Lead Agency:
New York City Taxi & Limousine Commission

Taxi & Limousine Commission

Taxi Medallion Increase
Draft Environmental Impact Statement

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EXECUTIVE SUMMARY

A. Project Description

Introduction

As allowed under New York State Legislation (New York State Senate Bill S5825-2011 and New York State Assembly Bill A8496-2011), 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 Environmental Impact Statement (DEIS) considers the environmental impacts of this discretionary action.

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 (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.

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 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 in 2012, and that the remaining 1,600 additional taxicab licenses would be issued by public sale over a two year period with 800 medallions sold each year, 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 introduction of additional medallions would have a small, but not negligible, impact on the value of a medallion and driver income, compared to the value of a medallion and driver income without the Proposed Action. These effects may be less than expected due to several factors:

- Medallion values are affected by interest rates for acquiring a medallion. While short-term interest rates have been at near–zero levels for an extended period of time, long term interest rates have continued to decline. These declining interest rates are likely to continue to provide robust market conditions for the acquisition of taxi medallions.
- The increase in the price differential between corporate and independent medallions increased significantly during 2001-2011. This differential has closely tracked changes in long-term interest rates in the US economy. The increase in the price

differential suggests that corporate medallions have increased their attractiveness for an investment purpose. Further, the continuation of a low interest rate environment is likely to keep investor demand relatively robust for cash flow yielding taxi medallions.

- Projections of employment growth in New York City are based on forecasts made by the NYSDOL, which project an annual compounded growth of 0.4% per annum to 2018. Actual employment growth in New York City (as indicated by data from the Bureau of Labor) has been much higher. Employment in New York City increased approximately 1.9% during 2011 compared to 2010 levels. Continued strong improvement in employment growth could potentially negate any negative impacts on driver incomes due to the Proposed Action.

Based on the visitation data from New York and Company, growth in international visitors to New York City has been particularly robust. International visitors during the 2004–2007 period increased an average of 12.4% per annum compared to 3.1% increase in domestic visitors during the same period. International visitation to New York has continued to be robust even during the recent recession growing at 4% per annum during 2007–2011, while increases in domestic visitation have been slower at 2%. The low interest rate environment is likely to keep the US dollar weak and international visitation to an iconic city like New York strong, providing continued demand for the New York City taxicabs.

Mitigation Measures[1]: Although no significant adverse impacts have been identified, the effects of the Proposed Action on the value of a medallion and taxi driver income may be ameliorated through an increase in taxi fares. As summarized below, although increased fares would result in a decrease in the number of revenue (i.e., fare-earning) trips, the increase in revenue per trip with the increased fares would result in a net increase in driver income and value of a medallion. In summary:

[1] **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 addition, at the same time, the TLC will hold a public hearing on rates of fare and whether such rates of fare should be changed as provided in Section 2304 of the New York City Charter. 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 is scheduled to be held on May 31, 2012 for the purpose of allowing the TLC to hear testimony and receive evidence regarding both matters. The impact of the potential change in the taxicab fare structure is not considered as part of this DEIS since it is independent of the potential sale of the additional medallions that would be allowed under the Proposed Action.

- A 1.25% increase in fares would neutralize any adverse impact on the value of an independent medallion assuming our most likely estimate of 1% decline in revenue trips due to a 15% increase in medallions.
- A 1.25% increase in fares would neutralize the impact on the value of a corporate medallion, assuming our most likely estimate of 1% decline in revenue trips due to a 15% increase in medallions.
- Assuming a maximum decrease of 1.8% in revenue trips due to the 15% projected increase in medallions, a 2.2% increase in fares would neutralize any adverse impact on the value of independent medallions and corporate medallions.

The impact of the Proposed Action on taxi driver income could be lessened through the following fare increases:

- Assuming a 1.0% decline in revenue trips with the Proposed Action (our most likely impact), and the resulting 1.1% decrease in driver income (assuming a decline in equilibrium lease rates), could be negated by 1.4% increase in fares. A similar increase would be sufficient to reduce negative impacts on driver income assuming medallion lease costs remain at existing caps.
- A 1.8% decline in revenue trips with the Proposed Action (based on our high estimate), and the resulting 3.5% decrease in driver income could be negated by a 2.5% increase in fares. A similar increase would be sufficient to reduce negative impacts on driver income assuming medallion lease costs will remain at existing caps.

It is recognized that past performance is not an absolute predictor of future results, and that there is some implicit uncertainty in the analysis given the multiple assumptions used in completing the analysis, and the significant amount of data that was applied in undertaking the review of the results of the change in revenue trips and medallion value that occurred with the last increase in the number of medallions. Consequently, an assessment was completed of the level of fare increase that would be required to offset the impact on the value of a medallion assuming twice the degree of impact that was predicted in the assessment described above. Even assuming twice the highest estimated impact, i.e., a 4.8% decline in revenue trips due to the additional medallions, the analysis indicates:

- A 6.5% increase in fares would neutralize impacts on the value of the corporate medallion. It would increase the valuation of the independent medallion 0.6% and would neutralize any negative impacts on taxi driver earnings.

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 2013, 30 of the 54 study intersections would have one or more significant adverse traffic impacts during one or more peak hours, in 2014, 45 of the 54 study intersections would have one or more significant adverse traffic impacts and, in 2015, 47 of the 54 study intersections would have one or more significant adverse traffic impacts. There would be more significant impacts during the AM peak hour that during the other two hours.

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 *CEQR Technical Manual (February 2012),* 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 $PM_{2.5}$. In addition, the Proposed Action is not expected to significantly impact NO_x and NO_2 concentrations in the New York City. Therefore, the proposed addition of 2,000 taxicab medallions would not result in a significant adverse impact to air quality.

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.[2] Furthermore, the increase in GHG emissions of approximately 118,520 tons per year

[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

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.

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, 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.

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, 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; and noise. Traffic-related significant adverse impacts and related mitigation measures, where applicable, are described in Chapter 15: Transportation. However, traffic 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.

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.

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 15 “Transportation”, the following intersections have approaches or overall intersection that could not be mitigated with reasonable mitigation measures.

- #1 – Third Avenue and 54th Street (2014 AM/Midday, 2015 AM/Midday)
- #3 - Third Avenue and 56th Street (2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #4 - Third Avenue and 57th Street (2014 Midday, 2015 Midday)
- #5 - Third Avenue and 58th Street (2014 Midday, 2015 Midday)
- #6 - Third Avenue and 59th Street (2015 Midday)

- #7 - Third Avenue and 60th Street (2013 AM/Midday, 2014 AM/Midday, 2015 AM/Midday)
- #8 – Second Avenue and 57th Street (2013 Midday, 2014 AM/Midday, 2015 AM/Midday/PM)
- #9 - Lexington Avenue and 57th Street (2014 Midday, 2015 Midday)
- #12 - Seventh Avenue and 33rd Street (2013 AM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #13 - Seventh Avenue and 34th Street (2013 AM/Midday/PM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #14 - Seventh Avenue and 35th Street (2013 AM, 2014 AM/Midday, 2015 AM/Midday)
- #15 - Seventh Avenue and 36th Street (2014 AM, 2015 AM/Midday)
- #17 - Sixth Avenue and 34th Street (2013 PM, 2014 Midday/PM, 2015 Midday/PM)
- #18 - Eighth Avenue and 34th Street (2014 PM, 2015 PM)
- #20 - Madison Avenue and 40th Street (2014 AM/Midday, 2015 AM/Midday)
- #22 - Madison Avenue and 42nd Street (2013 AM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #23 - Madison Avenue and 43rd Street (2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #24 - Madison Avenue and 44th Street (2014 PM, 2015 AM/Midday/PM)
- #25 - Madison Avenue and 45th Street (2014 AM/Midday, 2015 AM/Midday)
- #26 - Fifth Avenue and 42nd Street (2013 PM, 2014 PM, 2015 PM)
- #27 - Vanderbilt Avenue and 42nd Street (2015 AM)
- #29 - Eighth Avenue and 33rd Street (2013 PM, 2014 Midday/PM, 2015 Midday/PM)
- #30 - Eighth Avenue and 31st Street (2015 PM)
- #31 - Eighth Avenue and 41st Street (2013 PM, 2014 PM, 2015 AM/PM)
- #32 - Eighth Avenue and 42nd Street (2015 AM)
- #36 - Seventh Avenue and Central Park South (2015 AM/Midday/PM)
- #37 - Sixth Avenue and 23rd Street (2014 AM/Midday, 2015 AM/Midday)
- #39 - Sixth Avenue and 42nd Street (2013 PM, 2014 PM, 2015 PM)
- #41 - Sixth Avenue and Central Park South (2013 PM, 2014 Midday/PM, 2015 AM/Midday/PM)
- #43 - Fifth Avenue and 57th Street (2013 AM, 2014 AM, 2015 AM)
- #44 - Fifth Avenue and Central Park South (2013 AM, 2014 AM/PM, 2015 AM/PM)
- #45 - Madison Avenue and 57th Street (2015 PM)

- #47 - Second Avenue and 36th Street (2015 AM)
- #49 - Queens Plaza S and Northern Boulevard (2014 PM, 2015 PM)
- #50 - Tillary Street and Adams Street (2014 PM, 2015 AM/Midday/PM)
- #52 - Tillary Street and Flatbush Avenue (2013 AM/Midday/PM, 2014 AM/Midday/PM, 2015 AM/Midday/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 (New York State Senate Bill S5825-2011 and New York State Assembly Bill A8496-2011), 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 Environmental Impact Statement (DEIS) considers the environmental impacts of this discretionary action.

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 which is undergoing a separate environmental review in accordance with CEQR.

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 citywide 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 in 2012, and that the remaining 1,600 additional taxicab licenses would be issued by public sale over a two year period with 800 medallions sold each year, 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 addition, at the same time, the TLC will hold a public hearing on rates of fare and whether such rates of fare should be changed as provided in Section 2304 of the New York City Charter. 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 is scheduled to be held on May 31, 2012 for the purpose of allowing the TLC to hear testimony and receive evidence regarding both matters. The impact of the potential change in the taxicab fare structure is not considered as part of this DEIS 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, including the proposed Analysis Years (2013, 2014 and 2015) and describes the future development scenarios (No-Action scenario and With-Action scenarios) assessed in the DEIS. 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 *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 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, the TLC proposes to enter 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 or 2014 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 3,600 of these HAIL licenses can be issued during the first year of the program. The socioeconomic analysis in this DEIS 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 in 2012, and that the remaining 1,600 additional taxicab licenses would be issued by public sale over a two year period with 800 medallions sold each year (2013 and 2014). Therefore, 2013, 2014 and 2015 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.

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. 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 May 23, 2012.

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 May 23, 2012. Comments received prior to June 22, 2012 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, 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 – SOCIOECONOMICS

4.1 Introduction and Study Area Delineation

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. 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 Proposed Action entails the public sale by TLC of up to 2,000 taxicab licenses (medallions) for use with vehicles that are accessible to individuals with disabilities. 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. TLC anticipates that the public sale of the initial 400 taxicab licenses would occur in 2012, and that the remaining 1,600 additional taxicab licenses would be issued by public sale over a two year period with 800 medallions sold each year (2013 and 2014). The sale of the 2,000 new accessible medallions would not entail any construction activities or result in any site-specific development.

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.

4.2 Analysis Methodology

This section presents a summary of the methodology used to evaluate impacts on the value of a taxicab medallion, the income of taxicab drivers, the economic vitality of the livery car industry, and the overall New York City economy.

4.2.1 Analysis Year

The evaluation of the impact of the Proposed Action on socioeconomic conditions is completed for the year 2015, the first full year after the sale of all 2,000 medallions allowed under the Proposed Action.

4.2.2 Impact on the Value of a Yellow Taxicab Medallion

Increasing the number of medallions under the Proposed Action would impact fare revenue due to increased competition for taxi pick-ups, the increased cost of a taxicab to permit use by individuals with wheelchairs and increased taxicab operating costs due, primarily, to lower fuel efficiencies of handicap-accessible vehicles compared to other taxi vehicles. As established by the Haas Act in 1937, there are two types of taxicab medallions: corporate medallions and independent (or individual) medallions. The Haas Act also set a nominal "60/40" ratio of corporate to independent medallions. The impact of the Proposed Action on medallion value would be different for the two types of medallions since they differ in their business and operating arrangements.

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. Taxi medallions currently sell, on average, at over $700,000 for an independent medallion and approximately $1 million for a corporate (or "mini-fleet") medallion. Most recent (April 2012) medallion transfer prices for an independent medallion ($703,000) and a corporate medallion ($1 million) were consistent with these average medallion sale prices.

The value of a medallion is derived from fares and tips received by an owner of an independent medallion or from leasing the right to drive a yellow taxi to others by an owner of an independent or corporate medallion. Currently, medallions operate under one of three ownership structures: (1) owner-drivers who own the medallion and the taxi vehicle many of whom are required to drive a minimum number of annual shifts themselves; (2) driver owned vehicles (DOVs) who lease the medallion only and pay for vehicle costs of ownership themselves; and (3) mini-fleets who own multiple medallions and maintain a fleet of taxi vehicles that are leased to drivers on a per shift basis. Lease rates for the taxi medallion only are currently capped at $800/week by TLC for conventional vehicles and at $842/week for hybrid vehicles. Lease rates for the medallion and vehicles are capped on a per shift basis at $105 for all 12-hour day shifts and vary from $115 to $129 for 12 hour night shifts or $3 is added to the lease cap per shift for any hybrid depending on the day of the week.

Incomes for owner-operators of a medallion are derived from fares and tips received from passengers and leasing to additional drivers less the cost of maintaining and operating the vehicle (including fuel costs). 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 based on lease fees less the cost of maintaining the vehicle, dispatching and operating the garage (however fuel costs are borne by the driver).

For drivers who lease vehicles, income is derived from fares and tips received from passengers less lease costs and vehicle operating expenses (primarily fuel for the vehicle).

In estimating the value of a medallion, it is assumed that the value is a function of the anticipated net stream of revenues that would accrue through ownership of a medallion discounted using a discount rate that reflects the cost of financing the acquisition of a medallion. The change in the value of a medallion can then be estimated through a standard procedure for estimating the effects of change in supply on the value of an asset[1] as follows:

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

The calculation of the impact of the Proposed Action on the values of corporate and independent medallions was completed in two steps:

(1) An assessment of the impact of the Proposed Action on the number of revenue trips (trips with a fare paying passenger), was performed, based on the observed change in the number of revenue trips that occurred as a consequence of the increase in the number of medallions during the 2003-2006 period, while accounting for the effects of changes in taxi fares and overall economic conditions in the City. The analysis was completed for the period June 2004 thru December 2011, and compared the number of revenue trips that occurred before, during and after the period during which the number of medallions increased approximately six percent, from 12,487 medallions to the current level of 13,237 medallions.

[1] *Investment Valuation: Tools and Techniques for the Determining the value of Any Asset* Aswath Domodaran 2012

(2) The results of the first step were input into a financial model to estimate the change in the value of corporate and independent medallions. This assessment included, where applicable, 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 medallion amortization.

The analysis incorporated the effects of:

- Implementation in 2006 of a flat fare of $45 between Manhattan and John F. Kennedy International Airport (JFK);
- Fare increase in November 2006 for time spent in traffic;
- Medallion lease arrangements as permitted by the TLC;
- Vehicle costs, including the costs of taxi maintenance, insurance and fuel; and
- Taxi driver wages.

Since the replacement of the existing taxi fleet by the Taxi of Tomorrow will be underway during the period in which the additional medallions will be sold at auction, the analysis incorporated the effects of this separate initiative by the TLC.

The analysis was based on the following assumptions:

- A discount rate of 3.2% was used for corporate medallions and 7% for independent medallions. On an average basis this calculates to (for corporate medallions and independent medallions) a 4.8% discount rate which is close to a real discount rate of 4.1%, based on the average nominal interest rate of 5.5% on Medallion Financial's portfolio of New York medallion loans (Medallion Financial Report, 2010) and accounting for inflation in 2010[2].

- A tax rate of 40% based on KPMG Corporate and Indirect Tax Survey (2010).

[2] This discount rate is calculated such that the calculated value of the medallion is equal to the observed average 2011 market price of a medallion. The average discount rate is weighted for corporate and independent medallions and is presented for comparison purposes only, the actual analysis considered separate discount rates for Independent Medallions and Corporate Medallions. Inflation was measured based on consumer price index excluding volatile food and energy prices as released by the Bureau of Labor Statistics.

- An average assumed taxi vehicle replacement life of 5 years based on projected TLC hack-up dates for existing vehicles[3].
- An average taxi vehicle salvage value of $3,100 based on information collected by TLC.

The analysis incorporated the anticipated diversion of trips from other modes to taxis that would occur during periods of the day when current and projected demand for taxis are greater than can be accommodated by the existing supply of taxis. It is anticipated that population, employment and visitation to the City will continue to increase as documented in PlaNYC, and projections by the New York City Department of City Planning (NYCDCP), New York City Economic Development Corporation (NYCEDC), and New York & Company. This growth is expected to result in increased demand for taxis.

The results of this analysis are discussed in Section 4.5 of this Chapter. Since the net revenue received by a medallion owner varies between the owner of a corporate and independent medallion, separate estimates are provided of the impact of the increase in medallions on corporate and independent medallion value. A detailed description of the methods and detailed analytical results of this analysis are provided in Appendix B to this DEIS.

4.2.3 Impact on Taxicab Driver Income

Taxi driver income depends on the fares and tips received by a driver during each driver shift. Fares and tips, in turn, depend on the number of fare paying trips ("revenue trips") that can be completed for a given amount of work effort or driving. Consequently, the assessment of the impact of the increase in the number of medallions on taxicab driver income is based on the change in the number of revenue paying trips that would occur during the working shift of an average driver as a result of the additional medallions. This was completed on the basis of the analysis described in Section 4.2.2. Since there is no reason to anticipate that there would be change in the length of a revenue trip with the Proposed Action, it was conservatively assumed that the average length of trip in the future (2015) with the Proposed Action would be substantially the same as the average existing (2011) length of a revenue trip.

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[3] Vehicle replacement assumptions were based on detailed fleet projections based on hack-up dates provided by the TLC and the introduction of the ToT.

4.2.4 Impact on the Livery Industry

The Proposed Action may result in an impact on the livery industry due to increased competition from the additional yellow taxis that would be allowed under the Proposed Action. As a consequence, the socioeconomic analysis includes an estimate of the impact of the increase in the supply of yellow taxi medallions on the livery car industry. The analysis considers the extent to which the markets for the livery and yellow taxicabs currently overlap; provides an estimate of potential impacts on livery businesses serving specific neighborhoods in the City; and identifies differences in patterns of service between yellow taxis and livery cars and other factors that could lessen any adverse effects that the Proposed Action may have on the livery car industry. This analysis was completed using taxi-based geographic information system (GIS) data on taxi trips, data on livery base stations, the number of cars affiliated with each base, and population projections at the neighborhood level.

4.2.5 Impact on the Overall New York City Economy

The taxicab industry provides significant benefits to New York City by providing a needed transportation option for residents and visitors and by providing jobs for drivers and supporting businesses such as the hack-up and motor vehicle repair industry. The assessment of the impacts of the Proposed Action on the overall New York City economy was completed using the Regional Industrial Multiplier System (RIMS) Input-Output Model[4] that accounts for inter-industry relationships within regions, and allows for the estimation of the effect of a change in a specific part of the regional economy on overall regional employment and expenditures.

4.3 Existing Conditions

4.3.1 Overview

The 13,237 yellow taxis with medallions are the only vehicles authorized to pick up passengers by street hail in all the boroughs. Liveries and other for hire vehicles can only pick up passengers by prearrangement. As of June 4, 2012, a new class of vehicles, street hail liveries, will be allowed to accept street hails trips in Manhattan above East 96th Street and West 110th

[4] Bureau of Economic Analysis 2007 RIMS II Multipliers for New York City for the Transit and Ground Passenger Transportation Industry

Street and in Brooklyn, The Bronx, Queens and Staten Island (excluding the airports). These street hail livery vehicles will also be prohibited from accepting prearranged and street hail trips in Manhattan below West 110th Street and East 96th Street. According to recent taxi-based GPS data collected by TLC, 95% of all yellow taxi street hail pickups occurred in the Manhattan Core area or at LaGuardia or JFK airports.

Taxis are a vital part of the New York City economy. In 2011, the 13,237 yellow medallion taxicabs provided nearly 500,000 trips on the average day. An over $2 billion/year industry[5], 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 the critical transportation needs of its residents, businesses and visitors.

Currently, meters installed in taxis determine fares based on an initial charge of $2.50 and a charge for each additional "unit". A unit fare is defined as:

- $.40 per one-fifth of a mile, when the taxicab is traveling at 6 miles an hour or more, or
- $.40 per each 60 seconds when a taxi is not in motion or traveling at less than 6 miles per hour.

In addition riders are charged the following:

- Night surcharge of $.50 between 8:00 PM and 6:00 AM, and
- Peak hour Weekday Surcharge of $1.00 Monday thru Friday between 4:00 PM and 8:00 PM

Tips from passengers average between approximately 10 and 20 percent of the fare. Riders are also charged an MTA tax of $.50 per ride.

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

[5] Estimates assume 178 million annual fleet trips based on TLC data and average revenue per trip of $12.

rate within New York City and at twice the metered rate for the portion of the trip in Westchester or Nassau County). The passenger also must pay all intervening tolls to and from the destination. Fares to Newark Airport are calculated at the time- and distance-based amount shown on the taximeter plus a surcharge of $15.00. The passenger also must pay all intervening tolls to and from the airport.

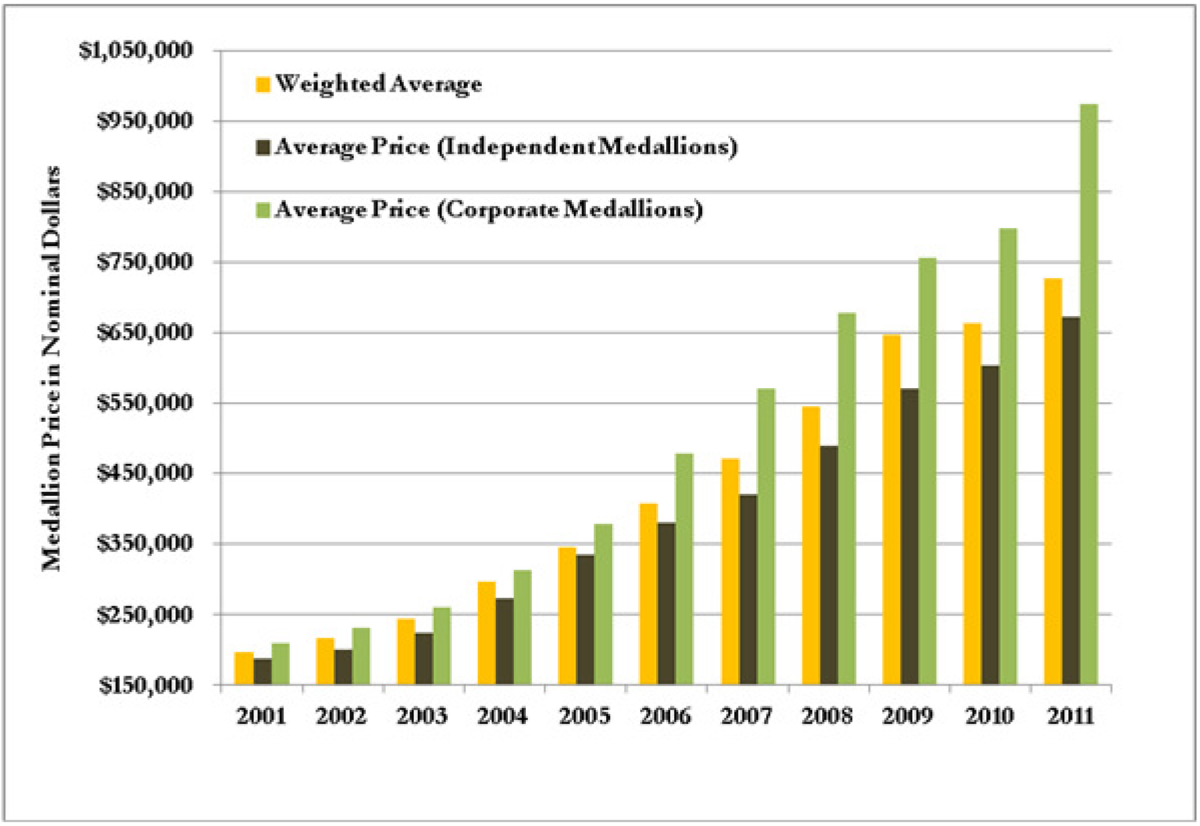
4.3.2 Medallion Value

The sale of new taxicab medallions by TLC is regulated by Subchapter A of Chapter 65 of the TLC Rules, and the sale of reissued medallions that have been revoked where the owners of such revoked medallions did not provide for resale is regulated by Subchapter B of the same Chapter. The sale of such medallions by TLC is completed through auction in which sealed bids are received by interested buyers.

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. Historical nominal prices of Independent and Corporate Medallions are shown in Figure 4-1. Nominal prices of medallions have increased significantly over the past decade with the weighted average price of a medallion increasing from approximately $198,000 dollars at the end of 2001 to $727,000 at the end of 2011, a total increase of 367%, or a 14% per year increase on a compounded annual basis.

The value of a corporate medallion is significantly greater than the value of an independent medallion. As shown in Figure 4-1, the average price over a year of an independent medallion (approximately $660,000) was approximately 68% of the average price of a corporate medallion (approximately $960,000) in 2011. The most recent (April 2012) medallion transfer price for an independent medallion was $703,000 and for a corporate medallion was $1 million. As indicated in Section 4.2.2, the Haas Act established an approximate 60/40 ratio between the number of corporate and independent medallions. Data on actual medallion types (from TLC) indicate that about 58% are corporate medallions while 42% are independent medallions.

Figure 4-1: Average Annual Nominal Medallion Price for the Period 2001-2011[6]



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

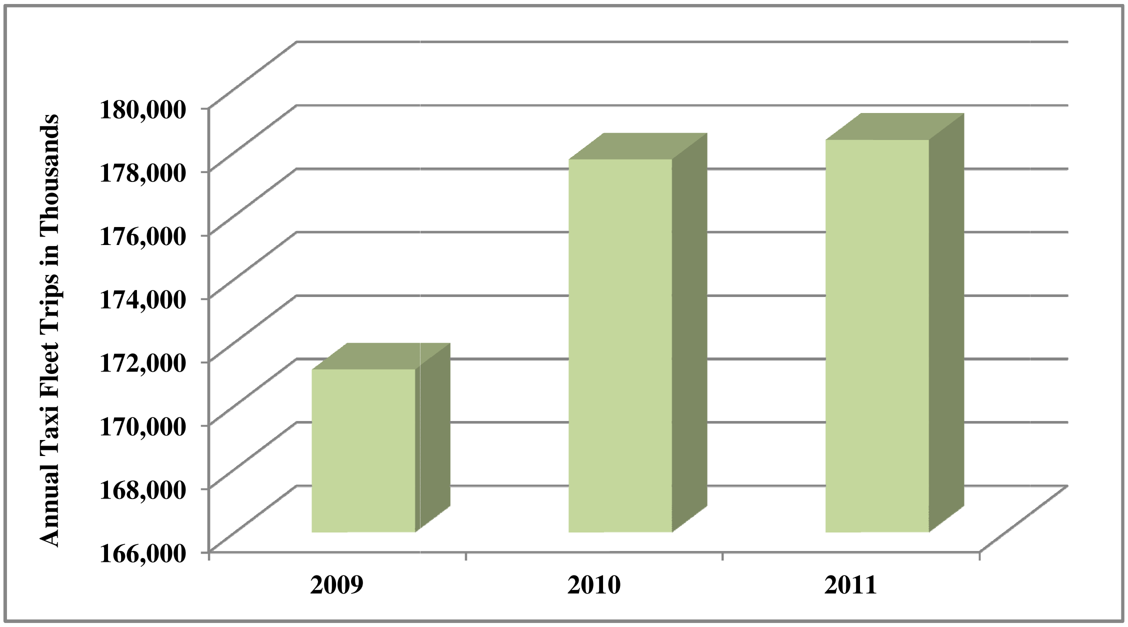
4.3.3 Demand for Taxicabs

4.3.3.1 Existing Observed Level of Demand for Taxis.

Taxicabs currently provide nearly 500,000 trips to fare-paying riders each day. As shown in Figure 4-2, total annual taxi "revenue" trips increased from approximately 171.1 million trips in 2009 to approximately 178.4 million trips in 2011, an increase of 4.2% over the two year period.

[6] For the calculation of the medallion price, transfers that took place below the market price were excluded from the calculation. Stock transfers of medallions have not been included in the analysis.

Figure 4-2: Total Annual Revenue Trips in Thousands

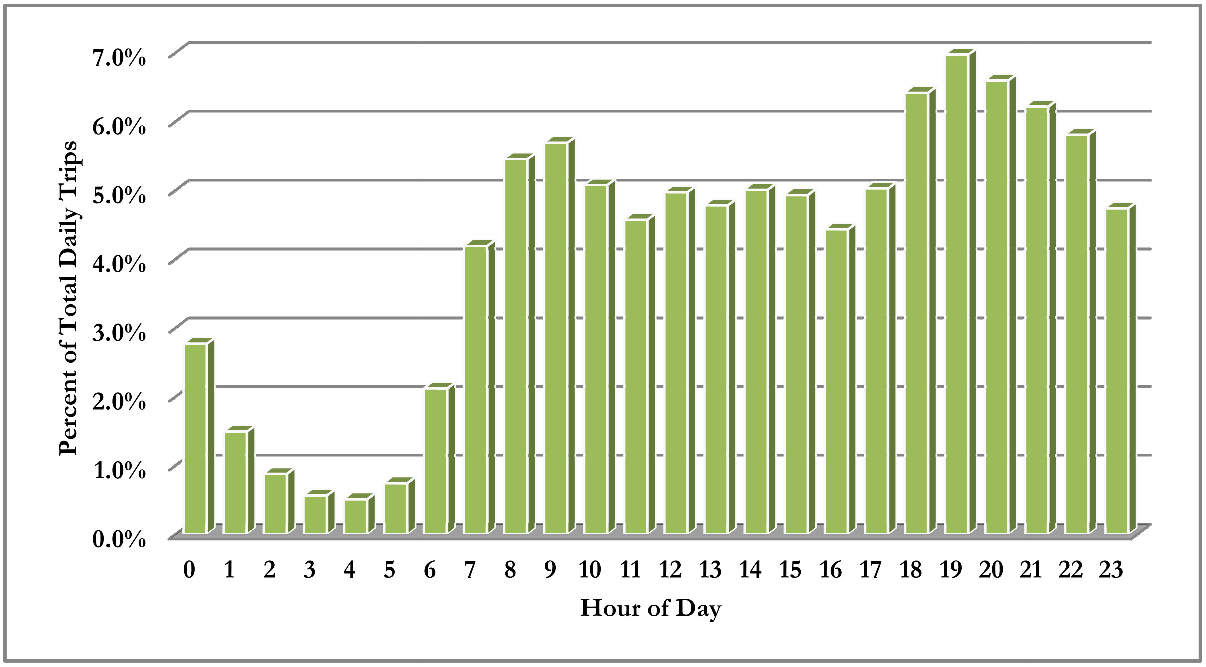


Source: TLC, TPEP Data (2009 – 2011)

Figure 4-3 depicts the hourly distribution of trips that occurred on March 22, 2011, a typical weekday that year, as a percentage of the approximately 484,000 taxi trips that occurred during that day. A review of the number of trips depicted on Figure 4-3 indicates that the highest number of taxi trips (approximately 5.5% to 7.5% of total daily taxi trips each hour) occurred during the 6:00 PM to 9:00 PM evening time period. Except during the early morning hours, the remaining trips were distributed relatively evenly during the remainder of the day. Figures 4-2 and Figures 4-3 suggest the following about existing taxi demand in New York City:

- Recovery in the economy since the recession has had a significant impact on the number of total revenue trips completed by the fleet.
- Taxicab demand in New York City is robust throughout the day (other than 1 AM to 6 AM) and differences in peak and off-peak demand is not pronounced. Thus taxicabs continue to experience strong passenger demand outside of traditional peak hours.

Figure 4-3: Hourly Distribution of Trips for a Typical Day



Source: TLC, TPEP daily trip data (March 22, 2011)

4.3.3.2 Projected Unmet Demand for Taxis

A number of quantitative and qualitative measures of the amount of time required to successfully hail a taxi indicate that there is substantial amount of unmet demand for taxis in the City beyond the ridership levels identified in Figures 4-3 and 4-4. As described in the following discussion, the level of unmet demand for taxicabs is suggested by the results of surveys by both the TLC and the Design Trust for Public Space.

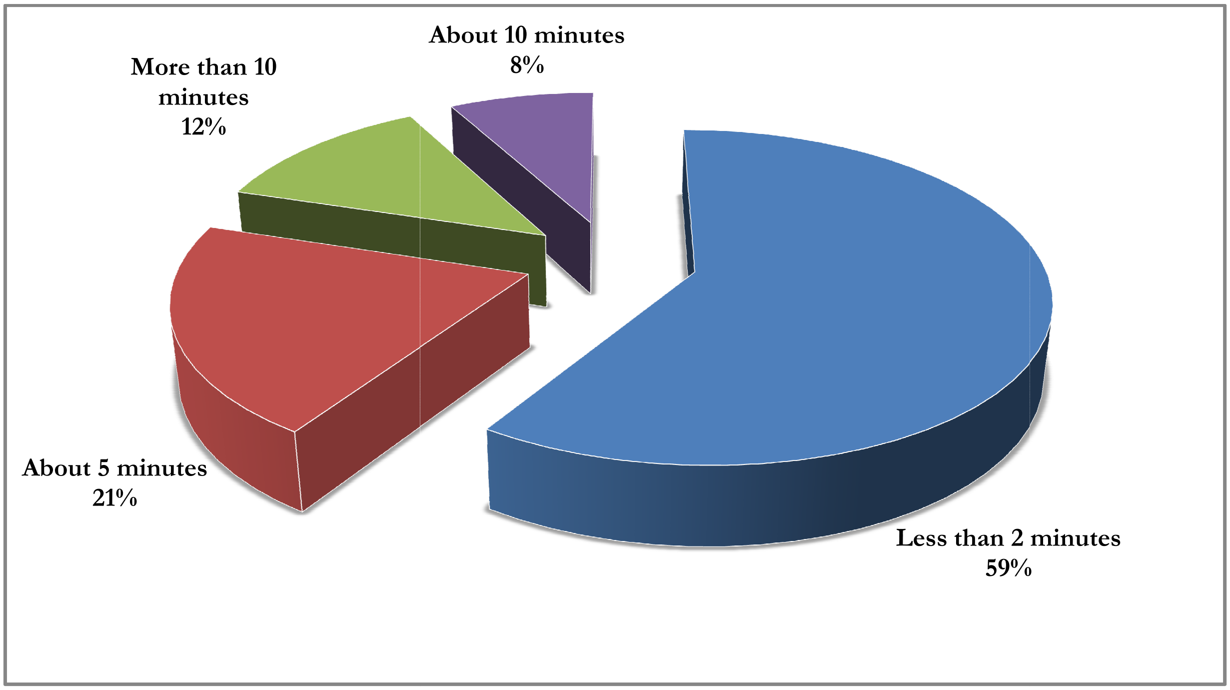
4.3.3.3 In-Cab Taxicab Passenger Enhancements Program Survey Concerning Demand for Taxicabs

TLC undertook an electronic survey of riders in New York City taxis during 2011-2012 using the in-cab Taxicab Passenger Enhancements Program (TPEP). Some of the questions asked included the following items:

- Wait-times experienced by taxi patrons, and
- The purpose of taking a taxi.

As shown in Figure 4-4, the results of the survey indicate that approximately 20% of the 37,000 respondents waited approximately 10 minutes or more for a taxi. Although indicative of the number of taxi riders that waited a significant amount of time to successfully hail a taxi, the survey likely underestimates actual wait-times for taxis since it captured only those riders who successfully hailed a taxicab. Because this survey was limited to individuals who successfully hailed a cab, it could not account for other potential riders who gave up their search for a taxi due to long wait times and used an alternative mode of transportation to make a trip.

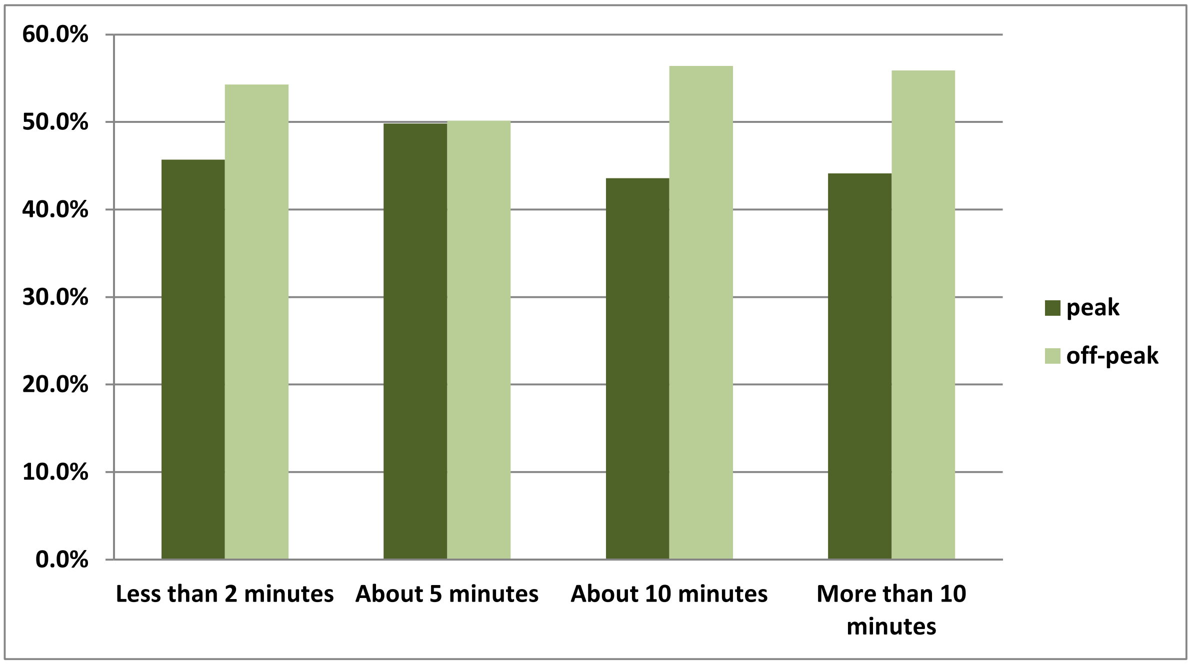
Figure 4-4: Taxi Wait Time



Source: TLC, TPEP Survey (2011-2012)

For about a quarter of the respondents the TPEP system recorded the time of day during which they completed the survey (and, consequently, the time during which they attempted to hail a taxi). As shown in Figure 4-5, ten minute or greater wait times for a taxi occurred during both peak (7:00 AM – 10:00 AM, and 4:00 PM – 7:00 PM) and off-peak periods, suggesting that unmet demand for taxis exists during both peak and off-peak hours of travel during the day.

Figure 4-5: Taxi Wait Time by Time of Day



Source: TLC. TPEP Survey (2011 – 2012), HDR Analysis

Figures 4-4 and Figures 4-5 suggest the following about existing taxi demand in New York City:

- A significant proportion (41%) experienced wait-times in excess of 2 minutes for taxis and improvements in taxi availability would likely reduce wait-times, and
- Wait-times for taxis are similar during the peak and the off-peak, that is wait-times in the off-peak are not significantly less than those in the peaks and thus improvements in taxi availability would likely reduce wait-times in both peak and off-peak periods.

4.3.3.4 Design Trust for Public Space Online Survey of Taxi Riders

The Design Trust for Public Space[7] undertook an on-line survey of over 500 taxi riders in September 2006 concerning the degree of difficulty required to hail a taxi. Respondents to the survey were asked to identify times of the day during which they found it difficult to hail taxicabs. Respondents identified weekday evenings between 4:00 PM and 8:00 PM, weekend nights and weekday mornings between 6:00 AM and 10:00 AM as periods during which it was particularly difficult to hail a taxi. Respondents were also asked to identify locations at which

[7] *Taxi 07: Roads Forward* Design Trust for Public Space

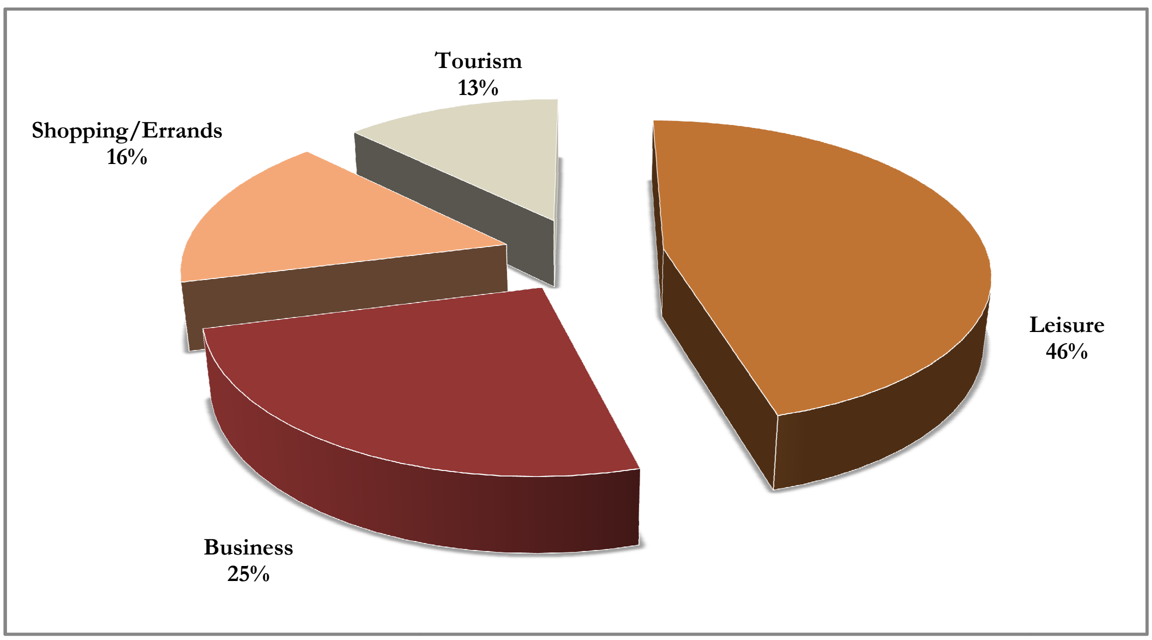
they found it difficult to hail a taxi. In response to this query, respondents identified Midtown Manhattan between 14th and 60th Streets, Brooklyn and Lower Manhattan below 14th Street as the three locations at which it was most difficult to hail a taxi.

The results of this survey suggest that there is a substantial amount of unmet demand for taxis, particularly during the AM and PM peak commuter periods and during weekday evening periods when there is the greatest level of visitation to the City.

4.3.4 Distribution of Taxi Trips by Purpose of Trip

The in-cab TPEP survey of taxi riders described in Section 4.3.3, also asked respondents to identify the purpose of their taxi trip (business, shopping/errands, tourism, and leisure). Approximately 17,400 survey responses were received to this question regarding taxi trip purpose. As shown in Figure 4-6, non-business travel accounted for approximately 75% of all the taxi trips taken by the respondents to the survey.

Figure 4-6: Distribution of Taxi Trips by Trip Purpose[8]

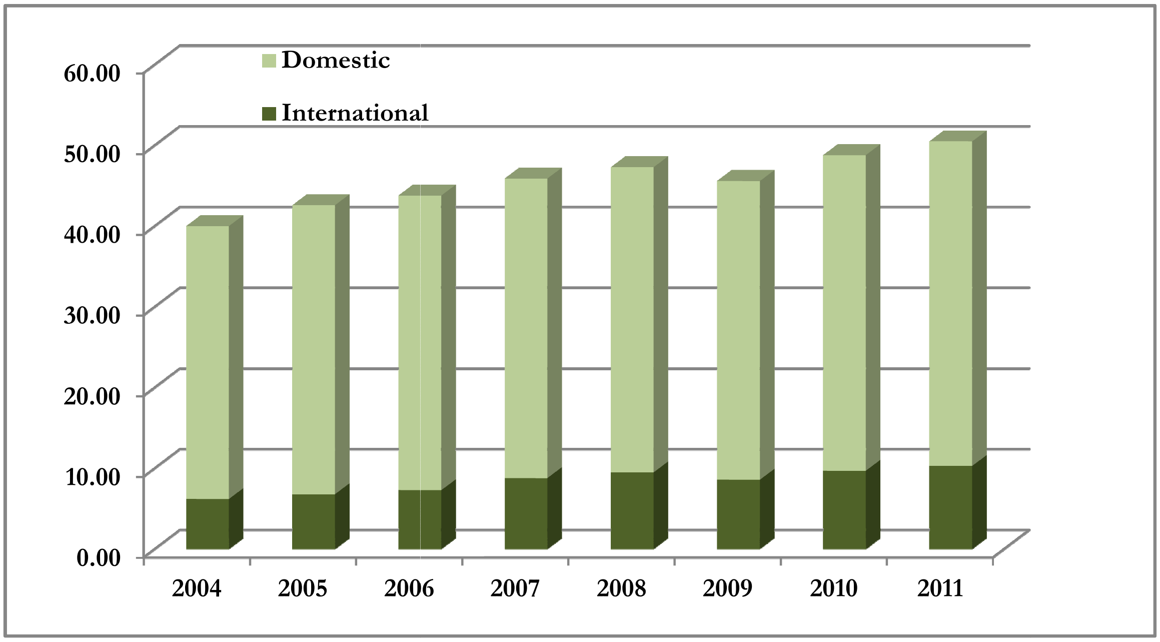


Source: TLC, TPEP Survey (2011-2012)

[8] Specifically the question posed to survey respondents was "What is the purpose of this trip?" with options of choosing leisure, business, shopping / errands and tourism.

This survey data is consistent with the observed increase in the number of visitors to the City. As depicted in Figure 4-7, during the period 2007 – 2011, the number of international visitors to the City increased approximately 4.0% per annum, while the number of domestic visitors to the City increased approximately 2.0 % per annum. This increase has remained robust even during the recent recession and slowdown in global growth. It is anticipated that continued growth in tourism and visitation to the City will contribute to the increase in demand for taxis. Reduction in overall taxi wait time for tourists and other visitors to the City would support the tourism industry, which is also a major industry of importance to New York City.

Figure 4-7: Visitors to New York City (in Millions)



Source: New York & Company (2012)

4.3.5 For-Hire Vehicle Industry

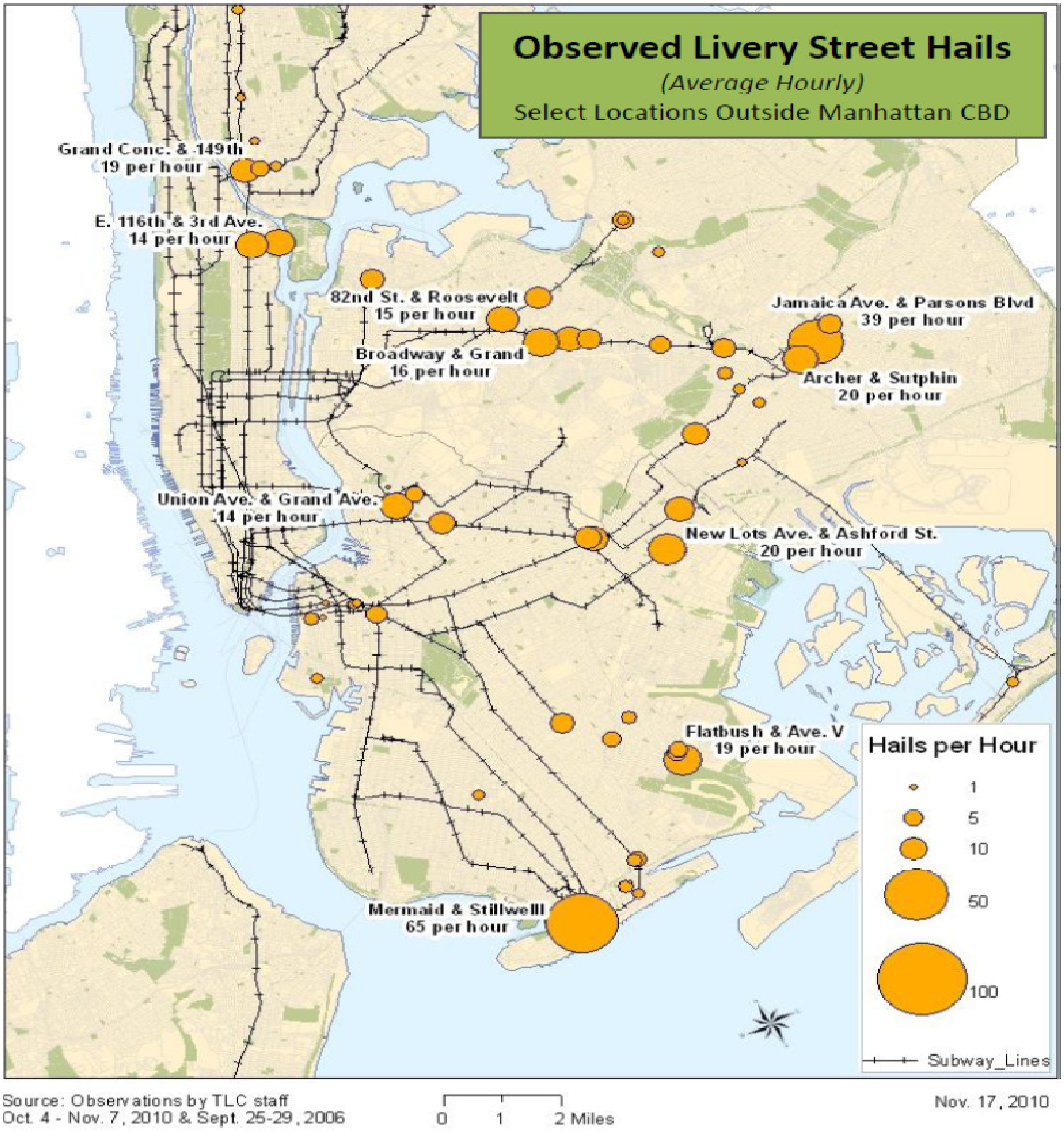
A for-hire vehicle is defined as a vehicle seating fewer than nine passengers (in addition to the driver) that provides service by prearrangement, and cannot accept street hails. All FHVs are affiliated with FHV bases, which set fares, provide off-street parking for at least half of the vehicles that 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 zone systems, by the hour or by the mile. FHVs include car services (“liveries”), black cars and limousines. There are over 21,000 livery vehicles operating out of nearly 500 livery bases in New York City. Livery vehicles provide service citywide and in most neighborhoods outside of the Manhattan Core, they are the primary form of FHV service for most residents. There are nearly 9,000 black cars operating out of 75 black car bases in the City, which primarily serve corporate clients with luxury cars. There are over 5,200 luxury limousines operating out of over 170 luxury bases, which 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 18,000 HAIL licenses to livery car owners and drivers that will allow livery vehicles to accept passengers by street hail in the outer boroughs, except at the airports, and the area of Manhattan north of the Manhattan Core. As described in the following discussion, this action will likely reduce illegal "poaching" of taxi riders in the Manhattan core and at the airports. This is expected to help protect the revenue stream of the yellow medallion industry.

