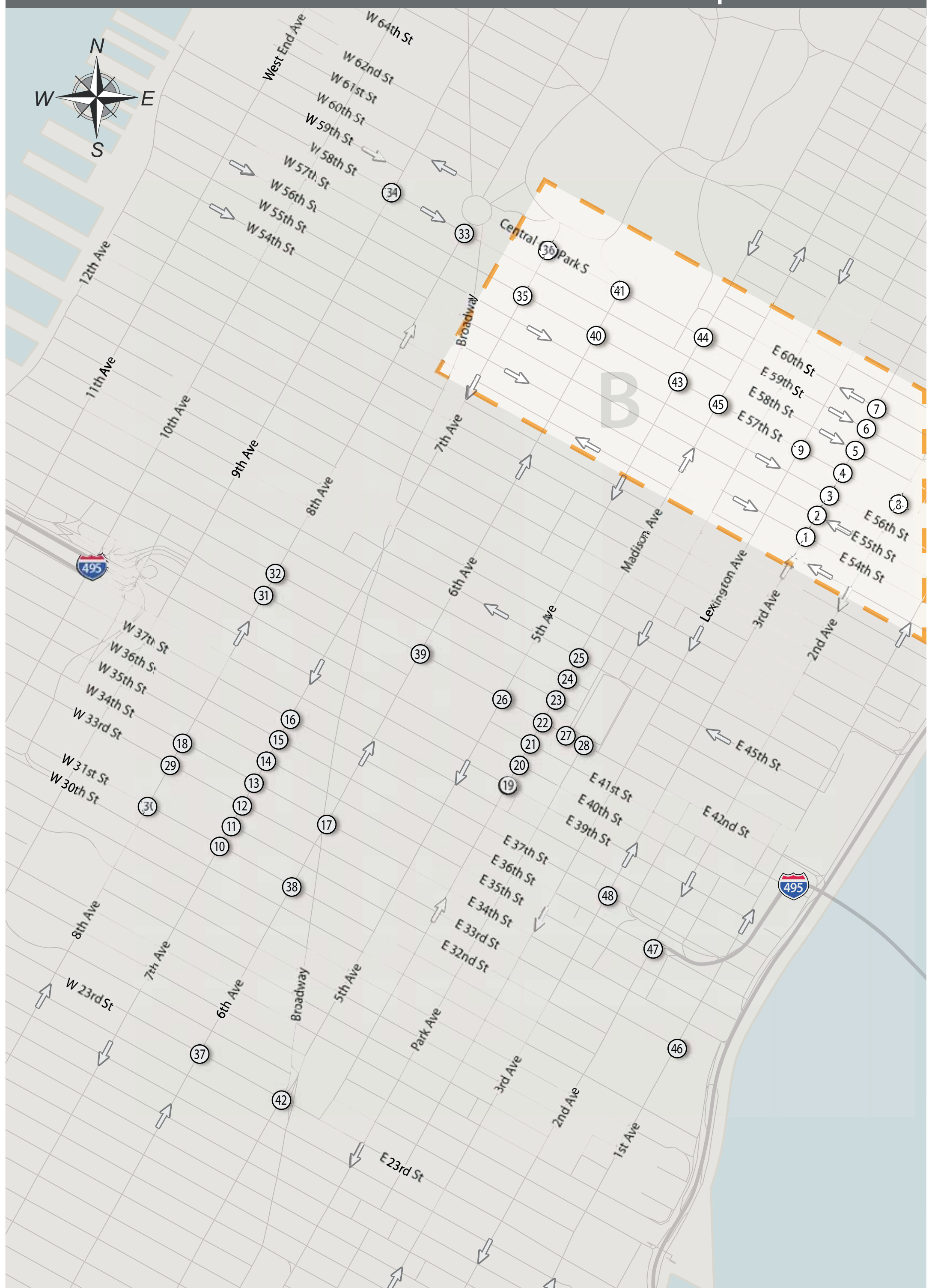
LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2016 Taxi Medallion Increase - FEIS

FIGURE 15-19c | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)

Manhattan-North Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2017 Taxi Medallion Increase - FEIS

FIGURE 15-19d | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-North)**

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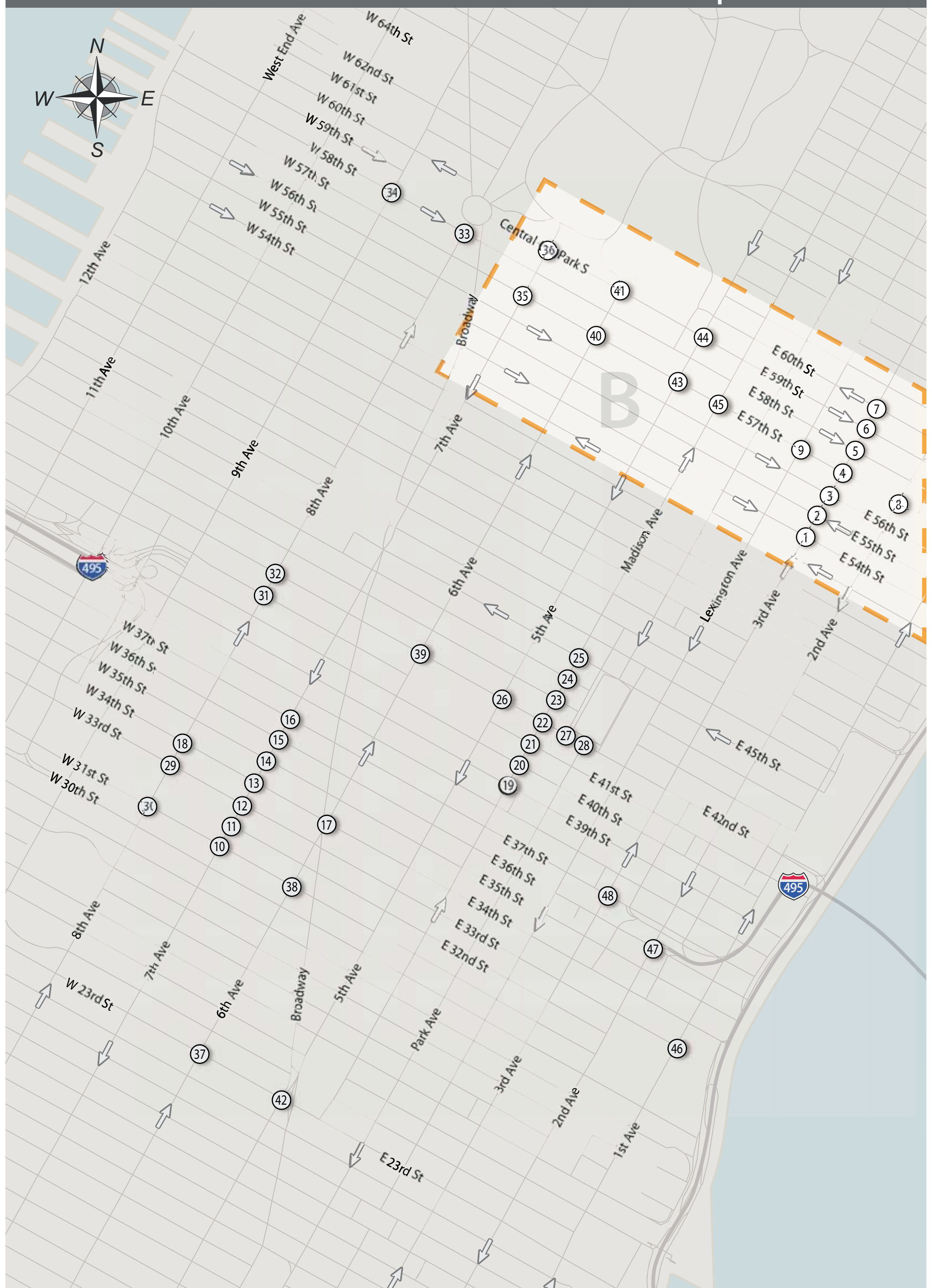
NYC Taxi and Limousine Commission

Manhattan-North Location Map



LEGEND:

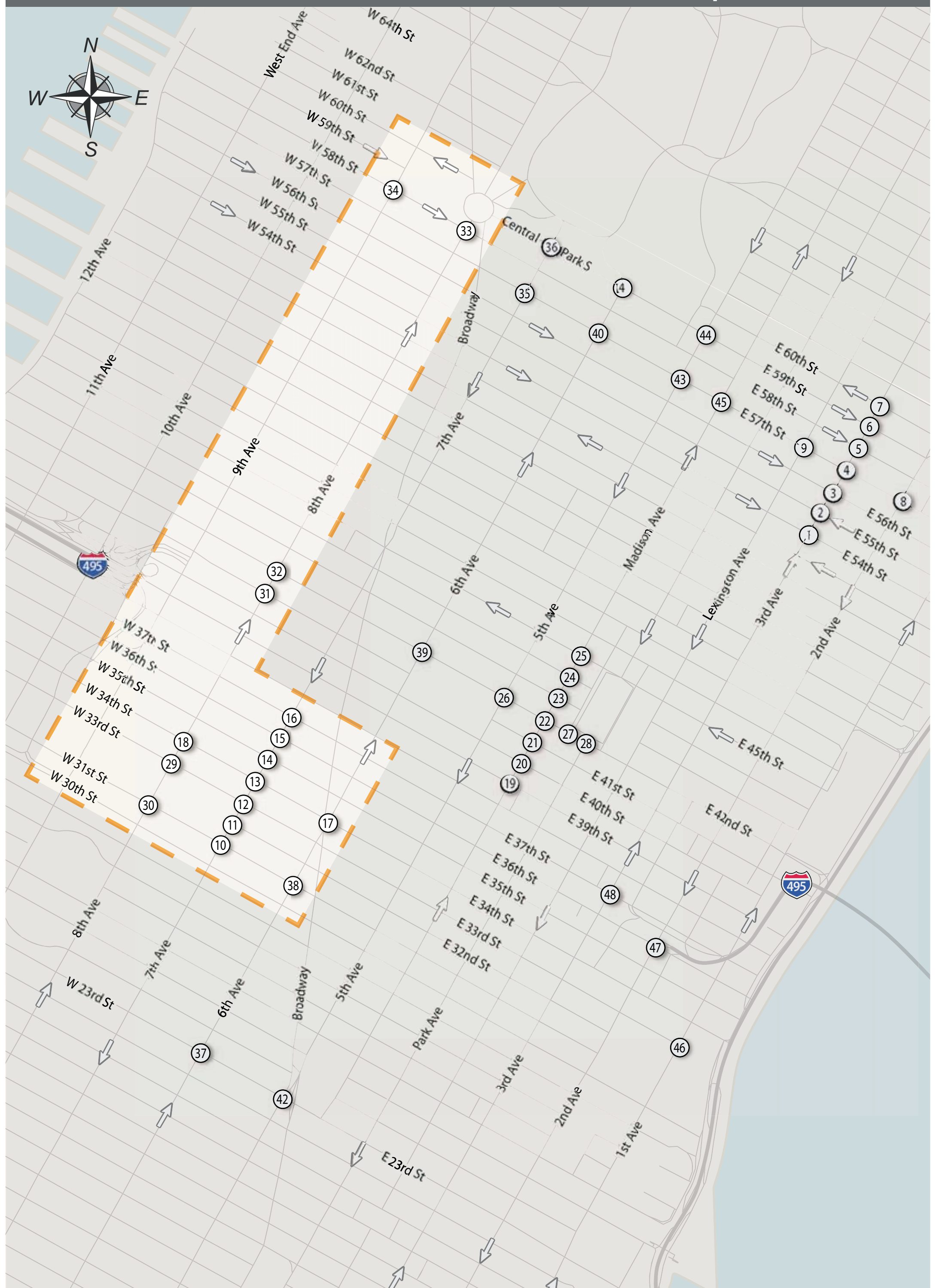
#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2014 Taxi Medallion Increase – FEIS

FIGURE 15-20a | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)**

HDR NYC Taxi and Limousine Commission

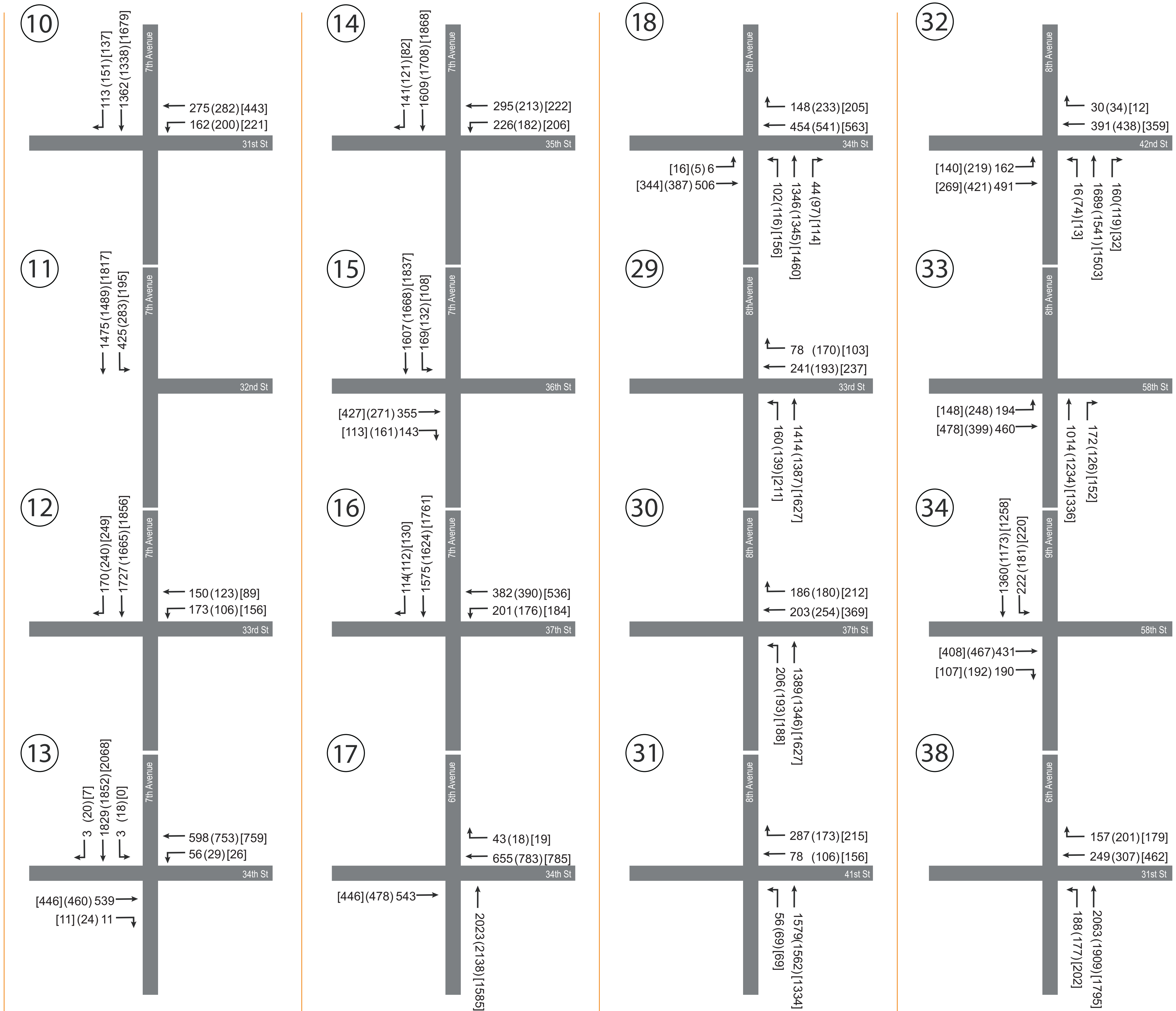
Manhattan-West Location Map



LEGEND:

— Study Intersection Location ID

000(000)[000] — AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



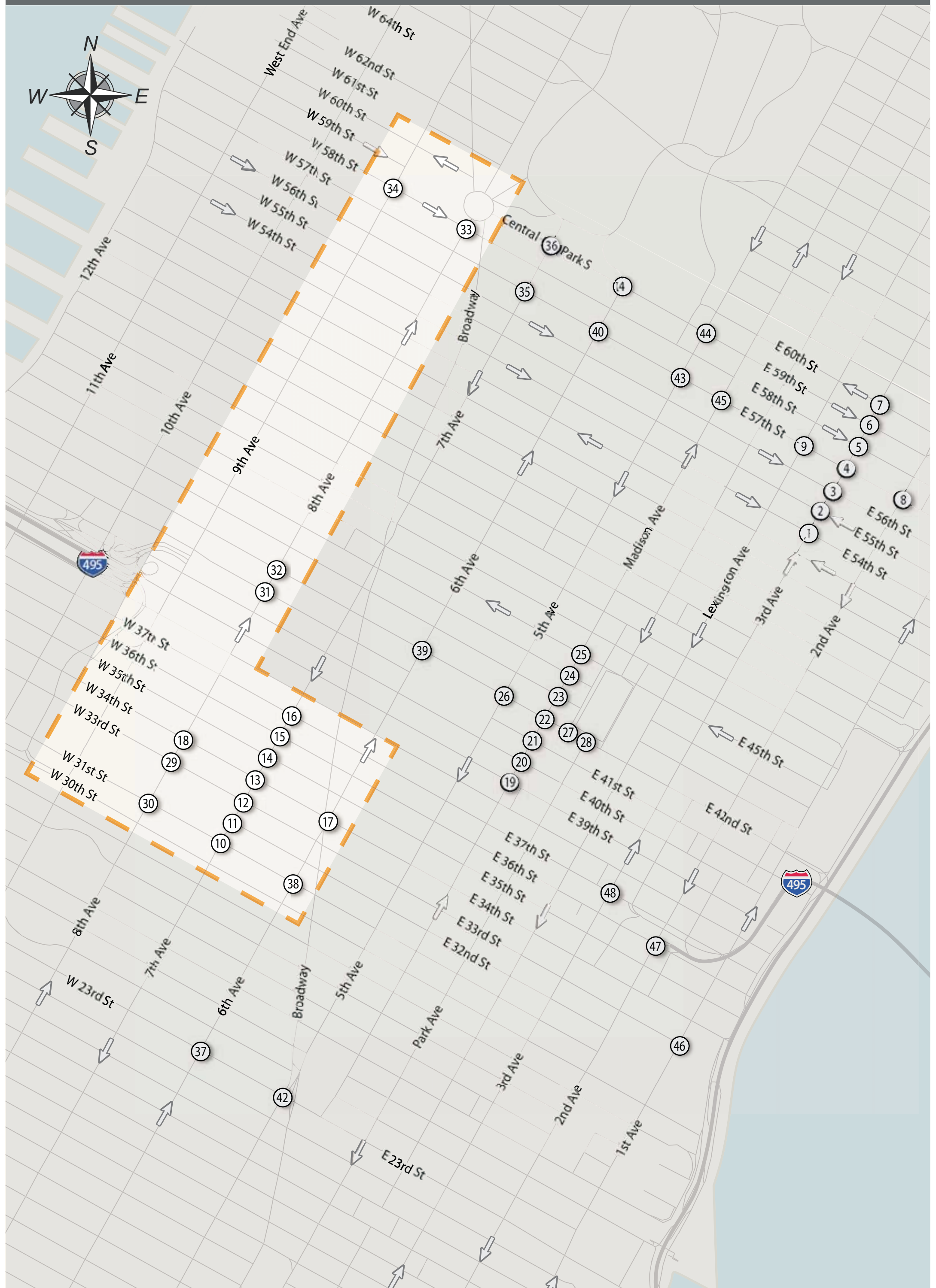
2015 Taxi Medallion Increase – FEIS

FIGURE 15-20b | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)**

HDR

NYC Taxi and Limousine Commission

Manhattan-West Location Map



LEGEND:

— Study Intersection Location ID

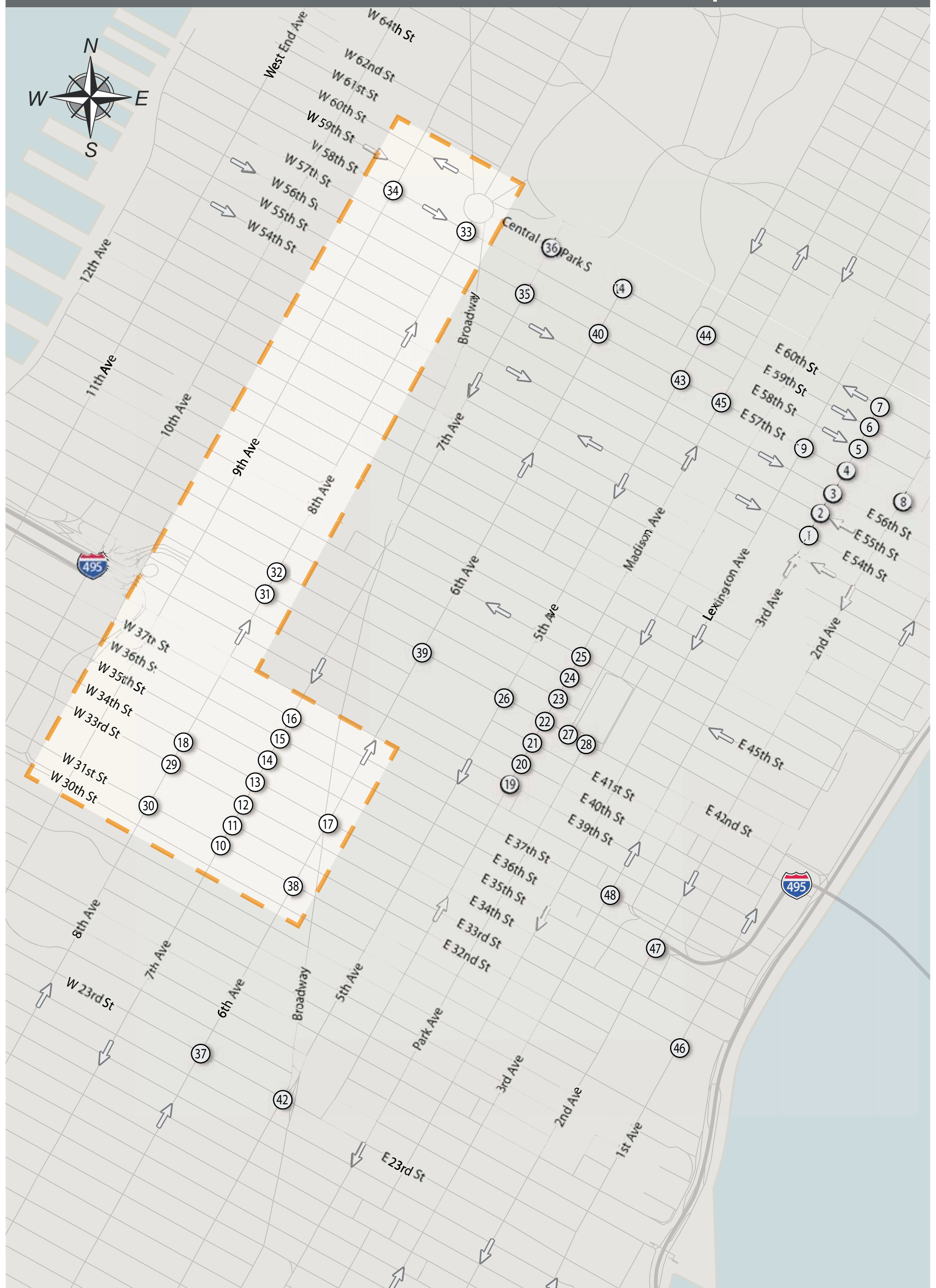
000(000)[000] — AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

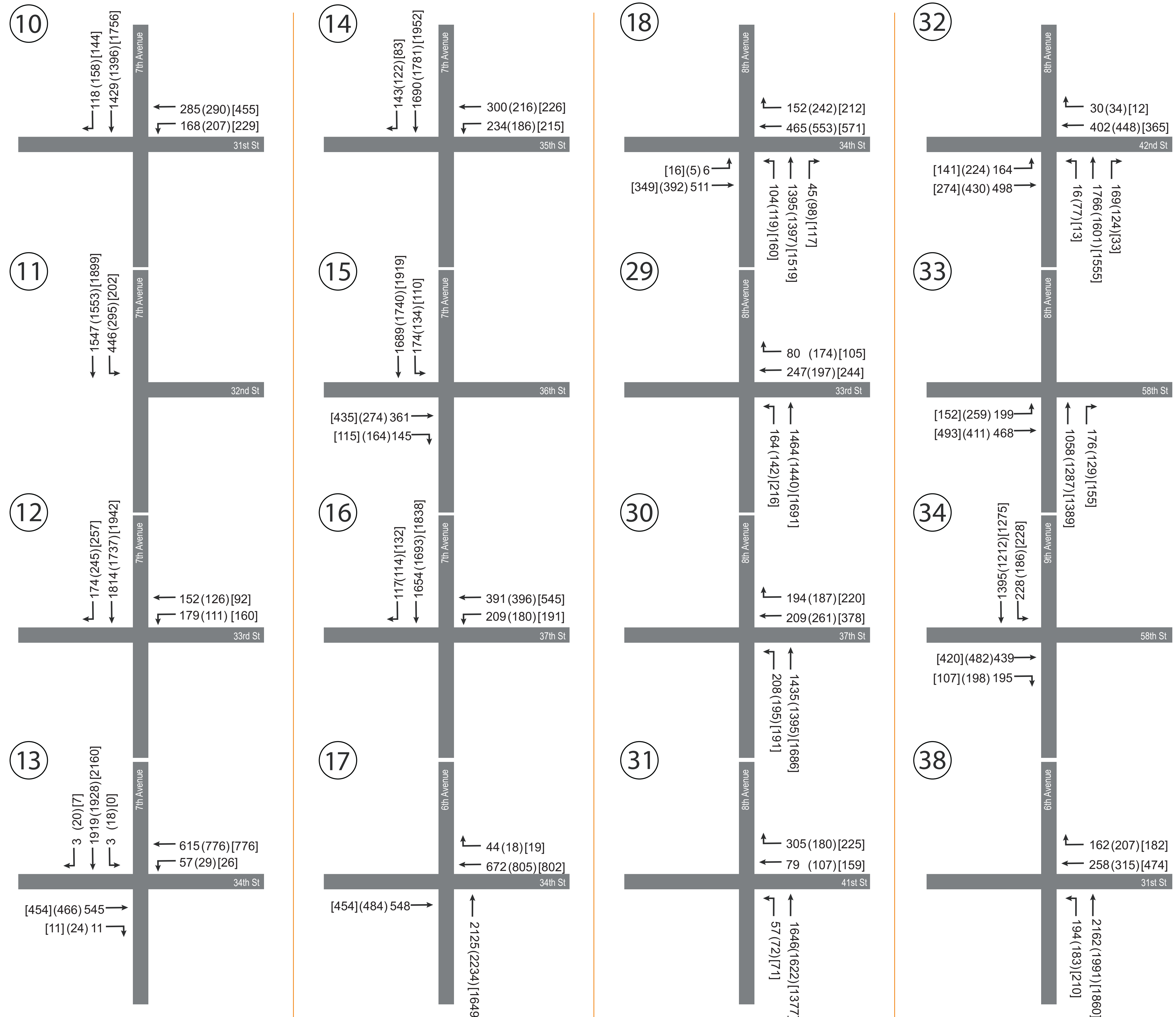
2016 Taxi Medallion Increase – FEIS

FIGURE 15-20c | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)

HDR NYC Taxi and Limousine Commission

Manhattan-West Location Map





LEGEND:

#	Study Intersection Location ID
000(000)(000)	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2017 Taxi Medallion Increase – FEIS

FIGURE 15-20d | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-West)

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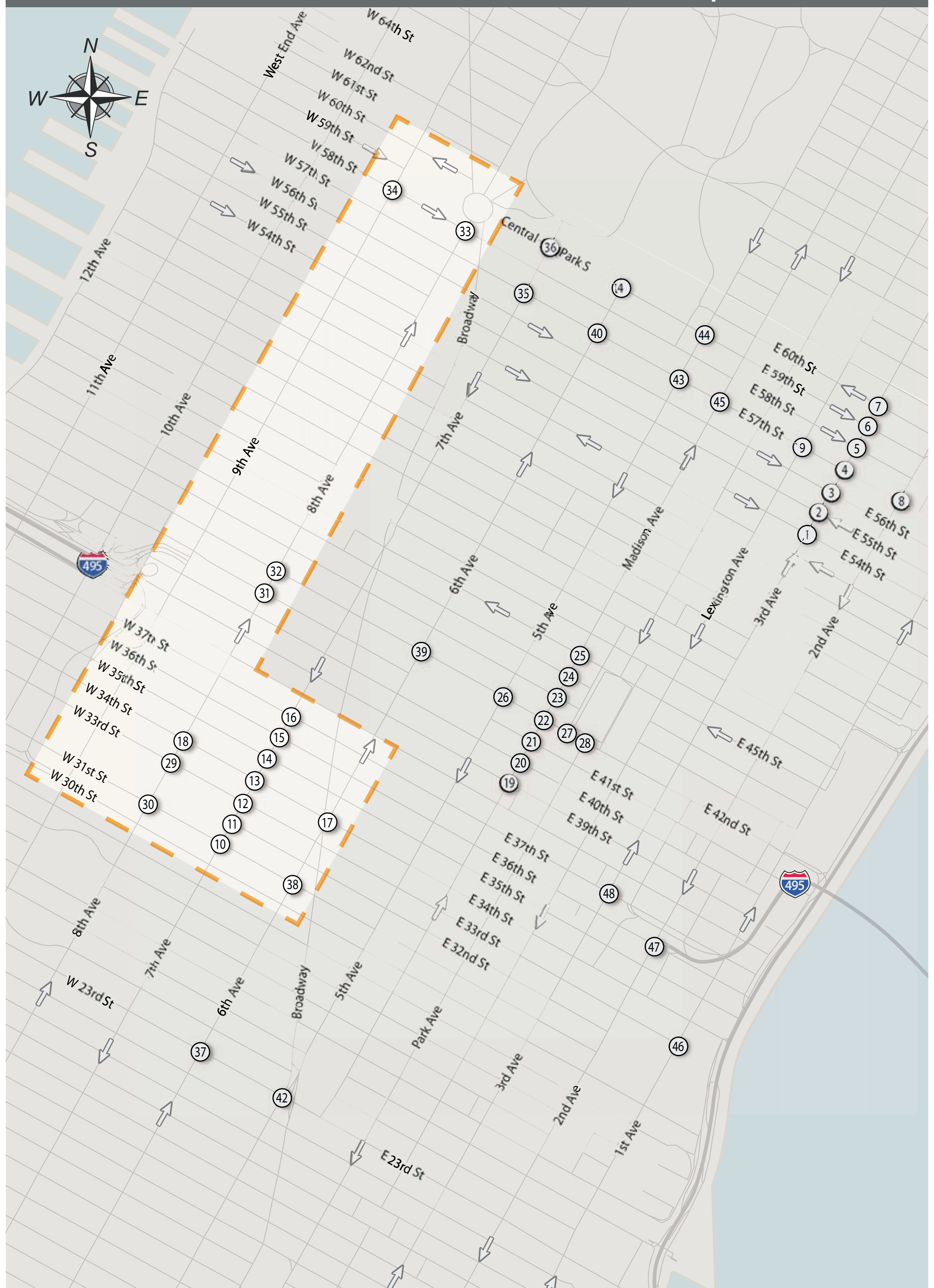
Manhattan-West Location Map



LEGEND:

#	Study Intersection Location ID
000(000)(000)	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2014 Taxi Medallion Increase - FEIS

FIGURE 15-21a | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)

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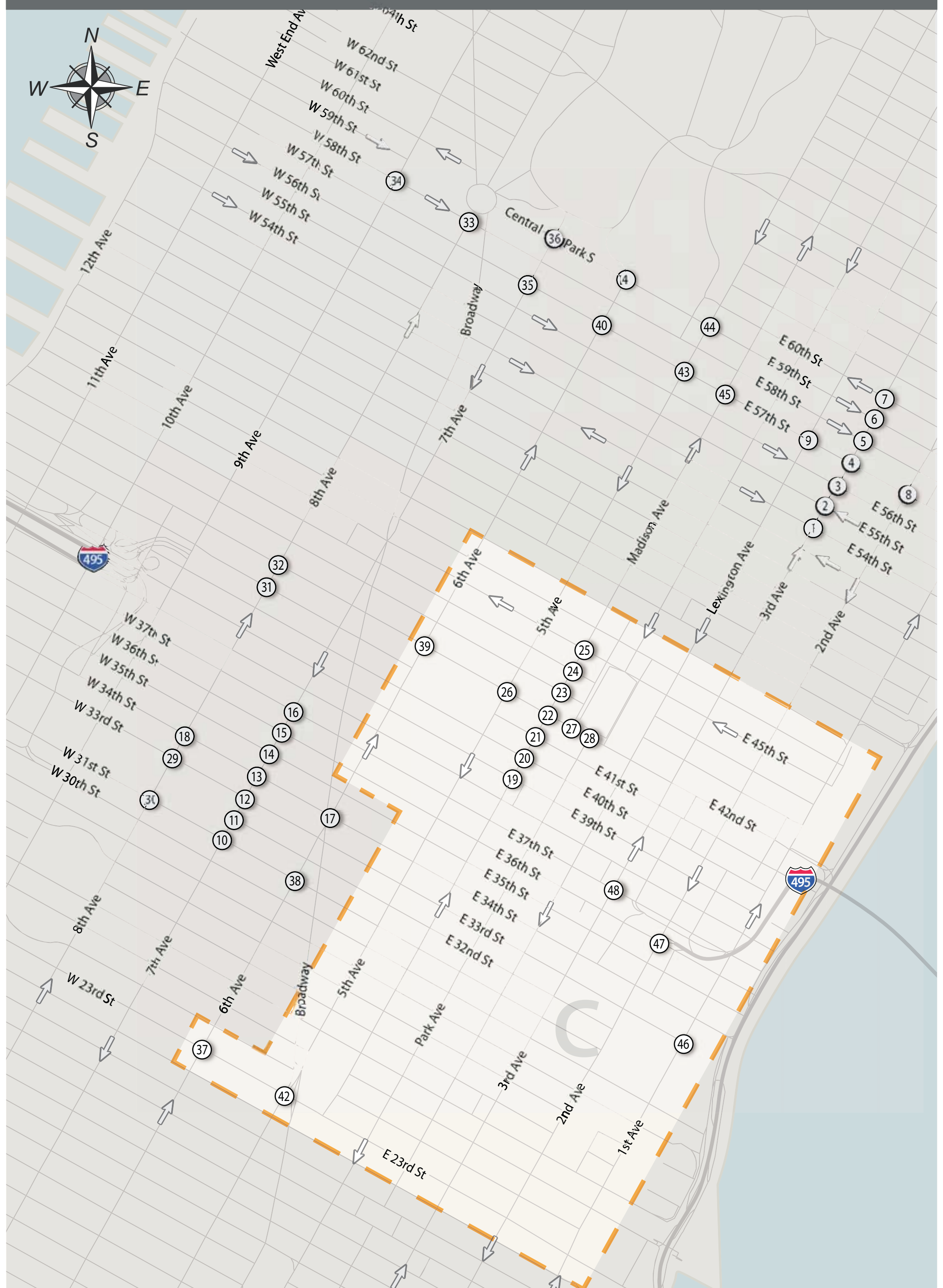
Manhattan-East Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2015 Taxi Medallion Increase - FEIS

FIGURE 15-21b | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)

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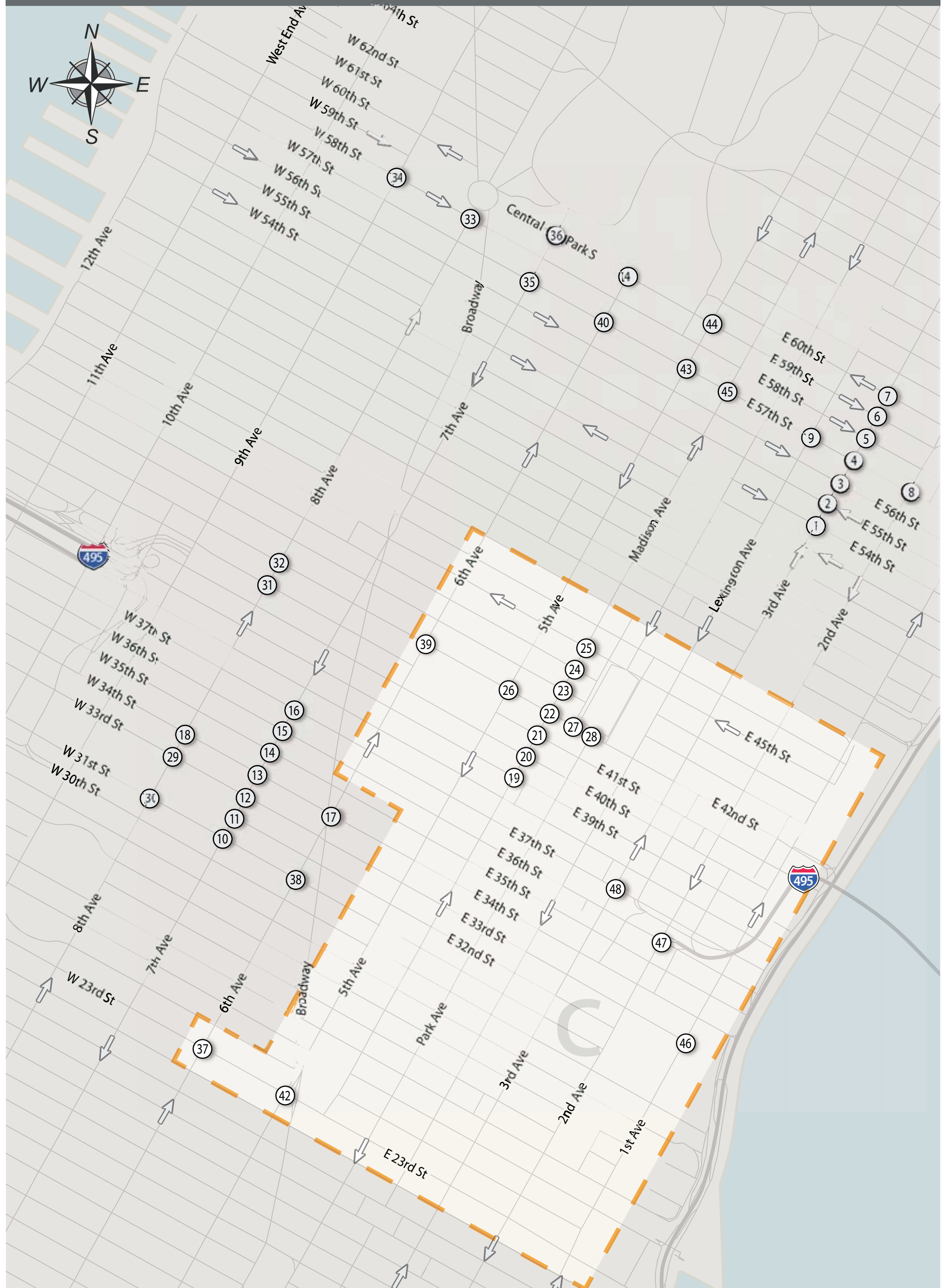
Manhattan-East Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2016 Taxi Medallion Increase - FEIS

FIGURE 15-21c | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)

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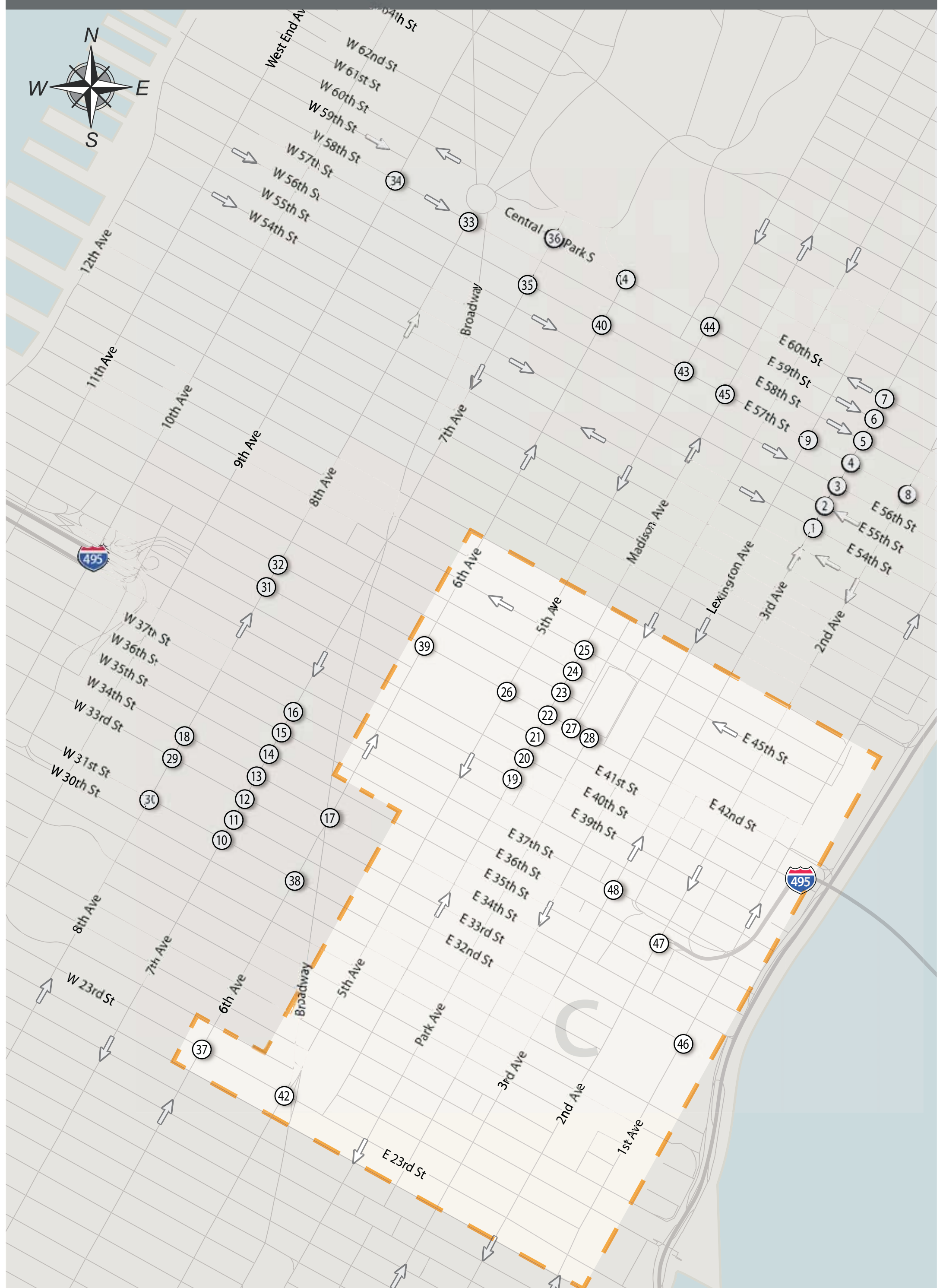
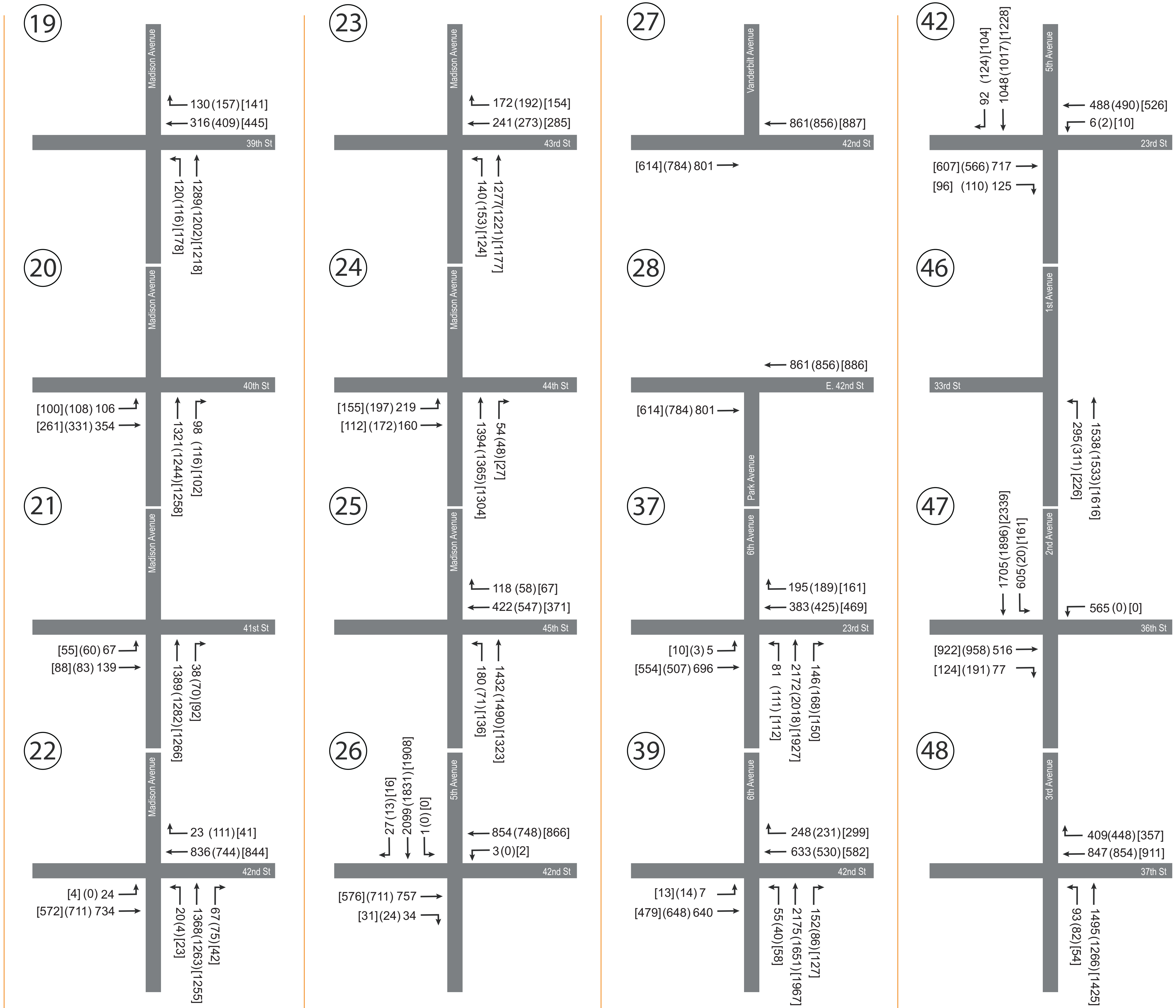
Manhattan-East Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



2017 Taxi Medallion Increase - FEIS

FIGURE 15-21d | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Manhattan-East)

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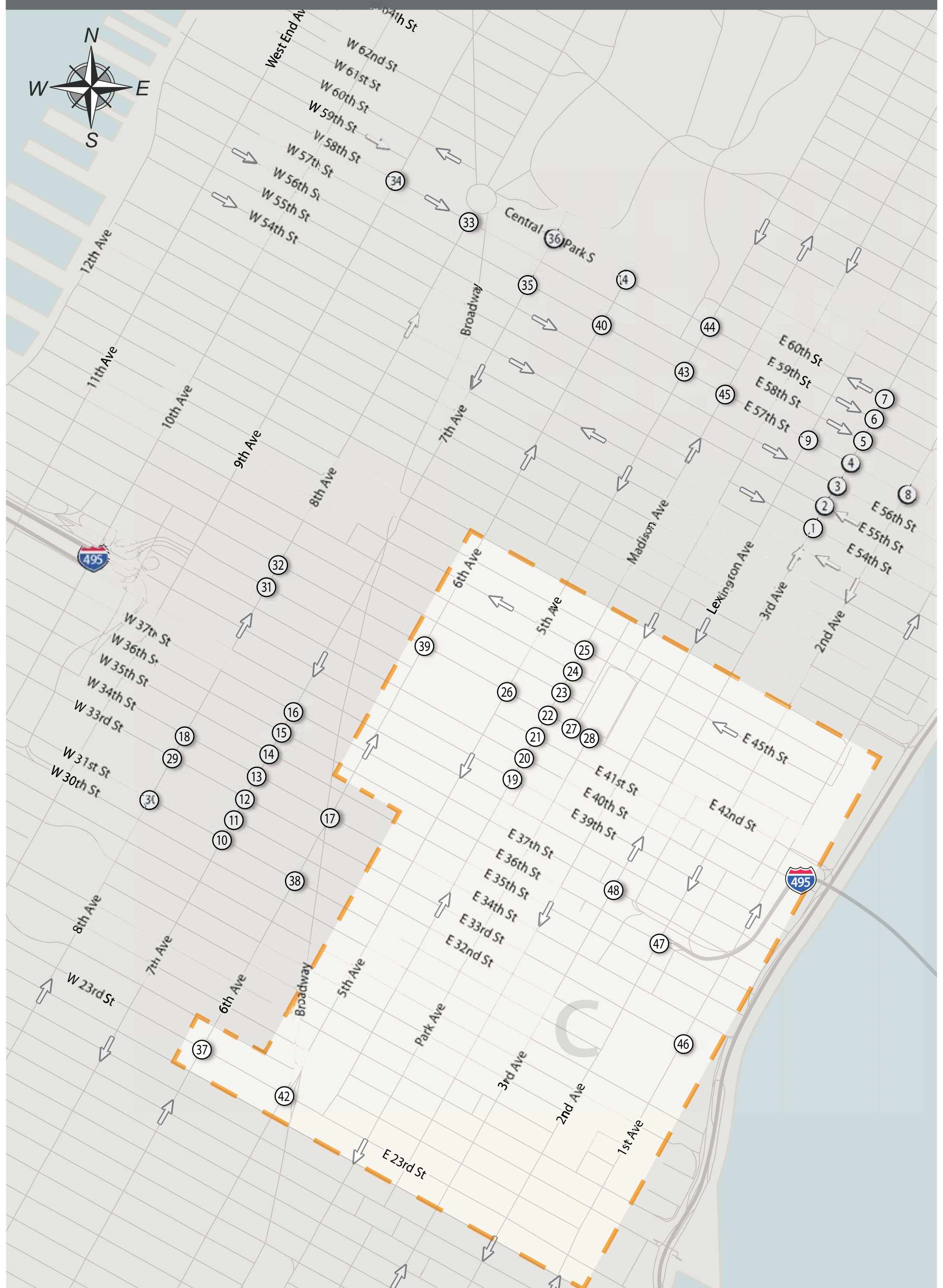
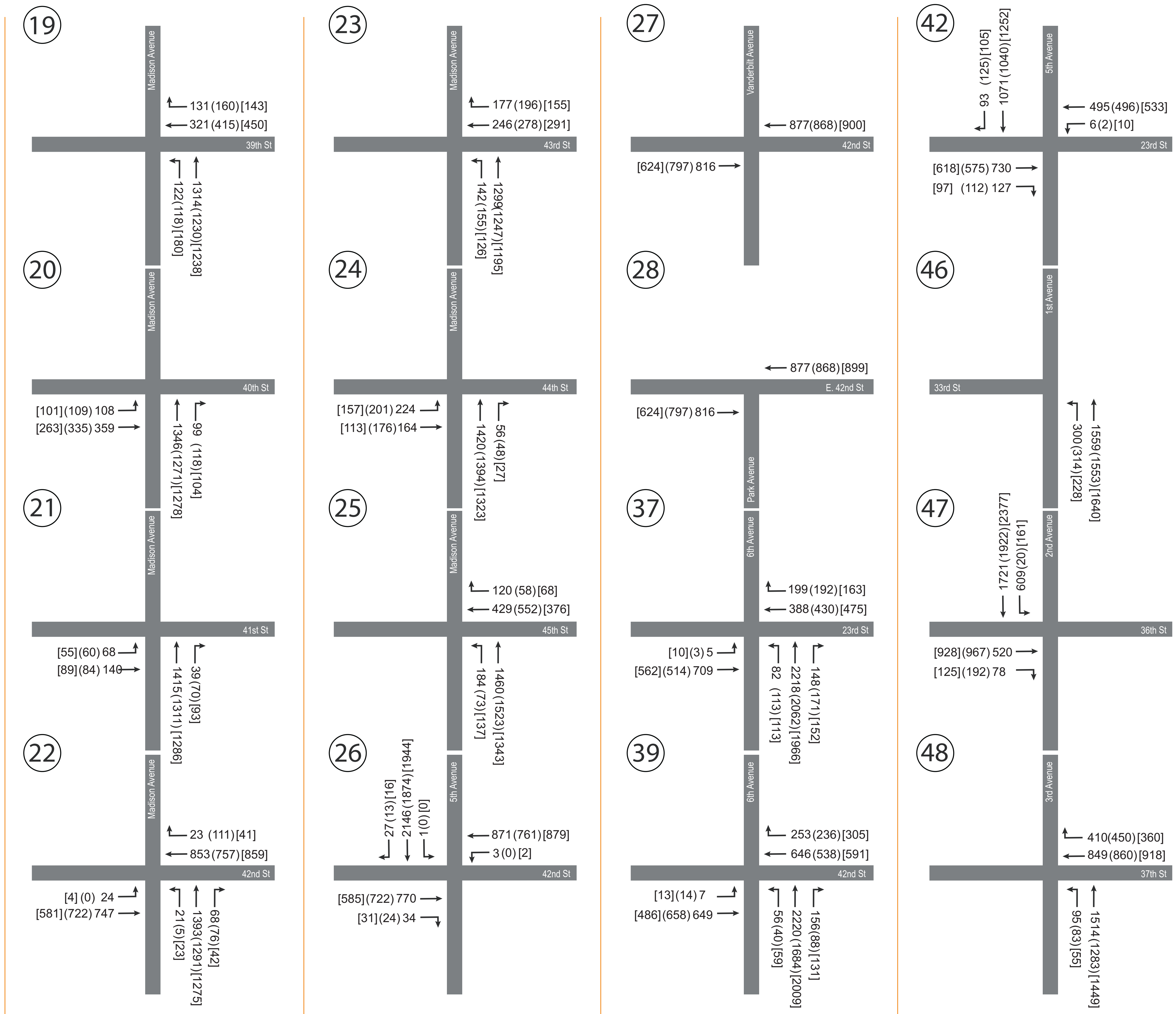
Manhattan-East Location Map



LEGEND:

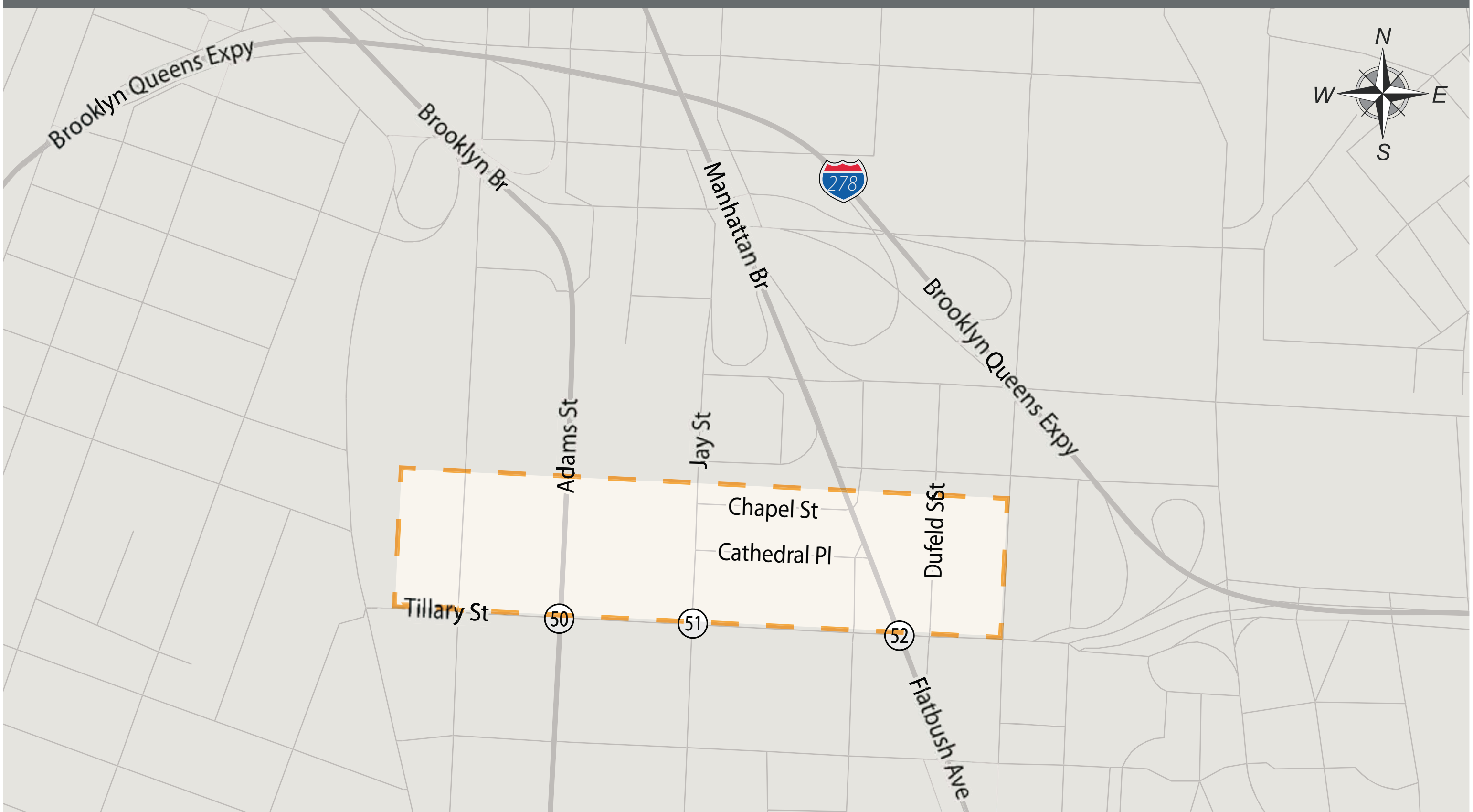
#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



2014 Taxi Medallion Increase – FEIS

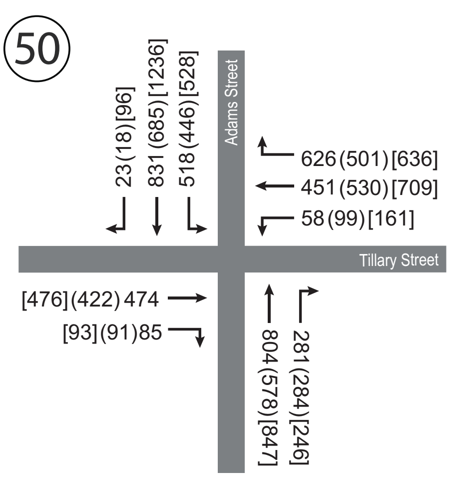
FIGURE 15-22a | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

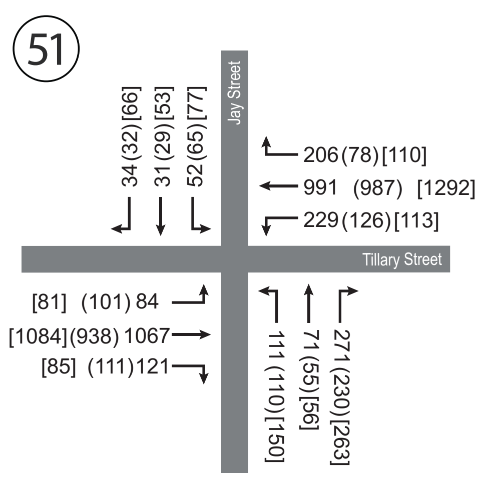
Brooklyn Location Map

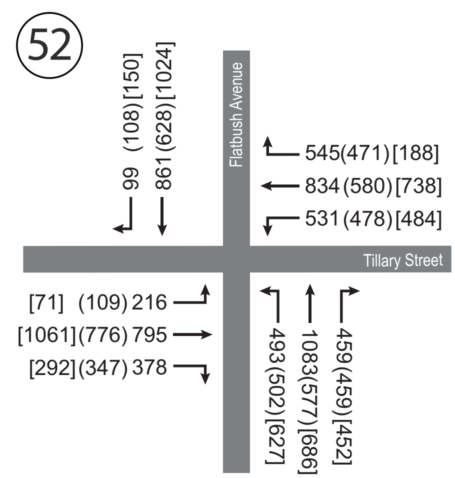


LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







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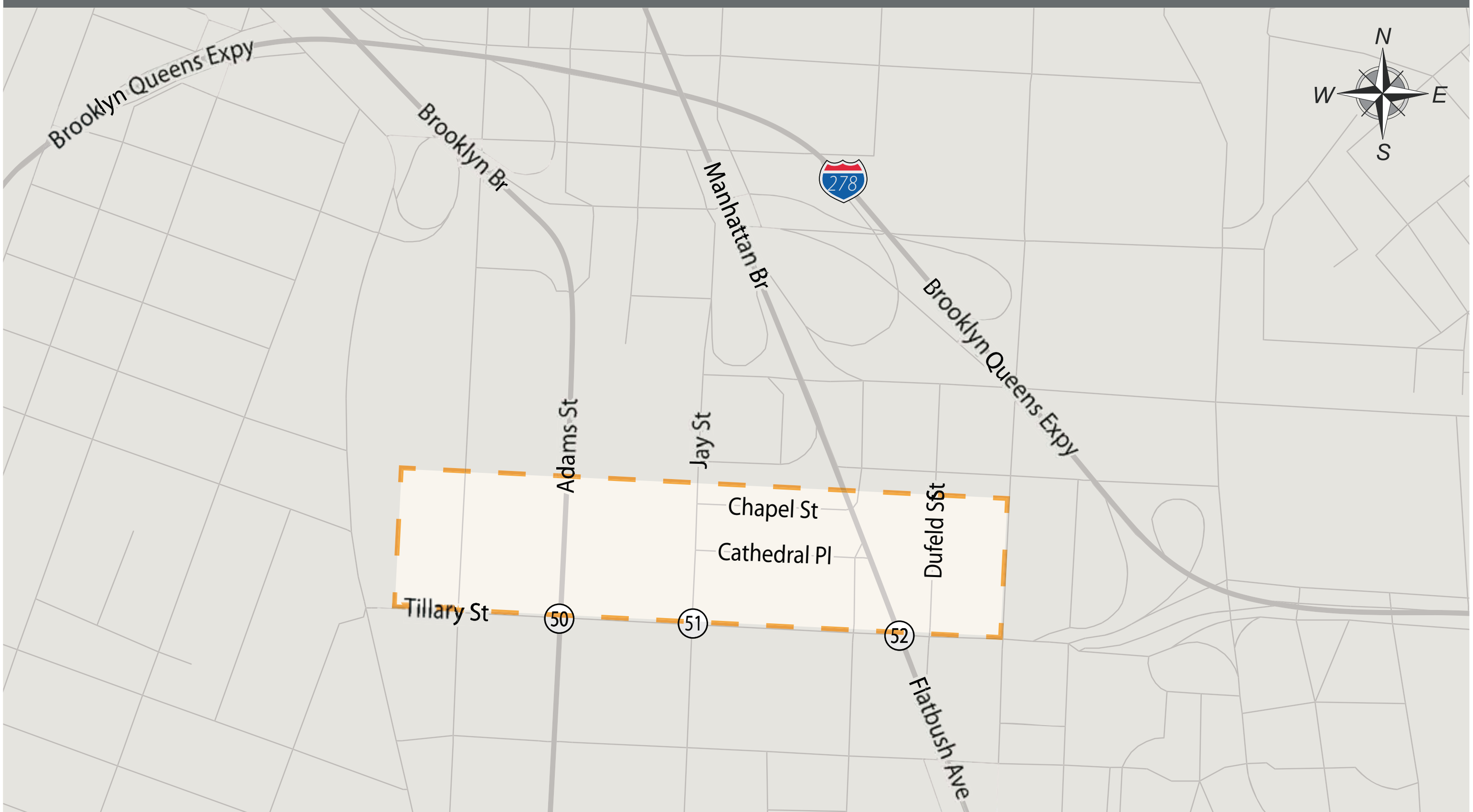
2015 Taxi Medallion Increase – FEIS

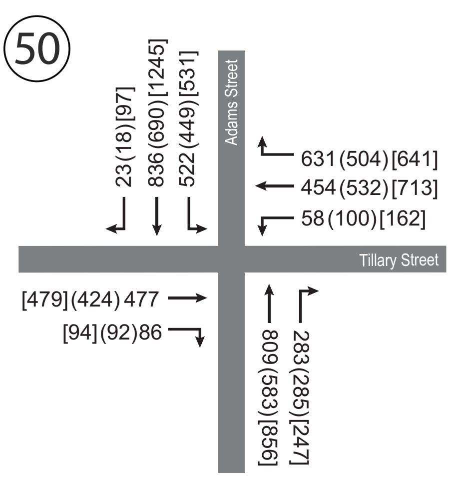
FIGURE 15-22b | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