4.3.6 Illegal Street Hails

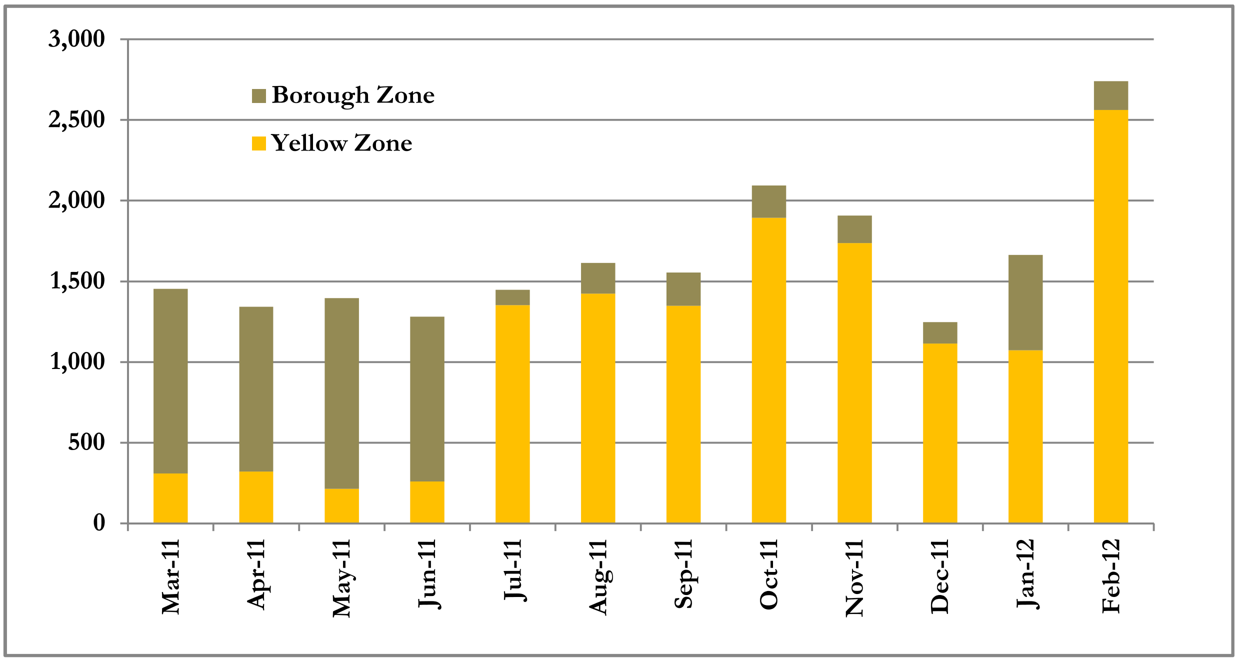
Although not permitted under TLC rules, illegal ride offers do take place in New York City. As part of its research program TLC placed observers in the field to monitor the number of illegal street hails. As shown in Figure 4-8, the results of this research program suggest that there is a high rate of illegal offers from livery vehicles, particularly outside of Manhattan. Many of these illegal hails are concentrated near existing subway lines where passengers illegally hail a livery vehicle for the final leg of their journey. High rates of illegal hails are observed in Brooklyn near Mermaid and Stillwell Avenues (65 hails per hour), and in Queens near Jamaica Avenue and Parsons Blvd (39 per hour), whereas in other areas such as Harlem, the Bronx, other neighborhoods in Queens such as Astoria and Long Island City, and other neighborhoods in Brooklyn, about 15-20 hails per hour were observed.

Figure 4-8: Observed Livery Street Hails



This is also reflected by the number of summonses issued by TLC for illegally providing street hail services (aka "poaching"). Between March 2011 and February 2012, TLC issued an average of 1,645 summonses per month to for-hire vehicle drivers or individuals without a TLC license for illegally providing street hail services. Figure 4-9 shows monthly poaching summonses issued by the TLC to drivers over this time period within the "yellow" and "borough" zones. The "yellow zone" includes those areas where yellow medallion taxis predominantly provide taxi service. This includes Manhattan (south of 110th street on the west and 96th street on the east side) as well as the airports. The borough zone refers to areas of New York City outside of the yellow zone. The poaching summonses include summonses for illegal street hails by (licensed) livery cars as well as (unlicensed) passenger cars. Fines on drivers and owners for illegal poaching are established under TLC Rules and Regulations and vary between $100 - $1,500 and license revocation if there are three penalties within a 36 month period.

Figure 4-9: Monthly Poaching Summonses Issued by TLC



Source: TLC Enforcement data (2012)

The TLC conducted an on-line survey of taxi passengers between November 2010 and February 2012 asking which service they would select if offered a ride simultaneously by a yellow taxi and a car service. 70.6% of those responding to the survey indicated that they would choose the yellow taxi. This composite data indicates that reducing illegal street hails would result in the diversion of riders to yellow taxicabs.

It is anticipated that there will be a decrease in poaching activities with the rollout of the HAIL licenses for livery vehicles described in Section 4.4 for several reasons:

- HAIL liveries will be painted a distinctive shade of green, and have a roof light and distinctive markings, which will facilitate enforcement of street hail regulations, and
- HAIL liveries will not be permitted to make any pickups – street hail or prearranged – in the Manhattan Core. This differs from livery vehicles, which may make prearranged pickups legally anywhere in the City. Any driver who allows a passenger to enter his distinctly colored Borough taxi in the Manhattan Core will have an increased risk of being given a summons for illegal poaching.
- HAIL liveries will have a GPS that will record pickups and drop-offs. This allows for enhanced tracking of vehicles and the identification of illegal poaching activities. Additionally, TLC anticipates the GPS systems will have geofencing capacity which will prevent activation of the meter in the Manhattan Core. This is also anticipated to disengage the credit card reader in the HAIL liveries.
- TLC is planning to increase penalties for illegally poaching (rules published for public hearing on June 21, 2012).

4.4 Future Conditions without the Proposed Action

Provided in this section is a description of future socioeconomic conditions without the Proposed Action that would occur as a consequence of anticipated increases in population, employment and visitation in the City, and implementation of other actions separate from the sale of the 2,000 additional taxi medallions, including sale of HAIL licenses for livery vehicles, replacement of the existing taxi fleet with the Taxi of Tomorrow, and the increased efforts by TLC to enforce rules against illegal poaching.

4.4.1 Projections of Increased Demand for Yellow Taxicabs

Taxicab trip data from TLC documents indicate that there has been increased demand for yellow taxicabs. This is highlighted by data for the period 2009 through 2011 (a period that included one of the worst financial crises in modern history), during which the average number of taxi trips per day increased from approximately 469,000 trips/day to approximately 489,000, an increase of approximately 4.3%. The average distance of a taxi revenue trip also increased during this period, when the average trip length of a taxi revenue trip increased from 2.72 miles per trip to 2.79 miles per trip, an increase of approximately 2.5% for the period. This indicates that taxicabs spent fewer miles cruising without passengers in 2011 than in 2009, resulting in greater fare box revenue per shift in 2011 than in 2009. All other costs being equal, this resulted in higher earnings for drivers. It is anticipated that the demand for taxis will continue to increase due, in part, to projected increases in visits, population and employment in the City.

Increased visitation to New York City. The number of visitors to the City increased from 35.2 million in 2001 to 50.5 million in 2011. The continued increase in the number of visitors to New York City is reflected in the increasing supply of hotel rooms. HVS Global Hospitality Services[9] indicates that a total of 62 new hotels opened in Manhattan between March 2008 and February 2011, adding 11,285 rooms to the market and representing growth of 17.0% over the February 2008 level. The same document projects a further increase in supply of approximately 8% over the 2010 level through 2013. The forecast is based solely on projects that were currently under construction and had secured necessary financing in June 2011. The HVS data further indicate that "as the economic recovery continues, we anticipate that the additional new supply will be absorbed. Consequently, the Manhattan lodging market is expected to remain undersupplied." NYC & Company[10] projects that post-2013 hotel projects such as Four Seasons Downtown with 175 rooms and the Four Points by Sheraton in the Financial District with 264 rooms (and suites) are likely to be developed.

Increased employment. The most recently available Long-Term Occupational Projections for New York City from the New York State Department of Labor indicate that total employment in the City will increase 3.8% between 2008 and 2018, an anticipated increase of more than 150,000 jobs. Based on these New York State Department of Labor (NYSDOL) data, it is projected that employment will increase 0.4% per annum. An analysis of TPEP data on taxi trips per day during 2009 through 2011 indicates that a 10% increase in employment would result in a 7.4% increase in taxi trips per day. Based on this assessment and projections of employment from the NYSDOL, it is estimated that there would be an increase of 0.3% per year in taxi trips per day due to NYSDOL projected increases in employment.

Projected increase in population. As documented in the New York City Population Projects by Age/Sex & Borough 2000-2030 (New York City Department of City Planning, December 2006), and as indicated in PlaNYC, it is anticipated that the population of New York City will increase by 13.9% between the years 2000 and 2030, including a projected increase in the population of Manhattan of 18.8%.

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9 2011 Manhattan Hotel Market Overview, June 2011

10 Hotel Development in NYC. New York City Briefing Sheet – ITB & Q1 2012 Update

Together, these projections of increased visitation, employment and population indicate that there will be an increased demand for taxicabs beyond 2011 levels.

These projected increases in visitation, employment and population will result in increased demand for taxis by the 2015 Analysis Year. Further increases in the demand for taxis are anticipated in the years beyond 2015, particularly as a result of the significant projected increase in population and employment, including in Manhattan as allowed under recent amendments to the New York City Zoning Resolution in the Hudson Yards area, which allows for over 43 million square feet of mixed used development, and elsewhere in Manhattan.

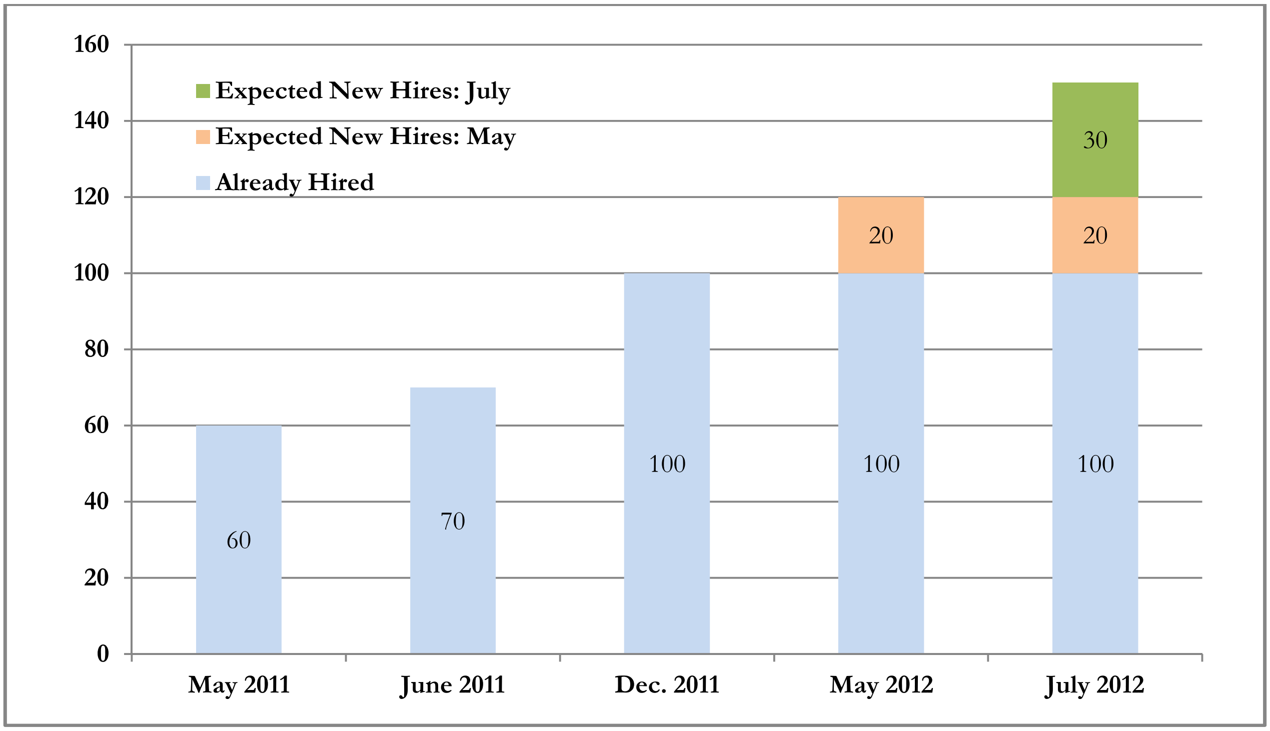
4.4.2 Program of Increased Enforcement of TLC Regulations

TLC has been increasing its enforcement of TLC rules regarding FHVs to crack down on those illegally providing street hail service (aka "poaching"). Between January 2009 and February 2011, TLC issued an average of 404 summonses per month to FHV drivers or individuals without TLC license poaching. Due to an increase in enforcement, the number of summonses increased to an average of 1645 per month during the period March 2011 to February 2012.

TLC's increased enforcement efforts are also reflected in the seizure of vehicles for poaching. In January 2012 TLC seized 276 vehicles, an increase of 167% compared to January 2011, and in February 2012 TLC seized 232 vehicles, an increase of 46% over February 2011. Increased enforcement efforts by the TLC as evidenced by increases in the average number of summonses issued and continued additions to enforcement staffing should further deter poaching.

As depicted in Figure 4-10, as part of its comprehensive strategy to increase enforcement efforts, TLC is also increasing its enforcement staffing. Since May 2011 TLC has doubled its enforcement staff from 60 to 120, and TLC projects that enforcement staff will increase to a total of 150 personnel by the middle of 2012.

Figure 4-10: TLC Enforcement Staffing



Source: TLC 2011

This increased field enforcement along with new handheld technology for the inspectors, significant increase in the number of enforcement vehicles, enhanced training for the inspectors and a future tow-pound contract will allow TLC to significantly reduce poaching activity. As detailed in the following discussion, in addition to field enforcement, the TLC will use sophisticated, technology-based enforcement to prevent the HAIL liveries from poaching in central Manhattan and the airports, and reduce poaching activity. TLC regulations will require each HAIL liverires to be equipped with a GPS locator that tracks the movement of the vehicle and the use of the meter. In addition, the TLC will apply a specialized squad of data miners -- experts in data and analysis -- who will monitor GPS data from the HAIL liveries and develop algorithms to detect violations. TLC anticipates using geofencing technology. However, if geofencing is unsuccessful, and a Borough Taxi driver accepts a passenger in a prohibited area and turns on the meter, the system will detect it and the TLC will issue a summons.

Today, there is no requirement for GPS in livery vehicles, so efforts against poaching are limited to field enforcement. The legislation enables the TLC to mandate GPS in the Borough Taxis, which will provide additional capability to monitor their activity and prevent encroachment into central Manhattan. The TLC has been conducting GPS-based enforcement for more than two years. In 2008, the TLC required yellow taxis to install GPS trackers, enabling the TLC to collect "electronic trip sheet" data, which includes the starting and ending location, fare, time, distance and other information about every trip. The TLC has used this data for a variety of enforcement and customer-service initiatives. For example, in 2011, the TLC used GPS data to investigate a widespread practice of overcharging by taxi drivers. The TLC discovered that a segment of drivers were using a special fare category (an out-of-town rate that is twice the in-City metered fare) for in-City trips. Through data-mining, agency staff were able to identify instances when drivers overcharged passengers and issued them summonses. From an extensive review of the TPEP data, TLC issued 2,629 violations. During the period from approximately 2009 through the present, TLC has used TPEP data to issue 5,189 violations for driving while suspended, 2,247 violations for driving a wheelchair accessible taxi without proper training, 11,813 violations for non-use of EZ-Pass and 2,194 violations of owner must drive requirements[11]. TLC successfully prosecuted numerous offenders based on TPEP data evidence.

TLC also uses about 145 TPEP tripsheets per week in prosecuting consumer complaints. For example, when a passenger claims that a taxi driver refused him service, TLC will check his tripsheet records to see if there is evidence that this taxi was in the proximity of the incident at the time it occurred. TLC audited TPEP tripsheets data to detect drivers who were charging passengers the full price for tolls when taxis are only permitted to charge passengers the discounted EZ-Pass rate. TLC's current conviction rate for consumer complaints is over 80%.

[11] The TLC's existing rules require that owners of independent taxicab medallions who bought their medallions after January 6, 1990 must drive their taxicabs, this is known as the "owner-must -drive" requirement. These owners who are under the age of 62 and/or who have driven for less than 10 years are required to drive 180 nine-hour shifts per year. Those owners who are over the age of 62 and who have driven for at least 10 years are required to drive 150 seven-hour shifts per year. This "owner-must-drive" requirement may be divided by up to four owner-drivers, provided that each owns at least 10 percent of the medallion.

It is anticipated that this enhanced enforcement of TLC regulations will result in a significant decrease in illegal poaching within the Manhattan core, in which only yellow taxis are permitted to accept street hails.

4.4.3 Implementation of HAIL Licenses for Livery Vehicles

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, which will begin June 4, 2012. It is projected that a significant number of livery vehicle owners and operators will take advantage of this street hail program by the 2015 Analysis Year.

4.4.4 Replacement of Existing Fleet of Taxis with the Taxi of Tomorrow

In 2007, City officials convened a group of stakeholders including representatives of taxi drivers, medallion owners and passengers to create a set of goals for the next New York City taxi cab - a project called the Taxi of Tomorrow. Auto manufacturers and designers were asked to submit proposals for a purpose-built vehicle to serve as the New York City taxicab. In May 2011, the Nissan NV200 was selected as the ToT as a result of a competitive process. The replacement of the existing taxi fleet with the ToT beginning in 2013 is currently undergoing independent environmental review under CEQR (CEQR Number 11TLC056Y). The introduction of the Taxi of Tomorrow has been included as part of the "No Action" condition.

Although environmental review of Taxi of Tomorrow has not yet been completed, a conservative initial analysis of the Taxi of Tomorrow--which compares the future fleet with the Taxi of Tomorrow to a projected future fleet without the Taxi of Tomorrow--suggests that the Taxi of Tomorrow could have a small negative impact (which is not significant by CEQR standards) on fleet-wide average expenses. Expenses in the future without the Taxi of Tomorrow as compared to future expenses with the Taxi of Tomorrow would vary depending on what vehicle choices independent medallion owners make in the future without the Taxi of Tomorrow. To model a conservative and reasonable worst-case-scenario of the impact of the Taxi of Tomorrow, the analysis assumes a continued and statistically significant increase in the number of vehicle owners who choose hybrid vehicles in the future as compared to the number who do so today. Because the fuel costs would be lower for hybrid vehicles, there could be a small negative fleet-wide impact due primarily to higher fuel costs for a Taxi of Tomorrow fleet than there would be for a heavily hybrid fleet. Preliminary predictions estimate that this impact would be between -1% and -3%. Even under this reasonable worst-case-scenario situation, the taxi industry, passengers and City as a whole would also likely benefit from other features of the Taxi of Tomorrow that are not quantified in the analysis. These benefits include improved passenger safety, improved safety for cyclists and pedestrians, improved driver and passenger comfort, easier entrance/ exit from the back seat, and passenger convenience features (e.g., outlets for charging personal electronics, floor lights to help locate personal belongings).

4.4.5 Summary of Changes from Existing Conditions in the Future Without the Action

The projected increases in population, visitation and employment, increased enforcement of TLC regulations, replacement of the existing fleet of taxis with the ToT, and implementation of the Borough Taxi plan have, together, the potential to result in a number of changes in the value of a taxi medallion, taxi driver income, the livery industry and the overall New York City economy in 2015 from conditions in 2011. A summary of these changes is provided in the following discussion.

- Value of a yellow taxicab medallion and income of taxi driver: Increased competition for fares outside of the Manhattan Core that would result from the street hail livery program and the possible impact of the ToT are anticipated to have a modest reduction in the value of the medallion and driver income. However, due to the projected increases in population, visitation and employment in the City, and implementation of the TLC increased enforcement program, it would be anticipated that the value of the medallion and driver income would increase compared to Existing Conditions.
- Livery Industry: Projected growth in population, visitation and employment along with the new hail license program would positively affect the economics of the livery industry. For those who decide to opt in to the street hail livery program, they would

incur the cost of hack-up and licensure. Those engaging in illegal poaching activities and do not join the street hail livery program, would suffer increased risk of severe financial penalties as a consequence of TLC enhanced enforcement activities.

- NYC Economy: Growth in population, visitation and employment would positively affect the overall economy of the City. Implementation of the street hail program would create increased business opportunities for the hack-up industry, while replacement of the existing taxi fleet by the ToT would reduce the demand for required hack-up services. Enhanced enforcement activities would have a negligible effect on the City economy. Overall, the combined effect of the street hail program and projected increases in population, visitation and employment would have a positive effect on the New York City economy.

4.5 Future Conditions with the Proposed Action

Provided in this section is a description of conditions in the future (2015) with the Proposed Action. Included are assessments of the impact of the Proposed Action on the:

- Value of a Yellow Taxicab Medallion
- Income of a Taxicab Driver
- Livery Industry
- Overall New York City Economy

4.4.6 Value of a Yellow Taxicab Medallion

As indicated in Section 4.1, a medallion is a license that acts as an asset with an expected stream of net revenues. Major factors that affect net revenues, and, consequently, the value of a medallion, include operating revenues (i.e., fares and tips), revenues received through leasing of a medallion, vehicle operating and maintenance costs (most notably fuel), and the cost of financing the acquisition of a medallion. Changes in overall economic conditions in New York City also affect the value of a medallion, but are independent of the Proposed Action and have been incorporated into the analysis for the assessments of conditions in the future with and without the Proposed Action.

As detailed in Appendix B, the value of a medallion is assumed to be a function of the anticipated net stream of revenues that would accrue through ownership of a medallion, discounted by a rate that reflects the cost of financing the acquisition of a medallion, as follows[12]:

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

In summary, the impact of the Proposed Action on the values of corporate and independent medallions was completed in two distinct steps:

1. An assessment of the impact of the Proposed Action on the number of revenue trips (trips with a fare paying passenger), based on the observed change in the number of revenue trips that occurred as a consequence of the increase in the number of medallions during the 2003-2006 period, accounting for the effects of changes in taxi fares and overall economic conditions in the City. The analysis was completed for the period June 2004 thru December 2011, and compared the number of revenue trips that occurred before, during and after the period during which the number of medallions increased approximately 6.0% from 12,487 medallions to the current level of 13,237 medallions.
2. The results of the first step were input into a financial model to estimate the change in the value of corporate and independent medallions. This assessment included, where applicable, 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 medallion amortization.

The results of this analysis indicate that the value of an independent medallion in the future with the Proposed Action would decrease by approximately 2.0% and the value of a corporate medallion would decrease by approximately 1.5% relative to the value of these medallions in the future without the Proposed Action.

Given the overall uncertainty in projecting future impacts based on past performance, a sensitivity analysis was completed to estimate the impacts on revenue trips per mile that would occur with a 10% increase in the number of medallions. The results of this analysis indicate that a 10% increase in the number of medallions would result in a 0.2% to 1.2% decrease in the

12 A similar analysis is conducted in *Investment Valuation:Tools and Techniques to determine the Value of Any Asset* Aswath Domodaran 2012

number of revenue trips per mile of travel. Our analysis therefore indicates that a 15% increase in medallions would result in a 1% decline in revenue trips per mile with an estimated range of decline in revenue trips from 0.24% to 1.82%[13]. This decrease in the number of revenue trips per mile of travel would result in a 0.5% to 3.6% reduction in the value of an independent medallion and a 0.4% to 2.7% decrease in the value of a corporate medallion.

4.4.6.1 Findings

The results of this assessment are supported by the results of a separate assessment of the projected number of trips that would be diverted from other modes to taxis due to the reduction in wait time based on the application of travel mode choice algorithms included in the most recent version of the New York Metropolitan Transportation Council (NYMTC) Best Practices Model (NYBPM) regional travel demand model.[14]

This assessment indicated that for journey-to-work trips in Manhattan the 0.66 minutes decrease in wait time would result in an increase ranging from 0.9% to 4.2% in taxi use, depending on the income of the worker. The assessment also indicated that the same decrease in wait time would result in a 1.1% increase in discretionary trips (such as entertainment, sports, visiting friends and relatives and eating out) and a 0.3% increase in maintenance trips (such as shopping, visiting doctors and banking).

4.4.7 Impact on Taxicab Driver Income

The results of the analysis described in Section 4.2.3 indicate that the number of revenue trips would decrease approximately 1% from 22.2 revenue trips per shift to 22 revenue trips per shift as a consequence of the increase in the number of medallions included in the Proposed Action. This is primarily because the additional taxis would meet current unmet demand for taxi rides as demonstrated in the analysis of historical data on the impact of past increases in the number of medallions on taxi revenue. This decrease in revenue trips per shift would result in an average decrease in driver revenue per shift from approximately $266 per shift to approximately $264 per

[13] This range is based on the confidence interval around our coefficient estimate, of two standard deviations around our mean estimate

[14] www.nymtc.org/project/bpm/bpmindex.html.

shift, a decline of approximately 1.1% in driver net income assuming some reduction in equilibrium lease rates or a decline of 2% in driver net income assuming lease rates stay at the maximum lease caps set by the TLC. The range of impacts on taxi driver income (assuming lease rates stay at current TLC maximum lease caps) are shown in Table 4-1 below. The estimated impacts on net taxi driver incomes per shift range from -0.5% to -3.5%.

Table 4-1: Range of Impacts on Taxi Driver Income

Estimated Impact Range	Net Income Per Shift, Under Current Conditions	Net Income Per Shift, Under Future Conditions	Impact in %
Low	$ 133.21	$ 132.58	-0.5%
Medium	$ 133.21	$ 130.57	-2.0%
High	$ 133.21	$ 128.57	-3.5%

A detailed description of this assessment can be found in Appendix B of this DEIS.

4.4.8 Impact on the Livery Industry

TLC data indicate that yellow cab pick-ups are largely concentrated in Manhattan below West 110th Street and East 96th Street ("the Manhattan Core") and at the City's airports. Together, these areas account for nearly 95 percent of all yellow taxi pick-ups in the City. It is anticipated that yellow taxicabs and livery vehicles would continue to predominately serve the same respective areas of the City that they currently serve. That is, yellow taxicabs are anticipated to continue to cruise in the area of the City with the greatest potential for ridership due to the high density of residents, employment and visitors in the Manhattan Core, while liveries would continue to respond to prearranged calls citywide, especially in neighborhoods without extensive yellow cab service. There would likely be some increase in yellow cab activity in neighborhoods predominantly served by livery cabs, but this increase in competition would be offset by projected increases in population, tourism and business activity.

Consequently, as detailed in Appendix C of this DEIS, it is anticipated that the overall impact of the issuance of 2,000 new yellow taxi medallions included in the Proposed Action on the existing livery car industry would be minimal.

4.4.9 Overall Impact on the New York City Economy

The introduction of 2,000 additional medallions is anticipated to have a beneficial impact on the overall New York City economy. As described in Section 4.2.5, the assessment of impacts was completed using a regional econometric input/output model that permits the evaluation of impacts on the economy that would result from changes in a particular industry. The results of this analysis are summarized in Table 4-2. As indicated in Table 4-2, the Proposed Action would result in additional City-wide earnings for drivers of approximately $207 million dollars per year. In addition, the Proposed Action is expected to create employment for an additional 4,700 drivers and a City-wide increase in employment of approximately 5,800 additional jobs per year.

Table 4-2: Impact on Employment and Earnings with the Proposed Action

	2012	2013	2014	2015
Additional Medallions	400	1,200	2,000	2,000
Additional Shifts	246,400	739,200	1,232,000	1,232,000
Days / Year or Shifts per year Taxi Driver works	260	260	260	260
Average Earnings / Driver	$28,800	$ 28,800	$28,800	$28,800
Additional Taxi Driver Employment	948	2,843	4,738	4,738
Additional Total Earnings for Taxi Drivers ($M)	$ 27.3	$81.9	$136.5	$136.5
City Wide Impact in Earnings in $ M	**$41.3**	**$124.0**	**$206.7**	**$206.7**
City Wide Impact in Employment in Person Years	**1,165**	**3,496**	**5,827**	**5,827**

Source: HDR Analysis, Bureau of Economic Analysis (RIMS II)

4.5 Identification of Significant Adverse Environmental Impacts

As documented in this Chapter, it is not anticipated that the Proposed Action would result in significant adverse impacts on socioeconomic conditions as defined under CEQR since it would neither directly nor indirectly displace any residence or business, and would not result in a significant adverse impact on the:

- Value of either an independent or corporate medallion,
- Income of taxi drivers,
- Livery industry, or
- Overall New York City economy.

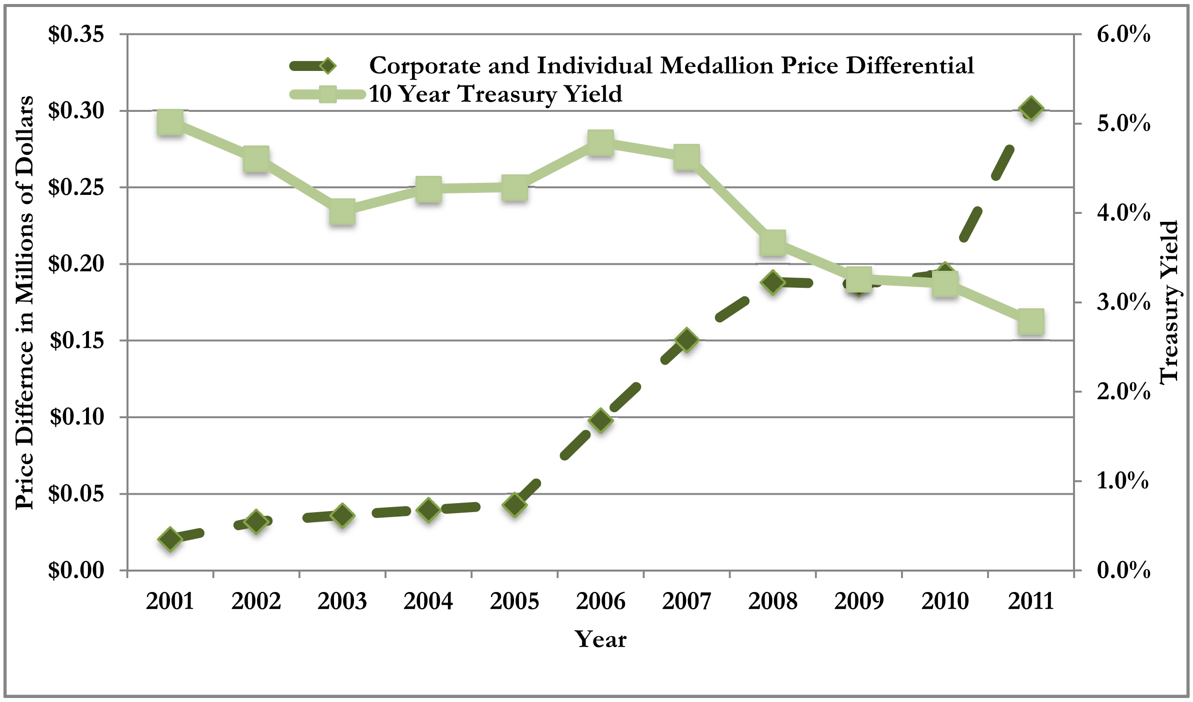
As discussed above, the introduction of additional medallions would have a small, but not negligible, impact on the value of a medallion and driver income, compared to the value of a medallion and driver income without the Proposed Action. These effects may be less than expected due to several factors:

- Medallion values are affected by interest rates for acquiring a medallion. While short-term interest rates have been at near–zero levels for an extended period of time, long term interest rates have continued to decline. These declining interest rates are likely to continue to provide robust market conditions for the acquisition of taxi medallions.

- The increase in the price differential between corporate and independent medallions as depicted in Figure 4-11, increased significantly during 2001 - 11. This differential has closely tracked changes in long-term interest rates in the US economy as measured by the yield on 10 year treasury notes. As shown in Figure 4-11, during the 2001 – 2011 period the yield on 10-year treasury declined from a high of 5% in 2001 to nearly 2.8% at the end of 2011, while the price differential between the cost of a corporate medallion and independent medallion increased from approximately $21,000 to almost $300,000. The increase in the price differential suggests that corporate medallions have increased their attractiveness for an investment purpose.[15] Further, the continuation of a low interest rate environment is likely to keep investor demand relatively robust for cash flow yielding taxi medallions.

[15] Corporate medallions may be a more attractive investment because they do not have an “owner-must-drive” requirement like many Independent medallions.

Figure 4-11:Medallion Price Differential and Interest Rates (in Nominal Dollars)[16]



Source: HDR Analysis of TLC Data and the US Federal Reserve

- Our projections of employment growth in New York City are based on forecasts made by the NYSDOL, which project an annual compounded growth of 0.4% per annum to 2018. Actual employment growth in New York City (as indicated by data from the Bureau of Labor) has been much higher. Employment in New York City increased approximately 1.9% over 2011 over 2010 levels. Continued strong improvement in employment growth could potentially negate any negative impacts on driver incomes due to the Proposed Action.

- Based on the visitation data from New York and Company, growth in international visitors to New York City has been particularly robust. International visitors during the 2004 – 2007 period increased an average of 12.4% per annum compared to 3.1% increase in domestic visitors during the same period. International visitation to New York has continued to be robust even during the recent recession growing at 4% per annum during 2007 – 2011, while increases in domestic visitation have been slower at 2%. The low interest rate environment is likely to keep the US dollar weak and international visitation to an iconic city like New York strong, providing continued demand for the New York City taxicabs.

[16] Based on TLC data (http://www.nyc.gov/html/tlc/html/misc/avg_med_price.shtml), calculated on the weighted average sale price of Independent and Corporate medallions for the year. Average annual 10 year treasury constant maturity yield based on data from the Federal Reserve.

4.6 Identification of Measures to Mitigate Identified Significant Adverse Environmental Impacts[17]

Although no significant adverse impacts have been identified, the effects of the Proposed Action on the value of a medallion and taxi driver income may be ameliorated through an increase in taxi fares. As summarized below, although increased fares would result in a decrease in the number of revenue trips, the increase in revenue per trip with the increased fares would result in a net increase in driver income and value of a medallion. In summary:

- A 1.25% increase in fares would neutralize any adverse impact on the value of an independent medallion assuming our most likely estimate of 1% decline in revenue trips due to a 15% increase in medallions.
- A 1.25% increase in fares would neutralize the impact on the value of a corporate medallion, assuming our most likely estimate of 1% decline in revenue trips due to a 15% increase in medallions.
- Assuming a maximum decrease of 1.8% in revenue trips per mile due to the 15% projected increase in medallions (based on our high estimate from the regression analysis), a 2.2% increase in fares would neutralize any adverse impact on the value of independent medallions and corporate medallions.

The impact of the Proposed Action on taxi driver income could be lessened through the following fare increases:

- Assuming a 1.0% decline in revenue trips per mile with the Proposed Action (our most likely impact), and the resulting 1.1% decrease in driver income (assuming a decline in equilibrium lease rates), could be negated by 1.4% increase in fares. A similar increase would be sufficient to reduce negative impacts on driver income assuming medallion lease costs remain at existing caps.

[17] **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 addition, at the same time, the TLC will hold a public hearing on rates of fare and whether such rates of fare should be changed as provided in Section 2304 of the New York City Charter. 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 is scheduled to be held on May 31, 2012 for the purpose of allowing the TLC to hear testimony and receive evidence regarding both matters. The impact of the potential change in the taxicab fare structure is not considered as part of this DEIS since it is independent of the potential sale of the additional medallions that would be allowed under the Proposed Action.

- A 1.8% decline in revenue trips per mile with the Proposed Action, and the resulting 3.5% decrease in driver income could be negated by a 2.5% increase in fares (assuming a decline in equilibrium lease rates). A similar increase would be sufficient to reduce negative impacts on driver income assuming medallion lease costs will remain at existing caps.

In completing this assessment, it is recognized that past performance is not an absolute predictor of future results, and that there is some implicit uncertainty in the analysis given the multiple assumptions used in completing the analysis, and the significant amount of data that was applied in undertaking the review of the results of the change in revenue trips and medallion value that occurred with the last increase in the number of medallions. Consequently, an assessment was completed of the level of fare increase that would be required to offset the impact on the value of a medallion assuming twice the degree of impact that was predicted in the assessment described above. Even assuming twice the highest estimated impact, i.e. a 4.8% decline in revenue trips due to the additional medallions, the analysis indicates (see Appendix B to this DEIS for details):

- A 6.5% increase in fares would neutralize impacts on the value of the corporate medallion. It would increase the valuation of the independent medallion 0.6% and would neutralize any negative impacts on taxi driver earnings.

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, 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 projects 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 (2015) Conditions without the Proposed Action, and Future (2015) 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 two intermediate analysis years (2013 and 2014).

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. 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

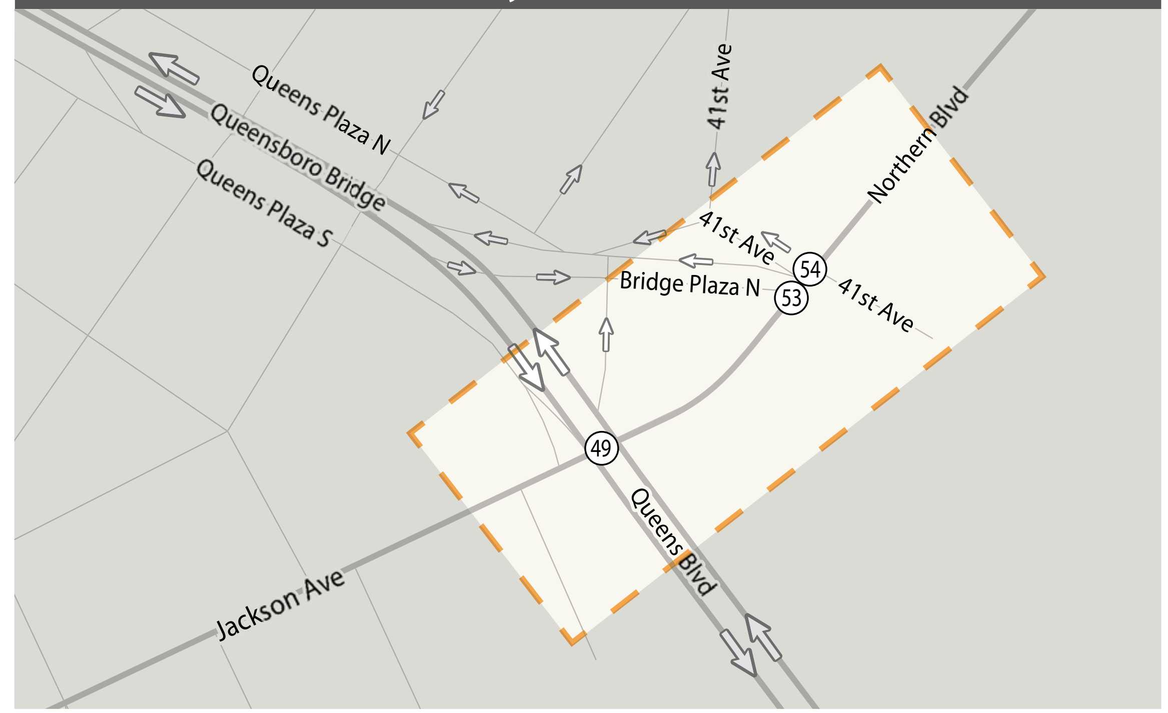
Taxi Medallion Increase - DEIS

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

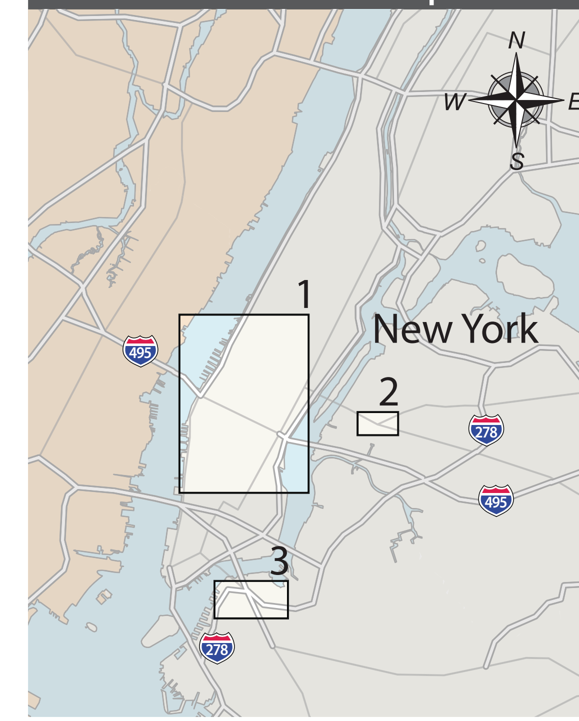
HDR NYC Taxi and Limousine Commission

1 – Manhattan Study Intersection Locations

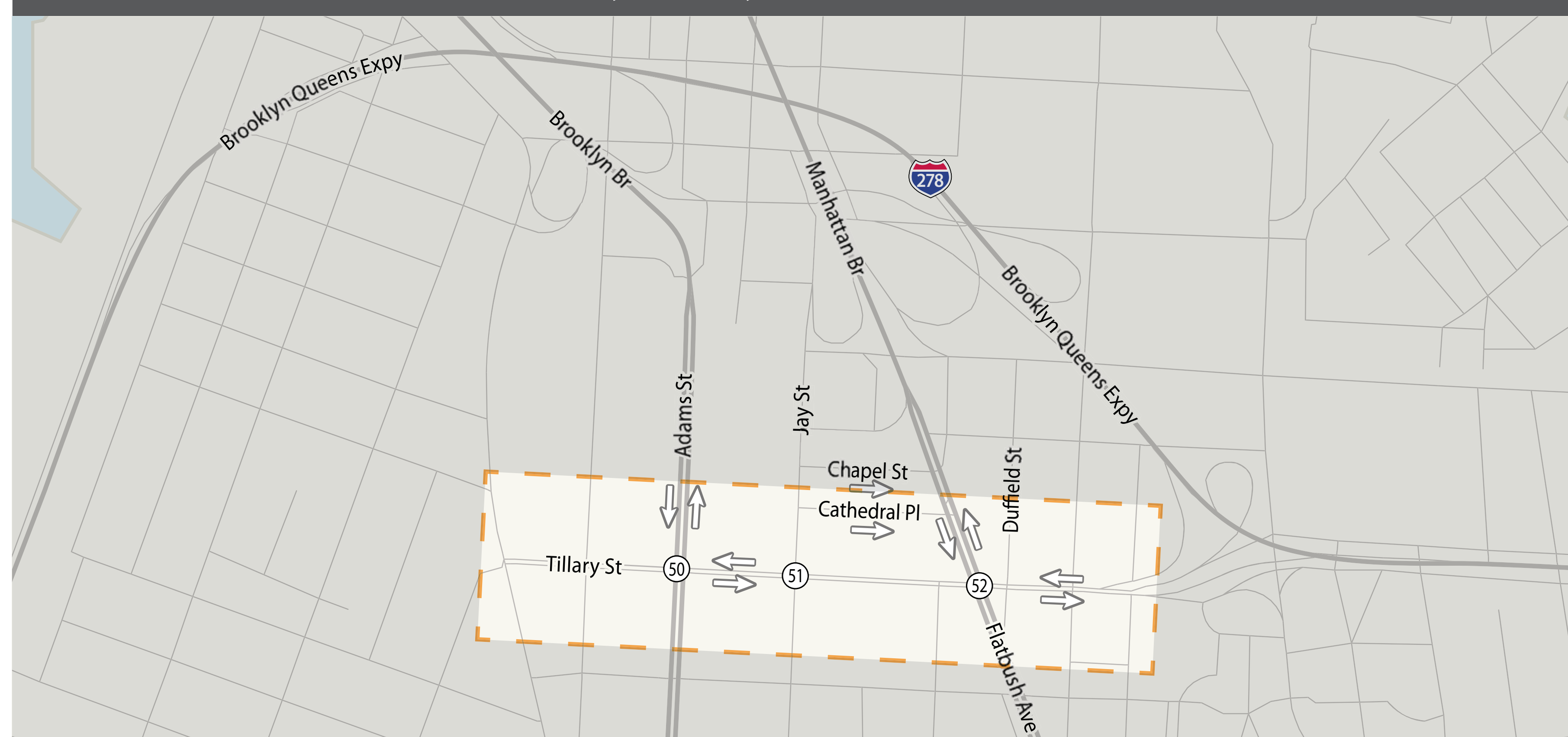
2 – Queens Study Intersection Locations



Location Map



3 – Brooklyn Study Intersection Locations



Medallion EIS [CEQR #03TLC001Y] was reviewed 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 (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 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 - DEIS

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

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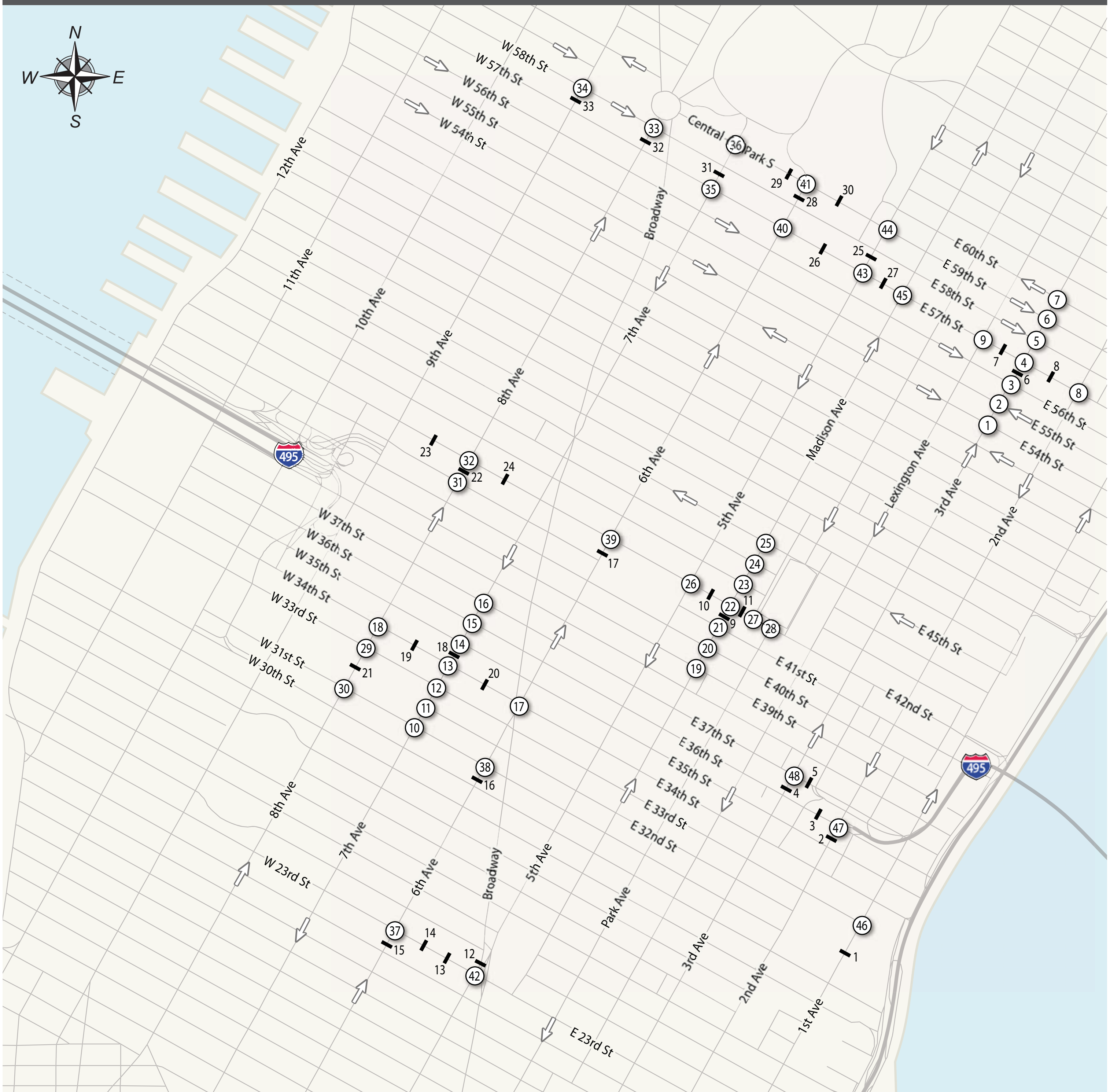
Manhattan Location Map



LEGEND:

- MTMC Locations
- ATR Locations

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

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 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 intersection. 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 No-Action condition and deteriorates "under the With-Action condition to worse than mid-LOS D (greater than 45 seconds/vehicle delay).
- A lane group that operates at LOS D in the No-Action condition and is projected to have a delay increase of 5.0 seconds/vehicle or more if the With-Action delay exceeds 45.0 seconds/vehicle.
- For a lane group that operates at LOS E in the No-Action condition, a delay increase of 4.0 seconds or more.
- For a lane group that operates at LOS F in the No-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" 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 1,700 and 2,200 in the AM peak hour; between 1,500 and 1,900 in the midday peak hour; and between 1,500 and 1,900 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

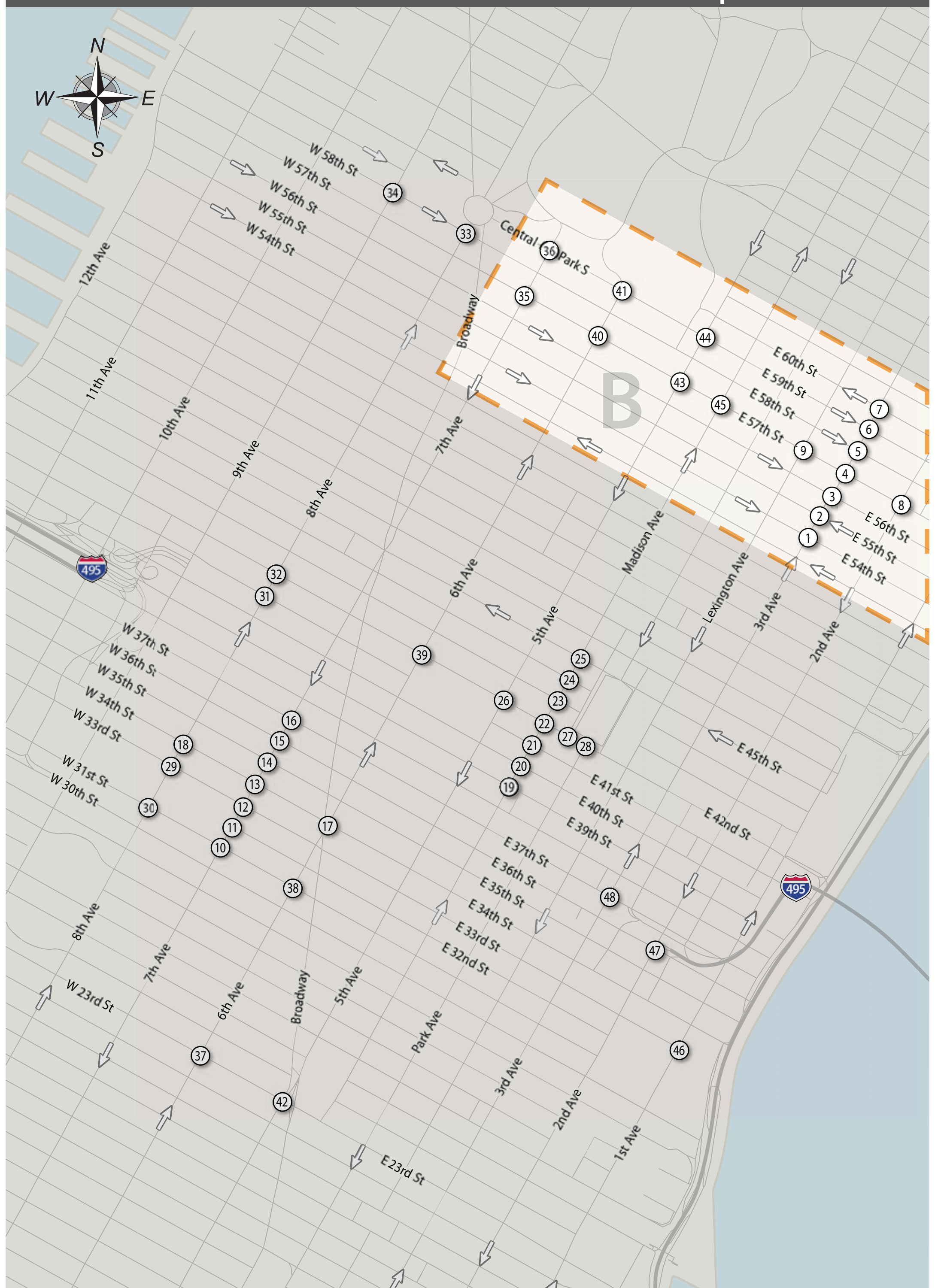
These outside lanes are typically used for parking and loading during the midday. This reduces it to a four-lane roadway with right-turn lanes for non-bus traffic. Traffic volumes on 57th Street are between 1,400 and 1,900 in the AM peak hour; between 1,000 and 1,800 in the midday peak hour; and between 1,100 and 1,700 in the PM peak hour. Traffic drops off west 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 - DEIS

FIGURE 15-3 | Existing 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

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	43%	184	29%	235	29%	175	30%	153	20%	174	31%
5th Avenue	43	282	43%	224	32%	205	28%	219	33%	153	20%	222	33%
6th Avenue	40	421	46%	151	25%	288	36%	157	27%	229	33%	176	31%
7th Avenue	35	339	42%	252	33%	271	35%	229	31%	228	33%	227	31%
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		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 1,600 and 2,000 in the AM peak hour; between 1,400 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.