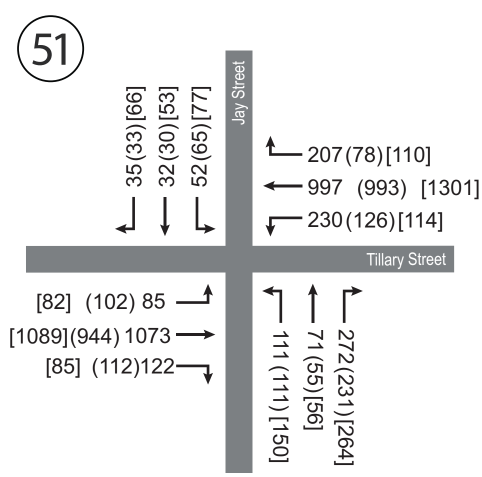
Brooklyn Location Map

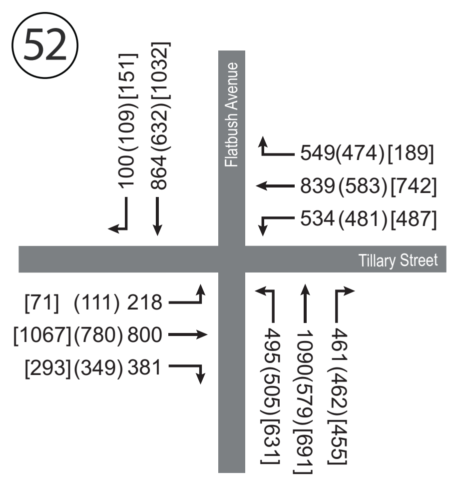


LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







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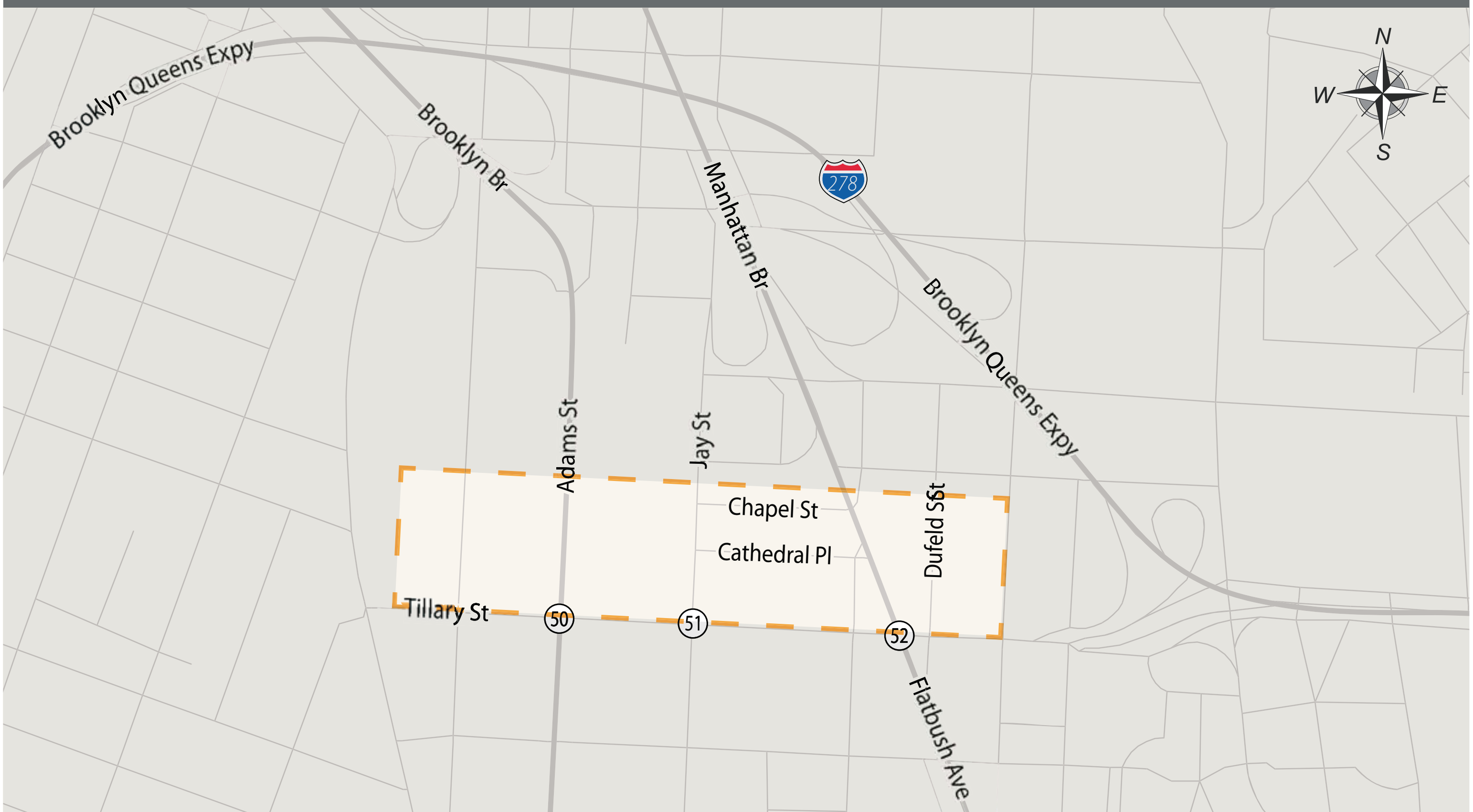
2016 Taxi Medallion Increase – FEIS

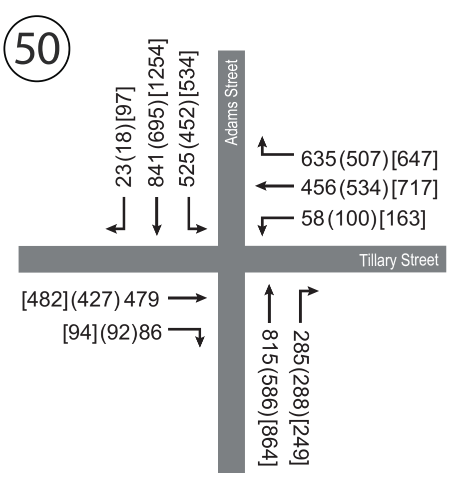
FIGURE 15-22c | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

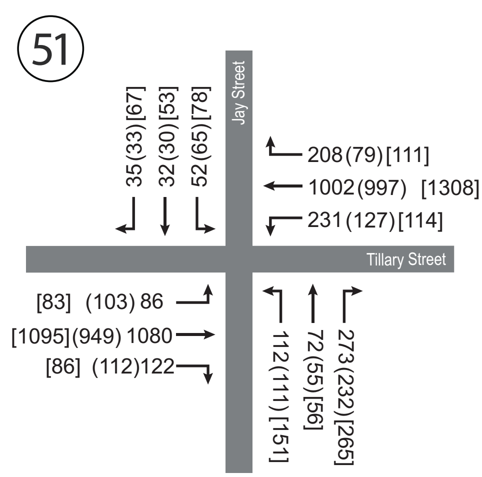
Brooklyn Location Map

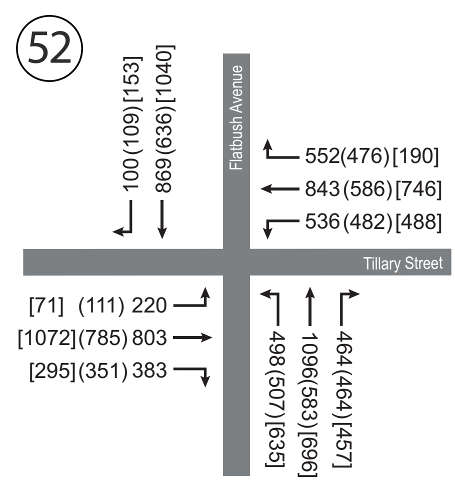


LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







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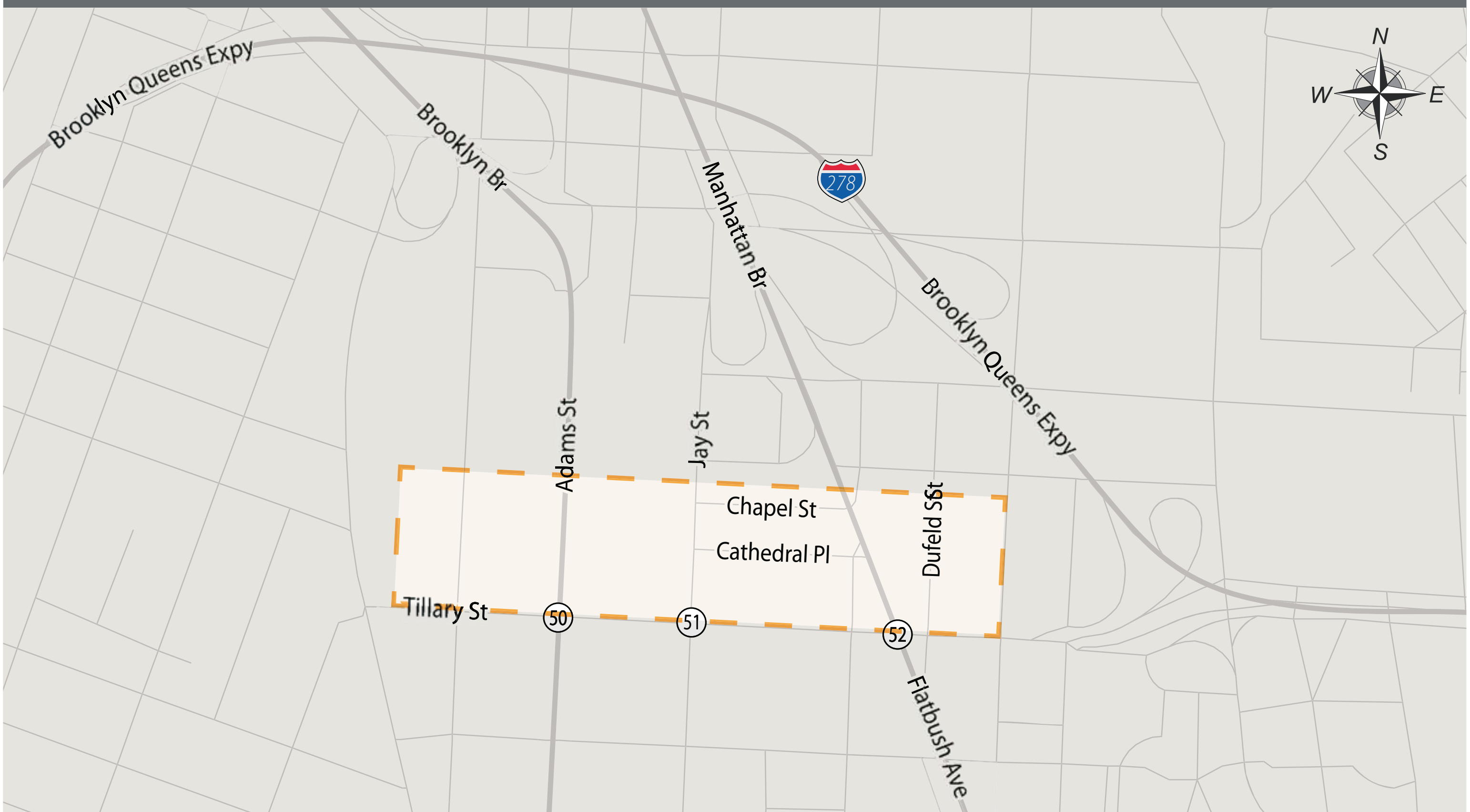
2017 Taxi Medallion Increase – FEIS

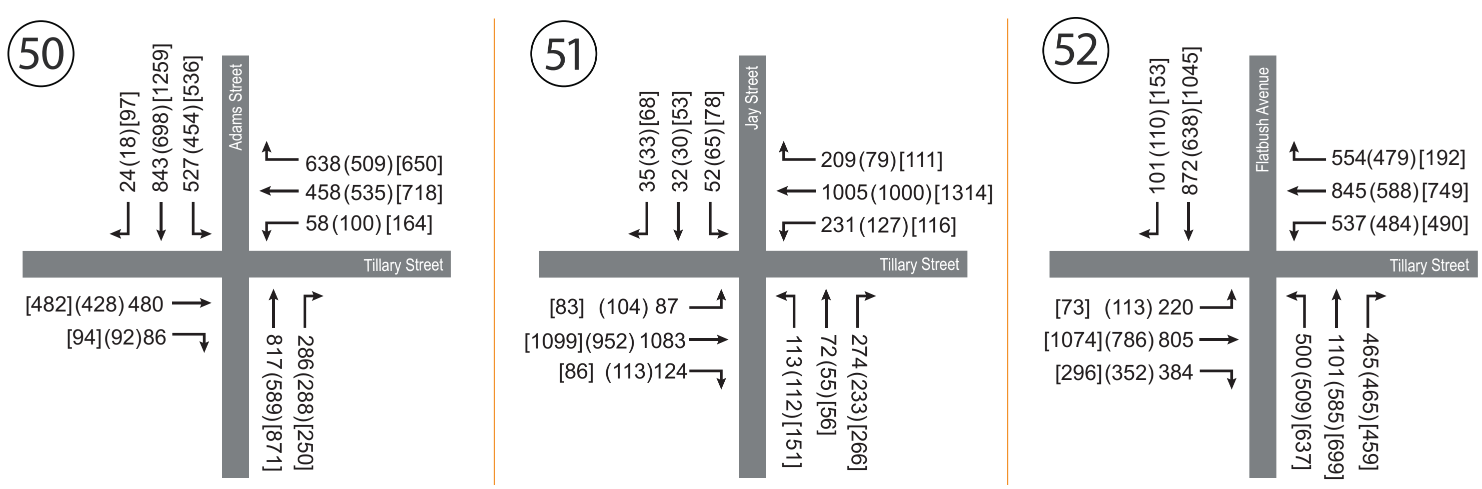
FIGURE 15-22d | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

Brooklyn Location Map



LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes



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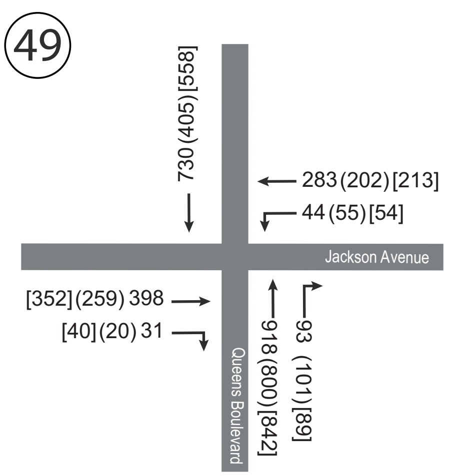
2014 Taxi Medallion Increase – FEIS

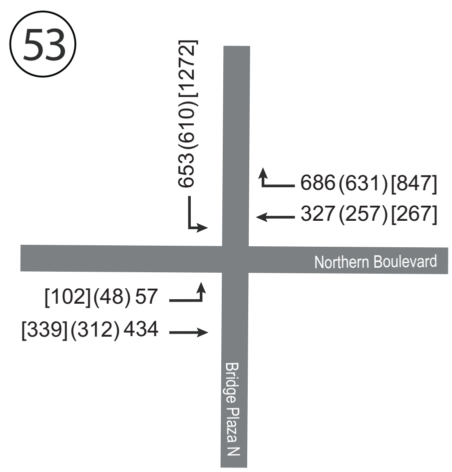
FIGURE 15-23a | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

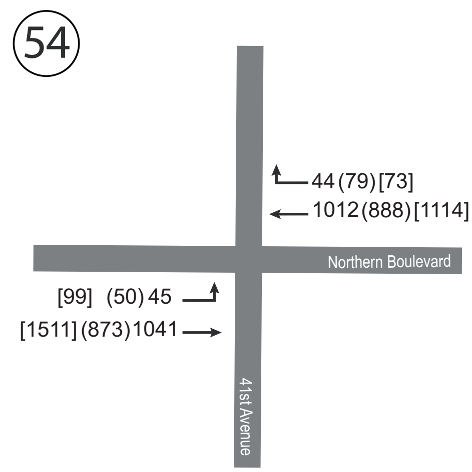
Queens Location Map

LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







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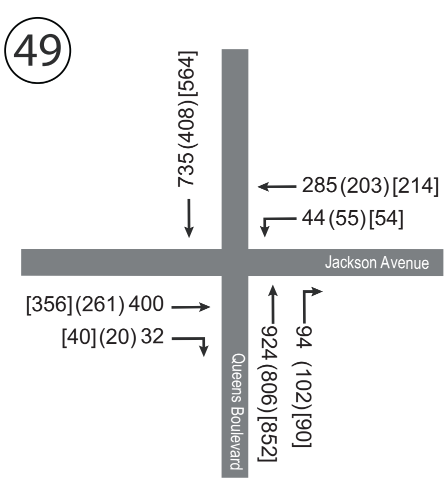
2015 Taxi Medallion Increase – FEIS

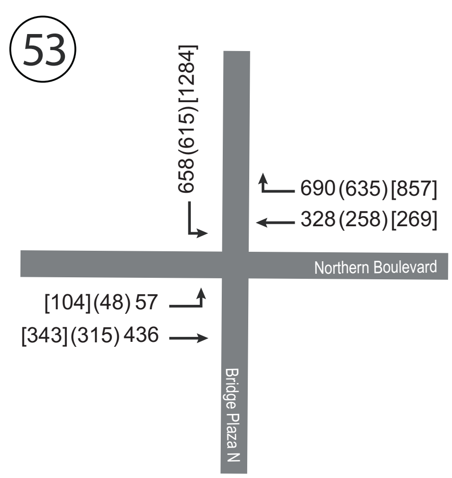
FIGURE 15-23b **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

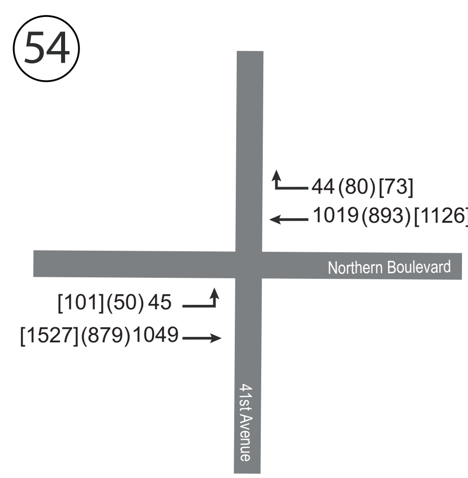
Queens Location Map

LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







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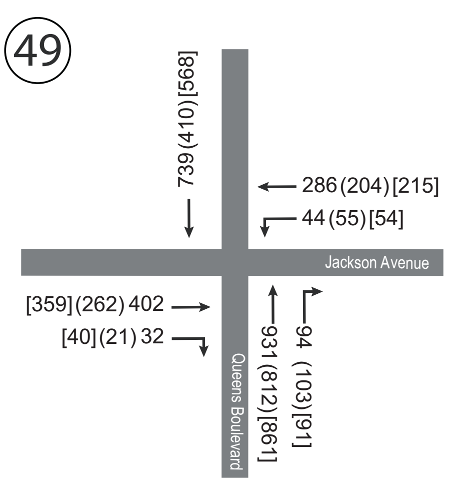
2016 Taxi Medallion Increase – FEIS

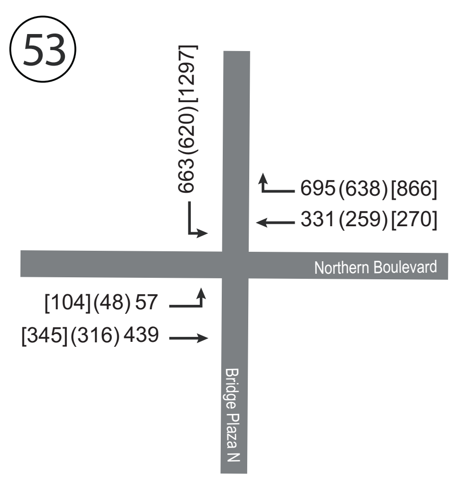
FIGURE 15-23c | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

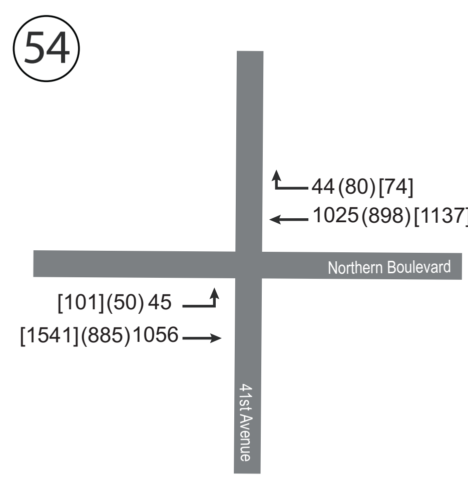
Queens Location Map

LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM **(8-9AM)**, Midday **(12-1 PM)**, PM **(5-6 PM)** Peak Hour Volumes







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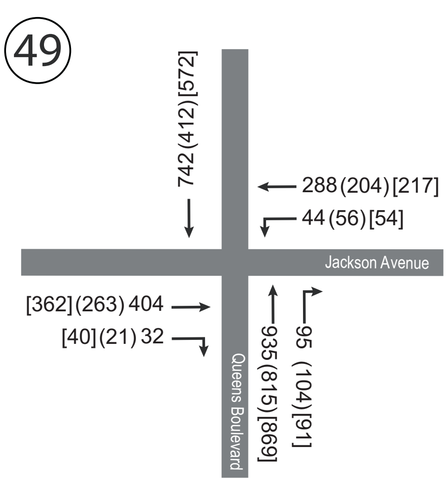
2017 Taxi Medallion Increase – FEIS

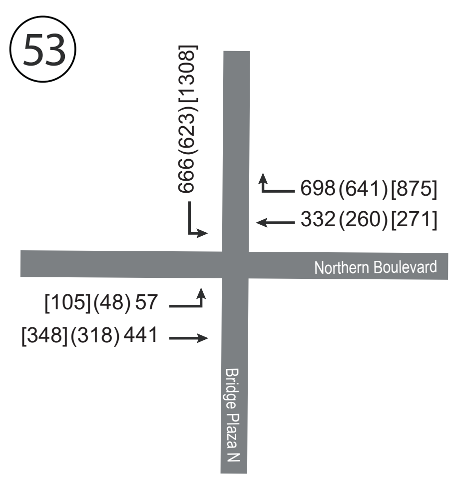
FIGURE 15-23d | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)

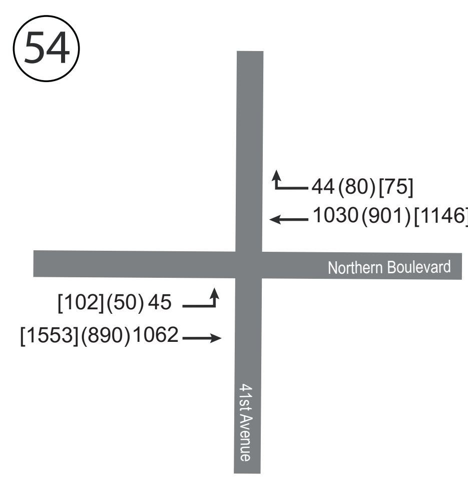
Queens Location Map

LEGEND:

#	Study Intersection Location ID
000(000)[000]	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes







15.2.8.2 Peak Hour Traffic Operations and Level of Service in the Future with the Proposed Action

Traffic volumes and LOS at the 54 study intersections in the future (2014, 2015, 2016, and 2017) with the Proposed Action were compared to the CEQR delay threshold to identify locations at which the Proposed Action would result in a significant adverse impact on traffic. As shown in Table 15-12, many of the study intersections would operate in 2017 with overall delay values above the CEQR 45.0 second delay threshold. Additionally, many individual turning movements would operate above the threshold. Of the 54 study intersections, 32 intersections would have an overall delay value that exceeds the CEQR threshold in the 2017 AM peak hour, 25 intersections in the 2017 Midday peak hour and 24 intersections in the 2017 PM peak hour. The results for the interim years (2014, 2015, and 2016) indicate that fewer intersections and lane groups would exceed the CEQR threshold. The detailed LOS results for all four analysis years are provided in Tables 15-13 through 15-16. Lane groups, approaches, and whole intersections with average delay values above the CEQR threshold have been highlighted in the Appendix comparison tables.

Compared to Future Conditions without the Proposed Action, there would be more whole intersections and lane groups that would exceed the threshold. Those locations have been examined to determine if they would exceed the CEQR thresholds for significant traffic impacts.

Table 15-12: With Proposed Action
LOS Comparison to CEQR Threshold

		LOS	AM	Midday	PM
2014	**Overall Intersections**	High LOS D	7	6	4
		LOS E	10	12	11
		LOS F	7	2	4
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	17	21	16
		LOS E	35	24	32
		LOS F	41	29	30
	Total Number of Lane Groups Analyzed		276	276	276
2015	**Overall Intersections**	High LOS D	8	7	3
		LOS E	9	13	14
		LOS F	9	4	4
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	16	18	15
		LOS E	30	26	33
		LOS F	50	34	34
	Total Number of Lane Groups Analyzed		276	276	276
2016	**Overall Intersections**	High LOS D	7	5	4
		LOS E	14	12	12
		LOS F	8	7	7
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	19	16	15
		LOS E	27	25	33
		LOS F	55	38	37
	Total Number of Lane Groups Analyzed		276	276	276
2017	**Overall Intersections**	High LOS D	7	4	3
		LOS E	16	13	13
		LOS F	9	8	8
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	19	20	15
		LOS E	26	21	29
		LOS F	58	43	43
	Total Number of Lane Groups Analyzed		276	276	276

Notes:
High LOS D: > 45 – 55 seconds of average vehicle control delay
LOS E: > 55 – 80 seconds of average vehicle control delay
LOS F: > 80 seconds of average vehicle control delay
Intersection 491 is not counted as a separate intersection in the analysis.

Table 15-13: 2014 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.10	128.4	F	L	1.00	101.0	F	L	0.67	50.9	D
			T	0.87	34.7	C	T	0.67	23.5	C	T	0.62	20.8	C
		NB 3rd Avenue	T	0.76	33.3	C	T	0.85	31.5	C	T	0.66	23.6	C
			R	0.60	35.1	D	R	1.06	123.5	F	R	0.50	30.3	C
		INTERSECTION			42.6	D			40.9	D			25.1	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.95	63.6	E	T	0.92	62.4	E	T	0.91	58.8	E
			R	0.76	44.3	D	R	0.88	75.5	E	R	0.88	65.4	E
		NB 3rd Avenue	LT	0.82	28.7	C	LT	0.81	10.3	B	LT	0.58	3.6	A
		INTERSECTION			34.7	C			20.3	C			16.2	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.91	45.9	D	LT	1.16	124.4	F	LT	0.92	49.1	D
		NB 3rd Avenue	T	0.95	15.5	B	T	0.99	23.0	C	T	0.99	114.5	F
			R	0.48	7.5	A	R	0.82	29.4	C	R	0.49	10.7	B
		INTERSECTION			21.1	C			42.1	D			97.9	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.13	79.5	E	LT	1.09	51.0	D	LT	1.01	31.9	C
		WB 57th Street	TR	0.98	60.0	E	T	0.62	30.9	C	T	0.47	22.7	C
			R	0.97	71.4	E	R	0.57	35.8	D	R	0.32	22.5	C
		NB 3rd Avenue	LTR	1.07	154.3	F	LTR	1.02	63.7	E	LTR	1.10	93.8	F
			R	0.20	19.7	B	R	0.67	24.0	C	R	1.08	81.4	F
		INTERSECTION			114.6	F			53.8	D			70.1	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.41	20.3	C								
			T	0.43	20.3	C	LT	1.03	70.6	E	LT	0.77	26.8	C
		NB 3rd Avenue	TR	1.06	67.6	E	TR	1.01	33.2	C	TR	1.09	56.2	E
		INTERSECTION			60.8	E			41.5	D			48.4	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.69	24.3	C	LT	0.98	57.6	E	LT	0.70	25.5	C
		NB 3rd Avenue	T	1.08	123.0	F	T	0.83	25.6	C	T	0.97	29.8	C
			R	1.05	59.9	E	R	1.05	57.9	E	R	1.05	55.5	E
		INTERSECTION			92.5	F			38.3	D			31.9	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.54	17.3	B	T	0.43	16.9	B	TR	0.48	15.8	B
			R	0.96	82.3	F	R	1.01	99.8	F	R	0.95	78.6	E
		NB 3rd Avenue	LT	1.20	122.3	F	LT	0.92	75.6	E	LT	0.80	9.4	A
		INTERSECTION			100.2	F			69.3	E			18.0	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.93	51.3	D	T	1.10	86.5	F	T	1.20	127.4	F
			R	1.11	99.5	F	R	0.88	52.3	D	R	0.51	41.5	D
		WB 57th Street	LT	1.03dl	30.9	C	LT	0.36	20.3	C	LT	0.28	19.9	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.20	18.4	B
			T	1.08	77.6	E	T	1.10	82.0	F	T	1.06	62.4	E
			R	0.89	62.9	E	R	0.78	41.0	D	R	1.06	97.0	F
		INTERSECTION			60.6	E			71.9	E			75.2	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.93	42.7	D	T	1.01	58.3	E	T	0.93	41.9	D
			R	0.60	29.3	C	R	0.48	25.9	C	R	0.43	24.7	C
		WB 57th Street	LT	0.99	42.2	D	LT	0.95	46.8	D	LT	0.95	50.4	D
		SB Lexington Avenue	LT	0.77	22.9	C	LT	0.98	46.7	D	LT	0.76	22.7	C
			R	0.25	16.2	B	R	0.75	37.6	D	R	0.43	20.4	C
		INTERSECTION			33.3	C			48.6	D			33.9	C
10	7th Avenue and 31st Street	WB 31st Street	LT	0.58	25.3	C	LT	0.61	24.4	C	LT	0.83	32.0	C
		SB 7th Avenue	T	0.63	8.1	A	T	0.61	4.8	A	T	0.69	5.7	A
			R	0.49	9.9	A	R	0.40	6.2	A	R	0.46	7.3	A
		INTERSECTION			12.4	B			10.1	B			13.2	B
11	7th Avenue and 32nd Street	SB 7th Avenue	LT	0.92	10.0	A	LT	0.83	4.9	A	LT	0.86	6.3	A
		INTERSECTION			10.0	A			4.9	A			6.3	A

Table 15-13: 2014 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
12	7th Avenue and 33rd Street	WB 33rd Street	L	1.03	110.1	F	L	0.64	45.0	D	L	0.97	94.7	F
			T	0.67	41.6	D	T	0.49	32.4	C	T	0.40	32.4	C
		SB 7th Avenue	TR	0.69	2.9	A	TR	0.71	3.8	A	TR	0.68	3.6	A
			R	1.18	117.4	F	R	1.21	116.1	F	R	1.08	59.5	E
		INTERSECTION			22.9	C			18.4	B			16.6	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.12	100.2	F	T	1.13	119.0	F	T	1.05	88.7	F
			R	0.07	22.5	C	R	0.20	39.1	D	R	0.10	28.8	C
		WB 34th Street	LT	1.17	105.4	F	LT	0.98	29.2	C	LT	0.95	22.0	C
		SB 7th Avenue	LTR	0.96	73.4	E	LTR	1.02	92.1	F	LTR	1.07	55.7	E
		INTERSECTION			85.0	F			79.9	E			52.4	D
14	7th Avenue and 35th Street	WB 35th Street	L	1.01	89.6	F	L	0.93	77.3	E	L	0.61	32.0	C
			T	0.98	74.2	E	T	0.72	39.0	D	T	0.64	33.8	C
		SB 7th Avenue	T	1.05	75.4	E	T	1.04	54.1	D	T	0.71	3.3	A
			R	1.19	136.7	F	R	1.10	97.0	F	R	0.62	14.9	B
		INTERSECTION			80.1	F			56.6	E			9.7	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	46.2	D	TR	0.78	36.5	D	TR	0.83	37.9	D
		SB 7th Avenue	LT	0.84	23.5	C	LT	0.93	63.0	E	LT	0.83	9.4	A
		INTERSECTION			28.3	C			58.2	E			16.0	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.93	50.5	D	LT	0.89	45.5	D	LT	1.02	68.9	E
		SB 7th Avenue	T	0.67	16.6	B	T	0.69	17.0	B	T	0.68	16.8	B
			R	0.61	28.4	C	R	0.53	22.4	C	R	0.60	26.4	C
		INTERSECTION			26.1	C			24.3	C			32.1	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.14	95.0	F	T	1.04	74.0	E	T	0.94	44.3	D
		WB 34th Street	T	0.77	32.6	C	T	0.92	44.5	D	T	1.05	72.1	E
			R	0.39	31.9	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.88	6.2	A	T	1.05	41.2	D	T	1.08	54.0	D
		INTERSECTION			26.1	C			46.0	D			57.6	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.93	50.2	D	LT	0.74	29.6	C	LT	0.69	27.2	C
		WB 34th Street	T	0.43	20.5	C	T	0.51	23.0	C	T	0.52	30.6	C
			R	0.46	21.0	C	R	0.85	35.1	D	R	0.74	38.2	D
		NB 8th Avenue	L	0.55	9.3	A	L	0.57	11.7	B	L	0.75	21.2	C
			T	0.85	8.2	A	T	0.80	8.7	A	T	0.86	10.4	B
			R	0.74	48.6	D	R	0.64	18.2	B	R	0.82	35.6	D
		INTERSECTION			19.8	B			17.8	B			20.1	C
19	Madison Avenue and 39th Street	WB 39th Street	T	0.69	28.5	C	T	0.81	35.7	D	T	0.84	37.8	D
			R	0.61	48.8	D	R	0.67	50.9	D	R	0.62	47.8	D
		NB Madison Avenue	LT	0.93	33.7	C	LT	0.78	23.0	C	LT	0.67	19.5	B
		INTERSECTION			33.7	C			28.1	C			25.7	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.75	65.3	E	L	0.69	57.2	E	L	0.66	56.1	E
			T	0.81	37.0	D	T	0.65	26.8	C	T	0.54	23.7	C
		NB Madison Avenue	TR	1.11	71.5	E	TR	1.09	76.5	E	TR	0.97	25.1	C
		INTERSECTION			64.9	E			66.6	E			26.6	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43.2	D	L	0.41	43.2	D	L	0.35	41.2	D
			T	0.37	20.1	C	T	0.22	17.7	B	T	0.22	17.4	B
		NB Madison Avenue	TR	1.00	47.4	D	TR	1.00	46.7	D	TR	1.01	27.9	C
		INTERSECTION			44.6	D			44.9	D			27.7	C

Table 15-13: 2014 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.21	131.9	F	LT	0.47	21.9	C	LT	0.69	33.1	C
		WB 42nd Street	T	1.14	92.8	F	TR	1.14	91.8	F	T	0.95	32.8	C
			R	0.15	18.5	B					R	0.31	17.0	B
		NB Madison Avenue	LT	1.10	87.2	F	LT	1.08	86.9	F	LT	1.03	44.5	D
			R	0.20	7.1	A	R	0.22	7.1	A	R	0.16	7.0	A
		INTERSECTION			98.2	F			72.1	E			37.2	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.52	26.0	C	T	0.60	28.5	C	T	0.63	29.5	C
			R	0.82	52.8	D	R	0.74	41.9	D	R	0.87	67.6	E
		NB Madison Avenue	LT	1.04	62.4	E	LT	1.08	67.7	E	LT	0.98	42.0	D
		INTERSECTION			57.3	E			59.9	E			42.2	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.77	36.1	D	LT	0.94	59.1	E	LT	0.92	61.4	E
		NB Madison Avenue	TR	1.00	39.4	D	TR	0.99	45.7	D	T	1.03	46.4	D
											R	0.12	5.2	A
		INTERSECTION			38.8	D			48.2	D			48.2	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.87	40.1	D	TR	1.00	62.3	E	TR	0.53	23.9	C
		NB Madison Avenue	LT	1.03	56.5	E	LT	1.12	70.4	E	LT	0.95	40.0	D
		INTERSECTION			52.4	D			68.1	E			36.6	D
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.81	34.0	C	T	0.71	32.8	C	T	0.57	34.4	C
			R	0.28	26.2	C	R	0.21	25.5	C	R	0.24	30.8	C
		WB 42nd Street	LT	0.95	33.3	C	LT	0.77	28.8	C	LT	1.07	76.1	E
		SB 5th Avenue	LT	0.84	23.6	C	LT	0.78	21.1	C	LT	1.10	75.6	E
			R	0.15	14.3	B	R	0.08	13.3	B	R	0.09	13.2	B
		INTERSECTION			28.1	C			25.2	C			68.8	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.04	50.7	D	T	0.87	26.7	C	T	0.80	11.0	B
		WB 42nd Street	T	0.92	24.9	C	T	0.67	7.2	A	T	0.86	16.8	B
		INTERSECTION			37.7	D			17.2	B			14.3	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.57	13.9	B	T	0.54	9.6	A	T	0.47	10.2	B
		WB 42nd Street	T	0.69	19.9	B	T	0.74	20.6	C	T	0.66	19.6	B
		INTERSECTION			17.1	B			15.5	B			15.3	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.73	31.3	C	TR	0.96	49.1	D	TR	0.92	43.8	D
		NB 8th Avenue	L	1.02	83.1	F	L	1.00	79.5	E	L	1.02	73.9	E
			T	0.87	17.7	B	T	0.79	14.2	B	T	0.86	15.2	B
		INTERSECTION			26.0	C			27.1	C			25.7	C
30	8th Avenue and 31st Street	WB 31st Street	T	0.46	26.9	C	T	0.51	26.4	C	T	0.84	39.8	D
			R	0.53	29.9	C	R	0.43	24.5	C	R	0.65	31.8	C
		NB 8th Avenue	L	1.00	89.2	F	L	1.00	91.1	F	L	1.26	188.2	F
			T	0.69	22.2	C	T	0.70	23.7	C	T	0.78	25.6	C
		INTERSECTION			30.6	C			30.8	C			40.9	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.18	12.6	B	T	0.28	14.0	B	T	0.39	16.0	B
			R	1.07	97.8	F	R	0.76	39.3	D	R	1.05	96.3	F
		NB 8th Avenue	LT	0.79	28.6	C	LT	0.79	29.1	C	LT	1.05	71.3	E
		INTERSECTION			38.2	D			29.1	C			69.4	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.85	29.4	C	LT	0.97	46.0	D	LT	0.56	15.8	B
		WB 42nd Street	TR	0.69	11.0	B	TR	0.77	12.1	B	TR	0.54	6.9	A
		NB 8th Avenue	L	0.09	7.1	A	L	0.45	11.0	B	L	0.08	5.9	A
			LT	1.10	67.5	E	LT	1.00	27.5	C	LT	1.03	48.0	D
			R	0.78	27.9	C	R	0.71	22.7	C	R	0.16	5.8	A
		INTERSECTION			49.4	D			28.6	C			35.8	D

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33	8th Avenue and 58th Street	EB 58th Street	LT	0.69	20.1	C	LT	0.88	30.0	C	LT	0.79	20.0	B
		NB 8th Avenue	TR	0.57	17.0	B	TR	0.63	17.9	B	TR	0.68	18.9	B
		INTERSECTION			18.0	B			22.2	C			19.2	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.82	41.2	D	T	0.92	54.7	D	T	1.14	117.0	F
			R	0.77	49.0	D	R	0.75	47.3	D	R	0.50	34.2	C
		SB 9th Avenue	LT	0.71	16.1	B	LT	0.65	15.0	B	LT	0.61	14.2	B
		INTERSECTION			23.5	C			26.2	C			38.6	D
35	7th Avenue and 57th Street	EB 57th Street	T	0.90	38.8	D	T	0.83	33.4	C	T	0.89	38.2	D
			R	0.88	55.2	E	R	0.82	48.5	D	R	0.84	51.4	D
		WB 57th Street	LT	1.09	78.3	E	LT	0.89	34.2	C	LT	0.96	39.8	D
		SB 7th Avenue	L	0.29	15.3	B								
			T	0.63	17.9	B	LT	0.31	13.8	B	LT	0.34	14.1	B
			R	0.40	19.0	B	R	0.28	16.6	B	R	0.37	18.2	B
		INTERSECTION			40.8	D			29.8	C			32.8	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.92	56.3	E	T	0.82	42.3	D	T	0.84	43.6	D
			R	0.62	32.3	C	R	0.71	40.6	D	R	0.59	33.0	C
		WB Central Park South	L	1.15	112.4	F	L	1.14	115.6	F	L	1.15	114.0	F
			T	0.64	16.2	B	T	1.00	50.2	D	T	1.04	55.1	E
		SB Central Park Driveway	L	0.85	63.6	E	L	0.01	27.0	C	L	0.01	27.0	C
			TR	0.96	53.2	D	TR	0.05	27.0	C	TR	0.06	27.2	C
		INTERSECTION			50.4	D			59.5	E			61.7	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	0.80	35.6	D	LT	0.73	34.6	C	LT	0.73	34.1	C
		WB 23rd Street	TR	0.84	47.5	D	TR	0.78	35.6	D	TR	0.75	38.5	D
		NB 6th Avenue	LT	1.14	94.5	F	LT	1.20	121.5	F	LT	0.95	36.9	D
			R	0.61	31.8	C	R	0.91	69.2	E	R	0.64	34.6	C
		INTERSECTION			73.4	E			92.5	F			36.6	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.56	24.7	C	TR	0.73	29.9	C	TR	0.82	34.4	C
		NB 6th Avenue	LT	0.98	37.9	D	LT	0.88	25.5	C	LT	0.85	23.6	C
		INTERSECTION			35.8	D			26.4	C			26.4	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.92	35.2	D	LT	0.91	34.1	C	LT	0.71	29.9	C
		WB 42nd Street	T	0.75	27.3	C	T	0.90	34.4	C	T	0.97	12.8	B
			R	1.08	88.5	F	R	1.09	103.8	F	R	1.09	56.7	E
		NB 6th Avenue	LTR	0.87	22.5	C	LTR	0.61	15.2	B	LT	1.04	53.5	D
											R	0.43	17.1	B
		INTERSECTION			29.5	C			28.7	C			42.3	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1.12	84.1	F	LT	1.09	71.2	E	LT	1.18	105.3	F
		WB 57th Street	T	0.98	62.7	E	T	1.02	72.6	E	T	1.07	85.0	F
			R	0.79	51.7	D	R	0.71	49.7	D	R	0.99	76.6	E
		NB 6th Avenue	LT	0.74	21.5	C	LT	0.64	19.5	B	LT	0.64	18.9	B
			R	0.48	21.9	C	R	0.49	21.2	C	R	0.73	36.5	D
		INTERSECTION			48.9	D			46.4	D			56.4	E
41	6th Avenue and Central Park South	EB Central Park South	L	0.58	28.6	C	L	0.64	28.1	C	L	0.89	57.2	E
			T	0.72	20.3	C	T	0.55	10.1	B	T	0.50	7.5	A
		WB Central Park South	TR	0.81	33.6	C	TR	0.77	31.4	C	TR	0.79	32.1	C
		NB 6th Avenue	L	1.10	105.2	F	L	1.05	97.4	F	L	1.06	90.2	F
			LTR	0.95dr	41.0	D	LTR	0.86dr	29.9	C	LTR	1.08	78.5	E
		INTERSECTION			43.0	D			34.2	C			56.1	E

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42	5th Avenue and 23rd Street	EB 23rd Street	T	0.77	37.7	D	T	0.72	32.5	C	T	0.74	34.5	C
			R	0.67	44.8	D	R	0.74	48.9	D	R	0.76	59.0	E
		WB 23rd Street	LT	0.39	17.6	B	LT	0.35	13.6	B	LT	0.35	17.0	B
		SB 5th Avenue	TR	0.71	23.1	C	TR	0.82	29.8	C	TR	0.81	26.6	C
		INTERSECTION			27.2	C			28.0	C			27.9	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.10	71.2	E	T	1.12	81.4	F	T	0.96	25.9	C
			R	1.09	77.6	E	R	0.90	38.3	D	R	0.69	19.3	B
		WB 57th Street	LT	1.12	99.1	F	LT	0.97	53.3	D	LT	1.07	72.1	E
		SB 5th Avenue	LT	1.09	75.9	E	LT	0.78	22.3	C	LT	0.73	20.9	C
			R	0.37	17.5	B	R	0.38	17.2	B	R	0.52	21.5	C
		INTERSECTION			77.6	E			45.7	D			35.2	D
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.5	C	T	0.92	29.9	C	T	0.42	6.2	A
			R	1.07	88.6	F	R	0.97	73.7	E	R	0.87	45.9	D
		SB 5th Avenue	LT	1.07	69.3	E	LT	0.80	24.7	C	LT	1.07	71.6	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17.0	B
		INTERSECTION			59.5	E			30.7	C			56.2	E
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.12	61.7	E	LT	1.05	37.8	D	LT	1.10	60.6	E
		WB 57th Street	T	0.87	36.9	D	T	0.67	27.2	C	T	0.96	54.2	D
			R	0.78	43.1	D	R	0.68	40.7	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.76	21.5	C	LTR	0.56	16.9	B	LT	0.97	39.7	D
											R	0.12	13.7	B
		INTERSECTION			38.1	D			27.4	C			49.2	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.59	21.7	C	L	0.85	40.5	D	L	0.55	20.6	C
			T	0.84	24.9	C	T	0.85	25.2	C	T	0.84	24.3	C
		INTERSECTION			24.4	C			28.1	C			23.8	C
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.00	66.2	E	TR	1.03	64.1	E	T	0.65	26.4	C
											R	0.51	31.1	C
		WB 36th Street	L	0.71	36.8	D								
		SB 2nd Avenue	L	1.07	86.8	F	L	0.02	10.6	B	L	0.12	11.2	B
			T	1.07	74.2	E	T	0.74	19.1	B	T	0.85	22.6	C
		INTERSECTION			69.7	E			36.5	D			23.4	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.53	15.5	B	TR	0.74	20.3	C	TR	0.69	18.9	B
			R	1.05	106.1	F	R	1.08	112.2	F	R	1.06	106.3	F
		NB 3rd Avenue	LT	0.79	27.1	C	LT	0.73	25.3	C	LT	0.64	23.3	C
		INTERSECTION			30.8	C			32.8	C			30.6	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.63	50.4	D	T	0.42	44.7	D	T	0.56	49.5	D
		WB Jackson Avenue	T	0.35	0.9	A	T	0.24	1.6	A	T	0.28	0.1	A
		SB West Service Road	T	0.89	41.4	D	T	0.58	22.3	C	T	0.80	30.6	C
			R	1.07	83.4	F	R	0.81	34.6	C	R	0.99	64.9	E
		INTERSECTION			52.4	D			28.1	C			40.3	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.85	19.1	B	T	0.56	6.6	A	T	1.12	92.5	F
			R	0.17	1.2	A	R	0.11	1.0	A	R	0.17	1.2	A
		WB Northern Boulevard	LT	0.63	24.1	C	LT	0.47	13.2	B	LT	1.02	117.7	F
		NB Queens Plaza S	LTR	1.09	79.6	E	LTR	0.36	10.4	B	LTR	1.04	62.4	E
		SB Queens Plaza S	T	0.55	21.8	C	T	0.28	16.0	B	T	0.85	37.6	D
		INTERSECTION			46.3	D			11.3	B			66.7	E

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			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.74	46.5	D	TR	0.70	44.3	D	TR	0.86	57.1	E
		WB Tillary Street	L	0.73	68.7	E	L	1.01	113.6	F	L	1.21	140.8	F
			T	0.80	49.2	D	T	0.80	37.0	D	T	1.41	221.1	F
			R	1.03	64.3	E	R	0.81	39.4	D	R	1.08	68.3	E
		NB Adams Street	T	1.17	128.3	F	T	1.06	91.8	F	T	1.17	124.3	F
		SB Adams Street	L	1.17	134.8	F	L	1.11	117.1	F	L	1.14	123.7	F
			T	0.81	30.8	C	T	0.68	26.8	C	T	1.10	83.2	F
		NB Service Road	TR	1.11	123.0	F	TR	1.01	95.7	F	TR	0.82	56.3	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.29	33.5	C
		INTERSECTION			73.0	E			58.5	E			113.6	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	33.9	C	L	0.35	27.0	C	L	0.32	34.2	C
			TR	0.87	40.5	D	TR	0.61	30.4	C	TR	0.88	36.7	D
		WB Tillary Street	L	1.05	89.2	F	L	0.43	45.2	D	L	0.51	31.0	C
			TR	0.95	62.0	E	TR	0.63	16.8	B	TR	1.12	88.2	F
		NB Jay Street	L	0.45	40.0	D	L	0.53	45.2	D	L	0.65	49.5	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	33.0	C
			R	0.52	21.3	C	R	0.56	21.7	C	R	0.70	28.6	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.50	46.1	D
			T	0.11	30.8	C	T	0.09	32.4	C	T	0.16	32.9	C
			R	0.17	32.7	C	R	0.18	35.1	D	R	0.28	36.0	D
		INTERSECTION			50.1	D			26.6	C			58.0	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	112.5	F	L	0.52	44.3	D	L	0.32	49.4	D
			TR	1.25	143.3	F	TR	1.16	125.1	F	TR	1.25	162.3	F
		WB Tillary Street	L	1.36	215.2	F	L	1.14	134.0	F	L	1.25	171.8	F
			TR	1.14	114.6	F	TR	1.08	97.9	F	TR	1.17	128.4	F
			R	1.18	145.2	F	R	1.15	138.5	F	R	0.63	47.8	D
		NB Flatbush Avenue	L	1.03	80.1	F	L	0.92	48.4	D	L	1.17	119.0	F
			T	0.99	58.6	E	T	0.52	26.2	C	T	0.61	28.9	C
			R	1.00	75.7	E	R	0.98	70.3	E	R	1.01	75.4	E
		SB Flatbush Avenue	T	1.09	96.4	F	T	0.57	39.0	D	T	1.07	87.4	F
			R	0.26	34.3	C	R	0.44	40.6	D	R	0.42	37.8	D
		INTERSECTION			112.0	F			84.9	F			109.8	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.39	29.0	C	LT	0.23	7.2	A	LT	0.52	26.9	C
		WB Northern Boulevard	T	0.51	24.6	C	T	0.40	22.9	C	T	0.45	23.5	C
			R	1.06	80.9	F	R	1.07	86.0	F	R	1.07	80.0	F
		SB Queens Plaza N	L	1.01	71.9	E	L	0.98	80.6	F	L	1.07	176.3	F
		INTERSECTION			59.2	E			61.9	E			108.8	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.42	0.4	A	LTR	0.61	3.8	A	LTR	0.60	5.1	A
		WB Northern Boulevard	LTR	0.58	7.9	A	LTR	0.55	6.8	A	LTR	0.59	8.5	A
		INTERSECTION			4.4	A			5.3	A			6.7	A

Please note that some intersection approaches and lane groups have the unexpected result of lower delay in later years or in comparison to the without the Proposed Action conditions. This is due to upstream metering, queue delay, and other factors inherent in the Synchro analysis methodology.

Table 15-14: 2015 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.13	135.5	F	L	1.01	104.6	F	L	0.68	51.2	D
			T	0.88	36.4	D	T	0.68	23.6	C	T	0.63	21.1	C
		NB 3rd Avenue	T	0.77	34.4	C	T	0.87	33.1	C	T	0.67	23.8	C
			R	0.62	36.2	D	R	1.08	129.7	F	R	0.51	30.5	C
		INTERSECTION			44.5	D			42.8	D			25.3	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.95	63.5	E	T	0.93	64.1	E	T	0.92	60.1	E
			R	0.77	45.2	D	R	0.89	76.7	E	R	0.89	67.0	E
		NB 3rd Avenue	LT	0.83	31.8	C	LT	0.82	12.6	B	LT	0.59	3.6	A
		INTERSECTION			37.2	D			22.4	C			16.5	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.92	48.1	D	LT	1.17	127.3	F	LT	0.93	50.5	D
		NB 3rd Avenue	T	0.96	17.8	B	T	1.01	27.2	C	T	1.00	130.3	F
			R	0.49	7.7	A	R	0.83	30.2	C	R	0.50	11.0	B
		INTERSECTION			23.3	C			45.7	D			110.3	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.15	85.3	F	LT	1.10	57.8	E	LT	1.02	34.8	C
		WB 57th Street	TR	0.98	59.2	E	T	0.62	31.0	C	T	0.47	22.8	C
			R	0.98	73.1	E	R	0.58	36.6	D	R	0.33	22.6	C
		NB 3rd Avenue	LTR	1.09	175.6	F	LTR	1.03	71.5	E	LTR	1.12	100.9	F
			R	0.20	19.7	B	R	0.68	24.4	C	R	1.08	79.8	E
		INTERSECTION			127.3	F			59.9	E			74.9	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.42	20.4	C								
			T	0.44	20.4	C	LT	1.04	75.0	E	LT	0.77	27.0	C
		NB 3rd Avenue	TR	1.08	75.3	E	TR	1.02	37.9	D	TR	1.11	65.0	E
		INTERSECTION			67.4	E			46.2	D			55.1	E
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.70	24.5	C	LT	0.99	60.4	E	LT	0.70	25.6	C
		NB 3rd Avenue	T	1.09	131.0	F	T	0.83	57.5	E	T	0.98	32.9	C
			R	1.06	57.0	E	R	1.06	60.6	E	R	1.05	56.6	E
		INTERSECTION			97.4	F			58.7	E			34.0	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.55	17.4	B	T	0.43	16.9	B	TR	0.49	15.9	B
			R	0.96	83.2	F	R	1.01	99.8	F	R	0.96	80.8	F
		NB 3rd Avenue	LT	1.21	128.6	F	LT	0.93	84.5	F	LT	0.81	9.7	A
		INTERSECTION			105.2	F			76.1	E			18.4	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.94	51.9	D	T	1.12	91.5	F	T	1.20	130.1	F
			R	1.13	106.5	F	R	0.89	52.5	D	R	0.51	41.5	D
		WB 57th Street	LT	1.05dl	31.5	C	LT	0.36	20.4	C	LT	0.28	20.0	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.26	20.0	C	L	0.20	18.5	B
			T	1.09	80.6	F	T	1.10	82.3	F	T	1.07	67.0	E
			R	0.89	64.2	E	R	0.78	41.0	D	R	1.06	97.0	F
		INTERSECTION			62.6	E			73.0	E			78.5	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.93	44.0	D	T	1.02	61.9	E	T	0.93	41.6	D
			R	0.61	29.9	C	R	0.50	26.5	C	R	0.45	25.2	C
		WB 57th Street	LT	1.00	44.7	D	LT	0.96	48.6	D	LT	0.97	53.2	D
		SB Lexington Avenue	LT	0.78	23.5	C	LT	1.00	51.4	D	LT	0.77	23.2	C
			R	0.26	16.3	B	R	0.75	38.1	D	R	0.43	20.6	C
		INTERSECTION			34.5	C			51.9	D			34.5	C
10	7th Avenue and 31st Street	WB 31st Street	LT	0.59	25.6	C	LT	0.62	24.6	C	LT	0.84	32.6	C
		SB 7th Avenue	T	0.65	8.5	A	T	0.62	4.9	A	T	0.70	5.8	A
			R	0.51	10.0	B	R	0.41	6.4	A	R	0.48	7.4	A
		INTERSECTION			12.7	B			10.3	B			13.4	B

Table 15-14: 2015 Future Conditions with the Proposed Action Delay and Level of Service Summary

No.	Signalized Intersection	Approach	AM Movt.	AM V/C Ratio	AM Delay Sec/Veh	AM LOS	Midday Movt.	Midday V/C Ratio	Midday Delay Sec/Veh	Midday LOS	PM Movt.	PM V/C Ratio	PM Delay Sec/Veh	PM LOS
11	7th Avenue and 32nd Street	SB 7th Avenue	LT	0.95	12.4	B	LT	0.85	5.3	A	LT	0.87	7.2	A
		INTERSECTION			12.4	B			5.3	A			7.2	A
12	7th Avenue and 33rd Street	WB 33rd Street	L	1.04	114.5	F	L	0.65	45.8	D	L	0.97	95.8	F
			T	0.67	41.8	D	T	0.50	32.5	C	T	0.41	32.6	C
		SB 7th Avenue	TR	0.71	3.4	A	TR	0.72	4.6	A	TR	0.70	4.8	A
			R	1.19	120.1	F	R	1.22	120.2	F	R	1.09	67.0	E
		INTERSECTION			23.7	C			19.4	B			18.2	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.13	102.3	F	T	1.14	121.1	F	T	1.06	88.8	F
			R	0.07	22.5	C	R	0.20	39.0	D	R	0.10	28.9	C
		WB 34th Street	LT	1.19	112.3	F	LT	1.00	32.8	C	LT	0.97	23.5	C
		SB 7th Avenue	LTR	0.98	83.5	F	LTR	1.04	103.9	F	LTR	1.09	65.9	E
		INTERSECTION			93.0	F			88.1	F			59.1	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.04	95.3	F	L	0.94	79.3	E	L	0.62	32.6	C
			T	0.99	76.3	E	T	0.73	39.6	D	T	0.65	34.2	C
		SB 7th Avenue	T	1.07	89.2	F	T	1.06	63.8	E	T	0.72	3.4	A
			R	1.20	141.5	F	R	1.12	100.3	F	R	0.64	14.9	B
		INTERSECTION			91.1	F			64.5	E			9.9	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	46.7	D	TR	0.78	36.8	D	TR	0.84	38.4	D
		SB 7th Avenue	LT	0.86	31.2	C	LT	0.95	76.7	E	LT	0.85	9.9	A
		INTERSECTION			34.4	C			69.5	E			16.4	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.95	53.2	D	LT	0.90	46.8	D	LT	1.03	71.8	E
		SB 7th Avenue	T	0.68	16.8	B	T	0.70	17.4	B	T	0.70	17.1	B
			R	0.63	29.3	C	R	0.53	22.6	C	R	0.60	26.7	C
		INTERSECTION			27.0	C			24.9	C			33.0	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.14	96.8	F	T	1.05	76.0	E	T	0.95	45.1	D
		WB 34th Street	T	0.78	33.1	C	T	0.94	46.3	D	T	1.06	75.8	E
			R	0.39	31.9	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.91	6.9	A	T	1.07	50.7	D	T	1.10	63.7	E
		INTERSECTION			26.6	C			52.8	D			64.3	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.94	50.8	D	LT	0.75	29.9	C	LT	0.69	27.5	C
		WB 34th Street	T	0.43	20.5	C	T	0.52	22.9	C	T	0.52	30.4	C
			R	0.47	21.1	C	R	0.86	35.3	D	R	0.75	37.9	D
		NB 8th Avenue	L	0.55	9.2	A	L	0.58	12.1	B	L	0.76	21.4	C
			T	0.87	8.8	A	T	0.81	9.1	A	T	0.88	11.5	B
			R	0.74	47.4	D	R	0.64	18.1	B	R	0.83	35.9	D
		INTERSECTION			20.2	C			17.9	B			20.6	C
19	Madison Avenue and 39th Street	WB 39th Street	T	0.70	29.0	C	T	0.82	36.7	D	T	0.85	38.9	D
			R	0.62	49.4	D	R	0.68	51.5	D	R	0.62	48.0	D
		NB Madison Avenue	LT	0.94	35.5	D	LT	0.79	23.4	C	LT	0.67	19.6	B
		INTERSECTION			35.2	D			28.7	C			26.0	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.77	67.3	E	L	0.71	58.6	E	L	0.66	56.6	E
			T	0.81	37.7	D	T	0.66	27.2	C	T	0.55	24.0	C
		NB Madison Avenue	TR	1.14	82.2	F	TR	1.11	72.5	E	TR	0.98	31.8	C
		INTERSECTION			73.4	E			63.8	E			32.1	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	44.0	D	L	0.42	44.4	D	L	0.35	41.3	D
			T	0.37	20.2	C	T	0.23	17.7	B	T	0.22	17.5	B
		NB Madison Avenue	TR	1.03	58.1	E	TR	1.03	58.9	E	TR	1.02	33.7	C
		INTERSECTION			53.9	D			56.0	E			33.0	C

Table 15-14: 2015 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.24	142.8	F	LT	0.48	21.9	C	LT	0.70	33.1	C
		WB 42nd Street	T	1.17	103.2	F	TR	1.15	98.0	F	T	0.97	37.2	D
			R	0.15	18.8	B					R	0.31	17.2	B
		NB Madison Avenue	LT	1.12	103.1	F	LT	1.11	103.1	F	LT	1.05	53.7	D
			R	0.20	7.0	A	R	0.23	6.9	A	R	0.16	7.0	A
		INTERSECTION			110.6	F			81.1	F			42.6	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.54	26.4	C	T	0.62	29.0	C	T	0.65	30.1	C
			R	0.84	55.6	E	R	0.76	43.1	D	R	0.88	69.5	E
		NB Madison Avenue	LT	1.06	70.5	E	LT	1.11	83.7	F	LT	0.99	49.1	D
		INTERSECTION			64.0	E			72.3	E			47.9	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.79	37.4	D	LT	0.96	63.9	E	LT	0.93	62.9	E
		NB Madison Avenue	TR	1.02	51.7	D	TR	1.02	50.7	D	T	1.05	55.3	E
											R	0.12	5.2	A
		INTERSECTION			49.2	D			53.2	D			55.8	E
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.88	41.2	D	TR	1.01	65.2	E	TR	0.54	24.0	C
		NB Madison Avenue	LT	1.04	63.8	E	LT	1.15	82.4	F	LT	0.96	46.6	D
		INTERSECTION			58.1	E			77.6	E			41.8	D
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.83	34.5	C	T	0.72	32.9	C	T	0.58	34.4	C
			R	0.28	26.2	C	R	0.21	25.4	C	R	0.24	30.5	C
		WB 42nd Street	LT	0.97	35.1	D	LT	0.78	29.1	C	LT	1.09	82.8	F
		SB 5th Avenue	LT	0.86	24.2	C	LT	0.80	21.7	C	LT	1.12	84.5	F
			R	0.15	14.3	B	R	0.08	13.3	B	R	0.09	13.2	B
		INTERSECTION			28.9	C			25.6	C			75.6	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.05	59.0	E	T	0.88	27.3	C	T	0.81	11.6	B
		WB 42nd Street	T	0.94	28.7	C	T	0.68	7.8	A	T	0.88	17.9	B
		INTERSECTION			43.7	D			17.8	B			15.1	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.58	14.1	B	T	0.55	9.6	A	T	0.47	10.6	B
		WB 42nd Street	T	0.71	20.6	C	T	0.75	21.1	C	T	0.68	20.1	C
		INTERSECTION			17.5	B			15.8	B			15.8	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.73	31.4	C	TR	0.97	50.5	D	TR	0.93	44.6	D
		NB 8th Avenue	L	1.03	85.5	F	L	1.01	80.6	F	L	1.03	77.0	E
			T	0.88	18.7	B	T	0.81	14.6	B	T	0.88	16.0	B
		INTERSECTION			26.9	C			27.6	C			26.8	C
30	8th Avenue and 31st Street	WB 31st Street	T	0.46	26.9	C	T	0.52	26.5	C	T	0.85	40.6	D
			R	0.54	30.0	C	R	0.43	24.5	C	R	0.66	31.7	C
		NB 8th Avenue	L	1.01	91.4	F	L	1.00	93.6	F	L	1.28	193.2	F
			T	0.70	22.4	C	T	0.71	23.9	C	T	0.79	26.0	C
		INTERSECTION			31.0	C			31.1	C			41.7	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.18	12.7	B	T	0.28	14.0	B	T	0.40	16.0	B
			R	1.11	109.8	F	R	0.77	40.1	D	R	1.07	101.9	F
		NB 8th Avenue	LT	0.80	29.1	C	LT	0.81	29.2	C	LT	1.07	80.1	F
		INTERSECTION			40.5	D			29.3	C			77.2	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.86	29.8	C	LT	0.98	49.0	D	LT	0.56	15.9	B
		WB 42nd Street	TR	0.69	11.0	B	TR	0.77	12.1	B	TR	0.54	6.8	A
		NB 8th Avenue	L	0.09	7.1	A	L	0.46	11.4	B	L	0.08	5.8	A
			LT	1.12	74.0	E	LT	1.02	32.9	C	LT	1.04	55.1	E
			R	0.80	29.6	C	R	0.72	22.9	C	R	0.16	5.8	A
		INTERSECTION			53.5	D			32.3	C			40.5	D

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			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
33	8th Avenue and 58th Street	EB 58th Street	LT	0.69	20.2	C	LT	0.90	31.2	C	LT	0.81	20.3	C
		NB 8th Avenue	TR	0.58	17.1	B	TR	0.63	18.0	B	TR	0.69	19.1	B
		INTERSECTION			18.2	B			22.6	C			19.5	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.82	41.8	D	T	0.93	56.9	E	T	1.15	122.7	F
			R	0.78	49.8	D	R	0.76	47.9	D	R	0.50	34.2	C
		SB 9th Avenue	LT	0.72	16.3	B	LT	0.66	15.1	B	LT	0.62	14.3	B
		INTERSECTION			23.9	C			26.7	C			40.1	D
35	7th Avenue and 57th Street	EB 57th Street	T	0.92	40.8	D	T	0.84	33.7	C	T	0.90	39.5	D
			R	0.90	57.6	E	R	0.84	50.9	D	R	0.86	53.2	D
		WB 57th Street	LT	1.10	83.6	F	LT	0.90	34.6	C	LT	0.97	40.6	D
		SB 7th Avenue	L	0.30	15.4	B								
			T	0.64	18.0	B	LT	0.32	13.9	B	LT	0.35	14.1	B
			R	0.41	19.1	B	R	0.28	16.6	B	R	0.38	18.3	B
		INTERSECTION			42.8	D			30.3	C			33.5	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.94	59.1	E	T	0.83	43.5	D	T	0.85	44.8	D
			R	0.63	32.7	C	R	0.71	40.6	D	R	0.61	33.5	C
		WB Central Park South	L	1.17	116.5	F	L	1.16	123.0	F	L	1.18	122.3	F
			T	0.65	16.3	B	T	1.02	55.4	E	T	1.07	62.2	E
		SB Central Park Driveway	L	0.87	65.9	E	L	0.01	27.0	C	L	0.01	27.0	C
			TR	0.98	58.2	E	TR	0.05	27.0	C	TR	0.06	27.2	C
		INTERSECTION			53.0	D			63.5	E			66.9	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	0.81	36.5	D	LT	0.73	34.8	C	LT	0.74	34.6	C
		WB 23rd Street	TR	0.85	48.6	D	TR	0.79	36.3	D	TR	0.76	38.9	D
		NB 6th Avenue	LT	1.16	104.9	F	LT	1.23	133.3	F	LT	0.97	40.3	D
			R	0.62	32.4	C	R	0.93	72.9	E	R	0.65	35.2	D
		INTERSECTION			80.2	F			100.6	F			38.8	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.57	24.9	C	TR	0.74	30.4	C	TR	0.83	35.0	C
		NB 6th Avenue	LT	1.01	43.1	D	LT	0.90	26.8	C	LT	0.86	24.4	C
		INTERSECTION			40.3	D			27.5	C			27.1	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.93	35.8	D	LT	0.93	35.6	D	LT	0.72	30.2	C
		WB 42nd Street	T	0.77	27.7	C	T	0.92	36.5	D	T	0.98	14.8	B
			R	1.11	94.6	F	R	1.11	109.5	F	R	1.11	67.5	E
		NB 6th Avenue	LTR	0.89	23.3	C	LTR	0.63	15.4	B	LT	1.07	62.2	E
											R	0.44	17.3	B
		INTERSECTION			30.4	C			29.9	C			48.7	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1.13	87.4	F	LT	1.11	77.2	E	LT	1.20	115.1	F
		WB 57th Street	T	1.00	64.8	E	T	1.03	75.1	E	T	1.08	86.7	F
			R	0.81	52.3	D	R	0.73	50.0	D	R	1.01	78.6	E
		NB 6th Avenue	LT	0.76	22.0	C	LT	0.66	19.7	B	LT	0.65	19.2	B
			R	0.49	22.0	C	R	0.50	21.5	C	R	0.75	37.6	D
		INTERSECTION			50.3	D			48.5	D			59.0	E
41	6th Avenue and Central Park South	EB Central Park South	L	0.61	30.3	C	L	0.67	31.0	C	L	0.93	65.1	E
			T	0.73	20.4	C	T	0.56	10.2	B	T	0.51	7.5	A
		WB Central Park South	TR	0.82	34.4	C	TR	0.78	32.0	C	TR	0.80	32.8	C
		NB 6th Avenue	L	1.13	114.3	F	L	1.07	104.7	F	L	1.08	98.0	F
			LTR	0.95	44.2	D	LTR	0.87dr	30.7	C	LTR	1.10	87.1	F
		INTERSECTION			45.7	D			35.7	D			61.3	E

Table 15-14: 2015 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.78	38.4	D	T	0.73	32.9	C	T	0.75	35.1	D
			R	0.68	45.3	D	R	0.76	50.5	D	R	0.77	60.5	E
		WB 23rd Street	LT	0.40	17.6	B	LT	0.36	13.7	B	LT	0.36	17.1	B
		SB 5th Avenue	TR	0.72	23.6	C	TR	0.84	30.7	C	TR	0.82	26.8	C
		INTERSECTION			27.6	C			28.6	C			28.3	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.11	74.7	E	T	1.13	87.6	F	T	0.96	26.1	C
			R	1.12	87.2	F	R	0.93	42.7	D	R	0.71	19.3	B
		WB 57th Street	LT	1.15	108.8	F	LT	0.99	56.6	E	LT	1.09	79.1	E
		SB 5th Avenue	LT	1.11	82.9	F	LT	0.80	23.0	C	LT	0.75	21.4	C
			R	0.37	17.6	B	R	0.38	17.3	B	R	0.52	21.7	C
		INTERSECTION			84.3	F			48.6	D			37.2	D
44	5th Avenue and Central Park South	EB Central Park South	T	0.88	23.6	C	T	0.94	32.4	C	T	0.42	6.4	A
			R	1.10	96.6	F	R	1.00	81.2	F	R	0.89	47.5	D
		SB 5th Avenue	LT	1.10	78.8	E	LT	0.82	25.4	C	LT	1.08	77.9	E
			R	0.08	14.1	B	R	0.07	14.0	B	R	0.15	17.1	B
		INTERSECTION			66.8	E			32.7	C			60.9	E
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.13	70.5	E	LT	1.06	40.2	D	LT	1.10	60.0	E
		WB 57th Street	T	0.88	37.9	D	T	0.68	27.2	C	T	0.97	55.2	E
			R	0.80	44.9	D	R	0.69	41.4	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.78	22.0	C	LTR	0.57	17.1	B	LT	0.98	42.4	D
											R	0.12	13.7	B
		INTERSECTION			41.1	D			28.3	C			50.3	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.61	22.1	C	L	0.85	41.3	D	L	0.55	20.9	C
			T	0.86	25.6	C	T	0.86	26.0	C	T	0.85	25.0	C
		INTERSECTION			25.0	C			28.8	C			24.4	C
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.01	68.8	E	TR	1.04	66.8	E	T	0.66	26.5	C
											R	0.51	31.2	C
		WB 36th Street	L	0.72	37.1	D								
		SB 2nd Avenue	L	1.08	89.6	F	L	0.02	10.6	B	L	0.12	11.2	B
			T	1.08	78.4	E	T	0.76	19.3	B	T	0.87	23.3	C
		INTERSECTION			72.7	E			37.6	D			23.9	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.53	15.5	B	TR	0.74	20.5	C	TR	0.70	19.0	B
			R	1.05	106.1	F	R	1.09	114.2	F	R	1.07	109.1	F
		NB 3rd Avenue	LT	0.80	27.2	C	LT	0.74	25.5	C	LT	0.65	23.5	C
		INTERSECTION			30.8	C			33.2	C			31.0	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.64	50.6	D	T	0.42	44.8	D	T	0.56	49.9	D
		WB Jackson Avenue	T	0.35	0.9	A	T	0.24	1.6	A	T	0.28	0.1	A
		SB West Service Road	T	0.90	42.2	D	T	0.59	22.4	C	T	0.80	31.0	C
			R	1.08	85.7	F	R	0.81	35.0	C	R	1.00	67.6	E
		INTERSECTION			53.4	D			28.3	C			41.4	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.85	19.5	B	T	0.56	6.6	A	T	1.13	97.2	F
			R	0.17	1.2	A	R	0.11	1.0	A	R	0.17	1.2	A
		WB Northern Boulevard	LT	0.64	24.3	C	LT	0.47	13.3	B	LT	1.04	120.5	F
		NB Queens Plaza S	LTR	1.10	82.5	F	LTR	0.37	10.5	B	LTR	1.05	66.4	E
		SB Queens Plaza S	T	0.55	21.9	C	T	0.29	16.1	B	T	0.86	38.4	D
		INTERSECTION			47.7	D			11.3	B			69.8	E

Table 15-14: 2015 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	Signalized Intersection	Approach	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS	Movt.	V/C Ratio	Delay Sec/Veh	LOS
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	46.8	D	TR	0.70	44.5	D	TR	0.87	58.4	E
		WB Tillary Street	L	0.73	69.5	E	L	1.03	118.0	F	L	1.21	143.7	F
			T	0.81	49.4	D	T	0.80	37.3	D	T	1.42	224.5	F
			R	1.04	66.3	E	R	0.82	39.6	D	R	1.09	71.7	E
		NB Adams Street	T	1.18	131.3	F	T	1.07	94.8	F	T	1.18	129.0	F
		SB Adams Street	L	1.17	138.0	F	L	1.12	119.3	F	L	1.14	125.9	F
			T	0.81	31.1	C	T	0.69	26.9	C	T	1.10	86.2	F
		NB Service Road	TR	1.11	125.1	F	TR	1.02	96.4	F	TR	0.83	56.6	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.30	33.5	C
		INTERSECTION			74.5	E			59.7	E			116.7	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	33.8	C	L	0.36	26.9	C	L	0.32	34.0	C
			TR	0.88	40.9	D	TR	0.62	30.5	C	TR	0.88	36.8	D
		WB Tillary Street	L	1.05	90.9	F	L	0.43	45.1	D	L	0.51	31.1	C
			TR	0.95	62.4	E	TR	0.63	16.9	B	TR	1.13	91.2	F
		NB Jay Street	L	0.45	40.0	D	L	0.54	45.5	D	L	0.65	49.5	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	33.0	C
			R	0.52	21.3	C	R	0.56	21.8	C	R	0.70	28.7	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.50	46.1	D
			T	0.11	30.8	C	T	0.09	32.5	C	T	0.16	32.9	C
			R	0.18	32.9	C	R	0.18	35.2	D	R	0.28	36.0	D
		INTERSECTION			50.5	D			26.6	C			59.3	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.98	114.1	F	L	0.52	44.1	D	L	0.32	49.4	D
			TR	1.26	147.3	F	TR	1.16	127.9	F	TR	1.25	164.5	F
		WB Tillary Street	L	1.37	217.9	F	L	1.15	136.4	F	L	1.26	175.1	F
			TR	1.14	117.1	F	TR	1.08	99.7	F	TR	1.18	131.2	F
			R	1.19	148.2	F	R	1.15	140.8	F	R	0.63	48.0	D
		NB Flatbush Avenue	L	1.04	81.3	F	L	0.93	49.8	D	L	1.18	121.9	F
			T	1.00	60.3	E	T	0.52	26.2	C	T	0.62	29.0	C
			R	1.01	76.6	E	R	0.98	69.2	E	R	1.02	77.2	E
		SB Flatbush Avenue	T	1.09	97.8	F	T	0.57	39.1	D	T	1.08	90.2	F
			R	0.27	34.3	C	R	0.44	40.7	D	R	0.43	37.8	D
		INTERSECTION			114.2	F			86.2	F			112.0	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.40	29.0	C	LT	0.24	7.2	A	LT	0.53	27.1	C
		WB Northern Boulevard	T	0.51	24.7	C	T	0.40	22.9	C	T	0.45	23.5	C
			R	1.07	82.5	F	R	1.08	88.2	F	R	1.08	84.6	F
		SB Queens Plaza N	L	1.01	73.6	E	L	0.99	85.1	F	L	1.08	189.5	F
		INTERSECTION			60.4	E			64.3	E			116.0	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.43	0.4	A	LTR	0.61	4.0	A	LTR	0.60	5.5	A
		WB Northern Boulevard	LTR	0.58	7.8	A	LTR	0.55	6.9	A	LTR	0.60	9.0	A
		INTERSECTION			4.3	A			5.5	A			7.1	A

Please note that some intersection approaches and lane groups have the unexpected result of lower delay in later years or in comparison to the without the Proposed Action conditions. This is due to upstream metering, queue delay, and other factors inherent in the Synchro analysis methodology.

Table 15-15: 2016 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.15	141.4	F	L	1.02	106.9	F	L	0.68	51.5	D
			T	0.90	38.8	D	T	0.69	23.9	C	T	0.64	21.3	C
		NB 3rd Avenue	T	0.78	39.1	D	T	0.87	34.0	C	T	0.68	23.8	C
			R	0.63	36.9	D	R	1.09	134.0	F	R	0.51	30.7	C
		INTERSECTION			48.5	D			43.9	D			25.4	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.96	65.6	E	T	0.94	65.8	E	T	0.93	62.0	E
			R	0.78	45.9	D	R	0.89	77.8	E	R	0.90	69.4	E
		NB 3rd Avenue	LT	0.84	38.1	D	LT	0.83	14.9	B	LT	0.59	3.6	A
		INTERSECTION			42.4	D			24.5	C			17.0	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.94	50.9	D	LT	1.19	135.3	F	LT	0.94	52.7	D
		NB 3rd Avenue	T	0.97	19.5	B	T	1.02	31.1	C	T	1.02	145.1	F
			R	0.49	7.9	A	R	0.84	31.3	C	R	0.51	11.2	B
		INTERSECTION			25.1	C			50.2	D			122.2	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.16	90.5	F	LT	1.11	63.6	E	LT	1.02	36.5	D
		WB 57th Street	TR	0.99	61.0	E	T	0.63	31.2	C	T	0.48	22.8	C
			R	0.99	74.3	E	R	0.59	37.1	D	R	0.33	22.6	C
		NB 3rd Avenue	LTR	1.11	128.7	F	LTR	1.04	78.1	E	LTR	1.13	106.6	F
			R	0.20	19.7	B	R	0.69	24.7	C	R	1.09	73.8	E
		INTERSECTION			103.7	F			65.0	E			78.5	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.42	20.5	C								
			T	0.44	20.4	C	LT	1.05	77.8	E	LT	0.78	27.2	C
		NB 3rd Avenue	TR	1.09	81.7	F	TR	1.03	42.5	D	TR	1.12	73.5	E
		INTERSECTION			72.8	E			50.4	D			61.5	E
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.70	24.7	C	LT	1.00	61.8	E	LT	0.71	25.8	C
		NB 3rd Avenue	T	1.11	82.1	F	T	0.85	71.2	E	T	0.99	37.6	D
			R	1.07	59.2	E	R	1.06	61.5	E	R	1.06	59.7	E
		INTERSECTION			66.7	E			67.5	E			37.4	D
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.55	17.4	B	T	0.44	17.0	B	TR	0.49	16.0	B
			R	0.97	84.9	F	R	1.02	101.9	F	R	0.97	83.2	F
		NB 3rd Avenue	LT	1.23	138.4	F	LT	0.95	92.5	F	LT	0.82	10.0	B
		INTERSECTION			112.9	F			82.5	F			18.9	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.95	52.4	D	T	1.13	93.9	F	T	1.21	133.5	F
			R	1.13	108.6	F	R	0.89	43.5	D	R	0.51	41.5	D
		WB 57th Street	LT	1.06dl	32.0	C	LT	0.36	20.4	C	LT	0.28	20.0	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.26	20.0	C	L	0.20	18.5	B
			T	1.10	83.3	F	T	1.11	85.7	F	T	1.08	71.4	E
			R	0.89	64.2	E	R	0.79	41.5	D	R	1.06	99.0	F
		INTERSECTION			64.2	E			75.1	E			82.0	F
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.94	45.4	D	T	1.03	65.2	E	T	0.94	42.6	D
			R	0.62	30.2	C	R	0.51	26.9	C	R	0.45	25.2	C
		WB 57th Street	LT	1.01	46.7	D	LT	0.97	50.2	D	LT	0.98	55.4	E
		SB Lexington Avenue	LT	0.80	24.0	C	LT	1.02	55.2	E	LT	0.79	23.7	C
			R	0.26	16.3	B	R	0.76	38.9	D	R	0.44	20.7	C
		INTERSECTION			35.6	D			54.7	D			35.4	D
10	7th Avenue and 31st Street	WB 31st Street	LT	0.59	25.7	C	LT	0.63	24.9	C	LT	0.85	33.0	C
		SB 7th Avenue	T	0.66	8.7	A	T	0.63	5.2	A	T	0.71	5.9	A
			R	0.51	10.0	A	R	0.42	6.6	A	R	0.49	7.4	A
		INTERSECTION			12.8	B			10.5	B			13.5	B
11	7th Avenue and 32nd Street	SB 7th Avenue	LT	0.96	14.8	B	LT	0.86	6.0	A	LT	0.88	8.2	A
		INTERSECTION			14.8	B			6.0	A			8.2	A

Table 15-15: 2016 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
12	7th Avenue and 33rd Street	WB 33rd Street	L	1.06	117.3	F	L	0.67	47.4	D	L	0.98	98.5	F
			T	0.67	42.1	D	T	0.50	32.8	C	T	0.41	32.7	C
		SB 7th Avenue	TR	0.72	4.0	A	TR	0.73	5.7	A	TR	0.71	6.5	A
			R	1.20	120.5	F	R	1.23	125.0	F	R	1.10	68.5	E
		INTERSECTION			24.2	C			20.8	C			19.8	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.13	104.4	F	T	1.15	124.1	F	T	1.06	90.9	F
			R	0.07	22.5	C	R	0.20	39.0	D	R	0.10	28.5	C
		WB 34th Street	LT	1.20	118.4	F	LT	1.02	37.6	D	LT	0.98	25.9	C
		SB 7th Avenue	LTR	1.00	93.2	F	LTR	1.05	112.6	F	LTR	1.12	75.5	E
		INTERSECTION			100.5	F			94.9	F			66.0	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.05	99.3	F	L	0.95	82.4	F	L	0.64	33.1	C
			T	1.00	78.4	E	T	0.73	39.8	D	T	0.66	34.4	C
		SB 7th Avenue	T	1.09	104.0	F	T	1.08	73.9	E	T	0.74	3.5	A
			R	1.21	142.9	F	R	1.12	99.0	F	R	0.64	14.6	B
		INTERSECTION			102.4	F			72.5	E			9.9	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.90	47.6	D	TR	0.79	37.0	D	TR	0.84	39.0	D
		SB 7th Avenue	LT	0.87	44.1	D	LT	0.96	86.0	F	LT	0.86	10.1	B
		INTERSECTION			44.8	D			77.3	E			16.7	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.96	55.9	E	LT	0.91	47.8	D	LT	1.05	76.0	E
		SB 7th Avenue	T	0.69	17.0	B	T	0.71	17.5	B	T	0.70	17.1	B
			R	0.63	29.1	C	R	0.54	22.8	C	R	0.61	26.9	C
		INTERSECTION			27.7	C			25.2	C			34.1	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.15	99.3	F	T	1.06	78.1	E	T	0.95	45.7	D
		WB 34th Street	T	0.79	33.6	C	T	0.95	48.4	D	T	1.07	79.2	E
			R	0.40	32.2	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.93	7.4	A	T	1.09	59.9	E	T	1.12	72.3	E
		INTERSECTION			27.2	C			59.5	E			70.3	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.94	51.8	D	LT	0.75	30.2	C	LT	0.70	27.6	C
		WB 34th Street	T	0.44	20.6	C	T	0.52	22.8	C	T	0.53	30.1	C
			R	0.47	21.2	C	R	0.88	35.4	D	R	0.76	37.7	D
		NB 8th Avenue	L	0.55	9.2	A	L	0.59	12.4	B	L	0.77	21.9	C
			T	0.88	9.5	A	T	0.82	9.5	A	T	0.89	12.7	B
			R	0.76	49.4	D	R	0.64	18.1	B	R	0.84	37.2	D
		INTERSECTION			20.7	C			18.2	B			21.2	C
19	Madison Avenue and 39th Street	WB 39th Street	T	0.71	29.5	C	T	0.83	37.7	D	T	0.86	39.8	D
			R	0.63	50.0	D	R	0.68	51.8	D	R	0.63	48.3	D
		NB Madison Avenue	LT	0.96	38.2	D	LT	0.81	24.1	C	LT	0.69	19.9	B
		INTERSECTION			37.3	D			29.3	C			26.4	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.78	68.0	E	L	0.72	60.0	E	L	0.66	56.6	E
			T	0.83	39.0	D	T	0.67	27.5	C	T	0.56	24.1	C
		NB Madison Avenue	TR	1.15	87.0	F	TR	1.14	81.8	F	TR	1.00	39.0	D
		INTERSECTION			77.3	E			71.1	E			38.0	D
21	Madison Avenue and 41st Street	EB 41st Street	L	0.42	45.0	D	L	0.43	45.8	D	L	0.36	41.5	D
			T	0.38	20.4	C	T	0.23	17.8	B	T	0.22	17.5	B
		NB Madison Avenue	TR	1.04	64.2	E	TR	1.05	70.0	E	TR	1.03	37.0	D
		INTERSECTION			59.3	E			66.1	E			36.0	D

Table 15-15: 2016 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
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22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.27	157.2	F	LT	0.49	21.8	C	LT	0.71	33.3	C
		WB 42nd Street	T	1.19	111.3	F	TR	1.17	104.3	F	T	0.98	39.7	D
			R	0.15	18.7	B					R	0.31	17.4	B
		NB Madison Avenue	LT	1.13	108.9	F	LT	1.13	120.8	F	LT	1.07	60.2	E
			R	0.21	6.9	A	R	0.23	7.0	A	R	0.16	6.9	A
		INTERSECTION			119.1	F			90.9	F			46.2	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.55	26.8	C	T	0.63	29.5	C	T	0.65	30.3	C
			R	0.86	59.2	E	R	0.77	44.8	D	R	0.89	71.4	E
		NB Madison Avenue	LT	1.07	75.2	E	LT	1.13	96.7	F	LT	1.00	53.0	D
		INTERSECTION			68.0	E			82.5	F			51.1	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.81	39.1	D	LT	0.98	67.6	E	LT	0.94	65.7	E
		NB Madison Avenue	TR	1.03	61.5	E	TR	1.03	58.7	E	T	1.06	60.6	E
											R	0.13	5.2	A
		INTERSECTION			57.5	E			60.4	E			60.5	E
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.90	43.2	D	TR	1.02	68.7	E	TR	0.55	24.2	C
		NB Madison Avenue	LT	1.06	70.8	E	LT	1.16	87.1	F	LT	0.98	50.5	D
		INTERSECTION			63.9	E			82.0	F			44.9	D
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.84	34.8	C	T	0.73	33.1	C	T	0.59	34.4	C
			R	0.28	26.1	C	R	0.21	25.2	C	R	0.24	30.3	C
		WB 42nd Street	LT	0.99	37.6	D	LT	0.79	29.4	C	LT	1.11	89.7	F
		SB 5th Avenue	LT	0.88	25.2	C	LT	0.82	22.3	C	LT	1.14	93.0	F
			R	0.15	14.3	B	R	0.08	13.3	B	R	0.09	13.2	B
		INTERSECTION			30.1	C			26.0	C			82.4	F
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.07	69.6	E	T	0.89	28.6	C	T	0.83	12.3	B
		WB 42nd Street	T	0.96	34.1	C	T	0.69	8.2	A	T	0.89	19.2	B
		INTERSECTION			51.7	D			18.8	B			16.2	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.59	14.2	B	T	0.56	9.6	A	T	0.48	10.8	B
		WB 42nd Street	T	0.72	21.3	C	T	0.76	21.5	C	T	0.69	20.6	C
		INTERSECTION			17.9	B			16.0	B			16.2	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.74	31.6	C	TR	0.98	51.6	D	TR	0.94	47.2	D
		NB 8th Avenue	L	1.04	88.2	F	L	1.02	82.8	F	L	1.04	78.8	E
			T	0.89	19.1	B	T	0.82	15.0	B	T	0.89	17.0	B
		INTERSECTION			27.4	C			28.3	C			28.1	C
30	8th Avenue and 31st Street	WB 31st Street	T	0.47	27.1	C	T	0.52	26.5	C	T	0.86	41.0	D
			R	0.55	30.4	C	R	0.44	24.6	C	R	0.67	32.1	C
		NB 8th Avenue	L	1.01	91.4	F	L	1.00	93.6	F	L	1.28	195.6	F
			T	0.71	22.7	C	T	0.72	24.2	C	T	0.81	26.5	C
		INTERSECTION			31.1	C			31.2	C			42.1	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.18	12.7	B	T	0.28	14.0	B	T	0.40	16.1	B
			R	1.14	120.3	F	R	0.79	41.7	D	R	1.09	109.3	F
		NB 8th Avenue	LT	0.82	29.6	C	LT	0.82	29.7	C	LT	1.07	83.7	F
		INTERSECTION			42.7	D			29.9	C			80.9	F
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.86	30.1	C	LT	0.99	51.6	D	LT	0.56	15.9	B
		WB 42nd Street	TR	0.70	10.9	B	TR	0.78	12.1	B	TR	0.54	6.5	A
		NB 8th Avenue	L	0.09	7.5	A	L	0.47	11.6	B	L	0.08	5.9	A
			LT	1.14	84.4	F	LT	1.04	39.0	D	LT	1.06	61.8	E
			R	0.82	30.7	C	R	0.73	24.0	C	R	0.16	5.9	A
		INTERSECTION			60.0	E			36.2	D			45.1	D

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33	8th Avenue and 58th Street	EB 58th Street	LT	0.70	20.5	C	LT	0.91	32.0	C	LT	0.81	20.3	C
		NB 8th Avenue	TR	0.59	17.3	B	TR	0.65	18.2	B	TR	0.70	19.2	B
		INTERSECTION			18.4	B			23.1	C			19.6	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.83	42.5	D	T	0.95	59.8	E	T	1.17	128.5	F
			R	0.78	50.2	D	R	0.77	49.4	D	R	0.50	34.2	C
		SB 9th Avenue	LT	0.72	16.5	B	LT	0.67	15.3	B	LT	0.62	14.4	B
		INTERSECTION			24.2	C			27.6	C			41.6	D
35	7th Avenue and 57th Street	EB 57th Street	T	0.93	42.8	D	T	0.85	34.4	C	T	0.92	40.8	D
			R	0.91	58.5	E	R	0.86	53.6	D	R	0.88	56.1	E
		WB 57th Street	LT	1.12	89.7	F	LT	0.91	35.1	D	LT	0.99	42.9	D
		SB 7th Avenue	L	0.30	15.5	B								
			T	0.65	18.3	B	LT	0.32	13.9	B	LT	0.35	14.2	B
			R	0.41	19.2	B	R	0.29	16.7	B	R	0.38	18.5	B
		INTERSECTION			44.8	D			30.9	C			34.9	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.96	62.2	E	T	0.85	44.7	D	T	0.87	46.2	D
			R	0.64	33.3	C	R	0.73	41.5	D	R	0.61	33.5	C
		WB Central Park South	L	1.18	122.7	F	L	1.19	130.7	F	L	1.19	129.0	F
			T	0.67	16.3	B	T	1.05	61.5	E	T	1.09	69.6	E
		SB Central Park Driveway	L	0.89	68.4	E	L	0.01	27.0	C	L	0.01	27.0	C
			TR	1.00	63.7	E	TR	0.05	27.0	C	TR	0.06	27.2	C
		INTERSECTION			56.0	E			68.1	E			72.0	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	0.83	37.4	D	LT	0.74	35.3	D	LT	0.75	35.1	D
		WB 23rd Street	TR	0.85	48.9	D	TR	0.80	36.9	D	TR	0.77	39.5	D
		NB 6th Avenue	LT	1.18	114.1	F	LT	1.25	142.9	F	LT	0.99	44.1	D
			R	0.62	32.8	C	R	0.95	76.8	E	R	0.65	35.3	D
		INTERSECTION			86.2	F			107.3	F			41.3	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.57	25.1	C	TR	0.75	30.6	C	TR	0.84	35.7	D
		NB 6th Avenue	LT	1.03	49.6	D	LT	0.92	28.2	C	LT	0.87	25.2	C
		INTERSECTION			45.7	D			28.7	C			27.9	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.94	37.7	D	LT	0.93	35.6	D	LT	0.73	30.7	C
		WB 42nd Street	T	0.78	28.1	C	T	0.93	38.8	D	T	1.00	17.7	B
			R	1.13	101.5	F	R	1.13	115.7	F	R	1.13	77.2	E
		NB 6th Avenue	LTR	0.91	24.5	C	LTR	0.64	15.6	B	LT	1.09	70.8	E
											R	0.46	17.7	B
		INTERSECTION			32.0	C			30.8	C			55.1	E
40	6th Avenue and 57th Street	EB 57th Street	LT	1.15	95.5	F	LT	1.12	82.8	F	LT	1.22	124.3	F
		WB 57th Street	T	1.01	66.4	E	T	1.04	77.5	E	T	1.09	90.2	F
			R	0.82	52.6	D	R	0.74	50.4	D	R	1.03	81.6	F
		NB 6th Avenue	LT	0.78	22.5	C	LT	0.67	20.0	B	LT	0.66	19.4	B
			R	0.49	22.2	C	R	0.50	21.5	C	R	0.75	38.2	D
		INTERSECTION			53.0	D			50.5	D			62.0	E
41	6th Avenue and Central Park South	EB Central Park South	L	0.63	30.5	C	L	0.71	34.4	C	L	0.98	77.0	E
			T	0.74	20.5	C	T	0.57	10.2	B	T	0.52	7.5	A
		WB Central Park South	TR	0.83	35.1	D	TR	0.79	32.8	C	TR	0.81	33.4	C
		NB 6th Avenue	L	1.12	112.7	F	L	1.10	112.4	F	L	1.11	106.4	F
			LTR	1.00dl	48.6	D	LTR	0.89dr	31.6	C	LTR	1.12	95.7	F
		INTERSECTION			47.3	D			37.3	D			66.6	E

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42	5th Avenue and 23rd Street	EB 23rd Street	T	0.80	39.0	D	T	0.73	33.0	C	T	0.76	35.5	D
			R	0.68	45.3	D	R	0.78	51.7	D	R	0.78	61.1	E
		WB 23rd Street	LT	0.40	17.7	B	LT	0.36	13.7	B	LT	0.36	17.2	B
		SB 5th Avenue	TR	0.74	24.0	C	TR	0.86	31.8	C	TR	0.83	27.5	C
		INTERSECTION			28.0	C			29.3	C			28.7	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.13	81.3	F	T	1.15	93.3	F	T	0.97	25.8	C
			R	1.14	96.6	F	R	0.94	44.4	D	R	0.73	19.6	B
		WB 57th Street	LT	1.18	118.8	F	LT	1.00	59.3	E	LT	1.11	85.9	F
		SB 5th Avenue	LT	1.13	92.9	F	LT	0.82	23.6	C	LT	0.76	21.8	C
			R	0.37	17.6	B	R	0.39	17.3	B	R	0.53	21.9	C
		INTERSECTION			93.1	F			51.0	D			39.0	D
44	5th Avenue and Central Park South	EB Central Park South	T	0.89	24.8	C	T	0.95	34.7	C	T	0.42	6.6	A
			R	1.12	103.7	F	R	1.01	84.1	F	R	0.90	50.0	D
		SB 5th Avenue	LT	1.12	88.5	F	LT	0.84	26.2	C	LT	1.10	84.5	F
			R	0.08	14.1	B	R	0.07	14.0	B	R	0.15	17.1	B
		INTERSECTION			74.2	E			34.1	C			65.9	E
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.15	78.2	E	LT	1.07	45.1	D	LT	1.11	64.8	E
		WB 57th Street	T	0.89	39.0	D	T	0.69	27.5	C	T	0.98	57.8	E
			R	0.82	46.8	D	R	0.70	42.1	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.79	22.5	C	LTR	0.58	17.3	B	LT	0.99	45.5	D
											R	0.12	13.7	B
		INTERSECTION			43.8	D			30.1	C			53.8	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.61	22.2	C	L	0.87	43.2	D	L	0.56	21.0	C
			T	0.87	26.3	C	T	0.87	26.7	C	T	0.86	25.6	C
		INTERSECTION			25.6	C			29.8	C			25.0	C
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.01	68.4	E	TR	1.05	69.1	E	T	0.66	26.6	C
											R	0.51	31.2	C
		WB 36th Street	L	0.73	37.4	D								
		SB 2nd Avenue	L	1.09	92.0	F	L	0.02	10.6	B	L	0.12	11.2	B
			T	1.09	82.0	F	T	0.77	19.6	B	T	0.88	24.1	C
		INTERSECTION			74.9	E			38.6	D			24.4	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.53	15.6	B	TR	0.74	20.5	C	TR	0.70	19.2	B
			R	1.06	108.2	F	R	1.11	121.3	F	R	1.08	112.0	F
		NB 3rd Avenue	LT	0.81	27.6	C	LT	0.75	25.7	C	LT	0.66	23.7	C
		INTERSECTION			31.2	C			34.2	C			31.5	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.64	50.6	D	T	0.43	44.8	D	T	0.57	50.3	D
		WB Jackson Avenue	T	0.35	0.9	A	T	0.24	1.6	A	T	0.28	0.1	A
		SB West Service Road	T	0.90	43.0	D	T	0.59	22.5	C	T	0.81	31.3	C
			R	1.08	87.9	F	R	0.82	35.2	D	R	1.01	69.4	E
		INTERSECTION			54.5	D			28.5	C			42.1	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.86	19.9	B	T	0.57	6.6	A	T	1.14	101.1	F
			R	0.17	1.2	A	R	0.12	1.0	A	R	0.17	1.2	A
		WB Northern Boulevard	LT	0.64	24.2	C	LT	0.48	13.3	B	LT	1.04	122.0	F
		NB Queens Plaza S	LTR	1.11	85.5	F	LTR	0.37	10.5	B	LTR	1.06	70.3	E
		SB Queens Plaza S	T	0.56	22.0	C	T	0.29	16.1	B	T	0.87	38.9	D
		INTERSECTION			49.0	D			11.4	B			72.4	E

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50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	47.0	D	TR	0.70	44.6	D	TR	0.87	59.0	E
		WB Tillary Street	L	0.74	70.3	E	L	1.04	120.8	F	L	1.22	146.6	F
			T	0.81	49.6	D	T	0.80	37.6	D	T	1.42	228.0	F
			R	1.05	68.4	E	R	0.82	39.8	D	R	1.10	75.9	E
		NB Adams Street	T	1.19	134.8	F	T	1.07	96.1	F	T	1.19	133.3	F
		SB Adams Street	L	1.18	140.4	F	L	1.13	122.3	F	L	1.15	128.1	F
			T	0.82	31.4	C	T	0.69	27.1	C	T	1.11	89.4	F
		NB Service Road	TR	1.12	128.5	F	TR	1.02	97.0	F	TR	0.83	57.4	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.30	33.5	C
		INTERSECTION			75.9	E			60.5	E			119.8	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.38	34.0	C	L	0.36	27.0	C	L	0.33	34.2	C
			TR	0.88	41.2	D	TR	0.62	30.5	C	TR	0.89	37.3	D
		WB Tillary Street	L	1.06	91.0	F	L	0.44	45.1	D	L	0.51	31.1	C
			TR	0.96	62.6	E	TR	0.63	16.9	B	TR	1.13	94.0	F
		NB Jay Street	L	0.46	40.1	D	L	0.54	45.5	D	L	0.66	49.7	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	33.0	C
			R	0.53	21.4	C	R	0.56	21.9	C	R	0.70	28.9	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.51	46.7	D
			T	0.11	30.8	C	T	0.09	32.5	C	T	0.16	32.9	C
			R	0.18	32.9	C	R	0.18	35.2	D	R	0.29	36.2	D
		INTERSECTION			50.7	D			26.6	C			60.7	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.99	115.9	F	L	0.52	44.1	D	L	0.32	49.4	D
			TR	1.27	149.2	F	TR	1.17	130.6	F	TR	1.26	167.2	F
		WB Tillary Street	L	1.37	219.8	F	L	1.15	137.2	F	L	1.26	176.0	F
			TR	1.16	122.5	F	TR	1.09	101.6	F	TR	1.18	133.1	F
			R	1.18	145.2	F	R	1.16	142.0	F	R	0.64	48.3	D
		NB Flatbush Avenue	L	1.04	83.1	F	L	0.94	51.1	D	L	1.18	124.7	F
			T	1.01	61.5	E	T	0.52	26.3	C	T	0.62	29.2	C
			R	1.01	78.6	E	R	0.98	70.2	E	R	1.02	78.1	E
		SB Flatbush Avenue	T	1.10	99.9	F	T	0.57	39.2	D	T	1.09	93.0	F
			R	0.27	34.3	C	R	0.44	40.7	D	R	0.43	38.0	D
		INTERSECTION			116.1	F			87.4	F			113.7	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.40	29.1	C	LT	0.24	7.3	A	LT	0.53	27.2	C
		WB Northern Boulevard	T	0.51	24.8	C	T	0.41	22.9	C	T	0.46	23.5	C
			R	1.08	85.3	F	R	1.08	90.0	F	R	1.09	88.2	F
		SB Queens Plaza N	L	1.01	73.5	E	L	1.00	89.2	F	L	1.09	199.9	F
		INTERSECTION			61.3	E			66.3	E			121.9	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.43	0.4	A	LTR	0.62	4.1	A	LTR	0.61	5.7	A
		WB Northern Boulevard	LTR	0.58	8.1	A	LTR	0.56	7.0	A	LTR	0.61	9.6	A
		INTERSECTION			4.5	A			5.6	A			7.5	A
Please note that some intersection approaches and lane groups have the unexpected result of lower delay in later years or in comparison to the without the Proposed Action conditions. This is due to upstream metering, queue delay, and other factors inherent in the Synchro analysis methodology.														

Table 15-16: 2017 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
1	3rd Avenue and 54th Street	EB 54th Street	L	1.16	146.7	F	L	1.03	110.6	F	L	0.69	51.9	D
			T	0.91	39.6	D	T	0.70	24.4	C	T	0.64	21.6	C
		NB 3rd Avenue	T	0.79	29.3	C	T	0.88	36.5	D	T	0.68	24.0	C
			R	0.63	37.5	D	R	1.09	133.0	F	R	0.52	30.9	C
		INTERSECTION			43.1	D			46.0	D			25.6	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.97	68.4	E	T	0.95	68.1	E	T	0.94	63.0	E
			R	0.79	46.9	D	R	0.91	80.2	F	R	0.91	71.1	E
		NB 3rd Avenue	LT	0.86	44.9	D	LT	0.84	18.2	B	LT	0.60	3.7	A
		INTERSECTION			48.3	D			27.7	C			17.2	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.95	54.2	D	LT	1.20	139.7	F	LT	0.95	54.3	D
		NB 3rd Avenue	T	0.99	23.2	C	T	1.03	35.6	D	T	1.03	158.3	F
			R	0.50	8.1	A	R	0.85	33.1	C	R	0.52	11.4	B
		INTERSECTION			28.5	C			54.5	D			132.6	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.16	91.3	F	LT	1.13	70.0	E	LT	1.03	39.0	D
		WB 57th Street	TR	1.00	62.4	E	T	0.63	31.3	C	T	0.48	22.9	C
			R	0.99	74.7	E	R	0.59	37.4	D	R	0.33	22.7	C
		NB 3rd Avenue	LTR	1.12	143.3	F	LTR	1.06	86.0	F	LTR	1.15	113.2	F
			R	0.20	19.8	B	R	0.69	24.8	C	R	1.09	75.7	E
		INTERSECTION			112.1	F			71.1	E			83.2	F
5	3rd Avenue and 58th Street	EB 58th Street	L	0.43	20.6	C								
			T	0.44	20.5	C	LT	1.06	81.2	F	LT	0.78	27.5	C
		NB 3rd Avenue	TR	1.11	88.5	F	TR	1.05	48.1	D	TR	1.14	82.6	F
		INTERSECTION			78.8	E			55.5	E			68.3	E
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.71	24.9	C	LT	1.01	64.7	E	LT	0.72	26.0	C
		NB 3rd Avenue	T	1.13	90.6	F	T	0.86	59.6	E	T	1.01	43.5	D
			R	1.07	60.9	E	R	1.06	63.5	E	R	1.06	59.7	E
		INTERSECTION			72.6	E			61.4	E			41.1	D
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.55	17.5	B	T	0.44	17.0	B	TR	0.50	16.0	B
			R	0.97	85.8	F	R	1.02	103.0	F	R	0.98	86.5	F
		NB 3rd Avenue	LT	1.26	149.2	F	LT	0.96	100.8	F	LT	0.84	10.4	B
		INTERSECTION			121.3	F			89.1	F			19.5	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.96	53.3	D	T	1.14	98.6	F	T	1.22	135.7	F
			R	1.14	113.4	F	R	0.91	44.8	D	R	0.53	41.7	D
		WB 57th Street	LT	1.08dl	32.5	C	LT	0.37	20.5	C	LT	0.29	20.0	B
		SB 2nd Avenue	L	0.32	24.8	C	L	0.26	20.0	C	L	0.20	18.5	B
			T	1.11	86.2	F	T	1.12	89.3	F	T	1.09	75.8	E
			R	0.90	65.6	E	R	0.79	41.8	D	R	1.07	100.0	F
		INTERSECTION			66.1	E			78.2	E			85.2	F
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.94	45.6	D	T	1.04	68.5	E	T	0.95	43.7	D
			R	0.64	31.0	C	R	0.52	27.2	C	R	0.46	25.4	C
		WB 57th Street	LT	1.02	49.0	D	LT	0.98	52.2	D	LT	0.99	57.6	E
		SB Lexington Avenue	LT	0.81	24.5	C	LT	1.03	59.7	E	LT	0.80	24.2	C
			R	0.27	16.4	B	R	0.77	39.5	D	R	0.45	21.0	C
		INTERSECTION			36.5	D			57.8	E			36.3	D
10	7th Avenue and 31st Street	WB 31st Street	LT	0.60	25.8	C	LT	0.64	25.1	C	LT	0.86	33.7	C
		SB 7th Avenue	T	0.67	9.0	A	T	0.65	5.5	A	T	0.73	6.2	A
			R	0.52	9.9	A	R	0.43	6.9	A	R	0.49	7.4	A
		INTERSECTION			13.1	B			10.8	B			13.9	B
11	7th Avenue and 32nd Street	SB 7th Avenue	LT	0.99	19.1	B	LT	0.88	6.9	A	LT	0.90	9.8	A
		INTERSECTION			19.1	B			6.9	A			9.8	A

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			AM				Midday				PM			
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12	7th Avenue and 33rd Street	WB 33rd Street	L	1.08	123.6	F	L	0.67	47.5	D	L	1.00	102.8	F
			T	0.68	42.3	D	T	0.51	33.0	C	T	0.41	32.7	C
		SB 7th Avenue	TR	0.74	4.9	A	TR	0.75	7.8	A	TR	0.72	9.5	A
			R	1.21	118.1	F	R	1.24	129.7	F	R	1.11	72.3	E
		INTERSECTION			25.1	C			22.7	C			22.8	C
13	7th Avenue and 34th Street	EB 34th Street	T	1.13	105.0	F	T	1.15	125.6	F	T	1.08	94.5	F
			R	0.07	22.5	C	R	0.20	39.1	D	R	0.10	28.6	C
		WB 34th Street	LT	1.22	123.5	F	LT	1.02	38.4	D	LT	1.00	28.8	C
		SB 7th Avenue	LTR	1.02	106.3	F	LTR	1.07	121.4	F	LTR	1.14	86.0	F
		INTERSECTION			109.7	F			100.7	F			73.9	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.08	106.6	F	L	0.96	83.5	F	L	0.65	33.6	C
			T	1.01	80.4	F	T	0.73	39.8	D	T	0.66	34.6	C
		SB 7th Avenue	T	1.12	69.1	E	T	1.10	79.0	E	T	0.76	3.6	A
			R	1.21	140.7	F	R	1.12	96.8	F	R	0.64	14.0	B
		INTERSECTION			78.1	E			76.6	E			10.1	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.90	47.6	D	TR	0.79	37.2	D	TR	0.85	39.7	D
		SB 7th Avenue	LT	0.89	57.5	E	LT	0.98	96.4	F	LT	0.88	10.8	B
		INTERSECTION			55.5	E			86.0	F			17.3	B
16	7th Avenue and 37th Street	WB 37th Street	LT	0.97	58.5	E	LT	0.92	49.3	D	LT	1.06	78.8	E
		SB 7th Avenue	T	0.71	17.4	B	T	0.72	18.0	B	T	0.72	17.5	B
			R	0.64	30.0	C	R	0.54	22.9	C	R	0.61	26.9	C
		INTERSECTION			28.7	C			25.8	C			35.0	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.15	100.2	F	T	1.05	76.5	E	T	0.97	46.9	D
		WB 34th Street	T	0.80	33.8	C	T	0.96	50.9	D	T	1.08	82.8	F
			R	0.40	32.2	C	R	0.14	22.6	C	R	0.21	26.2	C
		NB 6th Avenue	T	0.95	7.1	A	T	1.10	65.3	E	T	1.13	76.7	E
		INTERSECTION			26.9	C			63.4	E			74.0	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.95	52.4	D	LT	0.75	30.4	C	LT	0.70	27.9	C
		WB 34th Street	T	0.44	20.7	C	T	0.53	22.6	C	T	0.53	29.8	C
			R	0.48	21.2	C	R	0.90	31.8	C	R	0.78	37.6	D
		NB 8th Avenue	L	0.56	9.4	A	L	0.59	12.2	B	L	0.78	22.7	C
			T	0.90	10.4	B	T	0.84	10.0	B	T	0.91	14.0	B
			R	0.76	48.3	D	R	0.64	17.9	B	R	0.85	36.7	D
		INTERSECTION			21.2	C			18.0	B			21.9	C
19	Madison Avenue and 39th Street	WB 39th Street	T	0.71	29.6	C	T	0.85	38.8	D	T	0.87	40.9	D
			R	0.63	50.1	D	R	0.70	52.7	D	R	0.63	48.8	D
		NB Madison Avenue	LT	0.97	42.2	D	LT	0.83	24.9	C	LT	0.70	19.9	B
		INTERSECTION			40.3	D			30.2	C			26.7	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.78	68.8	E	L	0.73	60.5	E	L	0.67	57.1	E
			T	0.84	40.2	D	T	0.68	27.8	C	T	0.55	24.0	C
		NB Madison Avenue	TR	1.17	96.4	F	TR	1.16	120.3	F	TR	1.01	44.7	D
		INTERSECTION			84.8	F			100.9	F			42.6	D
21	Madison Avenue and 41st Street	EB 41st Street	L	0.43	46.3	D	L	0.43	46.1	D	L	0.36	42.1	D
			T	0.38	20.4	C	T	0.23	17.8	B	T	0.22	17.5	B
		NB Madison Avenue	TR	1.06	74.3	E	TR	1.07	81.6	F	TR	1.05	42.4	D
		INTERSECTION			68.1	E			76.7	E			41.0	D

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22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.31	173.4	F	LT	0.50	21.8	C	LT	0.72	33.6	C
		WB 42nd Street	T	1.21	121.7	F	TR	1.18	110.1	F	T	1.00	45.4	D
			R	0.15	18.9	B					R	0.31	17.5	B
		NB Madison Avenue	LT	1.16	125.0	F	LT	1.14	79.0	E	LT	1.08	71.0	E
			R	0.21	6.9	A	R	0.24	7.0	A	R	0.16	6.9	A
		INTERSECTION			133.1	F			74.4	E			52.7	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.56	27.1	C	T	0.64	29.9	C	T	0.67	30.9	C
			R	0.89	63.2	E	R	0.79	46.2	D	R	0.89	72.5	E
		NB Madison Avenue	LT	1.09	83.3	F	LT	1.15	113.2	F	LT	1.01	59.7	E
		INTERSECTION			74.8	E			95.3	F			56.4	E
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.83	41.1	D	LT	1.00	72.9	E	LT	0.95	67.5	E
		NB Madison Avenue	TR	1.05	74.9	E	TR	1.05	69.3	E	T	1.07	68.0	E
											R	0.13	5.2	A
		INTERSECTION			68.9	E			70.0	E			66.9	E
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.91	44.9	D	TR	1.03	70.9	E	TR	0.56	24.4	C
		NB Madison Avenue	LT	1.07	77.1	E	LT	1.19	98.9	F	LT	0.99	57.1	E
		INTERSECTION			69.1	E			91.2	F			50.2	D
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.85	34.9	C	T	0.75	33.2	C	T	0.60	34.3	C
			R	0.28	26.0	C	R	0.21	25.1	C	R	0.24	29.9	C
		WB 42nd Street	LT	1.00	39.9	D	LT	0.81	29.7	C	LT	1.13	96.2	F
		SB 5th Avenue	LT	0.90	26.5	C	LT	0.84	23.0	C	LT	1.16	102.0	F
			R	0.15	14.3	B	R	0.08	13.3	B	R	0.09	13.2	B
		INTERSECTION			31.4	C			26.5	C			89.3	F
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.09	81.6	F	T	0.90	30.3	C	T	0.84	13.1	B
		WB 42nd Street	T	0.97	41.3	D	T	0.70	8.9	A	T	0.91	20.8	C
		INTERSECTION			61.2	E			19.9	B			17.4	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.60	14.2	B	T	0.57	9.7	A	T	0.49	11.0	B
		WB 42nd Street	T	0.73	22.1	C	T	0.77	22.0	C	T	0.70	21.1	C
		INTERSECTION			18.4	B			16.2	B			16.5	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.75	31.5	C	TR	0.98	52.2	D	TR	0.94	47.1	D
		NB 8th Avenue	L	1.06	92.5	F	L	1.02	83.7	F	L	1.05	80.8	F
			T	0.91	19.3	B	T	0.83	15.1	B	T	0.90	17.5	B
		INTERSECTION			27.9	C			28.5	C			28.5	C
30	8th Avenue and 31st Street	WB 31st Street	T	0.48	27.1	C	T	0.53	26.5	C	T	0.87	41.7	D
			R	0.56	30.6	C	R	0.45	24.6	C	R	0.69	32.6	C
		NB 8th Avenue	L	1.01	92.5	F	L	1.01	94.8	F	L	1.28	195.6	F
			T	0.72	23.0	C	T	0.74	24.5	C	T	0.82	27.0	C
		INTERSECTION			31.3	C			31.5	C			42.4	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.18	12.7	B	T	0.28	14.0	B	T	0.41	16.2	B
			R	1.16	128.0	F	R	0.80	43.5	D	R	1.11	115.7	F
		NB 8th Avenue	LT	0.84	30.2	C	LT	0.83	30.0	C	LT	1.09	92.1	F
		INTERSECTION			44.4	D			30.3	C			88.4	F
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.87	31.1	C	LT	1.00	53.6	D	LT	0.57	16.1	B
		WB 42nd Street	TR	0.70	10.9	B	TR	0.79	12.1	B	TR	0.55	6.6	A
		NB 8th Avenue	L	0.09	8.0	A	L	0.48	12.0	B	L	0.08	5.8	A
			LT	1.17	95.4	F	LT	1.06	46.3	D	LT	1.08	70.3	E
			R	0.84	32.3	C	R	0.74	24.6	C	R	0.17	5.9	A
		INTERSECTION			67.1	E			40.8	D			50.9	D

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33	8th Avenue and 58th Street	EB 58th Street	LT	0.71	20.7	C	LT	0.92	33.4	C	LT	0.83	20.7	C
		NB 8th Avenue	TR	0.60	17.5	B	TR	0.66	18.4	B	TR	0.71	19.5	B
		INTERSECTION			18.6	B			23.7	C			19.9	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.84	43.1	D	T	0.96	62.9	E	T	1.18	133.7	F
			R	0.79	50.7	D	R	0.78	50.2	D	R	0.50	34.2	C
		SB 9th Avenue	LT	0.73	16.8	B	LT	0.68	15.5	B	LT	0.63	14.5	B
		INTERSECTION			24.5	C			28.5	C			42.9	D
35	7th Avenue and 57th Street	EB 57th Street	T	0.94	43.6	D	T	0.86	35.3	D	T	0.93	42.2	D
			R	0.92	61.2	E	R	0.88	56.0	E	R	0.89	59.3	E
		WB 57th Street	LT	1.12	91.2	F	LT	0.92	35.7	D	LT	1.00	41.3	D
		SB 7th Avenue	L	0.31	15.7	B								
			T	0.67	18.5	B	LT	0.33	14.0	B	LT	0.36	14.3	B
			R	0.42	19.4	B	R	0.29	16.7	B	R	0.39	18.6	B
		INTERSECTION			45.6	D			31.6	C			35.1	D
36	7th Avenue and Central Park South	EB Central Park South	T	0.96	63.4	E	T	0.86	45.9	D	T	0.88	47.7	D
			R	0.65	33.8	C	R	0.73	42.0	D	R	0.62	33.9	C
		WB Central Park South	L	1.20	129.8	F	L	1.20	137.5	F	L	1.22	138.7	F
			T	0.68	16.2	B	T	1.07	68.7	E	T	1.11	77.4	E
		SB Central Park Driveway	L	0.90	71.0	E	L	0.01	27.0	C	L	0.01	27.0	C
			TR	1.03	69.2	E	TR	0.05	27.0	C	TR	0.06	27.2	C
		INTERSECTION			58.9	E			72.8	E			78.0	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	0.84	38.5	D	LT	0.75	35.8	D	LT	0.76	35.7	D
		WB 23rd Street	TR	0.87	50.3	D	TR	0.81	37.7	D	TR	0.78	40.2	D
		NB 6th Avenue	LT	1.20	119.7	F	LT	1.28	154.6	F	LT	1.01	48.7	D
			R	0.63	32.9	C	R	0.96	81.1	F	R	0.66	35.8	D
		INTERSECTION			90.2	F			115.5	F			44.4	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.58	25.3	C	TR	0.76	31.1	C	TR	0.85	36.4	D
		NB 6th Avenue	LT	1.05	57.1	E	LT	0.93	29.1	C	LT	0.89	26.2	C
		INTERSECTION			52.1	D			29.5	C			28.8	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.95	39.1	D	LT	0.94	37.6	D	LT	0.74	31.3	C
		WB 42nd Street	T	0.79	28.2	C	T	0.94	39.8	D	T	1.00	19.3	B
			R	1.15	109.1	F	R	1.15	123.7	F	R	1.16	86.9	F
		NB 6th Avenue	LTR	0.92	26.0	C	LTR	0.65	15.8	B	LT	1.11	80.5	F
											R	0.47	18.2	B
		INTERSECTION			33.6	C			32.1	C			61.9	E
40	6th Avenue and 57th Street	EB 57th Street	LT	1.18	104.7	F	LT	1.13	88.5	F	LT	1.25	134.6	F
		WB 57th Street	T	1.01	67.6	E	T	1.05	81.3	F	T	1.10	91.6	F
			R	0.84	53.3	D	R	0.75	50.7	D	R	1.04	75.0	E
		NB 6th Avenue	LT	0.79	22.8	C	LT	0.68	20.1	C	LT	0.68	19.6	B
			R	0.50	22.3	C	R	0.51	21.8	C	R	0.76	38.5	D
		INTERSECTION			55.9	E			52.7	D			64.1	E
41	6th Avenue and Central Park South	EB Central Park South	L	0.65	32.1	C	L	0.75	38.1	D	L	1.02	85.9	F
			T	0.76	20.8	C	T	0.58	10.3	B	T	0.53	7.5	A
		WB Central Park South	TR	0.84	35.9	D	TR	0.81	33.6	C	TR	0.82	34.0	C
		NB 6th Avenue	L	1.15	122.0	F	L	1.12	120.6	F	L	1.13	115.1	F
			LTR	1.03dl	53.2	D	LTR	0.91dr	32.8	C	LTR	1.15	104.2	F
		INTERSECTION			50.7	D			39.1	D			71.9	E

Table 15-16: 2017 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.81	39.6	D	T	0.75	33.4	C	T	0.77	36.1	D
			R	0.70	45.9	D	R	0.79	52.5	D	R	0.79	61.9	E
		WB 23rd Street	LT	0.41	17.8	B	LT	0.37	13.7	B	LT	0.36	17.2	B
		SB 5th Avenue	TR	0.75	24.5	C	TR	0.87	33.0	C	TR	0.85	28.2	C
		INTERSECTION			28.4	C			30.0	C			29.3	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.14	88.1	F	T	1.16	98.0	F	T	0.97	22.2	C
			R	1.17	107.6	F	R	0.96	48.0	D	R	0.74	17.7	B
		WB 57th Street	LT	1.20	128.6	F	LT	1.00	60.5	E	LT	1.13	93.0	F
		SB 5th Avenue	LT	1.16	104.5	F	LT	0.84	24.6	C	LT	0.78	22.3	C
			R	0.38	17.7	B	R	0.39	17.4	B	R	0.53	22.1	C
		INTERSECTION			102.8	F			52.9	D			39.8	D
44	5th Avenue and Central Park South	EB Central Park South	T	0.91	26.3	C	T	0.96	37.4	D	T	0.42	6.9	A
			R	1.15	113.9	F	R	1.04	90.7	F	R	0.91	50.4	D
		SB 5th Avenue	LT	1.15	98.4	F	LT	0.85	27.2	C	LT	1.12	90.5	F
			R	0.08	14.1	B	R	0.07	14.0	B	R	0.15	17.2	B
		INTERSECTION			82.1	F			36.1	D			70.3	E
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.17	86.0	F	LT	1.08	50.6	D	LT	1.12	68.7	E
		WB 57th Street	T	0.90	40.2	D	T	0.70	27.8	C	T	0.99	60.5	E
			R	0.82	47.2	D	R	0.71	42.8	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.80	22.8	C	LTR	0.59	17.5	B	LT	1.01	49.1	D
											R	0.12	13.7	B
		INTERSECTION			46.4	D			32.0	C			57.2	E
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.62	22.6	C	L	0.88	44.5	D	L	0.56	21.1	C
			T	0.88	27.1	C	T	0.88	26.9	C	T	0.87	25.9	C
		INTERSECTION			26.3	C			30.2	C			25.2	C
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.02	71.0	E	TR	1.06	72.2	E	T	0.67	26.7	C
											R	0.52	31.4	C
		WB 36th Street	L	0.73	37.7	D								
		SB 2nd Avenue	L	1.09	94.4	F	L	0.02	10.6	B	L	0.12	11.2	B
			T	1.09	82.3	F	T	0.78	19.9	B	T	0.89	24.4	C
		INTERSECTION			76.0	E			40.0	D			24.7	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.54	15.6	B	TR	0.75	20.6	C	TR	0.71	19.3	B
			R	1.06	108.2	F	R	1.12	122.4	F	R	1.09	114.0	F
		NB 3rd Avenue	LT	0.82	27.9	C	LT	0.76	26.0	C	LT	0.67	23.9	C
		INTERSECTION			31.4	C			34.5	C			31.8	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.64	50.6	D	T	0.43	44.8	D	T	0.57	50.7	D
		WB Jackson Avenue	T	0.35	0.8	A	T	0.24	1.6	A	T	0.28	0.1	A
		SB West Service Road	T	0.91	43.4	D	T	0.59	22.6	C	T	0.81	31.6	C
			R	1.09	89.3	F	R	0.82	35.4	D	R	1.02	71.6	E
		INTERSECTION			55.1	E			28.5	C			42.9	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.85	19.6	B	T	0.57	6.7	A	T	1.15	104.0	F
			R	0.17	1.2	A	R	0.12	1.0	A	R	0.17	1.2	A
		WB Northern Boulevard	LT	0.64	24.2	C	LT	0.48	13.4	B	LT	1.05	124.2	F
		NB Queens Plaza S	LTR	1.11	87.5	F	LTR	0.37	10.5	B	LTR	1.07	73.1	E
		SB Queens Plaza S	T	0.56	22.0	C	T	0.29	16.1	B	T	0.87	39.6	D
		INTERSECTION			49.9	D			11.4	B			74.6	E

Table 15-16: 2017 Future Conditions with the Proposed Action Delay and Level of Service Summary

			AM				Midday				PM			
No.	**Signalized Intersection**	**Approach**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**	**Movt.**	**V/C Ratio**	**Delay Sec/Veh**	**LOS**
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	47.1	D	TR	0.70	44.6	D	TR	0.87	59.2	E
		WB Tillary Street	L	0.74	70.1	E	L	1.04	120.8	F	L	1.23	149.6	F
			T	0.81	49.6	D	T	0.80	37.7	D	T	1.43	229.3	F
			R	1.05	69.6	E	R	0.83	40.0	D	R	1.10	78.0	E
		NB Adams Street	T	1.19	135.8	F	T	1.08	97.9	F	T	1.20	137.2	F
		SB Adams Street	L	1.19	142.0	F	L	1.13	123.9	F	L	1.15	129.6	F
			T	0.82	31.5	C	T	0.69	27.2	C	T	1.12	91.1	F
		NB Service Road	TR	1.13	129.6	F	TR	1.02	97.0	F	TR	0.84	57.8	E
		SB Service Road	TR	0.09	31.9	C	TR	0.06	30.6	C	TR	0.30	33.5	C
		INTERSECTION			76.6	E			61.1	E			121.8	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.38	34.0	C	L	0.36	27.1	C	L	0.33	34.3	C
			TR	0.89	41.6	D	TR	0.62	30.6	C	TR	0.89	37.7	D
		WB Tillary Street	L	1.06	90.9	F	L	0.44	45.1	D	L	0.53	31.3	C
			TR	0.96	62.9	E	TR	0.64	16.9	B	TR	1.14	95.9	F
		NB Jay Street	L	0.46	40.3	D	L	0.54	45.7	D	L	0.66	49.7	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	33.0	C
			R	0.53	21.4	C	R	0.57	21.9	C	R	0.70	29.0	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.51	46.7	D
			T	0.11	30.8	C	T	0.09	32.5	C	T	0.16	32.9	C
			R	0.18	32.9	C	R	0.18	35.2	D	R	0.29	36.3	D
		INTERSECTION			50.9	D			26.7	C			61.6	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.99	115.7	F	L	0.53	44.6	D	L	0.33	49.6	D
			TR	1.27	150.3	F	TR	1.17	131.3	F	TR	1.26	168.2	F
		WB Tillary Street	L	1.37	220.7	F	L	1.16	138.8	F	L	1.27	177.7	F
			TR	1.16	123.8	F	TR	1.09	102.5	F	TR	1.19	136.1	F
			R	1.19	146.2	F	R	1.17	145.6	F	R	0.64	48.5	D
		NB Flatbush Avenue	L	1.05	84.3	F	L	0.94	52.0	D	L	1.19	126.2	F
			T	1.01	62.7	E	T	0.52	26.4	C	T	0.62	29.2	C
			R	1.02	79.1	E	R	0.99	70.6	E	R	1.03	79.5	E
		SB Flatbush Avenue	T	1.10	101.3	F	T	0.58	39.2	D	T	1.09	94.8	F
			R	0.27	34.4	C	R	0.45	40.9	D	R	0.43	38.0	D
		INTERSECTION			117.2	F			88.2	F			115.1	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.40	29.2	C	LT	0.24	7.3	A	LT	0.54	27.4	C
		WB Northern Boulevard	T	0.51	24.8	C	T	0.41	22.9	C	T	0.46	23.5	C
			R	1.08	86.6	F	R	1.09	91.3	F	R	1.10	92.3	F
		SB Queens Plaza N	L	1.02	74.3	E	L	1.01	91.6	F	L	1.10	212.6	F
		INTERSECTION			62.0	E			67.7	E			128.8	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.43	0.4	A	LTR	0.62	4.2	A	LTR	0.62	6.0	A
		WB Northern Boulevard	LTR	0.59	8.2	A	LTR	0.56	7.1	A	LTR	0.61	10.2	B
		INTERSECTION			4.5	A			5.7	A			8.0	A

Please note that some intersection approaches and lane groups have the unexpected result of lower delay in later years or in comparison to the without the Proposed Action conditions. This is due to upstream metering, queue delay, and other factors inherent in the Synchro analysis methodology.

15.3 Parking

Parking, loading/unloading and/or standing areas are available at most of the study intersections. Even intersections at which these activities are prohibited experience a noticeable amount of these maneuvers, as documented during the on-site data gathering for this ~~DEIS~~FEIS

These activities included both taxi and truck activity. A summary of these field observations can be found in Appendix D.

The Proposed Action is not expected to have a large effect on parking in the study area. Nearly all of the new taxis would be in active operation throughout the day, with very few taxis parked during the peak demand hours in the study area. Furthermore, it is anticipated that the few parked taxis would be spread around the city and not located in one area. Given the demand for taxis, and the need for taxi drivers to circulate looking for a fare, taxis in operation would spend little time standing and waiting curbside. Therefore, no significant parking impacts are expected because taxis would mainly be on the roadways and any parking or standing would be staggered and dispersed, allowing them to be absorbed by the available taxi-dedicated or other parking facilities.

15.4 Pedestrians and Bicycles

Pedestrian activity in some portions of the study area is very extensive, while in other areas it is comparatively light. Pedestrian crosswalk flows were counted at all of the study intersections during the peak hours. Pedestrian crossing volumes of 3,500 per hour of higher were observed at a number of locations, including Seventh Avenue and 34th Street and Eighth Avenue and 42nd Street; however, more typical pedestrian counts were below 2,500. This pedestrian information was essential to the preparation of the intersection capacity analysis.

Bicycle activities were documented in the field inventories and field observations. The field inventories and field observations were examined at locations with bike lanes and these facilities were considered in the intersection analyses.

The Proposed Action would not generate sufficient pedestrian trips to meet the minimum CEQR threshold of 200 or more new pedestrian trips for preparation of a detailed pedestrian analysis. Furthermore, pedestrian trips required to gain access to the taxis included in the Proposed Action would be dispersed throughout the study area. The Proposed Action would not generate any new bicycle trips. Therefore, no significant pedestrian or bicycle impacts would occur with the Proposed Action.

15.5 Transit

There are numerous transit services and facilities through the transportation study area, including local and express bus service, subway lines and stations, commuter rail terminals, and regional and national rail and bus facilities. Transit ridership in the study area is extensive and plays an important role in the movement of people and serving the economic activities of the area.

For the purposes of this analysis, all of the bus stops at or near the study intersections were identified, as were all of the bus-only lanes and their hours of operation. This information was included, as appropriate, in the intersection capacity analysis. Buses that block general travel lanes when they stop to pick-up or discharge passengers were estimated for all three peak hours, including a detailed assessment of bus stop locations relative to the general traffic lanes, parking, loading zones and other parameters.

The Proposed Action would not result in 200 or more new transit trips of any type (rail or bus), so, as indicated in the *2012 CEQR Technical Manual,* a detailed transit analysis of the impact of the Proposed Action was not required. Therefore, no significant adverse transit impacts would occur with the Proposed Action.

15.6 Safety

15.6.1 Existing Conditions

NYCDOT provided three years of available NYSDOT accident data for the period January 1, 2008 through December 31, 2010 for the study intersections. A summary of this data is presented in Table 15-17. The table includes all of the study intersections and is summarized by the total number of accidents, total number of reportable accidents (accidents involving a fatality, injury and property damage greater than $1,000), and the number of accidents involving a pedestrian or a bicyclist, and injuries.

According to the data provided, approximately 1,430 total reportable accidents, including two fatal accidents, occurred at the study intersections during the three year period. In addition, a total of 1,280 injuries occurred at the study intersections, of which 387 were pedestrian related and 136 were bicycle related accidents. There were 50 or more reportable accidents at the intersections listed below:

- Third Avenue and East 57th Street
- Seventh Avenue and West 34th Street
- Eighth Avenue and West 34th Street
- Eighth Avenue and West 42nd Street
- Sixth Avenue and West 42nd Street
- Tillary Street and Adams Street (over 110 accidents)
- Tillary Street and Flatbush Avenue

The data was analyzed in accordance with the *2012 CEQR Technical Manual* to identify high accident locations in the study area. According to the *2012 CEQR Technical Manual*, a high accident location is defined as a location, "where there were 48 or more total crashes in a 3-year period (reportable and non-reportable) or five or more pedestrian/bicycle injury accidents in any consecutive 12 months of the most recent 3-year period for which data is available." Analyses of the data revealed that 25 intersections exceeded the vehicle accident and/or pedestrian/bicycle accident threshold annually, and are highlighted in Table 15-35. Fatal accidents reported in the study area occurred at the intersection of Third Avenue and East 57th Street during 2008, and at the intersection of Third Avenue and East 60th Street during 2010.

Table 15-17: Accident Summary Table

Intersection	Injuries and Fatalities by Year										2008, 2009, 2010
	Pedestrian			Bicycle			Combined				Overall Accidents
	2008	2009	2010	2008	2009	2010	2008	2009	2010	Fatalities	Reportable Accidents
Manhattan											
3rd Avenue/E. 54th Street	0	1	3	1	0	2	1	1	5		15
3rd Avenue/E. 55th Street	0	1	0	0	0	0	0	1	0		8
3rd Avenue/E. 56th Street	3	0	3	2	0	0	5	0	3		22
3rd Avenue/E. 57th Street	6	4	14	2	0	3	8	4	17	1	63
3rd Avenue/E. 58th Street	3	6	2	0	1	2	3	7	4		29
3rd Avenue/E. 59th Street	2	4	2	1	0	0	3	4	2		36
3rd Avenue/E. 60th Street	1	3	3	0	0	1	1	3	4	1	23
2nd Avenue/E. 57th Street	2	0	2	1	1	0	3	1	2		24
Lexington Avenue/E. 57th Street	0	2	3	0	1	0	0	3	3		21
7th Avenue/W. 31 Street	0	5	2	1	0	0	1	5	2		22
7th Avenue/W. 32nd Street	3	1	4	0	0	0	3	1	4		14
7th Avenue/W. 33rd Street	4	3	6	0	1	0	4	4	6		28
7th Avenue/W. 34th Street	7	8	6	0	3	5	7	11	11		55
7th Avenue/W. 35th Street	5	2	2	0	1	2	5	3	4		28
7th Avenue/W. 36th Street	1	1	1	0	1	1	1	2	2		15
7th Avenue/W. 37th Street	6	0	1	1	0	1	7	0	2		17
6th Avenue/W. 34th Street	1	4	5	0	2	2	1	6	7		23
8th Avenue/W. 34th Street	8	4	12	2	3	1	10	7	13		61
Madison Avenue/E. 39th Street	1	0	0	0	0	0	1	0	0		7
Madison Avenue/E. 40th Street	0	2	1	0	0	0	0	2	1		8
Madison Avenue/E. 41Street Street	0	0	1	0	0	0	0	0	1		2
Madison Avenue/E. 42nd Street	6	2	1	1	0	0	7	2	1		19
Madison Avenue/E. 43rd Street	0	0	0	0	1	0	0	1	0		3
Madison Avenue/E. 44th Street	1	2	1	1	1	0	2	3	1		8
Madison Avenue/E. 45th Street	0	2	1	1	0	2	1	2	3		16
5th Avenue/E. 42nd Street	3	4	7	0	2	5	3	6	12		49
Vanderbilt Avenue/E. 42nd Street	2	1	1	0	3	1	2	4	2		11
Park Avenue N/E. 42nd Street	2	0	3	0	0	0	2	0	3		9
Park Avenue S/E. 42nd Street	0	0	1	0	0	1	0	0	2		3
8th Avenue/W. 33rd Street	3	2	4	0	0	0	3	2	4		22

Table 15-17: Accident Summary Table

Intersection	Injuries and Fatalities by Year										2008, 2009, 2010
	Pedestrian			Bicycle			Combined				Overall Accidents
	2008	2009	2010	2008	2009	2010	2008	2009	2010	Fatalities	Reportable Accidents
8th Avenue/W. 31Street Street	2	4	2	1	1	0	3	5	2		26
8th Avenue/W. 41Street Street	0	3	0	0	0	1	0	3	1		13
8th Avenue/W. 42nd Street	12	10	2	1	4	1	13	14	3		53
8th Avenue/W. 58th Street	3	2	1	0	1	0	3	3	1		16
9th Avenue/W. 58th Street	3	2	4	1	0	1	4	2	5		19
7th Avenue/W. 57th Street	3	1	1	1	1	1	4	2	2		26
7th Avenue/CP South	0	0	1	0	0	0	0	0	1		23
6th Avenue/W. 23rd Street	2	2	8	3	1	0	5	3	8		34
6th Avenue/W. 31Street Street	0	1	1	0	1	0	0	2	1		13
6th Avenue/W. 42nd Street	8	6	2	3	1	1	11	7	3		52
6th Avenue/W. 57th Street	2	6	3	1	1	4	3	7	7		45
6th Avenue/CP South	2	0	4	2	1	2	4	1	6		24
5th Avenue/E. 23rd Street	3	2	2	1	0	0	4	2	2		20
5th Avenue/E. 57th Street	2	0	2	0	2	2	2	2	4		21
5th Avenue/CP South	1	3	2	0	0	0	1	3	2		36
Madison Avenue/E. 57th Street	2	3	3	0	1	1	2	4	4		29
1Street Avenue/E. 33rd Street	3	1	2	1	0	1	4	1	3		17
2nd Avenue/E. 36th Street	2	1	1	0	1	0	2	2	1		30
3rd Avenue/E. 33rd Street	0	0	0	0	2	2	0	2	2		11
Queens											
Queens Plaza/Northern Blvd	0	0	0	0	0	0	0	0	0		4
Northern Blvd/Jackson Avenue	0	4	0	0	1	0	0	5	0		37
Brooklyn											
Tillary Street/Adams Street	3	1	1	2	0	7	5	1	8		110
Tillary Street/Jay Street	1	5	4	1	1	7	2	6	11		45
Tillary Street/Flatbush Avenue	0	3	1	0	2	1	0	5	2		73

15.6.2 Future Conditions without the Proposed Action

Vehicular and pedestrian volumes along the roadways and on the sidewalks and crosswalks in the Study Area were observed for the existing year 2011. Vehicular and pedestrian activity is anticipated to increase in the study area between 2011 and 2015 due to general background growth at an estimated rate of a quarter percent (0.25%) per year at Manhattan and Brooklyn study intersections and a half percent (0.5%) per year at Queens study intersections. Developments included in the Future Conditions without the Proposed Action scenario will also cause vehicular and pedestrian traffic growth. Some of these future developments, as well as planned roadway projects, may also cause signal timing changes and geometric improvements. Given the minimal increase in vehicular and pedestrian activity and the proposed general improvements due to the Future Conditions without the Proposed Action developments, it is anticipated that the accident rates at the analyzed intersections in the future without the Proposed Action would most likely not change significantly from existing accident rates.