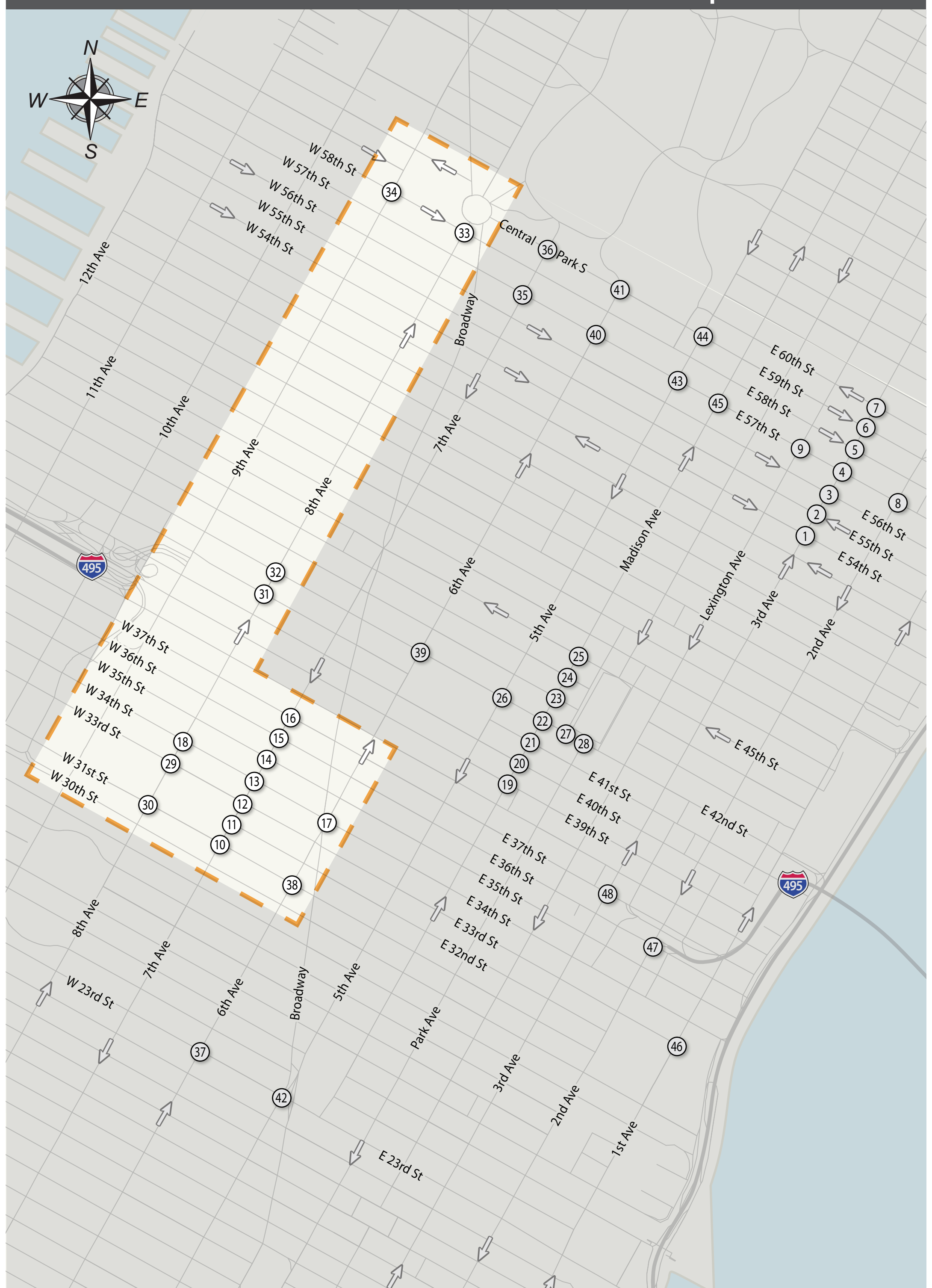
Eighth Avenue – This is a one-way northbound principal arterial connecting the West Village area with Columbus Circle and beyond. In the Study Area it passes through the Garment District and runs west of Penn Station. It has four northbound through lanes in the vicinity of Penn

2011 Taxi Medallion Increase – DEIS

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

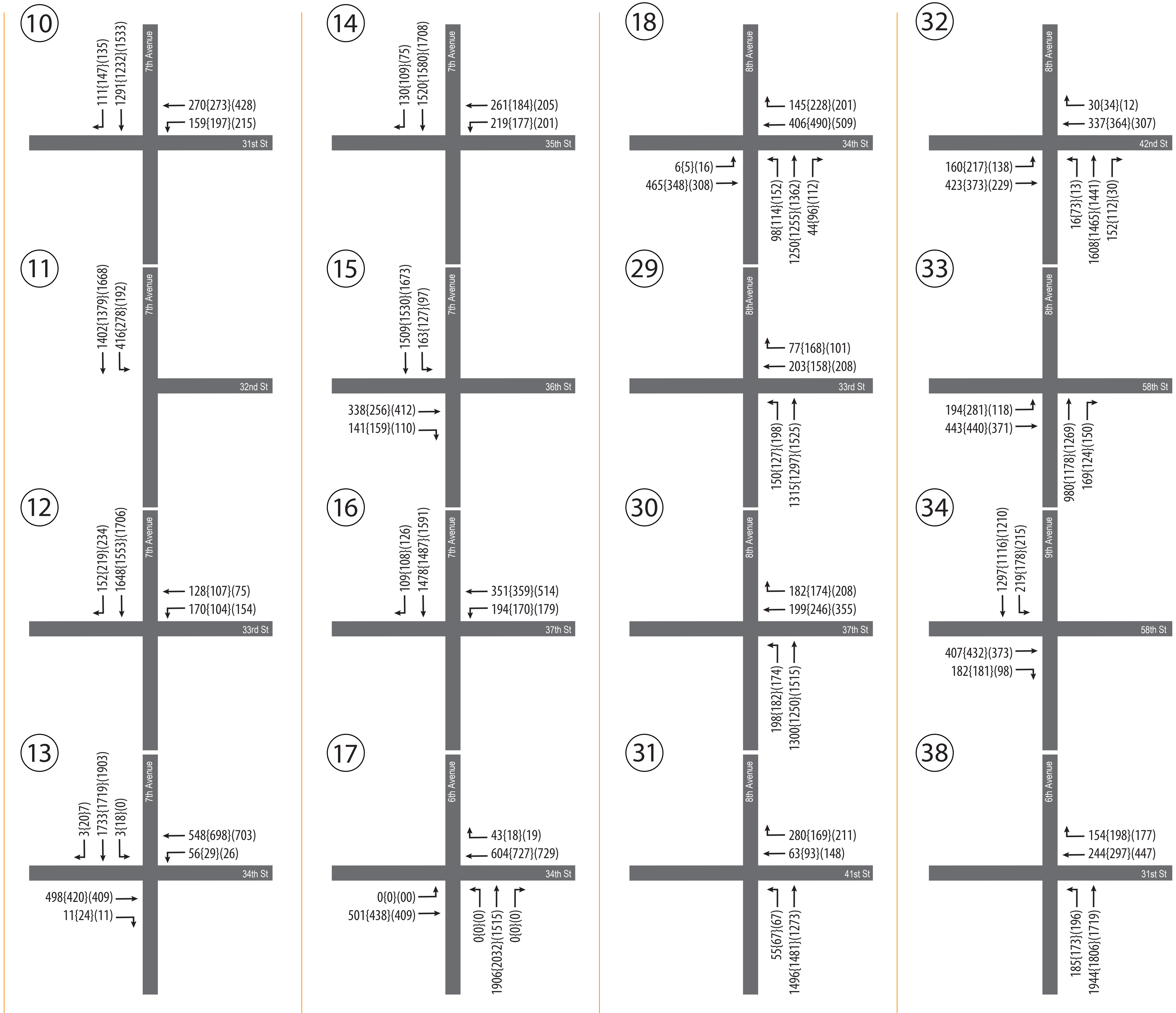
HDR | NYC Taxi and Limousine Commission

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 in the vicinity 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 1,500 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.

<u>Sixth Avenue (Avenue of the Americas)</u> – 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 2,000 in the AM and midday peak hours, though they are lower in the PM peak hour.

<u>Other Locations</u> – 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)

<u>East 42nd Street</u> – 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.

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FIGURE 15-5 | Existing 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

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.

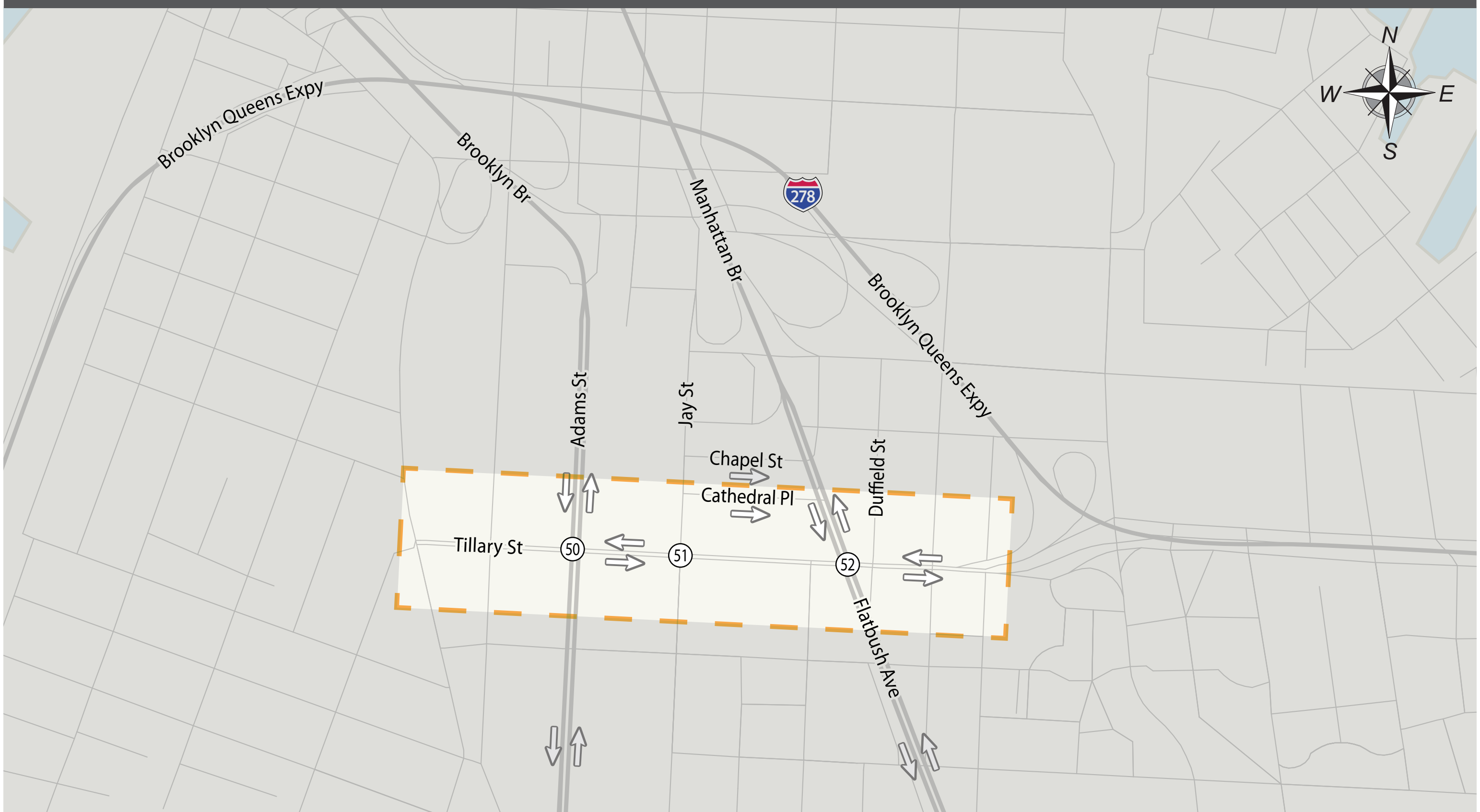
Brooklyn (See Figure 15-6)

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

2011 Taxi Medallion Increase – DEIS

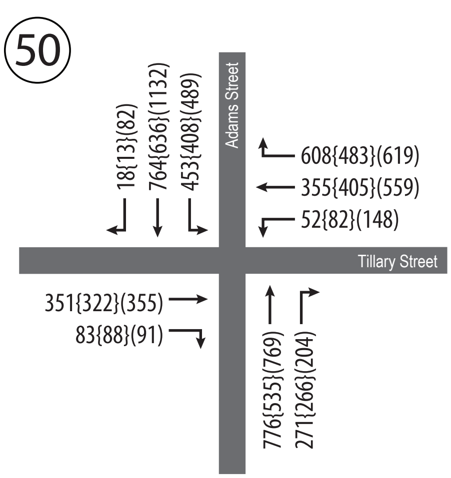
FIGURE 15-6 | Existing AM, Midday, and PM Peak Hour Volumes (Brooklyn)

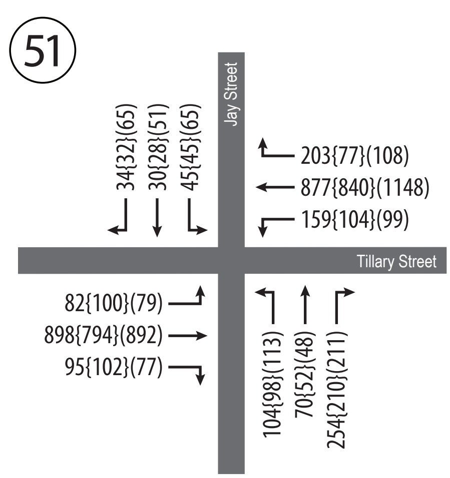
Brooklyn Location Map

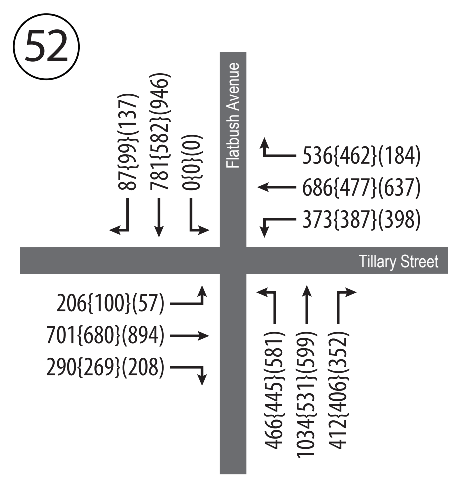


LEGEND:

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







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(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 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 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.

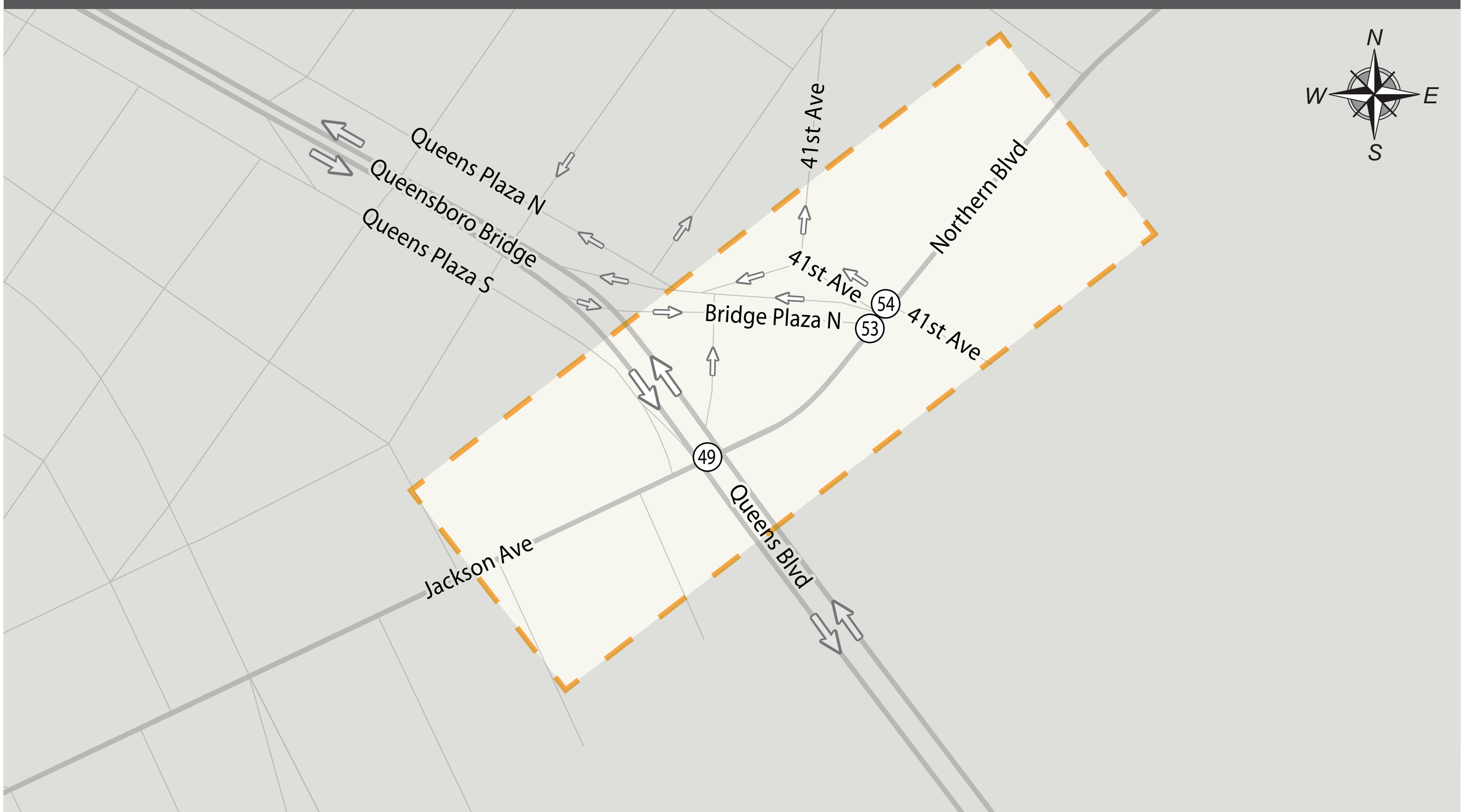
Queens (See Figure 15-7)

<u>Jackson Avenue / Northern Boulevard</u> – 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 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 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.

2011 Taxi Medallion Increase – DEIS

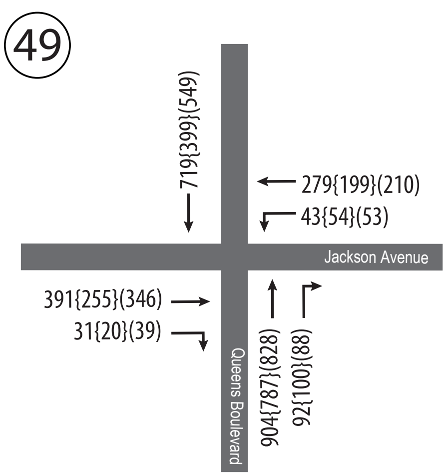
FIGURE 15-7 | Existing AM, Midday, and PM Peak Hour Volumes (Queens)

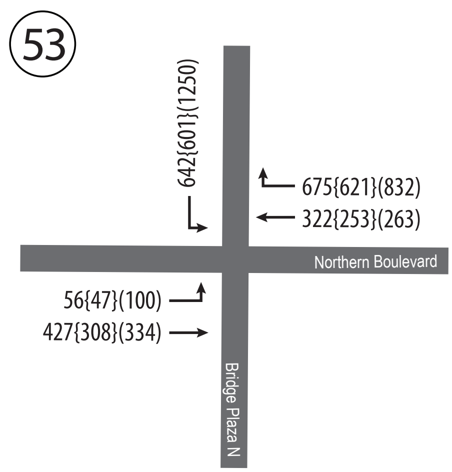
Queens Location Map

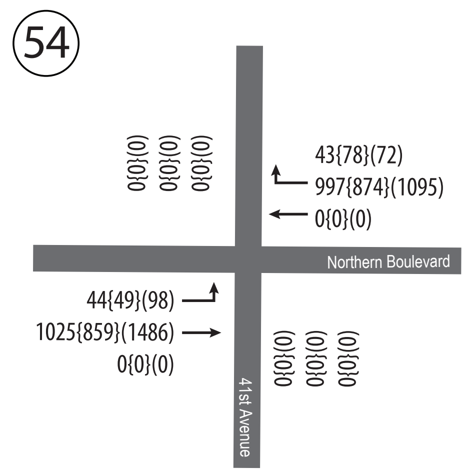


LEGEND:

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







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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, 14 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 23 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 26 intersections have one or more lane groups that exceed the 45.0 seconds per vehicle delay threshold set by CEQR. Thus a total of 32 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 22 intersections have one or more lane groups that exceed the 45.0 seconds per vehicle delay threshold set by CEQR. Thus a total of 35 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				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	1.05	111.4	F	L	0.94	87	F	L	0.62	47	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	0.8	46.5	D	T	0.86	51	D
			R	0.75	43.4	D	R	0.87	73.4	E	R	0.87	63.2	E
		NB 3rd Avenue	LT	0.8	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	0.8	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	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	0.9	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	56.1	E	LTR	1.04	68.7	E
			R	0.2	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	0.4	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	C	LT	0.98	56.7	E	LT	0.69	25.3	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	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	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	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	0.8	47.2	D	R	0.44	42.3	D
		WB 57th Street	LT	1.00dl	29.8	C	LT	0.33	20	B	LT	0.25	19.6	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.2	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	D	T	0.88	36	D
			R	0.57	28.2	C	R	0.46	25.1	C	R	0.41	24	C
		WB 57th Street	LT	0.95	36	D	LT	0.91	39	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	0.6	23.7	C	LT	0.76	27.7	C
		SB 7th Avenue	T	0.6	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
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.89	7.7	A	LT	0.79	4.1	A	LT	0.8	4.2	A
		INTERSECTION			7.7	A			4.1	A			4.2	A
12	7th Avenue and 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	B			12.6	B			17	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	0.2	33.9	C	R	0.1	33.2	C
		WB 34th Street	LT	1.05	57.6	E	LT	0.88	12.1	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			50.9	D			32.3	C

Table 15-3: Existing Delay and Level of Service

			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**
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	0.9	57.8	E	T	0.62	33.6	C	T	0.6	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	D			34	C			9.5	A
15	7th Avenue and 36th Street	EB 36th Street	TR	0.86	43	D	TR	0.75	35	D	TR	0.8	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	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	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	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	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	2.5	A	T	0.47	33.9	C
			R	0.45	11.1	B	R	0.84	19.7	B	R	0.72	44.3	D
		NB 8th Avenue	L	0.52	11.6	B	L	0.56	13.2	B	L	0.73	45.1	D
			T	1.03	38.5	D	T	0.96	21.6	C	T	1.03	59.2	E
			R	0.74	55.5	E	R	0.64	19.8	B	R	0.81	56.2	E
		INTERSECTION			31.1	C			17.8	B			47.9	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.68	28.8	C	T	0.81	36.1	D	T	0.84	38.7	D
			R	1.05	135.5	F	R	1.05	126.5	F	R	1.05	132.3	F
		NB Madison Avenue	LT	0.85	26.2	C	LT	0.72	20.4	C	LT	0.63	18.1	B
		INTERSECTION			34.1	C			32.8	C			30.7	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.69	57	E	L	0.63	51.2	D	L	0.59	50	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	41	D	TR	1.02	42.3	D	TR	0.91	16.5	B
		INTERSECTION			40.9	D			40.2	D			19.5	B
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43	D	L	0.41	42.8	D	L	0.35	41.2	D
			T	0.36	20	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	C
		WB 42nd Street	T	1.05	57.1	E	TR	0.83	24.1	C	T	0.89	26	C
			R	0.1	18	B					R	0.14	15.6	B
		NB Madison Avenue	LT	1.04	44.2	D	LT	1.02	31	C	LT	1	25	C
			R	0.2	7	A	R	0.22	7.1	A	R	0.16	7	A
		INTERSECTION			53.3	D			26.3	C			26.4	C
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.5	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			26.2	C
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.75	34.3	C	LT	0.91	54	D	LT	0.9	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	C	LT	0.91	24.2	C
		INTERSECTION			34	C			36.2	D			24.1	C

Table 15-3: Existing Delay and Level of Service

			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**
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.73	32	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	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	0.8	21	C	T	0.73	8.5	A
		WB 42nd Street	TR	0.88	19.5	B	TR	0.9	20.9	C	TR	0.89	22.6	C
		INTERSECTION			19.2	B			20.9	C			16.6	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.36	14	B	T	0.5	9.5	A	T	0.42	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	C	LR	0.27	24.4	C	LR	0.35	26	C
			R	0.38	28.6	C	R	0.4	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	29.6	C	TR	0.81	136.4	F
		NB 8th Avenue	L	0.95	66.5	E	L	0.94	68.3	E	L	1.01	75.3	E
			T	0.81	14	B	T	0.76	13.8	B	T	0.85	16.8	B
		INTERSECTION			19.3	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	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	C
		INTERSECTION			29	C			26.6	C			34.2	C
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	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	0.5	14.8	B
		WB 42nd Street	TR	0.61	10	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	0.68	19.9	B	LT	0.99	48.5	D	LT	0.62	25.8	C
		NB 8th Avenue	TR	0.55	16.7	B	TR	0.6	17.4	B	TR	0.65	18.3	B
		INTERSECTION			17.8	B			29.5	C			20.3	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	D	R	0.74	47.3	D	R	0.55	39	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	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.81	31.4	C	T	0.77	30	C	T	0.74	28.9	C
			R	0.81	45.2	D	R	0.77	43.5	D	R	0.74	41.4	D
		WB 57th Street	LT	1	56.7	E	LT	0.82	32.4	C	LT	0.81	32.4	C
		SB 7th Avenue	LTR	0.76	21.8	C	LTR	0.34	14.1	B	LTR	0.38	14.6	B
		INTERSECTION			34.6	C			27.6	C			26.5	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.87	48	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	C	L	0.01	30	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	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	C			24.5	C			25.1	C

Table 15-3: Existing Delay and Level of Service

			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**
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
40	6th Avenue and 57th Street	EB 57th Street	LT	0.96	50.7	D	LT	1.02	49	D	LT	1.04	58	E
		WB 57th Street	T	0.93	56.1	E	T	0.96	61.8	E	T	0.91	52.6	D
			R	0.77	51.6	D	R	0.7	49.9	D	R	0.9	64.1	E
		NB 6th Avenue	LT	0.71	20.7	C	LT	0.6	18.7	B	LT	0.6	18.3	B
			R	0.47	21.6	C	R	0.48	21	C	R	0.63	29.4	C
		INTERSECTION			37.7	D			38.1	D			37.3	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	28.6	C	L	0.6	27.7	C	L	0.85	50.8	D
			T	0.71	22.1	C	T	0.55	12.9	B	T	0.5	10.5	B
		WB Central Park South	TR	0.8	33	C	TR	0.75	30.8	C	TR	0.78	31.5	C
		NB 6th Avenue	L	1.05	91.1	F	L	1	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	0.7	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	B
		SB 5th Avenue	TR	0.69	22.8	C	TR	0.7	23	C	TR	0.78	25.5	C
		INTERSECTION			26.5	C			21.7	C			27	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.04	53.5	D	T	1.04	55.7	E	T	0.89	22.4	C
			R	0.96	46.4	D	R	0.84	33.6	C	R	0.64	19	B
		WB 57th Street	LT	1.04	70.1	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	0.7	20.1	C
			R	0.36	17.4	B	R	0.37	17	B	R	0.51	21.2	C
		INTERSECTION			56.9	E			36.1	D			28.1	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	A
			R	1.05	82.4	F	R	0.95	69	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	B
		INTERSECTION			50.1	D			29.1	C			46.8	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.05	35.9	D	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			29.5	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	0.97	59.5	E	TR	0.78	30.6	C	T	0.61	25.6	C
											R	0.21	22.5	C
		WB 36th Street	L	1.05	80.1	F								
		SB 2nd Avenue	L	0.87	46.4	D	L	0.02	10.4	B	L	0.02	10.5	B
			T	1.02	59.9	E	T	0.66	17.2	B	T	0.79	20.1	C
		INTERSECTION			62.4	E			21.9	C			21.6	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.45	16.8	B	TR	0.71	22	C	TR	0.7	21.7	C
			R	1.05	114.4	F	R	1.05	106	F	R	1.05	105	F
		NB 3rd Avenue	LT	0.6	20.2	C	LT	0.57	19.8	B	LT	0.57	19.7	B
		INTERSECTION			27.7	C			30	C			29.5	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.36	0.9	A	T	0.34	30	C	T	0.52	46.3	D
		WB Jackson Avenue	T	0.85	35.8	D	T	0.19	1.2	A	T	0.27	0.2	A
		SB West Service Road	T	1.02	66.2	E	T	0.75	30.6	C	T	0.8	31.2	C
			R	1.02	96.8	F	R	1.05	82.9	F	R	0.99	64.6	E
		INTERSECTION			45.5	D			43.9	D			39.8	D

Table 15-3: Existing Delay and Level of Service

			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**
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.91	28	C	T	0.45	4.3	A	T	1.05	68	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	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	F	L	1.05	97	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	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	0.4	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	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	0.4	39.9	D
			T	0.1	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	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	0.5	46.2	D	L	0.26	49.7	D
			TR	1.05	62.6	E	TR	0.97	72.9	E	TR	1.04	90.9	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	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	0.9	54.5	D	R	0.87	49.8	D	R	0.77	39.4	D
		SB Flatbush Avenue	T	0.99	68.2	E	T	0.5	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			68.6	E			58.1	E			69.4	E
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.39	33	C	LT	0.23	14.6	B	LT	0.51	27.1	C
		WB Northern Boulevard	T	0.5	24.5	C	T	0.23	14.6	B	T	0.44	23.4	C
			R	1.05	75.6	E	R	0.4	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	E			59.1	E			97.8	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.41	0.4	A	LTR	0.6	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

- 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

- 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

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

Third Avenue and 57th Street - 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 - The intersection operates at high LOS D overall in the AM peak hour.

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

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

Third Avenue and 60th Street

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

Second Avenue and 57th Street – 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

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

Seventh Avenue and 57th Street

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

Seventh Avenue and Central Park South – 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

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

- 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 – 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

- 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

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

Sixth Avenue and 34th Street

- The eastbound through lane group operates at LOS E during the AM and midday peak hours and at high LOS D in the PM peak hour.
- The westbound through lane group operates at high LOS D in the PM peak hour.

Eighth Avenue and 34th Street – 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 LOS E in the AM and PM peak hours.

Eighth Avenue and 33rd Street

- 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

- 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 – 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

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

Eighth Avenue and 58th Street

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

Ninth Avenue and 58th Street

- 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

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

Madison Avenue and 40th Street

- 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 – 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

- 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

- 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

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

Fifth Avenue and 42nd Street – 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

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

Sixth Avenue and 23rd Street – 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

- 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

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

Second Avenue and 36th Street – 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 peak hour.
- The westbound left-turn operates at LOS F in the AM peak hour.
- The southbound left-turn operates at high LOS D in the AM peak hour.
- The southbound through lane group operates at LOS E in the AM peak hour.

Third Avenue and 37th Street

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

Brooklyn

Tillary Street and Adams Street – 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 – 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 – 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 (see also #491 below) – 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 (see also #49 above) – The intersection operates at high LOS D in the AM peak hour.

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

Queens Plaza North and Northern Boulevard – 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 and at LOS F during the midday peak hour.
- 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 2015 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 2015 Analysis Year and the two interim years (2013 and 2014). The following annual compounding growth rates were used for Manhattan - 0.25% per year, Brooklyn - 0.50% per year, and Queens - 0.50% per year. 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 2015 Analysis Year and would contribute traffic to the study areas in the three 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 10 development projects in the first set that are likely to be constructed and occupied by 2015. 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 15 projects in the second set that would potentially be constructed by 2015. The location of these projects are illustrated in Figure 15-8a and Figure 15-8b and listed in Table 15-4 and Table 15-5.

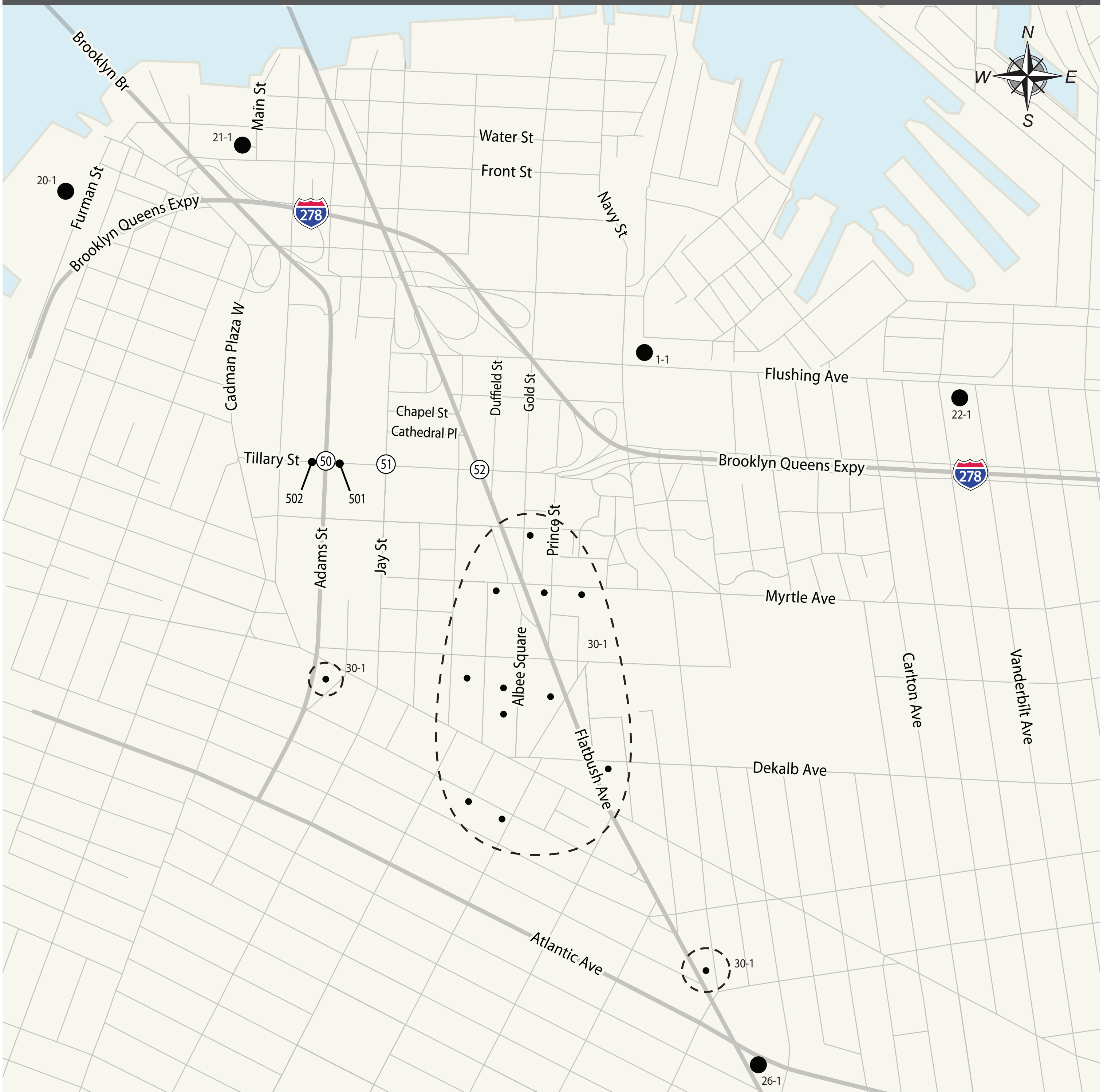
Taxi Medallion Increase – DEIS

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 – DEIS

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
	4-1	Fordham University Lincoln Center Master Plan	1
	5-1	770 11th Ave Mixed-Use Development Rezoning	1
	6-1	1st Ave Properties	1
1	1-2	Eastern Rail Yard: Between W. 30th and W. 33rd Streets and Tenth and Eleventh Avenues	2
2	2-2	Hudson Yards Site 2, Extell Development: east side Eleventh Avenue between W. 33rd and W. 34th Streets	2
4	4-2	Hudson Yards Site 4, Moinian Group: east side Eleventh Avenue between W. 34th and W. 35th Streets	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
83	12-2	Expanded Moynihan Project - Farley Building: block between Eighth and Ninth Avenues and W. 31st and W. 33rd Streets	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
32	32A-2	Hudson Yards Site 32, W 31 St at Ninth Ave Brookfield	2
33	32B-2	Hudson Yards Site 33, W 31 St at Ninth Ave Brookfield	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
95	67-2	Time Warner Garage site: W. 21st Street/W. 22nd Street (Block 693, Lot 23)	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 second set of projects, NYCDOT provided HDR with the Western Rail Yard Study no-action incremental volumes (all projects combined). Then NYCDCP provided information regarding the timing of each project (e.g. would it be complete in 2015) 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 2015. The trip generation numbers were then assigned to the roadway network based on the NYCDOT provided no-action Western Rail Yard Study incremental volumes and existing traffic patterns.

15.2.7.1.3 Traffic Volumes in the Future (2013, 2014, and 2015) Without the Proposed Action

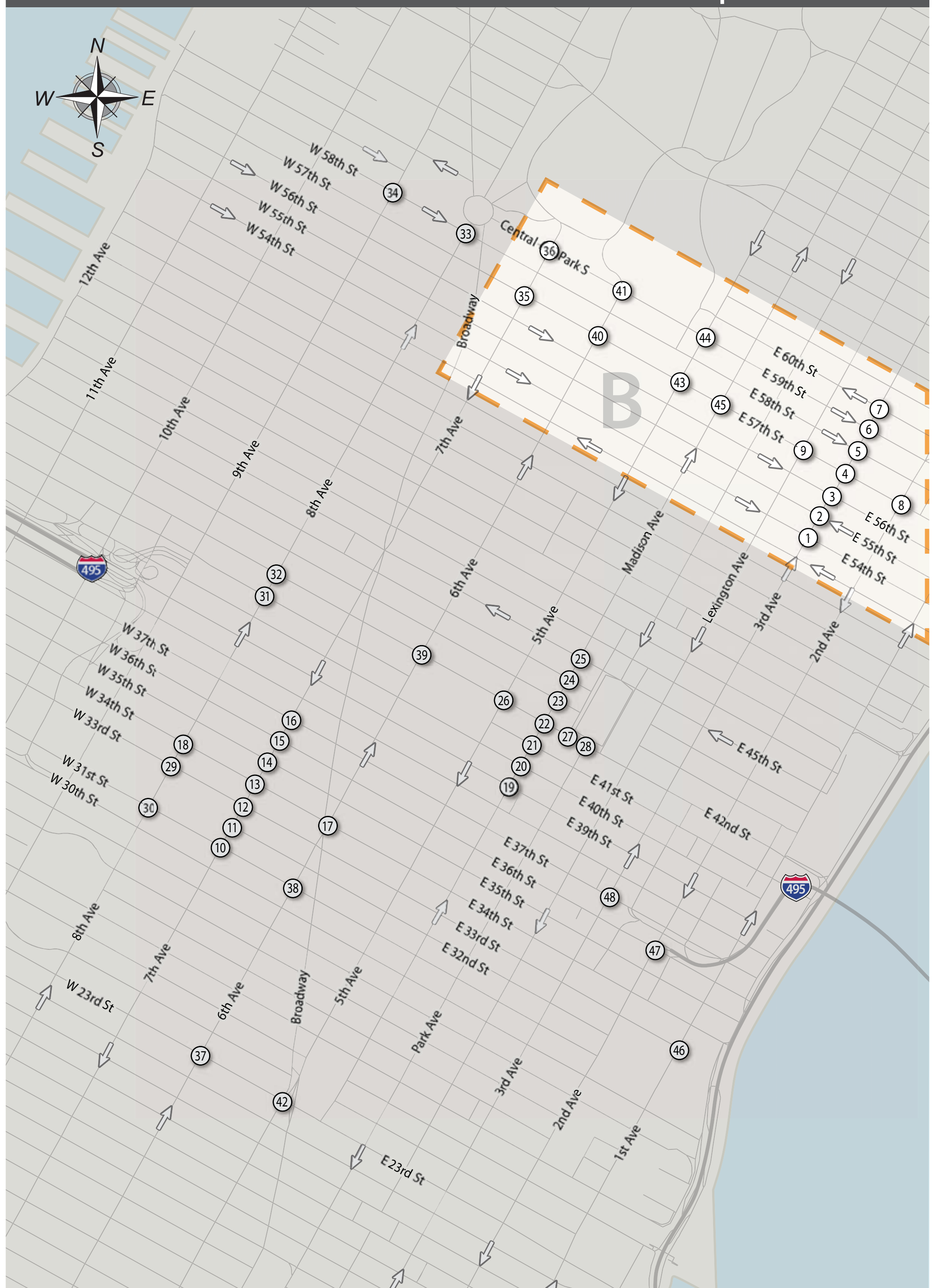
As indicated above, traffic volumes in the future without the Proposed Action for the years 2013, 2014, and 2015 for each peak hour were estimated by adding to existing traffic volumes, the background traffic growth and traffic that would be generated in the future by projects independent of the Proposed Action. The resulting 2013, 2014, and 2015 peak hour without Proposed Action volumes are presented in Figures 15-9a through 15-9c (Manhattan-North), Figures 15-10a through 15-10c (Manhattan-West), Figures 15-11a through 15-11c (Manhattan-East), Figures 15-12a through 15-12c (Brooklyn), and Figures 15-13a through 15-13c (Queens).

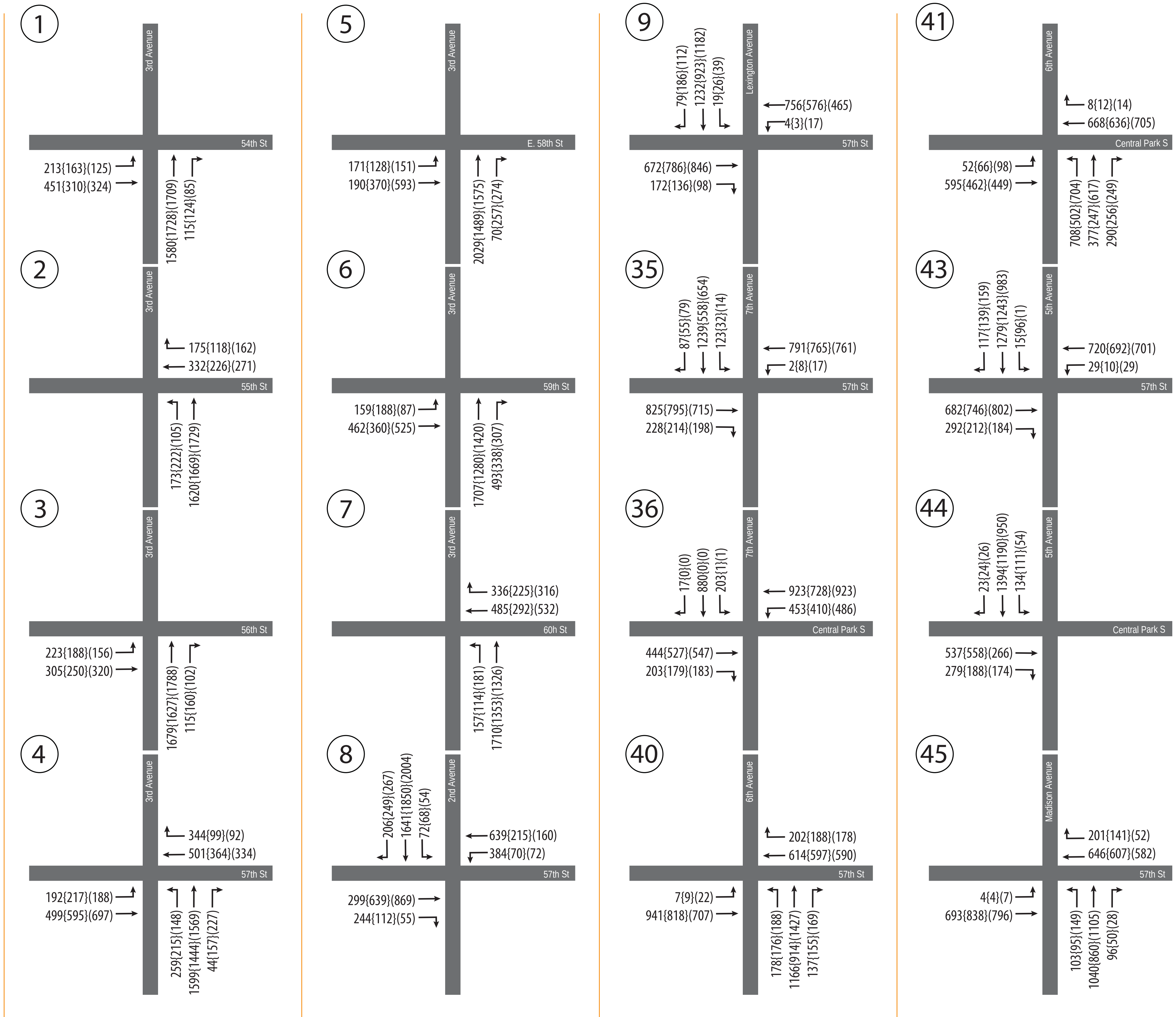
2013 Taxi Medallion Increase - DEIS

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:

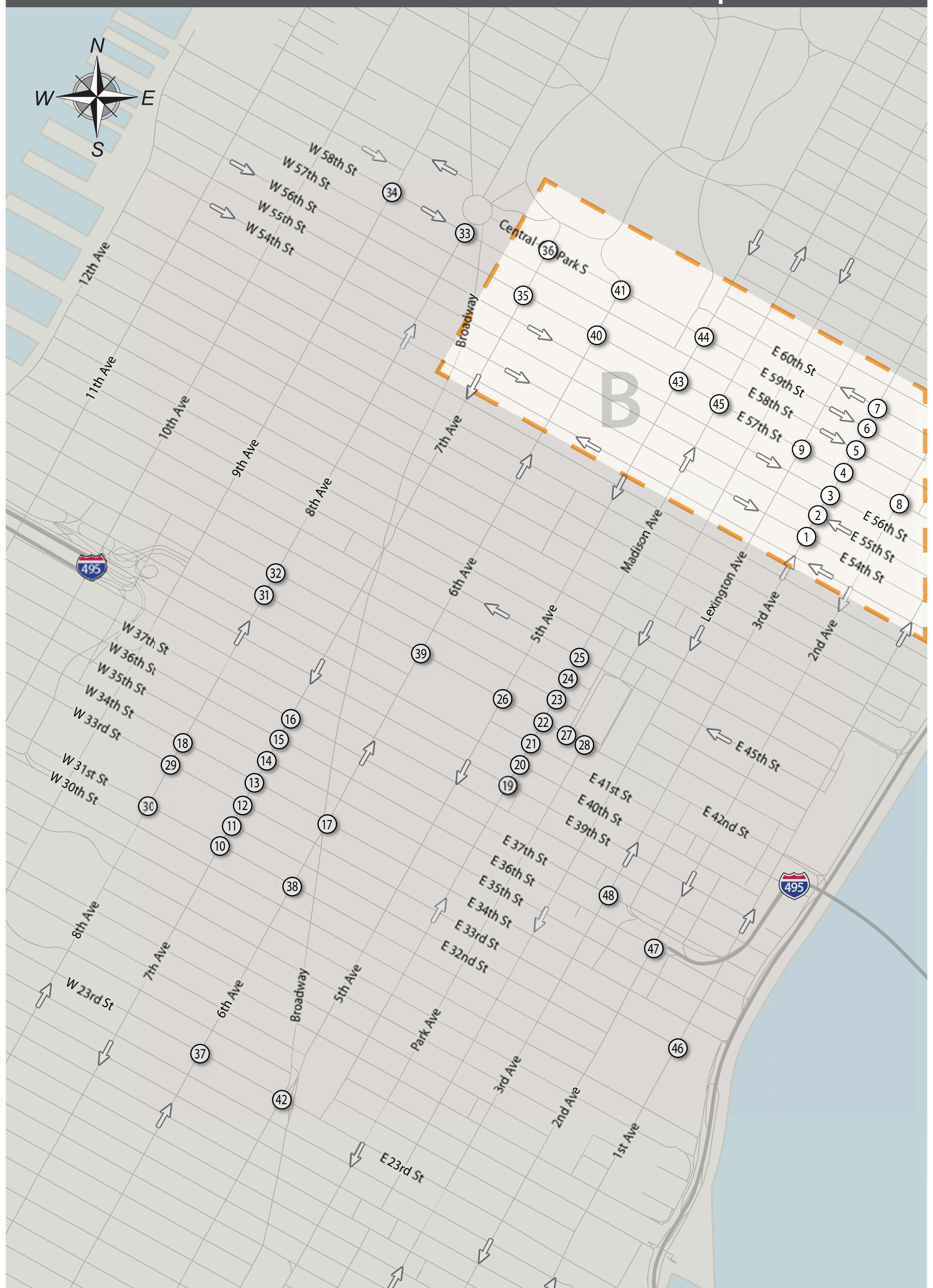
#	Study Intersection Location ID
000{000}(000)	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2014 Taxi Medallion Increase - DEIS