15.6.3 Future Conditions with the Proposed Action

The Future Condition with the Proposed Action would increase taxi volumes at many intersections within the Study Area, increasing the potential for conflicts and accidents. However, with the incorporation of the proposed mitigation described in Section 15.6.5 and the planned roadway projects, which include signal timing changes and geometric improvements at some study locations, the overall safety of the area would be enhanced. Therefore, the Future Conditions with the Proposed Action would not reasonably be expected to significantly increase the number of accidents in the study area.

15.6.4 Identification of Significant Adverse Environmental Impacts

As summarized in Table 15-30, there were 25 intersections in the Study Area that exceed the CEQR threshold of five or more pedestrian/bicyclist related accidents during any one year of the most recent 3-year period. These high accident locations are listed below:

Third Avenue

1. Third Avenue and East 54th Street
2. Third Avenue and East 56th Street
3. Third Avenue and East 57th Street
4. Third Avenue and East 58th Street

Madison Avenue

5. Madison Avenue and East 42nd Street

Fifth Avenue

6. Fifth Avenue and East 42nd Street

Sixth Avenue

7. Sixth Avenue and West 23rd Street
8. Sixth Avenue and West 34th Street
9. Sixth Avenue and West 42nd Street
10. Sixth Avenue and West 57th Street
11. Sixth Avenue and Central Park South

Seventh Avenue

12. Seventh Avenue and West 31st Street
13. Seventh Avenue and West 33rd Street
14. Seventh Avenue and West 34th Street
15. Seventh Avenue and West 35th Street
16. Seventh Avenue and West 37th Street

Eighth Avenue

17. Eighth Avenue and West 31st Street
18. Eighth Avenue and West 34th Street
19. Eighth Avenue and West 42nd Street

Ninth Avenue

20. Ninth Avenue and West 58th Street

Queens

21. Northern Boulevard and Jackson Avenue

Brooklyn

22. Tillary Street and Adams Street
23. Tillary Street and Jay Street
24. Tillary Street and Flatbush Avenue

There are a number of design and operational changes initiated in the study area in the past 3 years (and some that are still ongoing or in development) that have the potential to effect pedestrian and bicycle accident rates, including implementation of the Green Light for Midtown project being conducted by the NYCDOT to improve mobility and safety in the Midtown core area (Broadway from Columbus Circle to 42nd Street and from 35th Street to 26th Street). New crosswalks and new plaza spaces in the Times Square area and simplified crossings in Herald Square have resulted in noticeable improvements in the safety of motorists, pedestrians and cyclists. The Green Light for Midtown project includes safety features such as simplified intersections, shortened crosswalks, organized and defined traffic lanes and separation of conflicting movements.

Additionally, NYCDOT has begun to implement a Safe Streets for Seniors campaign to increase safety by increasing pedestrian crossing time at wide avenues (to allow more green time for slow walkers to safely transverse the roadway), installing high visibility crosswalks and advance stop bars, and installing refuge islands and investigating the use of leading pedestrian intervals at selected locations.

Lastly, NYCDOT is also planning to implement a bicycle protection system along Eighth and Ninth Avenues.

15.6.5 Existing Field Observations

As shown in Table 15-35, there were 25 intersections in the Study Area that exceed the CEQR threshold of five or more pedestrian/bicyclist related accidents during any one year of the 3-year analysis period (some also exceeded the CEQR threshold of 48 total accidents in the 3-year analysis period). As requested by NYCDOT, further investigation would be necessary in order to recommend improvements at all of these high crash locations. HDR staff performed field observations at all of these locations on March 4, 2013, April 8, 2013 and April 9, 2013. Below is a list of safety field observations at the study locations deemed to be a high crash location.

Sixth Avenue and 34th Street

The westbound right-turn movement was observed to have heavy bus turning traffic volumes. Traffic enforcement personnel were observed to be in control of traffic at the intersection. The "no right turn" sign on Sixth Avenue between 34^{th} Street and 33^{rd} Street appears to be too small for the size of the intersection. The stop bar pavement marking on the westbound approach between Broadway and 6th Avenue was not clear.

Seventh Avenue and 31st Street

Loading/standing activities were observed in the southeast corner of the intersection along Seventh Avenue which prohibited drivers from seeing pedestrians crossing the south leg crosswalk.

Seventh Avenue and 33rd Street

Illegal loading/standing on Seventh Avenue can affect visibility of vehicles going westbound, making left turns. The bus stop on the northwest side of Seventh Avenue is located too close to the intersection.

Seventh Avenue and 34th Street

Extremely heavy pedestrian volumes are present at the intersection due to the connection to New York Penn Station. Pedestrians holding advertisement boards at intersection corners can cause obstructions in sight for vehicle drivers. There is insufficient crossing width for pedestrians. Taxis stop on the pedestrian crosswalks. Traffic enforcement was observed. The bus stop on the northwest side of Seventh Avenue is located too close to the intersection.

Seventh Avenue and 35th Street

Taxis were observed stopping within crosswalks to pick up or drop off passengers.

Seventh Avenue and 37th Street

Many southbound right turning buses were observed. The pedestrian crosswalks on the east and west legs are marked with only transverse lines.

Eighth Avenue and 31st Street

The bus stop on the southeast corner of Eighth Avenue is located too close to the intersection. The pavement marking needs to be repainted.

Eighth Avenue and 34th Street

The bus stop on the northeast corner on Eighth Avenue is located too close to the intersection. The pavement marking needs to be repainted. It was observed that traffic enforcement stops vehicles within the pedestrian crosswalk. The northbound to eastbound turning radius is very tight for buses.

Eighth Avenue and 42nd Street

Extremely heavy pedestrian volumes are present at the intersection due to the connection to Port Authority Bus Terminal. Taxis stop on the pedestrian crosswalks. Traffic enforcement was observed. Bicyclists were observed riding on bus lane and to cross intersection by ignoring traffic signal.

Sixth Avenue and 23rd Street

High truck volumes were observed in this intersection as Sixth Avenue and West 23rd Street are both local truck routes. Illegal loading and standing was observed on some of the blocks.

Ninth Avenue and 58th Street

Heavy traffic volumes are on southbound Ninth Avenue. Illegal taxi dropping off or picking up passengers in the northeast corner might block the view of drivers trying to make left turning movements.

Sixth Avenue and 42nd Street

Bicyclists were observed riding in bus lanes.

Sixth Avenue and 57th Street

High volumes of taxi traffic were observed travelling northbound. Taxi drivers stop within the intersection crosswalk to pickup or drop off passengers.

Sixth Avenue and Central Park South

Illegal parking on southeast corner along Central Park South can affect visibility of vehicles making northbound right turns. Taxis were observed stopping within the pedestrian crosswalk. The Central Park horse drawn carriage ride vehicles stop at intersection corners, which can prevent northbound vehicles from making right or left turns.

Third Avenue and 54th Street

Bicyclists were observed riding on the sidewalk of Third Ave instead of using the roadway and riding close to the curb or travel lane. Trucks were loading and standing at the northwest corner of the intersection, along Third Avenue, which might affect visibility of conflicting flows of traffic.

Third Avenue and 56th Street

The major land use for the intersection area is office. High pedestrian volumes were observed during the AM peak period.

Third Avenue and 57th Street

Traffic enforcement officers were observed at northeast and southwest corners of the intersection. Loading trucks along west side of Third Avenue might affect visibility of conflicting flows of traffic.

Third Avenue and 58th Street

Traffic enforcements were observed at northeast and southwest corner. Heavy traffic volumes are on northbound Third Avenue. Loading/standing trucks along Third Avenue in the northwest corner might block the view of drivers trying to make turning movements.

Third Avenue and 60th Street

Trucks from the Queensboro Bridge were observed lining up to make the westbound right turn at the intersection. The turning radius is very tight for trucks. Heavy traffic volumes are present on northbound Third Avenue.

Madison Avenue and 42nd Street

East 42nd Street is a local truck route and Madison Avenue is heavily traveled by buses especially during the afternoon and evening peak periods. Trucks were observed to be making turns at this intersection and buses are the only vehicles that are allowed to turn.

Fifth Avenue and 42nd Street

The eastbound right turn has a tight radius and buses were observed to cross multiple southbound lanes in order to make the turn maneuver. Heavy pedestrian volumes were observed at this corner and block the line of sight for turning automobiles.

Tillary Street and Adams Street

Traffic enforcement officers were observed at the intersection. Turning lanes are not clear, pavement markings need to be repainted. High volumes of bicyclists were observed using the bike lanes connecting to the Brooklyn Bridge.

Tillary Street and Jay Street

The intersection is located in NYU Poly Tech and CUNY school area, where there are high volumes of pedestrians and bicyclists. Illegal loading/standing along Tillary Street in the northeast corner can affect visibility of vehicles making westbound right turns.

Tillary Street and Flatbush Avenue

High traffic volumes were observed on Flatbush Avenue. There is no bike lane, bicyclists have to ride close to the curb in a travel lane.

Jackson Avenue and Northern Boulevard

High traffic volumes were observed on Queens Plaza South as it provides connections to bridges to Manhattan. The intersection is complex due to the presence of piers supporting the overhead rail lines through the area. Illegal parking was observed on some of the blocks.

15.6.6 Identification of Measures to Mitigate Identified Significant Adverse Impacts

The proposed project would incorporate geometric/physical improvements that would enhance the overall operation of the study locations as well as overall safety along the corridors that include the study locations. To address the need for potential improvements at the above mentioned high accident locations, the following items are recommended:

- Installation of "School Crossing" signs at designated school crossings.
- Installation of "Turning Vehicles Yield to Pedestrians" signs to increase drivers' awareness.
- Installation of "Cross Only during Walk Signal" at each corner of an intersection to discourage pedestrians from crossing the intersection without the "Walk" symbol.
- Replacement of all 8" signal heads with 12" signal heads to reduce red light running and rear-end accidents and increase visibility and sight distance for the indications.
- Installation of pedestrian countdown signals to provide pedestrians with available time left to cross the intersection.
- Installation of additional signage for bike lanes and bike paths at each intersection location where bike paths are present.
- Installation of "No Right Turn" and "No Left Turn" signs to reinforce the "One Way" signs.

The recommended improvements listed above, combined with the measures that are being implemented by NYCDOT, are anticipated to improve pedestrian and bicyclist safety in the Study Area such that the Future Conditions with the Proposed Action would not be expected to result in a significant increase in accidents in the Study Area.

CHAPTER 16 – AIR QUALITY

16.1 Introduction and Study Area Delineation

This chapter evaluates the impact of the Proposed Action on ambient air quality. The *2012 CEQR Technical Manual* indicates that an air quality assessment should consider:

- The impact of a proposed action on ambient air quality; and
- Where appropriate, the impact of other air pollution sources on a proposed action, for example when a proposed building would be located in the vicinity of a source of air pollution such as an electric power generation station.

Since the Proposed Action would not add or locate receptors or users near a major source of air pollution, the assessment included in this analysis is limited to the potential impact of the Proposed Action on ambient air quality. In completing an assessment of the impact of a proposed action, the *2012 CEQR Technical Manual* specifies that the impact assessment should evaluate the impact of construction and operation of a Proposed Action, including the operation-related effects of any on-site stationary sources of air pollution and the effects of any motor vehicles ("mobile sources") that would be generated by a proposed action. Therefore, the assessment included in this section is focused on an assessment of mobile source-related impacts of the additional 2,000 taxis that would result from the Proposed Action.

The Proposed Action would result in a change in air pollutant emissions due to the introduction of 2,000 taxicabs on the City roadway network. Therefore, as indicated in the EAS, a detailed microscale analysis of potential air quality impacts was conducted at four (4) representative intersections at which the maximum potential impacts of the Proposed Action would be expected to occur. These intersections were identified based on coordination with the NYCDEP and the NYCDOT. As documented in the detailed microscale mobile source analysis in this section, no significant adverse impacts on air quality would occur as a result of the Proposed Action.~~; however the mitigation for traffic (i.e. signal timing changes) would bring the results down below significant thresholds.~~

16.1.1 Study Area Delineation

As described above in Chapter 15: Transportation, 54 representative intersections for analysis were selected for the traffic Study Area, in consultation with TLC, NYCDOT and NYCDEP, based on the review of the hourly taxi pick-up/drop-off data summarized by Census Block Group for each of the three analysis (AM, midday, and PM) peak periods, a review of taxi GPS data to identify blocks (links) with 50 or more pick-up/drop-off activities during the AM, midday and PM peak hours, and a review of the Final Environmental Impact Statement (2004) for the previous increase in the number of taxi medallions. These sources were supplemented by the following additional attributes in the selection of the intersections for analysis:

- The locations of major origins/destinations (i.e., Penn Station, Grand Central Terminal, PA Bus Terminal, etc.);
- Areas with greatest concentration of taxi pick-up/drop-off volumes;
- Areas with a high percentage of taxi cabs in baseline traffic;
- The location of taxi stands; and
- Portals (Brooklyn, Manhattan and Queens Borough Bridges) with high taxi volumes.

Of the 54 intersections for which a detailed traffic impact analysis was completed, the following four intersections were identified as having the greatest potential for air quality impacts from the Proposed Action based on NYCDEP's review of the existing peak taxi activity and background traffic volumes and delays:

- Third Avenue and 57th Street;
- Seventh Avenue and 34th Street;
- Fifth Avenue and 42nd Street; and
- Sixth Avenue and 23rd Street.

The detailed microscale analysis was conducted at these four intersections in accordance with the methodology in the *2012 CEQR Technical Manual*.

16.2 Analysis/Methodologies

Per the *2012 CEQR Technical Manual*, mobile source-related air quality pollutants may be of concern at a microscale level, due to elevated concentrations that may occur at particular locations in the vicinity of congested intersections. A detailed mobile source-related microscale air quality analysis is conducted for projects that add new vehicles to the roads, change traffic patterns, include parking lots or garages, or add new uses near roadways and parking facilities.

The *2012 CEQR Technical Manual* provides screening threshold values for carbon monoxide (CO) and inhalable fine particulate matter ($PM_{2.5}$) to determine if a detailed mobile source microscale analysis is required to assess the air quality impacts of a proposed project. The following are the results of the screening assessment:

Carbon Monoxide

The projected number of project-generated vehicles that would pass through the intersections of Seventh Avenue and 34th Street and ~~Madison~~ Fifth Avenue and 42nd Street during the AM, midday and PM peak hours and Third Avenue and 57th Street during the AM Peak hour would exceed the CO screening threshold of 140 or more auto trips based on 2012 *CEQR Technical Manual* guidance for projects in Manhattan between 30th and 61st Streets. The projected number of project-generated vehicles that would pass through the intersection of Sixth Avenue and 23rd Street during the AM, midday and PM peak hours would exceed the CO screening threshold of ~~1~~170 or more auto trips for areas outside of Manhattan between 30th and 61st Streets, downtown Brooklyn and Long Island City, Queens. However, based on coordination with NYCDEP, to provide for a comprehensive assessment, a detailed microscale analysis of potential CO impacts was performed for all four intersections for ~~AM, midday and PM~~the peak travel periods.

Inhalable Fine Particulate Matter

A review of the $PM_{2.5}$ screening criteria indicated that neither the four intersections selected above, nor the remaining 50 intersections which were analyzed for traffic, required a detailed microscale analysis of potential $PM_{2.5}$ impacts. However, based on coordination with NYCDEP, to provide for a comprehensive assessment, a detailed microscale analysis of potential $PM_{2.5}$, and PM_{10} impacts was performed for the four intersections previously identified.

Provided below is a discussion of the air pollutants of concern, a description of the status of compliance with established National Ambient Air Quality Standards[1] (NAAQS), the modeling methodology used to assess impacts, and the results of the air quality assessment.

16.2.1 Pollutants of Concern

The pollutants of concern for this assessment are those for which NAAQS have been established. A description of these air pollutants is provided below.

16.2.1.1 National Ambient Air Quality Standards

As required by the Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has established NAAQS[1] for six pollutants (40 CFR 50). These pollutants have both public health-based (primary) and public welfare-based (secondary) air quality standards. The "primary" ambient air quality standards have been established to protect the public health, while the "secondary" standards have been established to protect the public welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare. These six pollutants are carbon monoxide (CO), particulate matter (which includes both inhalable coarse particulate matter (PM_{10}) and inhalable fine particulate matter ($PM_{2.5}$)), lead (Pb), sulfur dioxide (SO_2), ozone (O_3), and nitrogen dioxide (NO_2). The NAAQS for these pollutants are provided in Table 16-1. As shown, NAAQS for SO_2, PM_{10}, $PM_{2.5}$, CO, O_3, and NO_2 are provided based on short-term averaging times (i.e., 1 hour, 3 hour, 8 hour and 24 hour). NAAQS based on long-term averaging times (i.e., 3 month, annual) are also provided for Pb, $PM_{2.5}$ and NO_2.

[1] http://www.epa.gov/air/criteria.html

Table 16-1: National Ambient Air Quality Standards

Pollutant	Primary	Secondary
CO		
1-Hour Average(1)	35 ppm	
8-Hour Average(1)	9 ppm	
Pb		
3 Month Rolling Average(2)	0.15 μg/m^3	0.15 μg/m^3
NO_2		
Annual Average	53 ppb	53 ppb
1-hour Average(3)	100 ppb	
O_3(4)		
8-Hour Average	0.075 ppm	0.075 ppm
$PM_{2.5}$		
24-Hour Average(5)	35 μg/m^3	35 μg/m^3
Annual Average(6)	12 μg/m^3	15 μg/m^3
PM_{10}		
24-Hour Average(7)	150 μg/m^3	150 μg/m^3
SO_2		
3-Hour Average(1)		0.5 ppm
1-Hour Average(8),(9)	75 ppb	

Source: EPA National Ambient Air Quality Standards.

Notes:

(1) Not to be exceeded more than once per year.

(2) Not to be exceeded.

(3) New standard promulgated February 9, 2010, effective April 12, 2010. 98th percentile of 1-hour measurements, averaged over 3 years.

(4) Former NYS Standard for ozone of 0.08 parts per million (ppm) was not officially revised via regulatory process to coincide with the Federal standard of 0.12 ppm which is currently being applied by NYS to determine compliance status. Compliance with the Federal 8 hour standards is determined by using the average of the 4th highest daily value during the past three years - which can not exceed 0.084 ppm or 0.075 ppm, effective May 27, 2008.

(5) 98th percentile, averaged over 3 years.

(6) Annual mean, averaged over 3 years.

(7) Not to be exceeded more than once per year on average over 3 years.

(8) 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.

(9) Final rule published June 22, 2010 and effective on August 23, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

The pollutants for which NAAQS have been established are described below. Due to the nature of the Proposed Action, the microscale air quality impact assessment for proposed roadways will focus on the impacts of the Proposed Action on the following pollutants emitted by motor vehicles: CO and particulate matter (PM_{10} and $PM_{2.5}$). Other mobile source-related pollutants, such as O_3 and annual NO_2 are regional in nature, making a project level evaluation inappropriate.

Carbon Monoxide. CO is a colorless and odorless gas that is generated by the incomplete combustion of fossil fuels in motor vehicles and a broad range of industrial and power-generation facilities. CO from the Proposed Action would be generated from the incomplete combustion of fuel used by motor vehicles. The Proposed Action would have a potential to affect local CO concentrations through the introduction of 2,000 new taxi medallions. Elevated concentrations of CO can be found in the immediate vicinity of roadways. Therefore, a detailed microscale analysis for CO emissions was performed.

Ozone. Ozone is a molecule composed of three oxygen atoms. Ozone is not emitted directly from motor vehicles. Instead, it is formed in the lower atmosphere through the reaction of volatile organic compounds (VOCs) and Nitrous Oxides (NO_x) in the presence of sunlight. This reaction occurs comparatively slowly and ordinarily takes place far downwind from the site(s) of the actual emission of these air pollutants. Major sources of VOCs include on-road motor vehicles, solvents, fires, off-road equipment, residential wood combustion, waste disposal, and a broad range of industrial processes. Major sources of NO_x include on-road motor vehicles, electricity generation, off-road equipment, fossil fuel combustion, fires, and industrial processes. As stated above, Ozone is regional in nature, making a project level evaluation inappropriate.

Particulate Matter, PM_{10} and $PM_{2.5}$. Particulate matter includes a broad range of air pollutants that exist as liquid droplets or solids, with a wide range of sizes and chemical composition. Particulate matter is emitted by both natural and anthropogenic sources. Natural sources include the condensed and reacted forms of natural organic vapors, salt particles resulting from the evaporation of sea spray, wind-borne pollen, fungi, molds, algae, yeasts, rusts, bacteria, and debris from living and decaying plant and animal life, particles eroded from beaches, desert, soil and rock, and particles from volcanic and geothermal eruptions and forest fires. Major anthropogenic sources of particulate matter result from the combustion of fossil fuels and wind blown fugitive emissions, including from vehicular exhaust, power generation, home heating, chemical and manufacturing processes, construction activities, agricultural activities, and mining.

USEPA has established NAAQS for two categories of particulate matter, PM_{10} and $PM_{2.5}$. PM_{10} are all particles 10 microns in diameter and smaller and are emitted by a wide variety of stationary and fugitive emissions sources. Particulate matter less than 10 microns in diameter can pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. $PM_{2.5}$ are particles 2.5 microns in diameter and smaller. They can be directly emitted from sources such as forest fires and industrial combustion and process sources, or they can form when gases emitted from power plants, industrial sources and motor vehicles react in the air. Elevated concentrations of particulate matter can be found in the immediate vicinity of roadways due to the resuspension of fugitive dust and emission of particulate matter from motor vehicles, particularly from "heavy duty" vehicles such as large trucks. As a consequence, concentrations of PM_{10} and $PM_{2.5}$ may increase in the vicinity of roadways as a result of the Proposed Action through the introduction <u>of</u> 2,000 new taxi medallions. Therefore, a detailed microscale analysis for PM_{10} and $PM_{2.5}$ emissions was performed.

Sulfur Dioxide. SO_2 emissions are generated from the combustion of sulfur-containing fuels, including oil and coal, largely from stationary sources such as power plants, steel mills, refineries, pulp and paper mills, and nonferrous smelters. Motor vehicles do not emit significant quantities of sulfur dioxide. Federal rules regarding the sulfur content in fuel for on-road vehicles has resulted in no significant quantities of SO_2 emitted from vehicular sources. Since the Proposed Action consists of the addition of vehicular sources only, an evaluation of the SO_2 emissions as a result of the Proposed Action was not deemed to be appropriate.

Nitrogen Dioxide. As described above, NO_x (principally NO_2 and nitrogen oxide (NO)) is one of the principal precursors in the formation of ground-level ozone. NO_2 is emitted directly by combustion sources, including motor vehicles, or is formed in the atmosphere by oxidation of NO. In addition, NO_x reacts in the atmosphere to form nitrate particles, acid aerosols, as well as

NO_2, which also cause respiratory problems, and contributes to the formation of acid rain, and atmospheric particles that cause visibility impairment in national parks. As described for O_3, the reactions that form NO_x occur comparatively slowly and ordinarily take place far downwind from the site(s) of actual air pollutant emissions. Therefore, the effects of NO_x are regional in nature, making a project level evaluation for annual NO_x inappropriate. However, as discussed at more length in Section 16.5.2, the USEPA has established a new 1-hour primary NAAQS for NO_2. Major roadways are estimated to be responsible for the majority of the 1-hour NO_2 exposure. However, monitoring data is still being collected for roadway area NO_2 levels. Therefore, a qualitative assessment of the impact of the Proposed Action on the 1-hour NO_2 NAAQS is provided in this chapter.

Lead. Pb emissions are associated with industrial sources and, in the past, motor vehicles using gasoline containing lead additives. As leaded gasoline has been eliminated from use in motor vehicles in the United States, motor vehicle-related lead emissions have been substantially eliminated, resulting in a significant decline of ambient concentrations of lead. Therefore, an evaluation of the Pb emissions as a result of the Proposed Action was not deemed to be appropriate.

16.2.1.2 Significant Impact Thresholds

On December 17, 2004, USEPA designated initial $PM_{2.5}$ attainment and non-attainment areas for the entire United States. All five boroughs of New York City were designated as non-attainment areas. NYCDEP established guidance on the incremental increase in $PM_{2.5}$ emissions that would be considered a significant air quality impact. Therefore, the $PM_{2.5}$ impacts were compared with the *de minimis* criteria that has been established by NYCDEP. The following approach was applied to $PM_{2.5}$ by calculating the difference between the future condition without the Proposed Action and the future condition with the Proposed Action:

- 24-hour average $PM_{2.5}$ concentration increments that are predicted to increase by more than half the difference between the background concentration and the 24-hour standard would be considered a significant adverse impact on air quality. As shown in Table 16-2, the existing background concentration at a monitoring location near the project area is 26 µg/m^3, since the 24-hour standard is 35 µg/m^3, the $PM_{2.5}$ 24-hour *de minimis* criteria used for the project was 4.5 µg/m^3.

- Annual incremental concentrations of $PM_{2.5}$ from mobile sources at intersection locations are assessed on a neighborhood scale. Predicted annual average $PM_{2.5}$ concentration increments greater than 0.1 $\mu g/m^3$ at ground level on a neighborhood scale would be considered a significant adverse impact on air quality.

In addition, incremental impact criteria for CO have been established by NYCDEP to determine whether the incremental change in ambient concentrations of CO represent a significant adverse impact on air quality. These de minimis levels are:

- An increase of 0.5 ppm or more in the maximum 8-hour average CO concentration at a location where the predicted No-Action 8-hour concentration is equal to 8 ppm or between 8 ppm and 9 ppm; or
- An increase of more than half the difference between the no build concentrations and the 8-hour standard, when no build concentrations are below 8 ppm.

16.2.2 Attainment Status

The CAA requires that each state submit a plan ("State Implementation Plan" or "SIP") to the USEPA demonstrating attainment and maintenance of the NAAQS. Currently the City of New York is designated as being in attainment with the NAAQS for CO, Pb, SO_2, and NO_2, and in "nonattainment" with the NAAQS for 8-hour O_3 and $PM_{2.5}$. While the City is in attainment with the NAAQS for CO, it was formerly in nonattainment status for this pollutant until 2002, when it was re-designated as attainment/maintenance for CO. The attainment/maintenance status requires that the responsible state air quality agency include requirements in a USEPA-approved SIP to assure that the area does not revert to nonattainment for CO.

Carbon Monoxide SIP

In demonstrating attainment and maintenance of compliance with the NAAQS for CO, the New York State Department of Environmental Conservation (NYSDEC), in conjunction with the City of New York, submitted a SIP revision for CO to USEPA. The USEPA approved the control programs and contingency measures to reduce CO emissions to meet the CO NAAQS in the New York City area. Effective May 20, 2002, USEPA approved the *CO Maintenance Plan* (USEPA 2002) and re-designated the New York City area as in attainment for CO.

Ozone SIP

On August 9, 2007, the NYSDEC submitted a proposed revision to the ozone SIP for the New York Metro Area (NYMA) demonstrating attainment by June 15, 2013. This final proposed revision incorporates minor changes made in response to comments received from USEPA and the Manufacturers of Emission Controls Association on that proposal. It is also consistent with NYSDEC's request, submitted separately, to have the NYMA reclassified from "moderate" to "serious" nonattainment. Serious nonattainment areas are required to demonstrate attainment within nine years of designation.

The NYSDEC made its original recommendation to the USEPA in March 2009 for areas to be designated attainment, nonattainment and unclassifiable for the 2008 NAAQS. The USEPA delayed proposing final designations as required by the CAA by May 2010 in anticipation of its promulgation of another revision to the ozone NAAQS in late 2010. However, in September 2011, the USEPA announced the abandonment of that proposed revision and the plan to move forward with the 2008 NAAQS of 0.075 ppm. Therefore, in October 2011, the NYSDEC submitted a revised designation recommendation to the USEPA which took into account monitoring data through 2010 and recommended that the NYMA Metropolitan Statistical Area (MSA), excluding Putnam County, be designated as a nonattainment area for the 2008 ozone NAAQS. On July 20, 2012 the USEPA designated New York- New Jersey – Long Island is marginal nonattainment for the 2008 ozone NAAQS.

Fine Particulate Matter ($PM_{2.5}$) SIP

In 2008, the NYSDEC prepared a revision to the $PM_{2.5}$ SIP for the NYMA demonstrating attainment of the $PM_{2.5}$ NAAQS by 2010. Based on updated air quality monitoring data, the 24-hour $PM_{2.5}$ NAAQS is now being met. Therefore, the NYSDEC petitioned the USEPA on May 5, 2011 to determine that the New York State portion of the NYMA has attained the 24-hour $PM_{2.5}$ NAAQS. This petition has not been acted on by USEPA.

16.2.3 Methodology

Mobile source analyses were conducted to estimate the change in concentrations of CO, PM_{10}, and $PM_{2.5}$ that would occur with the Proposed Action. The analyses were conducted for the four selected intersections identified in subsection 16.1.1 to determine whether the Proposed Action would cause new violations of applicable NAAQS and/or exceed applicable CEQR impact thresholds. A qualitative assessment of the impact of the Proposed Action on the 1-hour NO_2 NAAQS is also provided in this chapter.

The existing air quality conditions in the Study Area were determined based on ambient air quality monitoring data collected at the NYSDEC monitoring sites near Manhattan, where the majority of the taxi medallion travel occurs. Maximum 1-hour and 8-hour CO, 24-hour PM_{10}, as well as 24-hour and annual neighborhood $PM_{2.5}$, in the future with and without the Proposed Action were estimated at the four analysis sites, using dispersion modeling procedures provided in the *2012 CEQR Technical Manual*. Ambient pollutant levels were estimated at multiple receptor locations near each analysis site.

Dispersion modeling was conducted using USEPA's dispersion model, CAL3QHCR, which uses local meteorological data. The analyses followed *2012 CEQR Technical Manual* and USEPA's Intersection Modeling Guidelines for modeling methodology and receptor placement. The air quality dispersion analyses were conducted as follows:

- All roadway segments (links) within approximately 1,000 feet of each intersection and within the line of sight of each intersection were considered.
- Receptors were placed adjacent to sidewalks and queued approaches (approximately 3-feet from the curb line). An initial receptor was placed at the corner of each intersection then additional receptors were spaced from this initial corner receptor at approximately 11, 22, and 66 meters where distance between intersections permitted. Since receptors adjacent to the sidewalks would be expected to experience higher emission concentrations than receptors further from the roadway along property lines, no additional receptors were included for sensitive land uses (schools, hospitals, etc).
- Receptor heights were 1.8 meters (6.0 feet) above ground level.

For the analysis of the impact of the Proposed Action on annual average levels of $PM_{2.5}$ on a neighborhood scale (annual neighborhood), receptors were placed adjacent to sidewalks (~~approximately 15-feet from the curb line~~distance varied according to the annual average daily traffic), and set back from the corner receptor~~, similarly to what was described above~~ with even 25 meter spacing. Additional details regarding dispersion modeling analysis techniques are provided below.

16.2.3.1 Analysis Years

Analyses were conducted for the year 2017, the first full year after the sale of all 2,000 medallions when the maximum impact of the Proposed Action on air quality would occur.

16.2.3.2 Traffic Data

Traffic data were developed for the AM, midday, PM, and overnight (ON) peak hours at all intersections, as well as a separate evening (EV) period for Third Avenue and 57th Street and Fifth Avenue and 42nd Street, for future conditions without the Proposed Action and future conditions with the Proposed Action. The Synchro modeling and field data were used to develop the following traffic data necessary for the air quality analysis for all the roadway links at the four selected analysis intersections:

- AM, midday, PM, EV, and ~~overnight~~ ON peak hour traffic volumes for the intersections of Third Avenue and 57th Street and Fifth Avenue and 42nd Street, and AM, midday, PM, and ON peak hour traffic volumes for the intersections of Seventh Avenue and 34th Street and Sixth Avenue and 23rd Street;
- Vehicle classifications (percent autos, medallion taxis [where applicable], and trucks, including light-duty and heavy-duty trucks and buses);
- Width of traveled roadways (the effective width of the roadway);
- Length of traveled roadways;
- Average link speed (including intersection delay);
- Link and intersection approach volumes for each analysis time period. These volumes address the 1,000 foot approach and departure zones in every direction from each study intersection. ~~Where traffic collection data existed, each roadway approaching and departing 1,000 feet from the intersection of interest was modeled. Where traffic data for each roadway link was not collected, the peak hour traffic volume used for analysis was determined by comparing the total traffic volume at the selected analysis intersection to the total traffic volume at the intersection approximately 1,000 feet from the selected analysis intersection. The greater of the two traffic volumes was used to model the roadway link.~~

16.2.3.3 Vehicular Emissions

Mobile source CO, PM_{10}, and $PM_{2.5}$ emissions were estimated using the latest version of USEPA's MOVES2010b emissions model (dated October 30, 2012) which calculates average fleet emission factors. ~~NYCDEC~~ NYSDEC MOVES ~~default~~ input files were provided by NYCDEP; these files use~~are available for most inputs, however,~~ appropriate local inputs ~~provided by NYCDEP were used~~ to better represent the specific local emissions. To predict taxi specific emission factors, an age distribution input file was generated to account for the distribution of the taxi fleet that is projected to be in place in 2017. In addition, as discussed below, fugitive emissions were included for PM_{10} and $PM_{2.5}$ using the January 2011 USEPA AP-42 Compilation of Air Pollutant Emission Factors.

16.2.3.3.1 Taxi Emissions

The current NYC taxi fleet contains 13,237 vehicles, consisting of 49% conventional vehicles, 49% hybrid vehicles, and 2% accessible vehicles. All taxi vehicles were modeled as passenger cars. The NYCDEP default input files used to calculate the vehicle emissions were also used to calculate the taxi emissions, with the exception of the taxi specific age distribution file. The taxi age distribution was calculated for a 2017 No Build and Build scenario. The specific taxi volume determined at each link was applied, and the taxis are assumed to be traveling at the same modeled speed as all other vehicles.

Vehicle Age Distribution

The age distribution of taxis was modified based on the vehicle certification date provided by the TLC for each of the 13,237 vehicles. The existing fleet of taxis will be retired in three to seven years, in conformance with vehicle retirement requirements identified in TLC vehicle retirement regulations 67-18 (NYCTLC Rules and Regulations. Chapter 67: Rules for Taxicab Hack-up and Maintenance. Effective April 1, 2011). As existing taxi vehicles retire, new replacement taxi vehicles were introduced. As vehicles retire, retiring vehicles were replaced based on a forecasted expected share of vehicle type/make/model. The No-Action fleet forecast also takes into account that the production of the Stretch Ford Crown Victoria ended in 2011.

Non-handicap accessible taxi vehicles retiring in 2013 and later were assumed to be replaced by the TLC ToT vehicle. The ToT fleet would consist of the Nissan NV200 vehicle. This vehicle could be purchased with or without an accessible package. When the ToT selling period begins, the ToT vehicle would be phased into the fleet as vehicles retire.

For the future conditions with the Proposed Action, the 2,000 accessible taxi medallions proposed as part of this Proposed Action were added into the taxi fleet based on the medallions being sold at a public auction according to the following schedule: 400 would be sold in Year One (2014), 550 in Year Two (2015), 500 in Year Three (2016), and 550 in Year Four (2017).

In both the future conditions without and with the Proposed Action, accessible vehicles retiring in 2013 and later were assumed to be replaced by the ToT that has been modified to accept passengers with wheelchairs or by one of two other TLC-approved handicap accessible vehicles (VPG Autos MV-1 and Toyota Sienna).

16.2.3.3.2 Particulate Matter

The revised predictive emission factor equation for paved roads from the January 2011 USEPA AP-42 Compilation of Air Pollutant Emission Factors was used to determine the fugitive emissions for PM_{10} and $PM_{2.5}$. Fugitive emissions for PM_{10} and $PM_{2.5}$ were added to the MOVES emission factor for PM_{10} and $PM_{2.5}$.

Emissions of fugitive dust (i.e. emissions caused by the re-entrainment of dust into the air by moving vehicles) are primarily dependent on average fleet vehicle weight and on the surface silt loading. As indicated in the *2012 CEQR Technical Manual,* the following silt loading factors were used for estimating PM_{10} and $PM_{2.5}$ fugitive emissions:

- 0.16 for collector type roadways;
- 0.10 for principle and minor arterials;
- 0.015 for expressways and limited access roadways;
- 0.4 for paved roadways with fewer than 5,000 average daily traffic volumes; and
- A standard fleet average vehicle weight of 6,000 pounds was applied to background autos, taxis and trucks. A taxi average vehicle weight of 4,000 pounds was applied based on average weight of taxi fleet.

Re-entrained dust was considered for the moving vehicles in the 24-hour $PM_{2.5}$ analysis (incremental contribution at receptors three meters away from the edge of the roadway). However, re-entrained dust was not included in the $PM_{2.5}$ annual neighborhood analysis due to the fact that, per NYCDEP, existing neighborhood-scale ambient air monitoring data indicated that on a long-term (annual) average very little paved road dust is collected by $PM_{2.5}$ monitors.

16.2.3.3.3 MOVES Emission Factors

The MOVES2010b emissions program was used to estimate the emissions for the fleet under future conditions without and with the Proposed Action. The MOVES model requires a percentage of each vehicle source type, average speed, length, and road type for each link. The average speed used in the model represents through, acceleration, and queuing speeds for each link. The vehicle mix was distributed into two categories: passenger vehicles and single unit short-haul trucks. Single unit short-haul trucks were chosen to conservatively represent all vehicles not classified as passenger vehicles. One model run was done to represent the entire vehicle fleet and one to represent the taxi fleet due to the differing age distributions. A weighted emission factor for each link was then calculated for input into the CAL3QHCR model. The weighted emission factor was calculated by multiplying the total non-taxi vehicle volume for each link by the emission factor calculated for regular vehicles and trucks and adding the total taxi volume multiplied by the taxi emission factor, then divided by the total vehicle volume for each link. Emissions estimates were completed using emission factors for the following vehicle classifications:

- Passenger Car (MOVES Source Type ID 21) – Defined as four wheel, two axle vehicle whose primary function is passenger transport. Included non taxi automobiles, and taxi vehicles.
- Single Unit Short-haul Truck (MOVES Source Type ID 52) – Defined as single unit trucks with more than four tires with a range of operation of up to 200 miles. Included all buses, medium and heavy diesel vehicles.

MOVES allows for the selection of pollutants and processes. For CO, the processes of running exhaust and crankcase running exhaust were selected. The processes selected for PM_{10} and $PM_{2.5}$ were running exhaust, crankcase running exhaust, brake wear and tire wear. The road type selected was urban unrestricted access (MOVES road type ID 5). It is defined as all other urban roads, including local streets.

January was modeled in MOVES to represent the most conservative seasonal conditions. In the CAL3QHCR model the emission factor calculated for January was applied to the entire year. For intersections where refinements were applied, seasonal emission factors were calculated using MOVES. Per EPA guidance, the MOVES runs were conducted for January, April, July, and October which correspond to the first month of each quarter. January was assumed to represent February and March emissions, April represents May and June emissions, July represents August and September emissions, and October represents November and December emissions. In the CAL3QHCR model with the seasonal refinement, the ~~n~~met data was broken into quarters and seasonal emissions factors applied to the respective quarter.

16.2.3.3.4 Meteorological Conditions

Concentrations were estimated using five consecutive years of hourly meteorological data from LaGuardia Airport (2008 to 2012).

16.3 Existing Conditions

Existing ambient air quality conditions in the Study Area were determined based on ambient air quality monitoring data collected at the NYSDEC monitoring sites representative and within Manhattan, the borough in which the majority of the taxi medallion travel occurs. PM_{10} 24-hour, NO_2 annual, and SO_2 3-hour, 24-hour, and annual background levels were provided by NYCDEP in a memo dated May 21, 2010. For SO_2 1-hour, background levels were provided through separate correspondence with NYCDEP (August 2, 2010). PM2.5 24-hour background concentrations were provided in conversation with NYCDEP on July 26, 2012. For all other pollutants, background concentrations were taken from the New York State *Ambient Air Quality Report for 2009* (NYSDEC 2009). The data is summarized in Table 16-2. In each case, the most recent years' data, up to three years if available, were used in this summary. If a year of monitoring data was determined to be substantially incomplete, it was not included in this summary.

~~Table 16-2: Existing Ambient Pollutant Concentrations Nearest the Study Area~~

~~Pollutant~~	~~Averaging Period~~	~~Existing Ambient Pollutant Concentration ($\mu g/m^3$)~~	~~NAAQS ($\mu g/m^3$)~~	~~Monitor Data Location (years)[(1)]~~
~~$PM_{2.5}$[(2),(5)]~~	~~24-hr~~	~~26~~	~~35~~	~~PS 19 (2010-2012)~~
	~~Annual~~	~~12~~	~~12~~	~~PS 19 (2009-2011)~~
~~PM_{10}[(3)]~~	~~24-hr~~	~~67~~	~~150~~	~~PS 59 (2006 – 2008)~~
~~Pb~~	~~Roll 3-mo.~~	~~NA~~	~~0.15~~	~~No data reported in Manhattan~~
~~CO[(2),(6)]~~	~~1-hr~~	~~2,400~~	~~40,000~~	~~CCNY (2009-2011)~~
	~~8-hr~~	~~1,800~~	~~10,000~~	~~CCNY (2009-2011)~~
~~NO_2[(3)]~~	~~Annual~~	~~68~~	~~100~~	~~PS 59 (2004 – 2008)~~
~~O_3[(2),(7)]~~	~~8-hr~~	~~141~~	~~150~~	~~CCNY (2009-2011)~~
~~SO_2~~	~~1-hr[(4),(8)]~~	~~150~~	~~196~~	~~PS 59 (2004 – 2008)~~
	~~3-hr[(3)]~~	~~228~~	~~1,300~~	~~PS 59 (2004 – 2008)~~
	~~24-hr[(3)]~~	~~110~~	~~365~~	~~PS 59 (2004 – 2008)~~
	~~Annual[(3)]~~	~~29~~	~~80~~	~~PS 59 (2004 – 2008)~~

~~**Notes:**~~

~~(1) The Public School (PS) 19 monitoring station is located at 185 First Avenue, New York, NY 10003 and the PS 59 station is located at 228 East 57th Street, New York, NY 10022. Both of these are property of the New York City Department of Education. The City College of New York (CCNY) monitoring station is located at 160 Convent Avenue, New York, NY 10031.~~

~~(2) Existing ambient pollutant concentration from New York State *Ambient Air Quality Report for 2011,* except for $PM_{2.5}$ 24-hour concentration which was provided by NYCDEP (July 26, 2012).~~

~~(3) Source: DEP memorandum dated May 21, 2010.~~

~~(4) Source: Correspondence with DEP (August 2, 2010).~~

~~(5) $PM_{2.5}$ 24-hour concentration is based on the 3-year average of the 98th percentile of 24-hour concentrations. Annual concentrations are based on 3-year average of the weighted annual mean concentrations from the monitor.~~

~~(6) CO concentrations are based on 3-year average of second highest concentrations.~~

~~(7) Ozone concentration is based on the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at the monitoring station.~~

~~(8) SO_2 1-hour concentration is based on the 3-year average of the 99th percentile of the daily maximum 1-hour average.~~

Table 16-2: Existing Ambient Pollutant Concentrations Nearest the Study Area(1)

Pollutant	Averaging Period	Existing Ambient Pollutant Concentration	NAAQS	Monitor Data Location (years)
$PM_{2.5}$	24-hr	26 µg/m^3	35 µg/m^3	PS 19 (2010-2012)
	Annual	12 µg/m^3	12 µg/m^3	PS 19 (2010-2012)
PM_{10}	24-hr	44 µg/m^3	150 µg/m^3	PS 19 (2010 – 2012)
Pb	Roll 3-mo.	NA	0.15 µg/m^3	No data reported in Manhattan
CO	1-hr	2.7 ppm	35 ppm	CCNY (2008-2012)
	8-hr	1.8 ppm	9 ppm	CCNY (2008-2012)
NO_2	Annual	23 ppb	53 ppb	Botanical Garden (2008 – 2012)
O_3	8-hr	0.072 ppm	0.075 ppm	CCNY (2009-2011)
SO_2	1-hr	40 ppb	75 ppb	Botanical Garden (2008 – 2012)
	3-hr	0.06 ppm	0.5 ppm	Botanical Garden (2008 – 2012)

Notes:
(9) Existing ambient pollutant concentration from New York State *Ambient Air Quality Report for 2012.*

16.4 Future Conditions without the Proposed Action

In accordance with the *2012 CEQR Technical Manual*, a 0.25% annual background traffic growth rate was applied to the AM, midday, ~~and~~ PM, EV, and ON peak hour non-taxi traffic volumes to project future non-taxi background traffic in the year 2017. The EV and ~~overnight (~~ON~~)~~ existing baseline volumes were based on Automatic Traffic Recorder Counts and turning movement counts. ~~, where data was available. Where ON data was not available, adjustments were made based on the PM peak hour data.~~ Total taxi volumes were assumed to remain constant in the future conditions without the Proposed Action scenario.

In addition, NYCDCP was consulted to identify projects that would be in place by the Proposed Action year that would result in additional traffic attributable to those developments. As described in Chapter 15: Transportation, the non-taxi background traffic volumes were adjusted to include planned developments that would be in the area and completed by 2017. Any changes to roadway geometry and signal timing/phasing that would be implemented by the year 2017 due to these planned developments were also included in the analysis for future conditions without the Proposed Action. The PM peak hour non-taxi background traffic volume growth was used for the EV peak hour non-taxi background traffic volume growth, while the ON peak hour non-taxi background traffic volume growth used the lowest growth from the AM, midday, or PM peak hours.

In accordance with EPA suggested guidance[2], the time periods were adjusted using local speed data provided by NYCDOT using Midtown in Motion (MIM) and existing Automatic Traffic Recorder (ATR) count data. For Seventh Avenue and 34th Street no time period refinement was done and the EPA suggested time periods were used. For Sixth Avenue and 23rd Street the AM and midday time periods follow the EPA suggested guidance while the PM and ON time periods were refined. Following the recommendations of NYCDEP, five analysis time periods were used for Third Avenue and 57th Street and Fifth Avenue and 42nd Street. The time period refinements were based on the MIM speed and ATR count data to determine hours that had similar characteristics. The time periods are as follows.

Seventh Avenue and 34th Street

- AM is 6:00 AM to 9:00 AM;
- Midday is 9:00 AM to 4:00 PM;
- PM is 4:00 PM to 7:00 PM;
- ON is 7:00 PM to 6:00 AM.

Sixth Avenue and 23rd Street

- AM is 6:00 AM to 9:00 AM;
- Midday is 9:00 AM to 4:00 PM;
- PM is 4:00 PM to 12:00 AM;
- ON is 12:00 AM to 6:00 AM.

Third Avenue and 57th Street

- AM is 7:00 AM to 10:00 AM;
- Midday is 10:00 AM to 4:00 PM;
- PM is 4:00 PM to 7:00 PM;
- EV is 7:00 PM to 12:00 AM;
- ON is 12:00 AM to 7:00 AM.

Fifth Avenue and 42nd Street

- AM is 7:00 AM to 10:00 AM;
- Midday is 10:00 AM to 4:00 PM;
- PM is 4:00 PM to 7:00 PM;
- EV is 7:00 PM to 12:00 AM;

[2] Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas. EPA. December 2010.

- ON is 12:00 AM to 7:00 AM.

Applicable maximum pollutant concentrations predicted near the four selected intersections are shown in Table 16-3.

16.5 Future Conditions with the Proposed Action

16.5.1 Dispersion Modeling for CO and PM

The predicted traffic for future conditions with the Proposed Action was developed by adding the proposed increase in taxi volume, based on the pro-rated approach – an increase of 15.1% in taxi volume at each intersection - to the estimated traffic for future conditions without the Proposed Action.

Applicable maximum pollutant concentrations predicted near the four selected intersections are shown in Table 16-3.[3] The results of the analyses were below CEQR thresholds for PM_{10}, 24-hour and annual neighborhood $PM_{2.5}$ and CO~~, and above CEQR thresholds for annual neighborhood $PM_{2.5}$~~. In addition, the Proposed Action is not expected to significantly impact NO_x concentrations in the New York City. ~~As discussed in Section 16.7, proposed traffic mitigation would also mitigate annual neighborhood $PM_{2.5}$ levels and bring them below established CEQR thresholds. Additional analysis will be undertaken between DEIS and FEIS in order to further refine the air quality analysis.~~

[3] Analysis assumes that the vehicle miles traveled per year per taxi would remain at approximately 70,000 miles per year. A review of the 2004 EIS shows that the vehicle miles traveled per year per taxi were also approximately 70,000 miles per year. Therefore, a significant change in miles traveled per year is not anticipated.

Table 16-3: Maximum Estimated Pollutant Concentrations Near Selected Roadway Intersections in the Future Conditions without Proposed Traffic Mitigation

	$PM_{2.5}$		PM_{10}	CO	
Air Quality Receptor Site	**24-hr $PM_{2.5}$ Pollutant Concentrations (1),(2) µg/m^3** *(STV: 4.5 µg/m^3)*	**Annual Neighborhood $PM_{2.5}$ Pollutant Concentrations (1),(3) µg/m^3** *(STV: 0.1 µg/m^3)*	**24-hr PM_{10} Pollutant Concentrations (4) µg/m^3** *(NAAQS: 150 µg/m^3)*	**1-hr CO Pollutant Concentrations (5) ppm** *(NAAQS: 35 ppm)*	**8-hr CO Pollutant Concentrations (5) ppm** *(NAAQS: 9 ppm)*
3rd Avenue and 57th Street					
2017 Future Conditions with the Proposed Action	-	-	~~106~~ 90	~~4.5~~ 4.3	~~1.06~~ 0.70
2017 Future Conditions without the Proposed Action	-	-	-	-	~~1.02~~ 0.60
Increment due to the Proposed Action(6)	~~1.97~~ 2.1	~~0.38~~ 0.08	-	-	~~0.04~~ 0.10
5th Avenue and 42nd Street					
2017 Future Conditions with the Proposed Action	-	-	~~93~~ 79	~~4.1~~ 3.3	~~0.85~~ 0.34
2017 Future Conditions without the Proposed Action	-	-	-	-	~~0.60~~ 0.30
Increment due to the Proposed Action(7)	~~3.88~~ 1.0	~~0.30~~ 0.03	-	-	~~0.25~~ 0.04
6th Avenue and 23rd Street					
2017 Future Conditions with the Proposed Action	-	-	~~113~~ 82	~~4.7~~ 3.5	~~1.09~~ 0.47
2017 Future Conditions without the Proposed Action	-	-	-	-	~~0.82~~ 0.43
Increment due to the Proposed Action(8)	~~2.85~~ 1.0	~~0.32~~ 0.03	-	-	~~0.27~~ 0.04
7th Avenue & 34th Street					
2017 Future Conditions with the Proposed Action	-	-	~~89~~ 92	4.2	~~0.94~~ 0.93
2017 Future Conditions without the Proposed Action	-	-	-	-	0.86
Increment due to the Proposed Action(9)	~~2.96~~ 3.0	~~0.17~~ 0.08	-	-	~~0.08~~ 0.07

Notes for Table 16-3:

(1) The maximum modeled incremental $PM_{2.5}$ concentrations are estimated by taking the difference between the maximum $PM_{2.5}$ concentrations for the Future Conditions without the Proposed Action and the Future Conditions with the Proposed Action.

(2) The $PM_{2.5}$ 24-hour concentrations are the maximum modeled incremental $PM_{2.5}$ concentrations (due to Proposed Action generated traffic only) at any receptor three meters from the edge of the roadway.

(3) The $PM_{2.5}$ annual neighborhood concentrations are the maximum modeled incremental $PM_{2.5}$ concentrations (due to Proposed Action generated traffic only) at distance varied according to the annual average daily traffic ~~any receptor 15 meters from the edge of the roadway~~.

(4) PM_{10} concentrations are the maximum concentrations estimated using 24-hour traffic information plus background concentration of ~~67~~ 44 µg/m^3.

(5) CO 1-hour concentrations are the maximum concentrations estimated plus background concentration of 2.4 ppm. The 8-Hour CO increment criteria is ~~An increase of more than~~ half the difference between No-Action concentrations and the 8-hour standard, when No-Action concentrations are below 8 ppm. Background concentrations is 1.8 ppm per New York State Ambient Air Quality Report for 2012~~1~~.

(6) Third Avenue and 57th Street 24-hr $PM_{2.5}$ Incremental Pollutant Concentration of ~~1.97~~2.1 ug/m^3 based on a 2017 Future Conditions with the Proposed Action concentration of ~~28.64~~ 18.27 ug/m^3 and a 2017 Future Conditions without the Proposed Action concentration of ~~26.67~~16.18 ug/m^3, not including existing ambient pollutant concentrations. Annual neighborhood $PM_{2.5}$ Incremental Pollutant Concentration of ~~0.38~~ 0.08 ug/m^3 based on the maximum average difference between the 2017 Future Conditions with the Proposed Action concentration and a 2017 Future Conditions without the Proposed Action, not including existing ambient pollutant concentrations.

(7) Fifth Avenue and 42nd Street 24-hr $PM_{2.5}$ Incremental Pollutant Concentration of ~~3.88~~ 1.0 ug/m^3 based on a 2017 Future Conditions with the Proposed Action concentration ~~18.35~~10.81 ug/m^3 and a 2017 Future Conditions without the Proposed Action concentration of ~~14.47~~ 9.86 ug/m^3, not including existing ambient pollutant concentrations.. Annual neighborhood $PM_{2.5}$ Incremental Pollutant Concentration of ~~0.30~~0.03 ug/m^3 based on the maximum average difference between the 2017 Future Conditions with the Proposed Action concentration and a 2017 Future Conditions without the Proposed Action concentration, not including existing ambient pollutant concentrations.

(8) Sixth Avenue and 23rd Street 24-hr $PM_{2.5}$ Incremental Pollutant Concentration of 1.0 ~~2.85~~ug/m^3 based on a 2017 Future Conditions with the Proposed Action concentration of 10.16 ~~16.47~~ ug/m^3 and a 2017 Future Conditions without the Proposed Action concentration of 9.19~~13.62~~ ug/m^3, not including existing ambient pollutant concentrations. Annual neighborhood $PM_{2.5}$ Incremental Pollutant Concentration 0.03 ~~0.32~~ug/m^3 based on the maximum average difference between the~~a~~ 2017 Future Conditions with the Proposed Action concentration and a 2017 Future Conditions without the Proposed Action concentration, not including existing ambient pollutant concentrations.

(9) Seventh Avenue and 34th Street 24-hr $PM_{2.5}$ Incremental Pollutant Concentration of 3.0~~2.96~~ ug/m^3 based on a 2017 Future Conditions with the Proposed Action concentration of ~~17.73~~ 18.58ug/m^3 and a 2017 Future Conditions without the Proposed Action concentration of ~~14.77~~ 15.63 ug/m^3, not including existing ambient pollutant concentrations. Annual neighborhood $PM_{2.5}$ Incremental Pollutant Concentration of 0.08 ~~0.17~~ug/m^3 based on the maximum average difference between 2017 Future Conditions with the Proposed Action concentration and a 2017 Future Conditions without the Proposed Action concentration, not including existing ambient pollutant concentrations.

ppm = parts per million
µg/m^3 = micrograms per cubic meter

16.5.2 Impact of the Proposed Action on 1-hour NO_2

Nitrogen oxides (NO_x) is a general term for two air pollutants, nitrogen oxide (NO) and nitrogen dioxide (NO_2), that are produced during the combustion of fuels in stationary and mobile sources of air emissions. NO_x and volatile organic compounds, react in the atmosphere in the presence of sunlight to form photochemical smog, which includes ozone and other oxidants that have been shown to cause serious adverse health effects. Most (typically 90% or more) of the NO_x emitted as a result of combustion is in the form of NO and, once emitted, reacts in the atmosphere with oxygen and hydrocarbons to form ozone and NO_2.

In 1972, the USEPA established a primary (health based) NAAQS for NO_2, as the principal indicator pollutant for NO_x, at 53 parts per billion (ppb), based on an annual arithmetic average. On January 22, 2010, the USEPA established a new additional 1-hour primary NAAQS for NO_2 of 100 ppb based on the 3-year average of the 98th percentile of the daily maximum 1-hour average concentrations. The new standard became effective on April 12, 2010.

The USEPA is in the process of identifying areas that they intend to designate as "nonattainment" based on recorded exceedances of the 1-hour NO_2 NAAQS. It is USEPA's further intention to designate other areas of the country as "attainment" where monitoring data indicates compliance, or as "unclassifiable" where there is insufficient monitoring data to determine whether the 1-hour NO_2 NAAQS is being attained. Existing ambient air quality monitoring networks for NO_2 are focused on estimating the general population exposure annual concentrations of NO_2 against the 53 ppb annual arithmetic NAAQS for NO_2. These networks, including the New York City air quality monitoring network, do not include monitors near major roadways that could measure localized concentrations of NO_2. It is critical to measure NO_2 levels near roadways since mobile sources of NO_2 are responsible for the significant portion of the public's exposure to 1-hour NO_2. Regulations promulgated by the USEPA (75 CFR 6479, February 9, 2010) require that states site NO_2 monitors near roadways, and that such monitors be in service by January 1, 2013. Since the new 1-hour NO_2 NAAQS is based on the 3-year average of the 98th percentile of the daily maximum 1-hour average concentrations of NO_2, sufficient air quality data from the new network will not be available to determine compliance with the new 1-hour NO_2 NAAQS until after 2015, three years after the initiation of monitoring for 1-hour NO_2 near roadways.

Consistent with guidance in the *2012 CEQR Technical Manual*, it is premature to conduct a detailed quantitative assessment of the impact of NO_2 emissions from the Proposed Action on ambient levels of NO_2, given the lack of 1-hour NO_2 ambient air quality data for New York City to accurately estimate background levels of NO_2 near roadways. Therefore, the assessment of the impact of the Proposed Action on NO_2 was limited to:

- summarizing the available existing 1-hour NO_2 monitoring data at monitoring stations in New York City;
- assessing the monitoring data to determine whether there is an existing exceedance of the 1-hour NO_2 standard; and
- qualitatively evaluating the potential effects of the Proposed Action on ambient levels of NO_2, based on available monitoring data and the proximity of existing monitors to traffic corridors.

Ambient air quality in New York City is monitored by the NYSDEC as part of the federally-mandated National Air Monitoring Stations Network and the State and Local Air Monitoring Stations Network. The NYSDEC continually measures levels of pollutants in the air, including gaseous criteria pollutants (ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide) and particulate matter. Of the over 80 ambient air quality monitoring stations operated in New York State by NYSDEC, not all of which measure every pollutant, only two ambient air quality monitoring stations measure NO_2 in New York City. As stated above, ambient monitoring of NO_2 performed at these monitoring stations is used to estimate the general population exposure annual concentrations of NO_2 against the 53 ppb annual arithmetic NAAQS for NO_2. These monitoring stations are not near major roadways. The two sites that measure NO_2 are at the NY Botanical Garden Pfizer Lab in the Bronx and at Queens College in Queens~~)~~. Ambient one-hour NO_2 concentrations based on the 98th percentile of daily maximum 1-hour concentrations for the last three years recorded at these two stations are provided in Table 16-4 below. As shown in Table 16-4, background concentrations of 1-hour NO_2 were well below the NAAQS standard of 100 ppb for NO_2.

Table 16-4: 98th Percentile Daily Maximum One-Hour Average NO_2 Concentrations (in ppb)

Station	Location	2009	2010	2011	3-Year Average
Botanical Gardens	Bronx	66.0	70.0	60.7	65
Queens College 2	Queens	67.0	69.0	66.3	67

Source: Data provided via e-mail from Russ Twaddell, NYSDEC Bureau of Air Quality Surveillance.

Total annual NO_x emissions were calculated using USEPA's MOVES mobile source emission factor model for the following scenarios:

- The existing taxi fleet of 13,237 taxis in 2013;
- Future Conditions without the Proposed Action (taxi fleet of 13,237 taxis) in 2017; and
- Future Conditions with the Proposed Action (taxi fleet of 15,237 taxis) in 2017.

As shown on Table 16-5, the existing and future condition without the Proposed Action taxi fleet of 13,237 vehicles in 2013 and 2017, respectively, is estimated to produce approximately 50 tons of NO_x per year. The future fleet of 15,237 vehicles in 2017, based on the Proposed Action, would produce approximately 60 tons of NO_x per year, which is an increase of 10 tons of NO_x per year when compared to the estimated NO_x emissions for the future conditions without the Proposed Action.

Table 16-5: Taxi NO_x Emissions

Analysis Condition	Weighted Average NO_x Emissions (grams/vehicle-mile)	Taxi Fleet (vehicles)	NO_x Emissions (grams/fleet-mile) [1]	Fleet NO_x Emissions (tons/year) [2]
2013 Existing Conditions	0.0445	13,237	590	50
2017 Future Conditions without the Proposed Action	0.0474	13,237	630	50
2017 Future Conditions with the Proposed Action	0.0521	15,237	790	60
Change from Existing to Future Conditions without the Proposed Action				**0**
Change from Future Conditions without the Proposed Action to Future Conditions with the Proposed Action				**10**

Notes:

(1) The grams per fleet-mile represent the total NO_x emissions for each mile the total taxi fleet travels.

(2) Based on information provided by the TLC, which shows that each taxi vehicle travels approximately 70,000 miles per year.

As shown in Table 16-5, NO_x emissions for the entire taxi fleet are expected to increase by approximately twenty percent[4] between the existing and the 2017 Future Conditions with the Proposed Action. Assuming a similar increase in the monitored background ambient concentrations of 1-hour NO_2 (65 ppb at the Botanical Gardens and 67 ppb at the Queens College stations), it is not expected that the 1-hour NO_2 NAAQS of 100 ppb would be exceeded due to the Proposed Action. Since the taxi vehicles represents approximately 55 percent[5] of the total vehicles at an intersection, the increase in localized NO_x emissions from taxis at roadways would not be expected to increase more than 20 percent[6], based on the difference between 2017 Future Conditions with and without the Proposed Action. As such, the proposed increase of 2,000 taxi medallions is not expected to significantly impact NO_x and NO_2 concentrations in the City.

4 Increase of twenty percent in NO_x emissions for the taxi fleet calculated based on the following calculation: concentration in 2017 Future Conditions with the Proposed Action (60 tons/year) minus existing conditions concentration (50tons/year) divided by the concentration in the existing conditions (50 tons/year).

5 Based on the AM Peak volume at the intersection of Seventh Avenue and 34th Street, which contains the highest percentage of existing taxis out of the four intersections evaluated for qualitative NOx analysis. .

6 Increase of less than ~~10~~ 20 percent in NO_x emissions for the taxi fleet calculated based on the following calculation: concentration in 2017 Future Conditions with the Proposed Action (60 tons/year) minus concentration in 2013 Future Conditions without the Proposed Action (50tons/year) divided by the concentration in the 2017 Future Conditions without the Proposed Action (50 tons/year).

16.6 Identification of Significant Adverse Environmental Impacts

The results of the detailed dispersion analyses showed that CO, PM_{10} and 24-hour and annual neighborhood $PM_{2.5}$ values were below applicable CEQR thresholds, as well as state and federal ambient air quality standards. ~~As shown in Table 16-3, the results of the detailed microscale analysis for annual neighborhood $PM_{2.5}$ were above the applicable CEQR thresholds.~~

16.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since the Proposed Action is not anticipated to result in significant adverse impacts associated with air quality, no mitigation measures were identified. ~~Additional modeling was undertaken to assess potential air quality impacts of the proposed action in the future conditions with proposed traffic mitigation measures. Proposed traffic mitigation consists mainly of signal timing changes, as described in Chapter 25: Mitigation.~~

~~Further air quality analysis conducted with proposed traffic mitigation show that, the proposed addition of 2,000 taxicab medallions would not result in a significant adverse impact to air quality. Maximum pollutant concentrations predicted near the four analyzed intersections in the build conditions with traffic mitigation are shown in Table 16-6.~~

~~Table 16-6: Maximum Estimated Pollutant Concentrations Near Selected Roadway Intersections in the Future Conditions with Proposed Traffic Mitigation~~

	~~$PM_{2.5}$~~		~~PM_{10}~~	~~CO~~	
~~Air Quality Receptor Site~~	~~24-hr $PM_{2.5}$ Pollutant Concentrations (1),(2) $\mu g/m^3$~~ ~~*(STV: 4.5 μg/m³)*~~	~~Annual Neighborhood $PM_{2.5}$ Pollutant Concentrations (1),(3) $\mu g/m^3$~~ ~~*(STV: 0.1 μg/m³)*~~	~~24-hr PM_{10} Pollutant Concentrations (4) $\mu g/m^3$~~ ~~*(NAAQS: 150 μg/m³)*~~	~~1-hr CO Pollutant Concentrations (5) ppm~~ ~~*(NAAQS: 35 ppm)*~~	~~8-hr CO Pollutant Concentrations (5) ppm~~ ~~*(NAAQS: 9 ppm)*~~
~~3rd Avenue and 57th Street~~					
~~2017 Future Conditions with the Proposed Action~~	~~-~~	~~-~~	~~100~~	~~4.3~~	~~0.91~~
~~2017 Future Conditions without the Proposed Action~~	~~-~~	~~-~~	~~-~~	~~-~~	~~0.95~~
~~Increment due to the Proposed Action[6]~~	~~1.03~~	~~0.07~~	~~-~~	~~-~~	~~-0.04~~
~~5th Avenue and 42nd Street~~					
~~2017 Future Conditions with the Proposed Action~~	~~-~~	~~-~~	~~94~~	~~4.1~~	~~0.85~~
~~2017 Future Conditions without the Proposed Action~~	~~-~~	~~-~~	~~-~~	~~-~~	~~0.60~~
~~Increment due to the Proposed Action[7]~~	~~1.45~~	~~0.098~~	-	-	~~0.25~~
~~6th Avenue and 23rd Street~~					
~~2017 Future Conditions with the Proposed Action~~	~~-~~	~~-~~	~~99~~	~~4.2~~	~~0.86~~
~~2017 Future Conditions without the Proposed Action~~	~~-~~	~~-~~	~~-~~	~~-~~	~~0.46~~
~~Increment due to the Proposed Action[8]~~	~~0.82~~	~~-0.31~~	-	-	~~0.40~~
~~7th Avenue & 34th Street~~					
~~2017 Future Conditions with the Proposed Action~~	~~-~~	~~-~~	~~86~~	~~3.9~~	~~0.65~~
~~2017 Future Conditions without the Proposed Action~~	~~-~~	~~-~~	~~-~~	~~-~~	~~0.74~~
~~Increment due to the Proposed Action[9]~~	~~0.78~~	~~-0.23~~	-	-	~~-0.09~~

~~**Notes for Table 16-3:**~~

1. ~~The maximum modeled incremental $PM_{2.5}$ concentrations are estimated by taking the difference between the maximum $PM_{2.5}$ concentrations for the Future Conditions without the Proposed Action and the Future Conditions with the Proposed Action.~~
2. ~~The PM2.5 24-hour concentrations are the maximum modeled incremental PM2.5 concentrations (due to Proposed Action generated traffic only) at any receptor three meters from the edge of the roadway.~~
3. ~~The PM2.5 annual neighborhood concentrations are the maximum modeled incremental PM2.5 concentrations (due to Proposed Action generated traffic only) at any receptor 15 meters from the edge of the roadway.~~
4. ~~PM10 concentrations are the maximum concentrations estimated using 24-hour traffic information plus background concentration of 67 µg/m3.~~
5. ~~CO 1-hour concentrations are the maximum concentrations estimated plus background concentration of 2.4 ppm. An increase of more than half the difference between No-Action concentrations and the 8-hour standard, when No-Action concentrations are below 8 ppm. Background concentrations is 1.8 ppm per New York State Ambient Air Quality Report for 2011.~~
6. ~~Third Avenue and 57th Street 24-hr PM2.5 Incremental Pollutant Concentration of 1.03 ug/m3 based on a 2017 Future Conditions with the Proposed Action concentration of 27.70 ug/m3 and a 2017 Future Conditions without the Proposed Action concentration of 26.67 ug/m3, not including existing ambient pollutant concentrations. Annual neighborhood PM2.5 Incremental Pollutant Concentration of 0.07 ug/m3 based on the maximum average difference between the 2017 Future Conditions with the Proposed Action concentration and a 2017 Future Conditions without the Proposed Action, not including existing ambient pollutant concentrations.~~
7. ~~Fifth Avenue and 42nd Street 24-hr PM2.5 Incremental Pollutant Concentration of 1.45 ug/m3 based on a 2017 Future Conditions with the Proposed Action concentration of 15.92 ug/m3 and a 2017 Future Conditions without the Proposed Action concentration of 14.47 ug/m3, not including existing ambient pollutant concentrations.. Annual neighborhood PM2.5 Incremental Pollutant Concentration of 0.098 ug/m3 based on the maximum average difference between the 2017 Future Conditions with the Proposed Action concentration and a 2017 Future Conditions without the Proposed Action concentration, not including existing ambient pollutant concentrations.~~
8. ~~Sixth Avenue and 23rd Street 24-hr PM2.5 Incremental Pollutant Concentration of 0.82 ug/m3 based on a 2017 Future Conditions with the Proposed Action concentration of 20.35 ug/m3 and a 2017 Future Conditions without the Proposed Action concentration of 19.53 ug/m3, not including existing ambient pollutant concentrations. Annual neighborhood PM2.5 Incremental Pollutant Concentration of 0.31 ug/m3 based on the maximum average differencea 2017 Future Conditions with the Proposed Action concentration and a 2017Future Conditions without the Proposed Action concentration, not including existing ambient pollutant concentrations.~~
9. ~~24-hr PM2.5 Incremental Pollutant Concentration of 0.78 ug/m3 based on a 2017 Future Conditions with the Proposed Action concentration of 15.55 ug/m3 and a 2017 Future Conditions without the Proposed Action concentration of 14.77 ug/m3, not including existing ambient pollutant concentrations Annual neighborhood PM2.5 Incremental Pollutant Concentration of 0.23 ug/m3 based on the maximum average difference between 2017 Future Conditions with the Proposed Action concentration and a 2017 Future Conditions without the Proposed Action concentration, not including existing ambient pollutant concentrations.~~
10. ~~ppm = parts per million~~
11. ~~µg/m3 = $\mu g/m^3$~~

CHAPTER 17 – GREENHOUSE GASES

17.1 Introduction and Study Area Delineation

Provided in this chapter is an assessment of the impact of the Proposed Action on greenhouse gas (GHG) emissions. The assessment conforms to guidance included in the *2012 CEQR Technical Manual*, including an assessment of the consistency of the Proposed Action with the City's City-wide GHG reduction goal that was developed for planning purposes as part of PlaNYC.

As indicated in the *2012 CEQR Technical Manual*, a GHG consistency assessment is typically performed for the following types of projects:

- New York City capital projects;
- Projects that may require:
  - additional power generation; or
  - new regulations or other actions that would fundamentally change the City's solid waste management system.
- Projects that would result in the development of 350,000 square feet or greater.

The Proposed Action would result in an additional 2,000 taxicabs operating on New York City roadways, and not include any onsite development. The Proposed Action is neither a New York City capital project nor a new development, would not require additional power generation, or include new regulations or other actions that would fundamentally change the City's solid waste management system. However, since operation of the 2,000 additional taxicabs that would be allowed under the Proposed Action would result in the generation of GHGs, this chapter includes an estimate of the GHG emissions that would be generated with the Proposed Action, and an assessment of the Proposed Action's consistency with the City's City-wide GHG reduction goal.

17.2 Analysis/Methodologies

As indicated in the *2012 CEQR Technical Manual*, the global climate is changing due to increases in GHG emissions. Effects to the environment due to climate change include increases in temperature, rising sea levels and changes in levels of precipitation. To address these concerns locally, the City of New York passed the New York City Climate Protection Act (Local Law 22) in 2008 as part of PlaNYC, with the purpose of reducing City-wide GHG emissions by 30 percent below 2005 levels by 2030.

The impact of a proposed action on GHG emissions is assessed on the basis of the total amount of emissions of the following six GHGs regulated under the Kyoto Protocol (an international agreement adopted in 1997 that is linked to the United Nations Framework Convention on Climate Change): carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). The common sources of each of the six gases are:

- CO_2: fossil fuel combustion, forest clearing, cement production
- N_2O: landfills, production and distribution of natural gas and petroleum, anaerobic digestion, rice cultivation, fossil fuel combustion
- CH_4: fossil fuel combustion, fertilizers, nylon production, manure
- HFCs: refrigeration gases, aluminum smelting, semiconductor manufacturing
- PFCs: aluminum production, semiconductor manufacturing
- SF6: electrical transmissions and distribution systems, circuit breakers, magnesium production

Since the global warming potential of these GHGs vary from one another (See Table 17-1), the estimate of GHG emissions is provided on the basis of equivalent tons of CO_2 (CO_2e). This is calculated by multiplying the estimated tons of each GHG by the Global Warming Potential of each GHG included in Table 17-1.

Table 17-1: Global Warming Potential

Greenhouse Gas	Global Warming Potential
CO_2 - Carbon Dioxide	1
CH_4 - Methane	21
N_2O - Nitrous Oxide	310
HFCs - Hydrofluorocarbons	140 – 11,700
PFCs - Perfluorocarbons	6,500 – 9,200
SF_6 - Sulfur Hexafluoride	23,900

Source: *2012 CEQR Technical Manual*

A GHG assessment consists of estimation of the direct and indirect emission of GHGs from operations, mobile sources, and construction activities from the proposed action, and an assessment of the consistency of the project with the City's City-wide 30% GHG reduction goal from 2005 levels. As indicated in the *2012 CEQR Technical Manual,* direct GHG emissions from a proposed action include:

- GHG emissions from both on- and off-site generation of electricity required to operate the proposed action;
- GHG emissions from on-site industrial processes and boilers;
- Fugitive GHG emissions generated during construction of a project, including emissions from the operation of construction vehicles and equipment, and emissions resulting from the manufacture or transportation of construction materials used for the project; and
- Mobile source emissions that are produced by fleet vehicles owned or leased, and operated as part of the proposed action.

Indirect GHG emissions include emissions from the generation of electricity and/or steam from off-site facilities.

Since the Proposed Action does not include any construction activities and does not include any on-site operations, an assessment of operation and construction emissions was not warranted, and only a mobile source emission assessment was included as part of the GHG emissions assessment.

Based on procedures outlined in the *2012 CEQR Technical Manual,* the impact of the Proposed Action on GHG emissions was assessed in two steps:

- Estimation of the emissions for the project sources; and
- Assessment of the consistency of the Proposed Action with the City's City-wide GHG reduction goal.

The mobile source GHG emissions from the Proposed Action were estimated using the following steps:

1. Estimation of the number of vehicular trips from the Proposed Action;
2. Calculation of the Vehicle Miles Traveled (VMT) due to the Proposed Action; and
3. Estimation of the GHG emissions from the Proposed Action using the mobile GHG emissions calculator, provided in the *2012 CEQR Technical Manual*, to obtain the total estimated mobile source GHG emissions (in units of CO_2e) attributable to the project.

The following assumptions were used in applying the *2012 CEQR Technical Manual* mobile GHG emissions calculator:

- All taxi vehicles, including conventional and hybrid accessible and non-accessible vehicles and accessible and non-accessible ToT vehicles, were classified in the *2012 CEQR Technical Manual* mobile GHG emissions calculator[1] as taxis.
- Since the majority of the taxi medallion travel occurs in the borough of Manhattan (greater than 90%), the GHG emissions were calculated assuming the total VMTs for the taxi fleet was traveled in Manhattan.
- The percentages of daily VMT presented in Table 18-6 of the *2012 CEQR Technical Manual* were used for Manhattan. Since the majority of taxi travel does not typically occur on freeways, the 30% VMT assigned to freeways was conservatively distributed to local roads.
- The current safety and emissions inspections data for taxi medallions show that, on average, a NYC taxi is driven approximately 70,000 miles per year.

In conformance with the *2012 CEQR Technical Manual*, the consistency with the City's overall GHG reduction goal presented in PlaNYC 2030 was based on an assessment of the consistency of the Proposed Action with the following goals:

- Pursue transit-oriented development;
- Generate clean, renewable power through replacement of inefficient power plants with state-of-the-art technology and expanding the use of clean distributed generation;

[1] Prepared by the Mayor's Office of Environmental Coordination.

- Construct new resource- and energy-efficient buildings (including the use of sustainable construction materials and practices) and improve the efficiency of existing buildings; and
- Encourage sustainable transportation through improving public transit, improving the efficiency of private vehicles, and decreasing the carbon intensity of fuels.

17.3 Existing Conditions

Per the Inventory of New York City's Greenhouse Gas Emissions, dated April 2007, the City emits a total of 58.3 millions tons of total GHG emissions, of which 11.7 million tons of GHG emissions are generated from on-road vehicles.[2] As summarized in Table 17-2, the 13,237 taxis in the existing taxi fleet are estimated to emit approximately 784,430 tons of CO_2e per year. Therefore, the existing taxi fleet is approximately seven percent of the GHG emissions generated from on-road vehicles and approximately one percent of the total GHG emissions generated in the City.

17.4 Future Conditions without the Proposed Action

In the future without the Proposed Action, the number of taxis in the taxi fleet would not change from Existing Conditions. Therefore, the taxi fleet in the future conditions without the Proposed Action, consisting of 13,237 taxis, is also estimated to result in approximately 784,430 tons of CO_2e per year (see Table 17-2).

17.5 Future Conditions with the Proposed Action

In the future with the Proposed Action, the number of taxis in the taxi fleet would increase by 2,000 taxis, from 13,237 vehicles to 15,237 vehicles. Therefore, emissions in the future with the Proposed Action would increase the GHG emissions from taxis by approximately 118,520 tons per year to a total of approximately 902,950 tons of CO_2e per year (see Table 17-2).

[2] Source: Inventory of New York City's Greenhouse Gas Emissions, April 2007, Mayor's Office of Operations, Office of Long Term Planning and Sustainability. http://www.nyc.gov/html/om/pdf/ccp_report041007.pdf

Table 17-2: Estimated GHG Emissions from Taxis

Condition	Estimated Annual Distance Traveled (VMT)	Estimated CO_2e Tons
Existing	926,590,000	784,430
Future Without the Proposed Action	926,590,000	784,430
Future With the Proposed Action	1,066,590,000	902,950

As stated above, and in conformance with the *2012 CEQR Technical Manual*, the consistency with the City's overall GHG reduction goal presented in PlaNYC 2030 was based on an assessment of the consistency of the Proposed Action with the following goals:

- Pursue transit-oriented development;
- Generate clean, renewable power through replacement of inefficient power plants with state-of-the-art technology and expanding the use of clean distributed generation;
- Construct new resource- and energy-efficient buildings (including the use of sustainable construction materials and practices) and improve the efficiency of existing buildings; and
- Encourage sustainable transportation through improving public transit, improving the efficiency of private vehicles, and decreasing the carbon intensity of fuels.

The Proposed Action does not include construction work and is not a building. However, the Proposed Action does encourage sustainable transportation through improving public transportation. The implementation of the Proposed Action would improve the public transportation system by providing 2,000 additional taxis. In addition, the Proposed Action is an integral part of achieving Transportation Initiative 3 of PlaNYC 2030 which is to Expand For-Hire Vehicle Service Throughout Our Neighborhoods. PlaNYC 2030 recognizes that taxis and car services are an important part of the City public transportation system. Therefore, the Proposed Action would be consistent with PlaNYC 2030 and would not significantly hinder City Policy with respect to GHG emissions from mobile sources.

17.6 Identification of Significant Adverse Environmental Impacts

As shown in Table 17-2 the proposed addition of 2,000 taxicab medallions would result in approximately 902,950 tons of CO_2e emissions, compared to the 784,430 tons of CO_2e emitted under Existing Conditions and future conditions without the Proposed Action. GHG emissions in the future with the Proposed Action would be approximately eight percent of the estimated 11.7 million tons of GHG emissions generated from the on-road vehicles in the City and less than two percent of the total 58.3 millions tons of total GHG emissions generated in the City, based on a 2005 emissions inventory.[3] Furthermore, the increase in GHG emissions of approximately 118,520 tons per year due to the Proposed Action would result in an increase of one percent to the 11.7 million tons of GHG emissions generated from on-road vehicles in the City and 0.2 percent to the 58.3 million tons of total GHG emissions generated in the City.

17.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since the Proposed Action is not anticipated to result in significant adverse impacts associated with GHG emissions, no mitigation measures were identified. In addition, the Proposed Action is an integral part of achieving Transportation Initiative 3 of PlaNYC 2030 which is to Expand For-Hire Vehicle Service throughout Our Neighborhoods.

[3] Source: Inventory of New York City's Greenhouse Gas Emissions, April 2007, Mayor's Office of Operations, Office of Long Term Planning and Sustainability. http://www.nyc.gov/html/om/pdf/ccp_report041007.pdf

CHAPTER 18 - NOISE

18.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, a noise assessment should be performed to determine:

- a proposed project's potential effect on sensitive noise receptors, including residential, commercial and institutional uses; and
- the effects of ambient noise levels on new sensitive uses introduced by the proposed project.

The three main types of noise sources that affect the City noise environment are mobile, stationary, and construction sources. The Proposed Action would introduce vehicular mobile noise sources to the City's roadways through the proposed sale of 2,000 new taxi medallions. A noise impact screening assessment was performed to determine whether the additional vehicles with the Proposed Action would result in a noticeable change in noise levels. As indicated in the *2012 CEQR Technical Manual* a noticeable change in noise levels would occur if a project would result in the doubling (increase of 100%) of the number of existing Passenger Car Equivalents (PCEs) along a roadway. PCEs are used to account for the different noise generating characteristics of different motor vehicles (i.e., automobiles, light trucks, medium trucks, heavy trucks, buses). Based on the results of this noise screening assessment, the Proposed Action would not result in the doubling of existing noise PCEs, and, therefore, would not result in a noticeable change in noise of levels or a significant adverse impact on community noise levels.

18.2 Analysis/Methodology

Noise is often described as unwanted sound. Factors affecting how sound is perceived by the human ear include:

- Actual level of the sound (loudness);
- Distribution of sound energy among individual frequency bands in the audible range;
- Period of exposure to the sound; and
- Changes or fluctuations in the sound levels during the period of exposure.

Per the *2012 CEQR Technical Manual,* an initial impact screening assessment may be appropriate for projects that would generate vehicular mobile sources if a proposed project would:

- Generate or reroute vehicular traffic; or
- Be located near a heavily trafficked thoroughfare.

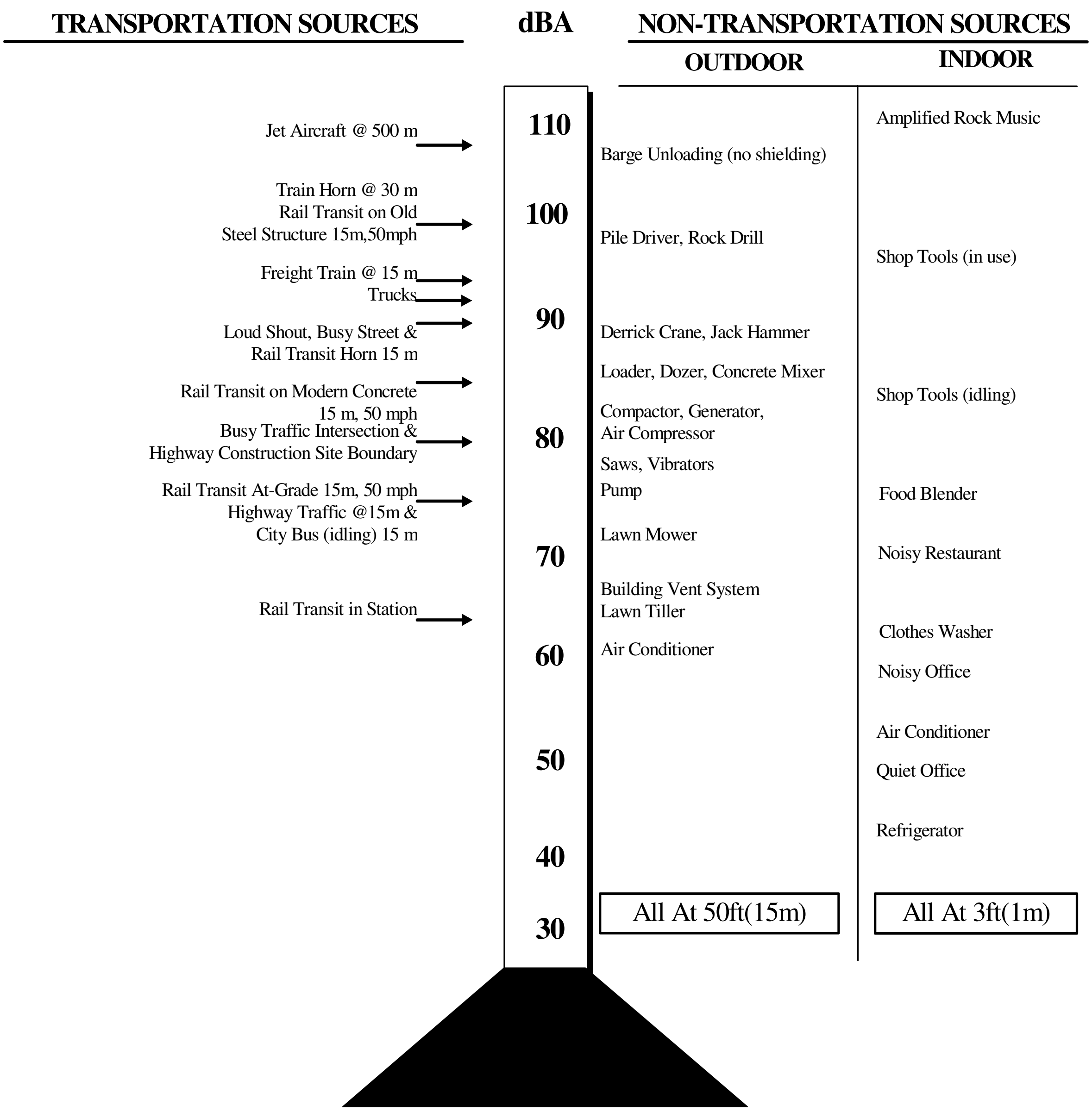
The Proposed Action would introduce vehicular mobile noise sources to the City's roadways through the proposed sale of 2,000 new taxi medallions. Therefore, a noise impact screening assessment was deemed appropriate. Provided below is a brief discussion of general noise characteristics and the results of the noise screening assessment.

18.2.1 Noise Characteristics

The human ear does not perceive all sound frequencies equally well, as a consequence, measured sound levels are adjusted or weighted to more closely correspond to noise perceived by human hearing. The adjusted noise metric (unit) that most closely duplicates human perception of noise is known as the A-weighted decibel (dBA). Community noise levels in urban areas usually range between 45 dBA and 85 dBA, 45 dBA being the approximate daytime noise level in a typical quiet living room, and 85 dBA being the approximate daytime noise level near a sidewalk adjacent to heavy traffic. Figure 18-1 (Common Indoor and Outdoor Noise Levels) illustrates noise levels emitted from typical fluctuating and non-fluctuating (steady) noise sources, based on the A-weighted decibel measure of noise. Sound energy is absorbed in the air as a result of temperature, humidity and the frequency of the sound. Sound levels at a given location are also affected by the presence of intervening topography and structures.

The average person's ability to perceive changes in noise levels is well documented. Generally, changes in noise levels of 3 dBA or less are barely perceived by most people, whereas a 5 dBA change is readily noticeable and a 10 dBA change is perceived as a doubling (or halving) of noise levels. The general principle on which most noise acceptability criteria are based is that a change in noise is likely to cause annoyance whenever it intrudes upon the existing noise from all other sources. Essentially, the level of annoyance depends upon the noise that exists before the introduction of a new noise-generating source or a modification of an existing noise generating source.

Figure 18-1
Common Indoor and Outdoor Noise Levels



Sources: Parsons Brinckerhoff Quade & Douglas, Inc., July 1998
FTA Report DOT-T-95-16. "Transit Noise and Vibration Impact Assessment: Final Report", April 1995
Hudson River Waterfront Transportation Corridor DEIS, November 1992

18.2.2 Noise Screening Assessment

Under CEQR, a noise screening assessment is conducted to determine if the project has the potential to cause a significant adverse noise impact at noise sensitive receptors. Noise sensitive receptors are defined as residences, hotels, motels, health care facilities, nursing homes, schools, houses of worship, court houses, public meeting facilities, museums, libraries, indoor and outdoor theaters, parks, golf courses, zoos, campgrounds and beaches. For vehicular noise sources, a noise impact screening assessment is performed based on the estimated change in traffic volumes for the expected hour(s) at which the greatest change in noise levels at noise sensitive receptors would be expected to occur with the proposed project. Noise PCE values are assigned to project-generated vehicle types to determine whether the project would cause a doubling (100% increase) or more of existing noise PCE's, which is equivalent to an increase in noise of 3 dBA or more. If the project would result in a doubling of existing noise PCE's, a detailed vehicular noise analysis is required. Per the *2012 CEQR Technical Manual*, the following PCE factors are used in completing this screening level assessment:

- Each Automobile or Light Truck: 1 Noise PCE
- Each Medium Truck: 13 Noise PCEs
- Each Bus: 18 Noise PCEs
- Each Heavy Truck: 47 Noise PCEs

There would be no change in the number of medium trucks, buses or heavy trucks with the Proposed Action. Taxi medallions were assigned a noise PCE of one, and it was conservatively assumed that all existing vehicles on the road are classified as automobiles, light trucks or taxis and would therefore have a noise PCE factor of one. This is a conservative assumption because City roadways typically consist of a mixture of other vehicle types (i.e. buses and/or trucks in addition to autos, light trucks and taxis) resulting in a higher existing PCE value, which would allow a larger number of taxi medallions to be added prior to causing a doubling of noise PCEs. Based on this assumption and a review of anticipated changes in traffic volumes that would occur with the Proposed Action, it was determined that the Proposed Action would not result in a doubling of the existing PCEs at any location. Since the Proposed Action would increase the number of existing taxi medallions by 15.1%, and the taxi medallions are only a portion of the total traffic on the City's roadway network, the Proposed Action would cause an increase of less than 15.1% in the overall traffic at any location. Therefore, since the Proposed Action would not cause a doubling of existing noise PCE's, a detailed noise analysis is not required.

18.3 Existing Conditions

As noted above, in conformance with the *2012 CEQR Technical Manual*, a detailed noise analysis is not required since the Proposed Action would not result in the doubling of existing noise PCEs.

18.4 Future Conditions without the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a detailed noise analysis is not required since the Proposed Action would not result in the doubling of existing noise PCEs.

18.5 Future Conditions with the Proposed Action

As noted above, in conformance with the *2012 CEQR Technical Manual*, a detailed noise analysis is not required since the Proposed Action would not result in the doubling of existing noise PCEs.

18.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects that would generate any mobile or stationary noise sources and/or be located in an area with high existing ambient noise levels could result in significant adverse impacts to sensitive noise receptors, including residential, commercial and institutional uses. The proposed sale of 2,000 taxi medallions would introduce mobile sources of noise to the City's roadways. However, the Proposed Action would not trigger the need for a detailed noise analysis since the existing noise PCE's would not be doubled by the project-generated traffic. Therefore, the Proposed Action would not result in a significant adverse impact to noise sensitive receptors.

18.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to noise sensitive receptors would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 19 – PUBLIC HEALTH

19.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, a public health assessment is warranted if a proposed project would result in a significant unmitigated adverse impact related to air quality, water quality, hazardous materials, or noise. As described in this ~~DEIS~~ FEIS, the Proposed Action would not result in ~~a~~ significant averse impact in any of these CEQR analysis areas. No significant adverse impact on public health would occur as a result of the proposed sale of 2,000 taxicab licenses.

19.2 Analysis/Methodologies

According to the *2012 CEQR Technical Manual,* where no significant unmitigated adverse impact is found in CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise, no public health analysis is warranted. If, however, an unmitigated significant adverse impact is identified in other CEQR analysis areas, such as air quality, water quality, hazardous materials, or noise, the Lead Agency may determine that a public health assessment is warranted for that specific technical area. As described in this ~~DEIS~~FEIS, the Proposed Action would not result in a significant unmitigated adverse impact in any of these CEQR analysis areas. Therefore, a public health assessment is not required.

19.3 Existing Conditions

As noted above, in conformance with *2012 CEQR Technical Manual*, a public health assessment is not required since the Proposed Action would not result in a significant adverse impacts related to air quality, water quality, hazardous materials, or noise.

19.4 Future Conditions without the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, a public health assessment is not required since the Proposed Action would not result in a significant adverse impacts related to air quality, water quality, hazardous materials, or noise.

19.5 Future Conditions with the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, a public health assessment is not required since the Proposed Action would not result in a significant adverse impacts related to air quality, water quality, hazardous materials, or noise~~. As summarized in Chapter 16, the proposed project would result in potential $PM_{2.5}$ impacts at four representative intersections in the project Study Area identified as having the greatest potential for air quality impacts, but would not result in any impacts from any other pollutant for which a NAAQS has been established. However, as further disclosed in Chapter 25: Mitigation, these predicted $PM_{2.5}$ impacts would be fully mitigated by adopting a series of routine traffic mitigation measures identified in this DEIS.~~ Therefore, a public health assessment is not required.

19.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, a public health assessment is not warranted if a project is not expected to result in significant adverse impacts related to air quality, water quality, hazardous materials, or noise, no public health. Since the proposed sale of 2,000 taxicab licenses would not result in a significant adverse impact related to these CEQR analysis categories, the Proposed Action would not result in a significant adverse impact on public health.

19.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to public health would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 20 – NEIGHBORHOOD CHARACTER

20.1 Introduction and Study Area Delineation

According to the *2012 CEQR Technical Manual*, an assessment of neighborhood character is generally needed when a proposed project has the potential to result in significant adverse impacts in any technical area presented below, or when the project may have moderate effects on several of the elements that define a neighborhood's character. These could include:

- Land Use, Zoning, and Public Policy;
- Socioeconomic Conditions;
- Open Space;
- Historic and Cultural Resources;
- Urban Design and Visual Resources;
- Shadows;
- Transportation; or
- Noise.

The Proposed Action is City-wide in scope and not neighborhood or site specific, and would not involve any construction activities. As described in Chapter 15: Transportation, the addition of 2,000 taxicabs on New York City streets would follow existing traffic patterns. Elements that contribute to the character of New York City neighborhoods would not be affected. No significant adverse impacts to neighborhood character would occur as a result of the Proposed Action.

20.2 Analysis/Methodologies

A preliminary assessment may be appropriate if a project would result in significant adverse impacts to the defining elements that contribute to a neighborhood's character, listed above. According to the *2012 CEQR Technical Manual,* a preliminary assessment determines whether changes expected in other technical areas may affect a contributing element of neighborhood character. The assessment should answer the following two questions:

- What are the defining features of the neighborhood?
- Does the project have the potential to affect the defining features of the neighborhood, either through the potential for a significant adverse impact or a combination of moderate effects in relevant technical areas?

Because a neighborhood's character is the result of the combination of various contributing elements, the salient features of the neighborhood should be identified. The discussion should focus on the major characteristics of the neighborhood and how they relate to the area's overall character. After the defining features of a neighborhood are identified, the potential for the project to affect the defining features of the neighborhood, either through the potential for a significant adverse impact or a combination of moderate effects in relevant technical areas, should be examined. If the project has the potential to affect defining features of a neighborhood, a detailed assessment of neighborhood character may be appropriate. If there is no potential for the project to affect such features, further analysis is likely not required.

If the preliminary assessment establishes that a project would affect a contributing element of neighborhood character, a detailed assessment is used to examine potential effects of the project by gathering information through field visits, photographs, and interviews, as needed. Using this information as a baseline, the future No-Action and future With-Action conditions are then projected and compared.

The proposed sale of 2,000 taxi medallions is not site or neighborhood specific, and would be implemented City-wide. As described in this ~~DEIS~~FEIS, no significant or "moderate" effects, i.e., effects considered reasonably close to the significant adverse impact threshold for a particular technical analysis area, on the following CEQR analysis areas would occur: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; air quality; and noise. Transportation ~~and air~~ related significant adverse impacts and related mitigation measures, where applicable, are described in Chapter 15: Transportation ~~and Chapter 16: Air Quality, respectively~~. However, roadway transportation elements alone do not comprise major characteristics defining New York City neighborhoods. Consequently, a preliminary or detailed assessment of neighborhood character is not required.

20.3 Existing Conditions

As noted above, in conformance with *2012 CEQR Technical Manual*, a neighborhood character assessment is not required since the Proposed Action would not result in a significant adverse effect on defining elements that contribute to the character of New York City neighborhoods.

20.4 Future Conditions without the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, a neighborhood character assessment is not required since the Proposed Action would not result in a significant adverse effect on defining elements that contribute to the character of New York City neighborhoods.

20.5 Future Conditions with the Proposed Action

As noted above, in conformance with *2012 CEQR Technical Manual*, a neighborhood character assessment is not required since the Proposed Action would not result in a significant adverse effect on defining elements that contribute to the character of New York City neighborhoods.

20.6 Identification of Significant Adverse Environmental Impacts

According to the *2012 CEQR Technical Manual*, projects with the potential to result in a significant adverse impact, or combined moderate adverse effects, on defining elements that contribute a neighborhood's character could result in a significant adverse impact on neighborhood character. The proposed sale of 2,000 medallions is a City-wide action, and not neighborhood or site specific. As described in this ~~DEIS~~FEIS, no significant or "moderate" effects, i.e., effects considered reasonably close to the significant adverse impact threshold for a particular technical analysis area, on the following CEQR analysis areas would occur: land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; air quality; and noise. Traffic ~~and air-~~ related significant adverse impacts and related mitigation measures, where applicable, are described in Chapter 15: Transportation ~~and Chapter 16: Air Quality, respectively~~. However, traffic ~~and air quality~~ alone does not contribute to major characteristics that define New York City neighborhoods. Therefore, since the proposed sale of 2,000 medallions would not affect defining features of New York City neighborhoods, no significant adverse impact on neighborhood character would occur.

20.7 Identification of Measures to Mitigate Identified Significant Adverse Impacts

Since no significant adverse impact to neighborhood character would occur as a result of the Proposed Action, no mitigation measures were identified.

CHAPTER 21 – ALTERNATIVES

21.1 Introduction

Provided in this chapter is an assessment of alternatives to the proposed project, including an assessment of the No Action Alternative. As mandated by SEQRA and CEQR, an evaluation must also be included of a No Action Alternative that identifies conditions in the future that would exist in the absence of the proposed project, identified in this ~~DEIS~~FEIS as "Future Conditions without the Proposed Action". As such, the No Action Alternative provides a baseline against which the potential impacts of the proposed project are evaluated.

As indicated in the *2012 CEQR Technical Manual*, the purpose of an analysis of alternatives is to provide the decision maker with the opportunity to consider reasonable alternatives to a proposed project that are consistent with the project's purpose, and that could potentially minimize or avoid significant adverse environmental impacts that would result from the proposed project. Based on this guidance, included in this chapter is an assessment of an alternative in which a lesser number of medallions (400 additional new medallions compared to 2,000 additional new medallions with the proposed project) would be offered at auction. This would result in a 3.0% increase in the number of medallions from 13,237 to 13,637 medallions. Consistent with the requirements of the *2012 CEQR Technical Manual*, the impacts of this lesser additional medallions alternative will be compared to the impacts of the proposed project.

As described in the *2012 CEQR Technical Manual*, the assessment of impacts of alternatives does not generally need to be assessed at the same level of detail as that of the proposed project, particularly for areas where it has been determined that the proposed project would not result in a significant adverse impact. In those cases, a qualitative assessment is sufficient. However, where a significant impact of a proposed project has been identified, it is usually appropriate to quantify the impact of an alternative so that a comparison of the effects of the proposed project and the alternative can be made more meaningful.

As detailed in Chapters 2 thru 20 of this ~~DEIS~~FEIS, operation of the proposed project would not result in any significant impacts on land use, zoning and public policy, socioeconomic conditions, community facilities and services, open space, shadows, historic and cultural resources, urban design and visual resources, natural resources, hazardous materials, water and sewer infrastructure, solid waste and sanitation services, energy, greenhouse gas emissions, noise, public health or neighborhood character, nor would the proposed project result in any significant construction period impacts. As a consequence, the assessment of impacts of the proposed project on these assessment areas is limited to qualitative assessment of the alternative to those of the proposed project. However, as detailed in Chapters 15 ~~and 16~~, the proposed project would result in traffic ~~and air quality~~ impacts requiring some level of mitigation at a number of intersections in the traffic study area. As a consequence, provided in this chapter is a quantified analysis of the traffic-related impacts ~~and a qualitative analysis of the air quality-related impacts~~ of the alternative in which a lesser number of medallions (400 additional new medallions compared to 2,000 additional new medallions with the proposed project) would be offered at auction.

21.2 Description of Alternatives to the Proposed Project

21.2.1 No Action Alternative

Under the No Action Alternative, the sale of the 2,000 additional taxi medallions accessible to persons with disabilities authorized under the State legislation would not be undertaken. However, conditions in the future without the Proposed Action would change from existing conditions as a consequence of a number of actions independent of the proposed project, including the following elements:

1. **Replacement of Existing Fleet of Taxis with the Taxi of Tomorrow**

In May 2011, the Nissan NV 200 was selected as the Taxi of Tomorrow, the next generation of New York City taxicabs. The CEQR-mandated environmental review of the replacement of the existing fleet of New York City taxicabs by the Taxi of Tomorrow was completed on September 12, 2012. The replacement of the existing taxi fleet with the ToT will begin by the end of 2013.

2. Increased Enforcement of TLC Regulations

As part of a comprehensive strategy to assure conformance with TLC regulations, including regulations restricting the area in which livery vehicles can accept passengers in the City, TLC is increasing the size of its enforcement staff. Between May 2011 and the middle of ~~2012~~2013, TLC more than doubled the number of its enforcement staff.

3. Implementation of HAIL Licenses for Livery Vehicles

On April 19, 2012, the TLC approved the issuance of up to 18,000 HAIL licenses to allow livery vehicles to accepted riders by street hail in the outer boroughs of New York City and in Manhattan outside of the Manhattan core. Approval of the issuance of these licenses was subsequently challenged by a number of parties in State court. On June 6, 2013, the New York State Court of Appeals ruled in the favor of the TLC, allowing the sale of the HAIL licenses to proceed. The sale of these new HAIL licenses subsequently began in 2013 and is included as part of the No Action alternative.

4. Anticipated Traffic Growth and Implementation of Mandated Transportation System Improvements Without the Proposed Action

As indicated in the *2012 CEQR Technical Manual*, traffic volumes on the Study Area roadway network are anticipated to increase between 0.5%/year and 0.125%/year depending on the area of the City and future year. In addition, City land use and environmental reviews of a number of major planned and approved developments indicate that these developments will contribute traffic to the Study Area roadway network. The City environmental reviews also mandate changes to a number of the Study Area intersections to mitigate projected traffic impacts of those projects. The majority of the changes are limited to signal timing adjustments; however, several include modifications of parking restrictions, motor vehicle standing regulations, and/or lane restriping. Additional intersection operations changes have also been identified by NYCDOT independent of proposed new developments, including changes to operations at 42nd Street and Vanderbilt Avenue to close Vanderbilt Avenue to westbound right turning traffic.

21.2.2 Sale of Fewer Taxi Medallions Alternative

Under this alternative, 400 additional medallions would be sold rather than the 2,000 additional medallions that would be allowed under the Proposed Action. This alternative would also incorporate the changes from existing conditions included in the No Action alternative.

21.3 Conditions in the Future with the Identified Alternatives

21.3.1 No Action Alternative

Conditions in the future without the Proposed Action (No Action Alternative) are described for each impact area identified in the *2012 CEQR Technical Manual* in Chapters 2 thru 14, and 17 thru 20 of this ~~DEIS~~FEIS, including descriptions of conditions in the Study Area in the future without the Proposed Action regarding land use, zoning, and public policy; socioeconomic conditions, community facilities and services; open space; shadows; historic and cultural resources; urban design and visual resources; natural resources; hazardous materials; public health, water and sewer infrastructure; solid waste and sanitation services; energy; greenhouse gas emissions; ~~and~~ noise; and air quality. As indicated in those chapters, conditions in the future with the No Action Alternative would be substantially the same as existing conditions for these areas of concern. However, as documented in Chapters 15 ~~and 16~~ of this ~~DEIS~~FEIS and summarized below, traffic ~~and air quality~~ conditions in the future with the No Action Alternative would be worse than existing conditions.

21.3.1.1 Traffic Conditions in the Future without the Proposed Action

Traffic volumes in the future without the Proposed Action were developed by increasing existing traffic volumes on the basis of background traffic growth rates provided in the *2012 CEQR Technical Manual*, and adding traffic volumes that would be generated by approved developments unrelated to the Proposed Action that would be in place prior to the 2018 Analysis Year. Similar analytical techniques were then applied to identify the level of service at each intersection evaluated to describe existing traffic conditions. Measures identified to mitigate impacts of approved No Action development projects unrelated to the Proposed Action were incorporated in the analysis.

The following traffic growth rates identified in the *2012 CEQR Technical Manual* were applied to estimate change in traffic volumes due to generalized "background" traffic growth: Manhattan - 0.25% per year for years 1-5 and 0.125% for year 6; Brooklyn - 0.50% per year for years 1-5 and 0.25% for year 6; and Queens - 0.50% per year for years 1-5 and 0.25% for year 6. It was assumed that taxi volumes in the future without the Proposed Action would be the same as the existing taxi volumes.

Major projects and developments unrelated to the Proposed Action that would be in place before the 2017 Analysis Year were identified based on coordination with NYCDOT, NYCEDC, NYCTLC, NYCDCP, and the Mayor's Office of Environmental Coordination (OEC). The projects were identified in two stages. Initially, a list of 24 development projects within the potential affect Study Area roadway network was created based on a review of the CEQR environmental review documents for those projects. An additional list of nine development projects independent of the Proposed Action was then developed based on data and information provided by NYCDOT and NYCDCP from the CEQR environmental review of the Western Rail Yard project. The locations of these projects are illustrated in Figure 15-8a and Figure 15-8b and listed in Table 15-4 and Table 15-5 in Chapter 15 of this ~~DEIS~~FEIS.

As indicated in Chapter 15, background growth in traffic in conjunction with growth in traffic as a consequence of approved development projects in the Study Area will result in substantial increases in traffic at a number of intersections compared to existing conditions. For example, in the AM peak hour, two-way traffic on 42nd Street is projected to increase by approximately 135 vehicles. Similarly, AM peak hour traffic on Seventh Avenue is expected to increase by approximately 65 vehicles compared to existing traffic levels, while traffic will increase by nearly 400 vehicles just west of Flatbush Avenue compared to existing traffic levels. There are also a number of other corridors and intersections that have substantial AM peak hour increases in the future without the Proposed Action. In Manhattan, increases in the Midday and PM peak hours tend to be lower than increases in the AM peak hour at a number of locations. Increases in traffic volumes on Eighth Avenue in the PM peak hour are projected to increase by approximately 75 vehicles. On Tillary Street in Brooklyn, traffic volumes in the future without the Proposed Action are projected to increase by over 400 vehicles in the PM peak hour, while traffic volumes on Northern Boulevard near 41st Street, in Queens, are projected to increase by approximately 55 vehicles during both the AM and PM peak hours.

An intersection capacity analysis for conditions in the future without the Proposed Action was completed for all 54 study intersections for the AM, Midday and PM peak hours. The resulting level of service and delay at each study intersection were compared against *2012 CEQR Technical Manual* delay thresholds. As shown in Table 15-6, many of the Study Area intersections would operate with overall delays greater than the *2012 CEQR Technical Manual* threshold of 45.0 seconds of delay. Additionally, there are numerous individual lane groups at each intersection that would operate above the threshold values. Of the 54 study intersections, 23 would have an overall delay value that would exceed the *2012 CEQR Technical Manual* threshold in the 2017 AM peak hour, 17 for the 2017 Midday peak hour and 19 for the 2017 PM peak hour. The detailed results of this level of service analysis are provided in Tables 15-7 through 15-10.

21.3.1.2 Air Quality Conditions in the Future without the Proposed Action

Air quality levels in the future without the Proposed Action would be affected by the completion of the 24 development projects and background growth described above, and the decrease in the motor vehicle emission rates that would occur as a consequence of the retirement of older vehicles by newer vehicles with lower air pollutant emissions rates that would occur during the intervening period.

21.3.2 Fewer Taxi Medallions Alternative

Under this alternative, the sale of additional taxi medallions would be limited to 400 medallions, all which were assumed to be sold by June 2014. The analysis year lags one year from the sales year to allow time for the new taxis to be fully integrated into the traffic flows. Consequently, the analysis year for the fewer taxi medallions alternative is 2014.

21.3.2.1 Traffic Conditions in the Future with the Fewer Taxi Medallions Alternative

As detailed in Chapter 15, Traffic conditions in the future with this Alternative were evaluated with the same analytical techniques as with the evaluation of the proposed project. Traffic volumes were estimated by adding the increased number of vehicles that would occur with 400 additional medallions to the traffic volumes in the future without the Proposed Action, a 3.0% increase over the number of existing medallions. This percent increase was applied to each peak hour turning movement at each study intersection. Resulting vehicular volumes at each intersection are shown in Figures 15-1 through 15-5. The greatest increases in traffic volume increases with the addition of 400 taxis are projected to occur on Third Avenue, where there would be a projected increase of up to 35 vehicles at certain intersections, and on Seventh Avenue, where there would be a projected increase of up to 40 vehicles at certain intersections.

Based on traffic impact criteria included in the *2012 CEQR Technical Manual*, and summarized in Table 21-1, the addition of 400 taxis to the Study Area roadway network would result in one or more impacts at a total of 48 Study Area intersections. This would be a decrease of 63 impacts from the projected one or more impacts of 111 Study Area intersections with 2,000 additional medallions. When considering all lane groups, the addition of 400 taxis would result in a decrease of 123 Study Area intersections at which there would be impacts from 181 intersections with 2,000 additional medallions to 58 intersections with 400 additional medallions.

Table 21-1: Summary of Significant Traffic Impacts

	Intersections with One or More Impacts				All Lane Groups with Impacts			
Alternative	**AM**	**Midday**	**PM**	**Total**	**AM**	**Midday**	**PM**	**Total**
Fewer	21	15	12	48	26	15	17	58
PP	37	37	37	111	61	57	63	181

As with the_proposed project, measures would be required to mitigate these identified impacts. Table 21-2 provides a summary of the number of intersections at which impacts cannot be fully mitigated with 2,000 additional medallions compared to the number of intersections at which impacts cannot be fully mitigated with 400 additional medallions.

Table 21-2: Comparison of the Number of Intersections that Cannot Be Fully Mitigated and Unmitigatable

Category of Mitigation	Additional 400 Medallions Year 2014			Additional 2,000 Medallions Year 2017		
	AM	MD	PM	AM	MD	PM
Impacts Cannot Be Fully Mitigated	1	1	1	9	6	3
Unmitigatable	7	6	6	14	19	18
Total	8	7	7	23	25	21

As summarized in Table 21-2, the number of intersections at which impacts cannot be fully mitigated or are considered to be unmitigatable would decrease with the lesser medallion alternative. In summary, the total number of intersections at which impacts could not be mitigated would decrease from 23 intersections to 8 intersections during the AM peak period, 25 to 7 intersections during the Midday peak period, and 21 to 7 intersections during the PM peak period.

21.3.2.2 Air Quality Conditions in the Future with the Fewer Taxi Medallions Alternative

As summarized in Chapter 16, the proposed project would add 2,000 taxi medallions and would not result in any air quality impacts. Because no potential air quality impacts would occur from the addition of 2,000 taxi medallions, and the limited number of new vehicles added under this alternative would be proportionally disbursed throughout the study area, no further air quality analysis was warranted concerning the 400 taxi medallion alternative.

~~As summarized in Chapter 16, the proposed project would result in potential $PM_{2.5}$ impacts at four representative intersections in the project Study Area identified as having the greatest~~

~~potential for air quality impacts, but would not result in any impacts from any other pollutant for which a NAAQS has been established. As further disclosed in Chapter 25: Mitigation, these predicted $PM_{2.5}$ impacts would be fully mitigated by adopting a series of routine traffic mitigation measures identified in this DEIS. It is conservatively assumed that the same, if not fewer, air impacts would result under this Alternative, and it is expected that any potential air quality impacts would also be fully mitigated by utilizing the same range of mitigation measures discussed in Chapter 25. Between issuance of the Draft and Final EIS, additional analysis will be undertaken in order to refine the range of impacts and mitigation measures anticipated under this Alternative.~~

CHAPTER 22 – UNAVOIDABLE ADVERSE IMPACTS

22.1 Introduction

Unavoidable significant adverse impacts are defined as those that meet the following two criteria:

- There are no reasonably practicable mitigation measures to eliminate the impacts; and
- There are no reasonable alternatives to the proposed project that would meet the purpose and need of the action, eliminate the impact, and not cause other or similar significant adverse impacts.

As described in Chapter 15: Transportation, a number of the potential traffic impacts identified for the Proposed Actions could be mitigated. However, as described below, project impacts on traffic circulation would not be fully mitigated.

22.2 Transportation

An impact is not considered to be significant if in the future with the Proposed Action condition if the movement operates at mid-LOS D (45.0 seconds of delay) or better or if the increase from conditions in the future without Proposed Action is below the CEQR impact thresholds. As described in Chapter 25: Mitigation, the following intersections have approaches or overall intersection that could not be mitigated with reasonable mitigation measures.

- #1 – Third Avenue and 54th Street (2015 Midday, 2016 AM/Midday, 2017 Midday)
- #2 – Third Avenue and 55th Street (2017 AM)
- #3 – Third Avenue and 56th Street (2014 Midday/PM, 2015 Midday/PM, 2016 Midday/PM, 2017 Midday/PM)
- #4 – Third Avenue and 57th Street (2015 Midday, 2016 Midday/PM, 2017 Midday/PM)
- #5 – Third Avenue and 58th Street (2015 Midday, 2016 Midday, 2017 Midday)
- #6 – Third Avenue and 59th Street (2015 Midday, 2016 Midday, 2017 Midday)

- #7 – Third Avenue and 60th Street (2014 AM/Midday, 2015 AM/Midday, 2016 AM/Midday, 2017 AM/Midday)
- #8 – Second Avenue and 57th Street (2014 Midday, 2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #9 – Lexington Avenue and 57th Street (2015 Midday, 2016 Midday, 2017 Midday)
- #12 – Seventh Avenue and 33rd Street (2014 AM, 2015 AM/PM, 2016 AM/PM, 2017 AM/Midday/PM)
- #13 – Seventh Avenue and 34th Street (2014 AM , 2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #14 – Seventh Avenue and 35th Street (2014 AM/Midday, 2015 AM/Midday, 2016 AM/Midday, 2017 AM/Midday)
- #15 – Seventh Avenue and 36th Street (2016 Midday, 2017 AM/Midday)
- #17 – Sixth Avenue and 34th Street (2014 PM, 2015 Midday/PM, 2016 Midday/PM, 2017 Midday/PM)
- #20 – Madison Avenue and 40th Street (2015 AM, 2016 AM/Midday, 2017 AM/Midday)
- #21 – Madison Avenue and 41st Street (2016 AM/Midday, 2017 AM/Midday)
- #22 – Madison Avenue and 42nd Street (2014 AM/Midday, 2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #23 – Madison Avenue and 43rd Street (2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #24 – Madison Avenue and 44th Street (2014 Midday, 2015 Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #25 – Madison Avenue and 45th Street (2014 Midday, 2015 AM/Midday, 2016 AM/Midday, 2017 AM/Midday)
- #26 – Fifth Avenue and 42nd Street (2014 PM, 2015 PM, 2016 PM, 2017 PM)
- #29 – Eighth Avenue and 33rd Street (2016 Midday/PM, 2017 Midday/PM)
- #30 – Eighth Avenue and 31st Street (2017 PM)
- #31 – Eighth Avenue and 41st Street (2014 PM, 2015 PM, 2016 AM/PM, 2017 AM/PM)
- #32 – Eighth Avenue and 42nd Street (2015 AM, 2016 AM, 2017 AM/Midday)

- #36 – Seventh Avenue and Central Park South (2014 AM /PM, 2015 AM/Midday/PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #37 – Sixth Avenue and 23rd Street (2015 AM, 2016 AM, 2017 AM/Midday)
- #39 – Sixth Avenue and 42nd Street (2014 PM, 2015 PM, 2016 PM, 2017 PM)
- #41 – Sixth Avenue and Central Park South (2014 PM, 2015 PM, 2016 Midday/PM, 2017 AM/Midday/PM)
- #43 – Fifth Avenue and 57th Street (2014 AM, 2015 AM, 2016 AM, 2017 AM)
- #44 – Fifth Avenue and Central Park South (2014 AM, 2015 AM/PM, 2016 AM/PM, 2017 AM/PM)
- #45 – Madison Avenue and 57th Street (2016 PM, 2017 PM)
- #47 – Second Avenue and 36th Street (2017 AM)
- #49 – Queens Plaza S and Northern Boulevard (2015 PM, 2016 PM, 2017 AM/PM)
- #50 – Tillary Street and Adams Street (2015 PM, 2016 AM/Midday/PM, 2017 AM/Midday/PM)
- #52 – Tillary Street and Flatbush Avenue (2016 AM /PM, 2017 PM)

As described in Chapter 15: Transportation, the mitigation measures proposed for implementation in conjunction with the Proposed Action would become operational in the appropriate future years as outlined in the mitigation tables.

CHAPTER 23 – GROWTH INDUCING ASPECTS OF THE PROPOSED PROJECT

The term "growth-inducing aspects" generally refers to the potential for a proposed project to trigger additional development in areas outside the project site that would otherwise not have such development without the proposed project. The *2012 CEQR Technical Manual* indicates that an analysis of the growth-inducing aspects of a proposed project is appropriate when the project:

- Adds substantial new land use, new residents, or new employment that could induce additional development of a similar kind or of support uses, such as retail establishments to serve new residential uses; and/or
- Introduces or greatly expands infrastructure capacity.

The Proposed Action is City-wide in scope and would not introduce new land use or add new residents. As described in Chapter 4: Socioeconomic Conditions, the Proposed Action authorizes the sale of 2,000 taxi medallions and would not alter existing economic patterns in New York City. As such, the Proposed Action would not "induce" new growth in New York City.

CHAPTER 24 – IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The Proposed Action would authorize the sale of 2,000 taxi medallions in New York City. There are a number of resources, both natural and built, that would be expended in the manufacturing, repurposing, and operation of the additional taxicabs that would operate on New York City streets. These resources include the materials used in automobile manufacturing and/or repurposing of vehicles for taxicab use, energy in the form of gas and electricity consumed during manufacturing, repurposing, and operation of taxicabs, and the human effort (i.e., time and labor) required to manufacture and/or repurpose automobiles for taxicab use, and operate taxicabs. However, these resources could potentially be reused for purposes other than those related to the Proposed Action.

APPENDIX A

TAXI MEDALLION ENVIRONMENTAL ASSESSMENT STATEMENT

NYC
Taxi & Limousine Commission

David Yassky
Commissioner
TLCCommissioner@tlc.nyc.gov

33 Beaver Street, 22nd floor
New York, NY 10004

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March 12, 2012

Mr. Robert R. Kulikowski, Ph.D.
Director
Mayor's Office of Environmental Coordination
253 Broadway – 14th Floor
New York, NY 10007

RE: Environmental Assessment Statement/Positive Declaration (CEQR No. *12TLC026Y*)

Dear Mr. Kulikowski:

The New York City Taxi and Limousine Commission (TLC) is assuming lead agency status for the CEQR review of the proposed Sale of 2,000 Taxi Medallions (CEQR No. *12TLC026Y*). Based on the review of the enclosed Environmental Assessment Statement (EAS), TLC has issued a Positive Declaration and determined that a Draft Environmental Impact Statement is to be prepared. The EAS/Positive Declaration is also available to download from the website linked below.

www.nyc.gov/tlc

Please contact me by phone at (212) 676-1033, or via email at conan.freud@tlc.nyc.gov if you have any questions.

Sincerely,

Name: Conan Freud
Title: Deputy Commissioner
New York City Taxi and Limousine Commission

Enclosure:
1) Environmental Assessment Statement/Positive Declaration

cc:

Taxi & Limousine Commission

David Yassky
Commissioner
TLCCommissioner@tlc.nyc.gov

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New York State Department of Environmental Conservation (DEC)—Division of Regulatory Services; DEC—Region II Office; Bronx Borough President; Brooklyn Borough President; Manhattan Borough President; Queens Borough President; Staten Island Borough President; New York City Economic Development Corporation; New York City Department of Environmental Protection; New York City Department of Transportation; New York City Community Boards.

City Environmental Quality Review
ENVIRONMENTAL ASSESSMENT STATEMENT SHORT FORM • FOR UNLISTED ACTIONS ONLY
Please fill out, print and submit to the appropriate agency (see instructions)

PART I: GENERAL INFORMATION

1. ***Does Action Exceed Any Type I Threshold In 6 NYCRR Part 617.4 or 43 RCNY §6-15(A) (Executive Order 91 of 1977, as amended)?***

☐ Yes ☑ No

If yes, **STOP**, and **complete the FULL EAS**

2. ***Project Name*** Taxi Medallion Increase

3. ***Reference Numbers***

CEQR REFERENCE NUMBER (To Be Assigned by Lead Agency) 12TLC026Y	BSA REFERENCE NUMBER (If Applicable) N/A
ULURP REFERENCE NUMBER (If Applicable)) N/A	OTHER REFERENCE NUMBER(S) (If Applicable) (e.g. Legislative Intro, CAPA, etc) N/A

4a. ***Lead Agency Information***	4b. ***Applicant Information***
NAME OF LEAD AGENCY New York City Taxi and Limousine Commission	NAME OF APPLICANT
NAME OF LEAD AGENCY CONTACT PERSON Conan Freud, Deputy Commissioner for Finance and Administration	NAME OF APPLICANT'S REPRESENTATIVE OR CONTACT PERSON
ADDRESS 33 Beaver Street, 22nd Floor	ADDRESS
CITY New York STATE NY ZIP 10004	CITY STATE ZIP
TELEPHONE (212) 676-1033 FAX	TELEPHONE FAX
EMAIL ADDRESS freudc@tlc.nyc.gov	EMAIL ADDRESS

5. ***Project Description:***

The proposed action entails a public sale by the New York City Taxi and Limousine Commission (TLC) of up to 2,000 new taxicab licenses (medallions). The sale would increase the number of yellow taxis by 15.1%. All of these new licenses will be required to be used with taxicab vehicles that are accessible to individuals who use wheelchairs. The sale of medallions would begin no earlier than July 15, 2012. Medallions are anticipated to be sold at a public auction on the following schedule: 400 would be sold in Year One (2012), 800 in Year Two (2013), and 800 in Year Three (2014). The sale of the 2,000 new accessible medallions would not require any site-specific development.

6a. ***Project Location: Single Site*** *(for a project at a single site, complete all the information below)*

ADDRESS N/A	NEIGHBORHOOD NAME N/A	
TAX BLOCK AND LOT N/A	BOROUGH N/A	COMMUNITY DISTRICT N/A

DESCRIPTION OF PROPERTY BY BOUNDING OR CROSS STREETS

N/A - The proposed action is not site specific and involves the sale of 2,000 new New York City taxi medallions citywide.

EXISTING ZONING DISTRICT, INCLUDING SPECIAL ZONING DISTRICT DESIGNATION IF ANY: N/A | ZONING SECTIONAL MAP NO: N/A

6b. ***Project Location: Multiple Sites*** *(Provide a description of the size of the project area in both City Blocks and Lots. If the project would apply to the entire city or to areas that are so extensive that a site-specific description is not appropriate or practicable, describe the area of the project, including bounding streets, etc.)*

N/A - The proposed action is not site specific and involves the sale of 2,000 new New York City taxi medallions citywide.

7. ***REQUIRED ACTIONS OR APPROVALS*** *(check all that apply)*

City Planning Commission: YES ☐ NO ☑

☐ CITY MAP AMENDMENT ☐ ZONING CERTIFICATION
☐ ZONING MAP AMENDMENT ☐ ZONING AUTHORIZATION
☐ ZONING TEXT AMENDMENT ☐ HOUSING PLAN & PROJECT
☐ UNIFORM LAND USE REVIEW PROCEDURE (ULURP) ☐ SITE SELECTION — PUBLIC FACILITY
☐ CONCESSION ☐ FRANCHISE
☐ UDAAP ☐ DISPOSITION — REAL PROPERTY
☐ REVOCABLE CONSENT

ZONING SPECIAL PERMIT, SPECIFY TYPE:

Board of Standards and Appeals: YES ☐ NO ☑

☐ SPECIAL PERMIT

EXPIRATION DATE MONTH DAY YEAR

☐ VARIANCE (USE)

☐ VARIANCE (BULK)

SPECIFY AFFECTED SECTION(S) OF THE ZONING RESOLUTION

☐ MODIFICATION OF

☐ RENEWAL OF

☐ OTHER

Department of Environmental Protection: YES ☐ NO ☑ IF YES, IDENTIFY:

Other City Approvals: YES ☑ NO ☐

- ☐ LEGISLATION
- ☐ RULEMAKING
- ☐ FUNDING OF CONSTRUCTION; SPECIFY:
- ☐ CONSTRUCTION OF PUBLIC FACILITIES
- ☐ POLICY OR PLAN; SPECIFY:
- ☐ FUNDING OF PROGRAMS; SPECIFY:
- ☐ LANDMARKS PRESERVATION COMMISSION APPROVAL *(not subject to CEQR)*
- ☐ PERMITS; SPECIFY:
- ☐ 384(b)(4) APPROVAL
- ☑ OTHER; EXPLAIN Discretionary action by TLC of the issuance/public sale
- ☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC) *(not subject to CEQR)*

State or Federal Actions/Approvals/Funding: YES ☐ NO ☑ IF "YES," IDENTIFY:

8. *Site Description:* *Except where otherwise indicated, provide the following information with regard to the directly affected area. The directly affected area consists of the project site and the area subject to any change in regulatory controls.*

GRAPHICS *The following graphics must be attached and each box must be checked off before the EAS is complete.* ***Each map must clearly depict*** *the boundaries of the directly affected area or areas and indicate a 400-foot radius drawn from the outer boundaries of the project site. Maps may not exceed 11×17 inches in size and must be folded to 8.5×11 inches for submission* N/A - Project is City-wide

- ☐ Site location map
- ☐ Zoning map
- ☐ Photographs of the project site taken within 6 months of EAS submission and keyed to the site location map
- ☐ Sanborn or other land use map
- ☐ Tax map
- ☐ For large areas or multiple sites, a GIS shape file that defines the project sites

PHYSICAL SETTING *(both developed and undeveloped areas)*

Total directly affected area (sq. ft.):	Type of Waterbody and surface area (sq. ft.):	Roads, building and other paved surfaces (sq. ft.)

Other, describe (sq. ft.): N/A - The proposed action is not site specific and involves the sale of 2,000 new New York City taxi medallions.

9. *Physical Dimensions and Scale of Project* *(if the project affects multiple sites, provide the total development below facilitated by the action)*

Size of project to be developed: N/A (gross sq. ft.)

Does the proposed project involve changes in zoning on one or more sites? YES ☐ NO ☑

If 'Yes,' identify the total square feet owned or controlled by the applicant: Total square feet of non-applicant owned development:

Does the proposed project involve in-ground excavation or subsurface disturbance, including but not limited to foundation work, pilings, utility lines, or grading? YES ☐ NO ☑

If 'Yes,' indicate the estimated area and volume dimensions of subsurface disturbance (if known):

Area: sq. ft. (width × length) Volume: cubic feet (width × length × depth)

DESCRIPTION OF PROPOSED USES *(please complete the following information as appropriate)*

	Residential	***Commercial***	***Community Facility***	***Industrial/Manufacturing***
Size (in gross sq. ft.)				
Type (e.g. retail, office, school)	units			

Does the proposed project increase the population of residents and/or on-site workers? YES ☐ NO ☑ Number of additional residents? Number of additional workers?

Provide a brief explanation of how these numbers were determined:

Does the project create new open space? YES ☐ NO ☑ if Yes (sq. ft)

Using Table 14-1, estimate the project's projected operational solid waste generation, if applicable: N/A (pounds per week)

Using energy modeling or Table 15-1, estimate the project's projected energy use: N/A (annual BTUs)

Has a No-Action scenario been defined for this project that differs from the existing condition? YES ☑ NO ☐ If 'Yes,' see Chapter 2, "Establishing the Analysis Framework" and describe briefly:

The proposed sale of medallions would be completed in three phases: 400 would be sold in Year One (2012), 800 in Year Two (2013), and 800 in Year Three (2014). Therefore, 2013, 2014 and 2015 have been selected as the analysis years. Consistent with CEQR protocols, growth factors will be applied to reflect changes that would occur within each analysis year. In addition, independent changes to the taxi fleet, as described below, will be used to adjust the No Action condition. In the future without the proposed action, the number of taxi medallions currently in service would remain unchanged. There are two changes, however, that would occur under the No Action Condition. The TLC plans to enter into an agreement with Nissan North America, Inc. (Nissan), to establish Nissan NV200 as the only vehicle authorized for use as a non-accessible New York City taxicab over the period 2011 through 2020. This "Taxi of Tomorrow" contract term would include three phases: 1) the period during which the vehicle would be under development, which would be a maximum of four years; 2) the ten-year period during which the manufacturer would sell vehicles into the NYC taxi market, beginning in 2013 or 2014; and 3) a period of five years, beginning at the conclusion of the ten-year selling period, during which Nissan would provide agreed-upon service and parts support for vehicles previously sold. In addition, also separate from the proposed action, legislation passed by the New York State Legislature allows TLC to issue up to 18,000 transferable permits for hail license vehicles that may pick up passengers by street hail in parts of New York City outside Manhattan, excluding airports, and in Manhattan north of East 96th Street and north of West 110th Street. The state legislation also allows for the issuance by TLC of up to 450 non-transferable permits that would authorize for-hire base stations to affiliate these street-hail vehicles.

10. *Analysis Year* *CEQR Technical Manual Chapter 2*

ANTICIPATED BUILD YEAR (DATE THE PROJECT WOULD BE COMPLETED AND OPERATIONAL): 2015

ANTICIPATED PERIOD OF CONSTRUCTION IN MONTHS: N/A

WOULD THE PROJECT BE IMPLEMENTED IN A SINGLE PHASE? YES ☐ NO ☑

IF MULTIPLE PHASES, HOW MANY PHASES: Three

BRIEFLY DESCRIBE PHASES AND CONSTRUCTION SCHEDULE: 400 medallions would be sold in Year One (2012), 800 in Year Two (2013), and 800 in Year 3 (2014). Therefore, 2013, 2014 and 2015 have been selected as the analysis years.

11. *What is the Predominant Land Use in Vicinity of Project?* *(Check all that apply)*

☐ RESIDENTIAL ☐ MANUFACTURING ☐ COMMERCIAL ☐ PARK/FOREST/OPEN SPACE ☐ OTHER, Describe: N/A

PART II: TECHNICAL ANALYSES

INSTRUCTIONS: The questions in the following table refer to the thresholds for each analysis area in the respective chapter of the CEQR Technical Manual.

- If the proposed project can be demonstrated not to meet or exceed the threshold, check the '**NO**' box.
- If the proposed project will meet or exceed the threshold, or if this cannot be determined, check the '**YES**' box.
- Often, a 'Yes' answer will result in a preliminary analysis to determine whether further analysis is needed. For each 'Yes' response, consult the relevant chapter of the CEQR Technical Manual for guidance on providing additional analyses (and attach supporting information, if needed) to determine whether detailed analysis is needed. Please note that a 'Yes' answer does not mean that an EIS must be prepared—it often only means that more information is required for the lead agency to make a determination of significance.
- The lead agency, upon reviewing Part II, may require an applicant either to provide additional information to support this Short EAS Form or complete a Full EAS Form. For example, if a question is answered 'No,' an agency may request a short explanation for this response. In addition, if a large number of the questions are marked 'Yes,' the lead agency may determine that it is appropriate to require completion of the Full EAS Form.