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

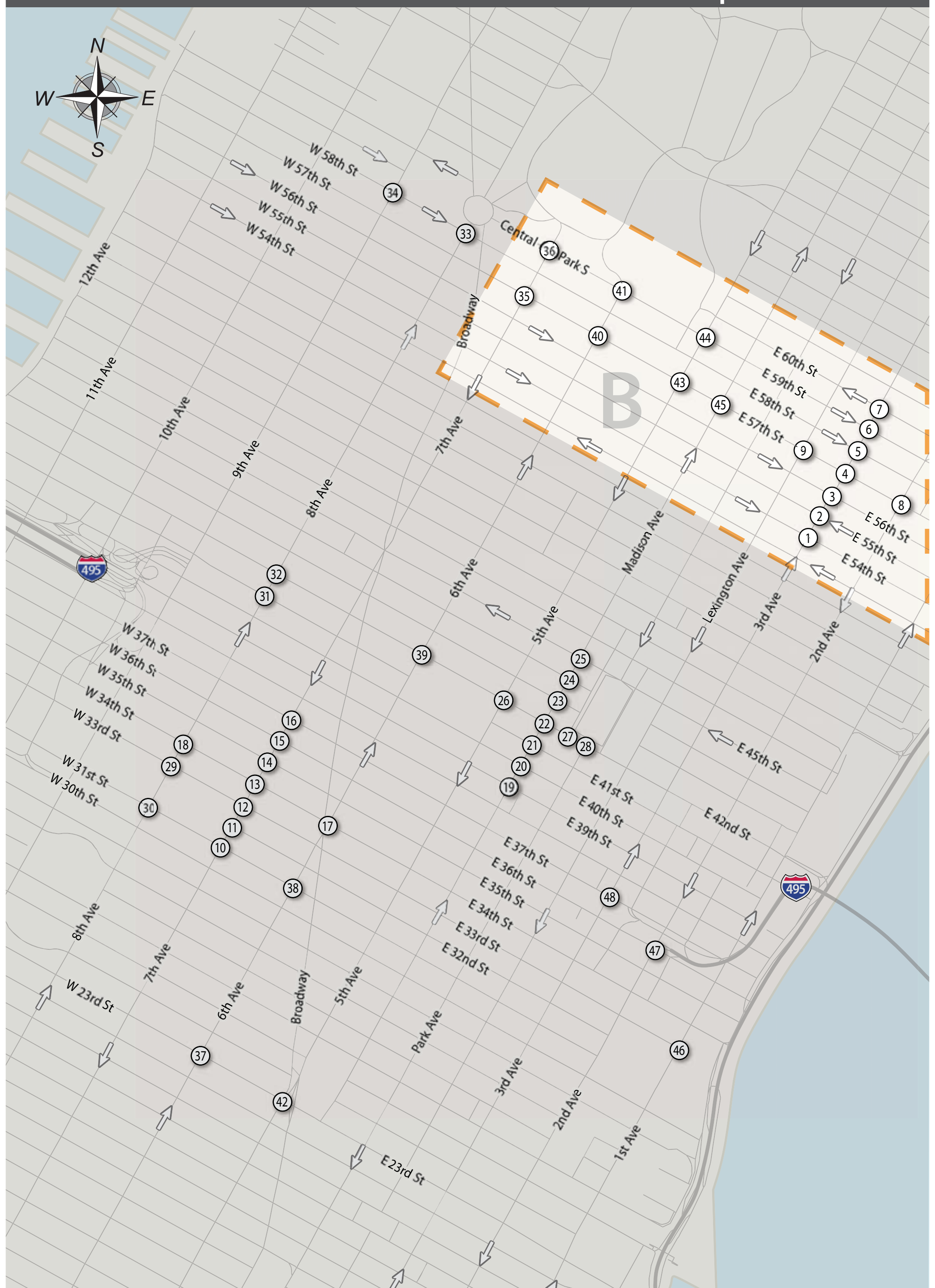
2015 Taxi Medallion Increase - DEIS

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

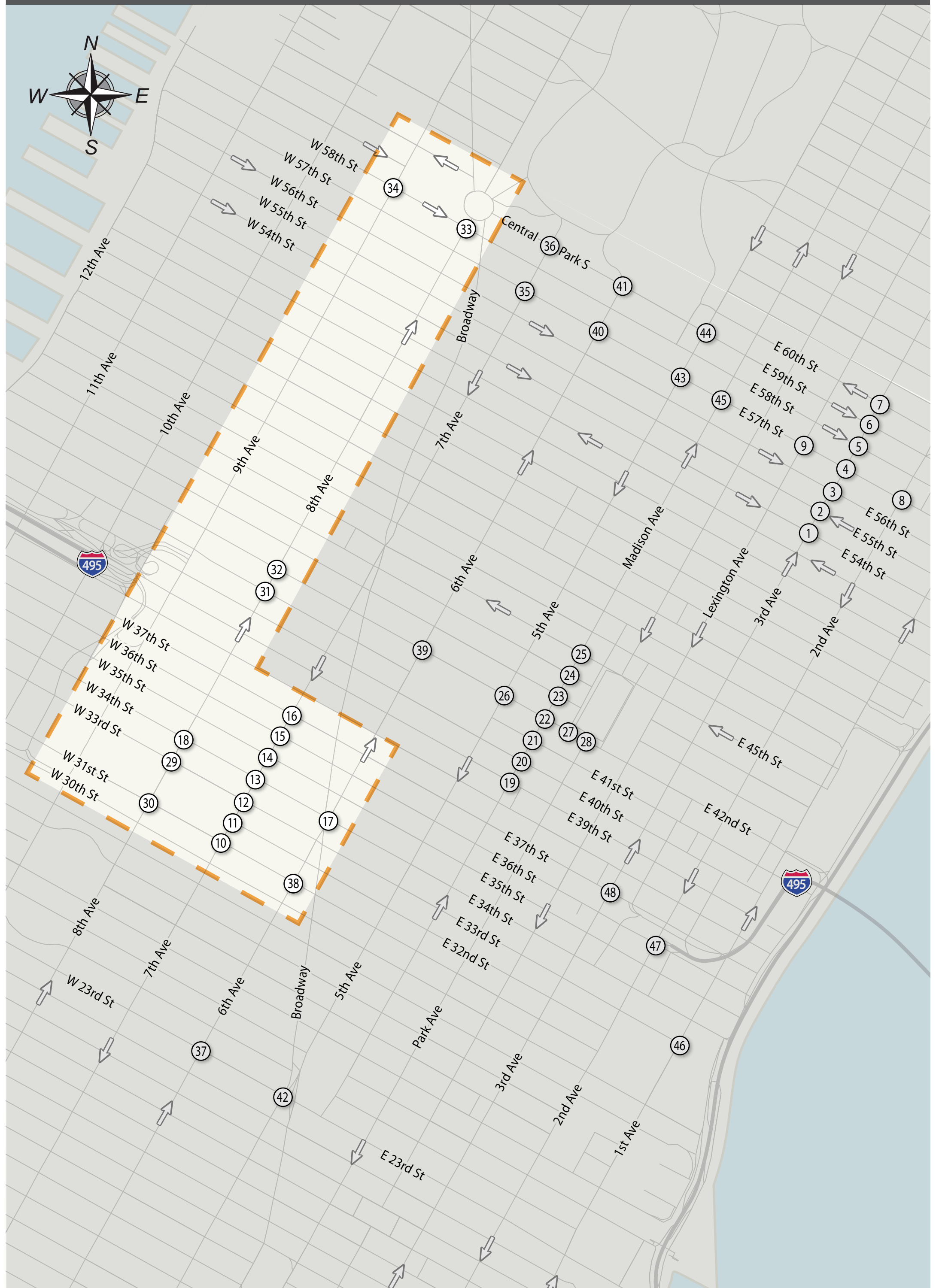
2013 Taxi Medallion Increase – DEIS

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

HDR

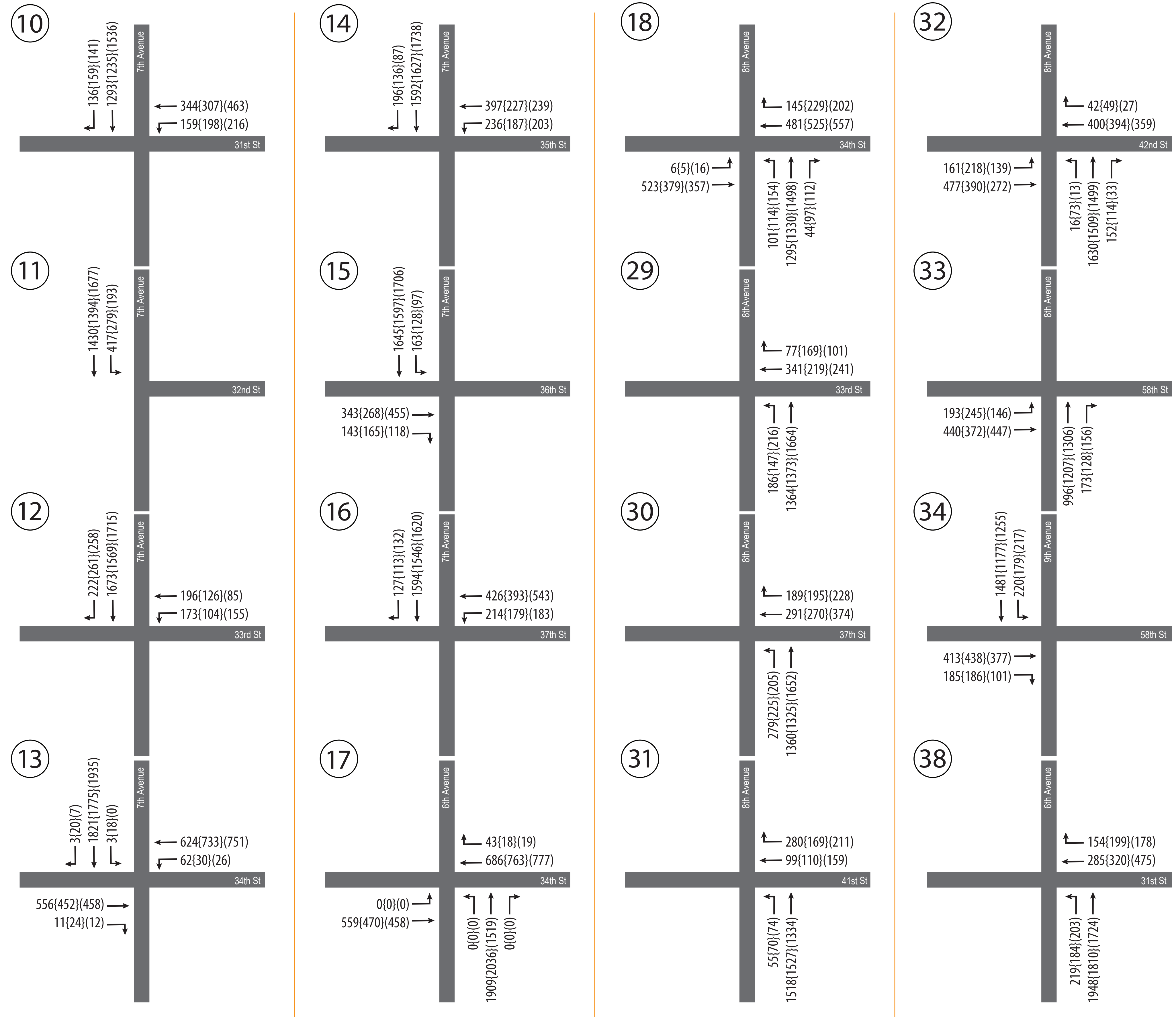
NYC Taxi and Limousine Commission

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

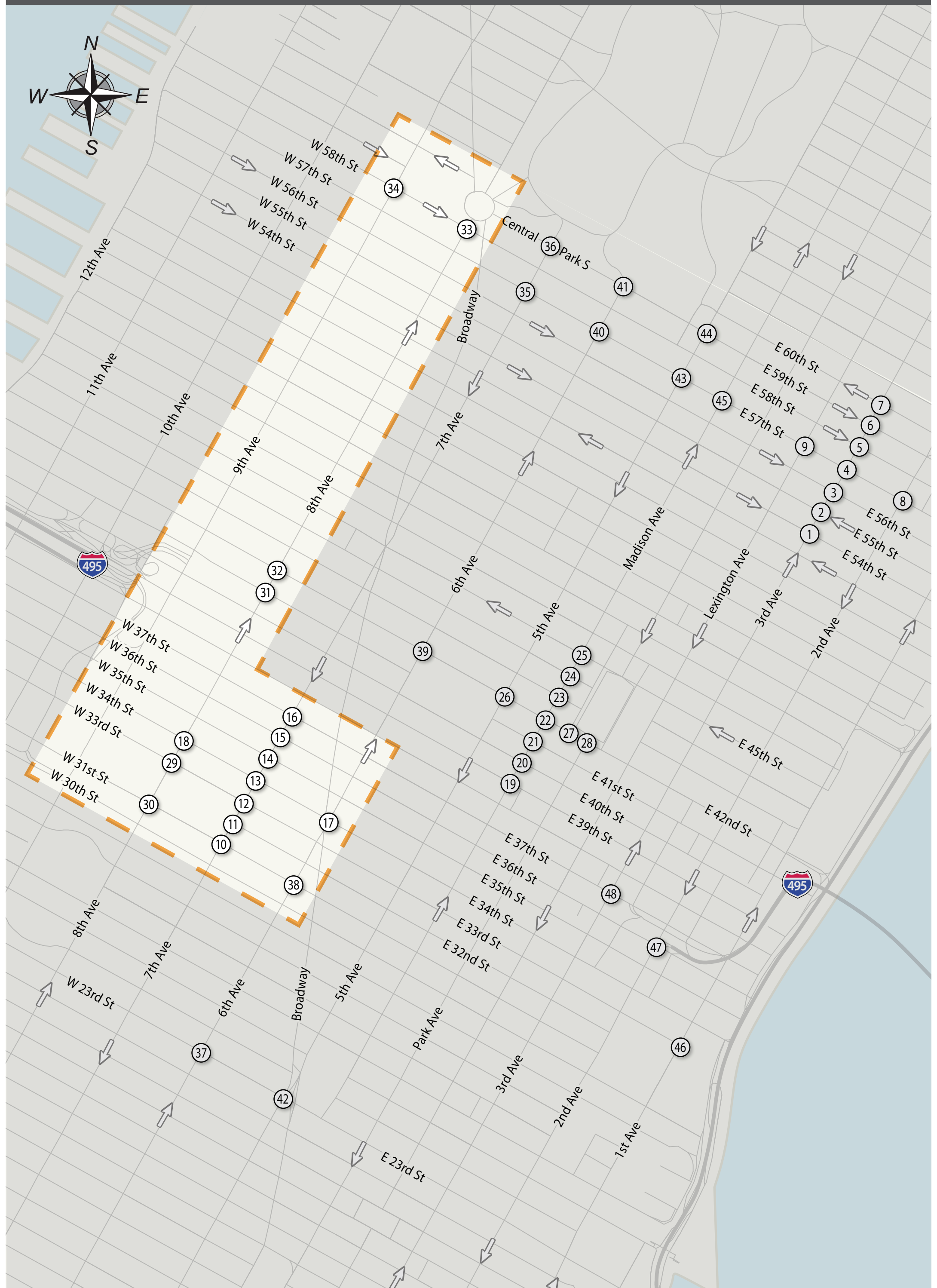


2014 Taxi Medallion Increase – DEIS

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

HDR NYC Taxi and Limousine Commission

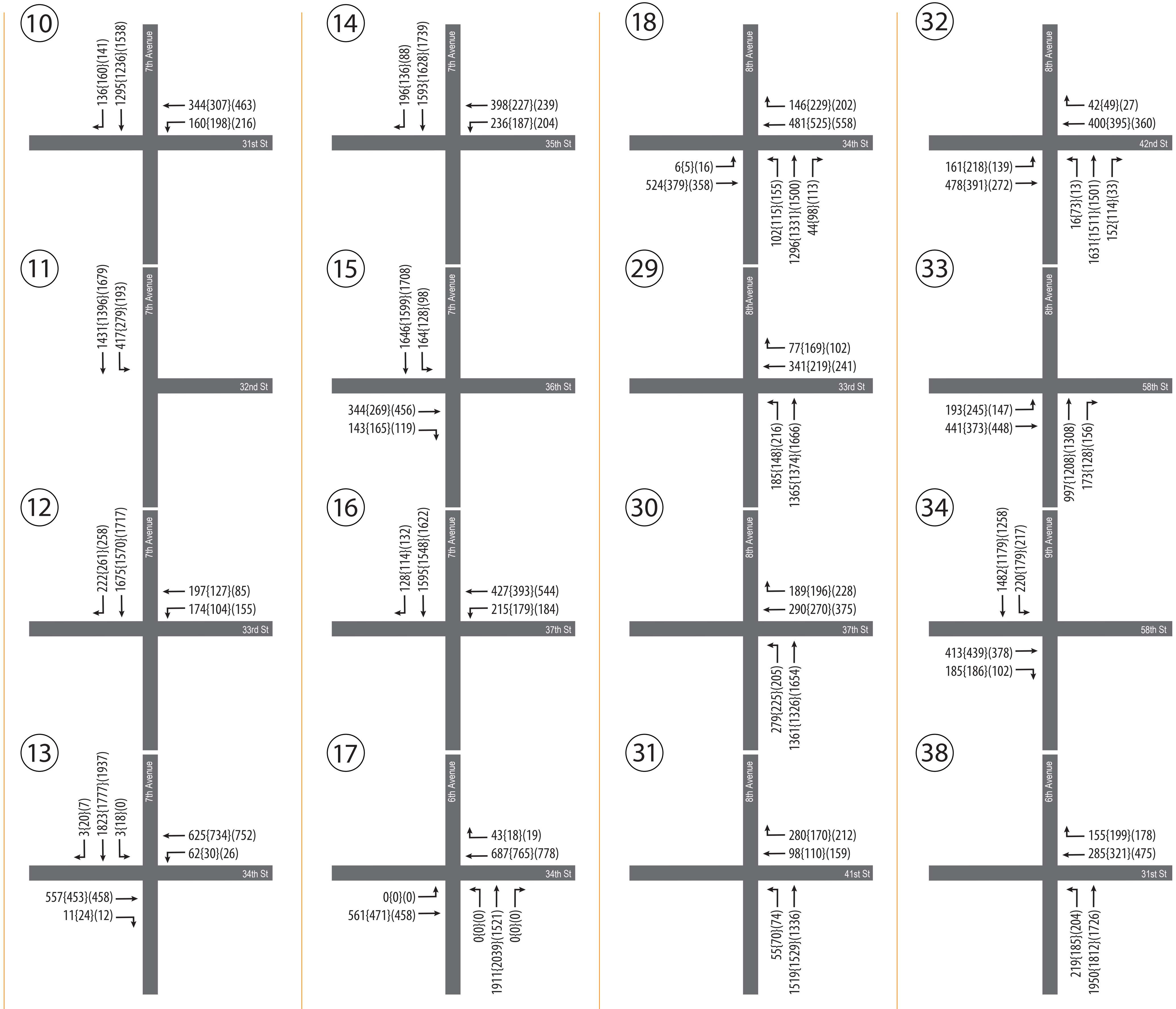
Manhattan-West Location Map



LEGEND:

— Study Intersection Location ID

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

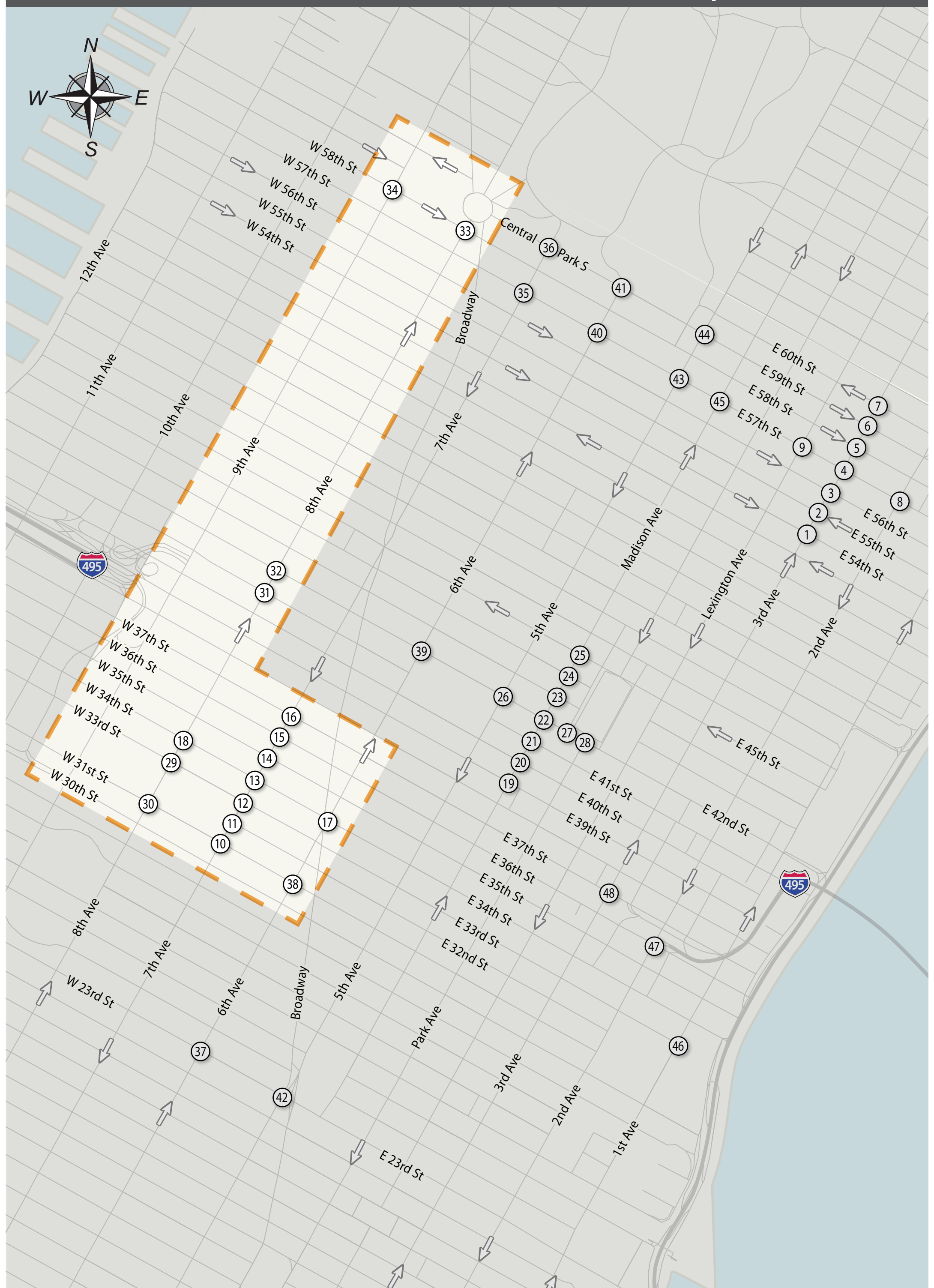


2015 Taxi Medallion Increase – DEIS

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

HDR NYC Taxi and Limousine Commission

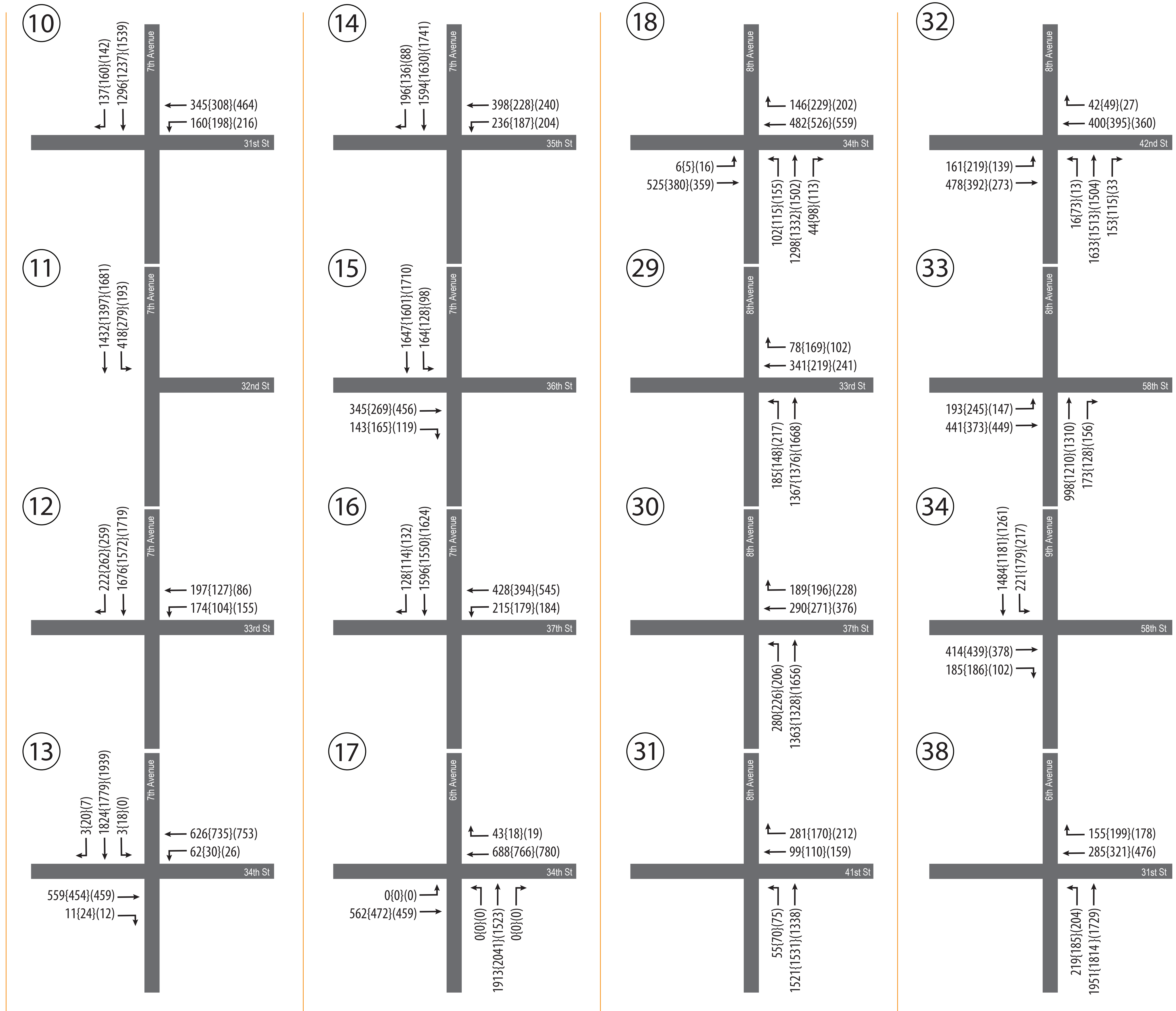
Manhattan-West Location Map



LEGEND:

\# Study Intersection Location ID

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



2013 Taxi Medallion Increase - DEIS

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

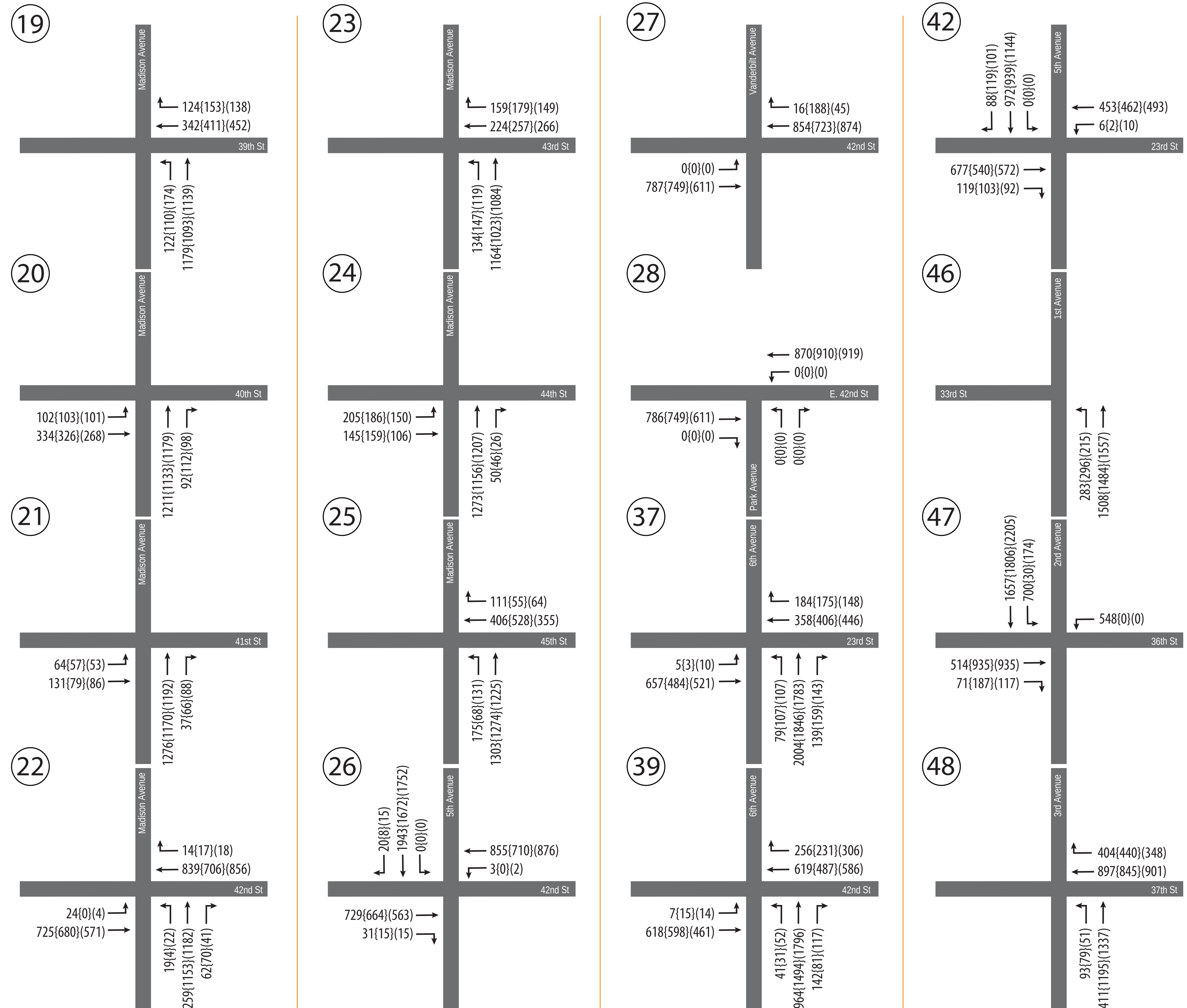
HDR

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



2014 Taxi Medallion Increase - DEIS

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

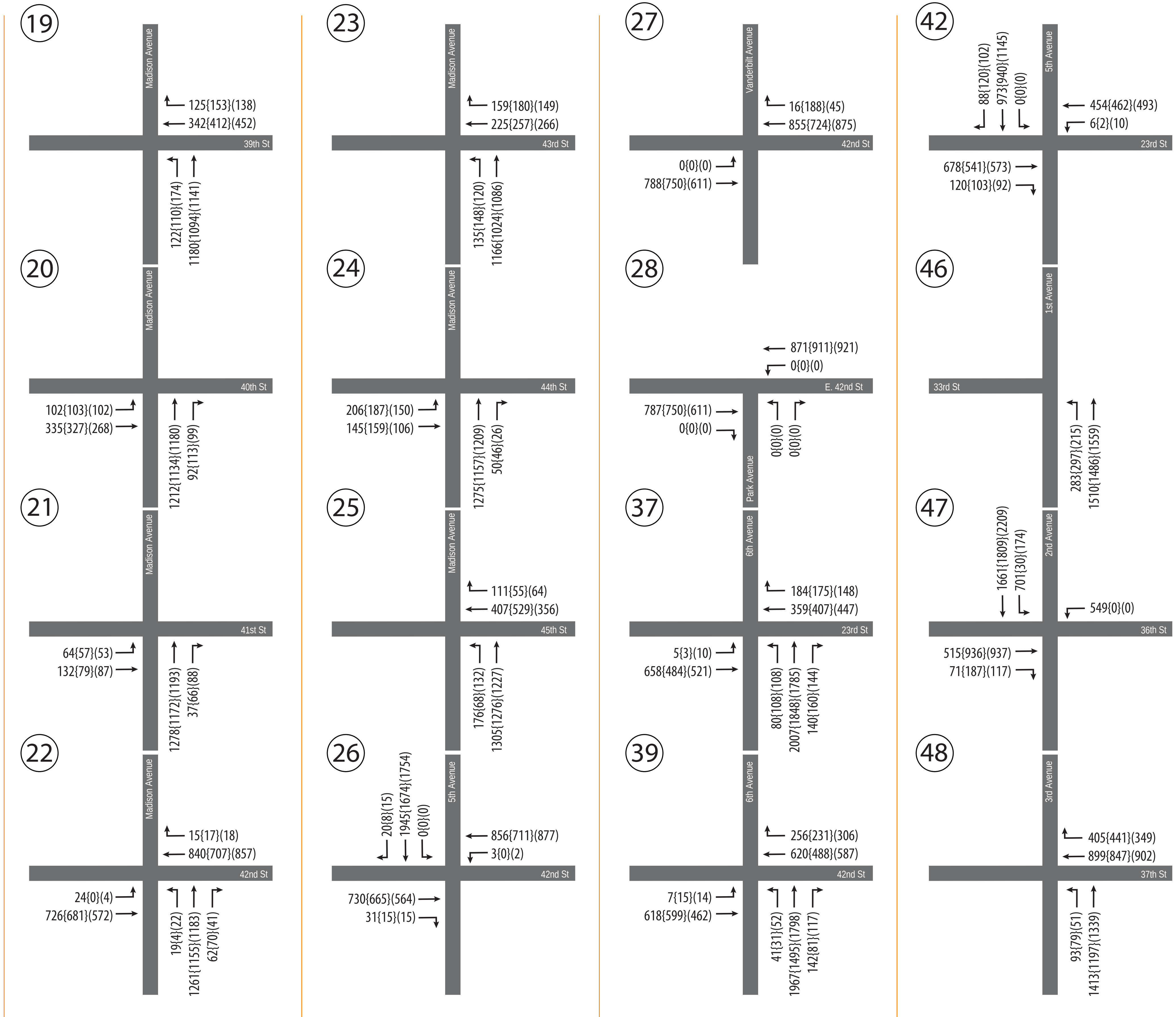
HDR
NYC Taxi and Limousine Commission

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

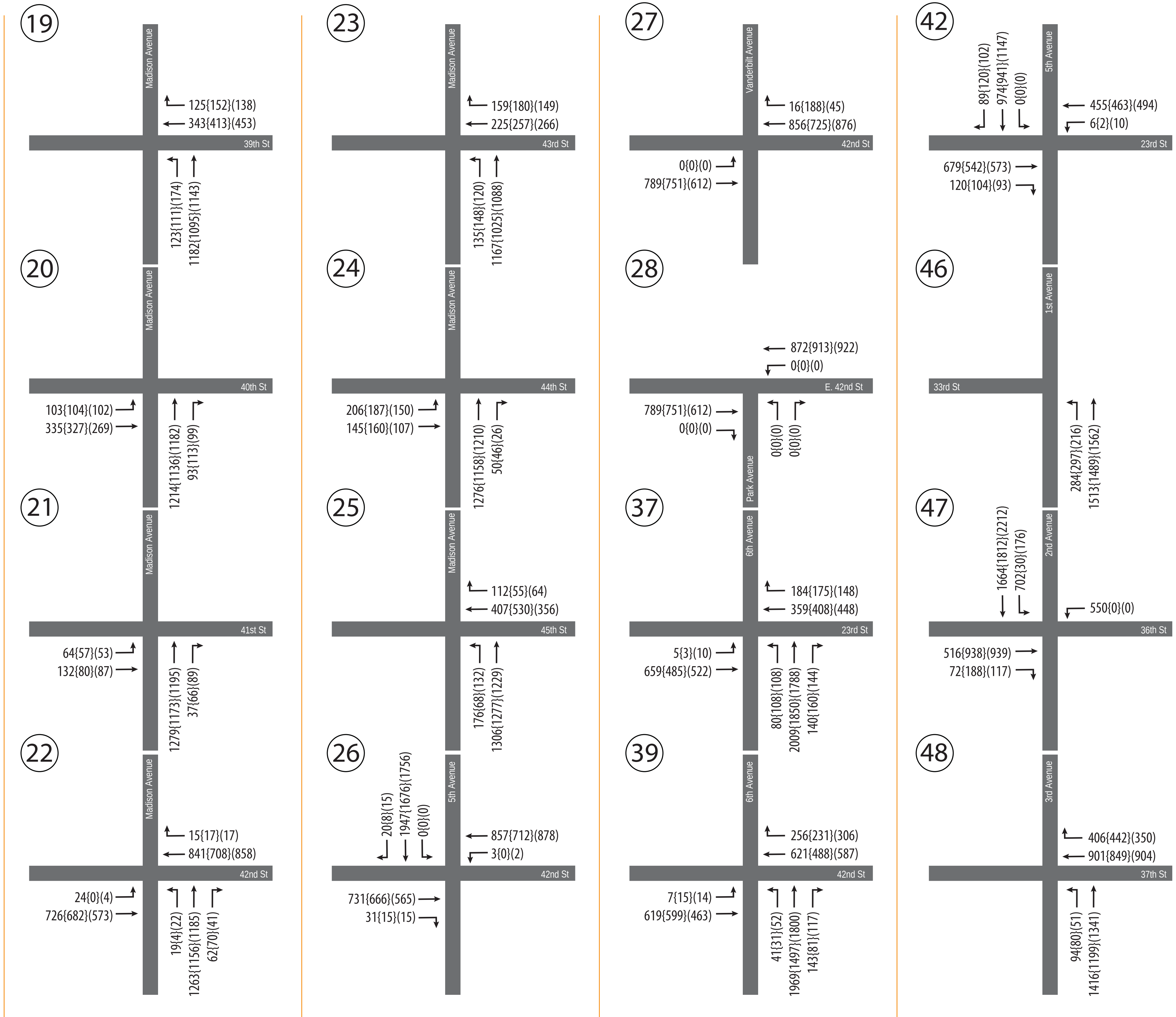


2015 Taxi Medallion Increase - DEIS

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



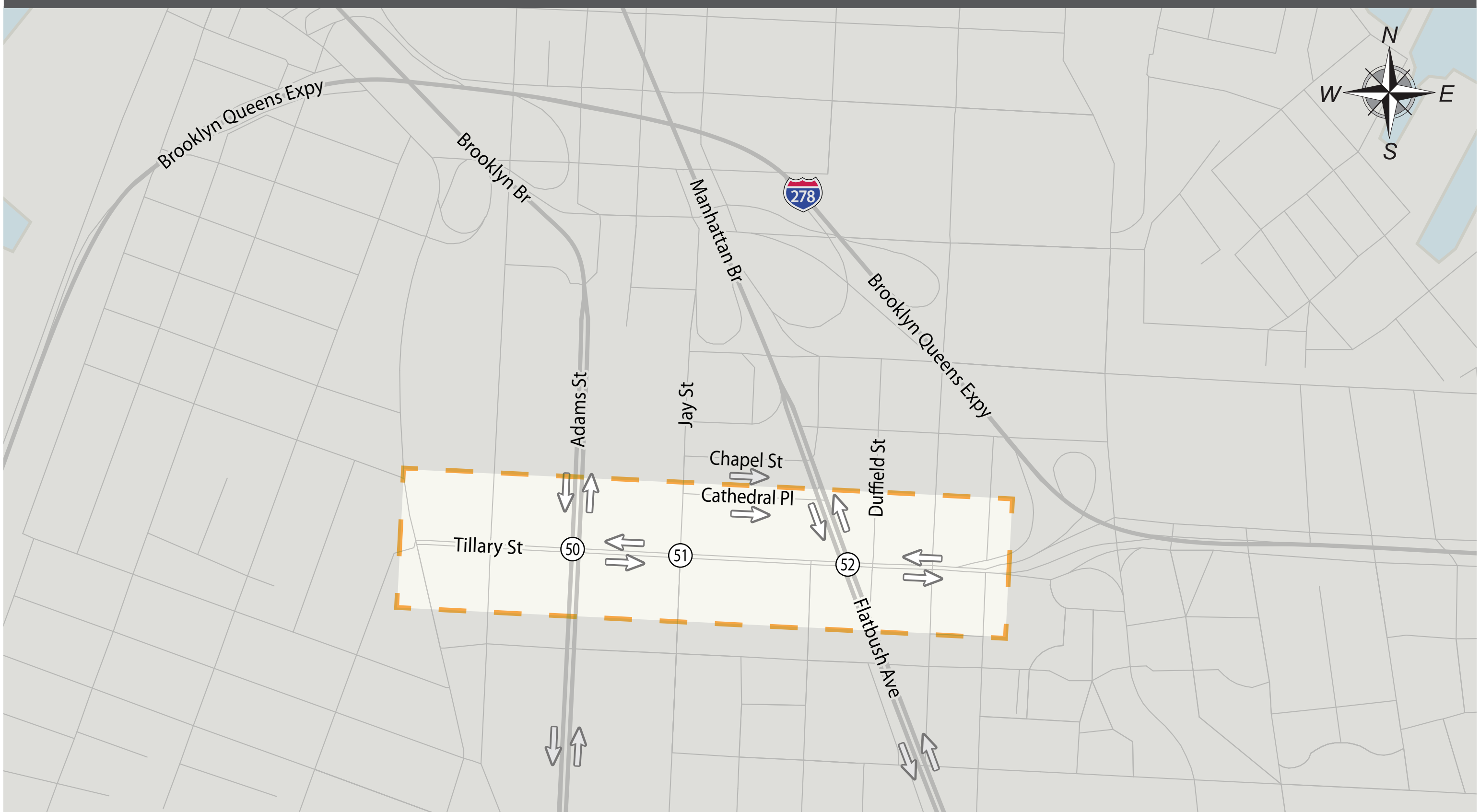
LEGEND:

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

2013 Taxi Medallion Increase – DEIS

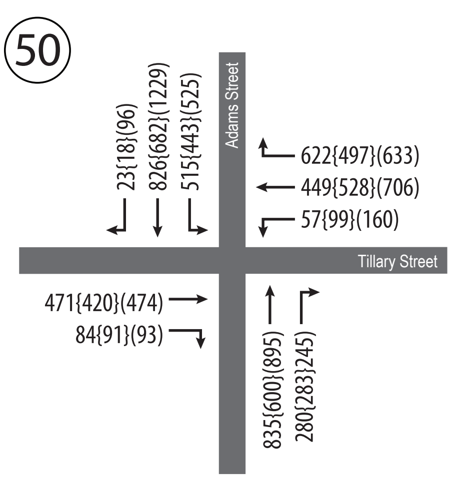
FIGURE 15-12a | **Future Conditions Without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

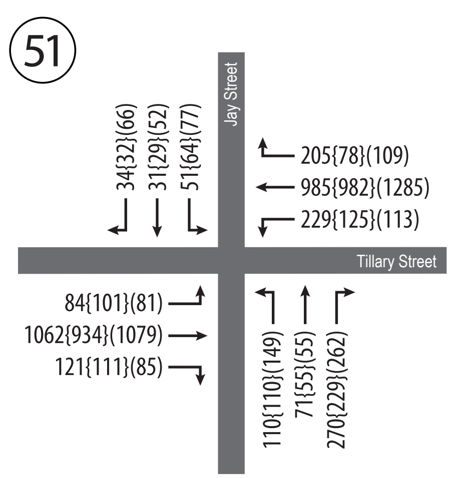
Brooklyn Location Map

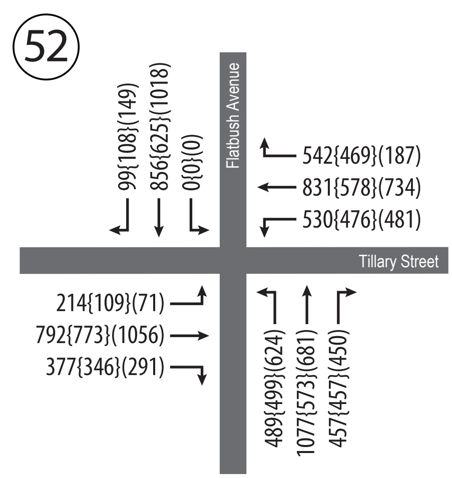


LEGEND:

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







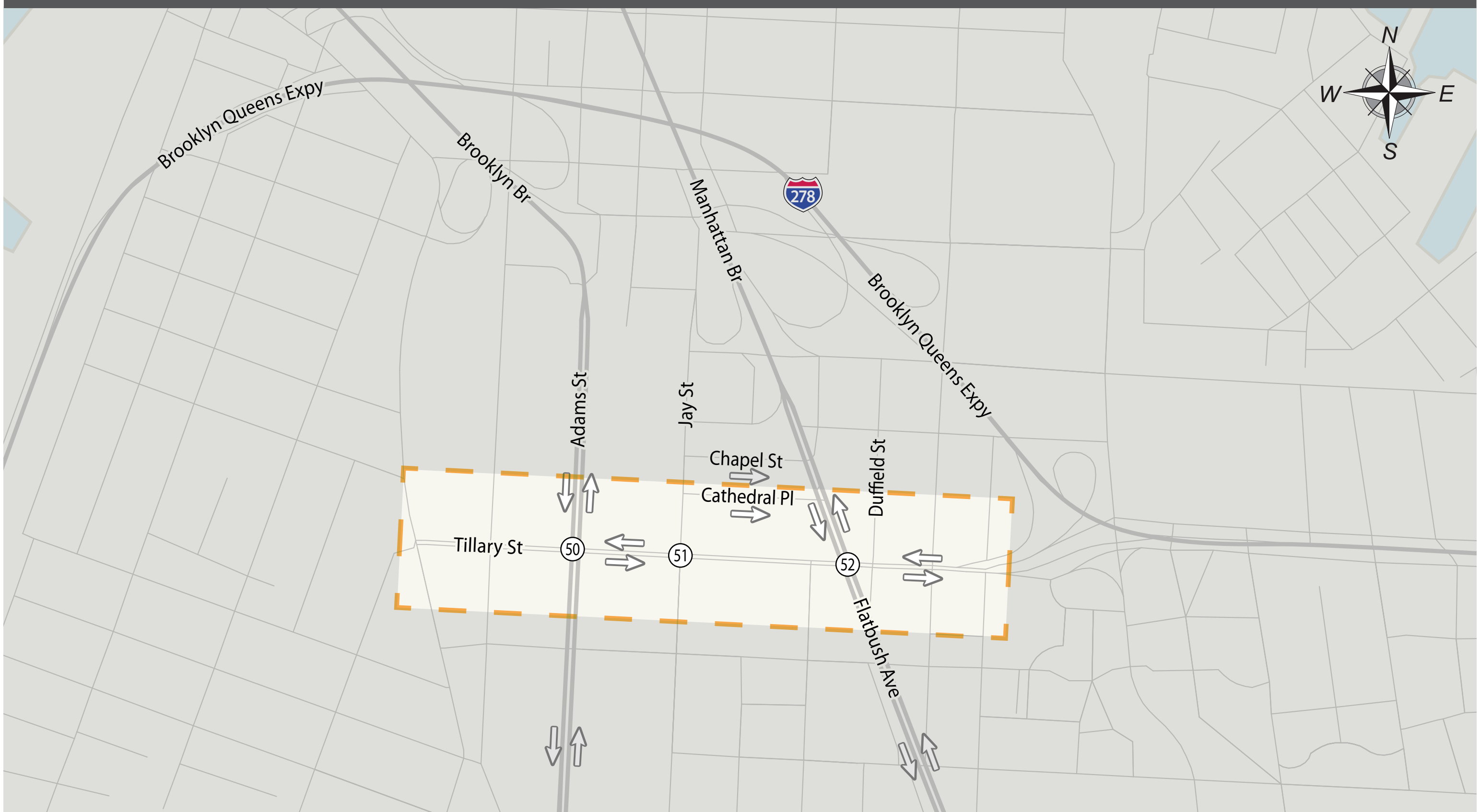
HDR

NYC Taxi and Limousine Commission

2014 Taxi Medallion Increase – DEIS

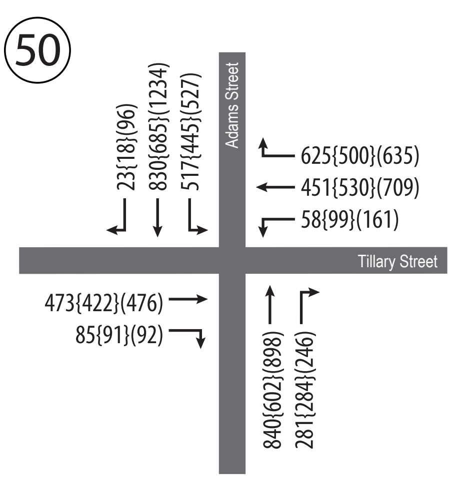
FIGURE 15-12b | **Future Conditions Without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

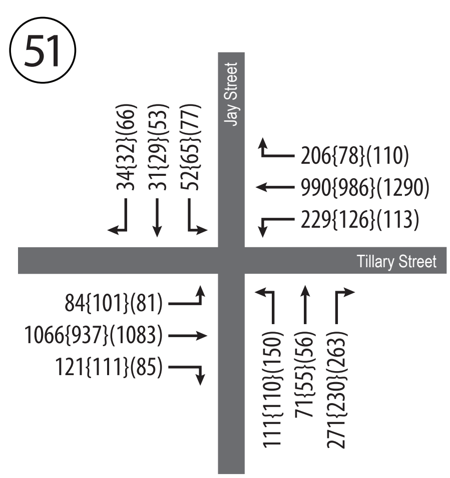
Brooklyn Location Map

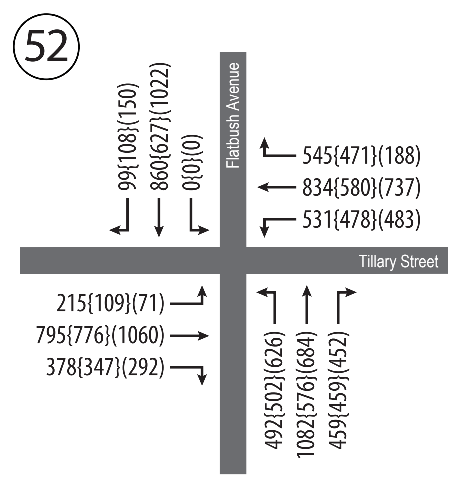


LEGEND:

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



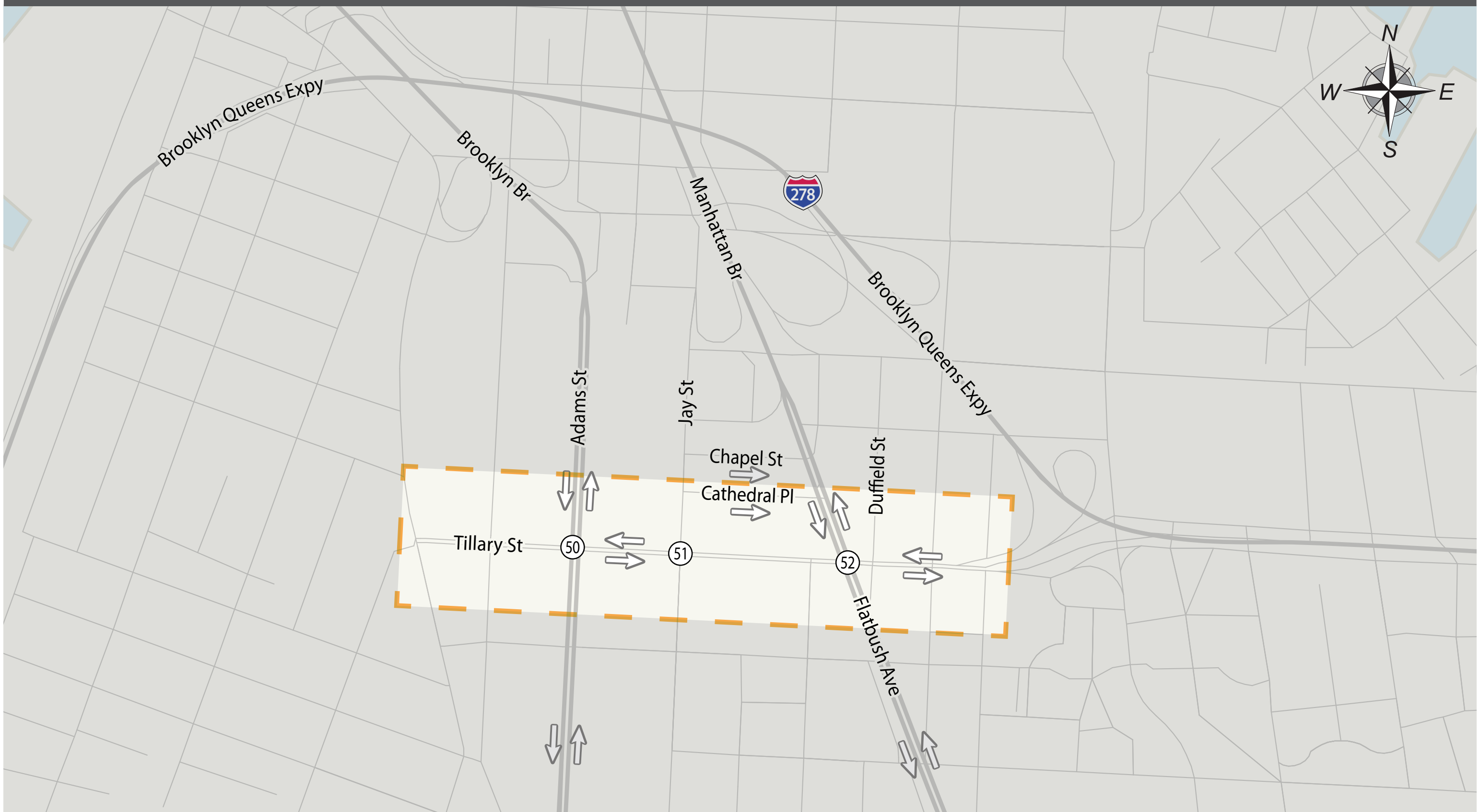




2015 Taxi Medallion Increase – DEIS

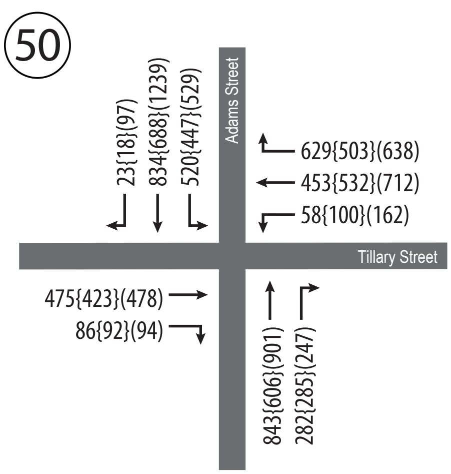
FIGURE 15-12c | Future Conditions Without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)

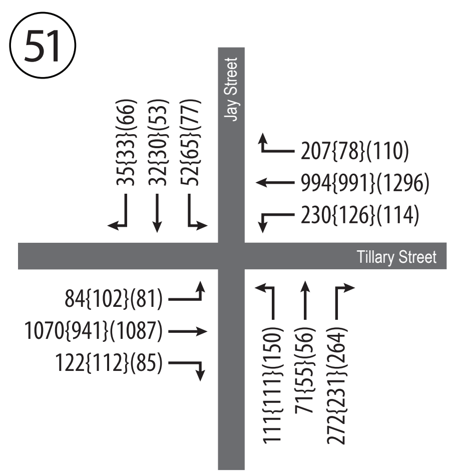
Brooklyn Location Map

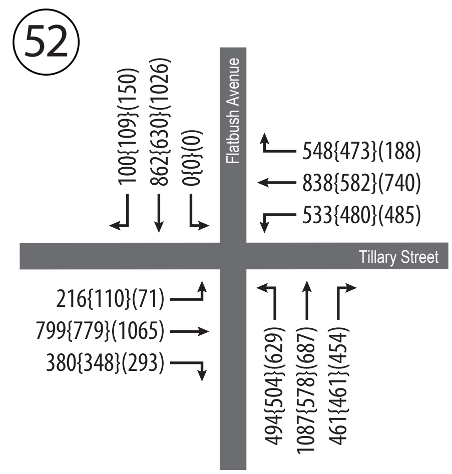


LEGEND:

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







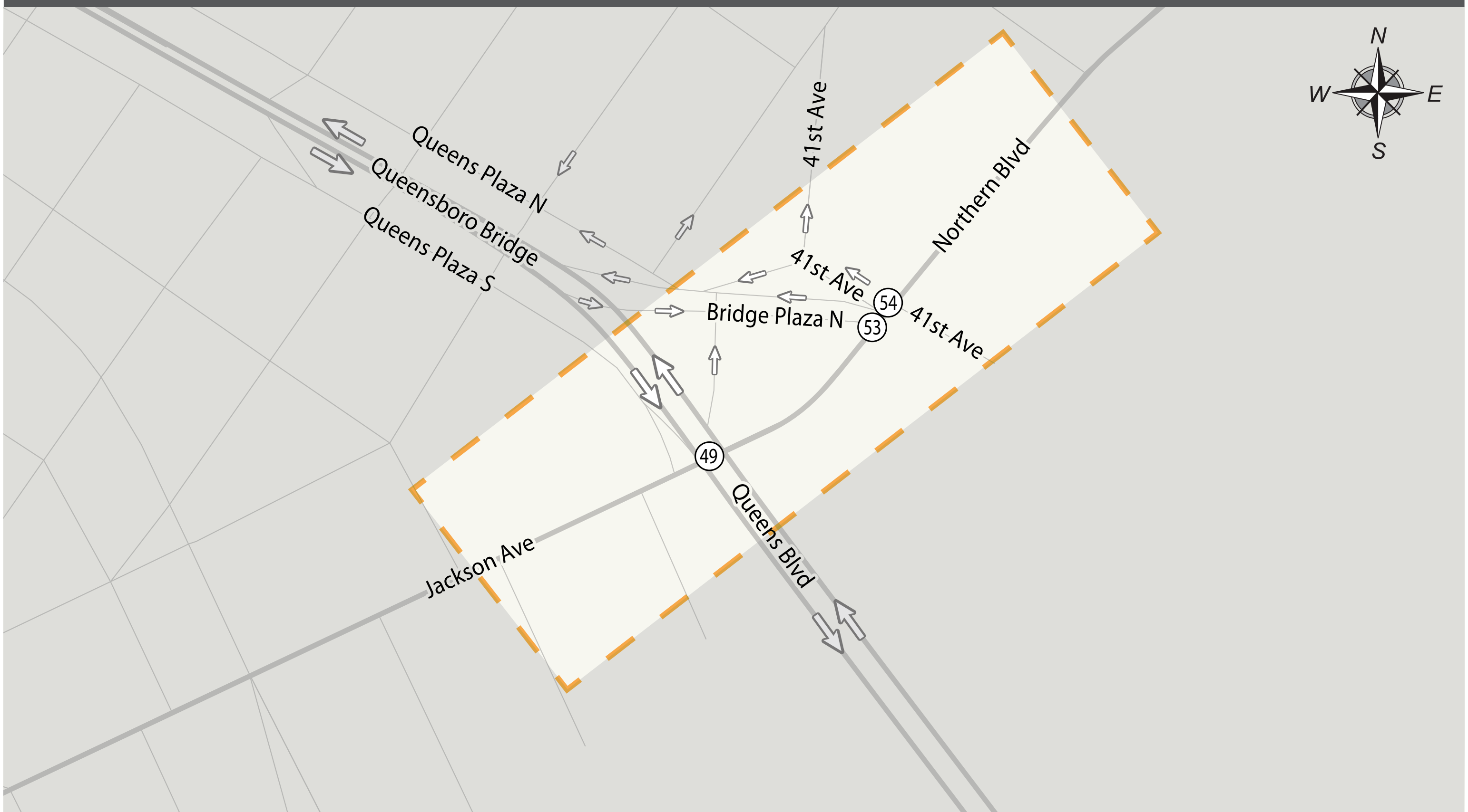
HDR

NYC Taxi and Limousine Commission

2013 Taxi Medallion Increase – DEIS

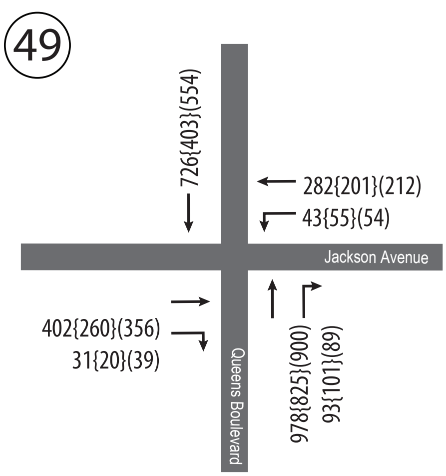
FIGURE 15-13a | Future Conditions Without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)

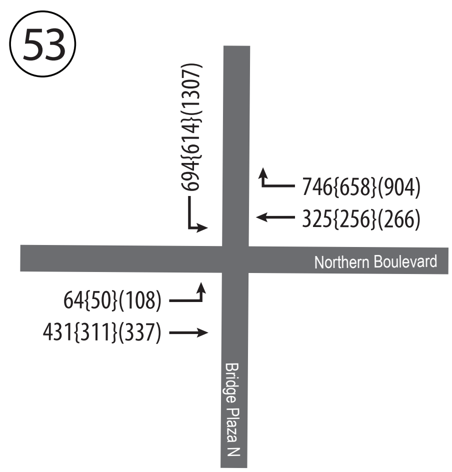
Queens Location Map

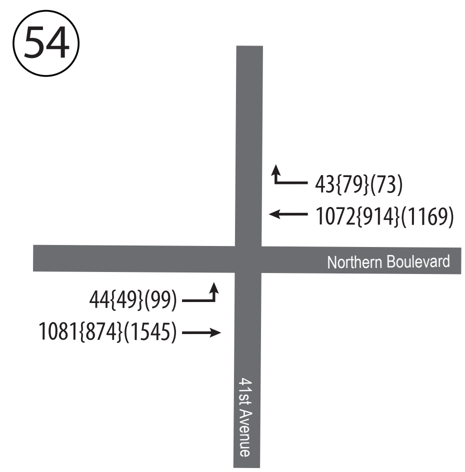


LEGEND:

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



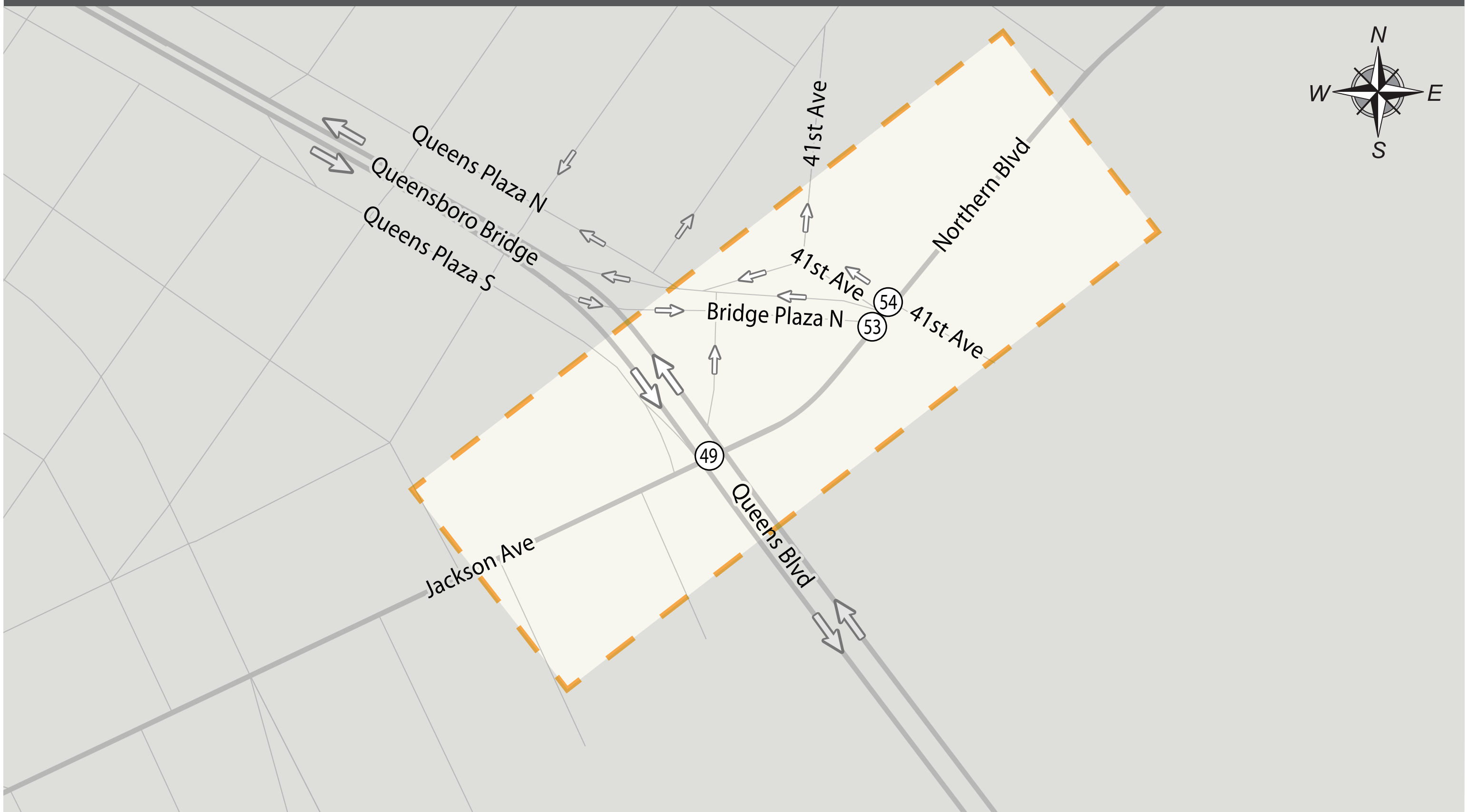




2014 Taxi Medallion Increase – DEIS

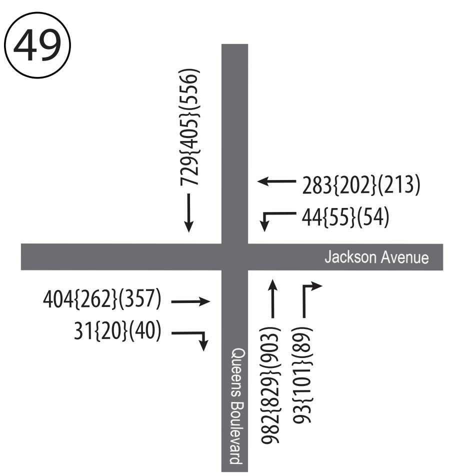
FIGURE 15-13b | **Future Conditions Without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

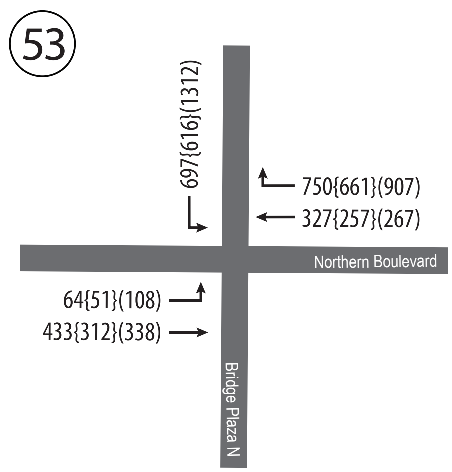
Queens Location Map

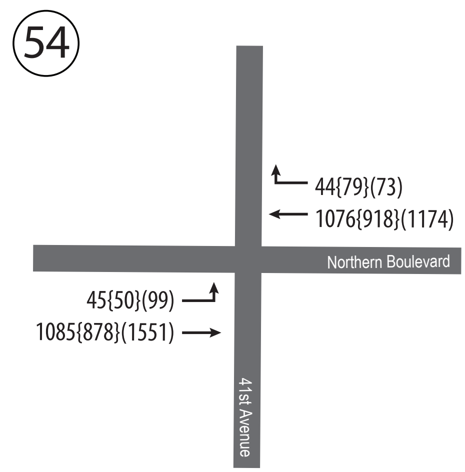


LEGEND:

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







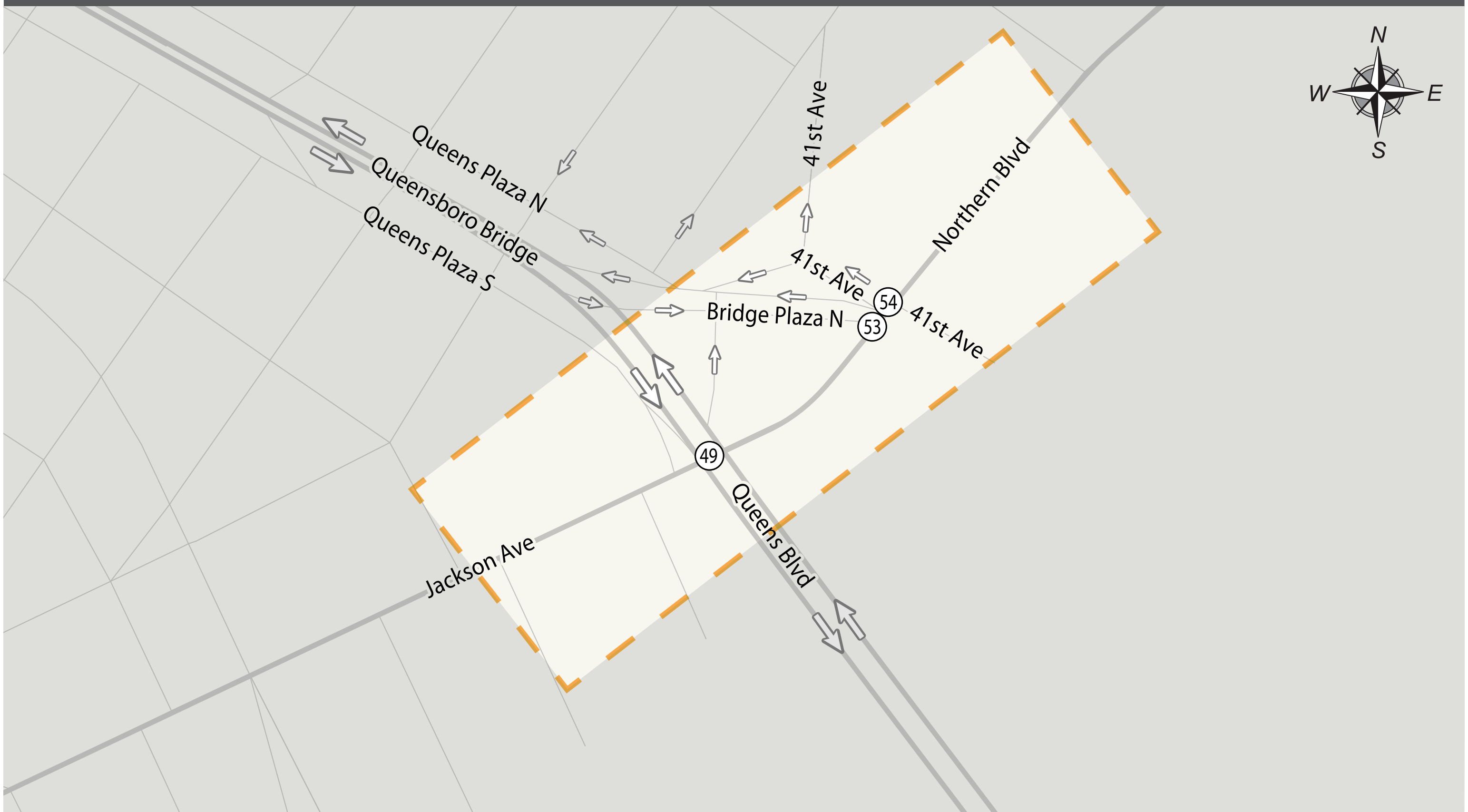
HDR

NYC Taxi and Limousine Commission

2015 Taxi Medallion Increase – DEIS

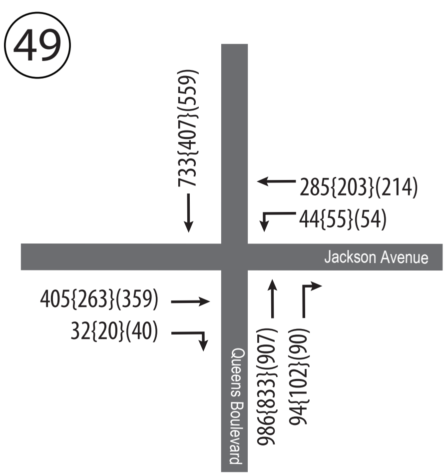
FIGURE 15-13c | Future Conditions Without the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)

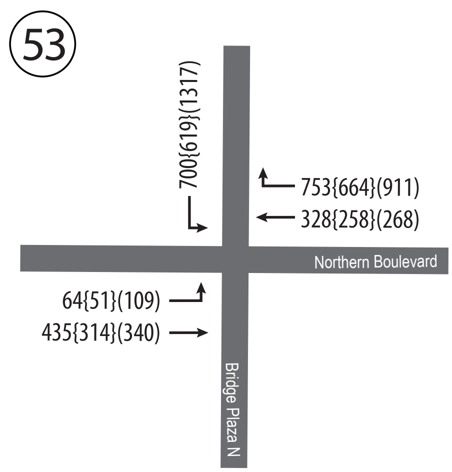
Queens Location Map

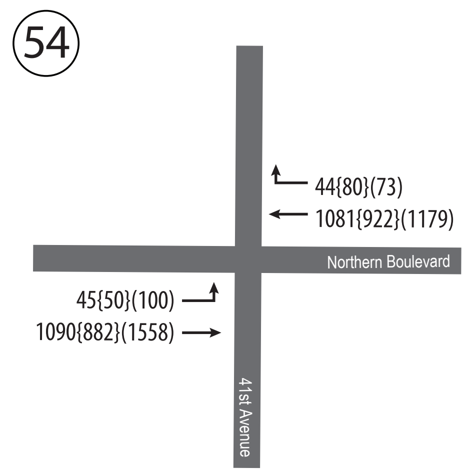


LEGEND:

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







HDR

NYC Taxi and Limousine Commission

As indicated in these figures and tables, 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 2015 AM peak hour, two-way traffic on 42nd Street is projected to increase by approximately 200 vehicles. Similarly, AM peak hour traffic on Seventh Avenue is expected to increase by approximately 150 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 approximately150 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 are projected to increase by over 100 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. 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 three future analysis years.

15.2.7.3 Peak Hour Traffic Operations and Level of Service

An intersection capacity analysis for conditions in the future (2013, 2014 and 2015) 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 2015 intersections would operate with overall delays greater than the CEQR threshold of 45.0 seconds delay. Additionally, there are numerous individual lane groups at each intersection that would operate above the threshold values. Of the 54 study intersections, 21 would have an overall delay value that would exceed the CEQR threshold in the 2015 AM peak hour, 12 for the 2015 midday peak hour and 17 for the 2015 PM peak hour. The results for the interim years (2013 and 2014) are similar to those for 2015. The detailed LOS results for all three analysis years are provided in Tables 15-7 through 15-9.[1]

Table 15-6: 2015 Without Proposed Action LOS Comparison to CEQR Threshold

		LOS	AM	Midday	PM
2015	**Overall Intersections**	High LOS D	8	7	8
		LOS E	7	4	6
		LOS F	6	1	3
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	16	17	19
		LOS E	27	17	27
		LOS F	42	28	33
	Total Number of Lane Groups Analyzed		216	212	217

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

[1] 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 15-7: 2013 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	1.05	113.9	F	L	0.94	88.1	F	L	0.62	47	D
			T	0.85	33.5	C	T	0.67	23.1	C	T	0.61	20.6	C
		NB 3rd Avenue	T	0.74	29.3	C	T	0.83	29.7	C	T	0.65	23.3	C
			R	0.59	34.5	C	R	1.04	119.5	F	R	0.49	29.9	C
		INTERSECTION			38.3	D			38.2	D			24.5	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.87	50.2	D	T	0.81	47.4	D	T	0.88	53.8	D
			R	0.75	43.7	D	R	0.87	73.4	E	R	0.87	63.9	E
		NB 3rd Avenue	LT	0.8	19.9	B	LT	0.78	7.6	A	LT	0.56	3.2	A
		INTERSECTION			25.8	C			15.9	B			15.2	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.87	41.2	D	LT	1.03	79.5	E	LT	0.8	35.2	D
		NB 3rd Avenue	T	0.93	13	B	T	0.97	18.4	B	T	0.97	24.3	C
			R	0.47	7	A	R	0.82	29.7	C	R	0.49	10.8	B
		INTERSECTION			18.2	B			29.6	C			25.6	C
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.07	54.7	D	LT	1.02	30	C	LT	0.95	21.9	C
		WB 57th Street	TR	0.94	51.5	D	T	0.58	28.8	C	T	0.44	21.4	C
			R	0.92	60.8	E	R	0.54	33.4	C	R	0.31	21.3	C
		NB 3rd Avenue	LTR	1.05	136	F	LTR	1	57.9	E	LTR	1.06	75.3	E
			R	0.2	19.6	B	R	0.85	37.6	D	R	1.07	80.1	F
		INTERSECTION			97.4	F			45.8	D			56.4	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.39	19.9	B								
			T	0.41	19.8	B	LT	0.98	58.2	E	LT	0.74	25.6	C
		NB 3rd Avenue	TR	1.04	60.5	E	TR	0.98	25.6	C	TR	1.05	38.6	D
		INTERSECTION			54.8	D			32.8	C			35.2	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.68	24.1	C	LT	0.98	57.7	E	LT	0.69	25.3	C
		NB 3rd Avenue	T	1.05	61.4	E	T	0.78	17.5	B	T	0.92	18.9	B
			R	1.05	59.6	E	R	1.05	66.3	E	R	1.05	55.6	E
		INTERSECTION			53.3	D			35.3	D			25.4	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.6	20.9	C	T	0.47	20.1	C	TR	0.52	18.9	B
			R	1	96.3	F	R	1.06	113.9	F	R	0.99	91.3	F
		NB 3rd Avenue	LT	1.05	46.6	D	LT	0.78	42.5	D	LT	0.68	2.8	A
		INTERSECTION			45.9	D			45.9	D			16	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.91	55	D	T	1.08	76.9	E	T	1.08	80.9	F
			R	1.07	99.5	F	R	0.81	46.8	D	R	0.44	41.7	D
		WB 57th Street	LT	1.01	30.5	C	LT	0.34	20.2	C	LT	0.27	19.8	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.2	18.4	B
			T	1.14	101.1	F	T	1.1	80.5	F	T	1.08	69.3	E
			R	0.89	62.9	E	R	0.78	40.5	D	R	1.05	94.1	F
		INTERSECTION			73.2	E			69.2	E			69.1	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.9	38.9	D	T	0.98	50.5	D	T	0.91	38.6	D
			R	0.57	28.2	C	R	0.46	25.2	C	R	0.41	24	C
		WB 57th Street	LT	0.97	39.2	D	LT	0.94	42.9	D	LT	0.92	43.6	D
		SB Lexington Avenue	LT	0.75	22.4	C	LT	0.95	41.1	D	LT	0.74	22.2	C
			R	0.25	16.2	B	R	0.74	37	D	R	0.42	20.2	C
		INTERSECTION			31.3	C			43.3	D			31.3	C
10	7th Avenue and 31st Street	WB 31st Street	LT	0.65	26.2	C	LT	0.64	24.5	C	LT	0.84	32.3	C
		SB 7th Avenue	T	0.6	7	A	T	0.56	3.5	A	T	0.63	4	A
			R	0.59	11.2	B	R	0.43	5.6	A	R	0.48	6.6	A
		INTERSECTION			12.5	B			9.8	A			12.7	B
11	7th Avenue and 32nd Street	SB 7th Avenue	LT	0.9	8.7	A	LT	0.79	4.1	A	LT	0.8	4.4	A
		INTERSECTION			8.7	A			4.1	A			4.4	A
12	7th Avenue and and 33rd Street	WB 33rd Street	L	1.03	110.1	F	L	0.63	44.2	D	L	0.96	93.4	F
			T	0.88	62.5	E	T	0.5	32.8	C	T	0.38	32	C
		SB 7th Avenue	TR	0.68	4.7	A	TR	0.67	3.2	A	TR	0.63	2.8	A
			R	1.54	262.9	F	R	1.31	168.4	F	R	1.12	77.5	E
		INTERSECTION			43.1	D			25	C			18.6	B

Table 15-7: 2013 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**
13	7th Avenue and 34th Street	EB 34th Street	T	1.06	72.5	E	T	1.09	101	F	T	1.02	81.3	F
			R	0.06	13	B	R	0.19	33.1	C	R	0.1	32.8	C
		WB 34th Street	LT	1.13	87.9	F	LT	0.92	13.9	B	LT	0.88	18.1	B
		SB 7th Avenue	LTR	1.04	107.5	F	LTR	1	85.4	F	LTR	1.05	51.5	D
		INTERSECTION			96.5	F			69.2	E			47.8	D
14	7th Avenue and 35th Street	WB 35th Street	L	1.07	104.9	F	L	0.96	83.5	F	L	0.6	31.8	C
			T	1.32	191.6	F	T	0.77	42.7	D	T	0.69	36.4	D
		SB 7th Avenue	T	1.04	36.8	D	T	0.99	34	C	T	0.66	3.2	A
			R	1.65	329.8	F	R	1.24	152.9	F	R	0.66	20	B
		INTERSECTION			90.4	F			45.8	D			10.7	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.87	44.5	D	TR	0.78	36.9	D	TR	0.88	42.2	D
		SB 7th Avenue	LT	0.85	25.2	C	LT	0.89	38.1	D	LT	0.77	8.5	A
		INTERSECTION			29.2	C			37.9	D			17.2	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.02	68.9	E	LT	0.91	47.6	D	LT	1.03	71	E
		SB 7th Avenue	T	0.68	16.6	B	T	0.65	16.3	B	T	0.63	15.6	B
			R	0.69	33.9	C	R	0.53	22.6	C	R	0.61	26.9	C
		INTERSECTION			32.1	C			24.7	C			33	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.1	81.6	F	T	1.03	69	E	T	0.91	42.3	D
		WB 34th Street	T	0.76	30.6	C	T	0.91	42.5	D	T	0.97	52	D
			R	0.36	29.1	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.87	8.1	A	T	1	26.2	C	T	1.09	58	E
		INTERSECTION			25.6	C			35.3	D			53.8	D
18	8th Avenue and 34th Street	EB 34th Street	LT	0.9	41.8	D	LT	0.71	27.2	C	LT	0.68	25.3	C
		WB 34th Street	T	0.43	9.7	A	T	0.48	2.5	A	T	0.49	32.3	C
			R	0.42	10	A	R	0.82	17.1	B	R	0.69	40.2	D
		NB 8th Avenue	L	0.61	20	B	L	0.59	16	B	L	0.81	56.2	E
			T	0.91	17.9	B	T	0.82	12.1	B	T	0.94	48.5	D
			R	1.1	157.5	F	R	0.68	24.1	C	R	0.93	80.8	F
		INTERSECTION			22.9	C			13.6	B			43.3	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.79	35.4	D	T	0.86	41.2	D	T	0.9	45.6	D
			R	1.05	135.5	F	R	1.05	128.3	F	R	1.06	134.3	F
		NB Madison Avenue	LT	0.88	29.7	C	LT	0.73	20.8	C	LT	0.64	18.2	B
		INTERSECTION			37.7	D			34.4	C			32.7	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.7	57.9	E	L	0.64	51.6	D	L	0.63	52.1	D
			T	0.8	37.6	D	T	0.68	28.5	C	T	0.59	25.8	C
		NB Madison Avenue	TR	1.04	48.5	D	TR	1.03	47	D	TR	0.92	16.9	B
		INTERSECTION			47.1	D			43.9	D			20.3	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43	D	L	0.41	42.8	D	L	0.35	41.2	D
			T	0.36	20	C	T	0.22	17.6	B	T	0.22	17.4	B
		NB Madison Avenue	TR	0.96	31.3	C	TR	0.96	34.6	C	TR	0.98	22.8	C
		INTERSECTION			30.7	C			33.9	C			23.1	C
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.27	157.6	F	LT	0.46	21.2	C	LT	0.72	33.7	C
		WB 42nd Street	T	1.19	114.3	F	TR	0.87	29.4	C	T	1	62.2	E
			R	0.1	19.7	B					R	0.14	18.6	B
		NB Madison Avenue	LT	1.05	54.7	D	LT	1.06	44.9	D	LT	1.01	29.4	C
			R	0.2	7	A	R	0.23	8.1	A	R	0.16	7	A
		INTERSECTION			99.9	F			33.8	C			40.7	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.52	25.9	C	T	0.6	28.2	C	T	0.61	28.9	C
			R	0.81	51.3	D	R	0.73	40.7	D	R	0.87	68.6	E
		NB Madison Avenue	LT	1	43.6	D	LT	0.98	23.2	C	LT	0.93	25.4	C
		INTERSECTION			42.2	D			25.8	C			29.5	C
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.75	34.6	C	LT	0.91	54.9	D	LT	0.91	59.8	E
		NB Madison Avenue	TR	0.95	42.5	D	TR	0.89	14.8	B	T	0.99	30.6	C
											R	0.12	5.4	A
		INTERSECTION			41.1	D			23.1	C			35.2	D

Table 15-7: 2013 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**
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.86	39.6	D	TR	0.99	59.9	E	TR	0.52	23.7	C
		NB Madison Avenue	LT	0.98	37.2	D	LT	1.01	29.3	C	LT	0.92	27	C
		INTERSECTION			37.8	D			38.6	D			26.3	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.81	33.8	C	T	0.69	32.6	C	T	0.58	34.5	C
			R	0.26	25.5	C	R	0.13	23.5	C	R	0.12	26.6	C
		WB 42nd Street	LT	0.99	37.8	D	LT	0.75	31.8	C	LT	1.12	94.6	F
		SB 5th Avenue	LT	0.82	22.5	C	LT	0.75	20.2	C	LT	1.05	56.8	E
			R	0.11	13.6	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			28.8	C			25.3	C			63.6	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.01	42.3	D	T	0.82	21.1	C	T	0.73	8.3	A
		WB 42nd Street	TR	0.95	29.7	C	TR	0.91	21.6	C	TR	0.87	25.1	C
		INTERSECTION			35.8	D			21.4	C			17.9	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.58	15.2	B	T	0.53	9.6	A	T	0.48	11.9	B
			R				R				R			
		WB 42nd Street	LT	0.73	21.9	C	T	0.8	22.6	C	T	0.72	22.5	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			18.8	B			16.9	B			17.8	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.91	22.6	C	TR	1.01	48.3	D	TR	0.92	204.2	F
		NB 8th Avenue	L	1.18	135.7	F	L	1.06	94.6	F	L	1.04	76.2	E
			T	0.84	15.6	B	T	0.79	12.2	B	T	0.88	13.4	B
		INTERSECTION			29.1	C			27.6	C			52.9	D
30	8th Avenue and 31st Street	WB 31st Street	T	0.66	32.2	C	T	0.54	27.4	C	T	0.85	45.6	D
			R	0.53	29.6	C	R	0.47	25.9	C	R	0.7	39.3	D
		NB 8th Avenue	L	1.35	211	F	L	1.16	139.8	F	L	1.38	231.3	F
			T	0.68	22	C	T	0.69	23.5	C	T	0.79	25.9	C
		INTERSECTION			49.6	D			37.3	D			47.1	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.23	13.3	B	T	0.29	14.2	B	T	0.4	16.1	B
			R	1.05	90.6	F	R	0.74	37.4	D	R	1.03	90.7	F
		NB 8th Avenue	LT	0.77	28	C	LT	0.78	28.4	C	LT	1.06	68.2	E
		INTERSECTION			36.5	D			28.3	C			66.2	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.84	28.6	C	LT	0.92	36.9	D	LT	0.56	15.9	B
		WB 42nd Street	TR	0.74	12	B	TR	0.76	12.4	B	TR	0.58	6.4	A
		NB 8th Avenue	L	0.09	8.6	A	L	0.45	13	B	L	0.08	9.8	A
			LT	1.07	52.1	D	LT	0.98	23.7	C	LT	1.03	51	D
			R	0.74	25.8	C	R	0.68	22.3	C	R	0.17	9.9	A
		INTERSECTION			39.6	D			24.6	C			37.5	D
33	8th Avenue and 58th Street	EB 58th Street	LT	0.67	20.7	C	LT	0.85	27.9	C	LT	0.76	20	C
		NB 8th Avenue	TR	0.56	16.9	B	TR	0.61	17.7	B	TR	0.67	18.7	B
		INTERSECTION			18.1	B			21.2	C			19.1	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.78	38.5	D	T	0.87	48.9	D	T	1.03	83.2	F
			R	0.75	47	D	R	0.76	49.2	D	R	0.55	37.8	D
		SB 9th Avenue	LT	0.75	17.3	B	LT	0.65	14.9	B	LT	0.6	14.1	B
		INTERSECTION			23.2	C			24.7	C			30.1	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.85	34.9	C	T	0.79	30.9	C	T	0.76	29.7	C
			R	0.84	49.3	D	R	0.78	43.8	D	R	0.75	41.6	D
		WB 57th Street	LT	1.05	66.6	E	LT	0.85	33	C	LT	0.84	33.3	C
		SB 7th Avenue	LTR	0.74	20.4	C	LTR	0.34	14.2	B	LTR	0.39	14.6	B
		INTERSECTION			37.8	D			28.2	C			27.1	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.87	48.2	D	T	0.84	44.9	D	T	0.86	46.9	D
			R	0.57	29	C	R	0.61	31.4	C	R	0.52	27.2	C
		WB Central Park South	L	1.06	77.9	E	L	1.06	86.9	F	L	1.06	79.9	E
			T	0.59	14.3	B	T	0.98	45.6	D	T	1.01	45.6	D
		SB Central Park Driveway	L	1.05	114.4	F	L	0.01	29	C	L	0.01	30	C
			TR	1.02	71.7	E	TR				TR			
		INTERSECTION			51.9	D			52.1	D			51.2	D

Table 15-7: 2013 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**
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.03	77	E	LT	0.95	65	E	LT	0.95	63.6	E
		WB 23rd Street	TR	1.06	108.1	F	TR	1.01	76.2	E	TR	0.95	80.1	F
		NB 6th Avenue	LT	0.93	29.3	C	LT	0.97	35.2	D	LT	0.77	21.1	C
			R	0.49	21.3	C	R	0.69	32.3	C	R	0.49	21.3	C
		INTERSECTION			50.1	D			46.1	D			39.2	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.59	25.4	C	TR	0.74	30.3	C	TR	0.83	35.2	D
		NB 6th Avenue	LT	0.96	32.9	C	LT	0.84	23.5	C	LT	0.82	22.5	C
		INTERSECTION			31.6	C			25	C			25.9	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.92	35.5	D	LT	0.87	31.7	C	LT	0.72	30.5	C
		WB 42nd Street	T	0.77	27.7	C	T	0.86	29.7	C	T	1	19	B
			R	1.17	114.4	F	R	1.13	117.2	F	R	1.16	88.5	F
		NB 6th Avenue	LTR	0.82	20.2	C	LTR	0.58	14.6	B	LT	1	39.1	D
											R	0.42	16.7	B
		INTERSECTION			30.5	C			28.5	C			37.3	D
40	6th Avenue and 57th Street	EB 57th Street	LT	0.98	38.4	D	LT	1.04	56.9	E	LT	1.09	75.7	E
		WB 57th Street	T	0.96	58.3	E	T	0.99	67.7	E	T	0.95	55.5	E
			R	0.77	50.8	D	R	0.7	49.5	D	R	0.9	61.5	E
		NB 6th Avenue	LT	0.71	20.8	C	LT	0.6	18.7	B	LT	0.6	18.3	B
			R	0.47	21.6	C	R	0.48	21	C	R	0.63	29.7	C
		INTERSECTION			35.1	D			41.6	D			42	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	28.6	C	L	0.61	28	C	L	0.85	51.9	D
			T	0.71	22.1	C	T	0.55	13	B	T	0.5	10.5	B
		WB Central Park South	TR	0.8	33.1	C	TR	0.76	30.9	C	TR	0.78	31.6	C
		NB 6th Avenue	L	1.05	91.1	F	L	1	85.4	F	L	1.02	78.9	E
			LTR	0.94dl	37.3	D	LTR	0.75	28.9	C	LTR	1.04	66.9	E
		INTERSECTION			39.8	D			32.7	C			49.6	D
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.76	36.5	D	T	0.71	20.4	C	T	0.72	33.7	C
			R	0.66	41.2	D	R	0.73	33.9	C	R	0.76	55.6	E
		WB 23rd Street	LT	0.38	17.4	B	LT	0.34	17	B	LT	0.34	17	B
		SB 5th Avenue	TR	0.69	22.8	C	TR	0.7	23.1	C	TR	0.79	25.6	C
		INTERSECTION			26.5	C			21.7	C			27.1	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.07	62.9	E	T	1.07	64.8	E	T	0.92	24	C
			R	0.97	46.2	D	R	0.84	33.3	C	R	0.64	18.6	B
		WB 57th Street	LT	1.08	81.8	F	LT	0.95	48.9	D	LT	1.03	59.8	E
		SB 5th Avenue	LT	1.04	57.7	E	LT	0.75	21.2	C	LT	0.7	20.2	C
			R	0.36	17.4	B	R	0.37	17.1	B	R	0.51	21.4	C
		INTERSECTION			61.9	E			39.6	D			31.4	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.3	C	T	0.91	28.6	C	T	0.41	6	A
			R	1.06	83.5	F	R	0.95	69	E	R	0.86	45.1	D
		SB 5th Avenue	LT	1.04	56.9	E	LT	0.77	23.5	C	LT	1.03	59.6	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17	B
		INTERSECTION			50.7	D			29.2	C			47.5	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.09	49.5	D	LT	1.02	23	C	LT	1.06	46	D
		WB 57th Street	T	0.85	35.8	D	T	0.66	26.8	C	T	0.95	51.4	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	20.7	C	LTR	0.54	16.5	B	LT	0.93	33.5	C
											R	0.12	13.7	B
		INTERSECTION			33.5	C			22.2	C			41.3	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.51	15.7	B	L	0.74	27.2	C	L	0.48	16.3	B
			T	0.75	17.6	B	T	0.78	19.6	B	T	0.76	19	B
		INTERSECTION			17.3	B			21	C			18.6	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	0.99	64.4	E	TR	1.03	63	E	T	0.67	26.8	C
											R	0.5	31	C
		WB 36th Street	L	0.73	37.7	D								
		SB 2nd Avenue	L	1.42	225.5	F	L	0.03	10.5	B	L	0.12	11.3	B
			T	1.43	224.1	F	T	0.74	18.9	B	T	0.82	21.3	C
		INTERSECTION			172.2	F			36	D			22.6	C

Table 15-7: 2013 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**
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.63	19	B	TR	0.81	25.7	C	TR	0.77	23.7	C
			R	1.49	270.9	F	R	1.21	156.3	F	R	1.12	123.8	F
		NB 3rd Avenue	LT	0.72	23.2	C	LT	0.63	20.7	C	LT	0.56	19.5	B
		INTERSECTION			47.4	D			37.7	D			32.6	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.61	48.7	D	T	0.35	30.1	C	T	0.5	43.9	D
		WB Jackson Avenue	T	0.33	0.8	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.9	43.3	D	T	0.75	31	C	T	0.83	34.8	C
			R	1.09	91	F	R	1.06	85.3	F	R	1.04	80.4	F
		INTERSECTION			55.3	E			44.8	D			44.8	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.82	16.5	B	T	0.46	4.3	A	T	0.99	50.2	D
			R	0.16	1.2	A	R	0.09	0.7	A	R	0.15	1	A
		WB Northern Boulevard	LT	0.6	22.8	C	LT	0.35	22.7	C	LT	0.9	88.4	F
		NB Queens Plaza S	LTR	1.17	111.8	F	LTR	0.44	13	B	LTR	1.15	105.1	F
		SB Queens Plaza S	T	0.55	22.5	C	T	0.37	19.5	B	T	0.89	43.4	D
		INTERSECTION			61.1	E			14.2	B			77	E
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.74	46.5	D	TR	0.69	44.3	D	TR	0.87	57.6	E
		WB Tillary Street	L	0.73	68.9	E	L	1	111.1	F	L	1.2	137.8	F
			T	0.8	48.9	D	T	0.79	36.6	D	T	1.4	218.4	F
			R	1.04	65.7	E	R	0.81	38.9	D	R	1.08	66.3	E
		NB Adams Street	T	1.16	125.9	F	T	1.05	90.5	F	T	1.16	120.5	F
		SB Adams Street	L	1.16	132.5	F	L	1.1	114.9	F	L	1.13	121.5	F
			T	0.8	30.5	C	T	0.68	26.7	C	T	1.09	80.8	F
		NB Service Road	TR	1.1	122.2	F	TR	1.01	95	F	TR	0.82	56	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.29	33.5	C
		INTERSECTION			72.4	E			57.8	E			111.3	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	33.9	C	L	0.35	27	C	L	0.32	34.1	C
			TR	0.87	40.2	D	TR	0.61	30.4	C	TR	0.87	36.4	D
		WB Tillary Street	L	1.05	89.5	F	L	0.43	45.2	D	L	0.51	31.9	C
			TR	0.94	61.5	E	TR	0.63	16.8	B	TR	1.11	86.6	F
		NB Jay Street	L	0.45	39.8	D	L	0.53	45.2	D	L	0.65	49.1	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	32.9	C
			R	0.52	21.2	C	R	0.56	21.6	C	R	0.69	28.5	C
		SB Jay Street	L	0.24	34.2	C	L	0.41	42.9	D	L	0.5	46	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	D
		INTERSECTION			49.8	D			26.6	C			57.2	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.96	110.9	F	L	0.52	44.3	D	L	0.32	49.4	D
			TR	1.25	141.3	F	TR	1.15	123.8	F	TR	1.24	159.7	F
		WB Tillary Street	L	1.36	214.3	F	L	1.14	132.5	F	L	1.24	169.3	F
			TR	1.13	112.9	F	TR	1.07	96.6	F	TR	1.17	127.1	F
			R	1.18	143.2	F	R	1.14	137.3	F	R	0.63	47.7	D
		NB Flatbush Avenue	L	1.02	77.9	E	L	0.91	47.3	D	L	1.16	116.9	F
			T	0.99	57.4	E	T	0.51	26.1	C	T	0.61	28.8	C
			R	1	74.6	E	R	0.98	69.3	E	R	1.01	74.1	E
		SB Flatbush Avenue	T	1.08	94.3	F	T	0.56	39	D	T	1.06	85.3	F
			R	0.26	34.3	C	R	0.44	40.6	D	R	0.42	37.7	D
		INTERSECTION			110.4	F			84	F			108.1	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.44	39.4	D	LT	0.24	14.6	B	LT	0.53	28.5	C
		WB Northern Boulevard	T	0.55	28	C	T	0.4	22.8	C	T	0.45	23.3	C
			R	1.06	76.4	E	R	1.12	101.3	F	R	1.14	106.1	F
		SB Queens Plaza N	L	0.98	62.2	E	L	0.99	84.6	F	L	1.1	210.1	F
		INTERSECTION			58	E			70.5	E			132.2	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.44	0.5	A	LTR	0.61	4.8	A	LTR	0.61	5.9	A
		WB Northern Boulevard	LTR	0.61	8.6	A	LTR	0.57	7.5	A	LTR	0.62	11.8	B
		INTERSECTION			4.8	A			6.2	A			8.7	A

Table 15-8: 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	1.05	113.9	F	L	0.94	88.1	F	L	0.62	47.3	D
			T	0.85	33.6	C	T	0.67	23.1	C	T	0.62	20.7	C
		NB 3rd Avenue	T	0.74	29.4	C	T	0.84	29.7	C	T	0.65	23.3	C
			R	0.59	34.5	C	R	1.05	121.4	F	R	0.49	29.9	C
		INTERSECTION			38.3	D			38.4	D			24.6	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.87	50.9	D	T	0.81	47.4	D	T	0.88	54.2	D
			R	0.75	43.7	D	R	0.88	74.5	E	R	0.87	63.9	E
		NB 3rd Avenue	LT	0.8	20.1	C	LT	0.78	7.7	A	LT	0.56	3.2	A
		INTERSECTION			26.1	C			16	B			15.2	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.87	41.2	D	LT	1.03	79.5	E	LT	0.8	35.3	D
		NB 3rd Avenue	T	0.93	13.1	B	T	0.97	18.8	B	T	0.97	24.6	C
			R	0.47	7	A	R	0.82	29.7	C	R	0.49	10.8	B
		INTERSECTION			18.2	B			29.9	C			25.8	C
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.07	55.2	E	LT	1.02	30.3	C	LT	0.95	22.2	C
		WB 57th Street	TR	0.94	51.7	D	T	0.58	28.8	C	T	0.44	23.1	C
			R	0.92	60.8	E	R	0.54	33.3	C	R	0.31	23.1	C
		NB 3rd Avenue	LTR	1.05	137.6	F	LTR	1	58.3	E	LTR	1.07	76.2	E
			R	0.2	19.6	B	R	0.85	37.5	D	R	1.07	81.5	F
		INTERSECTION			98.4	F			46	D			57.2	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.39	19.9	B								
			T	0.41	19.8	B	LT	0.98	58.2	E	LT	0.74	25.7	C
		NB 3rd Avenue	TR	1.04	61.1	E	TR	0.98	26.2	C	TR	1.05	39.1	D
		INTERSECTION			55.3	E			33.3	C			35.6	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.69	24.2	C	LT	0.98	57.7	E	LT	0.7	25.4	C
		NB 3rd Avenue	T	1.05	61.8	E	T	0.78	18	B	T	0.92	19	B
			R	1.05	60.2	E	R	1.05	66.2	E	R	1.05	55.6	E
		INTERSECTION			53.6	D			35.5	D			25.5	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.6	20.9	C	T	0.47	20.1	C	TR	0.52	18.9	B
			R	1	96.3	F	R	1.06	115.1	F	R	1	92.2	F
		NB 3rd Avenue	LT	1.05	47.3	D	LT	0.79	43.7	D	LT	0.68	2.8	A
		INTERSECTION			46.4	D			47	D			16.1	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.91	55.1	E	T	1.08	77.5	E	T	0.99	52.3	D
			R	1.07	99.2	F	R	0.82	47.2	D	R	0.4	38.2	D
		WB 57th Street	LT	1.01dl	30.5	C	LT	0.34	20.2	C	LT	0.28	19.9	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.19	17	B
			T	1.15	102.3	F	T	1.1	81.6	F	T	1.02	50.2	D
			R	0.89	62.9	E	R	0.78	40.7	D	R	1	79.2	E
		INTERSECTION			73.8	E			70	E			50.1	D
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.9	39	D	T	0.98	50.9	D	T	0.91	38.7	D
			R	0.57	28.3	C	R	0.46	25.2	C	R	0.41	24	C
		WB 57th Street	LT	0.97	39.4	D	LT	0.94	43.1	D	LT	0.93	44	D
		SB Lexington Avenue	LT	0.75	22.4	C	LT	0.95	41.2	D	LT	0.74	22.2	C
			R	0.25	16.2	B	R	0.74	37	D	R	0.42	20.3	C
		INTERSECTION			31.4	C			43.5	D			31.5	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.65	26.3	C	LT	0.64	24.4	C	LT	0.84	32.3	C
		SB 7th Avenue	T	0.6	7	A	T	0.56	3.5	A	T	0.63	4	A
			R	0.59	11.2	B	R	0.43	5.6	A	R	0.48	6.6	A
		INTERSECTION			12.6	B			9.8	A			12.7	B
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.9	8.7	A	LT	0.79	4.1	A	LT	0.8	4.4	A
		INTERSECTION			8.7	A			4.1	A			4.4	A

Table 15-8: 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 and 33rd Street	WB 33rd Street	L	1.03	111.5	F	L	0.63	44.2	D	L	0.96	93.4	F
			T	0.88	63.1	E	T	0.51	33	C	T	0.38	32	C
		SB 7th Avenue	TR	0.68	4.7	A	TR	0.67	3.2	A	TR	0.63	2.9	A
			R	1.54	262.9	F	R	1.31	168.3	F	R	1.12	77.5	E
		INTERSECTION			43.3	D			25	C			18.6	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.07	73	E	T	1.09	101.6	F	T	1.02	81.1	F
			R	0.06	13	B	R	0.19	33	C	R	0.1	32.9	C
		WB 34th Street	LT	1.13	89.1	F	LT	0.92	14	B	LT	0.88	18.1	B
		SB 7th Avenue	LTR	1.04	108.3	F	LTR	1	86.2	F	LTR	1.06	51.9	D
		INTERSECTION			97.4	F			69.8	E			48	D
14	7th Avenue and 35th Street	WB 35th Street	L	1.07	104.9	F	L	0.96	83.5	F	L	0.6	31.9	C
			T	1.33	192.7	F	T	0.77	42.7	D	T	0.69	36.4	D
		SB 7th Avenue	T	1.04	37	D	T	0.99	34.3	C	T	0.66	3.2	A
			R	1.65	329.7	F	R	1.24	152.7	F	R	0.68	21.1	C
		INTERSECTION			90.7	F			46.1	D			10.8	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.88	44.7	D	TR	0.79	36.9	D	TR	0.88	42.5	D
		SB 7th Avenue	LT	0.86	25.7	C	LT	0.89	38.7	D	LT	0.77	8.5	A
		INTERSECTION			29.6	C			38.4	D			17.3	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.02	69.7	E	LT	0.91	47.6	D	LT	1.03	71.7	E
		SB 7th Avenue	T	0.68	16.6	B	T	0.65	16.3	B	T	0.63	15.7	B
			R	0.69	34.3	C	R	0.54	22.8	C	R	0.61	26.9	C
		INTERSECTION			32.3	C			24.7	C			33.2	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.11	83.2	F	T	1.03	69.6	E	T	0.91	42.3	D
		WB 34th Street	T	0.76	30.7	C	T	0.91	42.9	D	T	0.98	52.2	D
			R	0.36	29.1	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.87	8.1	A	T	1	26.6	C	T	1.09	58.5	E
		INTERSECTION			25.9	C			35.7	D			54.1	D
18	8th Avenue and 34th Street	EB 34th Street	LT	0.9	42	D	LT	0.71	27.2	C	LT	0.68	25.4	C
		WB 34th Street	T	0.43	9.7	A	T	0.48	2.5	A	T	0.49	32.3	C
			R	0.42	10	B	R	0.82	16.9	B	R	0.69	40.2	D
		NB 8th Avenue	L	0.62	20.5	C	L	0.59	16.2	B	L	0.82	56.6	E
			T	0.91	18	B	T	0.82	12.1	B	T	0.94	48.7	D
			R	1.1	157.9	F	R	0.68	24.5	C	R	0.93	82.2	F
		INTERSECTION			23	C			13.6	B			43.4	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.79	35.4	D	T	0.86	41.4	D	T	0.9	45.6	D
			R	1.06	137.8	F	R	1.05	128.3	F	R	1.06	134.3	F
		NB Madison Avenue	LT	0.88	29.7	C	LT	0.73	20.8	C	LT	0.64	18.3	B
		INTERSECTION			37.9	D			34.4	C			32.7	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.7	57.9	E	L	0.64	51.6	D	L	0.63	52.5	D
			T	0.81	37.8	D	T	0.68	28.6	C	T	0.59	25.8	C
		NB Madison Avenue	TR	1.04	43	D	TR	1.03	48.3	D	TR	0.92	17.2	B
		INTERSECTION			42.9	D			44.9	D			20.6	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.48	49	D	L	0.41	42.8	D	L	0.35	41.2	D
			T	0.38	21.8	C	T	0.22	17.6	B	T	0.22	17.4	B
		NB Madison Avenue	TR	0.92	17.9	B	TR	0.96	35.5	D	TR	0.98	23.2	C
		INTERSECTION			19.6	B			34.8	C			23.4	C