	YES	NO
1. *LAND USE, ZONING AND PUBLIC POLICY*: *CEQR Technical Manual Chapter 4*		
(a) Would the proposed project result in a change in land use or zoning that is different from surrounding land uses and/or zoning? Is there the potential to affect an applicable public policy? If "Yes", complete a preliminary assessment and attach.		✓
(b) Is the project a large, publicly sponsored project? If "Yes", complete a PlaNYC assessment and attach.		✓
(c) Is any part of the directly affected area within the City's Waterfront Revitalization Program boundaries? If "Yes", complete the Consistency Assessment Form.		✓
2. *SOCIOECONOMIC CONDITIONS*: *CEQR Technical Manual Chapter 5*		
(a) Would the proposed project:		
• Generate a net increase of 200 or more residential units?		✓
• Generate a net increase of 200,000 or more square feet of commercial space?		✓
• Directly displace more than 500 residents?		✓
• Directly displace more than 100 employees?		✓
• Affect conditions in a specific industry?	✓	
3. *COMMUNITY FACILITIES*: *CEQR Technical Manual Chapter 6*		
(a) Does the proposed project exceed any of the thresholds outlined in Table 6-1 of Chapter 6?		✓
4. *OPEN SPACE*: *CEQR Technical Manual Chapter 7*		
(a) Would the proposed project change or eliminate existing open space?		✓
(b) Is the proposed project within an underserved area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?		✓
If "Yes," would the proposed project generate 50 or more additional residents?		
If "Yes," would the proposed project generate 125 or more additional employees?		
(c) Is the proposed project in a well-served area in the Bronx, Brooklyn, Manhattan, Queens, or Staten Island?		✓
If "Yes," would the proposed project generate 300 or more additional residents?		
If "Yes," would the proposed project generate 750 or more additional employees?		
(d) If the proposed project is not located in an underserved or well-served area, would the proposed project generate: 200 or more additional residents?		✓
500 additional employees?		✓

	YES	NO
5. *SHADOWS:* *CEQR Technical Manual Chapter 8*		
(a) Would the proposed project result in a net height increase of any structure of 50 feet or more?		✓
(b) Would the proposed project result in any increase in structure height and be located adjacent to or across the street from a sunlight-sensitive resource?		✓
6. *HISTORIC AND CULTURAL RESOURCES*: *CEQR Technical Manual Chapter 9*		
(a) Does the proposed project site or an adjacent site contain any architectural and/or archaeological resource that is eligible for, or has been designated (or is calendared for consideration) as a New York City Landmark, Interior Landmark or Scenic Landmark; is listed or eligible for listing on the New York State or National Register of Historic Places; or is within a designated or eligible New York City, New York State, or National Register Historic District?		✓
If "Yes," list the resources and attach supporting information on whether the project would affect any of these resources.		
7. *URBAN DESIGN*: *CEQR Technical Manual Chapter 10*		
(a) Would the proposed project introduce a new building, a new building height, or result in any substantial physical alteration to the streetscape or public space in the vicinity of the proposed project that is not currently allowed by existing zoning?		✓
(b) Would the proposed project result in obstruction of publicly accessible views to visual resources that is not currently allowed by existing zoning?		✓
8. *NATURAL RESOURCES:* *CEQR Technical Manual Chapter 11*		
(a) Is any part of the directly affected area within the Jamaica Bay Watershed? If "Yes," complete the Jamaica Bay Watershed Form.		✓
(b) Does the proposed project site or a site adjacent to the project contain natural resources as defined in section 100 of Chapter 11? If "Yes," list the resources and attach supporting information on whether the project would affect any of these resources.		✓
9. *HAZARDOUS MATERIALS:* *CEQR Technical Manual Chapter 12*		
(a) Would the project allow commercial or residential use in an area that is currently, or was historically, a manufacturing area that involved hazardous materials?		✓
(b) Does the project site have existing institutional controls (*e.g.* (E) designations or a Restrictive Declaration) relating to hazardous materials that preclude the potential for significant adverse impacts?		✓
(c) Would the project require soil disturbance in a manufacturing zone or any development on or near a manufacturing zone or existing/historic facilities listed in Appendix 1 (including nonconforming uses)?		✓
(d) Would the project result in the development of a site where there is reason to suspect the presence of hazardous materials, contamination, illegal dumping or fill, or fill material of unknown origin?		✓
(e) Would the project result in development where underground and/or aboveground storage tanks (*e.g.* gas stations) are or were on or near the site?		✓
(f) Would the project result in renovation of interior existing space on a site with potential compromised air quality, vapor intrusion from on-site or off-site sources, asbestos, PCBs or lead-based paint?		✓
(g) Would the project result in development on or near a government-listed voluntary cleanup/brownfield site, current or former power generation/transmission facilities, municipal incinerators, coal gasification or gas storage sites, or railroad tracks and rights-of-way?		✓
(h) Has a Phase I Environmental Site Assessment been performed for the site? If 'Yes," were RECs identified? Briefly identify:		✓
10. *INFRASTRUCTURE:* *CEQR Technical Manual Chapter 13*		
(a) Would the proposed project result in water demand of more than one million gallons per day?		✓
(b) Is the proposed project located in a combined sewer area and result in at least 1,000 residential units or 250,000 SF or more of commercial space in Manhattan or at least 400 residential units or 150,000 SF or more of commercial space in the Bronx, Brooklyn, Staten Island or Queens?		✓
(c) Is the proposed project located in a separately sewered area and result in the same or greater development than that listed in Table 13-1 of Chapter 13?		✓
(d) Would the project involve development on a site five acres or larger where the amount of impervious surface would increase?		✓
(e) Would the project involve development on a site one acre or larger where the amount of impervious surface would increase and is located within the Jamaica Bay Watershed or in certain specific drainage areas including: Bronx River, Coney Island Creek, Flushing Bay and Creek, Gowanus Canal, Hutchinson River, Newtown Creek, or Westchester Creek?		✓
(f) Is the project located in an area that is partially sewered or currently unsewered?		✓
(g) Is the project proposing an industrial facility or activity that would contribute industrial discharges to a WWTP and/or generate contaminated stormwater in a separate storm sewer system?		✓
(h) Would the project involve construction of a new stormwater outfall that requires federal and/or state permits?		✓
11. *SOLID WASTE AND SANITATION SERVICES:* *CEQR Technical Manual Chapter 14*		
(a) Would the proposed project have the potential to generate 100,000 pounds (50 tons) or more of solid waste per week?		✓
(b) Would the proposed project involve a reduction in capacity at a solid waste management facility used for refuse or recyclables generated within the City?		✓

	YES	NO
12. *ENERGY:* *CEQR Technical Manual Chapter 15*		
(a) Would the proposed project affect the transmission or generation of energy?		✓
13. *TRANSPORTATION:* *CEQR Technical Manual Chapter 16*		
(a) Would the proposed project exceed any threshold identified in Table 16-1 of Chapter 16?	✓	
(b) If "Yes," conduct the **screening analyses**, attach appropriate back up data as needed for each stage, and answer the following questions:		
(1) Would the proposed project result in 50 or more Passenger Car Equivalents (PCEs) per project peak hour? If "Yes," would the proposed project result in 50 or more vehicle trips per project peak hour at any given intersection?	✓	
***It should be noted that the lead agency may require further analysis of intersections of concern even when a project generates fewer than 50 vehicles in the peak hour. See Subsection 313 of Chapter 16, "Transporation," for information.*	✓	
(2) Would the proposed project result in more than 200 subway/rail or bus trips per project peak hour?		✓
If "Yes," would the proposed project result, per project peak hour, in 50 or more bus trips on a single line (in one direction) or 200 subway trips per station or line?		
(3) Would the proposed project result in more than 200 pedestrian trips per project peak hour?		✓
If "Yes," would the proposed project result in more than 200 pedestrian trips per project peak hour to any given pedestrian or transit element, crosswalk, subway stair, or bus stop?		
14. *AIR QUALITY:* *CEQR Technical Manual Chapter 17*		
(a) *Mobile Sources:* Would the proposed project result in the conditions outlined in Section 210 of Chapter 17?	✓	
(b) *Stationary Sources:* Would the proposed project result in the conditions outlined in Section 220 of Chapter 17?		✓
If 'Yes,' would the proposed project exceed the thresholds in the Figure 17-3, Stationary Source Screen Graph? (attach graph as needed)		
(c) Does the proposed project involve multiple buildings on the project site?		✓
(d) Does the proposed project require Federal approvals, support, licensing, or permits subject to conformity requirements?		✓
(e) Does the proposed project site have existing institutional controls (*e.g.* E-designations or a Restrictive Declaration) relating to air quality that preclude the potential for significant adverse impacts?		✓
15. *GREENHOUSE GAS EMISSIONS:* *CEQR Technical Manual Chapter 18*		
(a) Is the proposed project a city capital project, a power plant, or would fundamentally change the City's solid waste management system?		✓
(b) If "Yes," would the proposed project require a GHG emissions assessment based on the guidance in Chapter 18?		
16. *NOISE:* *CEQR Technical Manual Chapter 19*		
(a) Would the proposed project generate or reroute vehicular traffic?	✓	
(b) Would the proposed project introduce new or additional receptors (see Section 124 of Chapter 19) near heavily trafficked roadways, within one horizontal mile of an existing or proposed flight path, or within 1,500 feet of an existing or proposed rail line with a direct line of site to that rail line?		✓
(c) Would the proposed project cause a stationary noise source to operate within 1,500 feet of a receptor with a direct line of sight to that receptor or introduce receptors into an area with high ambient stationary noise?		✓
(d) Does the proposed project site have existing institutional controls (*e.g.* E-designations or a Restrictive Declaration) relating to noise that preclude the potential for significant adverse impacts?		✓
17. *PUBLIC HEALTH:* *CEQR Technical Manual Chapter 20* (To come - Contingent on Air Quality Analysis)		
(a) Would the proposed project warrant a public health assessment based upon the guidance in Chapter 20?	✓	
18. *NEIGHBORHOOD CHARACTER:* *CEQR Technical Manual Chapter 21*		
(a) Based upon the analyses conducted for the following technical areas, check yes if any of the following technical areas required a detailed analysis: Land Use, Zoning, and Public Policy, Socioeconomic Conditions, Open Space, Historic and Cultural Resources, Urban Design and Visual Resources, Shadows, Transportation, Noise. If "Yes," explain here why or why not an assessment of neighborhood character is warranted based on the guidance of in Chapter 21, "Neighborhood Character." Attach a preliminary analysis, if necessary.	✓	

The proposed action involves the sale of 2,000 new New York City taxi medallions. No new development would occur as part of the proposed action. Therefore, detailed analyses for the following technical areas are not required: Land Use, Zoning, and Public Policy, Open Space, Historic and Cultural Resources, Urban Design and Visual Resources, and Shadows. Regarding Transportation, and consequently Air Quality, and Noise, the greatest effect of the proposed action is likely to occur in portions of Midtown Manhattan, Downtown Brooklyn, and Queens Plaza at Northern Boulevard and Thompson Avenue. Overall, the defining features of these areas would not be significantly affected due to the presence of additional taxicabs. A detailed analysis of effects on Neighborhood Character will be prepared if the Transportation and Air Quality detailed analyses indicate the potential for significant adverse impacts to occur.

		YES	NO
19.	***CONSTRUCTION IMPACTS:*** *CEQR Technical Manual Chapter 22* Would the project's construction activities involve (check all that apply):		
	• Construction activities lasting longer than two years;		✓
	• Construction activities within a Central Business District or along an arterial or major thoroughfare;		✓
	• Require closing, narrowing, or otherwise impeding traffic, transit or pedestrian elements (roadways, parking spaces, bicycle routes, sidewalks, crosswalks, corners, etc);		✓
	• Construction of multiple buildings where there is a potential for on-site receptors on buildings completed before the final build-out;		✓
	• The operation of several pieces of diesel equipment in a single location at peak construction;		✓
	• Closure of community facilities or disruption in its service;		✓
	• Activities within 400 feet of a historic or cultural resource; or		✓
	• Disturbance of a site containing natural resources.		✓

If any boxes are checked, explain why or why not a preliminary construction assessment is warranted based on the guidance of in Chapter 22, "Construction." It should be noted that the nature and extent of any commitment to use the Best Available Technology for construction equipment or Best Management Practices for construction activities should be considered when making this determination.

N/A - The proposed action would not involve any construction activities.

20. *APPLICANT'S CERTIFICATION*

I swear or affirm under oath and subject to the penalties for perjury that the information provided in this Environmental Assessment Statement (EAS) is true and accurate to the best of my knowledge and belief, based upon my personal knowledge and familiarity with the information described herein and after examination of pertinent books and records and/or after inquiry of persons who have personal knowledge of such information or who have examined pertinent books and records.

Still under oath, I further swear or affirm that I make this statement in my capacity as the

Conan Freud, Deputy Commissioner for Finance and Administration of New York City Taxi and Limousine Commission

APPLICANT/SPONSOR NAME THE ENTITY OR OWNER

the entity which seeks the permits, approvals, funding or other governmental action described in this EAS.

Check if prepared by: ☐ APPLICANT/REPRESENTATIVE or ☑ LEAD AGENCY REPRESENTATIVE (FOR CITY-SPONSORED PROJECTS)

APPLICANT/SPONSOR NAME:

Conan Freud, Deputy Commissioner for Finance and Administration

LEAD AGENCY REPRESENTATIVE NAME:

SIGNATURE:

3-9-12

DATE:

PLEASE NOTE THAT APPLICANTS MAY BE REQUIRED TO SUBSTANTIATE RESPONSES IN THIS FORM AT THE DISCRETION OF THE LEAD AGENCY SO THAT IT MAY SUPPORT ITS DETERMINATION OF SIGNIFICANCE.

PART III: DETERMINATION OF SIGNIFICANCE (To Be Completed By Lead Agency)

INSTRUCTIONS:
In completing Part III, the lead agency should consult 6 NYCRR 617.7 and 43 RCNY §6-06 (Executive Order 91 of 1977, as amended) which contain the State and City criteria for determining significance.

1. For each of the impact categories listed below, consider whether the project may have a significant effect on the environment. For each of the impact categories listed below, consider whether the project may have a significant adverse effect on the environment, taking into account its (a) location; (b) probability of occurring; (c) duration; (d) irreversibility; (e) geographic scope; and (f) magnitude.

IMPACT CATEGORY	Potential Significant Adverse Impact YES	NO
Land Use, Zoning, and Public Policy		
Socioeconomic Conditions	✓	
Community Facilities and Services		
Open Space		
Shadows		
Historic and Cultural Resources		
Urban Design/Visual Resources		
Natural Resources		
Hazardous Materials		
Water and Sewer Infrastructure		
Solid Waste and Sanitation Services		
Energy		
Transportation	✓	
Air Quality	✓	
Greenhouse Gas Emissions		
Noise	✓	
Public Health	✓	
Neighborhood Character	✓	
Construction Impacts		

2. Are there any aspects of the project relevant to the determination whether the project may have a significant impact on the environment, such as combined or cumulative impacts, that were not fully covered by other responses and supporting materials? If there are such impacts, explain them and state where, as a result of them, the project may have a significant impact on the environment.

Refer to the EAS Supplementary Document.

3. ***LEAD AGENCY CERTIFICATION***

Deputy Commissioner for Finance and Administration
TITLE

New York City Taxi and Limousine Commission
LEAD AGENCY

Conan Freud
NAME

Conan Freud
SIGNATURE

☑ **Check this box if the lead agency has identified one or more potentially significant adverse impacts that MAY occur.**

☐ Issue ***Conditional Negative Declaration***

A ***Conditional Negative Declaration*** **(CND)** may be appropriate if there is a private applicant for an Unlisted action AND when conditions imposed by the lead agency will modify the proposed project so that no significant adverse environmental impacts would result. The CND is prepared as a separate document and is subject to the requirements in 6 NYCRR 617.

☑ Issue ***Positive Declaration*** and proceed to a draft scope of work for the Environmental Impact Statement.

If the lead agency has determined that the project may have a significant impact on the environment, and if a conditional negative declaration is not appropriate, then the lead agency issues a ***Positive Declaration***.

NEGATIVE DECLARATION (To Be Completed By Lead Agency)

Statement of No Significant Effect

Pursuant to Executive Order 91 of 1977, as amended, and the Rules of Procedure for City Environmental Quality Review, found at Title 62, Chapter 5 of the Rules of the City of New York and 6NYCRR, Part 617, State Environmental Quality Review, the [ ] assumed the role of lead agency for the environmental review of the proposed project. Based on a review of information about the project contained in this environmental assessment statement and any attachments hereto, which are incorporated by reference herein, the [ ] has determined that the proposed project would not have a significant adverse impact on the environment.

Reasons Supporting this Determination

The above determination is based on information contained in this EAS that finds, because the proposed project:

No other signficant effects upon the environment that would require the preparation of a Draft Environmental Impact Statement are foreseeable. This Negative Declaration has been prepared in accordance with Article 8 of the New York State Environmental Conservation Law (SEQRA).

TITLE	LEAD AGENCY
NAME	SIGNATURE

Taxi Medallion Increase
City Environmental Quality Review
Environmental Assessment Statement
Supplementary Document
CEQR # 12TLC026Y

The Proposed Action entails the public sale by the New York City Taxi and Limousine Commission (TLC) of up to a maximum of 2,000 taxicab licenses (medallions) to vehicles that are accessible to individuals with disabilities. The sale would increase the number of yellow taxi licenses from the existing number of 13,327 licenses to a total of 15,327 licenses, an increase of approximately 15.1%. All of the new licenses would be required to be used with taxicab vehicles that are accessible to individuals who use wheelchairs. The sale of medallions would begin no earlier than July 15, 2012. Medallions would be sold at a public auction on the following schedule: 400 would be sold in Year One (2012), 800 in Year Two (2013), and 800 in Year Three (2014). The sale of the 2,000 new accessible medallions would not require any site-specific development.

This supplementary document to the Environmental Assessment Statement (EAS) for the Proposed Action includes:

- A comparison of the impacts of the Proposed Action against screening criteria included in the CEQR Technical Manual to determine whether a detailed assessment of the impact of the Proposed Action is warranted for each impact category identified in the CEQR Technical Manual.

- A detailed assessment of the impacts of the Proposed Action in conformance with the requirements of the *CEQR Technical Manual* for each impact category for which the initial screening indicated the need for a detailed assessment.

1. Land Use, Zoning, and Public Policy

The Proposed Action is limited to the authorization of the TLC to publicly sell 2,000 new taxi medallions and does not require the direct or indirect use of any existing land use or result in a change in land use, zoning, or an officially adopted and promulgated public policy. Therefore, in conformance with *CEQR Technical Manual* screening criteria, the Proposed Action would not have the potential to result in a significant impact on land use, zoning or public policy and a detailed analysis is not required to determine whether the Proposed Action would result in a significant adverse impact on land use, zoning, and public policy.

2. Socioeconomic Conditions

The *CEQR Technical Manual* indicates that a detailed socioeconomic conditions analysis is not required if it can be demonstrated that a proposed action would not result in a significant direct or indirect displacement of residents or businesses, and that the proposed action would not have a significant adverse impact on an industry of importance to the City. Since the Proposed Action would not result in any new development, it would not result in any direct or indirect displacement of residences or businesses. However, it could potentially result in an adverse effect on the taxi industry, an industry of importance to the City, as a consequence of potential impacts on the value of a medallion, given the proposed increase in the number of medallions available for purchase and the potential decrease in taxicab fare revenue per shift due to the increased level of congestion that might result from the possible 15.1% increase in the number of taxicabs on the street network, particularly in Manhattan. Taxicab medallions are currently selling at over $700,000 for an independent medallion and approximately $1 million for a corporate (also known as minifleet) medallion.

In addition to analyzing the potential impacts on medallion value and taxicab fare revenue, the socioeconomic analysis will also quantify the potential impact of an increase in the supply of yellow taxi medallions on the livery car industry. The analysis will also look at the increase in employment as a result of the additional taxi medallions and its impact on the New York City economy.

3. Community Facilities and Services

The Proposed Action would not physically alter or displace any existing or planned community facility, nor would it add new populations that would create demand for services greater than the ability of existing facilities to provide those services. Therefore, in conformance with *CEQR Technical Manual* screening criteria, it would not have the potential to result in a significant impact on community facilities and services, and a detailed analysis was not undertaken to determine if the Proposed Action would result in a significant adverse impact to community facilities and services.

4. Open Space

Consistent with guidance in the *CEQR Technical Manual*, the Proposed Action would not have the potential to result in either direct or indirect impacts on open spaces. The Proposed Action would not result in direct impacts on open space resources because:

- The Proposed Action would not result in a physical loss of public open space by encroaching on an open space or displacing an open space;
- The Proposed Action would not change the use of an open space so that it no longer serves the same user population;
- The Proposed Action would not limit public access to an open space;
- The Proposed Action would not cause increased odors or shadows on public open space that would affect its usefulness, whether on a permanent or temporary basis. As documented in the air quality and noise impact analyses included in this supplementary document, the Proposed Action would also not result in a significant adverse impact on noise or air pollutant levels at any open space resource.

The Proposed Action would also not result in indirect impacts on open space resources because:

- The Proposed Action would not generate any additional residents or 125 workers in an underserved area, as defined in the *CEQR Technical Manual*;

- The Proposed Action would not generate any additional residents or 750 workers in a well-served area, as defined in the *CEQR Technical Manual*; and

- The Proposed Action would not generate any additional residents or 500 employees in an area outside of an undeserved or well-served area.

Therefore, in conformance with the *CEQR Technical Manual* screening criteria, it would not have the potential to result in a significant impact on open space resources and a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact on open space.

5. Shadows

The Proposed Action would not result in new structures—or additions to existing structures including the addition of rooftop mechanical equipment—of 50 feet or more or be located adjacent to, or across the street from, a sunlight-sensitive resource. Therefore, in conformance with the *CEQR Technical Manual* screening criteria, it would not result in a significant impact on sunlight-dependent resources, and a detailed analysis is not required to determine if the Proposed Action would cause a significant adverse impact from new shadows.

6. Historic and Cultural Resources

The Proposed Action would not result in any in-ground disturbance that could potentially affect archaeological resources. Nor would the Proposed Action result in:

- New construction, demolition, or significant physical alteration to any building, structure, or object;

- A change in scale, visual prominence, or visual context of any building, structure, or object or landscape feature;

- Construction, including but not limited to, excavating vibration, subsidence, dewatering, and the possibility of falling objects;

- Additions to or significant removal, grading, or replanting of significant historic landscape features;

- Screening or elimination of publicly accessible views; or

- Introduction of significant new shadows or significant lengthening of the duration of existing shadows on an historic landscape or on an historic structure.

Therefore, in conformance with the *CEQR Technical Manual* screening criteria, the Proposed Action would not have the potential to result in a significant impact on historic and cultural resources and a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact to historic and cultural resources.

7. Urban Design and Visual Resources

The Proposed Action would not result in the construction of a new structure or alteration of an existing structure, nor would it require any zoning change. Therefore, in conformance with *CEQR Technical Manual* screening criteria, the Proposed Action would not have the potential to result in a significant impact on urban design and visual resources and a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact to urban design and visual resources.

8. Natural Resources

The Proposed Action is not site specific and entails the authorization of the TLC to publicly sell up to 2,000 new medallions. Any additional taxicabs resulting from the Proposed Action would primarily operate on New York City roadways. Therefore, the Proposed Action would not:

- either contain, or be near or contiguous to, natural resources or important subsurface conditions;
- contain any "built resource" that is known to contain or may be used as a habitat by a protected species as defined in the Federal Endangered Species Act (50 CFR 17) or the State's Environmental Conservation Law (6 NYCRR Parts 182 and 193); or
- contain any subsurface conditions, the disruption of which might affect the function or value of an adjacent or nearby natural resource.

Therefore, in conformance with *CEQR Technical Manual* screening criteria, the Proposed Action would not have the potential to result in a significant impact on natural resources, and a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact to natural resources.

9. Hazardous Materials

The Proposed Action is not site specific and entails the authorization of the TLC to publicly sell up to 2,000 new medallions. Any additional taxicabs resulting from the Proposed Action would primarily operate on New York City roadways. The Proposed Action would not require any new construction or in-ground disturbance. Consequently, the Proposed Action would not:

- increase pathways to human or environmental exposure on a site with elevated levels of hazardous materials;

- introduce new activities or processes using hazardous materials causing the risk of human or environmental exposure to be increased; or

- introduce a population to potential human or environmental exposure from off-site sources.

Therefore, in conformance with *CEQR Technical Manual* screening criteria, the Proposed Action would not have the potential to result in a significant impact on hazardous materials and a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact on hazardous materials.

10. Water and Sewer Infrastructure

The Proposed Action is not site specific and would result in up to 2,000 additional taxicabs that would primarily operate on New York City roadways. Regarding water supply, the proposed project would not result in an exceptionally large demand for water (e.g., those that are projected to use more than one million gallons per day such as power plants, very large cooling systems, or large developments); nor does it involve a project site that is located in an area that experiences low water pressure. Regarding the demand on wastewater and stormwater conveyance and treatment, the Proposed Action would not increase population density; nor would it increase impervious surfaces. Therefore, in conformance with *CEQR Technical Manual* screening criteria, a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact to water and sewer infrastructure.

11. Solid Waste and Sanitation Services

The Proposed Action would not result in solid waste generation associated with residential, institutional, commercial, and industrial uses. Therefore, in conformance with *CEQR Technical Manual* screening criteria, a detailed analysis is not required to determine if the Proposed Action would not result in a significant adverse impact to solid waste and sanitation services.

12. Energy

The Proposed Action is not site specific and would result in up to 2,000 additional taxicabs that would primarily operate on New York City roadways, and does not involve any facility that would affect the transmission or generation of energy. Therefore, in conformance with *CEQR Technical Manual* screening criteria, a detailed analysis is not required to determine if the Proposed Action would result in a significant adverse impact to energy transmission or generation.

13. Transportation

Traffic Analysis

The *CEQR Technical Manual* sets the basic threshold for a detailed traffic analysis at 50 vehicle trips per hour related to the proposed action traveling through an intersection. The sale of

2,000 new taxi medallions would increase the taxi fleet by approximately 15.1%. Increasing the current taxi volume by 15.1% could translate into an increase of well over 50 taxis in one hour at a number of key intersections. For example, an intersection with 528 taxis in the AM peak hour could experience an increase of approximately 80 taxis during that hour. Therefore, the set of 52 representative intersections identified by the City — comprising intersections that carry a noticeable number of the 13,237 taxicabs currently operating in the City — will be analyzed to determine the potential impact of the taxi medallion sale in this study area (see Figure 1 "Traffic Study Area"). These representative intersections for analysis were selected, in consultation with TLC, New York City Department of Transportation (DOT) and New York City Department of Environmental Protection (DEP), based on the review of the hourly taxi pick-up/drop-off data summarized by Census Block Group for each of the three analysis (AM, midday, and PM) peak periods. In addition, taxi Global Positioning System (GPS) data was also used to identify blocks (links) with 50 or more pick- up/drop-off activities during the AM, midday and PM peak hours. Further, the prior Taxi Medallion EIS [CEQR #03TLC001Y] was also reviewed to verify the locations where traffic or air-quality impacts were identified. The following additional attributes led to the selection of study intersections:

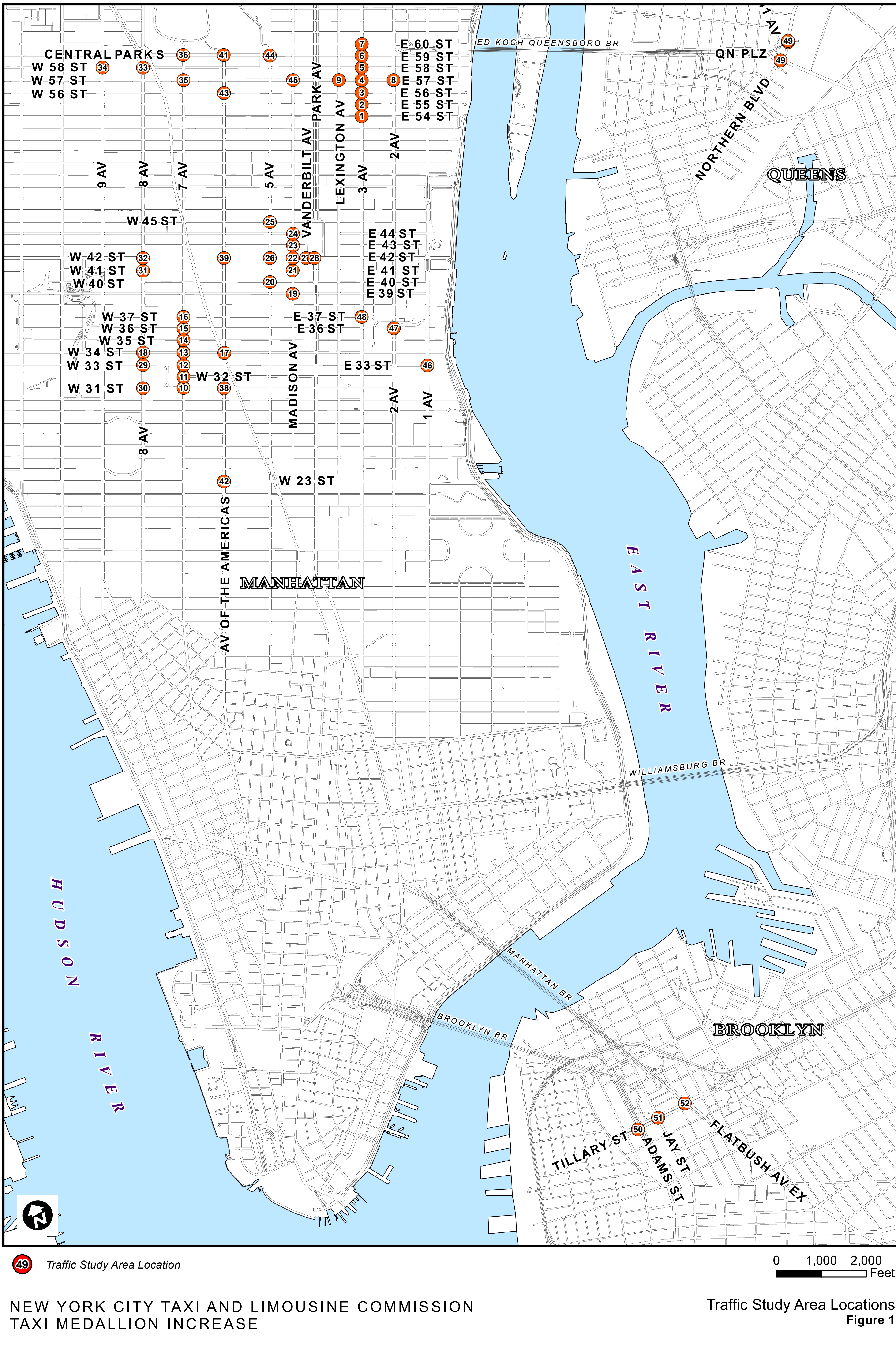
- Major origins/destinations (i.e., Penn Station, Grand Central Terminal, PA Bus Terminal, etc.);
- Next to the area with greatest concentration of taxi pick-up/drop-off volumes;
- High percentage of taxi cabs in baseline traffic;
- Taxi stands; and
- Portals (Brooklyn, Manhattan and Queens Borough Bridges) with high taxi volumes.

Transit Analysis

The CEQR thresholds for a detailed transit analysis are A) 200 passengers per peak hour related to a subway/rail line or station or B) 50 bus trips in a single direction on a single route. The sale of 2,000 new taxi medallions is not expected to increase transit trips. Conversely, it would increase the capacity and reduce wait times for an auto based mode, making that mode slightly more attractive. Therefore, a detailed transit analysis is not required.

Pedestrian Analysis

The CEQR threshold for a detailed pedestrian analysis is 200 pedestrian trips per peak hour. The Proposed Action is expected to generate few new pedestrian trips in the peak hours (i.e. trips that are not already being made). Furthermore, the new taxis could reduce some pedestrian activity by making the taxi mode more convenient. The Proposed Action could redistribute some pedestrian trips, but the pedestrian activity related to these new taxis will be dispersed throughout the primary taxi service areas. Therefore, there is no one location where the peak hour pedestrian activity is expected to exceed the 200 trip threshold. Thus, a detailed pedestrian analysis is not required.



49 Traffic Study Area Location

NEW YORK CITY TAXI AND LIMOUSINE COMMISSION
TAXI MEDALLION INCREASE

Traffic Study Area Locations
Figure 1

Source: New York City Taxi and Limousine Commission, New York City Department of Transportation, New York City Department of City Planning, New York City Department of Information, Technology, and Telecommunications.

Parking

Given the highly dispersed nature of the taxi fleet both with respect to service areas and where they park when not in service, a detailed parking analysis is not required. The Proposed Action is not expected to have a significant impact on any parking location.

14. Air Quality

As described above in Section 13. Transportation, 52 representative intersections for analysis were selected for the traffic study area, in consultation with TLC, DOT and DEP, based on the review of the hourly taxi pick-up/drop-off data summarized by Census Block Group for each of the three analysis (AM, midday, and PM) peak periods. In addition, taxi GPS data was also used to identify blocks (links) with 50 or more pick- up/drop-off activities during the AM, midday and PM peak hours. Further, the prior Taxi Medallion EIS was also reviewed to verify the locations where traffic or air-quality impacts were identified. The following additional attributes led to the selection of study intersections:

- Major origins/destinations (i.e., Penn Station, Grand Central Terminal, PA Bus Terminal, etc.);
- Next to the area with greatest concentration of taxi pick-up/drop-off volumes;
- High percentage of taxi cabs in baseline traffic;
- Taxi stands;
- Portals (Brooklyn, Manhattan and Queens Borough Bridges) with high taxi volumes; and
- All the intersections that were within the line of sight and 1,000 feet from the selected air quality intersections.

Of these 52 intersections, four intersections were identified by TLC, in consultation with DEP, as having the potential to require an air quality analysis. The four locations were selected based on DEP's review of the existing overall traffic volume, existing traffic delays, existing taxi volume, and the proposed increase in taxi volume, based on the pro-rated approach – an increase of 15.1% in taxi volume at each intersection. The results of this review indicated that the locations where the highest potential air quality impacts are expected are:

- 3rd Avenue and 57th Street;
- 7th Avenue and 34th Street;
- 5th Avenue and 42nd Street; and
- 6th Avenue and 23rd Street.

Therefore, a detailed microscale analysis of potential CO, $PM_{2.5}$ and PM_{10} impacts will be conducted at these four intersections during AM, midday and PM peak hours.

A qualitative discussion of potential NO_2 impacts will be included in the EIS.

15. Greenhouse Gas Emissions

According to the *CEQR Technical Manual,* although the contribution of the GHG emissions from a proposed project to global GHG emissions is likely to be considered insignificant when measured against the scale and magnitude of total global GHG emissions, the GHG emissions from certain projects still should be analyzed to determine their consistency with the City's citywide GHG reduction goal. The GHG consistency assessment focuses on projects that have the greatest potential to produce GHG emissions that may result in inconsistencies with the GHG reduction goal to a degree considered significant and, correspondingly, have the greatest potential to reduce those emissions through the adoption of project measures and conditions. With the exception of city capital projects, and projects proposing power generation or a fundamental change to the City's solid waste management system, a GHG emissions assessment is conducted only for larger development projects undergoing an EIS, since these projects have the greatest potential to be inconsistent with the City's GHG reduction goal to a degree considered significant. As indicated in the *CEQR Technical Manual,* the GHG consistency assessment focuses on those projects being reviewed in an EIS that would result in development of 350,000 square feet or greater.

Since the Proposed Action is not a New York City capital project and would not require additional power generation, or regulations and other actions that would fundamentally change the City's solid waste management system by changing solid waste transport mode, distances, or disposal technologies, and would not result in new development, it is unlikely to produce GHG emissions that may result in inconsistencies with the City's GHG reduction goal to a degree considered significant. Nonetheless, the sale of 2,000 taxi medallions will be evaluated to determine whether it would be inconsistent with the City's GHG policy.

16. Noise

In accordance with Section 311.1 of the *CEQR Technical Manual*, a noise screening assessment was performed to determine if the project-related vehicles would cause a doubling of noise passenger car equivalents (PCEs). Since the proposed project would increase the number of existing taxi medallions by 15.1%, and the taxi medallions are only a portion of the total traffic that would be on the road, the proposed project would cause an increase of less than 15.1% in the overall traffic at any location. Per the *CEQR Technical Manual*, PCEs factors for noise are as follows:

- Each Automobile or Light Truck: 1 Noise PCE
- Each Medium Truck: 13 Noise PCEs
- Each Bus: 18 Noise PCEs
- Each Heavy Truck: 47 Noise PCEs

As shown above, taxi medallions are assigned a noise PCE of one. Although typically the vehicles in the study area consist of a mix of autos, light trucks, taxis, buses and trucks, it was conservatively[1] assumed for this noise screening assessment that all existing vehicles on the road are classified as automobiles, light trucks or taxis and would have a noise PCE factor of 1. Based on this conservative assumption, the proposed project would not result in a doubling (increase of 100%) of the existing PCEs at any location since the PCEs would increase by less than 15.1%. As a result, a detailed noise impact assessment is not required. The EIS will confirm and document noise-related conclusions of the EAS.

17. Public Health

The Proposed Action would not result in significant unmitigated adverse impacts in water quality, hazardous materials, or noise. However, a detailed air quality assessment will be prepared as part of the EIS. In conformance with the *CEQR Technical Manual*, a public health assessment would be prepared if the detailed air quality analysis in the EIS indicates the potential for significant adverse impacts.

18. Neighborhood Character

The Proposed Action would not result in significant unmitigated adverse impacts in Land Use, Zoning, and Public Policy; Socioeconomic Conditions; Open Space; Historic and Cultural Resources; Urban Design and Visual Resources; Shadows; or Noise. Therefore, in conformance with the *CEQR Technical Manual*, no neighborhood character assessment is warranted unless the Proposed Action would result in significant adverse transportation impacts.

19. Construction Impacts

The Proposed Action would not involve new construction or in-ground disturbance. Therefore, in conformance with *CEQR Technical Manual* screening criteria, a detailed assessment of construction impacts is not warranted.

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[1] This approach is conservative because a mixture of other vehicle types (i.e., buses and/or trucks in addition to autos, light trucks and taxis) at a location would result in a higher existing PCE value. This would allow a larger number of taxi medallions to be added prior to causing a doubling of noise PCEs.

APPENDIX B

TECHNICAL MEMORANDUM ON SOCIOECONOMIC IMPACTS OF 2,000 ADDITIONAL MEDALLIONS

Socio-Economic Impacts of the Sale of 2000 Additional Medallions

Technical Appendix B

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1 Introduction

The Taxi and Limousine Commissions (TLC) proposes to sell up to 2,000 taxicab licenses (medallions) (Proposed Action) in the City of New York. The sale would increase the number of yellow taxi licenses from the existing number of 13,237 licenses to a total of 15,237 licenses, an increase of approximately 15.1%. All of the new licenses would be required to be used with taxicab vehicles that are accessible to individuals who use wheelchairs. The sale of medallions would begin toward the end of 2013 but sold taxicabs would not be picking up fares until early 2014. For the purposes of this analysis, taxi medallions are assumed to be sold according to the following schedule: 400 in 2014, 550 in 2015, 500 in 2016 and 550 in 2017.

This document discusses the methodologies used to assess the impact of the Proposed Action on socioeconomic conditions, as defined in the *2012 City Environmental Quality Review (CEQR) Technical Manual*. As defined in the *2012 CEQR Technical Manual*, the socioeconomic character of an area includes its population, housing, and economic activity. Socioeconomic changes may occur when a proposed action directly or indirectly changes any of these elements. Although socioeconomic changes may not result in impacts under CEQR, they are disclosed if they would affect land use patterns, low-income populations, the availability of goods and services, or economic investment in a way that changes the socioeconomic character of an area. According to the *2012 CEQR Technical Manual*, the five principal issues of concern with respect to socioeconomic conditions are whether a proposed action would result in significant adverse impacts due to: (1) direct residential displacement; (2) direct business and/or institutional displacement; (3) indirect residential displacement; (4) indirect business and/or institutional displacement; and (5) adverse effects on specific industries of importance to the City.

Since the Proposed Action would neither require any construction activities nor would result in any new development, it would not result in any direct or indirect displacement of residences or businesses.

However, it could potentially result in an adverse effect on the yellow taxicab industry, the for-hire vehicle (FHV) industry, and industries that provide direct services to yellow taxicab and FHV businesses. All of these industries are of importance to the City. As a consequence, the socioeconomic conditions impact analysis includes an assessment of the impact of the Proposed Action on yellow taxicab businesses, livery car businesses (the FHV industry), and businesses that provide direct services to the yellow taxicab and livery businesses.

The *2012 CEQR Technical Manual* indicates that a detailed socioeconomic conditions analysis is not required if it can be demonstrated that a proposed action:

- Would not result in a significant direct or indirect displacement of residents, or businesses, and
- Would not have a significant adverse impact on an industry of importance to the City.

This document provides technical details on the socioeconomic analysis conducted to identify impacts to an industry of importance to the City (namely the yellow taxicab industry, the for-hire vehicle (FHV) industry) as a result of the Proposed Action. Impacts to the yellow taxi cab industry would primarily consist of impacts to the value of the medallions, impacts on the income of taxi drivers and impacts to the New York City economy. This document identifies and quantifies all these expected impacts of the sale of additional medallions. The methodologies used to assess each of these impacts are detailed in the following discussion. The impact of the Proposed Action on the FHV industry is assessed in a separate technical memorandum prepared by Appleseed, Inc.

The primary impacts on the value of medallions and the income of taxi drivers arise because the new medallions would result in an increased level of competition for taxi ridership. Impacts on the New York City economy would take place as additional drivers find employment and contribute to the local economy. The impact of the Proposed Action on taxi ridership and revenue trips was quantified based on an analysis of the observed effect of previous medallions sales. The analysis was conducted primarily in three steps: (1) Statistical analysis was conducted (using econometric models) to estimate the potential impact on the number of fares (or revenue trips); (2) the impact on revenue trips was then translated to financial impacts using a financial model, on the value of the medallion and taxi driver income; (3) using input-output models an analysis was conducted to determine the impact of the Proposed Action on New York City's economy.

This document discusses and details the approach and findings of an assessment of the expected impacts on socioeconomic conditions due to the sale of 2000 additional medallions. Section 2 describes the methodology, data and results of the statistical analysis. Section 3 describes methodology and assumptions made to translate the results of the statistical analysis to financial impacts on the value of the medallion and the income of taxi drivers. The section discusses the results of this analysis. Section 4 discusses the methodology and results of the medallion sale on New York City's economy. Section 5 provides a summary and conclusion from the analysis.

2 Statistical Analysis: Methodology, Data and Results

A regression-based approach was used to quantify the impact on revenue trips per mile due to medallion sales based on the historical period June 2004 to December 2011. This section provides technical details on the methodology, the data and the associated assumptions that were made as part of the analysis.

2.1 Methodology

A regression model was developed to quantify the impact on revenue trips per mile due to medallion sales based on the historical period June 2004 to December 2011. The sample used for the regression analysis includes several relevant policy changes. Between April 2004 and May 2008, the number of taxi medallions increased from 12,487 medallions to the current level of 13,237 medallions, a 6.0% increase of 750 medallions. Fares also changed during this period including an increase in May 2004 and implementation in November 2006 of flat fares between Manhattan to John F. Kennedy International Airport (JFK). In November 2006 fare rates were increased for time spent in traffic or waiting. Based on the historical data, a regression based model was developed to quantify the impact on revenue trips per mile driven due to previous observed increases in the number of medallions, taking into account changes in fares, economic activity and seasonal factors. The model applies the following functional form, where the dependent and independent variables have been transformed into natural logarithms:

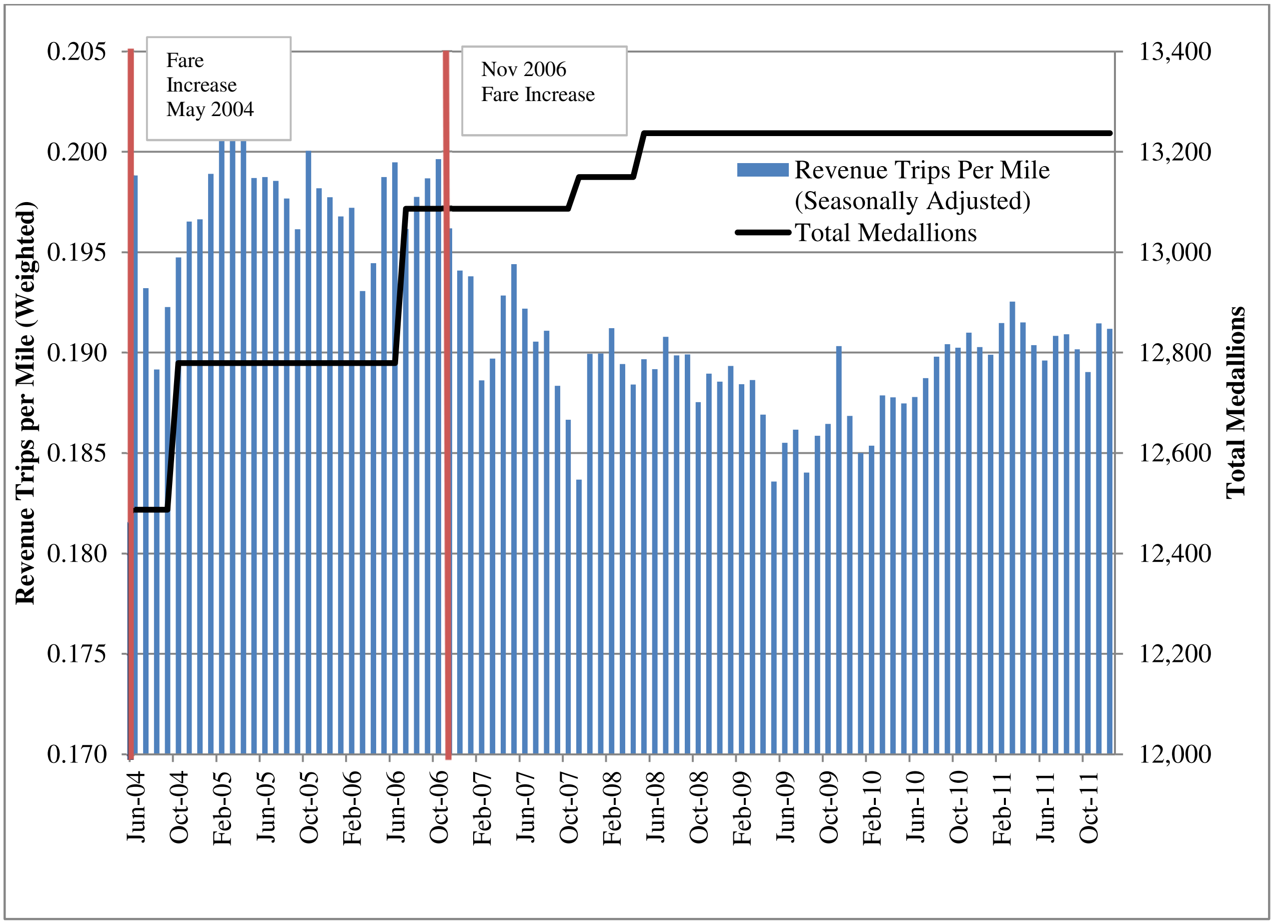
$$\ln\left(\frac{\text{RevenueTrips}}{\text{MilesDriven}}\right)_t = \text{Constant} + \beta_1 \text{DummyQ1} + \ldots + \beta_3 \text{DummyQ3} + \beta_4 \ln(\text{RealTaxiFare})_t + \tag{1}$$
$$+ \beta_5 \ln(\text{MedallionCount})_t + \beta_6 \ln(\text{Unemployment Rate})_t + \varepsilon_t + \varphi\varepsilon_{t-1}$$

The model yields an estimate of the degree to which a change in the number of medallions has affected the number of revenue trips per taxi and the consequently the value of the medallion, holding all other variables (such as economic conditions and taxi fares) constant.

Revenue trips per mile were calculated based on taxi meter inspections data. Taxi meter inspections data consist of meter units earned, of revenue trips taken and of miles driven between inspections. Inspections are conducted typically 3 times a year for each taxi vehicle. Revenue trips are used (as the numerator of) the dependent variable (instead of meter units or unit fare[1]) because airport trips are recorded on a flat fare basis and not as meter units which vary with distance travelled. Thus, revenue trips are a more accurate measure of total trips taken since they include airport trips. Figure 1shows seasonally adjusted revenue trips per mile driven (revenue trips have been weighted to reflect true sample proportions, see section 2.2 for details). The figure also includes the total number of medallions outstanding (but not necessarily in circulation) over the sample period.

[1] A unit fare is 1) One-fifth of a mile, when the taxi is traveling at 12 miles an hour or more; or 2) 60 seconds when not in motion or traveling at less than 12 miles per hour.

Figure 1: Revenue Trips per Mile and Total Medallions



Source: TLC Taximeter Inspections and Medallion sale records

Since November 2006, revenue trips per mile have gone down, both due to an increase in fares and a sale of additional medallions. The data are also affected by business cycle fluctuations, as the nation and New York City suffered from an economic downturn between December 2007 and June 2009. The regression analysis seeks to quantify statistically the impact of the change in the number of total medallions on revenue trips per mile. The findings from the statistical analysis were input into a financial analysis to quantify the impact on the value of a medallion due to a reduction in revenue trips (see Section 3 for details).

A second regression model was developed to estimate the growth in trips due to economic growth over time. The regression model quantified the relationship between increases in taxi trips per day and the growth in New York City employment and hotel occupancy. Details are presented in the section below. Trip growth however is assumed to be the same both with the Proposed Action and without the Proposed Action, and therefore is not a critical assumption for the analysis results presented here.

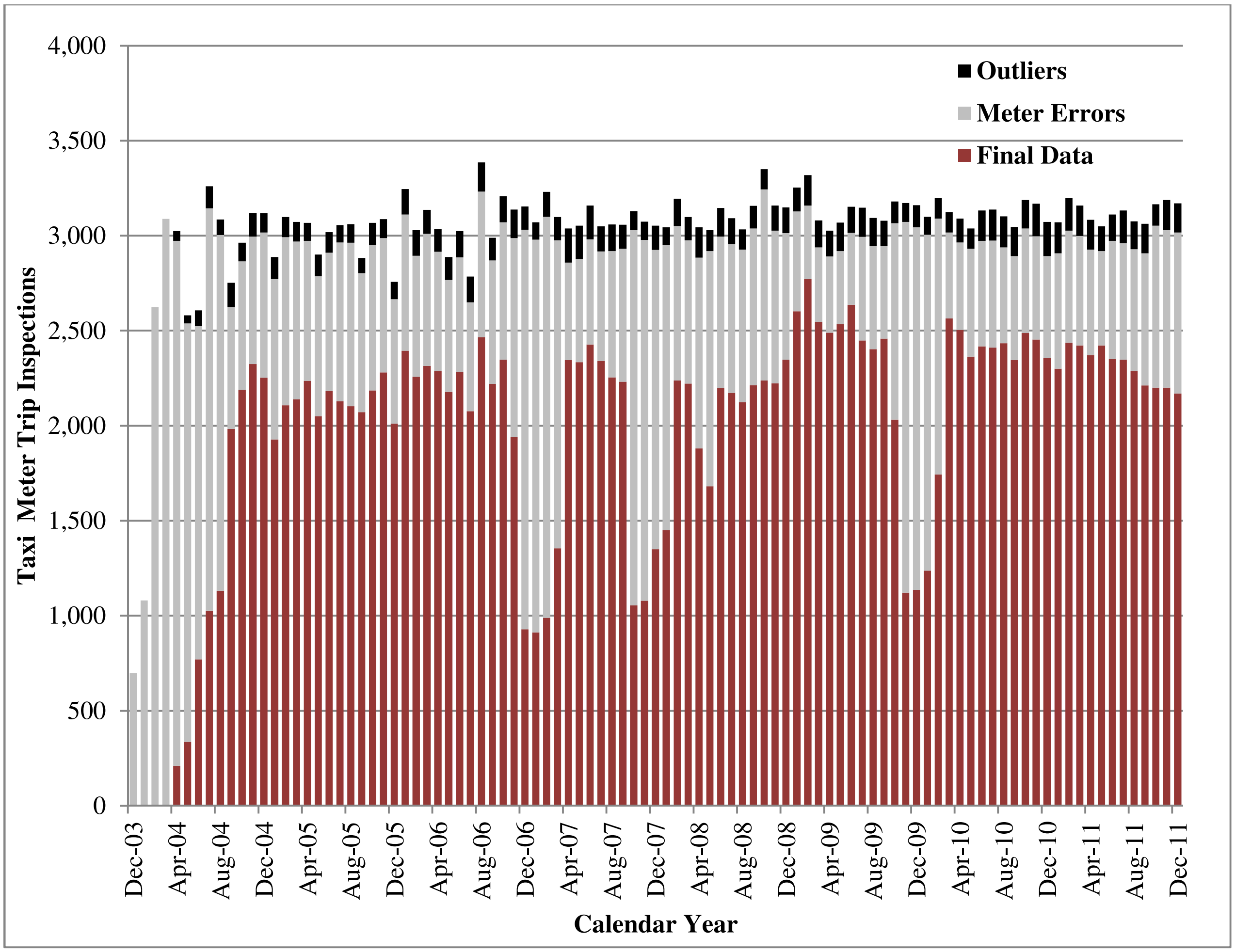
2.2 Review of Data and Assumptions

This section presents the data used and the assumptions made to develop the statistical analysis.

2.2.1 Data Set Description

Most taxicabs are inspected 3 times a year or once in every four months. The taxi meter inspections data consisted of readings of taxi odometers and taxi meters for each taxi cab in service. Figure 2 shows monthly inspection data provided by the TLC at the taxicab level.

Figure 2: Observations by Month for Miles and Meter Trip Data



Source: HDR Analysis of TLC Taximeter Data 2004 - 2011

Overall, the original dataset consisted of 294,774 data observations. Each observation presented in the figure above consists of a taxicab that was inspected during that month. For example, in July 2005, there were 3,055 taxi cabs that were inspected. The original data set was processed to remove outliers and meter errors to yield a final dataset (additional details on assumptions are presented below). In July 2005 for example, 835 observations were identified as meter errors and 91 observations were identified as outliers. Relevant data for conducting the analysis consisted of calculating the changes in miles, meter trips and meter units between two consecutive inspections. Calculating changes in miles and meter trips between two consecutive inspections results in the first observation on miles, meter trips, and meter units being removed from the analysis. As seen in the figure above, meter errors were higher in the beginning of the sample period (December 2003 to March 2004) primarily due to this reason.

Observations need to be checked for validity when:

- A taxi vehicle has been hacked-up[2] or replaced and therefore inspection data from odometer readings and taxi meter would not reflect accurately the changes in miles traveled and meter trips in between inspections and;

- A taxi meter has to be restarted due to repairs and hence changes in meter units and meter trips do not accurately reflect the changes in miles traveled and meter trips in between inspections.

Negative changes in miles, meter trips or meter units (i.e. a taxi had been hacked-up or replaced or the meter was repaired) were also removed. These changes reduced the sample size by 31% to 203,432 observations (data points that were removed as a result of this analysis are shown as *Meter Errors* in Figure 2).

The following assumptions were used to identify and remove outliers for the analysis:

- Meter units per mile driven were assumed to be less than 5 (this follows since a meter unit changes by 1 unit every 1/5th of a mile);

- Meter trips per mile driven were assumed to be less than 5 (this follows from an assumption that minimum trip distance was 0.2 miles);[3]

- Available miles or non-revenue miles defined as the difference between revenue miles and total miles were assumed to be less than 90%. That is, those taximeter observations that showed that only 10% or less miles driven were revenue earning were eliminated from the dataset;

- If there were multiple observations for a taxi during a 3 month period (177 observations) these were eliminated from the data set;

- Based on one day of Taxicab Passenger Enhancements Project (TPEP) trip data (March 22, 2011) provided by the TLC the following assumptions were made:

    - If average miles travelled per day[4] (for an individual taxi) were greater than 700 miles these observations were eliminated from the dataset;[5]

[2] Taxi vehicles do not come fully “hacked-up” for use as a taxi and must be modified for use as a taxi (according to rules and regulations set by the TLC) by local businesses prior to being declared road worthy by the TLC.
[3] This was done to eliminate outliers. A taxicab carry fare paying passengers 100% of the time a minimum distance of 0.2 miles for each trip would be expected to have revenue trips per mile less than or equal to 5.

- If average trips per day (for an individual taxi) were greater than 100 trips per day, then these observations were eliminated from the dataset.[6]

Taken together, these assumptions reduced the size of the dataset to 191,221[7] observations (data points removed from the analysis are shown as *Outliers* in Figure 2). Once the dataset was cleaned a summary dataset was developed that totaled the meter trip observations, mileage observations and meter unit observations for the medallions on a monthly basis (the remaining data set is shown as *Final Data* in Figure 2). This aggregate data provided fleet wide statistics which were then used as the basis for the statistical analysis.

2.2.2 Weighting the Dataset

As shown in Figure 2 in certain months (particularly at the end of 2006, 2007 and 2009) a significant number of observations had to be removed from the dataset. For certain months, this meant that the number of usable observations for different medallion types (independent or mini-fleet) were not representative of their proportions in the taxi meter inspection data sample. This might bias the results since a greater proportion of mini-fleet medallions are driven for two shifts a day (and thus operate 24 hours a day) while a larger proportion of independent medallions are driven for a single shift (and thus operate for 12 hours a day). Similarly, independent medallions might have a higher proportion of personal use or non-revenue use compared to mini-fleet medallions.

To correct for such sampling issues, the dataset was weighted to reflect the composition of the taxi meter inspections data.[8] For example, in October 2007 a large proportion of mini-fleet medallions were either hacked-up or had meter repairs since the previous inspection. As a result, out of 1,892 (mini-fleet) observations, only 441 (mini-fleet observations) were usable. The weighting scheme assigned a value of 4.3 (1,892 divided by 441) to each mini-fleet observation in the analysis dataset for October 2007. A similar procedure was implemented for independent medallions. The weighting factor was applied to revenue trips for each medallion (inspected that month) and to the total miles driven (based on inspections for that month). Data were then aggregated to estimate fleet-wide revenue trips per mile driven.

Figure 3 shows the aggregate fleet weighted and un-weighted revenue trips per mile. Weighted and un-weighted data for each taxi medallion was aggregated to develop total fleet-wide estimates of revenue trips per mile. As can be seen on the figure below, the weighted dataset is very consistent with the un-weighted dataset and it corrects for those periods (for example fall 2007) in which a large number of

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[4] This was calculated as the change in miles between two consecutive inspections divided by the number of days between the two inspection days

[5] The maximum number of revenue miles recorded by a taxi on that day was 260 miles. Average number of live hours or revenue hours for those taxis that had earned 150 revenue miles or more was 9.84 hours, which translates to 41% live fare time. Assuming the same percentage held for the ratio of revenue miles to total miles, results in maximum total miles of 634 miles for a taxi. A conservative cutoff of 700 miles per day was used to eliminate any other outliers.

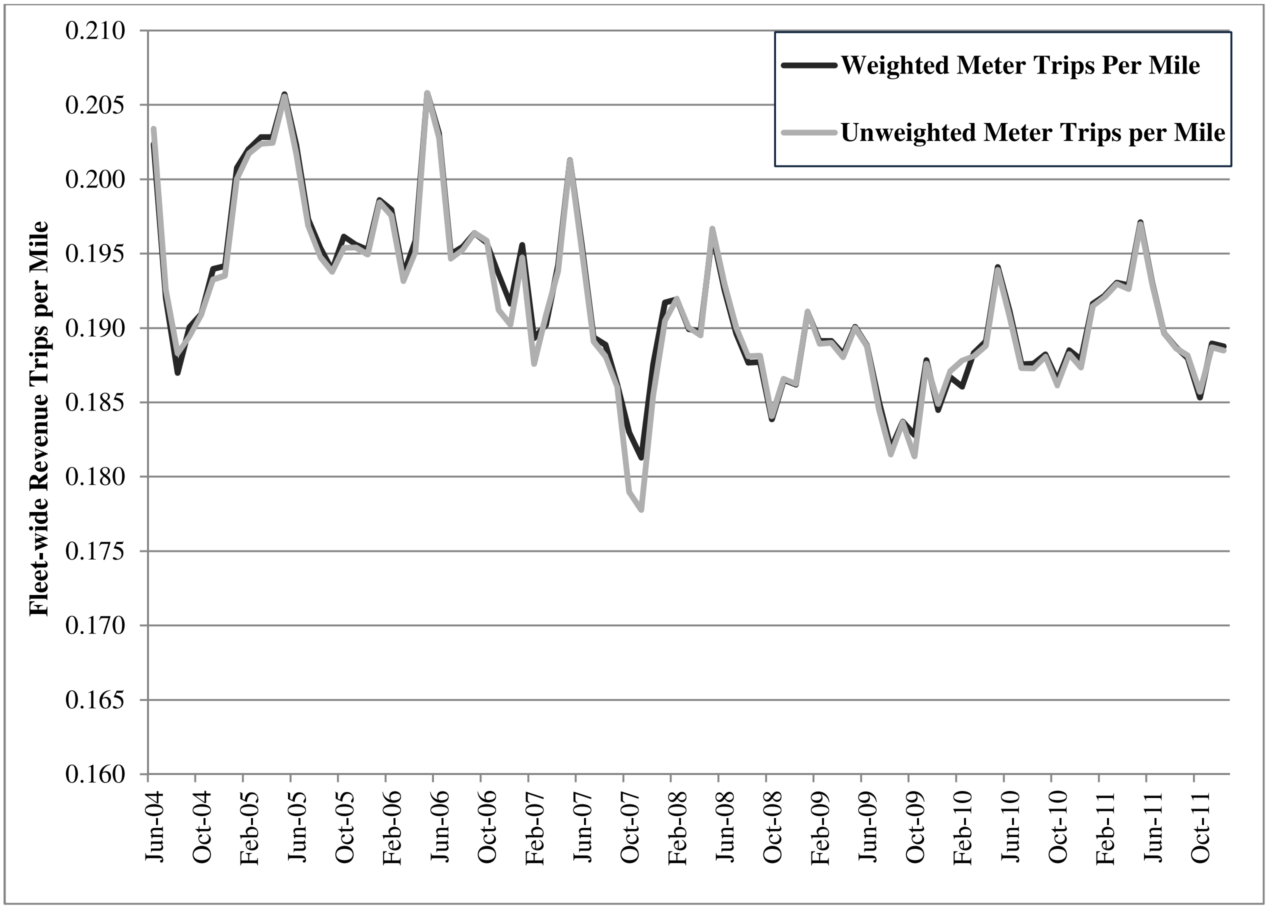
[6] The maximum trips travelled on that day by a medallion were 80. Since the maximum trips would vary day to day, any trips that were 25% greater than that maximum were eliminated.

[7] These included 466 observations in Jan 2012 which were not included in the analysis.

[8] A similar technique was used by Schaller 1999, *Transportation* 26:283-297,"Elasticities for taxicab fares and service availability".

vehicles were hacked-up or their meters were repaired. However, the correction goes in both directions and accounts for the composition of medallion types.

Figure 3: Weighted and Un-weighted Fleet-wide Revenue Meter Trips per Mile



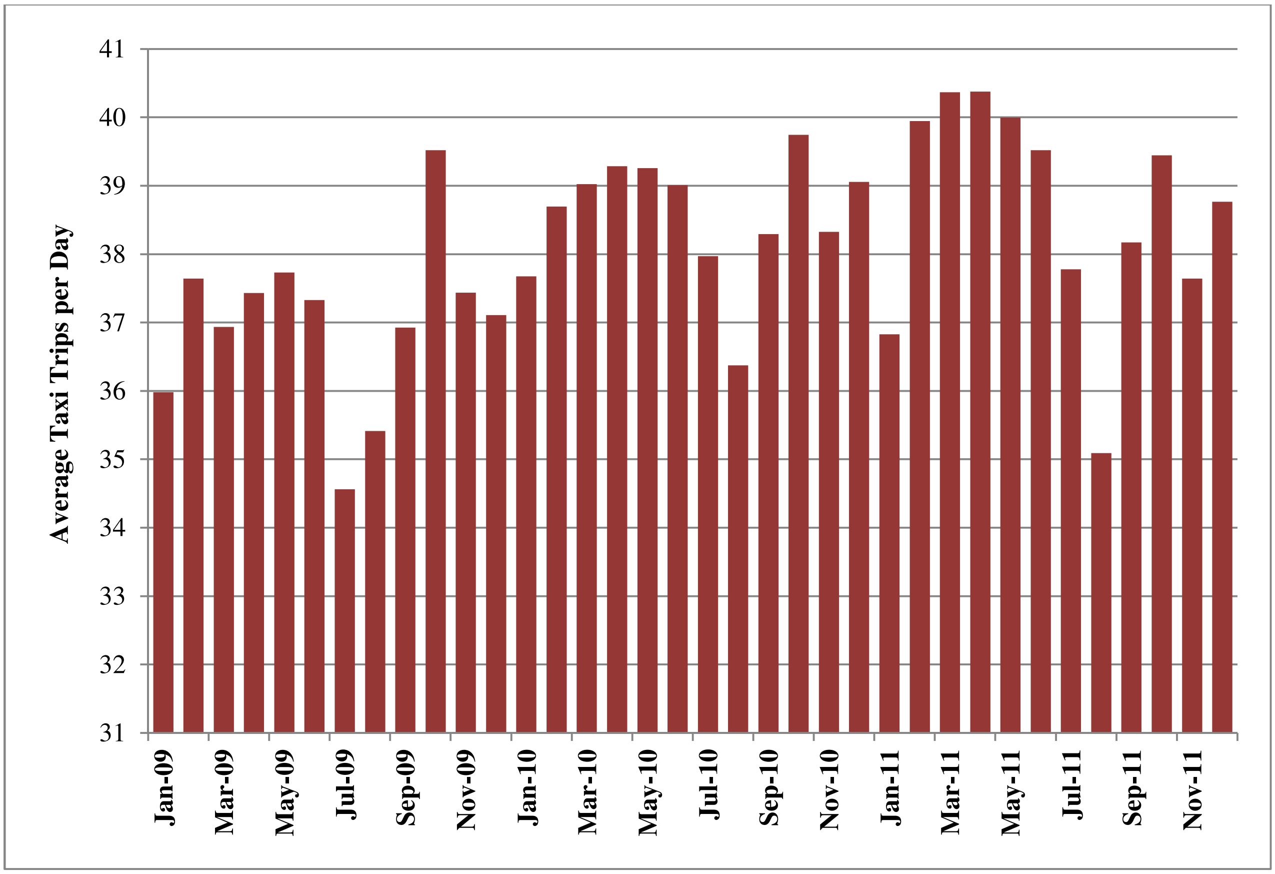
Source: TLC Taxi Meter Inspection Data and HDR Analysis (2004 – 2011)

2.2.3 TLC TPEP Data

In March 2004, TLC Board of Commissioners mandated that certain technology related improvements be implemented in all medallion taxi cabs. As part of the proposed improvements, The Taxi Passenger Enhancements Project (TPEP) allows for electronic trip sheet data collection. TPEP equipment automatically captures the pick up and drop-off locations of every passenger including fare amounts and pick-up time and drop off time. Reliable data from TPEP (after implementation) are available from TLC starting in January 2009.

Since TPEP data are not available during periods when expansions in the taxi fleet took place (which took place prior to January 2009); the TPEP dataset was utilized to estimate growth in the taxi trips over time. Using the data from Jan 2009 to December 2011 impact of employment growth was estimated. During this period nominal fares were not changed, and as discussed previously there were no sales of taxi medallions. TPEP data used in the analysis are presented in Figure 4. On average a taxi completes 35 to 40 trips per day. As New York City's economy recovered from the recession from 2009 to 2011 taxi trips per day increased from 37 trips per day for the average taxi to 38.7 trips per day.

Figure 4: Average Taxi Trips per Day



Source: TLC TPEP Data (2009-2011)

2.3 Results

Regression based results from two analysis are presented below. Results from Medallion sale impacts indicate the likely impact of the expansion in the taxi fleet. The second regression estimates the impact of the economic growth on taxi trips.