Table 15-8: 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	1.27	158.9	F	LT	0.46	21.2	C	LT	0.72	33.7	C
		WB 42nd Street	T	1.19	114.8	F	TR	0.87	29.6	C	T	1	62.6	E
			R	0.1	19.7	B					R	0.14	18.5	B
		NB Madison Avenue	LT	1.05	58.7	E	LT	1.06	45.5	D	LT	1.02	30.3	C
			R	0.2	8.4	A	R	0.23	8.1	A	R	0.16	7	A
		INTERSECTION			102	F			34.1	C			41.2	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.52	26	C	T	0.6	28.2	C	T	0.61	28.9	C
			R	0.81	51.3	D	R	0.73	41	D	R	0.87	68.6	E
		NB Madison Avenue	LT	1	44.4	D	LT	0.98	23.8	C	LT	0.94	26.3	C
		INTERSECTION			42.9	D			26.3	C			30.2	C
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.75	34.7	C	LT	0.92	55.3	E	LT	0.91	59.8	E
		NB Madison Avenue	TR	0.95	43.3	D	TR	0.89	14.9	B	T	0.99	31.2	C
											R	0.12	5.4	A
		INTERSECTION			41.8	D			23.3	C			35.6	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.86	39.7	D	TR	0.99	60.3	E	TR	0.53	23.8	C
		NB Madison Avenue	LT	0.98	37.8	D	LT	1.01	29.9	C	LT	0.92	27.6	C
		INTERSECTION			38.3	D			39.1	D			26.7	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.81	33.9	C	T	0.69	32.6	C	T	0.58	34.5	C
			R	0.26	25.6	C	R	0.13	23.5	C	R	0.12	26.7	C
		WB 42nd Street	LT	0.99	38	D	LT	0.75	31.8	C	LT	1.12	95	F
		SB 5th Avenue	LT	0.82	22.6	C	LT	0.75	20.2	C	LT	1.05	57.2	E
			R	0.11	13.6	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			28.9	C			25.3	C			63.9	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.01	42.8	D	T	0.83	21.2	C	T	0.73	8.3	A
		WB 42nd Street	TR	0.95	30	C	TR	0.91	21.9	C	TR	0.87	25.6	C
		INTERSECTION			36.3	D			21.6	C			18.2	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.58	15.3	B	T	0.53	9.6	A	T	0.48	12	B
			R				R				R			
		WB 42nd Street	LT	0.73	21.9	C	T	0.8	22.7	C	T	0.72	22.6	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			18.8	B			17	B			17.9	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.91	22.6	C	TR	1.01	48.2	D	TR	0.92	205.9	F
		NB 8th Avenue	L	1.17	133.5	F	L	1.06	96.4	F	L	1.04	76.2	E
			T	0.84	15.6	B	T	0.79	12.2	B	T	0.88	13.5	B
		INTERSECTION			28.9	C			27.7	C			53.3	D
30	8th Avenue and 31st Street	WB 31st Street	T	0.65	32.1	C	T	0.54	27.3	C	T	0.86	45.8	D
			R	0.53	29.6	C	R	0.47	25.9	C	R	0.7	39.3	D
		NB 8th Avenue	L	1.35	211	F	L	1.16	139.8	F	L	1.38	231.3	F
			T	0.68	22	C	T	0.69	23.5	C	T	0.79	26	C
		INTERSECTION			49.6	D			37.3	D			47.2	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.22	13.3	B	T	0.29	14.2	B	T	0.4	16.1	B
			R	1.05	90.6	F	R	0.75	37.8	D	R	1.04	92.9	F
		NB 8th Avenue	LT	0.77	28	C	LT	0.78	28.4	C	LT	1.06	68.7	E
		INTERSECTION			36.5	D			28.4	C			66.8	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.84	28.8	C	LT	0.92	37	D	LT	0.56	15.9	B
		WB 42nd Street	TR	0.74	12	B	TR	0.76	12.5	B	TR	0.58	6.4	A
		NB 8th Avenue	L	0.09	8.6	A	L	0.45	13	B	L	0.08	9.8	A
			LT	1.07	52.5	D	LT	0.98	24.1	C	LT	1.03	51.8	D
			R	0.74	25.8	C	R	0.68	22.3	C	R	0.17	9.9	A
		INTERSECTION			39.9	D			24.8	C			38	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	0.67	20.7	C	LT	0.85	27.9	C	LT	0.76	20.1	C
		NB 8th Avenue	TR	0.56	16.9	B	TR	0.62	17.7	B	TR	0.67	18.7	B
		INTERSECTION			18.2	B			21.2	C			19.1	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.78	38.5	D	T	0.88	49.2	D	T	1.03	83.8	F
			R	0.75	47	D	R	0.76	49.2	D	R	0.55	38.1	D
		SB 9th Avenue	LT	0.75	17.3	B	LT	0.65	15	B	LT	0.6	14.1	B
		INTERSECTION			23.3	C			24.7	C			30.3	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.86	35	C	T	0.79	31	C	T	0.77	29.8	C
			R	0.84	49.3	D	R	0.78	44.4	D	R	0.75	41.9	D
		WB 57th Street	LT	1.05	66.8	E	LT	0.85	33.1	C	LT	0.84	33.3	C
		SB 7th Avenue	LTR	0.74	20.4	C	LTR	0.34	14.2	B	LTR	0.39	14.6	B
		INTERSECTION			37.9	D			28.3	C			27.2	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.87	48.3	D	T	0.84	45	D	T	0.86	46.9	D
			R	0.57	29	C	R	0.62	31.5	C	R	0.52	27.2	C
		WB Central Park South	L	1.06	78.6	E	L	1.06	87.6	F	L	1.06	80.5	F
			T	0.59	14.3	B	T	0.98	45.8	D	T	1.01	46	D
		SB Central Park Driveway	L	1.05	114.4	F	L	0.01	29	C	L	0.01	30	C
			TR	1.02	71.7	E	TR				TR			
		INTERSECTION			52	D			52.4	D			51.5	D
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.03	77.4	E	LT	0.95	65	E	LT	0.96	64	E
		WB 23rd Street	TR	1.06	108.6	F	TR	1.01	76.2	E	TR	0.95	80.3	F
		NB 6th Avenue	LT	0.93	29.4	C	LT	0.97	35.5	D	LT	0.78	21.1	C
			R	0.49	21.4	C	R	0.69	32.6	C	R	0.49	21.4	C
		INTERSECTION			50.4	D			46.2	D			39.3	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.59	25.4	C	TR	0.74	30.3	C	TR	0.83	35.2	D
		NB 6th Avenue	LT	0.96	33	C	LT	0.84	23.6	C	LT	0.82	22.6	C
		INTERSECTION			31.7	C			25.1	C			25.9	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.92	35.4	D	LT	0.87	31.8	C	LT	0.72	30.6	C
		WB 42nd Street	T	0.77	27.8	C	T	0.86	29.9	C	T	1	19.8	B
			R	1.17	114.3	F	R	1.13	117.1	F	R	1.16	88.5	F
		NB 6th Avenue	LTR	0.83	20.3	C	LTR	0.58	14.6	B	LT	1	39.4	D
											R	0.42	16.7	B
		INTERSECTION			30.5	C			28.6	C			37.6	D
40	6th Avenue and 57th Street	EB 57th Street	LT	0.99	38.8	D	LT	1.05	57.3	E	LT	1.1	76.6	E
		WB 57th Street	T	0.96	58.3	E	T	0.99	68.3	E	T	0.95	55.6	E
			R	0.77	51	D	R	0.7	49.6	D	R	0.9	62.3	E
		NB 6th Avenue	LT	0.71	20.8	C	LT	0.6	18.7	B	LT	0.6	18.4	B
			R	0.48	21.7	C	R	0.48	21.1	C	R	0.63	29.7	C
		INTERSECTION			35.2	D			41.8	D			42.3	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	28.5	C	L	0.61	28	C	L	0.85	51.9	D
			T	0.71	22.1	C	T	0.55	13	B	T	0.5	10.6	B
		WB Central Park South	TR	0.8	33.1	C	TR	0.76	30.9	C	TR	0.78	31.8	C
		NB 6th Avenue	L	1.06	91.8	F	L	1	85.4	F	L	1.02	79.6	E
			LTR	0.94dl	37.3	D	LTR	0.75	29	C	LTR	1.04	67.1	E
		INTERSECTION			39.9	D			32.8	C			49.8	D
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.76	36.5	D	T	0.71	20.6	C	T	0.72	33.7	C
			R	0.66	41.4	D	R	0.73	34	C	R	0.76	55.5	E
		WB 23rd Street	LT	0.38	17.4	B	LT	0.34	17	B	LT	0.34	17	B
		SB 5th Avenue	TR	0.69	22.8	C	TR	0.7	23.1	C	TR	0.79	25.6	C
		INTERSECTION			26.5	C			21.7	C			27.1	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
43	5th Avenue and 57th Street	EB 57th Street	T	1.07	63.8	E	T	1.07	65.6	E	T	0.92	24.2	C
			R	0.97	46.7	D	R	0.84	33.2	C	R	0.64	18.7	B
		WB 57th Street	LT	1.08	83.2	F	LT	0.95	49.1	D	LT	1.03	60.5	E
		SB 5th Avenue	LT	1.04	58.1	E	LT	0.75	21.2	C	LT	0.71	20.2	C
			R	0.37	17.5	B	R	0.38	17.1	B	R	0.51	21.4	C
		INTERSECTION			62.7	E			39.9	D			31.6	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.3	C	T	0.91	28.8	C	T	0.42	6.1	A
			R	1.06	83.5	F	R	0.95	69	E	R	0.86	45.1	D
		SB 5th Avenue	LT	1.04	57.4	E	LT	0.77	23.5	C	LT	1.03	59.9	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17	B
		INTERSECTION			51.1	D			29.3	C			47.7	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.09	50.7	D	LT	1.02	23.7	C	LT	1.06	47.2	D
		WB 57th Street	T	0.85	35.9	D	T	0.66	26.8	C	T	0.95	51.7	D
			R	0.77	42	D	R	0.67	40	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.73	20.7	C	LTR	0.54	16.5	B	LT	0.93	33.7	C
											R	0.12	13.7	B
		INTERSECTION			33.9	C			22.4	C			41.8	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.51	15.7	B	L	0.74	27.5	C	L	0.48	16.3	B
			T	0.75	17.6	B	T	0.78	19.6	B	T	0.76	19	B
		INTERSECTION			17.3	B			21.1	C			18.6	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	0.99	65	E	TR	1.03	63.2	E	T	0.67	26.9	C
											R	0.5	31	C
		WB 36th Street	L	0.73	37.8	D								
		SB 2nd Avenue	L	1.42	226.2	F	L	0.03	10.5	B	L	0.12	11.3	B
			T	1.43	225.6	F	T	0.74	18.9	B	T	0.83	21.4	C
		INTERSECTION			173.2	F			36.1	D			22.7	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.63	19	B	TR	0.81	25.8	C	TR	0.77	23.8	C
			R	1.49	270.9	F	R	1.21	156.3	F	R	1.12	124.9	F
		NB 3rd Avenue	LT	0.72	23.2	C	LT	0.63	20.7	C	LT	0.56	19.5	B
		INTERSECTION			47.4	D			37.8	D			32.7	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.62	48.8	D	T	0.35	30.1	C	T	0.5	44	D
		WB Jackson Avenue	T	0.34	0.8	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.9	43.8	D	T	0.76	31.3	C	T	0.83	35.1	D
			R	1.1	92.9	F	R	1.07	87.8	F	R	1.05	82.1	F
		INTERSECTION			56.2	E			45.7	D			45.4	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.82	16.7	B	T	0.47	4.4	A	T	0.99	50.8	D
			R	0.16	1.2	A	R	0.09	0.7	A	R	0.16	1	A
		WB Northern Boulevard	LT	0.61	22.9	C	LT	0.35	22.7	C	LT	0.91	89.1	F
		NB Queens Plaza S	LTR	1.18	114	F	LTR	0.44	13	B	LTR	1.16	106.6	F
		SB Queens Plaza S	T	0.56	22.6	C	T	0.37	19.6	B	T	0.89	43.9	D
		INTERSECTION			62.1	E			14.3	B			78	E

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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	46.6	D	TR	0.7	44.4	D	TR	0.87	58	E
		WB Tillary Street	L	0.73	68.6	E	L	1.01	113.6	F	L	1.21	140.7	F
			T	0.8	49.1	D	T	0.8	36.9	D	T	1.41	221.1	F
			R	1.04	66.7	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	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	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			73.2	E			58.3	E			113	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	33.9	C	L	0.35	27	C	L	0.32	34.1	C
			TR	0.87	40.4	D	TR	0.61	30.4	C	TR	0.88	36.6	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	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	C
			R	0.52	21.3	C	R	0.56	21.7	C	R	0.7	28.6	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.5	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	D
		INTERSECTION			50	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	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	75.7	E	R	0.98	70.3	E	R	1.01	75.4	E
		SB Flatbush Avenue	T	1.09	96	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	0.44	39.5	D	LT	0.24	14.6	B	LT	0.53	28.5	C
		WB Northern Boulevard	T	0.55	28.1	C	T	0.4	22.8	C	T	0.45	23.3	C
			R	1.07	78.6	E	R	1.12	103.3	F	R	1.15	107.7	F
		SB Queens Plaza N	L	0.98	63	E	L	0.99	86.1	F	L	1.1	214.9	F
		INTERSECTION			59	E			71.7	E			134.9	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.44	0.5	A	LTR	0.61	5.1	A	LTR	0.61	6	A
		WB Northern Boulevard	LTR	0.62	8.8	A	LTR	0.57	7.7	A	LTR	0.63	12.4	B
		INTERSECTION			4.9	A			6.4	A			9.1	A

Table 15-9: 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	1.05	113.9	F	L	0.94	88.1	F	L	0.62	47.3	D
			T	0.85	33.6	C	T	0.67	23.2	C	T	0.62	20.7	C
		NB 3rd Avenue	T	0.74	29.6	C	T	0.84	29.8	C	T	0.65	23.3	C
			R	0.59	34.8	C	R	1.05	121.4	F	R	0.5	30.3	C
		INTERSECTION			38.4	D			38.5	D			24.6	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.87	50.9	D	T	0.82	48	D	T	0.88	54.2	D
			R	0.75	43.7	D	R	0.88	74.5	E	R	0.87	63.9	E
		NB 3rd Avenue	LT	0.8	20.6	C	LT	0.79	7.8	A	LT	0.56	3.2	A
		INTERSECTION			26.4	C			16.2	B			15.2	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.87	41.4	D	LT	1.03	80.1	F	LT	0.8	35.3	D
		NB 3rd Avenue	T	0.93	13.2	B	T	0.98	19.1	B	T	0.97	24.9	C
			R	0.47	7	A	R	0.82	29.7	C	R	0.49	10.9	B
		INTERSECTION			18.4	B			30.2	C			26	C
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.07	56.3	E	LT	1.02	31	C	LT	0.96	22.7	C
		WB 57th Street	TR	0.94	51.8	D	T	0.58	28.8	C	T	0.44	21.3	C
			R	0.92	61.1	E	R	0.54	33.5	C	R	0.31	21.2	C
		NB 3rd Avenue	LTR	1.05	138.9	F	LTR	1.01	59.2	E	LTR	1.07	76.8	E
			R	0.2	19.6	B	R	0.85	37.4	D	R	1.07	81.4	F
		INTERSECTION			99.3	F			46.7	D			57.5	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.39	19.9	B								
			T	0.41	19.8	B	LT	0.98	59.4	E	LT	0.74	25.7	C
		NB 3rd Avenue	TR	1.05	62.1	E	TR	0.98	26.4	C	TR	1.05	40.3	D
		INTERSECTION			56.2	E			33.7	C			36.4	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.69	24.2	C	LT	0.98	57.7	E	LT	0.7	25.4	C
		NB 3rd Avenue	T	1.05	62.5	E	T	0.78	18	B	T	0.92	19.2	B
			R	1.06	61.3	E	R	1.05	67.7	E	R	1.05	56.6	E
		INTERSECTION			54.2	D			35.8	D			25.7	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.6	20.9	C	T	0.47	20.2	C	TR	0.52	18.9	B
			R	1.01	97.2	F	R	1.06	115.1	F	R	1	92.2	F
		NB 3rd Avenue	LT	1.05	47.7	D	LT	0.79	44.2	D	LT	0.68	2.8	A
		INTERSECTION			46.7	D			47.3	D			16.1	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.91	55	D	T	1.08	78	E	T	1.08	82.4	F
			R	1.08	100.8	F	R	0.82	47.1	D	R	0.44	41.6	D
		WB 57th Street	LT	1.01dl	30.6	C	LT	0.34	20.2	C	LT	0.27	19.8	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.2	18.4	B
			T	1.15	103.2	F	T	1.1	82.4	F	T	1.08	70.7	E
			R	0.89	63.5	E	R	0.78	40.7	D	R	1.05	96	F
		INTERSECTION			74.4	E			70.5	E			70.5	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.9	39.1	D	T	0.98	51.3	D	T	0.91	39.1	D
			R	0.57	28.3	C	R	0.46	25.3	C	R	0.41	24.2	C
		WB 57th Street	LT	0.98	40	D	LT	0.94	43.3	D	LT	0.93	44.6	D
		SB Lexington Avenue	LT	0.75	22.4	C	LT	0.96	41.6	D	LT	0.74	22.2	C
			R	0.26	16.2	B	R	0.74	37	D	R	0.42	20.3	C
		INTERSECTION			31.6	C			43.9	D			31.7	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.65	26.3	C	LT	0.64	24.5	C	LT	0.84	32.4	C
		SB 7th Avenue	T	0.6	7	A	T	0.56	3.6	A	T	0.63	4	A
			R	0.6	11.4	B	R	0.43	5.6	A	R	0.48	6.6	A
		INTERSECTION			12.6	B			9.8	A			12.8	B
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.9	8.8	A	LT	0.79	4.2	A	LT	0.8	4.4	A
		INTERSECTION			8.8	A			4.2	A			4.4	A

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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
12	7th Avenue and and 33rd Street	WB 33rd Street	L	1.03	111.5	F	L	0.63	44.2	D	L	0.96	93.4	F
			T	0.88	63.1	E	T	0.51	33	C	T	0.39	32.1	C
		SB 7th Avenue	TR	0.68	4.7	A	TR	0.67	3.2	A	TR	0.63	2.9	A
			R	1.54	262.9	F	R	1.32	170.6	F	R	1.12	79.5	E
		INTERSECTION			43.4	D			25.3	C			18.9	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.07	74.2	E	T	1.09	102.3	F	T	1.02	81.5	F
			R	0.06	13	B	R	0.19	32.9	C	R	0.1	32.8	C
		WB 34th Street	LT	1.14	89.7	F	LT	0.92	14.1	B	LT	0.88	18.1	B
		SB 7th Avenue	LTR	1.04	108.7	F	LTR	1	86.7	F	LTR	1.06	52.2	D
		INTERSECTION			97.9	F			70.2	E			48.3	D
14	7th Avenue and 35th Street	WB 35th Street	L	1.07	104.9	F	L	0.96	83.5	F	L	0.6	31.9	C
			T	1.33	192.7	F	T	0.77	42.9	D	T	0.7	36.5	D
		SB 7th Avenue	T	1.04	37.1	D	T	0.99	34.7	C	T	0.66	3.2	A
			R	1.65	329.7	F	R	1.24	152.7	F	R	0.68	21	C
		INTERSECTION			90.7	F			46.4	D			10.8	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.88	44.7	D	TR	0.79	36.9	D	TR	0.88	42.5	D
		SB 7th Avenue	LT	0.86	25.6	C	LT	0.89	39.3	D	LT	0.77	8.5	A
		INTERSECTION			29.5	C			38.9	D			17.3	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.02	70.4	E	LT	0.91	47.6	D	LT	1.03	72.1	E
		SB 7th Avenue	T	0.68	16.6	B	T	0.66	16.3	B	T	0.63	15.7	B
			R	0.69	34.3	C	R	0.54	22.8	C	R	0.61	26.9	C
		INTERSECTION			32.6	C			24.7	C			33.3	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.11	84	F	T	1.03	70.2	E	T	0.91	42.4	D
		WB 34th Street	T	0.76	30.7	C	T	0.91	43	D	T	0.98	52.9	D
			R	0.36	29.1	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.87	8.1	A	T	1	26.8	C	T	1.09	59.2	E
		INTERSECTION			26.1	C			35.9	D			54.7	D
18	8th Avenue and 34th Street	EB 34th Street	LT	0.9	42.2	D	LT	0.71	27.3	C	LT	0.68	25.5	C
		WB 34th Street	T	0.43	9.7	A	T	0.48	2.5	A	T	0.49	32.3	C
			R	0.42	10	B	R	0.82	16.9	B	R	0.69	40.1	D
		NB 8th Avenue	L	0.62	20.6	C	L	0.59	16.3	B	L	0.82	56.5	E
			T	0.91	18.1	B	T	0.82	12.2	B	T	0.94	49	D
			R	1.1	157.4	F	R	0.68	24.5	C	R	0.93	82.2	F
		INTERSECTION			23.1	C			13.6	B			43.6	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.79	35.5	D	T	0.86	41.6	D	T	0.9	45.8	D
			R	1.06	137.8	F	R	1.05	128.3	F	R	1.06	134.3	F
		NB Madison Avenue	LT	0.88	30.1	C	LT	0.73	20.8	C	LT	0.64	18.3	B
		INTERSECTION			38.2	D			34.5	C			32.8	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.7	58.4	E	L	0.64	51.9	D	L	0.63	52.5	D
			T	0.81	37.8	D	T	0.68	28.6	C	T	0.59	25.9	C
		NB Madison Avenue	TR	1.05	44.2	D	TR	1.03	49.3	D	TR	0.92	17.4	B
		INTERSECTION			43.8	D			45.7	D			20.7	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.48	49	D	L	0.41	42.8	D	L	0.35	41.2	D
			T	0.38	21.8	C	T	0.22	17.7	B	T	0.22	17.4	B
		NB Madison Avenue	TR	0.92	18.5	B	TR	0.96	36	D	TR	0.98	23.8	C
		INTERSECTION			20.1	C			35.2	D			24	C
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.27	158.9	F	LT	0.46	21.2	C	LT	0.72	33.7	C
		WB 42nd Street	T	1.2	115.3	F	TR	0.88	29.7	C	T	1	63	E
			R	0.1	19.7	B					R	0.14	18.6	B
		NB Madison Avenue	LT	1.06	59.8	E	LT	1.06	45.8	D	LT	1.02	30.8	C
			R	0.2	8.4	A	R	0.23	8.1	A	R	0.16	7	A
		INTERSECTION			102.6	F			34.2	C			41.5	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**
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.52	26	C	T	0.6	28.2	C	T	0.61	28.9	C
			R	0.81	51.3	D	R	0.73	41	D	R	0.87	68.6	E
		NB Madison Avenue	LT	1	44.6	D	LT	0.98	24.2	C	LT	0.94	26.7	C
		INTERSECTION			43.1	D			26.6	C			30.5	C
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.75	34.7	C	LT	0.92	55.7	E	LT	0.92	60.8	E
		NB Madison Avenue	TR	0.95	44.1	D	TR	0.89	15	B	T	0.99	39.6	D
											R	0.12	5.4	A
		INTERSECTION			42.4	D			23.4	C			42.7	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.87	40	D	TR	0.99	60.3	E	TR	0.53	23.8	C
		NB Madison Avenue	LT	0.98	38	D	LT	1.01	30	C	LT	0.92	28	C
		INTERSECTION			38.5	D			39.2	D			27.1	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.81	33.9	C	T	0.69	32.7	C	T	0.58	34.5	C
			R	0.26	25.5	C	R	0.13	23.5	C	R	0.12	26.7	C
		WB 42nd Street	LT	0.99	38.4	D	LT	0.75	31.8	C	LT	1.13	95.9	F
		SB 5th Avenue	LT	0.82	22.6	C	LT	0.75	20.2	C	LT	1.05	57.7	E
			R	0.11	13.6	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			29	C			25.4	C			64.4	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.01	43.3	D	T	0.83	21.3	C	T	0.73	8.3	A
		WB 42nd Street	TR	0.95	30.3	C	TR	0.91	22	C	TR	0.88	25.8	C
		INTERSECTION			36.6	D			21.7	C			18.4	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.58	15.3	B	T	0.53	9.6	A	T	0.48	12	B
			R				R				R			
		WB 42nd Street	LT	0.73	22	C	T	0.8	22.8	C	T	0.72	22.6	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			18.8	B			17	B			17.9	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.92	23	C	TR	1.01	47.7	D	TR	0.92	205.6	F
		NB 8th Avenue	L	1.17	133.5	F	L	1.06	96.3	F	L	1.05	77.6	E
			T	0.84	15.7	B	T	0.79	12.3	B	T	0.88	13.6	B
		INTERSECTION			29	C			27.7	C			53.3	D
30	8th Avenue and 31st Street	WB 31st Street	T	0.65	32	C	T	0.54	27.4	C	T	0.86	45.9	D
			R	0.53	29.5	C	R	0.47	25.9	C	R	0.7	39.3	D
		NB 8th Avenue	L	1.36	212.8	F	L	1.16	141.4	F	L	1.38	233.9	F
			T	0.68	22	C	T	0.69	23.5	C	T	0.79	26	C
		INTERSECTION			49.9	D			37.5	D			47.5	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.23	13.3	B	T	0.29	14.2	B	T	0.4	16.1	B
			R	1.05	91.6	F	R	0.75	37.8	D	R	1.04	92.9	F
		NB 8th Avenue	LT	0.77	28	C	LT	0.78	28.5	C	LT	1.06	69.9	E
		INTERSECTION			36.7	D			28.4	C			67.8	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.84	28.8	C	LT	0.92	37.8	D	LT	0.56	15.9	B
		WB 42nd Street	TR	0.74	12	B	TR	0.76	12.5	B	TR	0.58	6.4	A
		NB 8th Avenue	L	0.09	8.8	A	L	0.45	13.1	B	L	0.08	9.8	A
			LT	1.07	53	D	LT	0.98	24.3	C	LT	1.03	53.2	D
			R	0.75	26.4	C	R	0.69	22.6	C	R	0.17	9.9	A
		INTERSECTION			40.2	D			25.1	C			38.9	D
33	8th Avenue and 58th Street	EB 58th Street	LT	0.67	20.7	C	LT	0.85	27.9	C	LT	0.76	20.1	C
		NB 8th Avenue	TR	0.56	16.9	B	TR	0.62	17.7	B	TR	0.67	18.7	B
		INTERSECTION			18.2	B			21.2	C			19.1	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.78	38.6	D	T	0.88	49.2	D	T	1.03	83.8	F
			R	0.75	47	D	R	0.76	49.2	D	R	0.55	38.1	D
		SB 9th Avenue	LT	0.76	17.3	B	LT	0.65	15	B	LT	0.61	14.1	B
		INTERSECTION			23.3	C			24.7	C			30.3	C

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35	7th Avenue and 57th Street	EB 57th Street	T	0.86	35.1	D	T	0.79	31	C	T	0.77	29.9	C
			R	0.84	49.3	D	R	0.78	44.4	D	R	0.75	41.9	D
		WB 57th Street	LT	1.05	67.1	E	LT	0.85	33.1	C	LT	0.84	33.4	C
		SB 7th Avenue	LTR	0.74	20.4	C	LTR	0.34	14.2	B	LTR	0.39	14.6	B
		INTERSECTION			38	D			28.4	C			27.2	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.87	48.7	D	T	0.84	45.2	D	T	0.87	47	D
			R	0.57	29	C	R	0.62	31.5	C	R	0.52	27.2	C
		WB Central Park South	L	1.06	79.3	E	L	1.06	87.6	F	L	1.06	81.2	F
			T	0.59	14.4	B	T	0.98	45.7	D	T	1.01	46.4	D
		SB Central Park Driveway	L	1.05	114.4	F	L	0.01	29	C	L	0.01	30	C
			TR	1.02	72	E	TR				TR			
		INTERSECTION			52.3	D			52.4	D			51.9	D
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.03	77.8	E	LT	0.96	65.4	E	LT	0.96	64.3	E
		WB 23rd Street	TR	1.06	108.6	F	TR	1.02	76.6	E	TR	0.95	80.6	F
		NB 6th Avenue	LT	0.93	29.5	C	LT	0.97	35.6	D	LT	0.78	21.1	C
			R	0.49	21.4	C	R	0.69	32.6	C	R	0.49	21.4	C
		INTERSECTION			50.5	D			46.4	D			39.4	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.59	25.4	C	TR	0.74	30.3	C	TR	0.84	35.2	D
		NB 6th Avenue	LT	0.96	33.1	C	LT	0.85	23.7	C	LT	0.82	22.6	C
		INTERSECTION			31.7	C			25.1	C			26	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.92	35.8	D	LT	0.87	31.6	C	LT	0.72	30.6	C
		WB 42nd Street	T	0.77	27.8	C	T	0.86	29.9	C	T	1	19.8	B
			R	1.17	114.2	F	R	1.13	117	F	R	1.16	88.5	F
		NB 6th Avenue	LTR	0.83	20.3	C	LTR	0.58	14.6	B	LT	1	39.6	D
											R	0.42	16.7	B
		INTERSECTION			30.6	C			28.5	C			37.8	D
40	6th Avenue and 57th Street	EB 57th Street	LT	0.99	39	D	LT	1.05	57.6	E	LT	1.1	78.1	E
		WB 57th Street	T	0.96	58.3	E	T	0.99	68.6	E	T	0.95	55.7	E
			R	0.77	50.9	D	R	0.7	49.6	D	R	0.9	62.1	E
		NB 6th Avenue	LT	0.71	20.8	C	LT	0.6	18.7	B	LT	0.6	18.4	B
			R	0.48	21.7	C	R	0.48	21.1	C	R	0.63	29.7	C
		INTERSECTION			35.3	D			42	D			42.6	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.56	28.8	C	L	0.61	28.4	C	L	0.86	53.2	D
			T	0.71	22.1	C	T	0.55	13	B	T	0.5	10.6	B
		WB Central Park South	TR	0.8	33.2	C	TR	0.76	31	C	TR	0.78	31.8	C
		NB 6th Avenue	L	1.06	91.8	F	L	1	85.4	F	L	1.02	79.6	E
			LTR	0.95dl	37.7	D	LTR	0.75	29	C	LTR	1.05	67.7	E
		INTERSECTION			40.1	D			32.8	C			50.1	D
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.76	36.5	D	T	0.71	20.6	C	T	0.72	33.7	C
			R	0.66	41.3	D	R	0.73	34.3	C	R	0.76	56.1	E
		WB 23rd Street	LT	0.38	17.4	B	LT	0.34	17	B	LT	0.34	17	B
		SB 5th Avenue	TR	0.69	22.9	C	TR	0.7	23.1	C	TR	0.79	25.7	C
		INTERSECTION			26.6	C			21.8	C			27.2	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.07	64.2	E	T	1.08	66.1	E	T	0.92	24.2	C
			R	0.97	46.6	D	R	0.84	33.6	C	R	0.64	18.6	B
		WB 57th Street	LT	1.09	84.1	F	LT	0.95	49.5	D	LT	1.04	61.5	E
		SB 5th Avenue	LT	1.04	58.3	E	LT	0.75	21.2	C	LT	0.71	20.2	C
			R	0.37	17.5	B	R	0.38	17.1	B	R	0.51	21.4	C
		INTERSECTION			63	E			40.2	D			31.9	C

Table 15-9: 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**
44	5th Avenue and Central Park South	EB Central Park South	T	0.86	22.4	C	T	0.91	29	C	T	0.42	6.1	A
			R	1.06	83.5	F	R	0.95	70	E	R	0.86	45	D
		SB 5th Avenue	LT	1.04	57.4	E	LT	0.77	23.6	C	LT	1.03	60.4	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17	B
		INTERSECTION			51.1	D			29.5	C			48	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.09	51.2	D	LT	1.02	24.5	C	LT	1.06	47.6	D
		WB 57th Street	T	0.86	35.9	D	T	0.67	26.9	C	T	0.95	51.9	D
			R	0.77	42	D	R	0.67	40	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.74	20.7	C	LTR	0.54	16.6	B	LT	0.93	33.8	C
											R	0.12	13.7	B
		INTERSECTION			34	C			22.7	C			42	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.52	15.7	B	L	0.74	27.5	C	L	0.48	16.3	B
			T	0.75	17.7	B	T	0.78	19.7	B	T	0.76	19	B
		INTERSECTION			17.3	B			21.1	C			18.7	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	1	65.7	E	TR	1.03	64.1	E	T	0.68	26.9	C
											R	0.5	31	C
		WB 36th Street	L	0.73	37.8	D								
		SB 2nd Avenue	L	1.42	227.5	F	L	0.03	10.5	B	L	0.12	11.3	B
			T	1.43	226.8	F	T	0.74	18.9	B	T	0.83	21.4	C
		INTERSECTION			174.2	F			36.5	D			22.7	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.64	19.1	B	TR	0.82	25.9	C	TR	0.77	23.8	C
			R	1.49	272.8	F	R	1.21	157.6	F	R	1.12	126	F
		NB 3rd Avenue	LT	0.72	23.3	C	LT	0.63	20.8	C	LT	0.56	19.5	B
		INTERSECTION			47.6	D			38	D			32.9	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.62	48.9	D	T	0.35	30.1	C	T	0.5	44.1	D
		WB Jackson Avenue	T	0.34	0.8	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.91	44.5	D	T	0.76	31.4	C	T	0.84	35.4	D
			R	1.1	94.8	F	R	1.07	89	F	R	1.05	83.2	F
		INTERSECTION			57.1	E			46.2	D			45.8	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.83	16.8	B	T	0.47	4.4	A	T	1	52.6	D
			R	0.17	1.2	A	R	0.09	0.7	A	R	0.16	1	A
		WB Northern Boulevard	LT	0.61	23	C	LT	0.35	22.7	C	LT	0.91	89.9	F
		NB Queens Plaza S	LTR	1.18	116.2	F	LTR	0.45	13	B	LTR	1.16	109.3	F
		SB Queens Plaza S	T	0.56	22.6	C	T	0.37	19.6	B	T	0.9	44.5	D
		INTERSECTION			63.1	E			14.3	B			79.7	E
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	46.9	D	TR	0.7	44.5	D	TR	0.88	59.3	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	0.8	37.2	D	T	1.41	223.8	F
			R	1.05	68.9	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	C	T	0.68	26.9	C	T	1.1	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	0.3	33.5	C
		INTERSECTION			74.4	E			59.1	E			114.8	F

Table 15-9: 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	33.8	C	L	0.36	27	C	L	0.32	34	C
			TR	0.87	40.7	D	TR	0.62	30.5	C	TR	0.88	36.7	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	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	C
			R	0.52	21.3	C	R	0.56	21.8	C	R	0.7	28.7	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.5	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	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	59.7	E	T	0.52	26.2	C	T	0.61	29	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	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	0.44	39.5	D	LT	0.24	14.6	B	LT	0.53	28.6	C
		WB Northern Boulevard	T	0.55	28.1	C	T	0.4	22.8	C	T	0.45	23.3	C
			R	1.07	79.7	E	R	1.13	105.2	F	R	1.15	109.8	F
		SB Queens Plaza N	L	0.99	64.1	E	L	1	88.7	F	L	1.1	219.5	F
		INTERSECTION			59.7	E			73.3	E			137.5	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.45	0.5	A	LTR	0.62	5.1	A	LTR	0.62	6.2	A
		WB Northern Boulevard	LTR	0.62	9	A	LTR	0.57	7.8	A	LTR	0.63	12.9	B
		INTERSECTION			5	A			6.5	A			9.4	A

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 Proposed Action volumes 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 2013, 2014 and 2015 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 (2012), 800 in Year Two (2013), and 800 in Year Three (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.

Table 15-10 shows the percent increase in taxi medallions for each of the three 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 2013, 9 taxis in 2014, and 15 taxis in 2015). For 2015, the resulting net increase in peak hour taxi volumes is presented in Figures 15-14 through 15-18. For 2013 and 2014, the net increase in peak hour taxi volumes would be 20% (400/2000) and 60% (1200/2000) of the 2015 net increase in peak hour taxi volumes, respectively.

Table 15-10: 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
2012-2013	400	2013	400	13,237	13,637	3.0%
2013-2014	800	2014	1200	13,237	14,437	9.1%
2014-2015	800	2015	2000	13,237	15,237	15.1%

2015 Taxi Medallion Increase - DEIS

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

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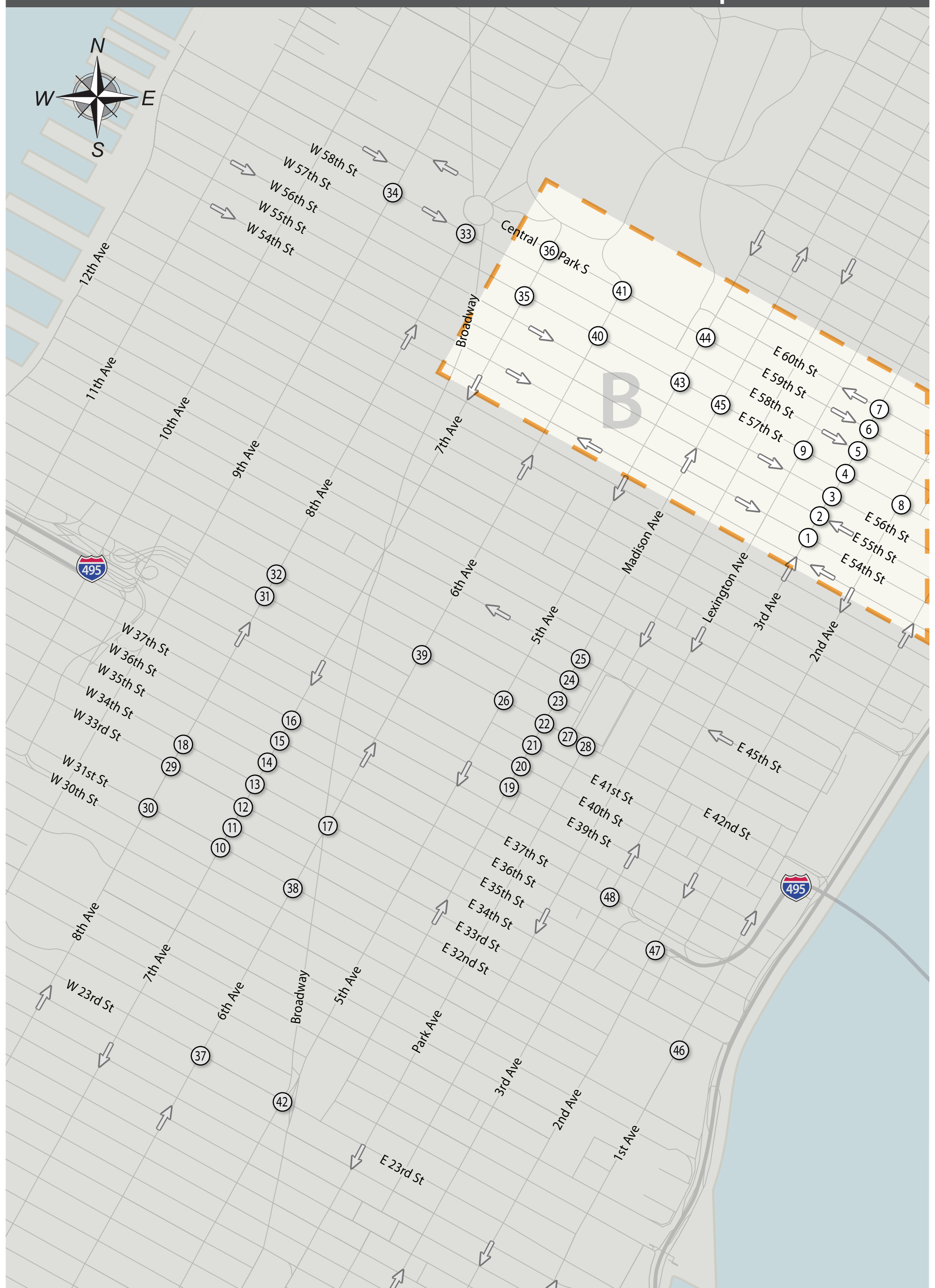
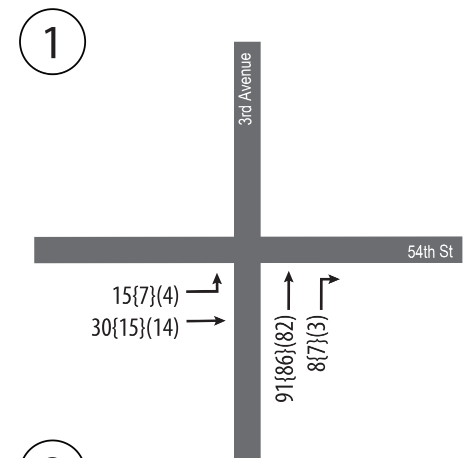
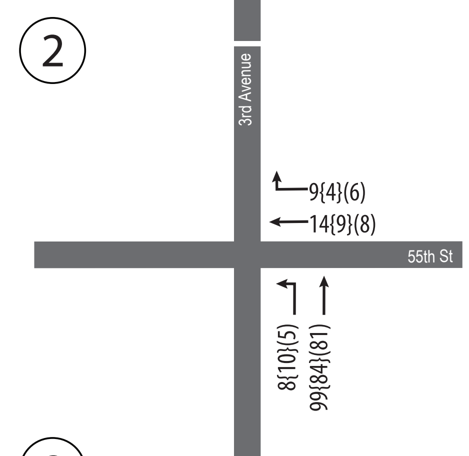
Manhattan-North Location Map

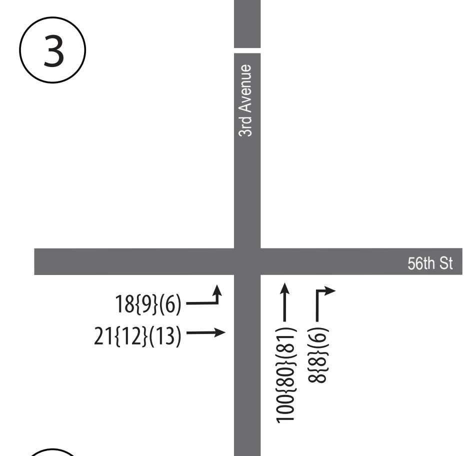


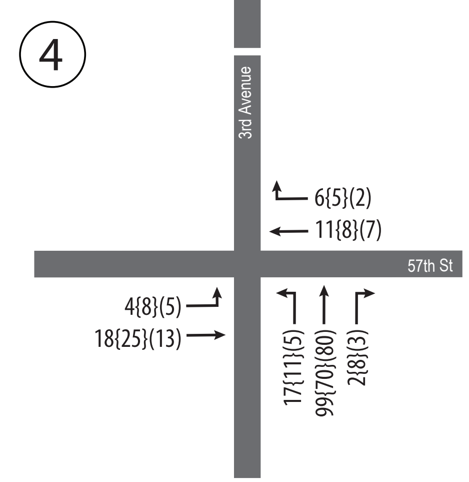
LEGEND:

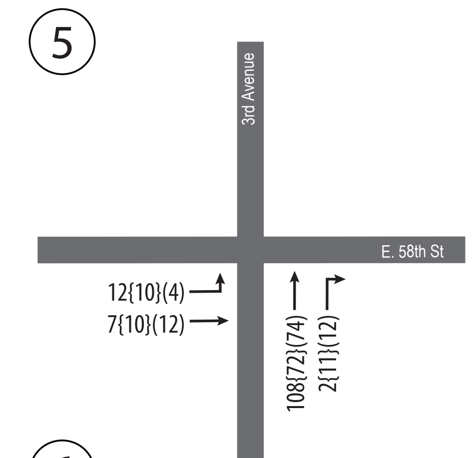
#	Study Intersection Location ID
000{000}(000)	AM (8-9AM) , Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

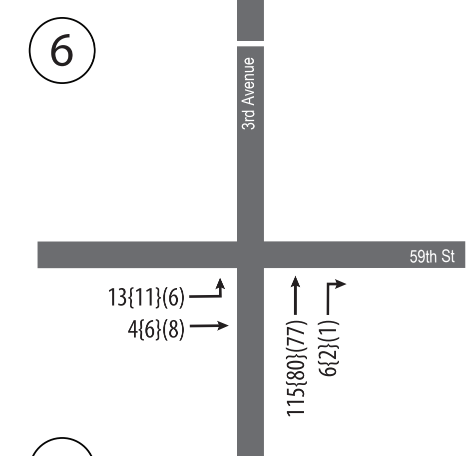


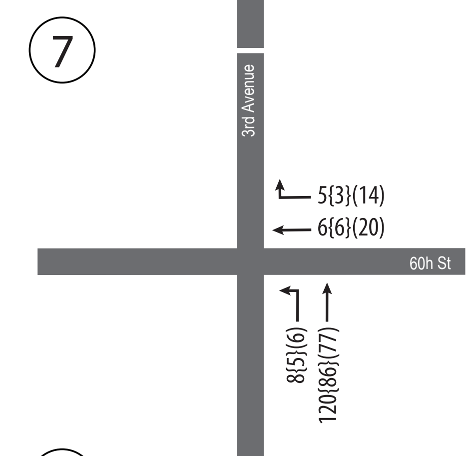


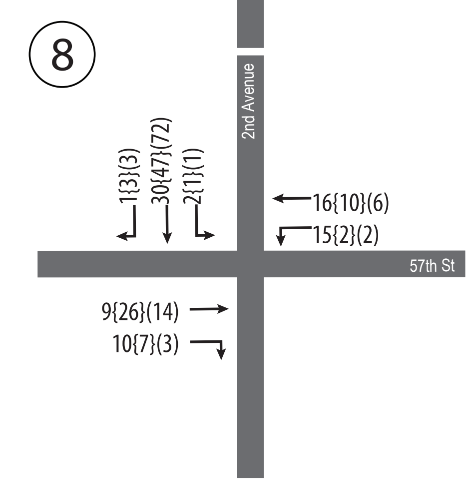


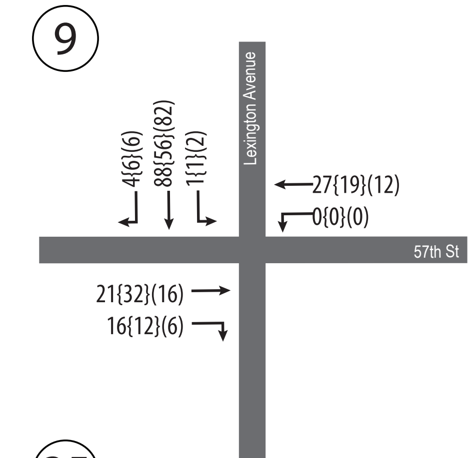


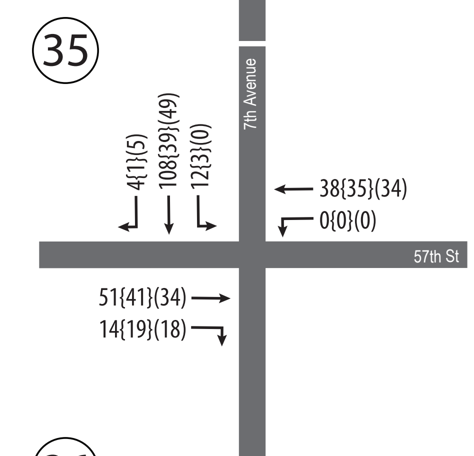


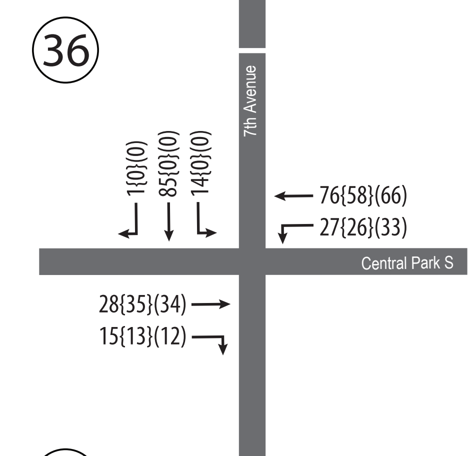


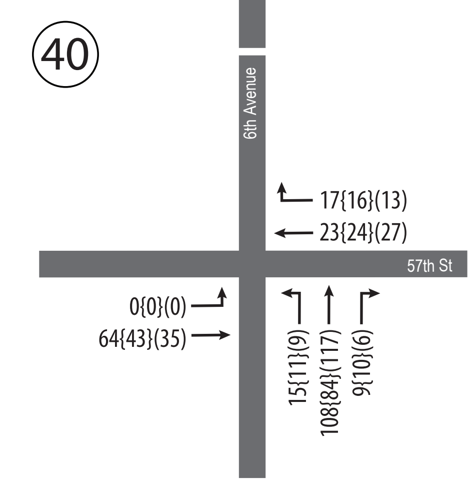


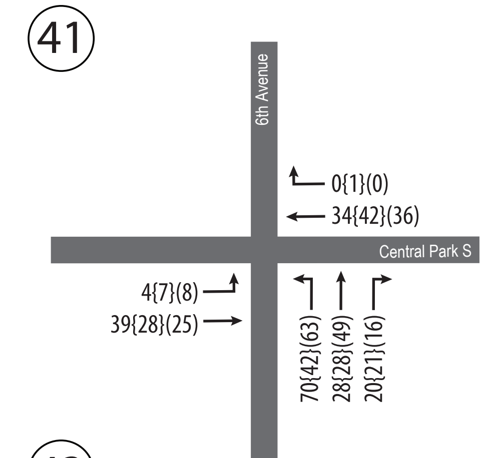


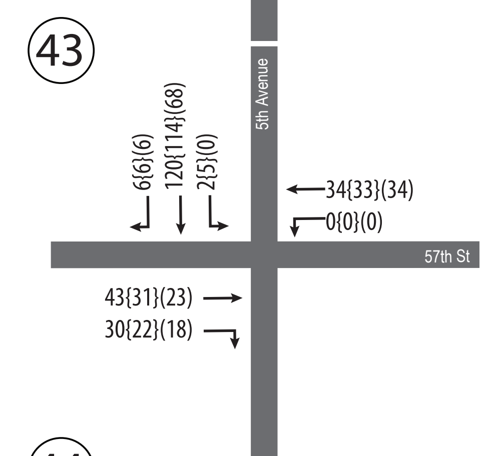


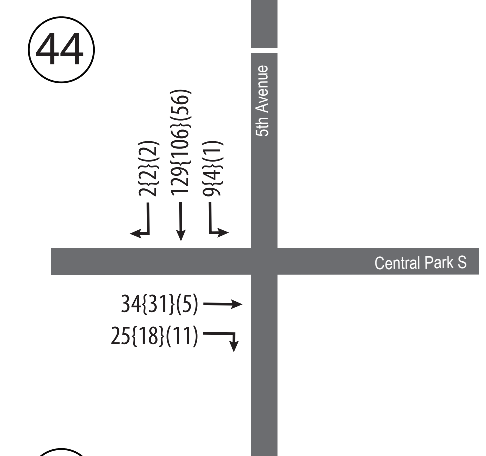


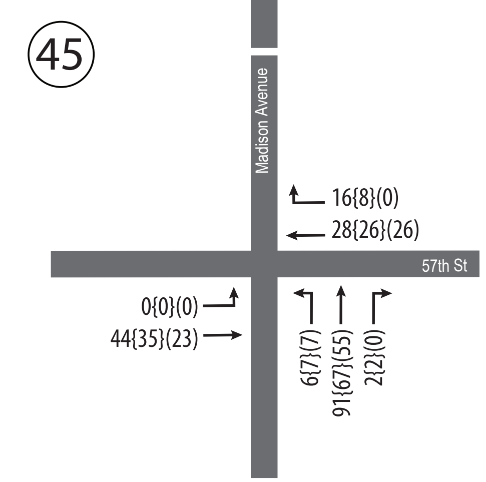












2015 Taxi Medallion Increase – DEIS

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

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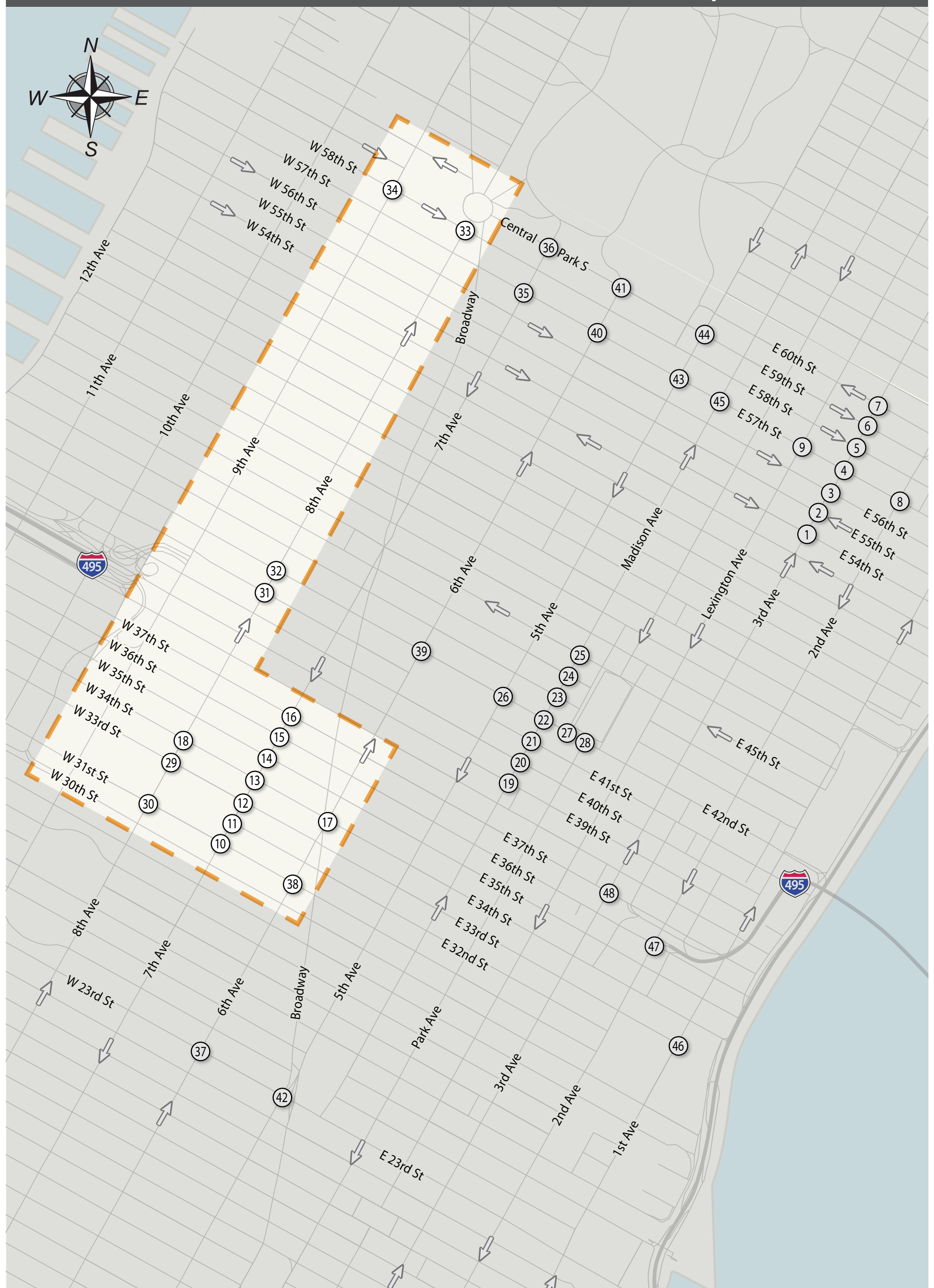
Manhattan-West Location Map



LEGEND:

\# Study Intersection Location ID

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

2015 Taxi Medallion Increase - DEIS

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

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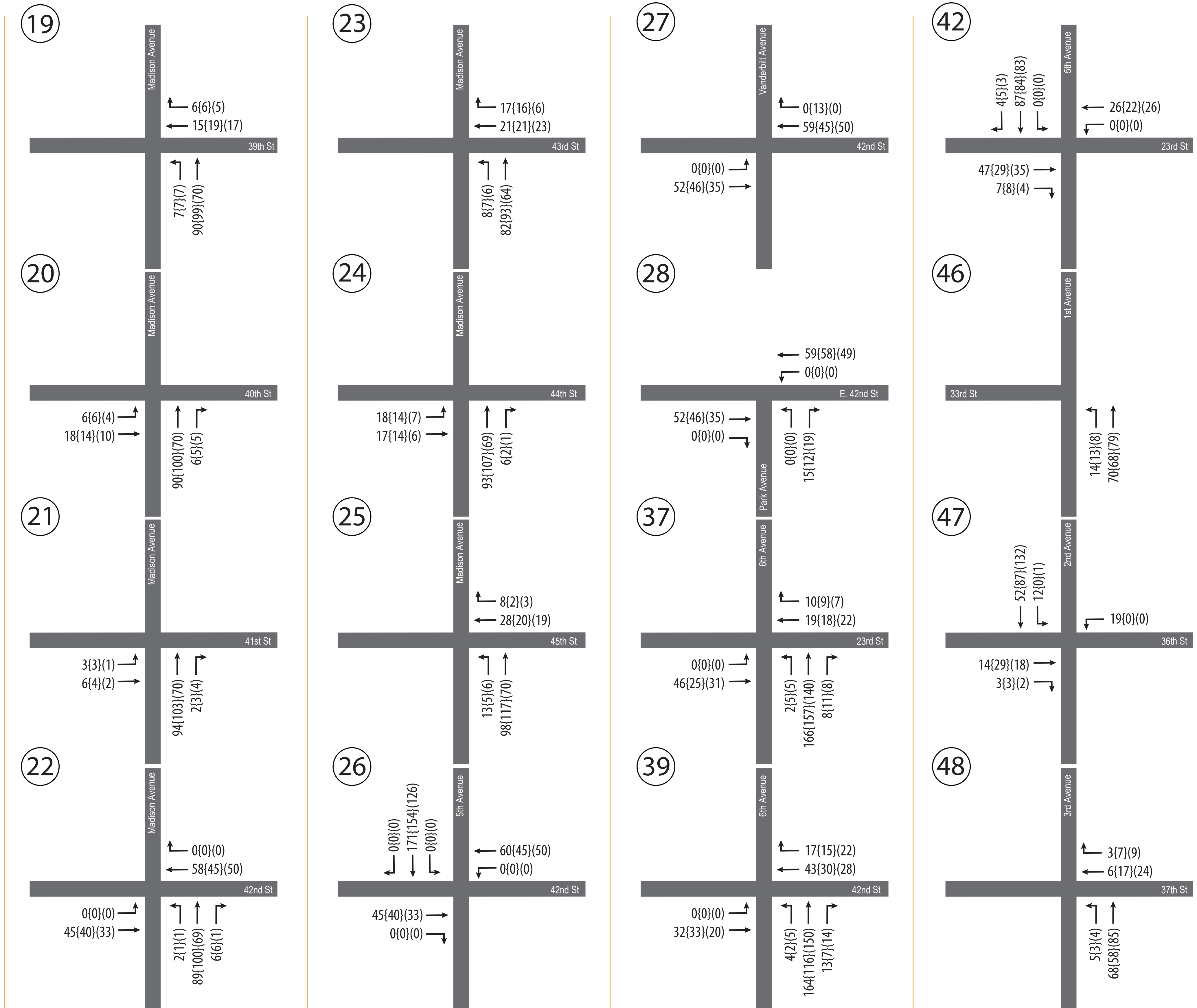
NYC Taxi and Limousine Commission

Manhattan-East Location Map

LEGEND:

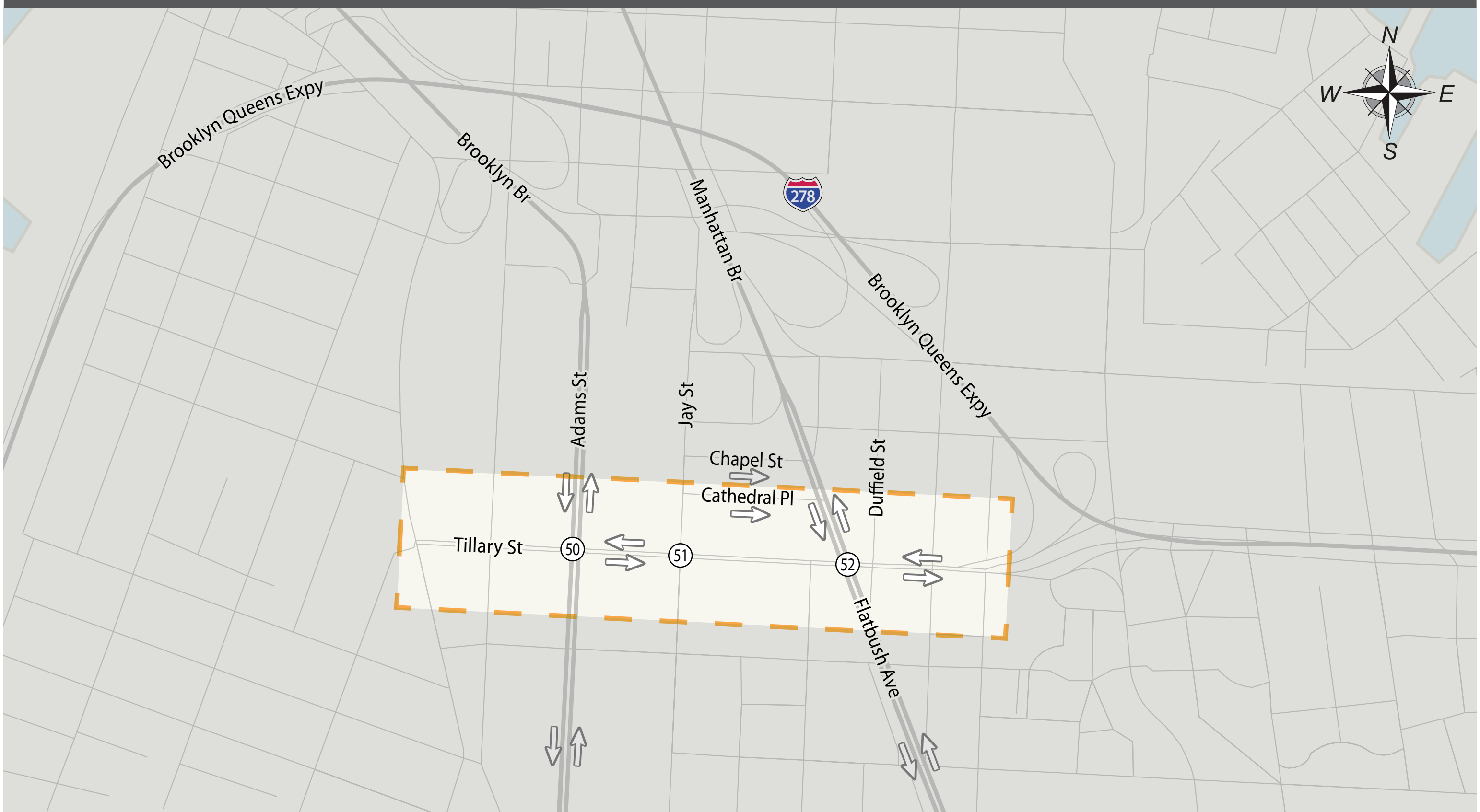
#	Study Intersection Location ID
000{000}(000)	AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes



2015 Taxi Medallion Increase – DEIS

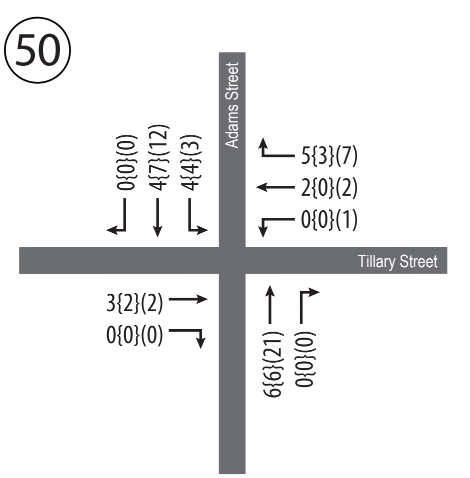
FIGURE 15-17 | **Volume Increase under Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

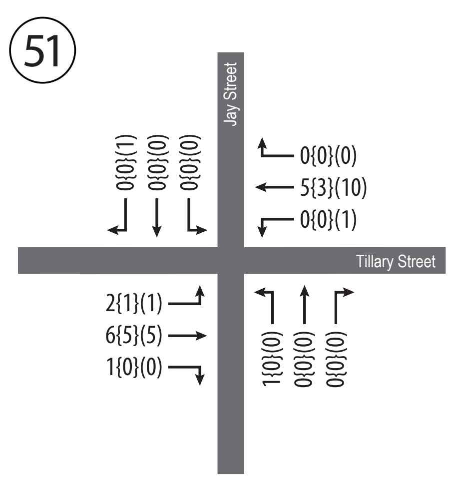
Brooklyn Location Map

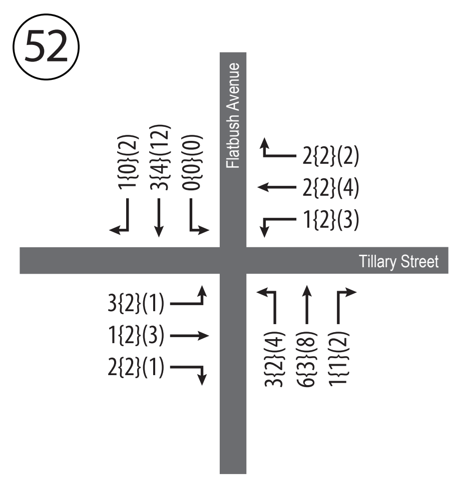


LEGEND:

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







HDR

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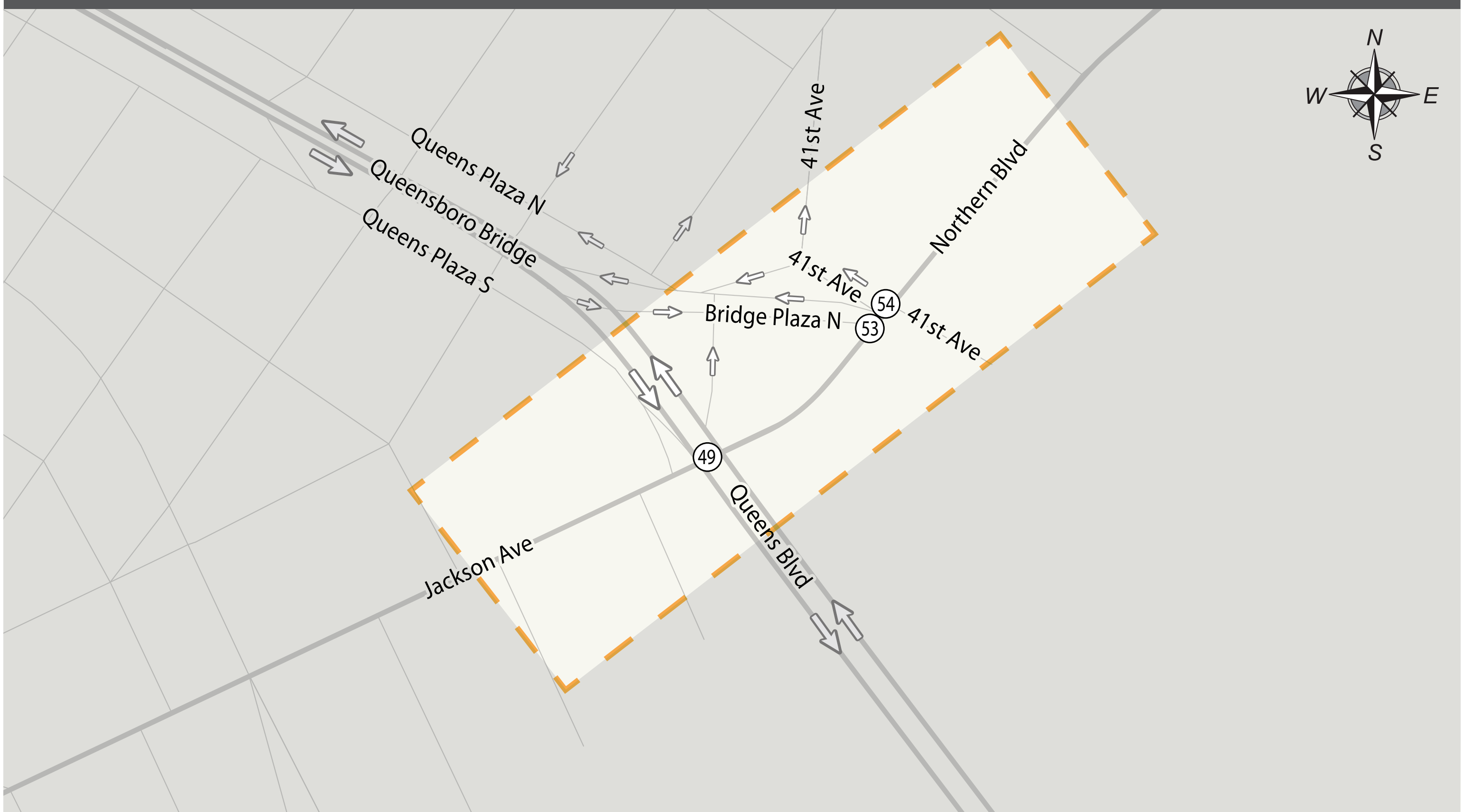
2015 Taxi Medallion Increase – DEIS

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

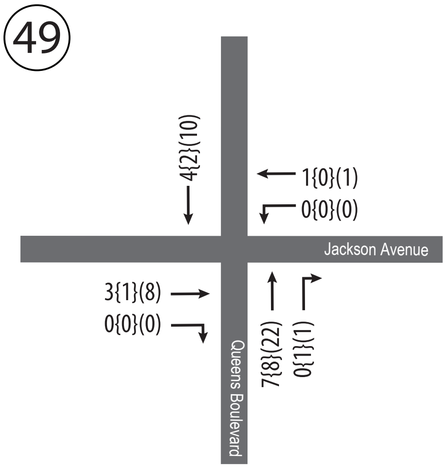
Queens Location Map



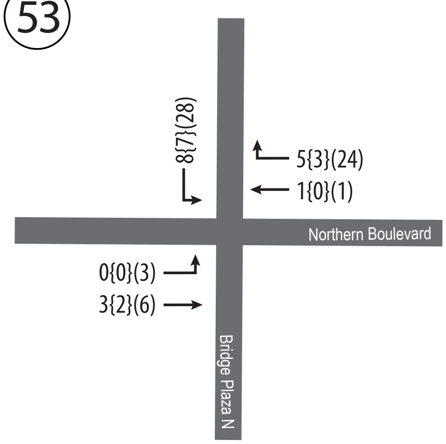
LEGEND:

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

49



53



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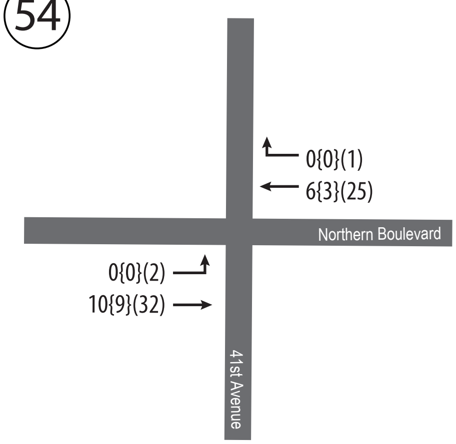

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NYC Taxi and Limousine Commission

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 2015 AM peak hour, taxi volumes (at select locations) increase by nearly 100 vehicles on Madison Avenue; by over 100 vehicles on Third Avenue, 42nd Street, 57th Street and Central Park South; by over 150 vehicles on Seventh Avenue and Eighth Avenue; and by nearly 200 vehicles on Sixth 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 2015 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 2015 PM peak hour condition, 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, Sixth Avenue, Eighth Avenue, and Madison 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 2015 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 2013, 2014, and 2015 are presented in Figures 15-19a through 15-19c (Manhattan-North), Figures 15-20a through 15-20c (Manhattan-West), Figures 15-21a through 15-21c (Manhattan-East), Figures 15-22a through 15-22c (Brooklyn), Figures 15-23a through 15-23c (Queens).

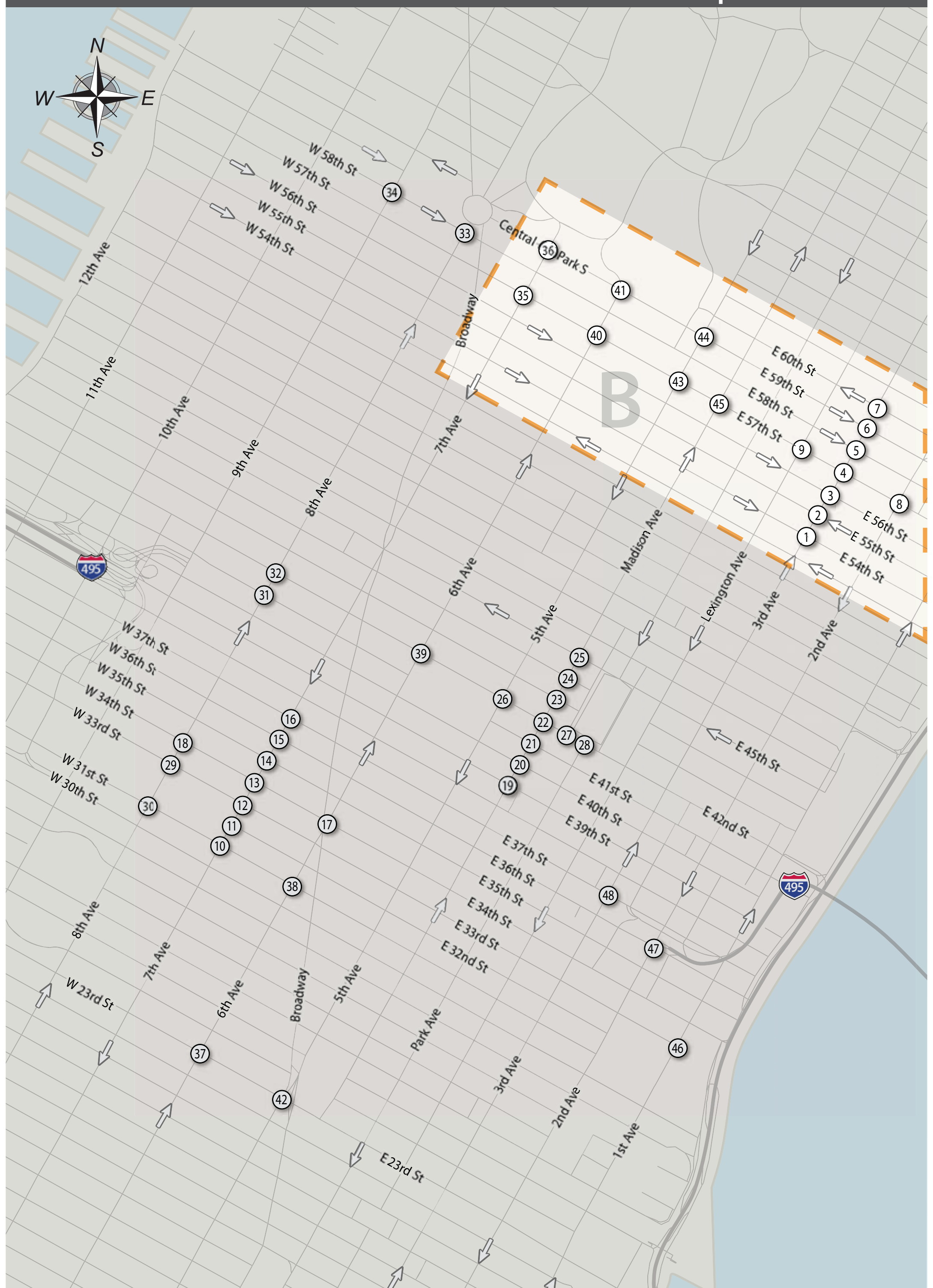
2013 Taxi Medallion Increase - DEIS

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

HDR

NYC Taxi and Limousine Commission

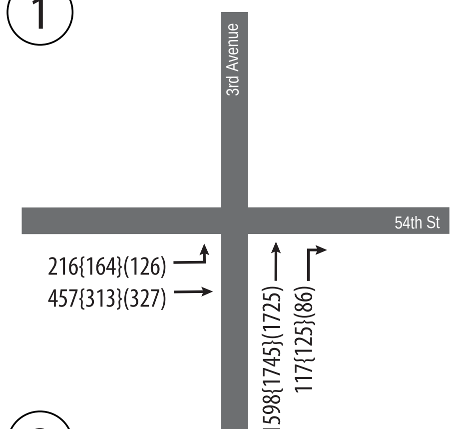
Manhattan-North Location Map



LEGEND:

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

1



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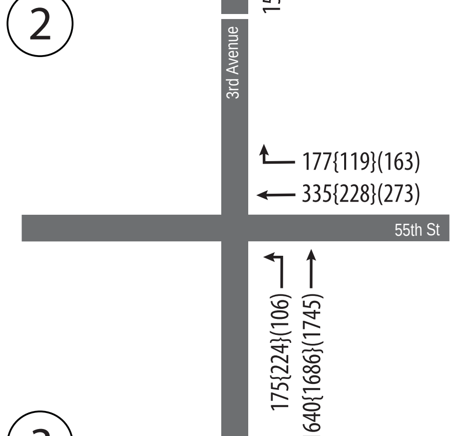

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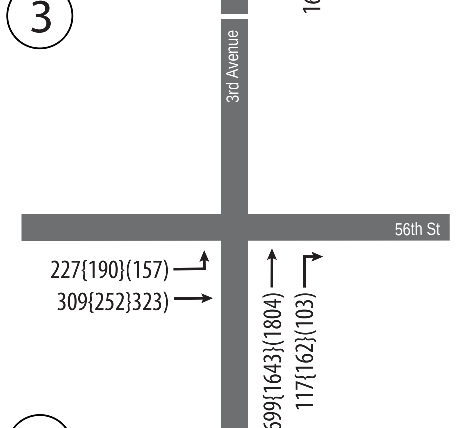

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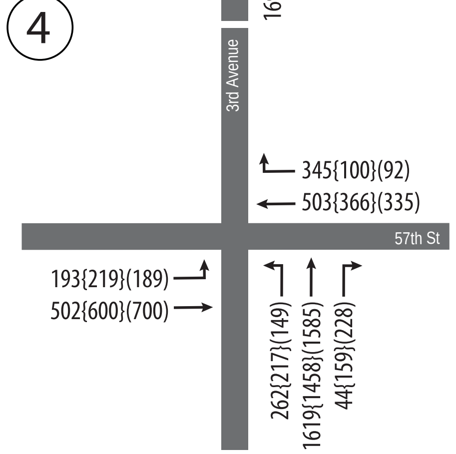

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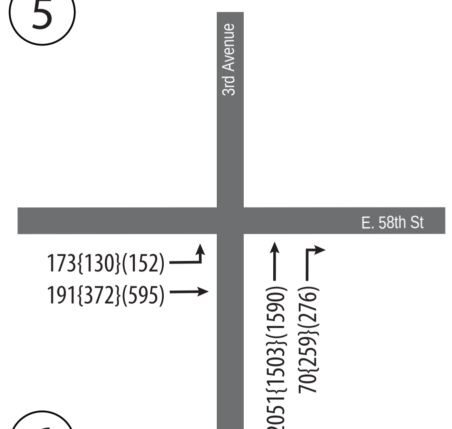

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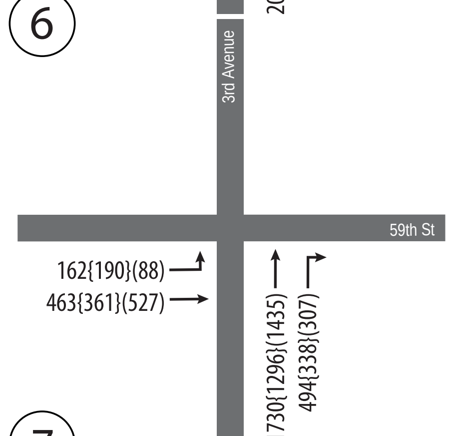

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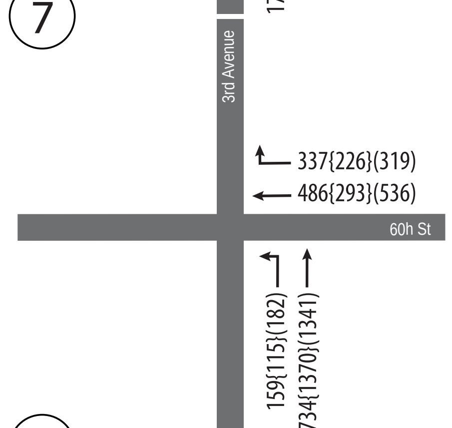
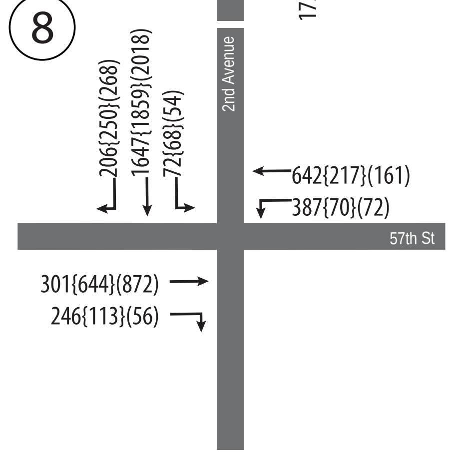


8



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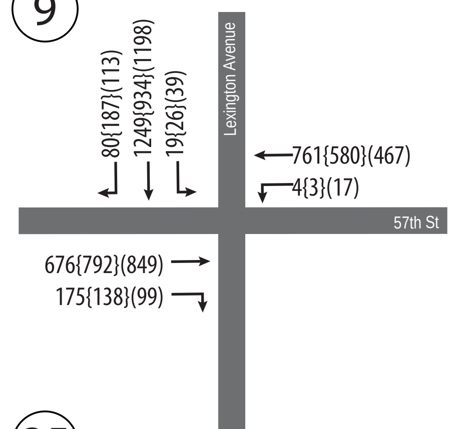

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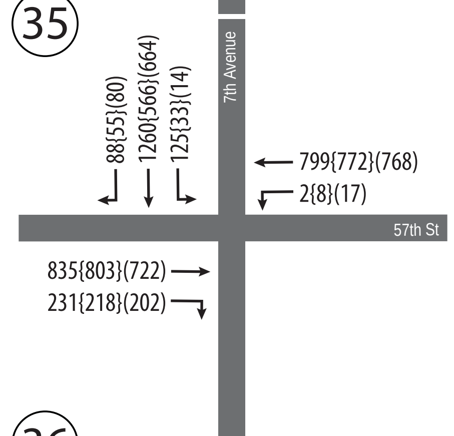

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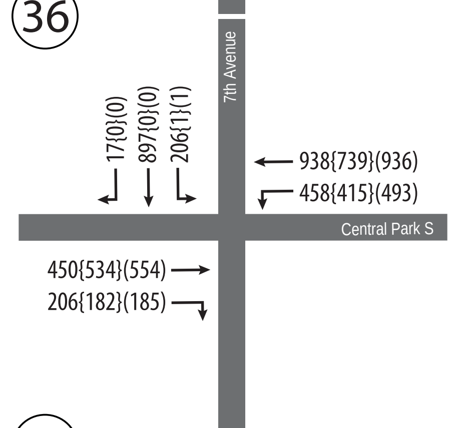

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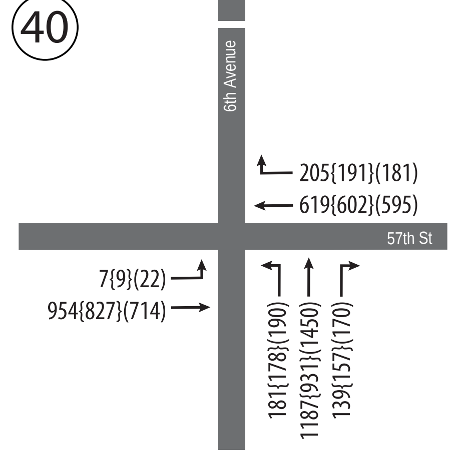

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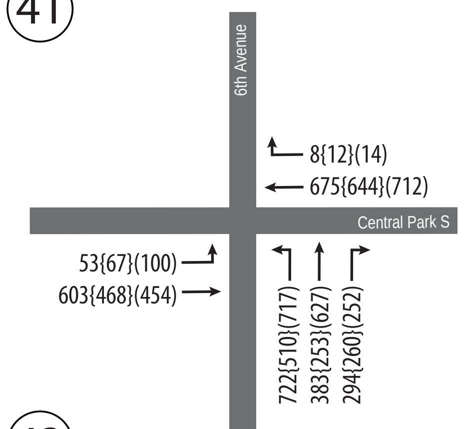

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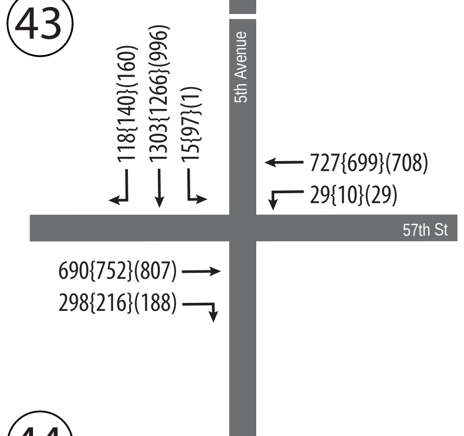

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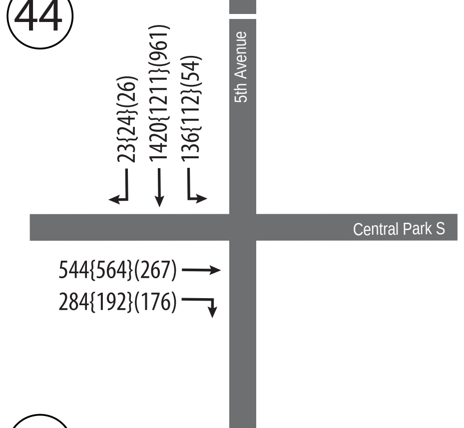

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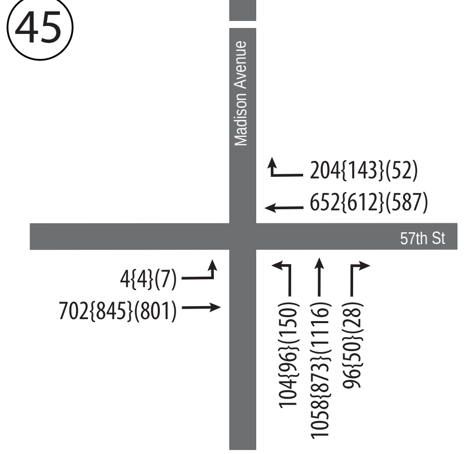
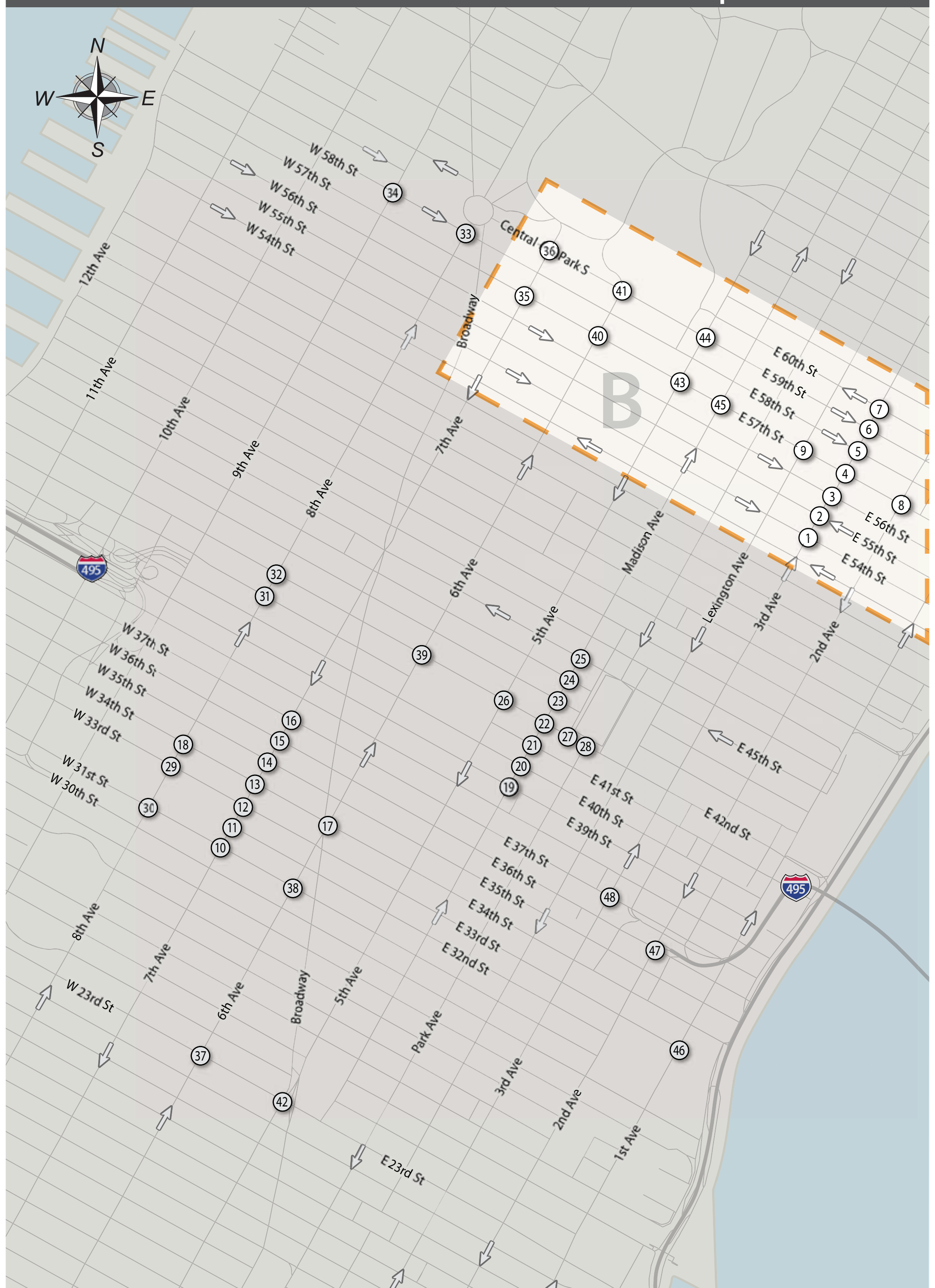


2014 Taxi Medallion Increase - DEIS

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

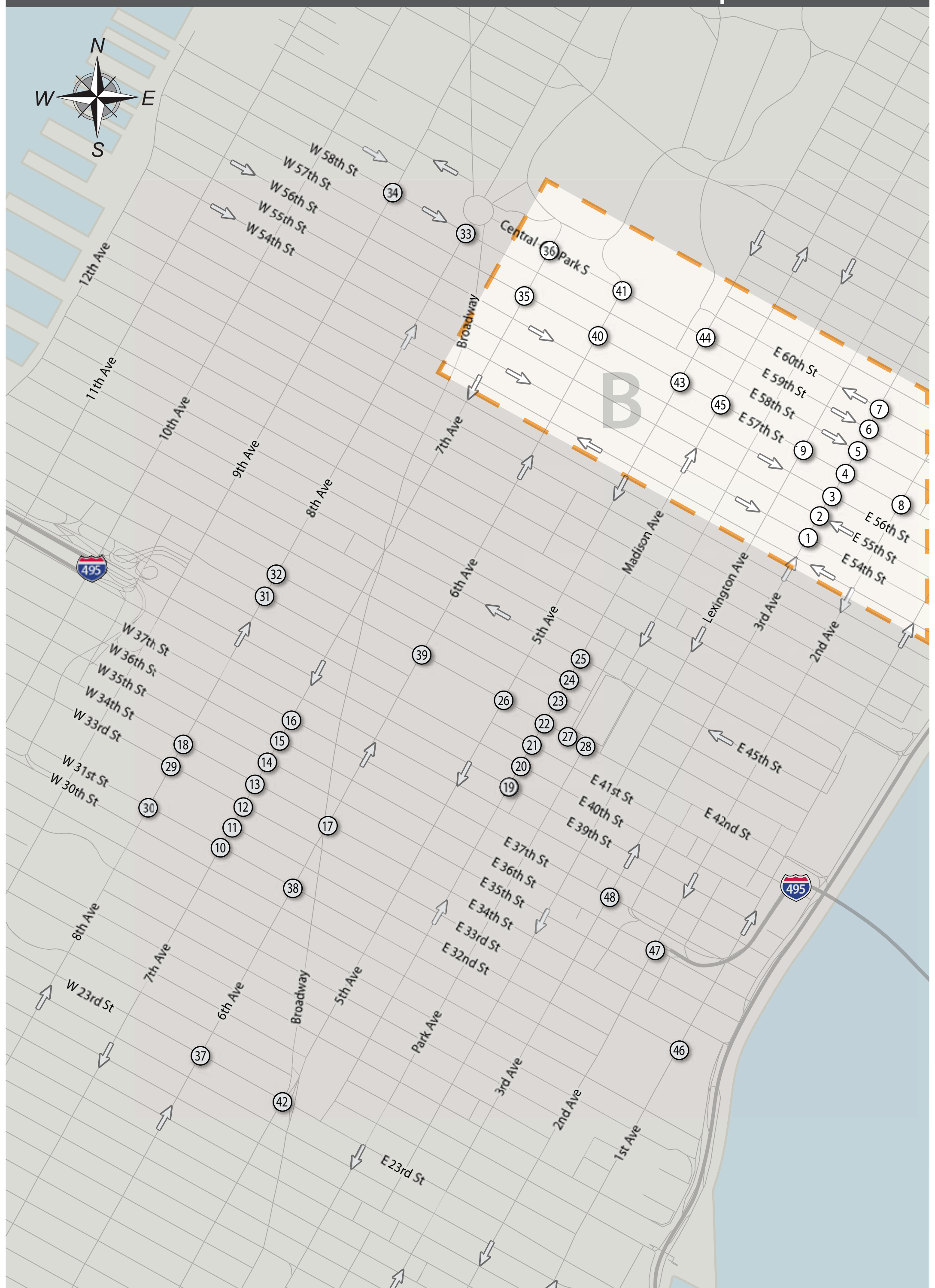
000{000}(000) AM (8-9AM), Midday (12-1 PM), PM (5-6 PM) Peak Hour Volumes