2.3.1 Impacts of the Sale of Additional Medallions on Revenue Trips per Mile

Econometric models estimated to evaluate the impacts on existing revenue trips per mile are presented in Table 1 below. A 10% increase in medallions is expected to decrease revenue trips per mile by 0.7%. A range of impacts (a 95% confidence interval) was developed using the standard error of the estimate. Therefore, the range of likely impacts was estimated to be within two standard deviations of the mean estimate of the coefficient (-0.017, -0.121). Unemployment rate in New York City was included in the model to account for the impact of changes in economic activity[9]. Seasonal dummy variables were included in the regression to account for expected changes in seasonal demand. Quarterly dummy variables were used instead of monthly variables as the data is based on taxi inspections that take place three times a year and the seasonality is more reflective of the three months period. The model specification also includes a first order auto regressive term.

Table 1: Models to Evaluate Impacts of Additional Medallions

Dependent Variable: Log(Revenue Meter Trips / Total Miles)				
Sample: 2004M06 2011M12 (Monthly)				
Included observations: 91				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Constant	-0.451	0.449	-1.003	0.319
Seasonality Quarter 1	0.025	0.004	6.778	0.000
Seasonality Quarter 2	0.027	0.005	5.758	0.000
Seasonality Quarter 3	0.003	0.004	0.810	0.420
LOG(Real Taxi Fare)	-0.251	0.154	-1.633	0.106
LOG(Medallion Count)	-0.069	0.026	-2.619	0.011
LOG(Unemployment Rate in New York City)	-0.041	0.015	-2.710	0.008
First Order Auto Regressive Term AR(1)	0.686	0.084	8.142	0.000
R-squared	**0.789**			
Adjusted R-squared	**0.772**			
S.E. of regression	0.014			
F-statistic	44.466			
Prob(F-statistic)	0.000			
Durbin-Watson stat	2.06			

The coefficient estimates from the regression analysis indicates the following:

- A 10 percent increase in the number of medallions reduces revenue trips per mile for existing medallions by 0.69 percent. Using twice the standard error of the parameter as a measure of uncertainty, the estimate could vary by roughly half a percentage point in either direction, from .2 percent to 1.2 percent for the same percentage increase in the number of medallions. Therefore, the 15 percent increase implied by the sale of 2,000 medallions would be associated with a 1 percent decline in revenue trips per mile with a range varying between .26 percent and 1.82 percent (using a -0.069 coefficient estimate and 0.026 standard deviation) ;

[9] Additional economic variables were also experimented with but were not included in the final specification. These included the Federal Reserve's New York City Coincident economic indicators, hotel occupancy in New York City, employment in Manhattan and New York City for different sectors such as professional services, business services and leisure services. Certain US macro-economic variables were also experimented with including real US consumption expenditures, US retail sales and the University of Michigan consumer sentiments index.

- A 10 percent increase in real taxi fares is associated with a 2.5 percent decrease in revenue trips per mile;
- A 10 percent increase in the unemployment rate results in 0.4 percent decline in revenue trips per mile.

2.3.2 Impacts of Economic Growth on Daily Trips per Taxi

An additional regression-based model was developed to estimate the growth in taxi trips due to economic growth. Economic growth would impact trips per taxi both with the Proposed Action and without the Proposed Action. The model presented in Table 2 was based on TPEP data from the TLC from 2009 – 2011. During 2009 – 2011, the supply of medallions was not increased, nor were there any fare increases. As such, changes in average taxi trips were mostly due to changes in the economic environment (tourism, employment, etc.). The results indicate that a 10 percent growth in employment in New York City is associated with 7.4 percent increase in average daily trips per taxi. Quarterly dummies were utilized rather than monthly dummies for seasonal adjustment due to the short sample of the data.

Table 2: Impact on Taxi Trips Due to Economic Growth

Dependent Variable: LOG(Average Daily Trips per Taxi)				
Sample: 2009M01 2011M12 (monthly)				
Included observations: 36				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Constant	-2.390	3.554	-0.673	0.506
Quarter 1	0.008	0.014	0.561	0.579
Quarter 2	0.014	0.012	1.145	0.261
Quarter 3	-0.044	0.016	-2.763	0.010
LOG(Total Employment in New York City)	0.743	0.432	1.721	0.096
LOG(Seasonally Adjusted Hotel Occupancy)	0.453	0.104	4.354	0.000
R-squared	**0.527**			
Adjusted R-squared	**0.448**			
S.E. of regression	0.029			
F-statistic	6.678			
Prob(F-statistic)	0.000			
Durbin-Watson stat	1.758			

The impacts on revenue trips per mile of additional medallions and economic growth were included in the financial analysis.

3 Financial Model: Methodology, Assumptions and Results

Results of the statistical analysis were then input into the financial analysis to quantify the impacts of the reduction in taxi trips to an impact on 1) the value of the medallion and 2) the income of taxi drivers. The analysis takes into account the different medallion operating structures in the New York City taxi market and a number of assumptions were made in order to conduct the analysis. These critical assumptions are detailed below.

3.1 Introduction

The value of a medallion when it was first traded after World War II averaged $2,500 or approximately $26,000 in 2012 dollars. A medallion currently sells at over $950,000 for an individual medallion and over $1.15 million for a corporate (also known as mini-fleet) medallion. The medallion derives its value from the income it generates. For owner-operators, income is represented by fares and tips and often leasing to a second-shift driver less vehicle ownership costs, insurance costs, maintenance and repair costs and operating costs such as fuel. For lease drivers, income is represented by fare and tip revenues minus lease fees and fuel costs.

On July 12, 2012, TLC approved the following revisions to its rules governing fares charged in taxis and street hail livery vehicles[10], and the caps that can be charged by an owner of a taxi to a driver, effective September 4, 2012.

Currently, taxi fares are based on an initial charge of $2.50, and a "unit fare" which was increased to $0.50 per each additional "unit" from $0.40 per "unit." A unit fare is:

- One-fifth of a mile, when the taxi is traveling at 12 miles an hour or more; or
- 60 seconds when not in motion or traveling at less than 12 miles per hour.

In addition, there is a night surcharge of $.50 between the hours of 8:00 PM and 6:00 AM, and a peak hour weekday surcharge of $1.00, Monday through Friday between the hours of 4:00 PM and 8:00 PM. Tips from passengers average between approximately 15 and 20 percent of the fare. Riders are also charged a New York State MTA Tax of $.50 per ride.

The fare for a trip between Manhattan and JFK was increased in 2012 from a flat fare of $45.00 plus any intervening tolls to a flat fare of $52.00 plus any intervening tolls.

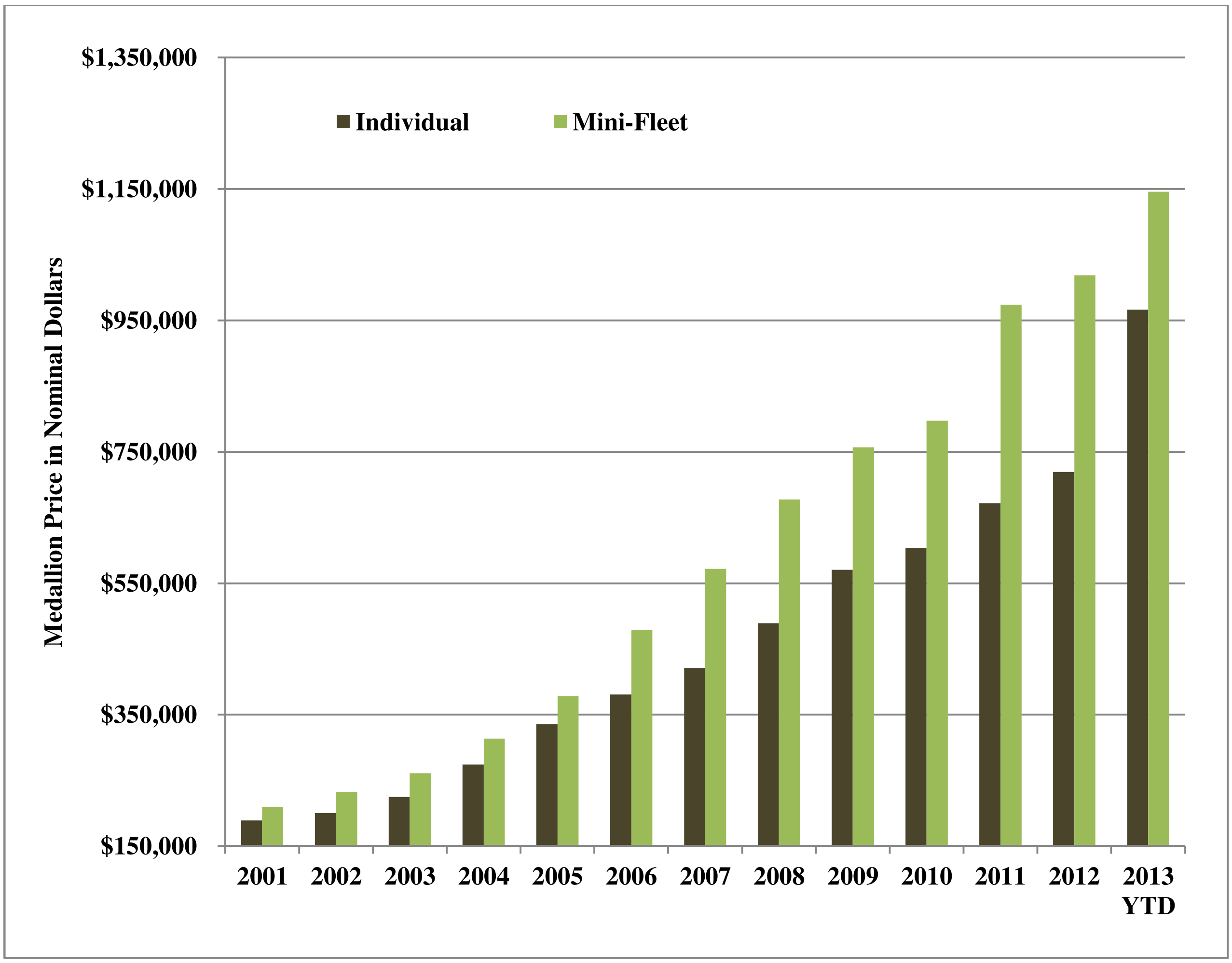
There are also established fares for trips to Westchester and Nassau Counties, and Newark Airport. Westchester and Nassau County fares are calculated based on the amount shown on the taximeter (which is calculated at the standard city rate within the City and at twice the metered rate for the portion of the trip in Westchester or Nassau County) and all necessary tolls to and from the destination. Fares for a trip to Newark Airport are calculated based on the amount shown on the taximeter plus a surcharge of $17.50 (increased from $15.00) and all necessary tolls to and from the destination.

[10] Informally known as the "Borough Taxi"; street hail livery vehicles (after purchase of permit) are allowed to provide street hail service outside the business district of Manhattan

Factors that affect the value of a medallion include taxi fares, the demand for taxi service, the availability and cost of financing, the availability of drivers, and the anticipated return on the investment to acquire a medallion.

Historical nominal prices of individual and corporate medallions are shown in Figure 5. Nominal prices of medallions have increased significantly over the past decade with the average annual price of owner-operated (or independent) medallions increasing 281% between 2001 and 2012, while the average annual price of corporate medallions has increased approximately 386% over the same period. As shown below, the average price of an individual medallion (approximately $967,000) as of June 2013 was about 84% of the average price of a corporate medallion (approximately $1,150,000).

Figure 5: Medallion Price (Nominal Dollars) for the Period 2001-2013[11]

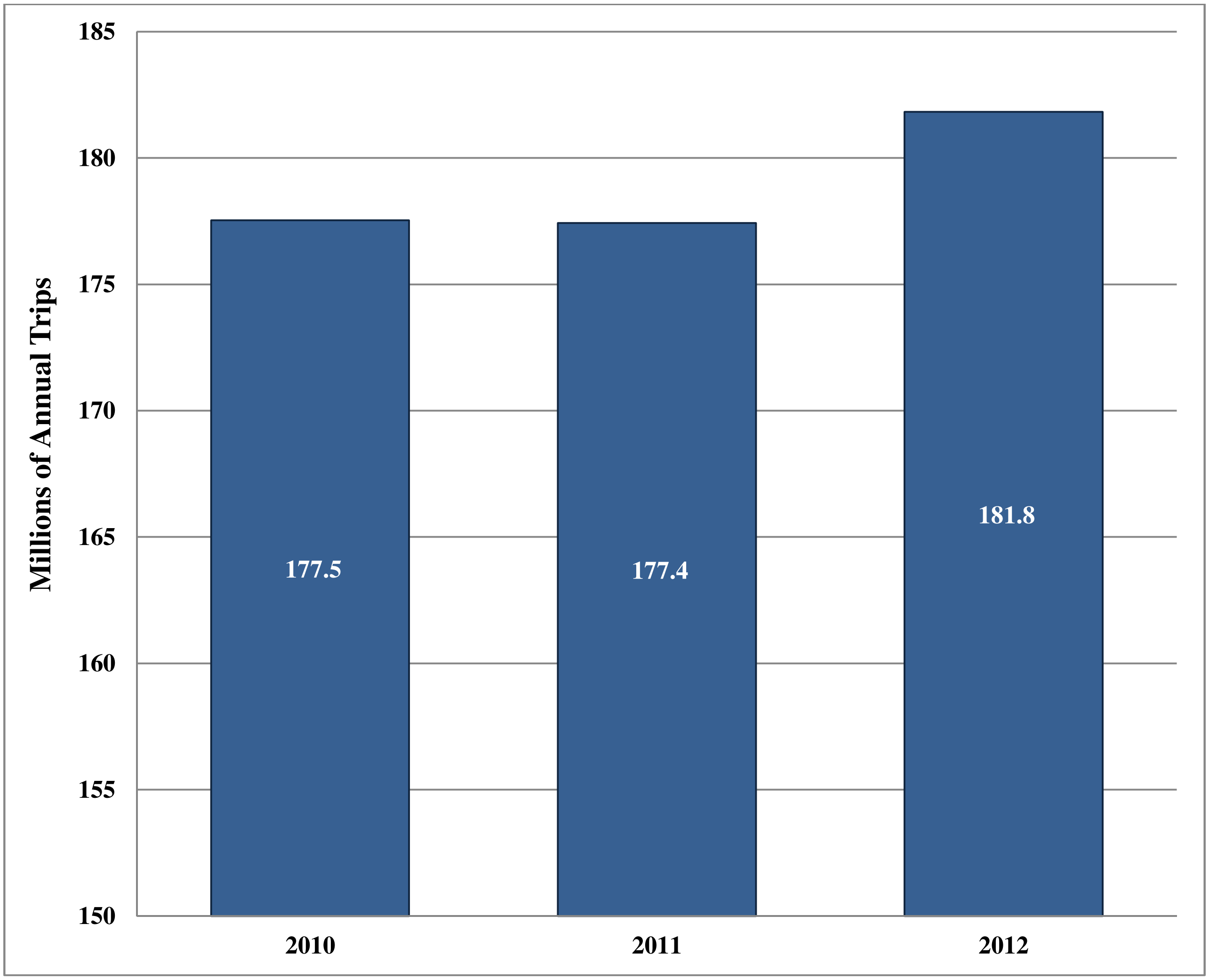


Source: TLC (June 2013)

[11] Independent medallions sold during June 2013 for $1.05 M while corporate medallions sold for $1.32M in May 2013 (sales in June 2013 consisted of zero-dollar sales typically transfers between family members).

New York City taxicabs currently provide nearly 500,000 trips to fare-paying riders each day. As shown in Figure 6, total annual taxi "revenue" trips increased from approximately 177.5 million trips in 2010 (considering trips during the period October 2009 thru September 2010) to approximately 181.8 million trips in 2012 (October 2011 to September 2012), an increase of approximately 2.4%.

Figure 6: Total Annual Revenue Trips in Millions



Source: TLC, TPEP Data (2009 – 2012)

3.2 Methodology

The financial analysis quantified impacts on the value of the medallion and the incomes of taxi drivers. The methodology used, along with assumptions is presented in the sections below.

3.2.1 Medallion Value

Impacts on revenue trips per mile driven, estimated based on the statistical analysis described in Section 2, were input into a financial model. The model translated the impact of the reduction in revenue trips per mile driven into an impact on the financial value of a medallion. As indicated by the statistical analysis reductions in revenue trips per mile would lead to a reduction in trips per taxi and ultimately to a reduction in fare revenue earnings per taxi driver shift[12]. Medallion owner- earnings (for example for Independent owner-drivers) directly from fare revenues would decline as trips decline based on findings from the statistical analysis.

Separately, scenarios were considered for impacts to medallion earnings based on leasing of the medallion (or the vehicle and the medallion). The scenarios take into consideration the fact that as driver revenues decline (from a reduction in revenue trips) drivers may be less willing to pay the maximum lease cap and lease rates might decline. According to TLC, taxi medallions (or the vehicle and medallion) currently lease at the maximum regulated lease rates. Owners of independent medallions primarily earn revenue from driving but a significant number of owners lease to a second shift driver as well. Corporate medallion owners (which include mini-fleet medallions and DOVs) earn all their income from leasing. Based on the findings from our statistical analysis, two scenarios were considered for impacts on lease rates. These include 1) lease rates decline by the same percentage terms as the decline in revenue trips 2) lease rates do not decline and stay at the current maximum. In terms of value of the medallion scenario 1) is associated with the worst case impacts and hence analysis results for medallion value are shown for this scenario only.[13]

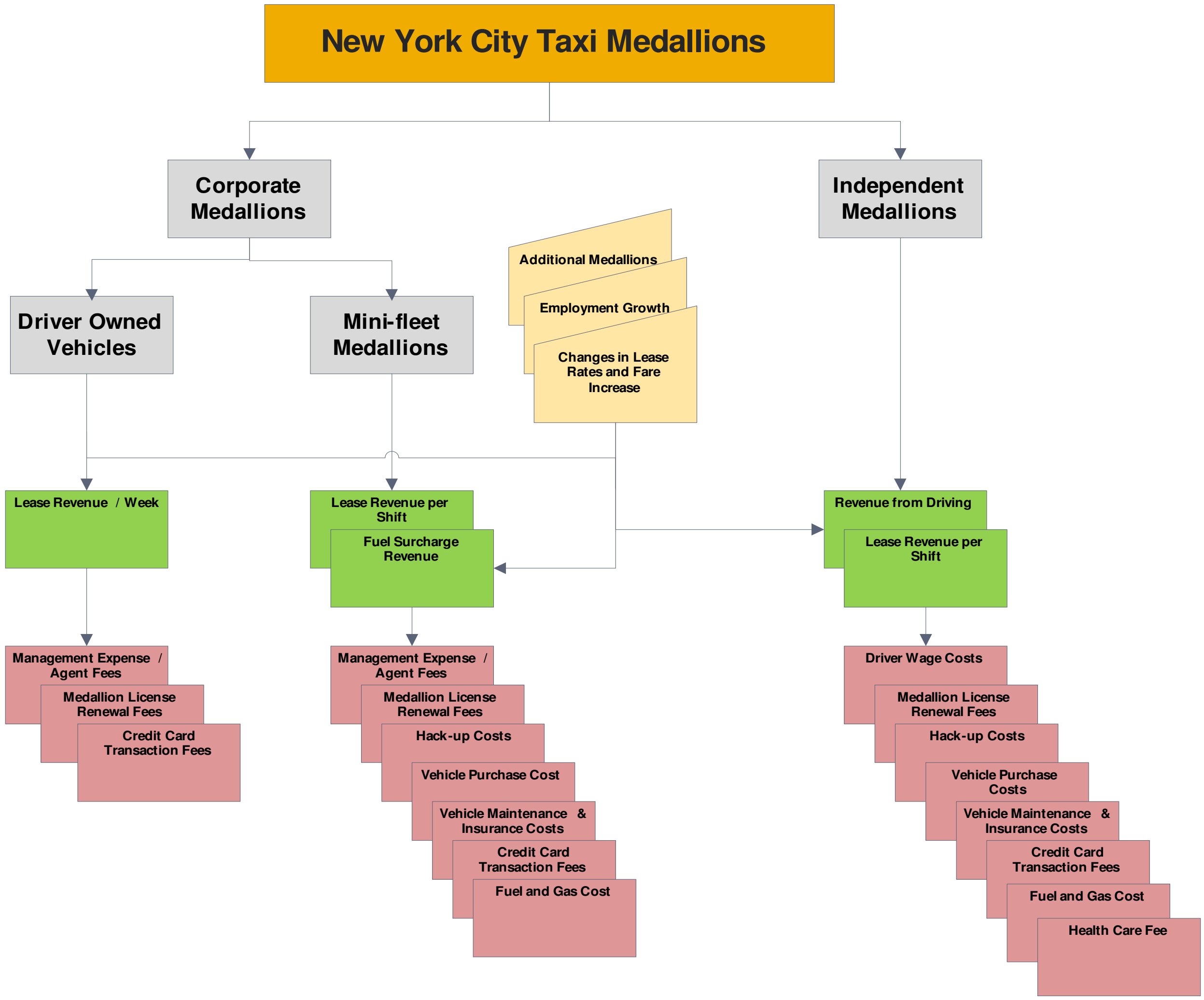
Since the value of a medallion is a function of the anticipated net stream of cash flows (or net revenues) that would accrue through ownership of a medallion, a simplified version for estimating the change in the value of a medallion can be viewed as follows:

$$\textit{Change in Medallion Value (\$)} = \textit{Change in Annual Cash Flow (\$)} / \textit{Discount Rate} \qquad (2)$$

As indicated in this formula, annual cash flow (or net revenue) is discounted (using a *discount rate*) to reflect the time value of money (i.e., the "opportunity cost" of using capital to fund the purchase of a medallion). The model considers separately independent and corporate medallions. Figure 7 depicts the different ownership structures of taxi medallions and how they were reflected in the medallion valuation analysis. For ease of presentation, vehicle depreciation expense, medallion asset amortization, salvage revenues from old vehicles and taxes are not shown in the figure below but are included in the calculation.

[12] According to TLC, taxi drivers lease vehicles for 12 hour shifts which include driving time as well as breaks.
[13] It is assumed that in equilibrium lease rates will change slightly to reflect the fall in revenues. This does not assume any changes (increases or decreases) in TLC regulated maximum lease caps.

Figure 7: Methodological Overview for Medallion Valuation[14]



Corporate medallions operate either as driver-owned vehicles (DOVs)[15] or as fleets. DOVs lease medallions on a weekly basis. Vehicles used as taxis are typically owned by the driver, who is therefore responsible for the miscellaneous costs associated with the ownership of the vehicle. Typically, medallions are managed by agents on behalf of the owners.[16] As of September 2012, medallion owners are responsible for paying fees on all credit card transactions.

[14] Some independent medallions are operated as fleets or driver-owned vehicles (those without owner-must-drive requirement).

[15] This is a simplifying assumption since both fleet and DOV are treated as corporate medallions (for analytical purposes) while in reality the structure is much more complicated. Medallion classification data indicates that about 58% of all medallions are classified as corporate and for analytical purposes, 45% of those corporate medallions are assumed to operate as DOVs while the remainder is assumed to operate as fleets. In reality, operating structures are more complicated and TLC estimates that about a third of medallions are operated by owner-drivers, a third are operated as fleets and another third are operated as DOVs.

[16] For simplicity, in the analysis, it is assumed that owners pay a fee to an agent (who manages on their behalf) while earning lease revenue income from medallions. In actuality lease fees are collected by the agent and the agent pays a fixed fee to the owner as payment for the privilege of leasing the medallion.

Fleet operators either own multiple mini-fleet medallions themselves or manage them for their owners. Fleet operators generally own taxi vehicles, which they lease with medallions to taxi drivers on a per-shift basis. Drivers collect and keep fares and tips from customers, pay the lease fees which are regulated by the TLC (lease rates vary from $115 per shift to $139 per shift for conventional vehicles and $118 per shift to $141 for hybrid vehicles) and pay for gasoline out of their fare income. Beginning in September 2012, fleet operators are permitted to charge a set lease cap surcharge in exchange for providing drivers with fuel. Fleet operators are therefore responsible for any expenses related to the vehicle such as initial hack-up (i.e. modifying the vehicle so that it meets regulations set by TLC to operate as taxicab), insurance, maintenance and repair costs as well as vehicle purchase costs. Beginning in September 2012, fleet operators are also responsible for paying credit card processing fees. Managing fleets requires personnel and other overhead costs, which are included as management expense agent fees (management fees on a per medallion basis are assumed to be equal to those paid by DOV medallion owners).

Most independent medallion owners also own the vehicle and therefore pay for its purchase and hack-up costs as well as its operating, maintenance, and repair costs. Many independent medallion owners are required to personally drive a minimum of 180 9-hour shifts per year. The labor cost of independent medallion owners is taken into account in the valuation model. As per TLC fare rules passed in July 2012, $0.06 of the fare earned on each trip is to be dedicated to a health and disability fund for taxi drivers and the deduction is taken into account in the valuation model.[17] Many owner-drivers lease their medallions for a second shift, generating additional revenue while typically increasing certain costs such as insurance and maintenance. Beginning in September 2012, medallion owners are also responsible for paying credit card transaction fees.

The impact of the Proposed Action on the values of corporate and independent medallions was derived from a financial model incorporating the following key inputs:

- The projected change in revenue trips per mile based on the increase in the number of medallions and in economic growth. The econometric model described above provides the parameters for the projection;
- Estimates of operating costs, lease costs, maintenance costs, annual management expense, insurance costs, license renewal fees, the salvage value of a taxi, vehicle depreciation, and medallion amortization;
- The regulatory framework and;
- Taxi driver wages[18]

[17] The fund has not been created at the time of writing but will be implemented in later in 2013, with deductions beginning shortly thereafter. The fee deductions have been included in future conditions and for consistency included as part of existing conditions.

[18] For independent medallion owners taxi driver wages are included in the analysis to account for the cost of the labor input of the owner driver. Taxi driver wages are not included as costs for corporate medallion owners.

The analysis also incorporates the effects of the replacement of the existing taxi fleet with the Taxi of Tomorrow (ToT)[19].

The model estimates impacts for independent medallions, mini-fleets and DOVs.

Equation (3) shows the specific form of equation (2) chosen for the analysis. Forecasts for revenues and costs with and without the Proposed Action were made for the period 2013 to 2029. The valuation impact analysis begins in 2017, (the projected final year for all medallion sales, and ends in 2029, the first full year when tax depreciation from the sale of the medallions would expire. The term *r* is the discount rate (which varies by type of medallion). The growth rate of future revenues (term *g* in equation (3)) accounts for the growth in fare revenues expected for independent medallions. For corporate medallions, no growth in lease revenues is assumed (term *g* in equation (3) is set to zero) since lease caps are fixed by TLC.

$$\text{Medallion Value in 2017} = \frac{\text{NetCashFlow}_{2017}}{(1+r)^0} + \ldots + \frac{\text{NetCashFlow}_{2029}}{(1+r)^{12}} + \frac{\text{NetCashFlow}_{2029}(1+g)}{(r-g)} \frac{1}{(1+r)^{12}} \quad (3)$$

The last term in equation (3) takes into account the value of the medallion for the period beyond 2029 as the medallion would continue to provide cash flows beyond 2029. Cash flows beyond 2029 were used to calculate the terminal value of the asset that is the value of the asset such that it can provide 2029 cash-flow in perpetuity. The terminal value can be calculated by taking the cash flows and dividing by the discount rate (economic growth was included for independent medallions) to yield a valuation for an asset that would provide those discounted cash flows. Discounted cash flows for the analysis horizon are added to this terminal value to give the economic value of the medallion.

Finally, impacts on medallion value are estimated by:

$$\text{Impacts on Medallion Value} = \frac{\text{Medallion Value in 2017}_{\text{with additional medallions}}}{\text{Medallion Value in 2017}_{\text{without additional medallions}}} - 1 \qquad (4)$$

3.2.2 Taxi Driver Incomes

Drivers who do not own their own medallions lease vehicles and medallions from owners, for which they pay a lease fee. In return, drivers keep fare and tip revenues and pay for fuel costs from their earnings[20]. The sale of additional taxi medallions might have an impact on the income of drivers since additional medallions would compete for trips, resulting in a decrease in revenue trips per shift (holding all other factors constant). As a consequence, lease rates could decline. However, it is also possible that lease rates, would remain unchanged if net revenues earned by taxi drivers after the sale of additional medallions are

[19] The Taxi and Limousine Commission has voted to adopt the Nissan NV200 as the primary taxi vehicle in New York City. Starting in late 2013, any vehicle newly hacked up for taxicab use must be an NV200 (other than certain accessible vehicles).

[20] Fleet medallion owners have the option of providing fuel to drivers in return for charging a higher lease fee. Our analysis assumes that this will be the case for the driver leasing from fleet medallion owners.

in excess of their reservation wage (i.e. the minimum amount drivers must earn to convince them to prefer work over leisure). In other words, the decline in revenues is not sufficient enough to decrease work effort on the part of taxi drivers. Both scenarios for lease rates are quantified and impacts on driver income are calculated as part of our analysis, however since the worst case scenario for drivers consists of no associated decline in lease rates, results based on this scenario are shown in greater detail.

Demand for taxis is likely to increase over time due to growth in employment and visitation to New York City. The analysis takes into account increases in taxi trips due to total employment growth in New York City (which includes increases in employment in the hospitality sector related to tourism). Growth in taxi trips is accounted by the economic growth regression model presented above which includes total employment in New York City and hotel occupancy in New York City (see Table 2). Reliable forecasts for employment growth are used from the New York State Department of Labor. Trip growth however is assumed to be the same both with the Proposed Action and without the Proposed Action, and therefore is not a critical assumption for the analysis results presented here.

This analysis considers the worst case impacts on taxi driver incomes. Impacts on revenue trips due to additional medallions are assumed to directly impact taxi drivers and not the lease rates which drivers pay to obtain a taxi vehicle and medallion (the primary cost for most drivers). The impact on driver revenues per shift is quantified using regression analysis results for the revenue trips per mile. Results are presented for the year 2017, the year which all 2000 medallions have been sold. Fuel costs and lease costs are quantified using assumptions presented in Section 3.3.1. Since there is no basis to anticipate that there would be a change in the length of a revenue trip with the Proposed Action[21], it was assumed that the average length of trip in the future (2017) with the Proposed Action would be the same as the average existing (2012) length of a revenue trip. An implication of this assumption is that fares for the average trip are assumed be the same with and without the Proposed Action (after incorporating impacts of the fare increase in 2012).

3.3 Assumptions

Assumptions used to calculate financial impacts on medallion values and taxi driver incomes are presented below.

3.3.1 Medallion Values

A number of assumptions were applied in estimating the impact on the value of a medallion. First, it was assumed that the existing taxi fleet would be replaced by the TOT regardless of the Proposed Action. It was further assumed that additional medallions will be sold according to the schedule presented in the below.

[21] Even if taxis go out further to search for fares it is not clear if average trip length will change. People who take taxis for longer trips can do so now as well and yellow taxi trips have been primarily concentrated in Manhattan and the airports. Shorter wait-times for taxis would attract more passengers to use taxis for shorter trips while the greater availability of taxis would enable passengers to take taxis to the airport. In short, impacts on revenue trip length are not expected to be significant.

Table 3: Timeline of Additional Medallions Sales

Year	Non-Accessible	Accessible	Total	Fleet Size Before Additional Medallions	% Increase in Fleet
2013	0	0	0	13,237	0.0%
2014	0	400	400	13,237	3.0%
2015	0	550	550	13,637	4.0%
2016	0	500	500	14,187	3.5%
2017	0	550	550	14,687	3.7%
Total	**0**	**2,000**	**2,000**	**15,237**	

Source: TLC (2012)

The financial analysis estimates the impact of the Proposed Action on medallion values taking into account the three ownership structures. For simplicity, it was assumed that corporate medallions consisted primarily of DOVs and medallion owners who operate mini-fleets. As shown in Table 4, TLC estimates that about 55 percent of the corporate medallions operate under a fleet model while the rest operate as DOVs. In either case, the primary source of revenues for corporate medallions derives from leasing activity. Leases are typically on a weekly basis for DOVs and on a (12 hour) shift basis for mini-fleets.

Table 4: Assumed Composition of Corporate Medallions

Metric	Value	Source	Unit
% of Corporate Medallions operated as Fleets	55%	TLC	%
% of Corporate Medallions operated as DOVs	45%	TLC	%

The analysis calculated impacts on independent medallions separately. Independent medallion owners (most of who operate under the owner-operator model) collect revenues from fares as well as lease revenues if they lease their vehicles for a second shift. Table 5 provides an overview of important trip assumptions used in the analysis. According to inspection data, the average taxi is driven about 70,000 miles in any given year. According to TPEP data, the taxi fleet completed about 181.8 million trips between October 2011 and September 2012. Approximately 88% of the taxi fleet is double-shifted, or in other words, is driven two shifts (each of which generally spans 12 hours) in the average 24-hour period.[22] The number of annual shifts for the average taxi was estimated at 660 using double-shifting assumptions, utilization assumptions and number of days in a year. The average number of miles that a taxi travels during a shift was calculated at about 106 using mileage assumptions and the number of shifts operated in a given year. Finally, the average number of trips per shift for a medallion is estimated to be 20.6 in 2012. This was estimated using total fleet-wide trips and the number of annual shifts that a-taxi operates on average.

[22] TLC defines a "single-shifted" medallion as a medallion where only one driver appears on trip records for 90% of days in service; all else are considered double-shifted; These estimates were based on daily TPEP trip sheet data for all of 2012.

Table 5: Trip Assumptions

Metric	Value	Source	Unit
Taxi Annual Mileage	70,000	TLC Safety and Emissions Inspection Data	Miles
Total Annual Fleet Trips	181.8 Million	October 2011 – Sept 2012, TPEP Data	Trips
Total Taxis	13,237	TLC Medallion Count	Medallions
Average Trips / Taxi	13,734	Calculated	Annual Trips
Average Miles Driven Per Shift	106	Calculated	Miles per Shift
Average Trips Per Shift in 2012[23]	20.6	Calculated; changes annually	Trips per Shift
Average Trips per Shift in 2017 (with Proposed Action)	20.0	Calculated	Trips per Shift
Average Trips per Shift in 2017 (without Proposed Action)	20.2	Calculated	Trips per Shift
Average Taxi Utilization Rate	95.9%	TLC T-PEP Data (Oct 2010 – Sept 2012)	%
Fleet Average Double-shifted Taxis	88%	TLC TPEP Data 2012	%
Fleet Average Shifts / Day	1.9	Calculated	Shifts / Day
Fleet Average Annual Shifts	660	Calculated	Shifts / Year

Lease revenue assumptions for fleet-operated medallions are presented in Table 6. The lease rate for a 12-hour day shift for a conventional vehicle is capped at $115 per day. The maximum lease rate for a 12-hour night shift for conventional vehicles varies from $125 to $139 depending on the day of the week. An average rate of $132 per night shift was used for conventional vehicles. For hybrid vehicles, lease rates are capped at $118 per day and nightly rates vary from $128 to $141 per shift. An average nightly lease rate of $134 was used[24]. Using the average rates for a nightly shift and for a daily shift (along with an assumption of the percentage of fleet vehicles that are hybrid), a weighted average lease rate of $124 per shift was calculated.

[23] Trips decline in 2012 (partially) and in 2013 after full effect of the fare increase in the September of 2012.

[24] TOT vehicles will be able to charge conventional lease rates initially and will be able to charge hybrid rates once the micro-hybrid version of the TOT is available. The micro-hybrid will become available as early as July 2014 and no later than Dec 31, 2005.

Table 6: Lease Revenue Assumptions for Fleet-Operated Medallions

Metric	Value	Source	Unit
12-hour day Shift, Conventional Lease Rate	$115	TLC 2012 Rule book	Dollars / shift
Average 12-hour night shift, Conventional Lease Rate	$132	Calculated	Dollars / shift
12-hour day Shift, Hybrid Lease Rate	$118	TLC 2012 Rule book	Dollars / shift
Average 12-hour night shift, Hybrid Lease Rate	$134	Calculated	Dollars / shift
% of Hybrids in 2012	30%	Estimate based on information provided to TLC by Taxi Industry Representatives[25]	%
Weighted Average Lease Rate	$124	Calculated	Dollars / shift

Lease revenue assumptions for DOVs are presented in Table 7. Medallion owners leasing to DOV's who own hybrid vehicles will be able to charge a maximum of $1,114 per week while owners of other conventional vehicles would be charged a maximum of $1,072 per week. With ToT vehicles becoming an increasing part of the operating fleet, the weighted average rate approaches the lease rate of $1,114 per week.

Table 7: Lease Revenue Assumptions for DOVs

Metric	Value	Source	Unit
Weekly Lease Rate for hybrid / TOT vehicles	$1,114	TLC Medallion Only Hybrid Lease Rate	Dollars / Week
Weekly Lease Rate for conventional vehicles	$1,072	TLC Medallion Only Conventional Lease Rate	Dollars / Week

Fare revenue assumptions used to calculate impacts on independent medallion owners are shown in Table 8. Based on TPEP data, the average fare including tips (but excluding MTA taxes and tolls) during September 2011 to August 2012 was $12.72 per trip. The tipping rate on credit card transaction based on TPEP data was 18% and it was assumed to be equal to the rate on cash transactions, for which data are not available.

[25] Three of the major taxi industry groups, the Committee for Taxi Safety, the Metropolitan Taxicab Board of Trade and the Greater New York Taxi Association provided TLC in July 2012 with estimates on the share of their DOV- and fleet-operated affiliated medallions that were operated using a hybrid vehicle.

Table 8: Fare Revenue Assumptions for Independent Medallions

Metric	Value	Source	Unit
Weighted Fare (incl. tip) / Trip	$12.72	TLC Fare Data (Sept 11 - Aug 12)	2012 Dollars
Weighted Fare (incl. tip) / Trip after Fare Increase[26]	$14.86	Calculated	2012 Dollars
Cash Tip %	18.0%	TLC Assumption (Cash Tipping Rate assumed equal to Credit Card Rate)	%
Credit Fare %	46.5%	TLC Fare Data (Sept 11 - Aug 12)	%
Cash Fare %	53.5%	TLC Fare Data (Sept 11 - August 12)	%
Average Fare Increase Assumption	17%	TLC	%
Estimated Fare Elasticity	-0.25	HDR Regression Analysis	

TLC estimated that the recently passed fare increases would result in a 17 percent raise in the average fare to about $14.86 per trip (inclusive of tip but excluding MTA tax and tolls).[27] Increasing prices would be expected to impact the demand for taxi trips and analysis during this study as well as findings by other researchers[28] suggest that a 10 percent increase in fares would result in a 2.5 percent reduction in the number of trips per shift. As shown in Table 5, this results in a decline in trips without the Proposed Action.

Estimated lease rates for second shift drivers of independent medallions are shown in

[26] Fare calculated does not include MTA taxes ($0.5 per trip) and tolls ($0.21 per trip).

[27] TLC Statement of Basis and Purposed for Proposed Rules http://www.nyc.gov/html/tlc/downloads/pdf/taxi_fare_rules_passed.pdf

[28] Fare elasticity findings have been corroborated by research done by others, such as Schaller (1999), *Transportation* 26:283-297 "Elasticities for taxicab fares and service availability"

Table **9**. According to TLC, second shift drivers for independent medallions work on an informal basis where lease rates are believed to follow weekly long-term lease rates. Since a second shift driver would typically only be able to lease for the second shift, we assume that their lease rate would be equivalent to the "DOV weekly all-in lease rate"[29] divided by 2 (assuming 2 12-hour shifts per day). Assuming an average work week of six days for the second shift driver, a per-shift lease rate for second shift drivers is calculated.

[29] Listed in TLC rules as "Standard Medallion Lease Cap including Long Term Vehicle Lease/Conditional Purchase"

Table 9: Independent Medallion Lease Assumptions for Second Shift Drivers

Metric	Value	Source	Unit
Weekly Long-Term Hybrid Lease Rate	$1,389	Hybrid Independent Lease Rate	Dollars / Week
Weekly Long-Term Conventional Lease Rate	$1,347	Conventional Independent Lease Rate	Dollars / Week
% Weekly DOV Lease Rate for Second Shift Drivers	50%	TLC	%
Average Long-Term Second Shift Driver Work Week	6	TLC	Days / Week

Total revenues earned by taxi medallions are affected by double-shifting assumptions, as shown in Table 10. There are various methods for querying TPEP data to obtain an estimate of how much double-shifting takes place fleet-wide (e.g., basing it on the number of hours in which actual trips are logged, or basing it on the number of distinct drivers that log into the system in a day); however, estimating double-shifting rates in the aggregate is uncertain. In addition, TLC does not definitively know which medallions are run as fleets and which are run as DOVs, and estimates used in the analysis are TLC's best determination based on information from licensing records and provided by taxi industry representatives. The double-shifting estimates shown in Table 10 reflects TLC's best estimate for each group in the analysis.

Table 10: Double-shifting Assumptions by Medallion Operating Structure

Medallion	Single Shifted	Double Shifted[30]	Source
Owner-driver (assumed Independent)	27.1%	72.9%	Estimated based on TLC T-PEP Data for all of 2012
DOVs (assumed Corporate)	5.3%	94.7%	Estimated based on TLC T-PEP Data for all of 2012
Fleet (assumed Corporate)	1.5%	98.5%	Estimated based on TLC T-PEP Data for all of 2012
Total	**11.6%**	**88.4%**	Estimated based on TLC T-PEP Data for all of 2012

Taxi utilization assumptions and shifts per year assumptions for corporate fleet medallions are presented in

[30] A single-shifted medallion is defined as where only one driver appears on trip records for 90 percent of days in service; all else is defined as double-shifted.

Table **11**. The double-shifting assumption of 98.5 percent implies about 1.98 shifts per day on average for fleet medallions. Combining the utilization rate with days per year and shifts per day gives the total annual shifts per year estimate of 716.

Table 11: Taxi Utilization Assumptions for Corporate Medallions

Metric	Value	Source	Unit
Days / Year	365		Days
Corporate Utilization Rate	98.8%	TLC T-PEP Data (Oct 2010 – Sept 2012)	% rate
Corporate Fleet Double-shifted Taxis	98.5%	TLC / Table 8	% rate
Corporate Fleet Shifts per day	1.98	Calculated	Shifts / day
Corporate Fleet Revenue Shifts Per Year	716	Calculated	Shifts / Year

Utilization assumptions for DOV's are presented in Table 12. The double-shifting assumption of 94.7 percent results in an estimate of about 1.95 shifts per day for the average DOV vehicle. Days per year assumptions are combined along with average fleet utilization assumptions to calculate about 682 shifts per year for the average DOV vehicle.

Table 12: Utilization Assumptions for DOVs

Metric	Value	Source	Unit
Days / Year	365		Days
Fleet Average Taxi Utilization Rate	95.9%	TLC T-PEP Data (Oct 2010 – Sept 2012)	%
DOV double-shift rate	94.7%	TLC / Table 8	%
DOV shifts per day	1.95	Calculated	Shifts / day
DOV shifts per year	682	Calculated	

As shown in

Table **13** below, average shifts per day for independent medallions were calculated assuming that 73 percent of independent medallions are double-shifted. This means that the average independent medallion is operated for about 1.7 shifts per day. Assuming an independent medallion utilization rate of 95.1 percent based on TLC data and the calculated independent shifts per day results in 601 annual shifts per independent medallion. Assuming an independent owner driver works 5 days a week for 52 weeks a year results in 260[31] independent owner shifts – these are those shifts that will be driven by the independent owner driver himself. The difference between total shifts and independent owner driver shifts were assumed to be leased (to a second driver) shifts.

[31] T-PEP data suggests that many taxi drivers work more than 5 days a week, but they are likely not to work every week of the year.

Table 13: Taxi Utilization Assumptions for Independent Medallions

Metric	Value	Source	Unit
Days / Year	365		Days
Independent Taxi Utilization Rate	95.1%	TLC T-PEP Data (Oct 2010 – Sept 2012)	%
Independent Double-shifted Taxis	72.9%	TLC / Table 8	%
Independent Shifts per day	1.7	Calculated	Shifts / day
Total Independent Shifts	601	Calculated	Shifts / Year
Owner-Driver Shifts	260	Based on 5 work days, 52 weeks a year	Shifts / Year
Independent Leased Shifts	341	Calculated	Shifts / Year

Recently passed TLC rules require medallion owners to pay the credit card fee arising from credit card transactions. TPEP vendors charge medallion owners typically 70 percent of the 5 percent credit card fees or 3.5 percent per transaction. Total average fare on credit cards is higher than the average fare per transaction for a variety of reasons, including higher base fares and possibly higher tipping. Credit card fees are determined based on the final fare amount, inclusive of taxes and tolls. As a result of the 2012 fare increase, the average credit card fare is expected to increase from $14.52 per trip to $16.89. Credit card fees estimates are based on the average number of transactions per shift and the total number of shifts for each type of medallion (see Table 10 through

Table **13**). Since the total number of transactions (per shift) is impacted by the introduction of additional medallions, estimated credit card fees (for the Proposed Action) are slightly lower than estimated credit cards fees for the future without the Proposed Action.

Credit card fee assumptions are provided in

Table **14**. The share of credit card transactions reached 48.2 percent in August 2012, increasing by 5 percentage points on a yearly basis. The analysis assumes a yearly increase in the share of credit card transactions of 2.5 percentage points as early gains slow down. This implies that in 2017 about 60 percent of the transactions are based on credit card adoption while by 2029, 89 percent of transactions are assumed to be based on credit cards. This assumption is the same both for Proposed Action and without the Proposed Action.

Table 14: Credit Card Fee Assumptions

Metric	Value	Source	Unit
Total (Cash + Credit Card) Trips / Shift in 2012	20.6	Calculated; varies by year	
Credit Fare (incl. tip, tolls and tax) / Trip in 2012	$14.52	TLC Fare Data (September 11 - August 12)	2012 Dollars
Credit Fare (incl. tip, tolls and tax) / Trip after fare increase (2013 and beyond)	$16.89	Calculated	2012 Dollars
% Credit Card Fees on Transaction	3.5%	TLC	%
Annual Increase in percent of Credit Card Transactions	2.5%	HDR Assumption	%

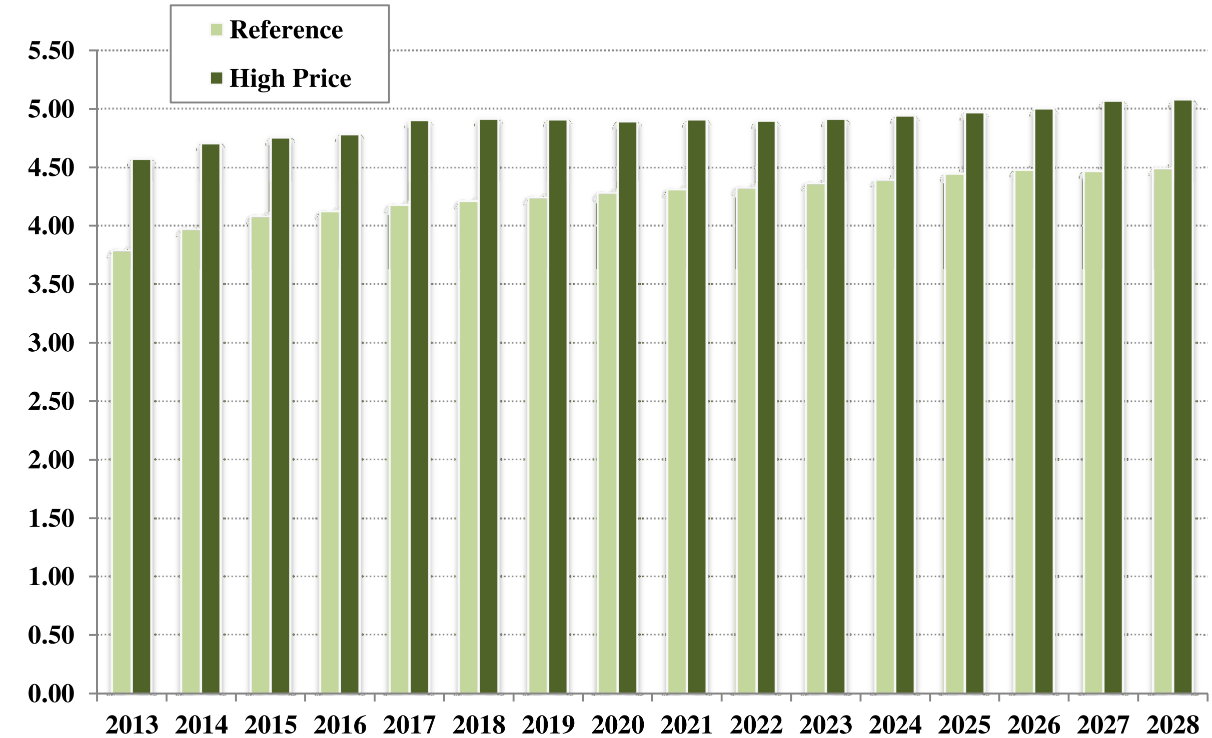
Table 15 below presents estimates of vehicle operating costs. Insurance, maintenance and repair costs are estimated on a per-mile basis and eventually on per shift basis using the average number of miles travelled per shift.

Table 15: Vehicle Cost Assumptions

Metric	Value	Source	Unit
Maintenance and Repair	$0.050	FHWA Complete Car Cost Guide	Dollars / Mile
Insurance	$0.194	FHWA Complete Car Cost Guide	Dollars / Mile
Gas Price	$3.825	Energy Information Agency, New York City 2012 Average; varies by year	Dollars / Gallon
Average Miles Driven Per Shift	106	Calculated	Miles per Shift

Fuel prices per gallon were based on Energy Information Agency (EIA) data and developed using the EIA 2012 fuel price forecast shown in Figure 8. Fuel prices presented are in constant 2012 dollars. They are expected to reach almost $4.5 per gallon in 2029 in the reference case scenario, and about $5.1 dollars per gallon in the high-price scenario.

Figure 8: Fuel Price Forecast in Constant 2012 Dollars



Source: EIA 2012 Annual Energy Outlook

Fuel costs were calculated on a per-shift basis and multiplied by the number of shifts for the different types of medallions. Recently announced TLC rules allow medallion owners to charge additional lease fees (a gas surcharge) in exchange for providing fuel. TLC anticipates that corporate medallions operated under the fleet model will likely take advantage of this option. Based on the number of shifts that corporate fleets were operated, fleet revenues were increased for every shift operated according to the schedule shown in Table 16. Therefore, if the fuel price index is between $2.50 and $2.99, medallion owners can charge an additional $19 per shift.

Table 16: Fuel Surcharge per Shift for Corporate Medallions

Fuel Price	Future with and Future without Additional Medallions
$2.49 or less	$16
$2.50 to $2.99	$19
$3.00 to $3.49	$21
$3.50 to $3.99	$24
$4.00 to $4.49	$26
$4.50 to $4.99	$29
$5.00 or more	$31

Source: TLC Rule Book

A major component of operating costs for independent medallion owners is value of the owner drivers' personal labor input. These were treated as costs and quantified as wage income and subtracted from total revenues. These assumptions are presented in Table 17 below. According the Bureau of Labor Statistics, average hourly incomes of taxi drivers were $14.15 per hour. As discussed above, independent medallions operate a total of 601 shifts per year of which 260 are assumed to be owner driver shifts. Given a 12-hour shift, which includes breaks and travel to and from the garage or other vehicle swap points, actual work hours are assumed to be 8 hours per shift. After applying the hourly wage assumption to working hours, wage costs per shift were estimated at $113 per shift. Based on the estimated 260 shifts per year, total annual wage costs per taxi were approximately $29,425 per year[32].

Table 17: Wage Cost Assumptions for Independent Medallions

Metric	Value	Source	Unit
Taxi Driver Wages $ / Hr	$14.15	Bureau of Labor Statistics, New York MSA 2010 inflated to 2012	2012 Dollars / Hr
Hours / Shift	12.0	TLC	Hours
Working Hours / Shift	8.0	Mean working hours for US taxi drivers, Bureau of Labor Statistics	
Wage Cost per Shift	$113.2	Calculated	2012 Dollars / Shift
Independent Owner Shifts / Taxi	260	Calculated	Shifts Per Year
Implied Owner - Driver Wage	$29,425	Calculated	2012 Dollars

TLC regulations have established a health care fund for drivers, funded through a $0.06 per trip charge to be deducted from fare revenues when the fund is created. This charge would impact all drivers, but for medallion valuation purposes it would only impact independent owner-drivers as it would reduce revenues received from fares (other medallions owners generate revenues from leasing, not fares). Table 18 shows the assumptions used to quantify the impact of the health care fee.

Table 18: Health Care Fees for Independent Medallions

Metric	Value	Source	Unit
Health Care Fees per Trip	$0.06	TLC	$ 2012 per Trip
Total Trips / Shift in 2012	20.6	Calculated ; varies by year	Revenue Trips / Shift
Independent Owner Shifts / Taxi	260	Calculated	Shifts Per Year

[32] These wage costs are included for valuation purposes only as compensation for the owner's time driving the vehicles. In the case of an owner-operator, the owner-operator does not actually pay himself a wage. However, for purposes of medallion valuation, we conceptualize him as doing so in order to properly model the costs and revenues that drive medallion values.

An important factor in the analysis is the selection of a discount rate for the valuation of the medallions. This analysis calculates an implied market discount rate such that discounted cash flows equal the observed market price of corporate and independent medallions. The calculated weighted average (of corporate and independent medallion) discount rate is 3.0 percent. This estimate can be compared to interest rates charged for taxi medallion loans in New York City. One estimate is the average interest rate charged by Medallion Financial, the principal lender to taxi medallion owners. Medallion Financial's portfolio of New York City Taxi medallion loans had an average interest rate of 4.16 percent as of September 2012 (based on a portfolio of 431 loans).[33] During 2009-2011, average inflation for urban areas in the US not considering volatile food and fuel prices was 1.4 percent per year. This yields a real discount rate of approximately 2.8 percent per annum. This estimate is comparable to the weighted average discount rate calculated above[34].

Table 19 presents additional assumptions used to calculate the financial value of the medallion. Since the assumptions, particularly tax rate assumptions, are the same both with the Proposed Action and without the Proposed Action, these will not impact the results materially but are included nevertheless for completeness. Federal tax rates were assumed to be 40 percent, based on corporate tax rates applicable in the US. Accounting for Section 197 intangibles, which include taxi medallions, allows for amortization of medallions over a period of 15 years. For purposes of this analysis, medallion amortization is assumed to start in 2014 with the sale of representative medallion and end in 2028. As discussed above in 3.2.1, the terminal value of the medallion was calculated based on cash flow in 2029, the year in which medallion amortization expires. New York State taxes were also included in the analysis at 7.1 percent. Corporations engaged primarily in transportation can elect to be taxed under (New York State) Article 9-A where taxes are due on 7.1 percent of entire net income or under Article 9. For analytical simplicity we assume a tax rate of 7.1 percent of entire net income. Entire net income[35] is defined to equal federal taxable income less certain modifications for items of income that New York State treats differently. In our analysis, the amortization of section 197 intangibles is considered an exception to this rule and as such New York City and State taxes are payable during 2014 and beyond. New York City estimates taxes rates on four bases. For simplicity, the tax rate of 8.85 percent on net income allocated to New York City is assumed for this analysis. Sales and use taxes also might be applicable for New York City lease medallions[36]. However these taxes are not included in the analysis.

An assumption of 5 years was used for vehicle depreciation. Vehicle depreciation is a non-cash expense which reduces the taxes that medallion owners have to pay. Vehicle salvage costs of $3,100 were assumed and hack-up costs after 2013 were assumed to be $633. Based on discussions with TLC, agents pay medallion-owners a fee and keep revenues from leasing; the net difference or agent "fees" are

[33] See Medallion Financial's September 2012 10-Q filing, Consolidated Schedule of Investments (http://www.sec.gov/Archives/edgar/data/1000209/000119312512457715/d435673d10q.htm).

[34] Another reason why discount rates might differ is because the implied discount rate calculates the weighted average cost of capital (which includes cost of debt and equity). The Medallion Financial estimate is the average cost of debt to the taxi industry.

[35] For definition of article 9-A, entire net income see http://www.tax.ny.gov/bus/ct/def_art9a.htm

[36] See advisory opinion of New York State Department of Taxation and Finance; http://www.tax.ny.gov/pdf/advisory_opinions/sales/a91_20s.pdf

approximately $1,068 per month.[37] These management fees were included for corporate medallions (both mini-fleets and DOVs). TLC charges a small annual fee for taxi meter inspections and other miscellaneous charges.

The analysis assumes different discount rates (which reflect the cost of financing and the opportunity cost of capital) for corporate medallions owners (2.2%) and independent medallion owners (4.1%). The cost of financing faced by the different types of medallions owners are different since corporate medallion owners own multiple medallions and many operate vehicle fleets and are likely to have greater collateral in lieu of any financing received. Corporate medallion owners are therefore likely to experience lower financing costs compared to individual medallion owners many of whom borrow to finance the purchase of a single medallion.

Table 19: Additional Valuation Assumptions

Metric	Value	Source	Unit
Corporate Medallion Discount Rate	2.2%	Calculated	%
Independent Medallion Discount Rate	4.1%	Calculated	%
Federal Tax Rate	40%	KPMG Corporate and Indirect Tax Survey 2011	%
New York State Tax Rate on Net Income	7.1%	Federation of Tax Administrators, 2013	%
New York City Tax Rate (on net income allocated to New York City)	8.85%	Tax Revenue Forecasting Documentation, NYC OMB 2013	%
Average Depreciable Life of Vehicle	5	Calculated average based on projected vehicle retirement and hack-up date[38]	Years
Average Vehicle Salvage Value	$3,100	TLC Safety and Emissions Estimate	Dollars
Hack-up Cost	$633	Hack-up Costs after introduction of ToT in 2013	Dollars
Medallion Asset Amortization	15	US Tax code, 26 C.F.R. § 1.197-2 Amortization of goodwill and certain other intangibles.	Years
Medallion License Renewal Fees	$825	TLC	Dollars / Year
Management Expense	$1,068	TLC Estimate	Dollars / Month

[37] A medallion agent pays the medallion owner about $3,388 per month for the privilege of leasing out that owner's medallion to a DOV driver. Most DOV drivers pay $1,114 per week for leasing the medallion, or about $4,456 per month. The agent's profit or fee can be conceptualized as the difference between how much he pays the medallion owner and how much the DOV driver pays him. This is about $1,068 per month.

[38] According to vehicle hack-up and retirement data received from the TLC, the current average retirement of a vehicle is 5.2 years.

Costs, including vehicle purchase costs, vehicle replacements, and fuel costs, were developed based on detailed projections of the vehicle fleet up to year 2020, the first full year when all vehicles eligible to convert to ToT would have converted. Additionally, as discussed previously, the ToT was assumed to be introduced to the fleet in 2013. After 2020, the following assumptions were made to forecast revenues and costs:

- Vehicle purchase and hack up costs, as well as salvage values were based on the average costs estimated for the period 2013 – 2020;
- Fuel efficiencies and vehicle fleet characteristics were assumed to stay constant beyond 2020. Increases in fuel costs beyond 2020 were determined by the increases in the price of fuel in constant 2012 dollars terms based on the EIA 2012 fuel price forecast for the period 2013 to 2029 (as presented above);
- Vehicle maintenance and repair costs, insurance costs, credit card fees, health care fees were calculated using the same assumptions as before 2020; and
- The annual depreciation incurred on the purchases of new vehicles was assumed to be equal to the average annual replacement cost of additional vehicles.

Economic growth assumptions are also incorporated into the analysis and are shown in Table 20. Based on the results of the regression analysis described in Section 2.3.2, growth in taxi trips was included such that a 10% increase in total employment in the City would result in a 7% increase in taxi trips. The New York State Department of Labor forecasts employment growth for the City at 0.4% per year. This employment growth translates into an annual growth in taxi trips of 0.3%. This growth in taxi trips is the same with the Proposed Action and without the Proposed Action.

Table 20: Economic Growth Assumptions

Metric	Value	Source	Unit
Employment Growth in New York City	0.4%	NY State Department of Labor, 2008 – 2018 Long Term Employment Forecast	%
Elasticity of Trip growth with Respect to New York City Employment Growth	0.743	Regression Based Estimate 2009- 2011 refer to Table 2.	

Source: HDR Analysis, New York State Department of Labor

Finally, this analysis was conducted in real terms using real discount rates and not in nominal terms. Implicitly, therefore, the analysis assumes that costs will rise with general inflation, while fares and lease rates will rise sufficiently over the period of analysis to keep revenues and fares constant in real terms.

3.3.2 Taxi Driver Incomes

Important assumptions used to calculate impacts on the driver were presented above and presented again for ease of reference in Table 21.

Table 21: Taxi Driver Impact Assumptions

Metric	Value	Source	Unit
Taxi Annual Mileage	70,000	TLC Safety and Emissions Inspection Data	Miles
Fleet Taxi Utilization Rate	95.9%	TLC TPEP Taxi Utilization (Oct 2010-Sept 2012)	%
Fleet Average Shifts / day	1.9	Calculated	Shifts / day
Shifts / Year	660	Calculated	Shifts / Year
Weighted Fare / Trip	$14.86	Calculated	2012 Dollars
Fuel Price	$3.825	Energy Information Agency New York City Jan – Nov 2012 Price	2012 Dollars / Gallon
Fuel Price in 2017	$4.90	EIA High Price Forecast	2012 Dollars / Gallon
Average Trips / Taxi	13,596	Calculated	Annual Trips
Average Miles Driven Per Shift	106	Calculated	Miles per Shift
Average Trips Per Shift in 2012	20.6	Calculated; varies by year	Trips per Shift
Revenue Trips / Mile	0.194	Calculated	Trips / Mile

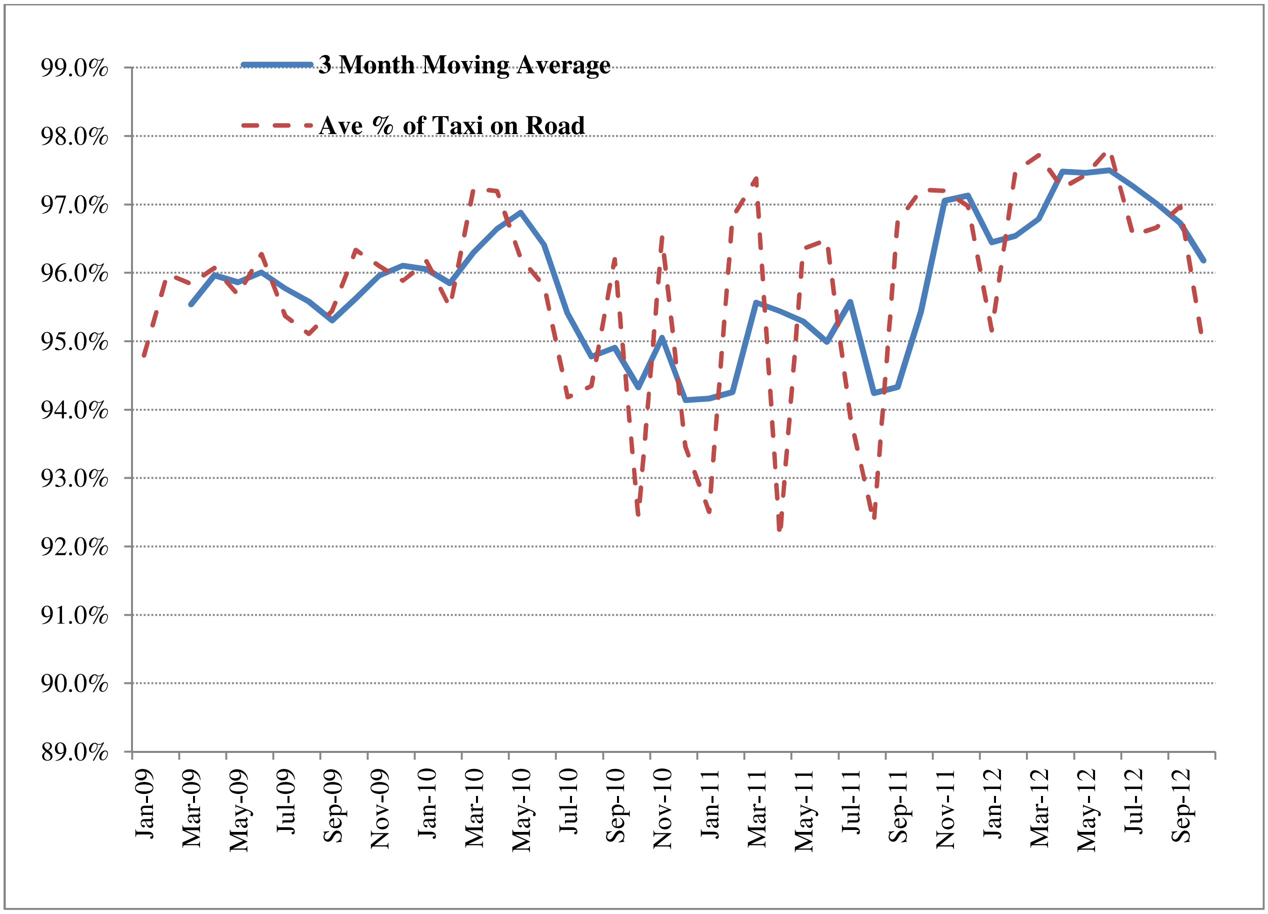
3.3.3 Taxi Utilization and Supply of Drivers

Impact on the value of medallions would partly depend on the availability and willingness of taxi drivers to supply the additional labor needed as results of the increase in the number of medallions. Availability of taxi drivers can be gauged by: 1) examining the average percentage of taxis on the road relative to the total number of medallion (i.e., taxi utilization rate) which indicates the historical willingness and availability of taxi drivers to currently meet very high utilization rates for taxi cabs and; 2) reviewing trends in the number of taxi drivers who renew or get new licenses to drive taxis which indicates the overall supply of taxi drivers available to drive taxis (and lease taxis on a per shift basis).

Figure 9 reports data from TPEP trip sheets for the period January 2009 to September 2012. The figure shows that, after accounting for seasonal variations, and time spent by taxis for repairs,[39] the monthly share of taxis on the road averaged 96 percent. Examining the 3-month moving average utilization rate (which smooths monthly fluctuations) indicates that utilization did not fall below 94 percent. The high levels of taxi utilization indicate that there is robust demand from taxi drivers to drive taxis throughout the year.

[39] Taxis that experience an accident are allowed to be temporarily replaced by Stand-by Vehicles (SBV).

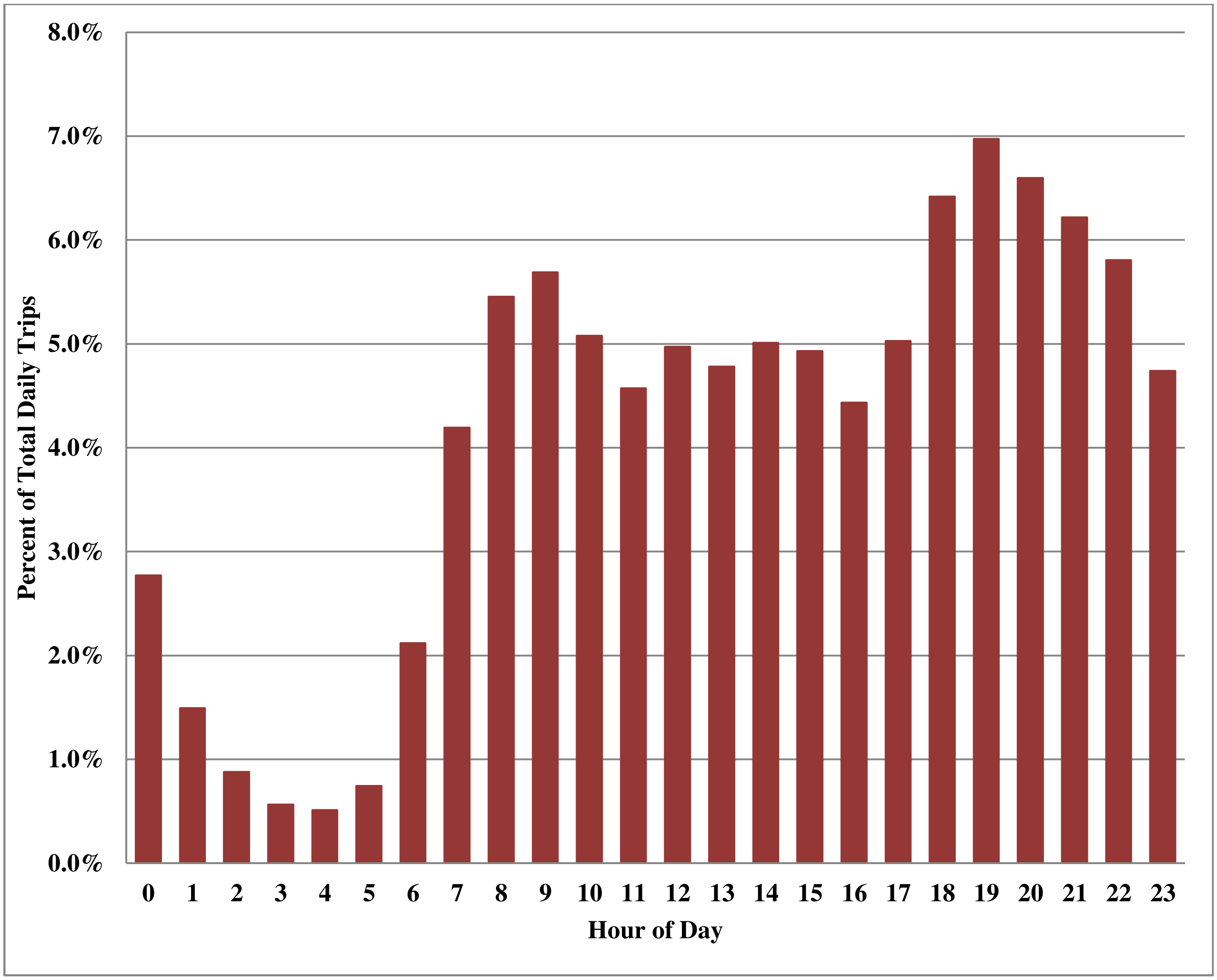
Figure 9: Average Percent of Taxis on the Road



Source: TPEP 2009 – 2012

Figure 10 depicts the hourly distribution of trips that occurred on March 22, 2011, a typical weekday that year. The figure depicts the hourly percentage of the approximately 484,000 taxi trips that occurred during that day. The highest number of taxi trips (approximately 5.5% to 7.5% of total daily trips) occurred during the 6:00 PM to 9:00 PM evening time period. Excluding the early morning hours of 2 am to 5 am taxis completed upwards of 10,000 trips per hour with average taxi completing more than 36 trips per day. The data indicate the high demand for New York City taxis throughout the typical day.

Figure 10: Hourly Distribution of Trips for a Typical Day

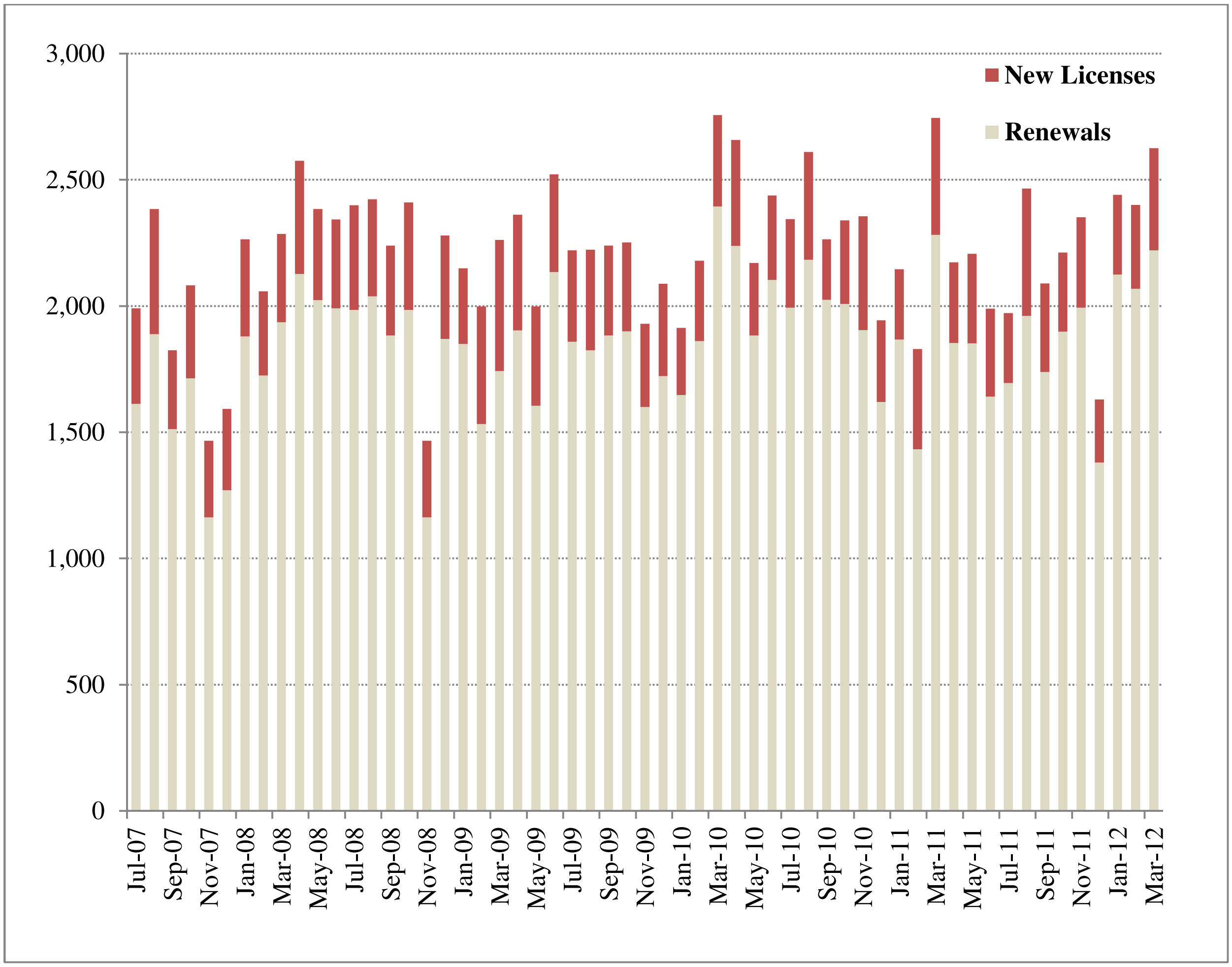


Source: TLC, TPEP daily trip data (March 22, 2011)

Data on the supply of taxi drivers support the insights of the utilization rate analysis. Figure 11 shows the number of medallion driver licenses issued and renewed on a monthly basis since July 2007. The data indicate that an average of 2,200 licenses per month were renewed or issued. Given that licenses are valid for a two-year period, upwards of 50,000 licensed drivers are potentially available to drive taxis in an average month.[40]

[40] Based on the data presented above, an average of 53,600 licenses were outstanding during the period June 2009 to March 2012. The total number of outstanding medallions was 13,237. On average for the fleet, a medallion completes 1.9 shifts per day, with a utilization rate of 96 %, which for a 30-day period means that a maximum of 724,000 shifts can be completed, or an average of 13.5 shifts per licensed driver per month. The number presented here is indicative of total potential drivers for yellow medallion taxis; not all holders of TLC licenses are active yellow cab drivers.

Figure 11: Taxi Medallion Driver Licenses Issued



Source: TLC

While the analysis of medallion values and taxi drivers' income captures and estimates a potential reduction in fare-paying trips per taxi-shift due to the increase in the number of taxi medallions, overall taxi utilization is not expected to change. The change in revenue trips is marginal and demand from taxi drivers is likely to stay robust. Historical utilization, as measured by the percentage of total taxis on the road, has been very high. The number of available drivers, as measured by the number of taxi driver licenses renewed and issued, allows for significant increases in the number of shifts driven by taxi drivers and shows that there is a ready supply of available drivers to drive taxis in New York City and meet high taxi utilization rates even after an increase in the number of medallions.[41] Overall, this data indicate that increases in the supply of taxi driver shifts would be easily absorbed by demand from taxi drivers willing to drive and not likely to significantly impact lease rates.

[41] Using assumptions presented in the preceding footnote, an increase of 2000 medallions (or 15.1 percent) increase in the number of medallions) would raise the average number of shifts per licensed driver from 13.3 to 15.3 shifts per licensed driver per month. Thus the expected increase in the average number of shifts per licensed driver is not significant and should be readily met by the existing taxi driver population.

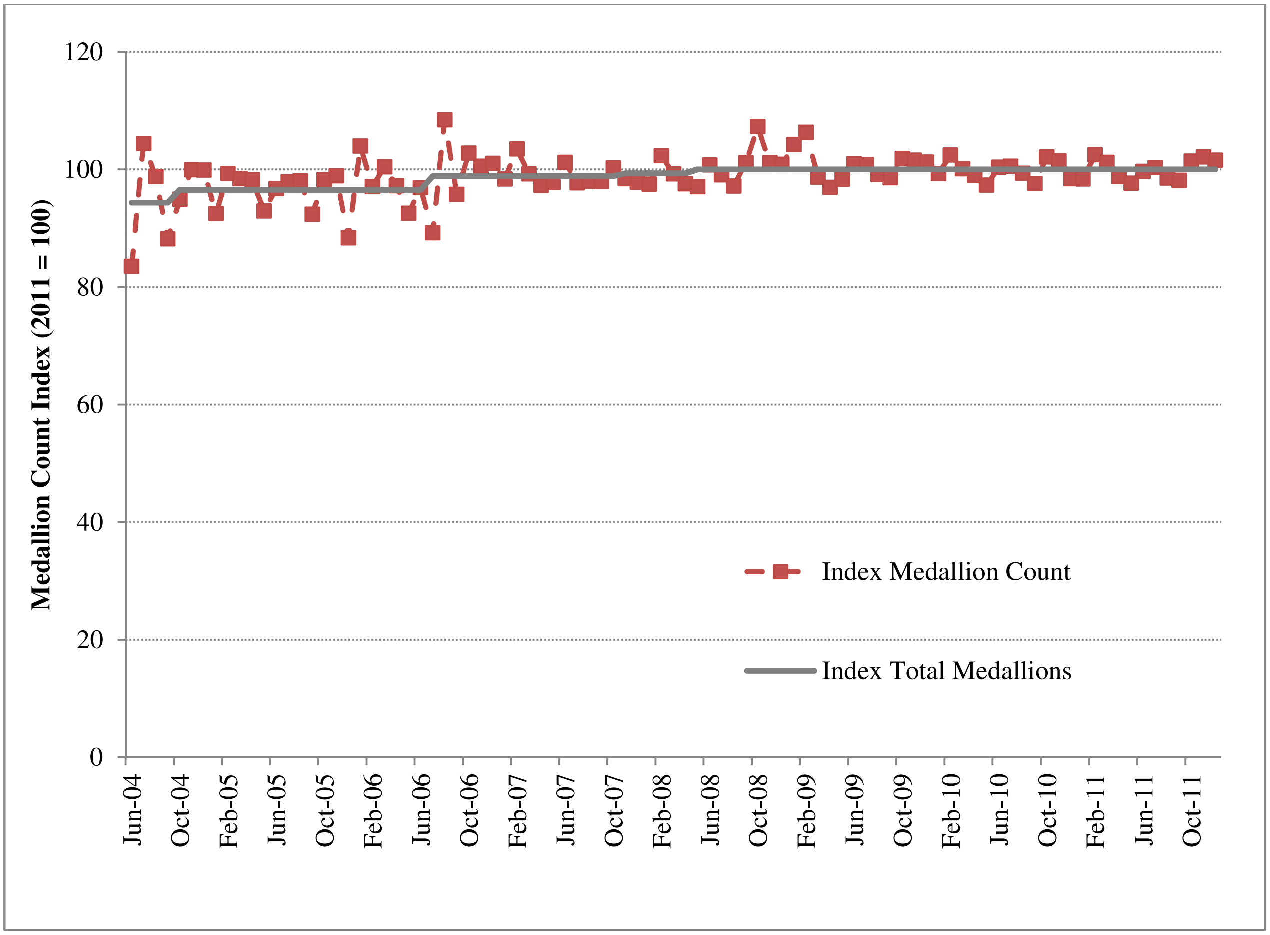
3.3.4 Other Assumptions

Fares were calculated for a representative fare (based on Schaller 2006 *Taxicab Factbook*) with 4.77 minutes of wait-time and assuming an average trip length of 2.8 miles (based on TPEP data). Before May 2004 the initial charge was $2.00, the mileage charge was $0.30 per 1/5th mile with 90 seconds of wait-time per meter unit. On May 2004, this increased to $2.50 initial charge with $0.40 per 1/5th mile with 120 seconds of wait-time and in November 2006 the wait-time changed to 60 seconds of wait-time per meter unit. A $45 flat fare was implemented from any point in the Borough of Manhattan to JFK Airport.

The number of total medallions inspected was used as a proxy for the total number of active outstanding taxi medallions. This was done for the following reasons:

- While data on actual sales of taxi medallions and total outstanding taxi medallions is available the date on which medallions become an active part of the taxi fleet is less certain, and can vary between a few days to a few months;
- The TLC inspections data provides a representative snapshot of the behavior of all active medallions involved in taxi service. The number of active taxis captured in the TLC data is proportional to the total medallions available at any point in time. Figure 12 presents indices for total outstanding medallions according to TLC records ("Total Medallions") and for the number of taxi meter inspections recorded by month ("Medallion Count"). The year 2011 is set as the base year for both indices. Overall, the index of medallion count tracks the number of total medallions well.
- The analysis seeks to understand how revenue trips per mile are impacted by the change in the number of active taxi medallions between consecutive inspections. The dataset tracks miles and trips completed by inspected taxis between consecutive inspections. While on average the taxi fleet utilization is 95% or higher, the number of taxis on the road can vary from month to month. Figure 12 shows data on the average number of medallions on the road per day based on TPEP data during 2009 – 2011.

Figure 12: Index of Medallion Count and Total Medallions



Source: TLC Taximeter Inspection data and TLC Records of Medallion Sales

- Finally, an important technical reason to use the proxy variable is that during the time period of our dataset the ~~numbers~~ of active medallions is relatively constant. While taxi medallions do increase a total of 5.6% during the period of the analysis, increases only ~~takes~~ place periodically.[42] The ~~numbers~~ of active medallions as approximated by the taximeter inspections data has higher variation while it tracks the increases in the medallions due to additional sales.

[42] An additional 300 medallions were sold in April 2004 ; however due to the low number of usable taxi meter inspection data points, in the first 5 months of 2004 (Jan 2004 – May 2004) the data used in the analysis starts in June 2004.

3.4 Results

Results of the impact on taxi medallion valuation and taxi driver incomes are summarized below.

3.4.1 Medallion Values

Presented below are summary tables for the three types of medallion ownership structures in the future with and without the medallions sale. The tables are derived using the point estimate of the revenue trips per mile for the representative medallion. The following section presents results of analysis in terms of impacts on the value of the medallion.

3.4.1.1 Net Revenue by Medallion Type in 2017

Table 22 presents revenues and costs for owners who lease their medallions only to driver owned vehicles. As discussed above, lease rates per week under current conditions were assumed to be capped at $1,114 dollars per week for hybrid vehicles and $1,072 per week for conventional vehicles. With the sale of additional medallions in the future, it was assumed that lease revenues would decline by a similar percentage as revenue trips per mile. Management expenses and license renewal fees were also included. As discussed above, medallion purchases can be amortized over a period of 15 years and medallion amortization expenses were included in the analysis. Cash flows and discounted cash flows were projected to year 2029 (the first year after the medallion purchase has been completely amortized) and a terminal value (the value of the asset such that it confers cash flows indefinitely into the future) of the asset was calculated.

The results indicate that for lease medallions (DOVs) net cash flows are estimated to decline by 1.4 percent in 2017 (assuming medium impacts on revenue trips).

Table 22: Revenues and Costs for Lease Medallions (DOVs) in 2017

Revenues and Costs	without Proposed Action	with Proposed Action
Hybrid / ToT Lease Rate Per Week	$1,114	$1,102
Conventional Lease Rate Per Week[43]	$1,072	$1,061
Weighted Average Lease Rate	$1,114	$1,102
Revenue Weeks Per Year	51.38	51.38
Annual Total Revenue	**$57,232**	**$56,640**
Less Annual Management Expense	$12,816	$12,816
***Less* Annual** License Renewal Fees	$825	$825
***Less* Annual** Credit Card Fees	$4,817	$4,767

[43] According to TLC most drivers who lease medallions only (DOVs) pay the hybrid lease rate because they generally operate hybrid vehicles.

Revenues and Costs	without Proposed Action	with Proposed Action
Annual Net Operating Income	**$38,774**	**$38,231**
Annual Medallion Amortization Expense[44]	$62,220	$61,401
Less Federal Tax in 2017[45]	-	-
Less New York State Tax	$2,753	$2,714
Less New York City Tax	$3,431	$3,383
Total Annual Cash Flow Per Medallion	**$32,589**	**$32,133**

Revenues and costs for medallions being operated under the fleet mode ("Mini-Fleet") are shown in Table **23**. Lease revenues were calculated on a per shift basis. Additionally, under new rules passed by TLC for the ToT, corporate medallion owners can charge an additional fee for providing fuel. Expected revenues from fuel surcharges and the costs of providing that fuel are included in the analysis. These revenues and costs were based on a per shift basis as well. Vehicle maintenance costs, insurance costs were based on a per shift basis. Annual management expenses as well as license renewal fees were included as costs. Depreciation expenses for vehicles as well as medallion amortization expenses were included in the analysis. Cash flows and discounted cash flows were projected to year 2029 (the first year after the medallion purchase has been completely amortized) and a terminal value of the asset was calculated (see section 3.2).

Revenues are estimated to decline overall. Lease revenues decline based on the assumption that the percentage decline in trips would result in a similar impact on lease rates. The analysis indicates that in 2017 net cash flows are expected to decline 1.7 percent assuming medium impacts from the sale of additional medallions.

Table 23: Revenues and Costs for Mini-fleet Medallions in 2017[46]

Revenues and Costs	without Proposed Action	with Proposed Action
Average Hybrid Lease Revenue Per Shift	$126	$125
Average Conventional Lease Revenue Per Shift	$123	$122
Hybrid Percent	12.3%	12.3%
Weighted Average Lease Revenue / shift	$124	$122
Annual Revenue Shifts Per Year	716	716
Annual Lease Revenue	$88,570	$87,653
Annual Fuel Surcharge Revenue Per Year	$20,764	$20,764
Annual Total Revenue	**$109,334**	**$108,417**
Less Annual Average Hack-up Cost per Medallion	$172	$172
Plus Annual Average Salvage Value per Medallion	$844	$844

[44] Medallion purchase is assumed to be capitalized and then expensed on a 15-year schedule, based on the classification of taxi medallion as a Section 197 intangible.

[45] Taxes are calculated as Operating Income less Medallion Amortization Expense, multiplied by the tax rate. Since operating income is less than amortization expense, there are no taxes due.

[46] Impacts are shown for the base case or medium impacts. Results are shown for the reference case gas price scenario.

Revenues and Costs	without Proposed Action	with Proposed Action
Less Annual Maintenance & Repair Costs per Medallion	$3,814	$3,814
Less Annual Insurance Costs per Medallion	$14,710	$14,710
Less Annual Management Expense per Medallion	$12,816	$12,816
Less Annual License Renewal Fees	$825	$825
Less Annual Credit Card Fees	$5,057	$5,005
Less Annual Fuel Expenses	$12,944	$12,944
Annual Net Operating Income	**$59,840**	**$58,975**
Annual Vehicle Depreciation Expense[47]	$5,370	$5,370
Annual Medallion Amortization Expense[48]	$87,959	$86,639
Less Annual Fixed Capital Investment	$7,954	$7,954
Less Federal Tax in 2017[49]	-	-
Less New York State Tax	$3,867	$3,806
Less New York City Tax	$4,821	$4,744
Total Annual Cash Flow Per Medallion	**$43,198**	**$42,471**

[47] Vehicle purchase is depreciated using an assumption of 5 years based on average fleet life, calculated hack-up date, and projected vehicle replacement.

[48] Medallion purchase is assumed to be capitalized and then expensed on a 15-year schedule, based on the classification of taxi medallion as a Section 197 intangible.

[49] Taxes are calculated as Operating Income less Medallion Amortization Expense and Vehicle Depreciation expense, multiplied by the tax rate. Since operating income is less than Medallion Amortization expense and Vehicle Depreciation expense, there are no taxes due; however taxes will be due in 2029 when medallion amortization expires. Taxes are due and included in the valuation analysis.

Table 24 presents revenues and costs for independent medallions in year 2017 which include revenues from leasing as well as driving. Revenues from driving are based on 260 shifts driven by the driver using average fare of $14.86 per trip and about 20 trips per shift. Fuel costs are based on 260 shifts driven by the owner. Hack-up costs, fixed capital investment were calculated for the whole fleet and then averaged on a per medallion basis. Taxi driver wages were included as compensation for labor for owner-drivers based on an assumption of $14.15 dollars an hour and 260 shifts per year. Additionally, about 341 shifts were assumed to be leased to a second driver for additional revenue. Depreciation expense and medallion amortization expense were included. Cash flows and discounted cash flows were projected to year 2029 (the first year after the medallion purchase has been completely amortized) and a terminal value of the asset was calculated. The analysis indicates that cash flows will decline by 2.1 percent in 2017.

Table 24: Revenues and Costs for Independent Medallions in 2017[50]

Revenues and Costs	without Proposed Action	with Proposed Action
Revenue from Driving	**$78,099**	**$77,290**
Hybrid Lease Revenue Per Shift[51]	$116	$115
Conventional Lease Revenue Per Shift	$112	$111
Percent of Vehicles Not ToT or Hybrids	0.1%	0.1%
Weighted Average Lease Revenue / shift	$116	$115
Annual Lease Revenue Shifts	341	341
Annual Lease Revenue	$39,470	$39,061
Annual Total Revenue	**$117,569**	**$116,352**
Less Annual Average Fuel Costs per Medallion	$4,700	$4,700
Less Annual Average Hack-up Cost per Medallion	$172	$172
Less Annual Taxi Driver Wages	$29,425	$29,425
Plus Annual Average Salvage Value	$844	$844
Less Annual Average Maintenance & Repair Costs	$3,201	$3,201
Less Annual Average Insurance Costs	$12,347	$12,347
Less Annual Medallion License Renewal Fees	$825	$825
Less Annual Credit Card Fees	$3,113	$3,081
Less Annual Health Care Fees	$315	$312
Annual Net Operating Income	**$64,314**	**$63,132**
Annual Vehicle Depreciation Expense[52]	$5,370	$5,370
Annual Medallion Amortization Expense[53]	$64,477	$63,315
Less Fixed Capital Investment[54]	$7,954	$7,954
Less Federal Taxes in 2017[55]	$-	$-
Less New York State Tax	$4,185	$4,101
Less New York City Tax	$5,217	$5,112
Total Annual Cash Flow Per Medallion	**$46,958**	**$45,965**

[50] Impacts are shown for the base case or medium impacts. Results are shown for the high gas price scenario
[51] These rates are different than those shown for Fleet medallions since as discussed in Section 4.2 these are based on the weekly long term (typically DOV) lease rates.
[52] Vehicle purchase is depreciated using an assumption of 5 years based on average fleet life calculated-using hack up date and projected vehicle replacement.
[53] Medallion purchase is assumed to be capitalized and then expensed on a 15 year schedule based on the classification of taxi medallion as a section 197 intangible.
[54] These are the purchase costs of new vehicles, which impact cash flows but are excluded from tax and income calculations.
[55] Taxes are calculated as Operating Income less Medallion Amortization expense and Vehicle Depreciation Expense multiplied by the tax rate. Since operating income is less than Amortization Expense and Vehicle Depreciation Expense there are no taxes due.

3.4.1.2 Impacts on the Value of the Medallion

Incorporating the results from the regression analysis described in section 2.3.1 along with other revenue and cost assumptions, we obtain a range of values for net revenues which, once capitalized, provide a range of medallion values. Medallion values were estimated based on a discounted cash flow analysis discussed in detail in 3.2.1. Table 25 shows that ―the sale of additional medallions reduces the value of a corporate medallion by between 0.4% and 2.7%. Table 26 reports similar results for independent medallions with impacts ranging from 0.5% to 3.6% of medallion value.

Table 25: Impact of Additional Medallions on Corporate Medallion Value in 2017[56]

Impact Scenario	Impact on Medallion Value
Low	-0.4%
Medium	-1.5%
High	-2.7%

Table 26: Impact of Additional Medallions on Independent Medallion Value in 2017

Impact Scenario	Impact on Medallion Value
Low	-0.5%
Medium	-2.0%
High	-3.6%

3.4.2 Taxi Driver Incomes

Estimates of current taxi driver incomes for both Independent medallion drivers (leasing for a second shift from an independent owner-driver) and Mini-fleet medallion drivers are presented in Table 27 below. Estimates are on a per-shift basis. Since the fare increase took place in the latter half of 2012, full impacts of the fare increase both from a revenue perspective and for fleet drivers from a taxi cab leasing cost perspective have only partially been incorporated (i.e. for the last 3 months of the year). For 2013 and onwards the full fare of $14.86 has been used in the analysis. The number of trips per shift also declined slightly due to the increase in fares (decreasing from an estimated 20.8 trips per shift in 2011 to 20.6 trips per shift in 2012). Fare assumptions used to calculate driver incomes were based on $13.25 per trip in 2012 dollars (compared to an estimated $14.86 after the fare increase and $12.72 per-trip prior to fare increase in 2012). Both independent owner drivers and fleet medallion drivers make revenues through passenger trips. Total revenues per shift were estimated at $273 on average. Based on the changes introduced as part of the fare increase

[56] Discount rates were calculated to reflect observed market price in June 2013. For corporate medallions, this market value was approximately $1.15 M. The estimated impact on medallion values was based on the projected cash flows with and without additional medallions, from 2017 to 2029.

lease medallion owners can charge for a premium in return for providing fuel and paying for credit card fees. In addition, both independent drivers and fleet drivers must pay health care fees on a per-trip basis. For fleet drivers revenues come from fares and costs include lease costs which include fuel costs and health care fees. Total net income is estimated at $131.1 per shift for fleet drivers and $139.1 per shift for independent medallion drivers. For independent drivers revenues are the same but costs include fuel at $19 (assuming 106 miles are driven per shift on average) and health care fees of $1.2 per shift. TLC data indicates that independent medallion owners will typically lease the medallion for a second shift and according to TLC data about 73% did so in 2012.

Table 27: Taxi Driver Incomes in 2012[57]

Driver Type	**Independent Drivers Leasing for second Shift**	**Fleet / DOV**
Revenues		
Trips Per Shift	20.6	20.6
Fare per Trip*	$13.25	$13.25
Revenues Per Shift	**$ 273.00**	**$273.00**
Costs		
Average Miles per Shift	106	106
Fuel Gallons per Shift	4.95	
2012 Gas Price	$3.82	
Fuel Cost	$18.92	
Lease Costs	$113.74	
Total Lease + Fuel Costs	**$132.67**	**$140.69**
Health Care Fees	$1.20	$1.20
Total Costs	**$133.90**	**$141.93**
Net Income per Shift		
Driver Net Income Per Shift	**$139.10**	**$131.07**

* *Weighted Estimate for 2012 (includes fare increase for 3 months of 2012)*

After the sale of the additional medallions, revenues per shift are expected to go down from $300.4 to $297.3 for the average shift that completes 20.0 trips per shift and drives some 106 miles. The expected impact on the income of a driver leasing from an independent owner on a per shift basis is a decline of 1.2% assuming lease rates decline to reflect the reduction in driver income. Assuming no impacts on lease rates (i.e. lease rates continue to remain at the current TLC capped rates and are not lowered by the market to increase driver demand) driver income is expected to decline 1.9% for the average driver leasing from an independent owner. Results presented in Table 28 are shown conservatively for the case where lease caps are assumed to stay at their maximums (in real terms) and do not decline in response to a decline in taxi- revenue trips per shift.

[57] After new rules proposed by TLC, Credit card fees are now included in the lease cost.

Table 28: Impacts on Taxi Driver Income for Independent Medallion Drivers (leasing for a second Shift) in 2017 ($/shift)[58]

Metric	without Proposed Action	with Proposed Action
Revenues		
Trips Per Shift - Action	20.2	20.0
Fare per Trip	$14.86	$14.86
Revenues Per Shift	**$300.38**	**$297.27**
Costs		
Average Miles per Shift	106	106
Fuel Gallons per Shift	3.69	3.69
2017 Gas Price ($ 2012 dollars)[59]	$4.90	$4.90
Fuel Cost	$18.08	$ 18.08
Lease Costs	$115.75	$115.75
Total Lease + Fuel Costs	**$133.83**	**$ 133.83**
Health Care Fees	$1.2	$1.2
Total Costs	**$135.04**	**$ 135.03**
Net Income per Shift		
Driver Net Income Per Shift	**$165.34**	**$162.24**

Table 29 shows the impacts of additional medallions on fleet drivers. Impacts are slightly higher than Independent medallions primarily because drivers will pay slightly more for fuel to fleet medallion owners. As discussed above corporate medallion drivers leasing on a per-shift basis are no longer responsible for credit card fees and medallion owners might charge an additional amount on a per – shift basis in return for providing both fuel and for processing credit cards fees. Driver incomes are estimated to decline by 2.1 percent in 2017.

Table 29: Impacts on Taxi Driver Income for Fleet drivers in 2017

Metric	without Proposed Action	with Proposed Action
Revenues		
Trips Per Shift - Action	20.2	20.0
Fare per Trip	$14.86	$14.86
Revenues Per Shift	**$300.38**	**$297.27**
Costs		
Average Miles per Shift		
Fuel Gallons per Shift		

58 Impacts are shown for base case or medium impacts due the introduction of additional medallions. High Gas prices are assumed for the analysis.

59 High gas prices are conservatively assumed here.

Metric	without Proposed Action	with Proposed Action
2017 Gas Price ($ 2012 dollars)[60]		
Fuel Cost		
Lease Costs[61]	$152.70	$152.70
Total Lease + Fuel Costs	$152.70	$152.70
Health Care Fees	$1.2	$1.2
Total Costs	**$153.90**	**$153.91**
Net Income per Shift		
Driver Net Income Per Shift	**$146.47**	**$143.37**

Impacts on driver income (conservatively assuming lease rates remain at their maximum) are shown in Table 30. These are conservatively shown for fleet drivers only (since impacts on them are slightly higher) but a similar range of impacts will be expected for independent medallion drivers. Impacts are expected to range from a decline 0.5% to a decline of 3.7% on driver incomes per shift.

Table 30: Impacts on Driver Income for Fleet Drivers in 2017 ($/Shift)

Estimated Impact Range	Under Future Conditions without Additional Medallions	Under Future Conditions with Additional Medallions	Impact in %
Low	$146.47	$145.73	-0.5%
Medium	$146.47	$143.37	-2.1%
High	$146.47	$141.01	-3.7%

[60] High gas prices are conservatively assumed here.
[61] Lease costs are higher (than independent medallion owners), since they include fuel costs.

4 New York City Economy: Methodology, Assumptions and Results

4.1 Methodology

Impacts on the economy (primarily increases in employment) due to the sale of additional 2,000 medallions are quantified using 2007 values of RIMS II, the input-output model developed by the Bureau of Economic Analysis. Important assumptions used to quantify these impacts are shown and discussed below.

An input-output model contains detailed data on earnings and labor used to produce specific goods and services, and is a suitable tool for assessing the impacts of various policy changes on an industry. Since such a model was used in this analysis, we include a brief description of its workings.

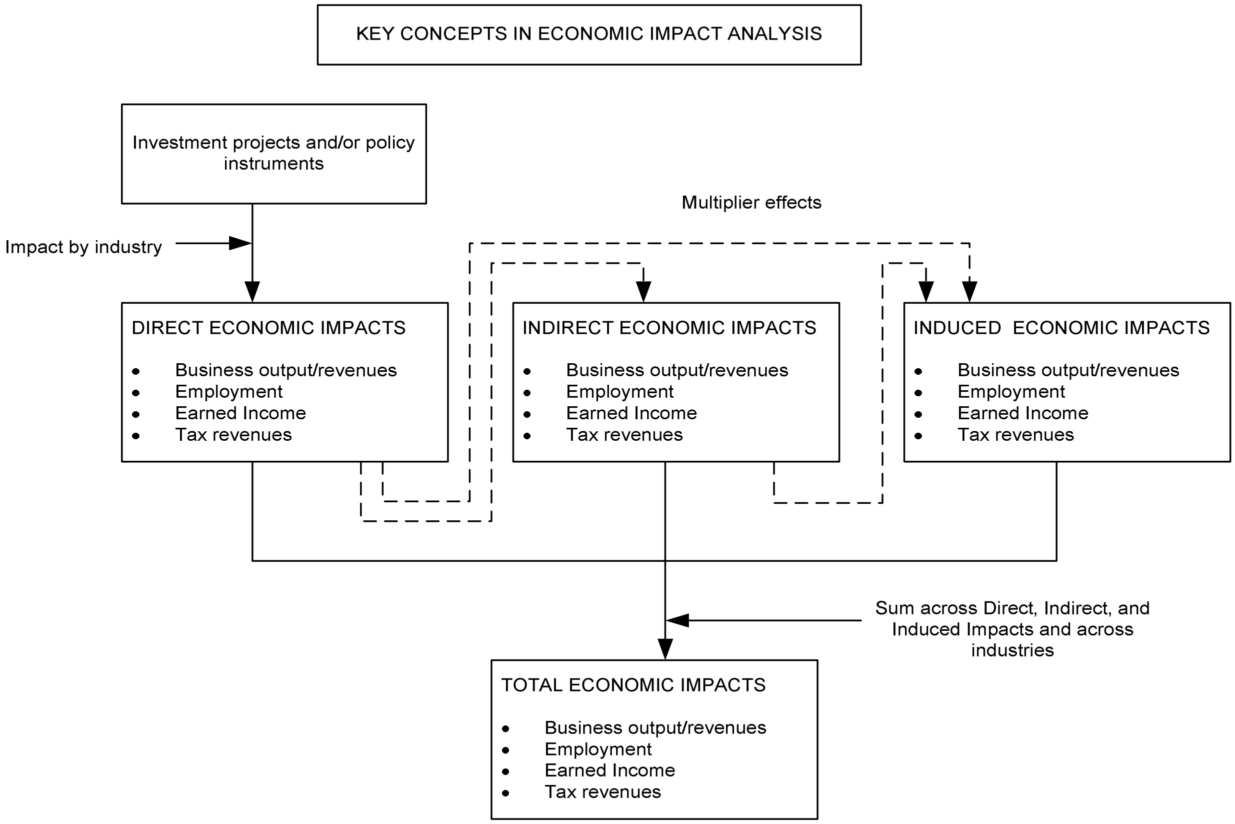
The primary measure of an industry's importance on the region is the total output generated from each dollar of its product or service sold. If an industry in a given county sells $1 million of its goods (whether the sale is outside the county is irrelevant), there is a direct infusion of $1 million into the county, called the direct effect. However, suppliers to that industry based in the county have also been called upon to increase their production to meet the needs of the industry to produce the $1 million in goods, and suppliers of these same suppliers must also increase production to meet their increased needs as well. When all these indirect effects are added to the direct effect (the $1 million in sales), we get an estimate of the total (direct and indirect) output effects.

However, the total economic effect of the $1 million in sales extends further beyond the output effect. As all production of output outlined above requires labor, this means that total wages and salaries paid have increased, both in the industry directly receiving the additional expenditure as well as all the affected supplying industries. These wages and salaries will in turn be spent in part on goods and services produced locally. This final effect on the regional economy through the spending of wages and salaries is known as the induced effect. By keeping track of how much labor is required to meet the direct, indirect and induced effects, the input-output model estimates the employment generated throughout the regional economy from the increased activity[62].

We can represent how the Input - Output model functions as the shown in Figure 13. An increase in final demand is "fed into" the model, and the model produced a calculation of the total effect (direct, indirect and induced) on the regional economy in terms of output, income and jobs. The additional medallions would provide employment to taxi drivers and leading to economic benefits for New York City.

[62] In the input-output model, the estimate of increased employment will always be in terms of the employment required for a given level of production, usually referred to as *person-years* of employment. These estimates should never be interpreted as specifying *permanent jobs.*

Figure 13: The Input - Output Model



The multipliers shown in

Table **31** suggest that a $1 increase in output for the Taxi Industry results in $1.67 increase in overall demand in the regional economy. Similarly, a $1 increase in output results in $0.38 increase in earnings while a $1 million increase in output results in the creation of 18.1 jobs city-wide. Using an input-output model, we can also single out the increase in total output that occurs in the industry due to increased employment in the industry. In particular, we estimate total earnings across change 1.51 per $1 change in the Ground Passenger Industry earnings and 1.23 city-wide jobs increase due to an additional job in the Ground Passenger Industry.

Table 31: Economic Multipliers for the Transit and Ground Passenger Transportation Industry[63]

485A00 Including Taxi Service	
Output Multiplier: City-Wide Effect per $1 in Final Demand	1.67
Earnings Multiplier: City-Wide Effect per $1 in Final Demand	0.40
Employment Multiplier: City-Wide Effect per $1 Million in Final Demand	18.08
Earnings Multiplier: City-Wide Impact per $1 in Industry Earnings	1.51
Employment Multiplier: City-Wide Impact per Job increase in Industry	1.23

The multipliers used for the hack-up and repair industry are presented in Table 32. Impacts of additional hack-ups were included in the analysis (assuming vehicles would be TOT).

Table 32: Economic Multipliers for the Automotive Repair and Maintenance Industry

8111A0 Automotive Repair and Maintenance	
Output Multiplier: City-Wide Effect per $1 in Final Demand	1.58
Earnings Multiplier: City-Wide Effect per $1 in Final Demand	0.38
Employment Multiplier: City-Wide Effect per $1 Million in Final Demand	14.57
Earnings Multiplier: City-Wide Impact per $1 in Industry Earnings	1.4107
Employment Multiplier: City-Wide Impact per Job increase in Industry	1.2442

4.2 Assumptions

Detailed assumptions used to calculate impacts on the economy are presented in Table 33. Based on a taxi utilization rate of 95.9% and an assumption of 1.9 shifts per taxi, each additional medallion sold would create 660 shifts per year and employs 2.5 drivers full time, assuming a taxi driver works 260 shifts per year. Average annual earnings of drivers were based on the average wage of drivers in dollars per hour and the number of hours per shift. Earnings per hour were based on the estimate from Bureau of Labor Statistics since these include all types of taxi drivers. Hack-up expenditures are based on TLC surveys that indicate the TOT would cost $633 to hack-up[64].

[63] Bureau of Economic Analysis 2007 RIMS II Multipliers for New York City for the Transit and Ground Passenger Transportation Industry

[64] Taxi of Tomorrow, Environmental Assessment Statement, 2012

Table 33: Assumptions Used to Calculate Impacts on the New York City Economy

Metric	Value	Source	Unit
Additional Medallions	2,000	TLC	Taxis
Shifts / Year	660	Calculated	Shifts / Year
Taxi Driver Working Days Per Year	260	5 days per week for 52 weeks	Days / Year
Taxi Driver Wages $ / Hr	$14.15	Bureau of Labor Statistics, New York MSA 2010, inflated to 2012 dollars	Dollars / Hr
Hours / Shift	12.0	TLC	Hours
Work Hours / Shift	8.0	Mean working hours for US taxi drivers, Bureau of Labor Statistics	
Average Annual Earnings Per Driver	$29,425	Calculated	Trips per Shift
Average Hack-up Expenditure for ToT	$633	TLC	Expenditure per Vehicle

4.3 Results

Table 34 shows expected employment impacts as a result of additional taxicabs. The 2000 additional taxicabs are expected to add almost 1.32 million twelve hour shifts for taxicab drivers on annual basis. As a result of the additional drivers city-wide earnings are expected to increase $226 million dollars per year. In addition the Proposed Action is expected to create employment for an additional 5,100 drivers and a city-wide increase in employment of 6,250 person years of employment. Also included in this estimate are the employment impacts due to hack-ups for additional medallions

Table 34: Employment and Earnings Impact from Additional Medallions

	2014	2015	2016	2017 and Onwards
Additional Medallions	400	950	1,450	2,000
Additional Shifts	264,000	627,000	957,000	1,320,000
Days / Year or Shifts per year Taxi Driver works	260	260	260	260
Average Earnings / Driver	$29,425	$29,425	$29,425	$29,425
Additional Taxi Driver Employment	1,015	2,412	3,681	5,077
Additional Total Earnings for Taxi Drivers ($M)	$29.9	$71.0	$108.3	$149.4
City Wide Impact in Earnings ($M)	**$45**	**$108**	**$164.2**	**$226.4**
Citywide Impact in Employment in Person Years	**1,253**	**2,970**	**4,531**	**6,248**

Source: HDR Analysis, Bureau of Economic Analysis (RIMS II)

5 Summary and Conclusions

This document provides the technical details to quantify the socioeconomic impacts from the sale of additional medallions in accordance with the *2012 CEQR Technical Manual*. The methodology adopted consisted of conducting a detailed statistical analysis of previous medallion sales using data from inspections of taxi meters and taxi odometers during December 2003 to December 2011. The statistical analysis results were then input into a financial model to quantify impacts on the value of the taxi medallion and impacts on taxi driver incomes. Separately an input-output analysis was conducted to quantify the impacts on the New York City's economy from the sale of additional medallions.

The results indicate that the 15 percent increase implied by the sale of 2,000 medallions would be associated with a 1 percent decline in revenue trips per mile with a range varying between 0.26 percent and 1.82 percent. The decline in trips would result in a-sale of additional medallions reduces the value of a corporate medallion by between 0.4 percent and 2.7 percent, with a most likely impact of 1.5 percent and for independent medallions the impacts would be 0.5 percent and 3.6 percent with a most likely impact of 2 percent. Impacts on (fleet) taxi driver incomes would range from a decline in income of 0.5 percent per shift to a decline of in income of 3.7 percent per shift, with a most likely decline in income of 2.1 percent. The sale of additional medallions would approximately add 6,248 person years of employment in New York City and result in an increase in City-wide earnings of $226.4 million.

APPENDIX C

IMPACT OF THE ISSUANCE OF 2,000 NEW YELLOW TAXI MEDALLIONS ON NEW YORK CITY'S LIVERY CAR INDUSTRY

Impact of the Issuance of 2,000 New Yellow Taxi Medallions on New York City's Livery Car Industry

May 2012

appleseed

The issuance of 2,000 new yellow taxi medallions could affect the economics of the City's livery car industry – the primary provider of for-hire vehicular transportation in Upper Manhattan (north of 110th Street on the West Side and north of 96th Street on the East Side), and in the boroughs outside Manhattan. The following analysis seeks to quantify the potential impact of an increase in the supply of yellow taxis on the livery car industry, taking into account:

- The extent to which (and where) markets for the two types of service currently overlap;
- The potential impact of an increased supply of yellow cabs in specific neighborhoods;
- Differences in patterns of service between yellow taxis and livery cars; and
- Other factors that could mitigate any adverse effects that an increase in the supply of yellow taxis might have on the livery car industry.

Data used in this analysis include:

- GIS data from the Taxi and Limousine Commission's (TLC) Taxi Passenger Enhancement Project (TPEP);
- Data on livery base stations and the number of cars affiliated with them;
- Data on enforcement actions taken by TLC against such illegal pick-ups;
- Data on complaints filed with TLC regarding yellow cab drivers' refusing to take passengers to destinations outside the Manhattan Core; and
- Data on population growth at the neighborhood level, from the Census Bureau and NYC Department of City Planning.

Yellow taxi service in Upper Manhattan, Brooklyn, Queens, the Bronx and Staten Island

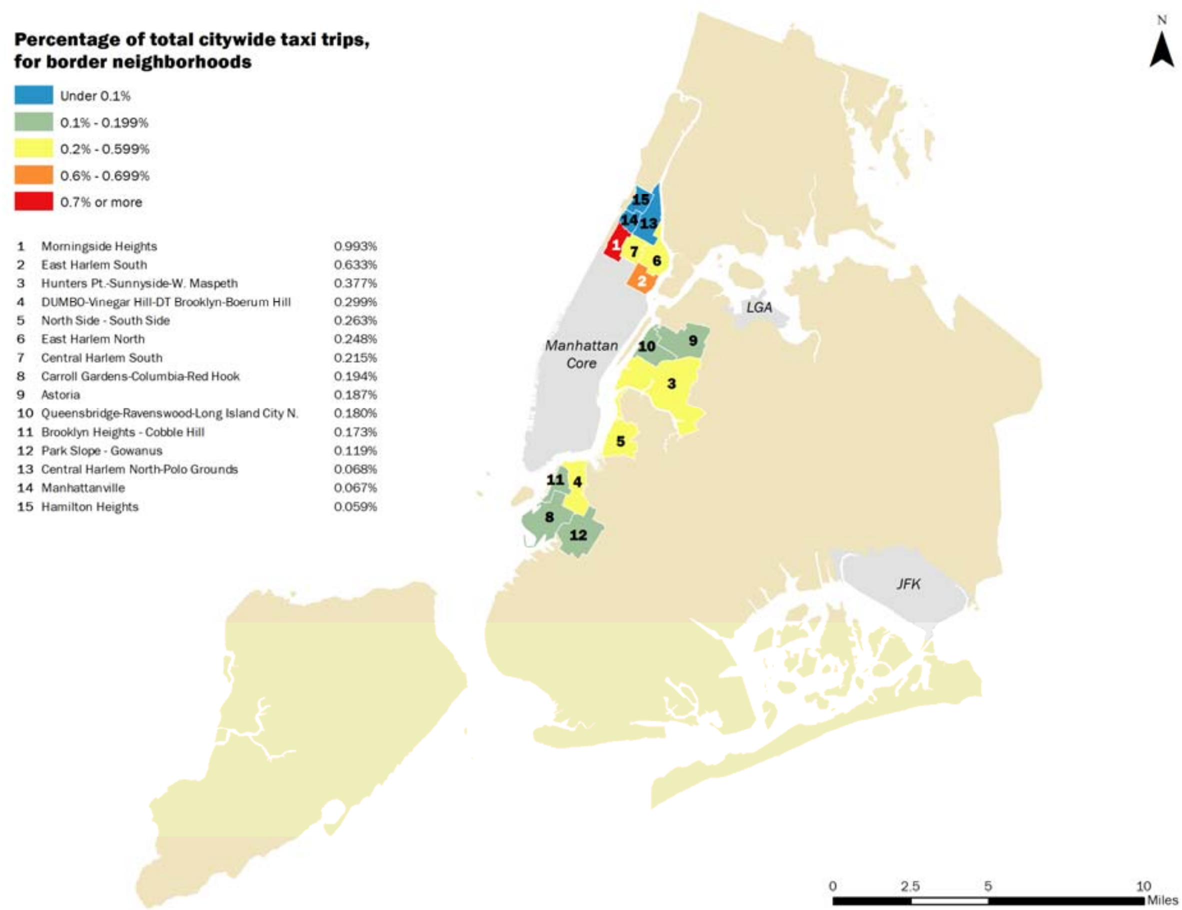
There is currently little direct competition between yellow cabs and livery cars. The services they provide differ – yellow taxis primarily serve passengers who hail them on the street, while livery car pick-ups are generally arranged by phone. Moreover, they serve geographically distinct markets. TLC data indicate that yellow cab pick-ups are largely concentrated in Manhattan below West 110th Street/East 96th Street ("the Manhattan Core") and at the City's airports (LaGuardia Airport and John F. Kennedy International Airport). Together these areas account for nearly 95 percent of all yellow taxi pick-ups in the City.

Data provided by TLC on the pick-up points of all yellow taxi trips that occurred in New York City on a single, randomly-chosen day in 2011 (based on GPS data from TPEP), indicate that there were approximately 467,450 yellow taxi trips on that day.[1] Pick-ups at locations other than neighborhoods in Manhattan below West 110th Street/East 96th Street and the two airports accounted for about 24,800 trips – 5.3 percent of all yellow taxi trips on that day.

[1] According to TLC, the distribution of yellow taxi trips does not vary significantly from day to day.

Moreover, most of the estimated 24,800 pick-ups that occurred outside the industry's core market areas were concentrated in a relatively small number of neighborhoods close to the Manhattan Core. As Figure 1 shows, 15 of the City's 188 neighborhoods (as defined by the Department of City Planning) accounted for more than 77 percent of all yellow taxi pick-ups outside the industry's core markets – but only 4.1 percent of all yellow cab pick-ups City-wide.

Figure 1: Percentage of yellow taxi trips originating outside the Manhattan Core, by neighborhood



Source: NYC Taxi and Limousine Commission: GPS data from TPEP

These 15 neighborhoods are generally clustered in three areas:

- Just north of West 110th Street and East 96th Street in Manhattan (Morningside Heights, Manhattanville, Hamilton Heights, Central Harlem South, Central Harlem North, East Harlem South and East Harlem North); this area accounts for about 43.0 percent of all yellow taxi pick-ups outside the industry's core markets (but only 2.28 percent of all yellow taxi pick-ups City-wide);

- Brooklyn neighborhoods near Manhattan (DUMBO/Downtown Brooklyn/Boerum Hill, Brooklyn Heights/Cobble Hill, Carroll Gardens/Red Hook, Park Slope/Gowanus and Williamsburg), with 19.8 percent of all pick-ups outside the core market areas (1.05 percent of all yellow taxi pick-ups City-wide); and

- Western Queens (Hunts Point/Sunnyside/West Maspeth, Long Island City North/ Queensbridge and Astoria), accounting for 14.8 percent of all pick-ups outside the core (but only 0.74 percent of all yellow taxi pick-ups City-wide).

The remaining 155 New York City neighborhoods (outside the industry's core Manhattan and airport markets and the 15 "border" neighborhoods) are home to more than 73 percent of the City's residents but account for only 1.2 percent of all yellow cab pick-ups.

As shown below in Table 1, the 15 "border" neighborhoods represent a fairly small percent of both the City's population and yellow cab pickups.

Table 1: Yellow Cab Pickups and Neighborhood Population

	Manhattan Core/airports	*Border Neighborhoods*	*Remaining Area*	*TOTAL*
No. neighborhoods	18	15	155	188
Total population	1,381,798	773,344	5,923,329	8,078,471
% of total city population	17.1%	9.6%	73.3%	100%
% of total yellow cab pick ups	94.7%	4.1%	1.2%	100%

Source: ACS 2006-2010 (Population) and TLC (TPEP, 2011)

Geographic distribution of livery car services

In the neighborhoods outside the yellow cab industry's core market (including most of the border neighborhoods shown in Figure 1), livery cars are the primary – and in most neighborhoods the only – providers of for-hire vehicle transportation. As of late 2011, there were 23,817 livery cars licensed by TLC to provide service in the City. While it does not regularly collect detailed data on trips by livery cars, TLC estimates – based on dispatch trip counts provided by bases for the period from July 2010 through February 2011 – that these vehicles account for approximately 200,000 to 250,000 trips per day. For purposes of this analysis, we use a midpoint of 225,000 trips.

Data on the number of livery car pick-ups are not currently available by neighborhood. However, data on the distribution of livery car bases licensed by TLC, and the number of cars affiliated with each base, provide a rough measure of the distribution of this service throughout the City. Figure 2 shows the locations of livery car bases around the City.

Table 2 lists the top 20 neighborhoods ranked by the total number of cars affiliated with local base stations; and Figure 2 shows the relative concentration of livery cars in neighborhoods across the City.

While these data provide a rough measure of the geographic distribution of livery services, they need to be used cautiously, especially at the neighborhood level. The fact that few (or even no) livery cars are based in a particular neighborhood does not mean that livery service is not available to its residents; they may be well served by cars based in adjacent or nearby neighborhoods.

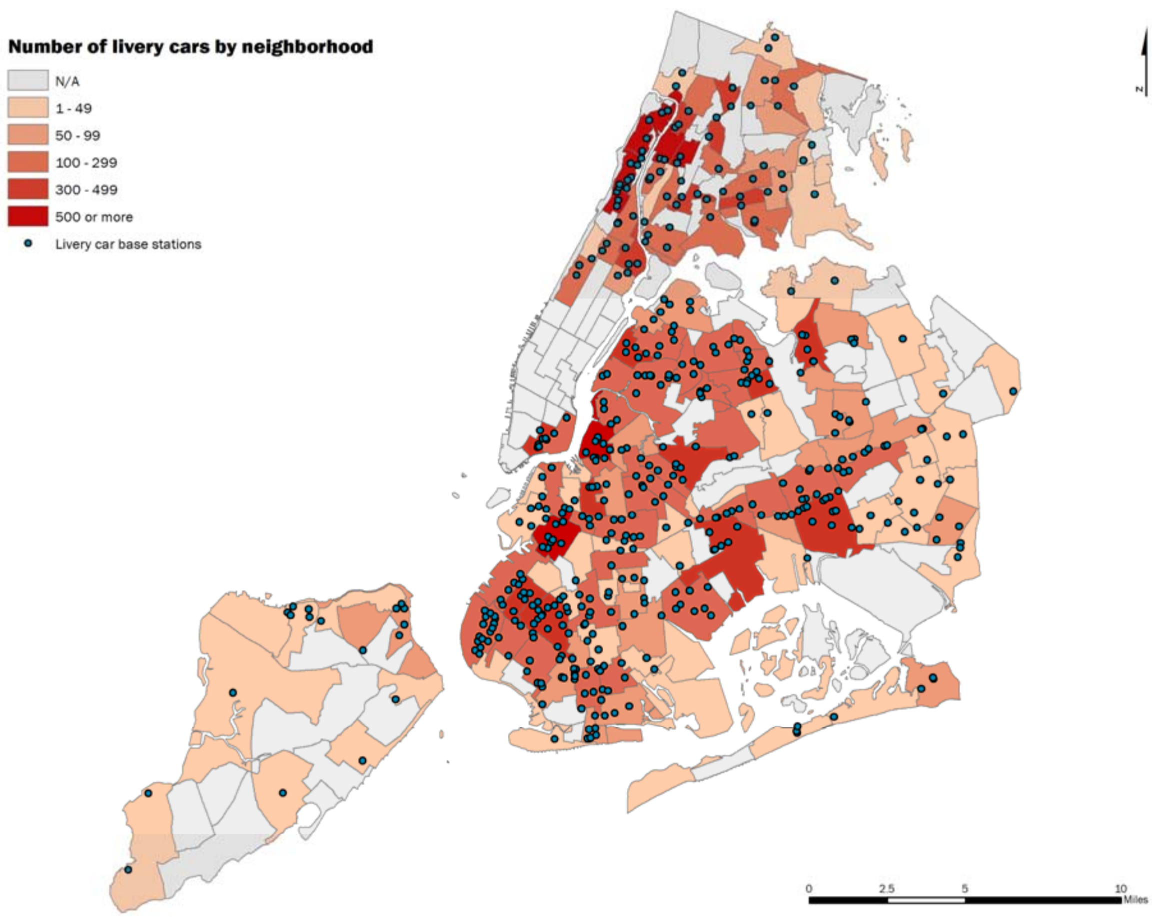
Table 2: Top 20 neighborhoods by number of livery cars affiliated with local base stations

Borough	Neighborhood	# Livery Base Stations	# Livery Cars
Manhattan	Washington Heights South	8	859
Brooklyn	North Side - South Side	7	674
Manhattan	Washington Heights North	3	635
The Bronx	University Heights - Morris Heights	3	629
Brooklyn	Park Slope – Gowanus	9	600
Manhattan	Hamilton Heights	4	585
Manhattan	Marble Hill – Inwood	2	576
The Bronx	Mount Hope	2	558
Brooklyn	East New York (part A)	7	479
The Bronx	Belmont	2	467
Manhattan	East Harlem North	4	465
The Bronx	Morrisania – Melrose	4	463
Brooklyn	Clinton Hill	4	412
Brooklyn	Sunset Park East	9	405
Queens	Corona	6	386
The Bronx	Norwood	2	381
The Bronx	Soundview – Bruckner	2	381
Queens	Ridgewood	6	368
Queens	Queensbridge-Ravenswood-Long Island City N.	7	368
Queens	South Ozone Park	13	366

Source: NYC Taxi and Limousine Commission

Data on the distribution of livery cars by the location of the bases with which they are affiliated highlight the degree to which the yellow taxi and livery car industries tend to serve geographically distinct markets. As noted earlier, neighborhoods outside the yellow taxi industry's core markets account for only 5.3 percent of all yellow taxi pick-ups, while neighborhoods in Manhattan below 110th Street and East 96th Street account for only 3.4 percent of the City's total supply of livery cars – a total of about 820 cars, based primarily in the Upper West Side, Lower East Side and Chinatown.[2]

Figure 2: Livery cars base stations and distribution of livery cars by neighborhood



Source: NYC Taxi and Limousine Commission

[2] For the purposes of this analysis, Carmel Car Service in the Upper West Side and Dial 7 Car Service in Long Island City were removed as both companies have a City-wide customer base and do not exclusively serve the neighborhoods in which they are located.

Assessing the impact of an increase in the supply of yellow taxis

In theory, an increase in the supply of yellow taxis could result in increased competition from yellow cabs for passengers now served by livery cars. However, because of the degree to which the two industries serve geographically distinct markets, and also provide different types of service (street hails vs. pre-arranged pick-ups), the effects of an increase in the supply of yellow taxis on the livery industry are likely to be limited – and in particular, limited to the relatively small number of neighborhoods that are served by both industries.

We cannot predict with any certainty how an increase in the supply of yellow taxis will affect driver behavior. However, yellow taxis have always been allowed to pick up passengers anywhere in the City – yet for many years drivers have consistently chosen to concentrate on serving the fare-rich Manhattan Core, even when other parts of the City demonstrate demand for street hail service, and when yellow-vs.-yellow competition is most intense within the Manhattan Core. It seems reasonable to assume that yellow cab pick-ups will remain overwhelmingly concentrated in the industry's core area – Manhattan below West 110th Street and East 96th Street, and the airports. Yellow taxi drivers' preference for serving these core areas is also reflected in complaints filed with the TLC about drivers refusing to take passengers to destinations in other parts of the City. Of the 12,578 customer complaints filed with the Taxi and Limousine Commission from July 2011 through February 2012, "refusals of service" accounted for 26.7 percent, making this the single leading cause of complaints about yellow taxi service in New York City. In the vast majority of these cases, the driver's refusal to serve the customer was based on the customer's stated destination.

Moreover, data on enforcement actions taken by TLC against livery car drivers who are found taking illegal street hails in the Manhattan Core suggests that there is greater demand for street-hail service in this area than is now being met by the City's existing supply of yellow taxis. From February 2011 through January 2012, TLC issued more than 10,000 summonses to drivers for "poaching" in the Manhattan Core – 64 percent of all poaching summonses issued in the City during that period.

In addition, customers show a clear preference for yellow taxi service when it is available. A TLC on-line survey of 2,666 passengers conducted between November 2010 and February 2012 showed that 70.6 percent of all hailing passengers would choose a yellow cab over a car service, if both arrived at the same time and offered a ride.

TLC's survey data also reveal that many yellow taxi passengers in the Manhattan Core also experience long wait times. Based on TLC's TPEP Survey data, we estimate that about 20 percent of all passengers experience waits of 10 minutes or more.

While these facts are not by themselves sufficient to allow us to quantify the unmet demand for yellow taxi service in the industry's core markets, they nevertheless provide strong evidence that significant unmet demand does in fact exist. We therefore anticipate that unmet demand for yellow taxi service (as well as demand that is now being met illegally by livery cars) could absorb a significant portion of the additional capacity that will be created through the issuance of 2,000 new medallions.

Nevertheless, increased competition in these core areas could lead to increased availability of yellow taxis in other areas, as drivers more frequently venture beyond the core in search of fares. To be conservative – and, in effect to test a reasonable worst-case scenario – we assume for purposes of this analysis that the share of pick-ups occurring outside the industry's core markets will be 50 percent higher for the incremental yellow taxi trips generated by 2,000 new medallion taxis than it was for all yellow taxi trips in 2011. Based on this assumption, we estimate that neighborhoods outside the industry's core market will account for 7.95 percent (5.3 percent x 1.5) of all of the additional trips resulting from the issuance of 2,000 new medallions.

Based on HDR's analysis of the impact of issuing 2,000 new medallions on the yellow taxi industry, we also assume that increased competition among yellow taxis will lead to a 1.04 percent reduction in the average number of trips per day – from 35.4 trips per vehicle per day in 2011 (according to the single-day GPS data from T-PEP cited above) to 35 trips per day. Taken together, increasing the supply of yellow taxis by 2,000 and reducing the average number of trips per day by 1.04 percent would result in an increase in the total number of yellow taxi trips from 467,450 to 532,680 (an increase of 65,230, or 14 percent).

Taking all of the preceding assumptions into account, we estimate that out of a total of 65,230 additional yellow taxi pick-ups per day, 7.95 percent – about 5,186 – would occur outside the industry's core Manhattan and airport markets. This equates to 2.3 percent of the estimated daily number of livery car trips in the City (225,000). This suggests that the overall impact of the issuance of 2,000 new yellow taxi medallions on the existing livery car industry is likely to be minimal.

In the border neighborhoods identified in Figure 1, the impact could be somewhat greater. Assuming once again that the geographic distribution of yellow taxi pick-ups outside the Manhattan Core and the airports would be similar after issuance of the new medallions to what it was in 2011, we estimate that:

- In the neighborhoods just north of the Manhattan Core (Morningside Heights, Manhattanville, Hamilton Heights, Central Harlem South, Central Harlem North, East Harlem South and East Harlem North) under a reasonable worst-case scenario yellow taxi pick-ups would increase by about 2,230 per day (43.0 percent of 5,186). To put this number in perspective: 2,230 additional yellow taxi pick-ups per day would be equivalent to 14.1 percent of an estimated total of about 15,770 daily trips made by livery cars based in this area.[3]

  It is important to recognize (as discussed below) that an increase in the number of yellow taxi pick-ups in any given area does not necessarily mean a commensurate increase in direct competition with livery services. Passengers who are shifting from modes of transportation other than livery services may account for some portion of the increase in yellow taxi pick-ups; and increased demand resulting from population growth

[3] 1,669 livery cars based in these seven neighborhoods, multiplied by an estimated average of 9.45 trips per car per day.

and commercial and institutional development may also absorb part of the increased supply of yellow taxi service. An increase of 2,230 yellow taxi pick-ups per day therefore *does not* translate into an equivalent decline in the number of livery car trips.

- In the five Brooklyn neighborhood areas shown in Figure 1, under a reasonable worst-case scenario yellow taxi pick-ups would increase by about 1,027 per day (19.8 percent of 5,186), equivalent to 7.5 percent of the 13,660 daily trips by livery cars based in these neighborhoods.

- In the three neighborhoods in Queens shown in Figure 1, under a reasonable worst-case scenario the number of yellow taxi pick-ups would increase by about 726 per day (14.0 percent of 5,186) equivalent to 4.8 percent of approximately 15,100 trips per day by livery cars based in the area.

Overall, the data suggest that as a result of increasing the supply of yellow taxis through the issuance of 2,000 new medallions, livery car services would experience:

- Increases in competition in other neighborhoods outside the yellow taxi industry's core markets that would range from zero to negligible. The projected number of additional yellow taxi pick-ups in neighborhoods outside Manhattan below West 110th Street and East 96th Street, the airports and the border neighborhoods (about 1,200 per day) would be equal to less than 0.7 percent of the estimated number of daily trips (about 180,000) by livery cars based in those neighborhoods.
- Modest increases in competition for passengers in the neighborhoods just north of the Manhattan Core, in the Brooklyn neighborhoods shown in Figure 1, and in Long Island City, Sunnyside and Astoria, with projected increases in the number of daily yellow taxi trips ranging from 4.8 to 14.1 percent of the daily number of trips by livery cars based in those three areas. (As noted above, however, only a portion of the projected increases in yellow taxi trips will represent direct competition with livery car service, since part of the increase in yellow taxi trips in these neighborhoods will reflect shifts from modes other than livery cars – that is, from subways, buses or walking.)

Mitigating factors

There are, however, several factors that are likely to mitigate any adverse effects that livery car services in "border" areas might potentially experience due to increased competition from yellow taxis.

- Several of the areas where livery car services could experience increased competition from yellow taxis are also areas that could experience significant population growth during the next five to ten years. As Table 3 shows, several neighborhoods – including Williamsburg, Downtown Brooklyn and Central Harlem South – saw double-digit growth in population between 2000 and 2010. With the continued development of the Williamsburg waterfront and projects in other Brooklyn neighborhoods (including Atlantic Yards), such growth could continue in the future. And while 2000-2010 population growth in Hunters Point was more modest, completion of several buildings at Queens West and the first stage of development at Hunters Point South are likely to drive substantial population growth during the next few years.

Table 3: Population growth in the border neighborhoods, 2000-2010

Neighborhood	2000	2010	% Change
Williamsburg	40,130	45,774	14.1%
Downtown Brooklyn	30,847	34,495	11.8%
Central Harlem South	39,075	43,383	11.0%
Central Harlem North	70,016	75,282	7.5%
Morningside Heights	54,208	55,929	3.2%
Hunters Point	61,956	63,271	2.1%
East Harlem South	56,899	57,902	1.8%
East Harlem North	57,148	58,019	1.5%
Brooklyn Heights-Cobble Hill	22,548	22,887	1.5%
Park Slope	67,263	67,649	0.6%
Carroll Gardens-Red Hook	38,327	38,353	0.1%
Hamilton Heights	50,555	48,520	-4.0%
Queensbridge-Long Island City	21,104	20,030	-5.1%
Manhattanville	24,772	22,950	-7.4%
Astoria	89,122	78,793	-11.6%
TOTAL	**723,970**	**733,237**	**1.3%**

Source: United States Census: 2000, 2010

- In some border areas, new commercial and institutional development could also generate additional demand for both taxi and livery car service. Potential generators of new demand could for example include Columbia University's new Manhattanville Campus, other new development along the 125^{th} Street corridor, and Barclays Center in Brooklyn.

- Similarly, new growth and development in neighborhoods beyond the border areas could also increase demand for taxi and livery services. Examples of such development could include the ongoing revitalization of Coney Island; expansion of the Resorts Word Casino, possibly coupled with development of new hotels and convention and trade show facilities; Flushing Commons and other new developments in Flushing; and (in the future) redevelopment of Willets Point.

- Moreover, even if an increase in the supply of yellow taxis does result in some shifting of passenger trips from other modes of transportation to yellow cabs, not all of these trips will come from livery car service. Increased availability of yellow cab service in border neighborhoods might also result in some trips being shifted to yellow taxis from subways or buses.

Conclusion

On the basis of this assessment, we conclude that from a City-wide perspective, the impact of issuing 2,000 yellow taxi medallions on the livery car industry would be negligible. In a few "border" areas that are currently served by both industries, the impact could be somewhat greater. But the projected increase in the supply of yellow taxis could be offset in these areas by continued growth in demand for for-hire vehicle transportation.

APPENDIX D

TRANSPORTATION TECHNICAL BACKUP DATA

(AVAILABLE UPON REQUEST)