2015 Taxi Medallion Increase - DEIS

FIGURE 15-19c | **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

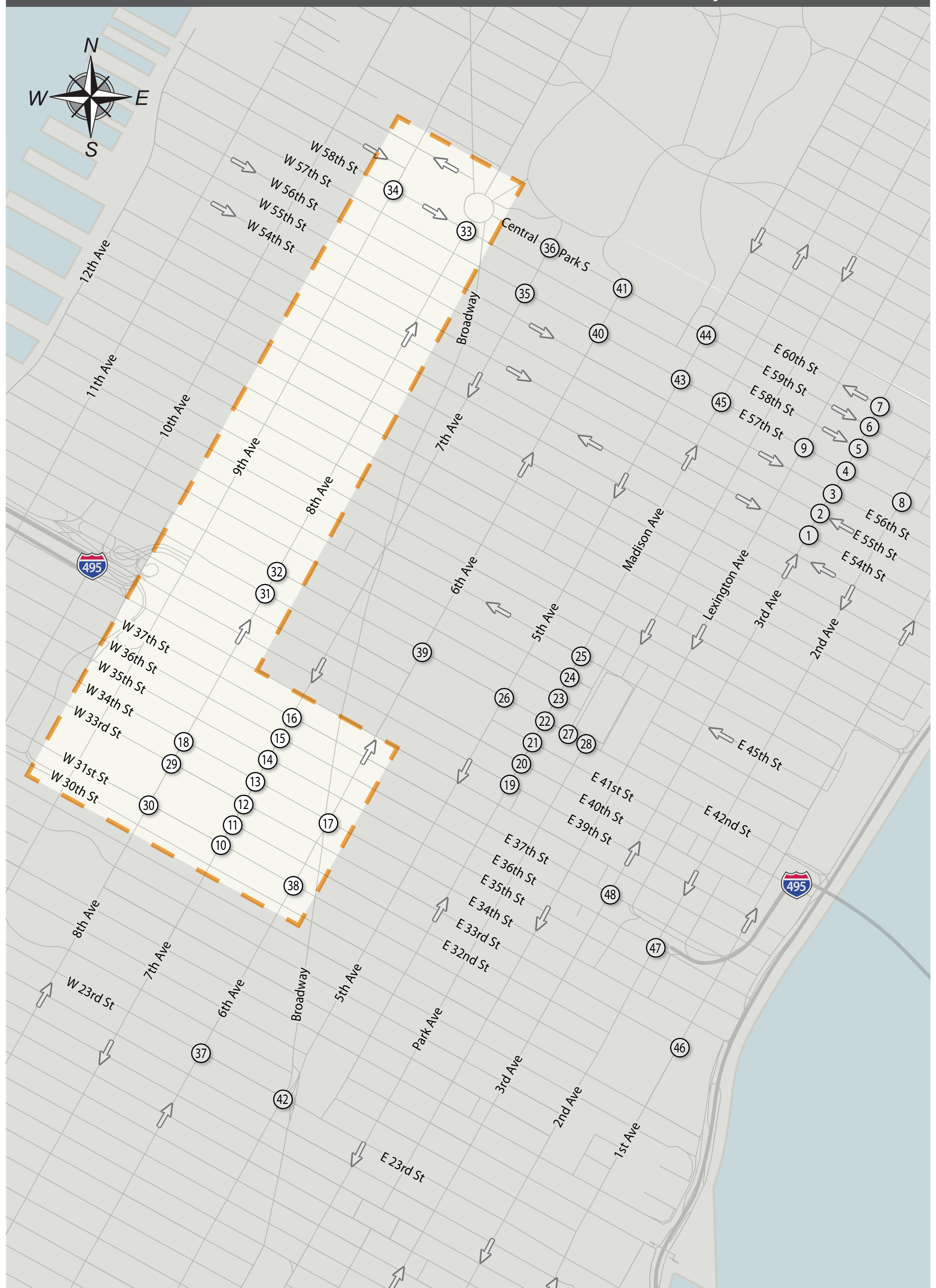
2013 Taxi Medallion Increase – DEIS

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

HDR

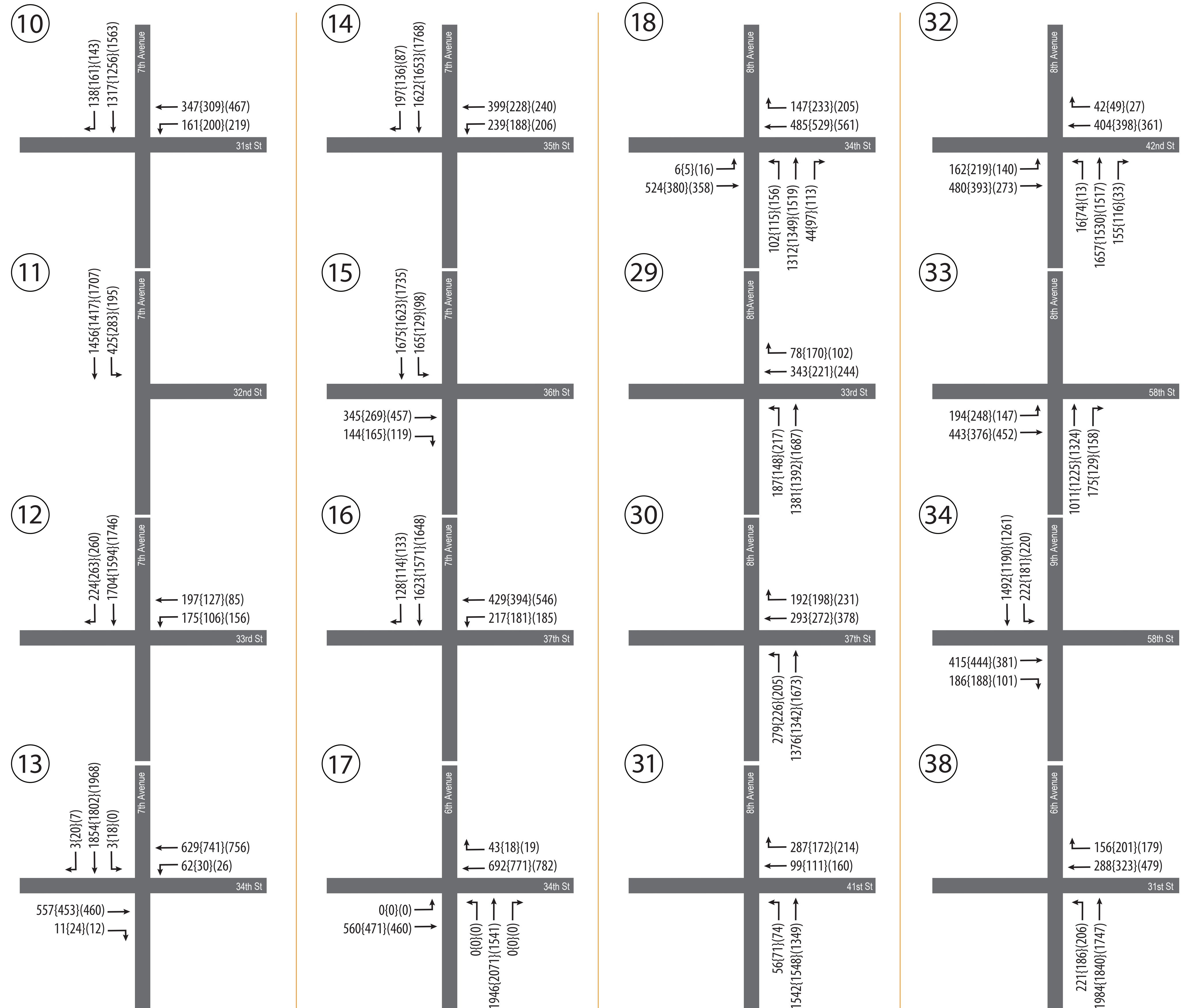
NYC Taxi and Limousine Commission

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

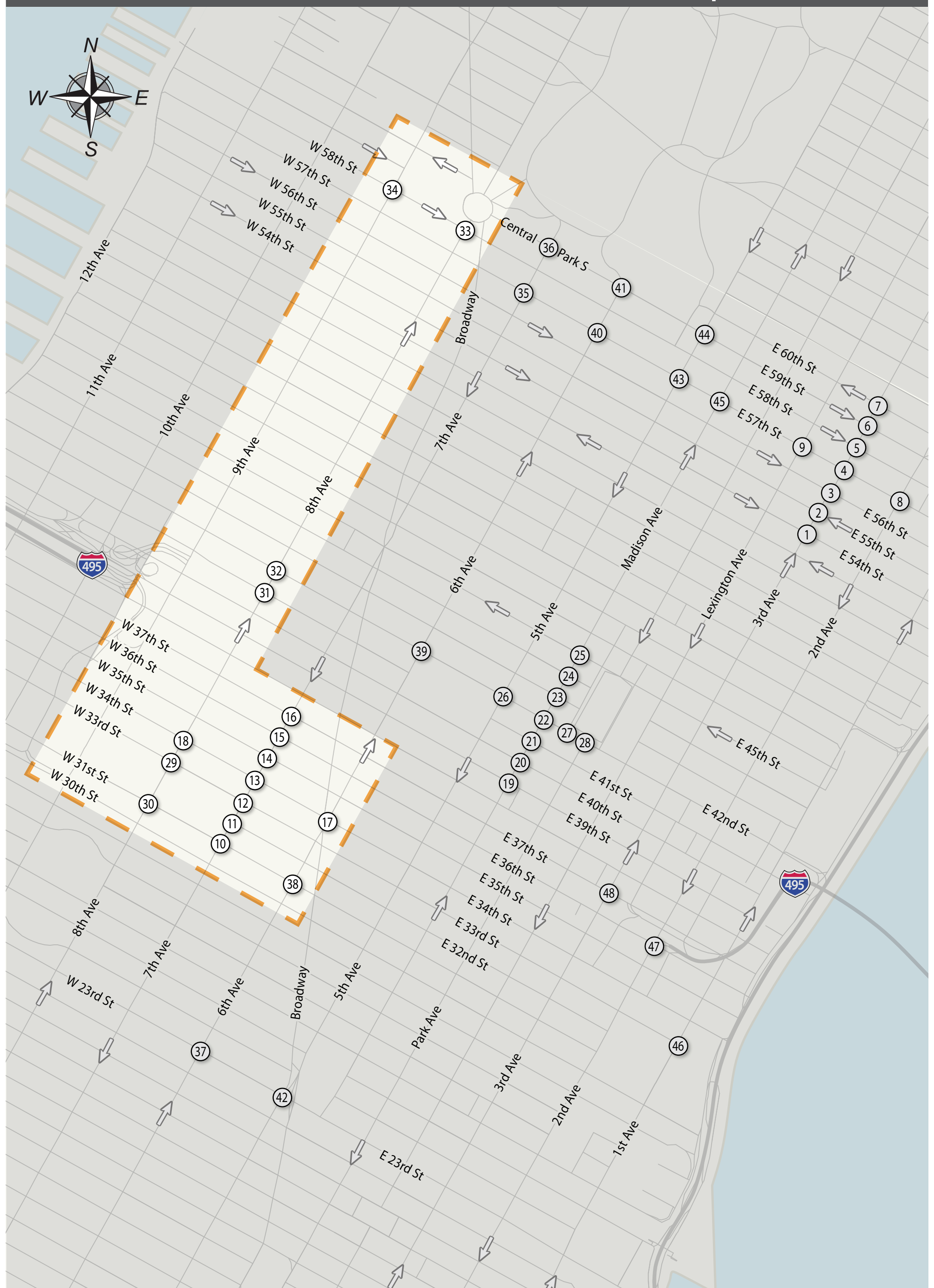


2014 Taxi Medallion Increase – DEIS

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

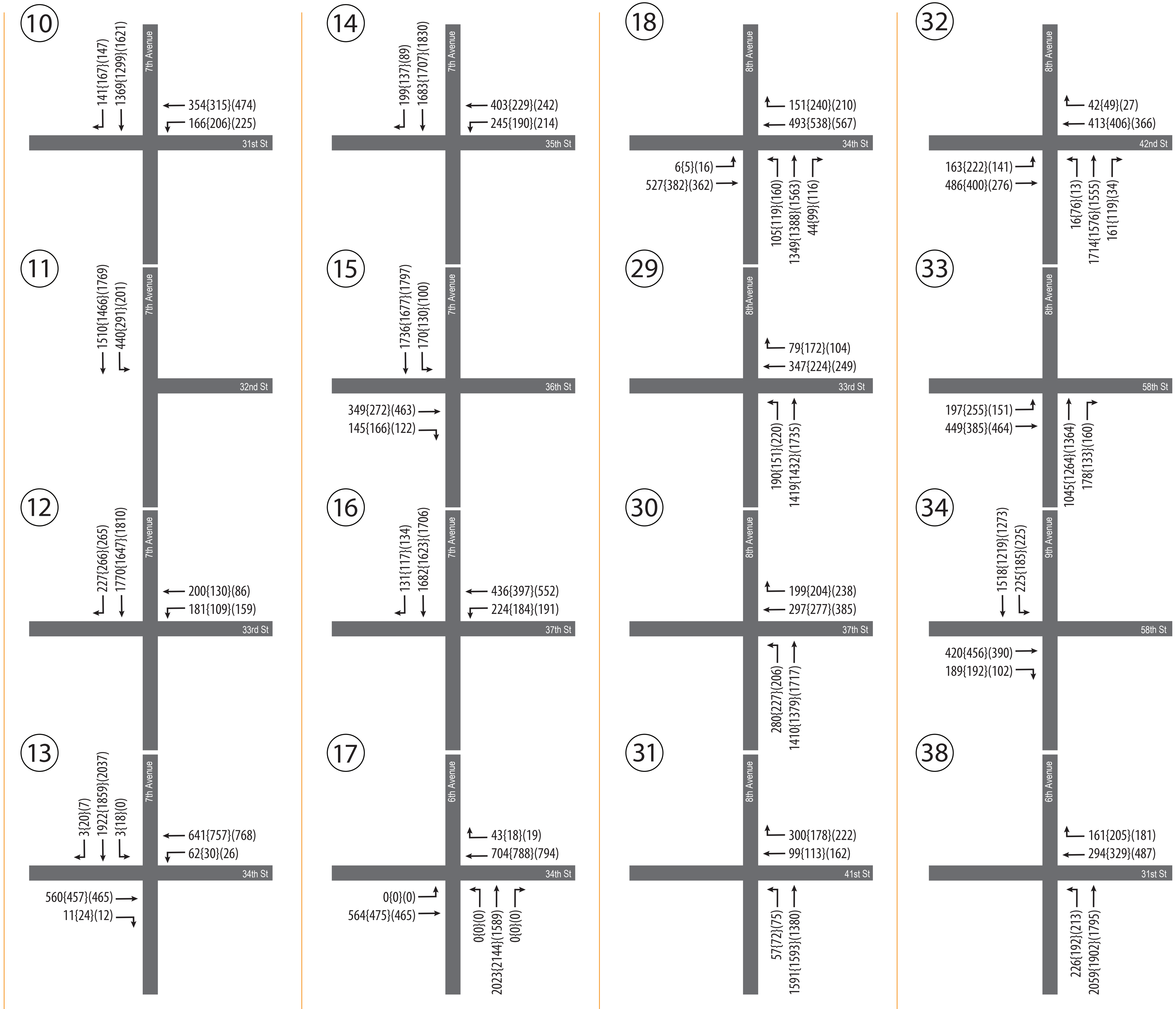
HDR NYC Taxi and Limousine Commission

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



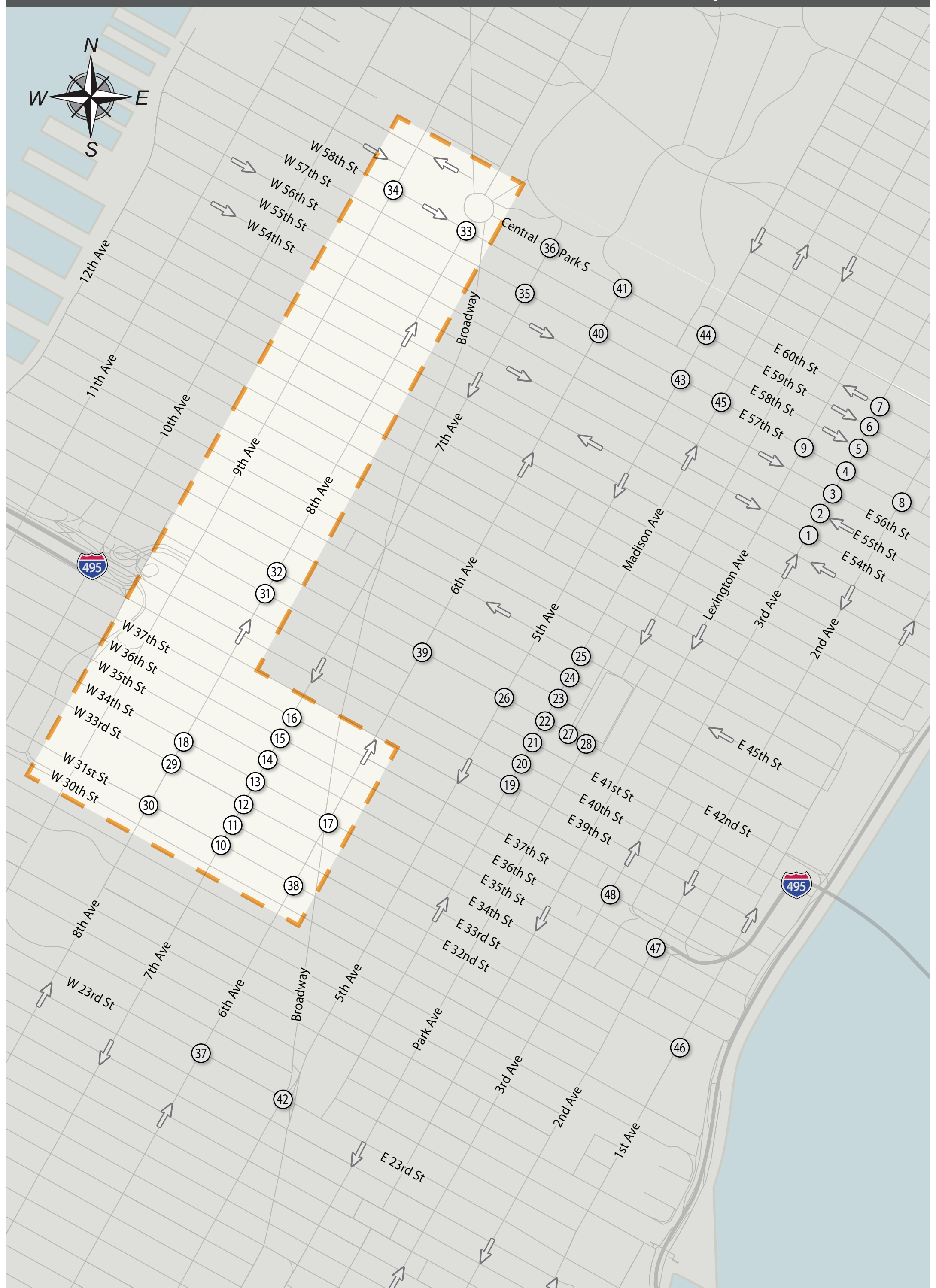
2015 Taxi Medallion Increase – DEIS

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

HDR

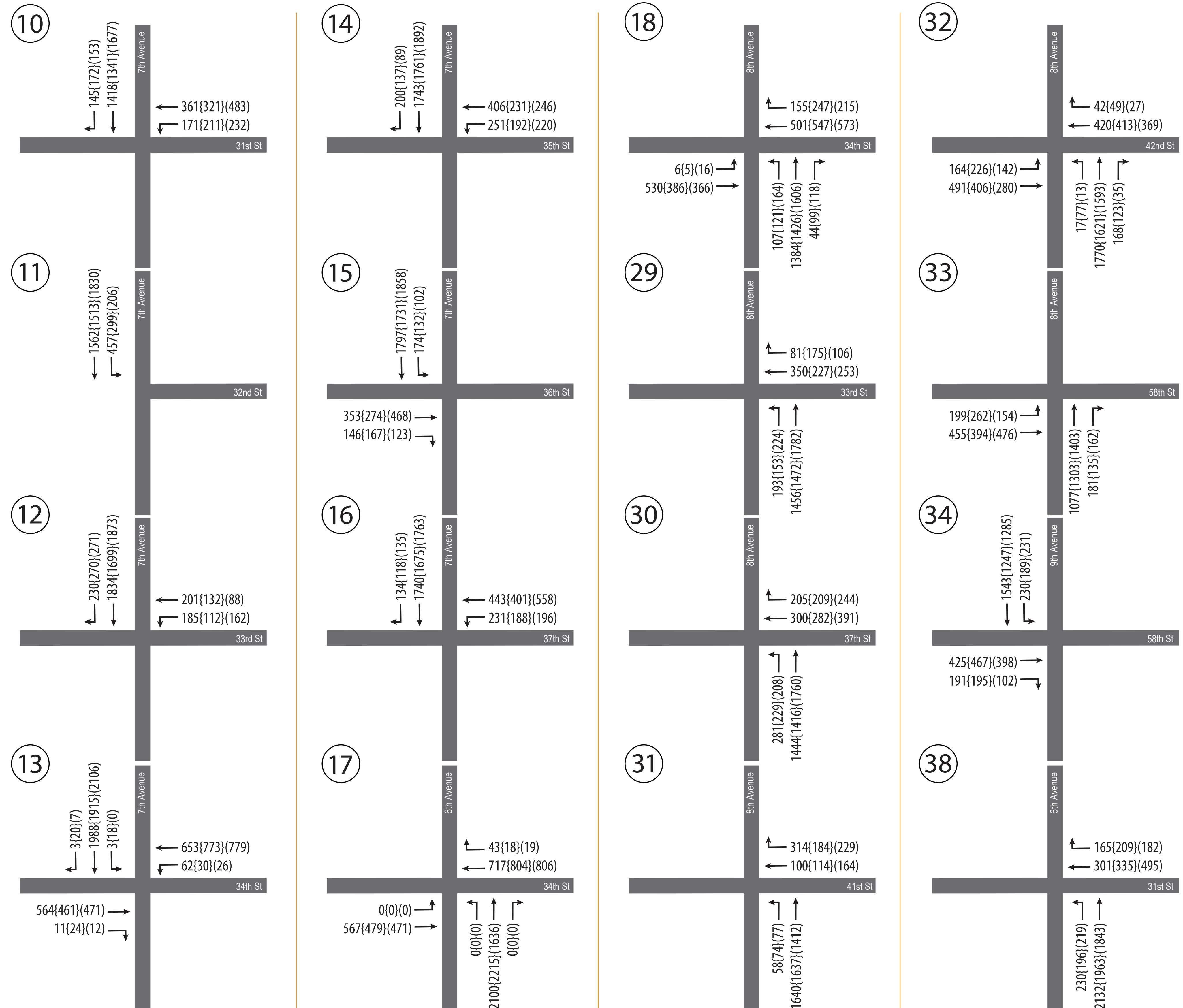
NYC Taxi and Limousine Commission

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



2013 Taxi Medallion Increase - DEIS

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

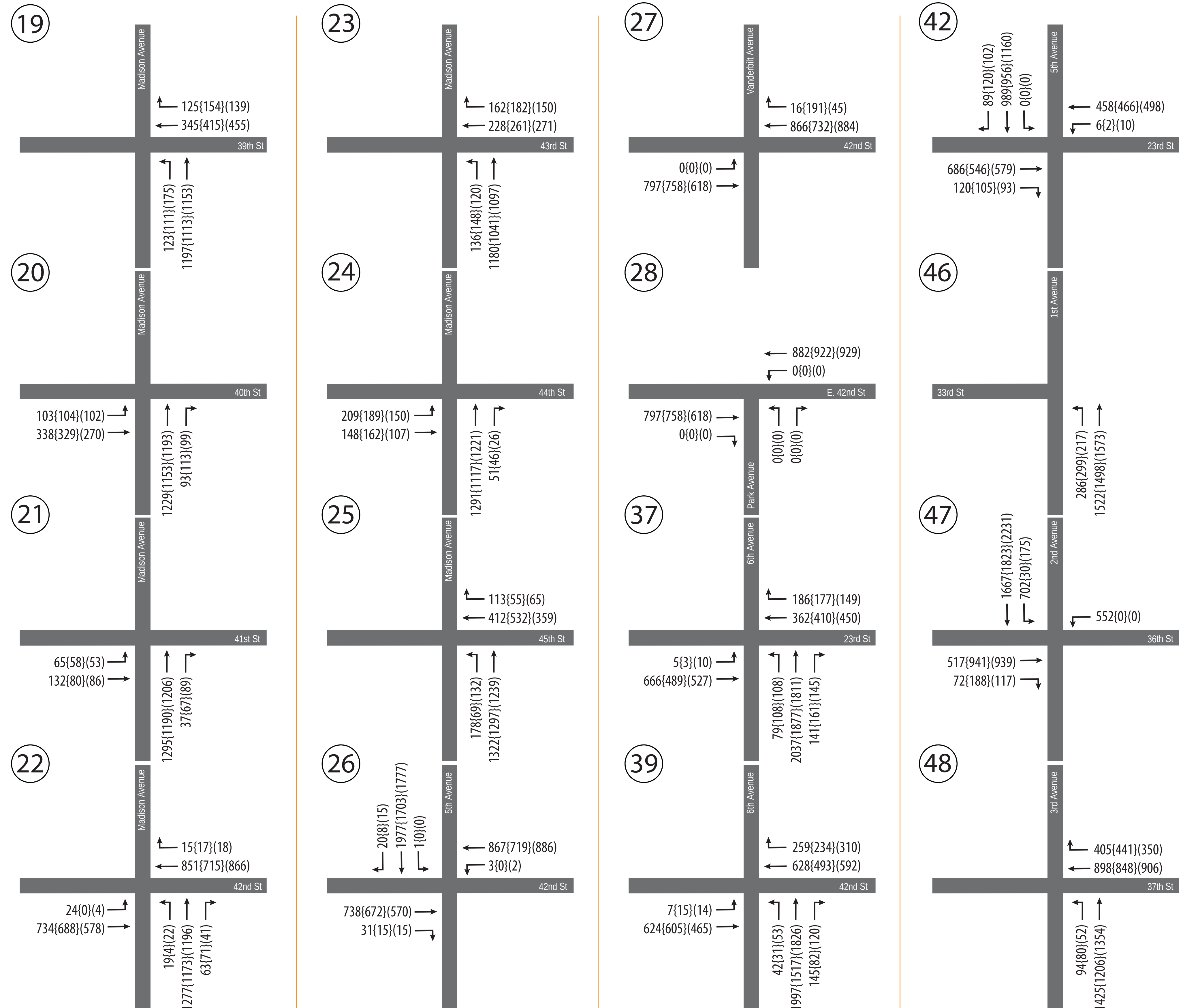
HDR NYC Taxi and Limousine Commission

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



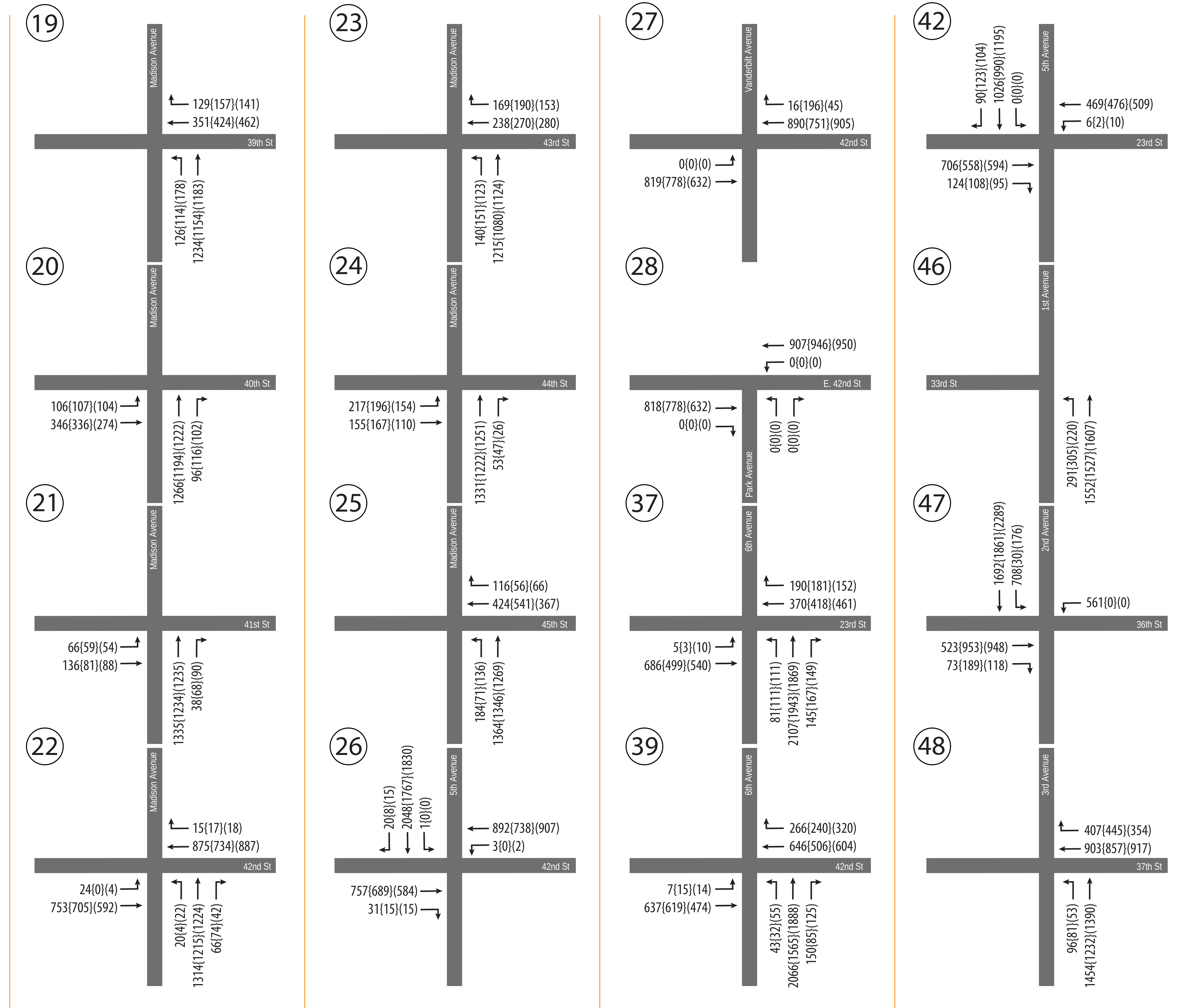
2014 Taxi Medallion Increase - DEIS

FIGURE 15-21b | 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

2015 Taxi Medallion Increase - DEIS

FIGURE 15-21c | **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:

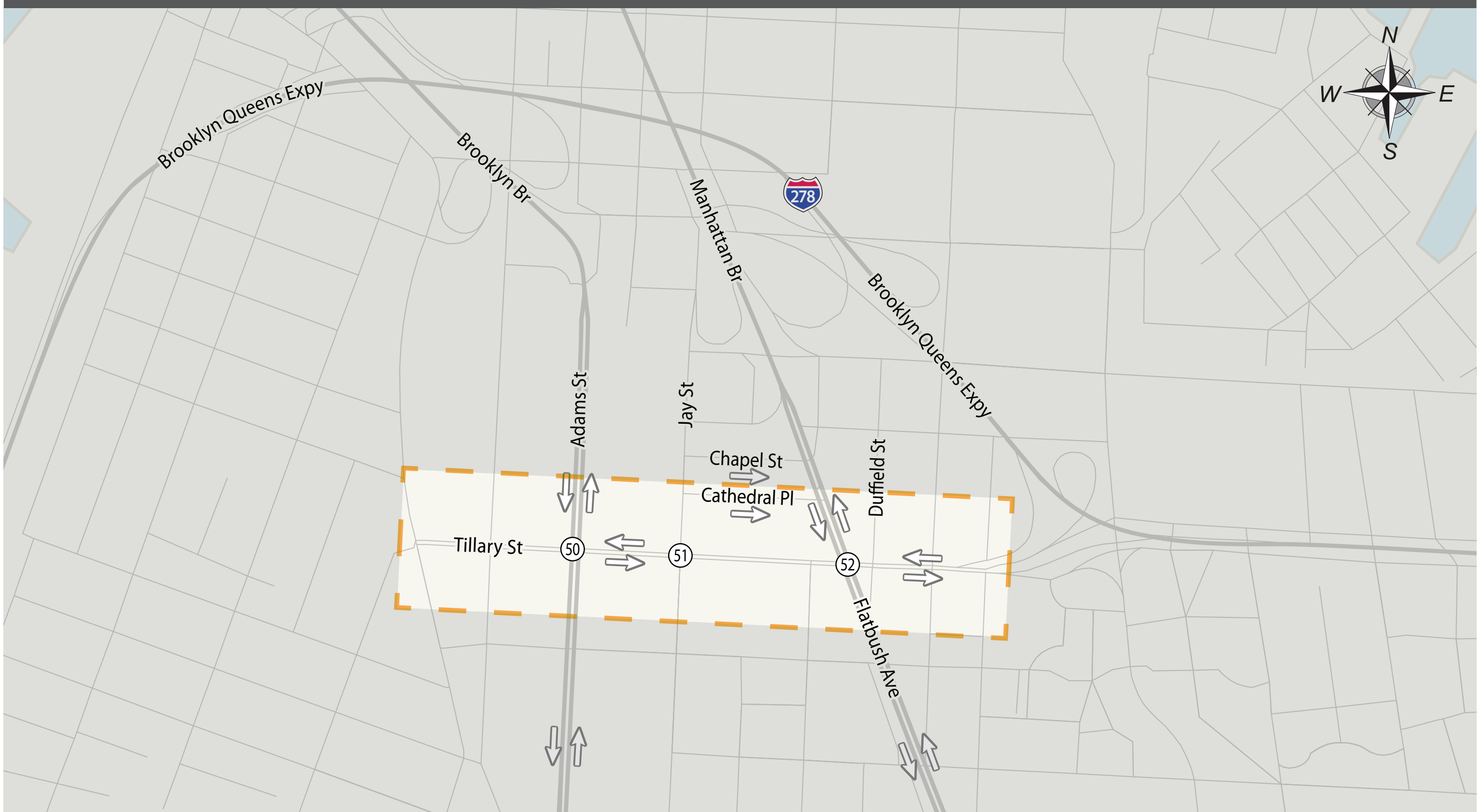
Ⓝ Study Intersection Location ID

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

2013 Taxi Medallion Increase – DEIS

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

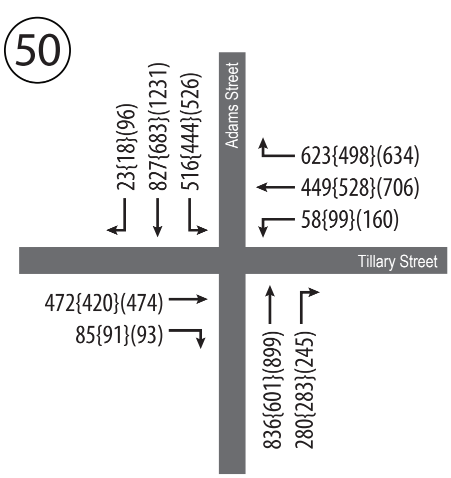
Brooklyn Location Map

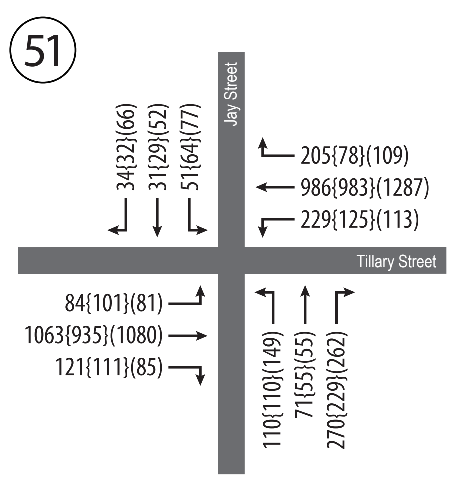


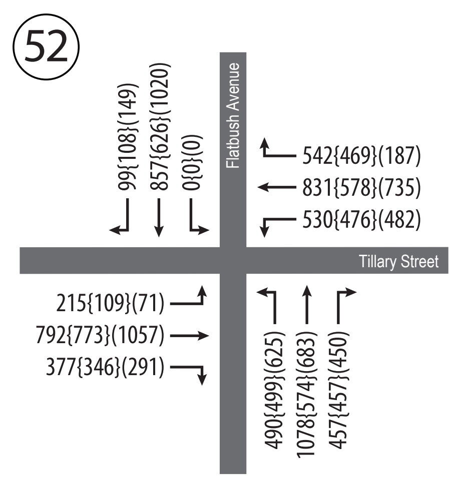
LEGEND:

\# Study Intersection Location ID

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







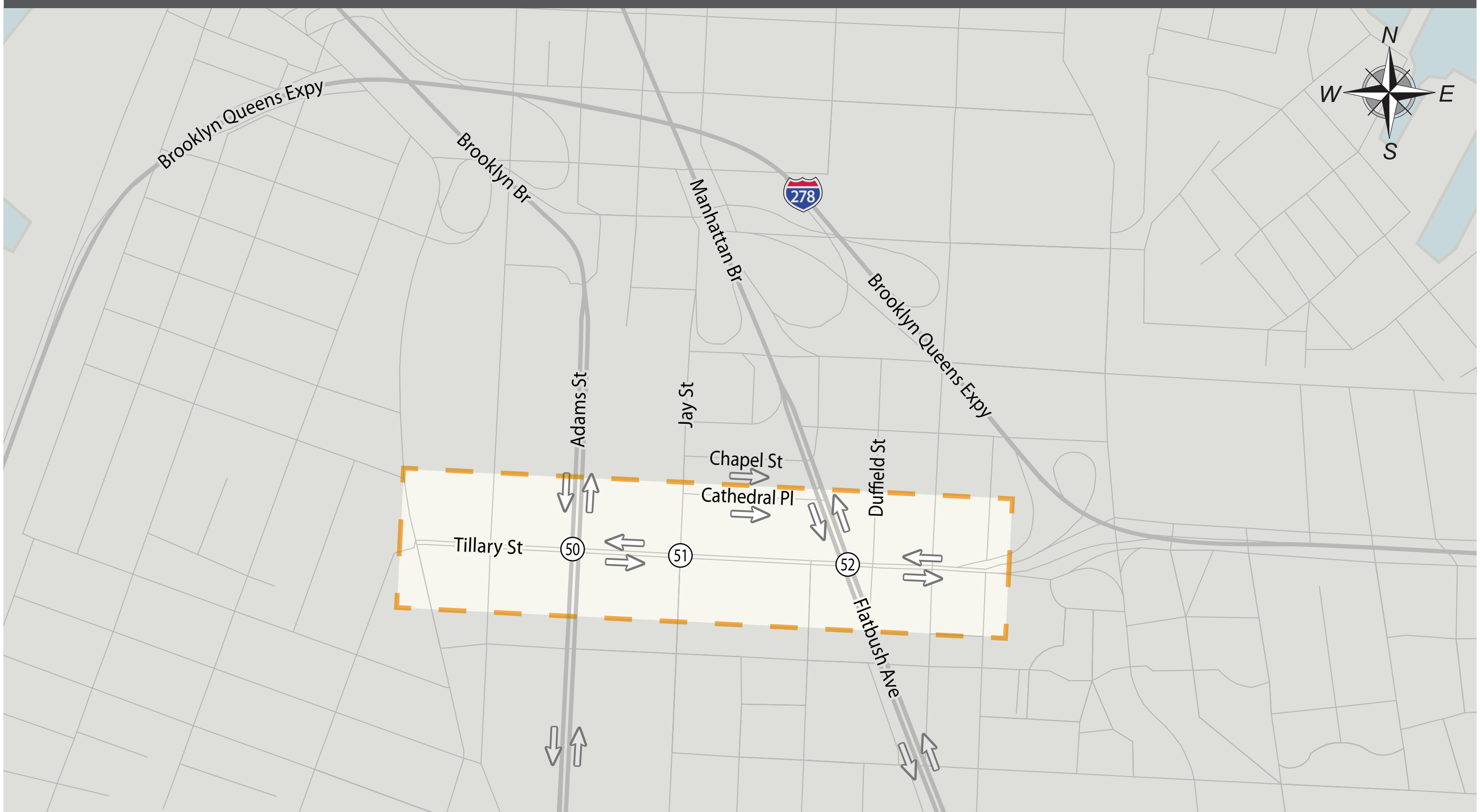
HDR

NYC Taxi and Limousine Commission

2014 Taxi Medallion Increase – DEIS

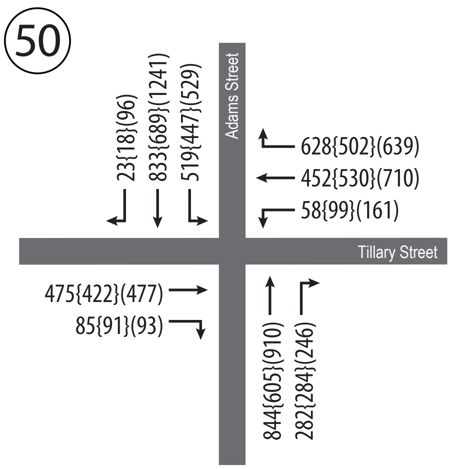
FIGURE 15-22b | Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)

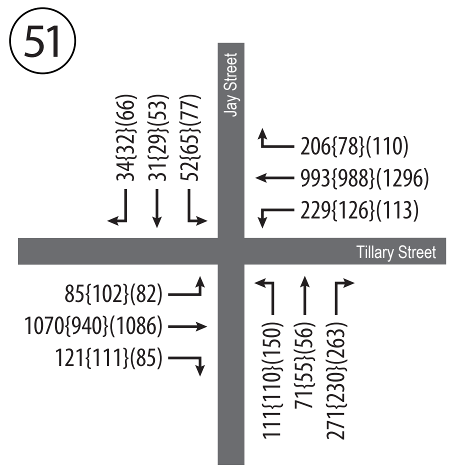
Brooklyn Location Map

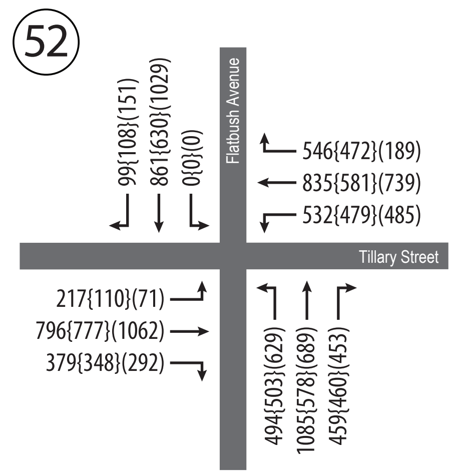


LEGEND:

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







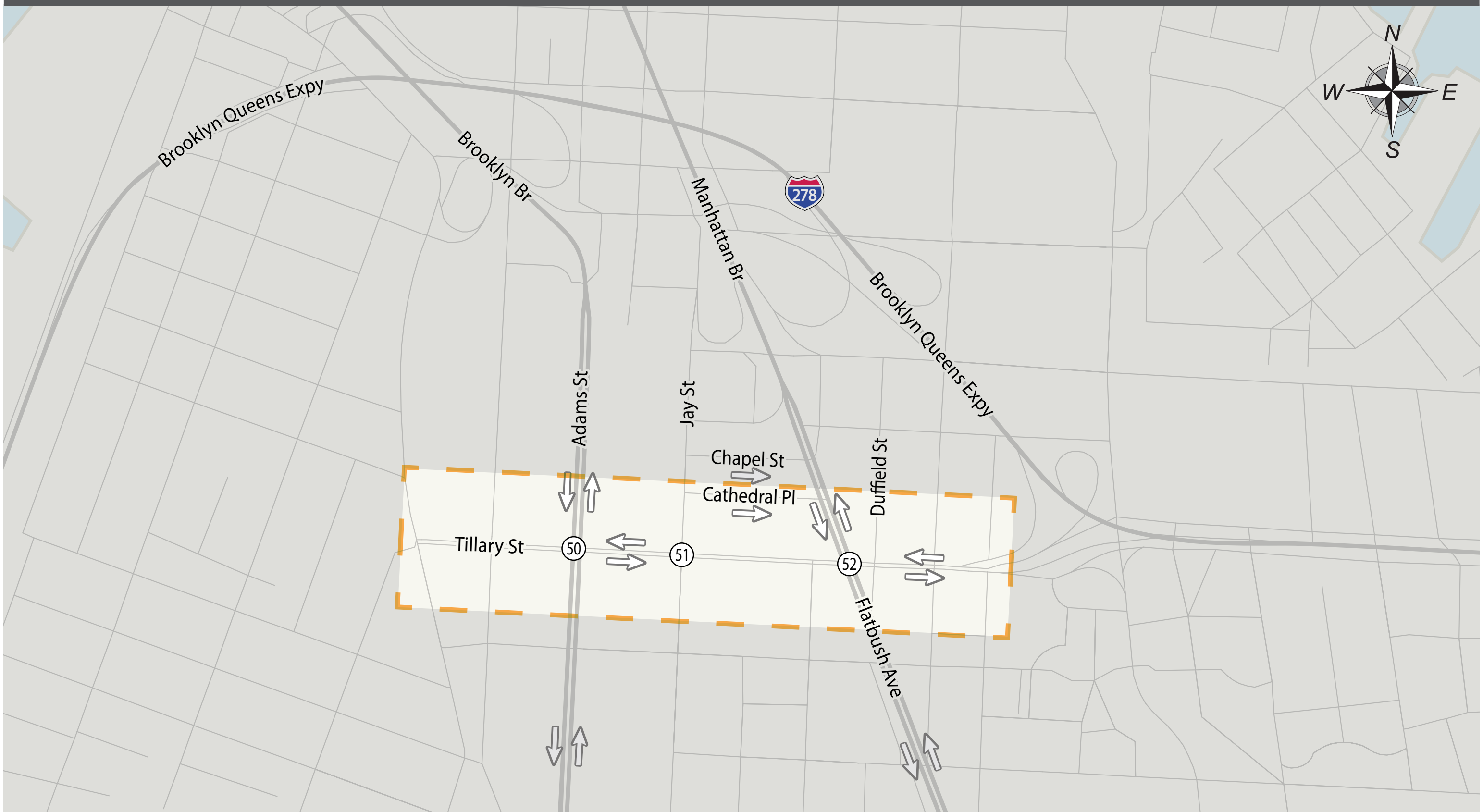
HDR

NYC Taxi and Limousine Commission

2015 Taxi Medallion Increase – DEIS

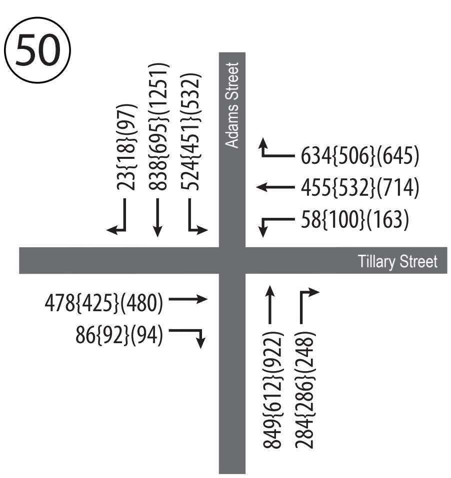
FIGURE 15-22c | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Brooklyn)**

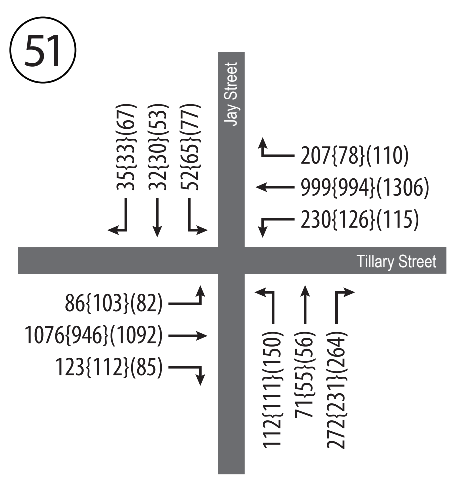
Brooklyn Location Map

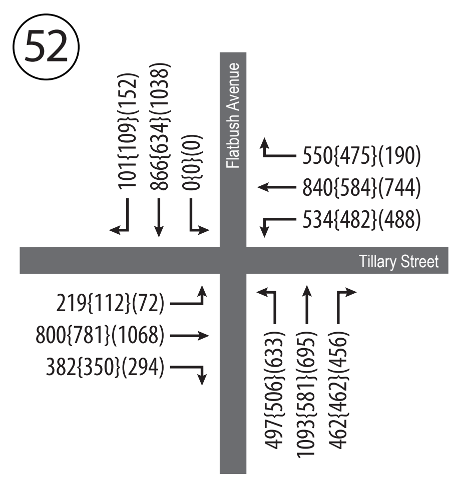


LEGEND:

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







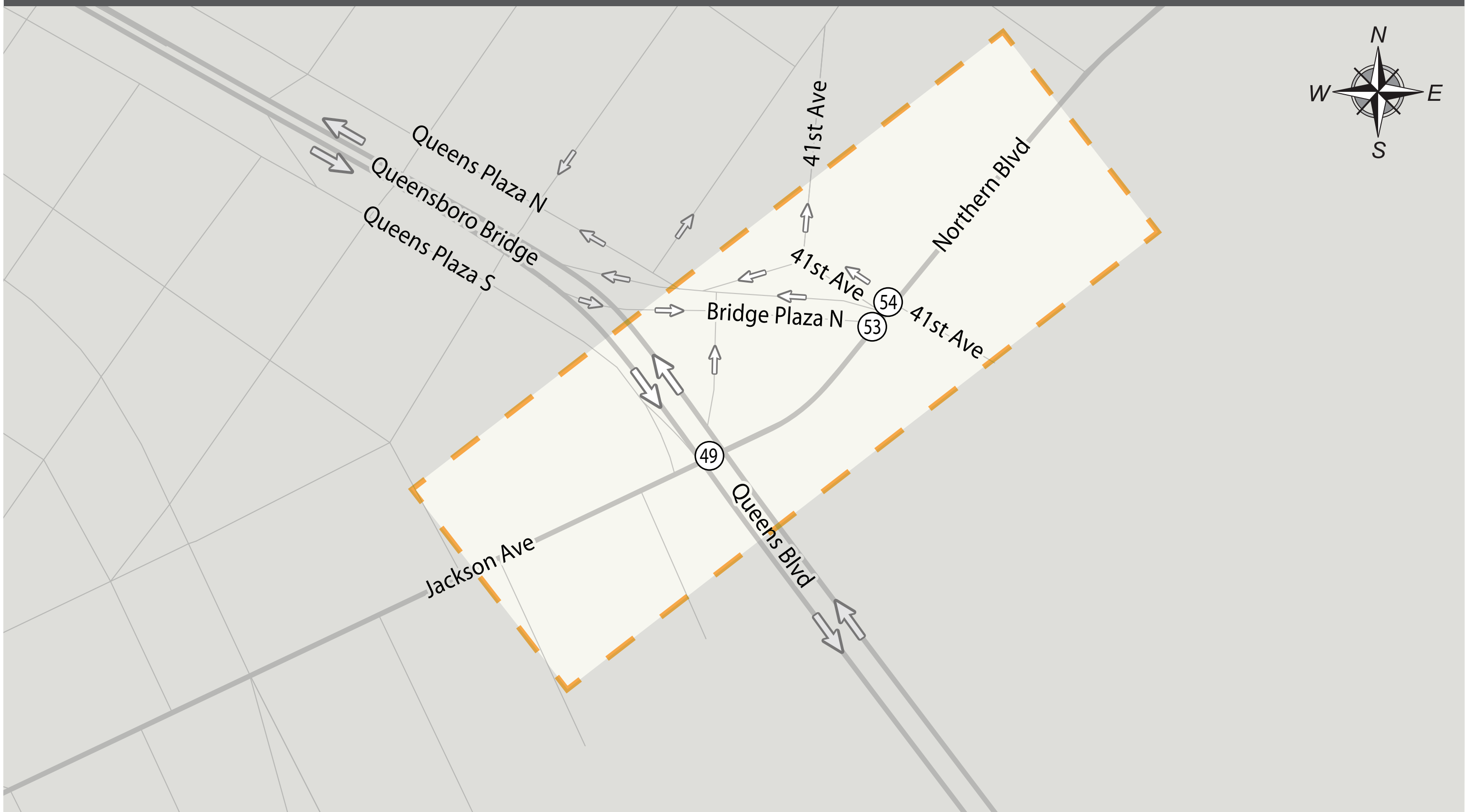
HDR

NYC Taxi and Limousine Commission

2013 Taxi Medallion Increase – DEIS

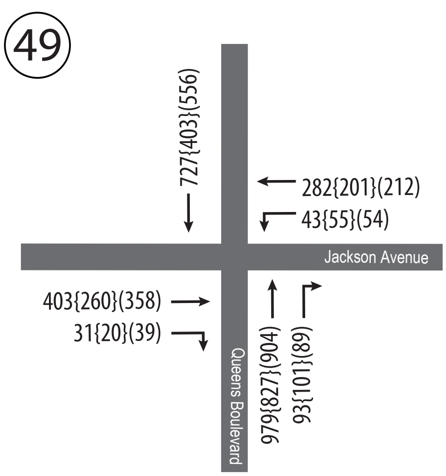
FIGURE 15-23a | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

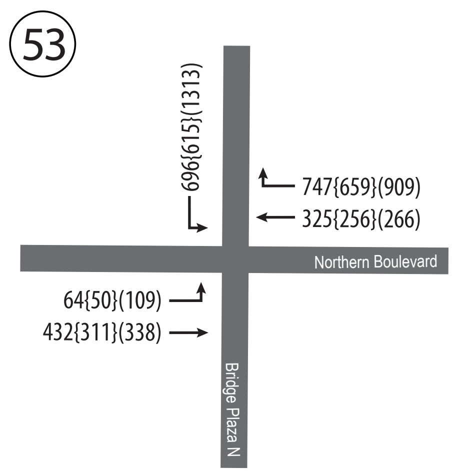
Queens Location Map

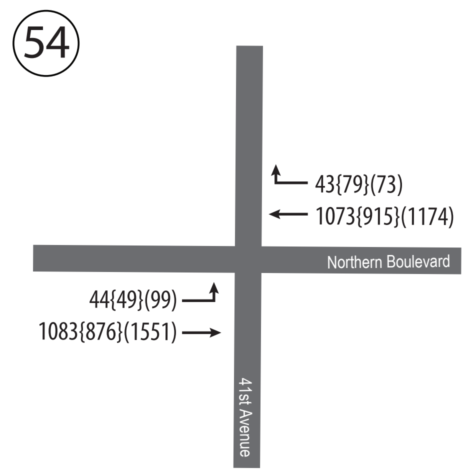


LEGEND:

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







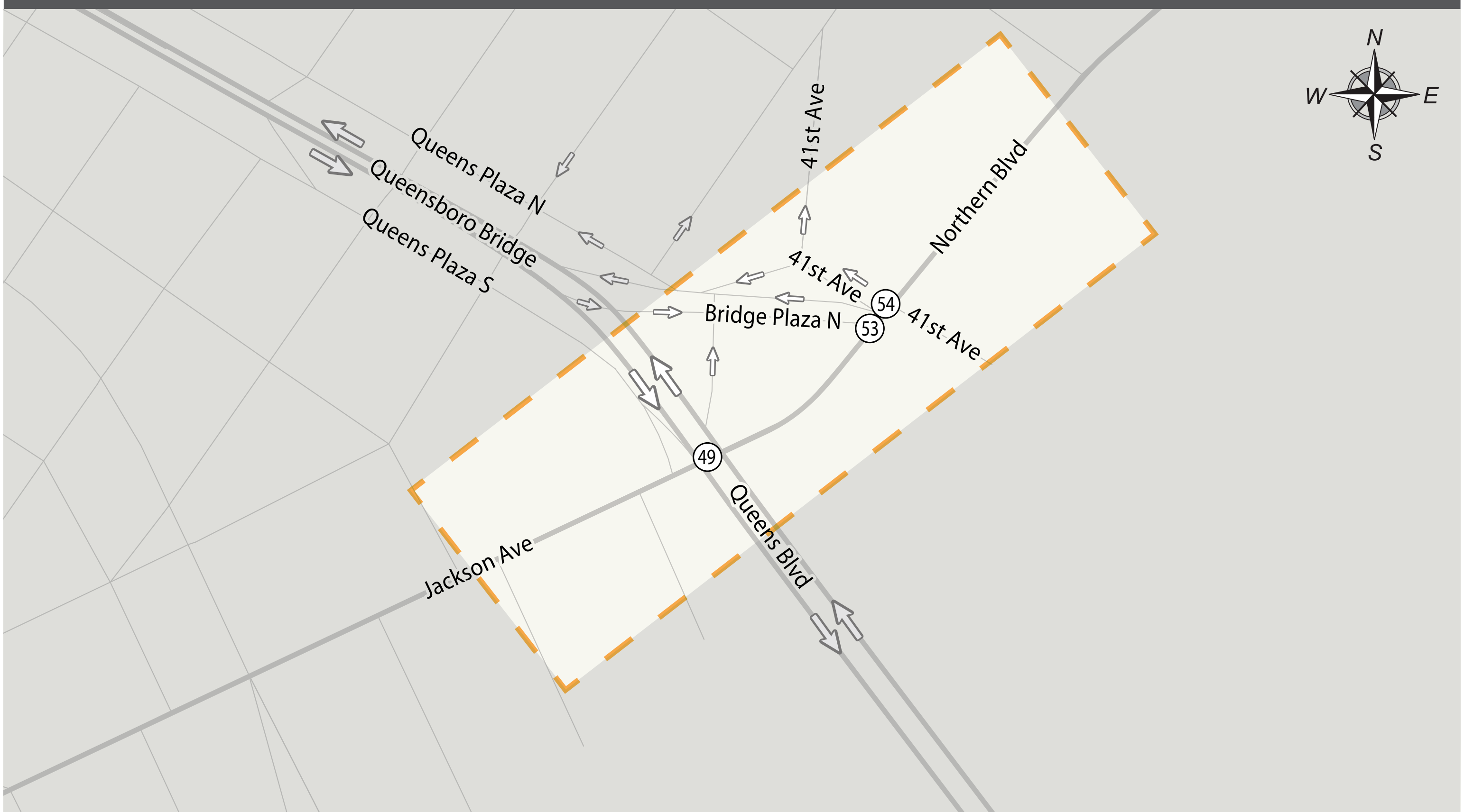
HDR

NYC Taxi and Limousine Commission

2014 Taxi Medallion Increase – DEIS

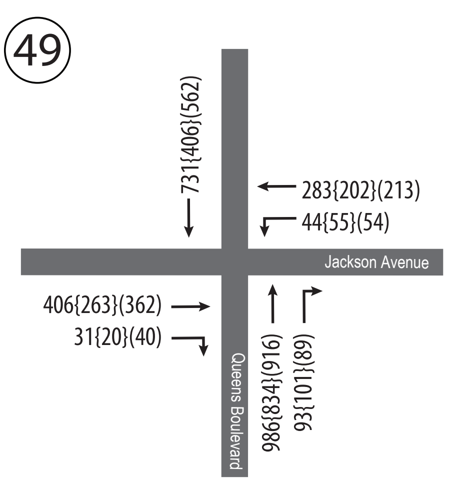
FIGURE 15-23b | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

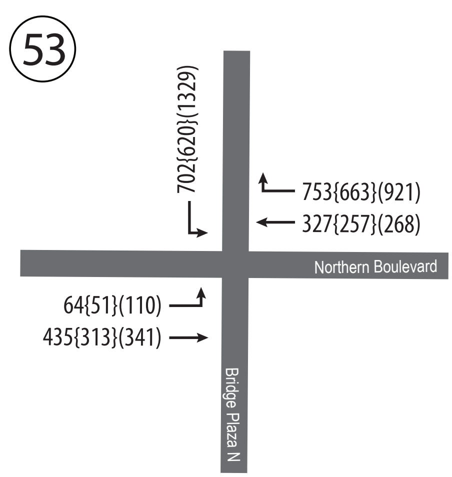
Queens Location Map

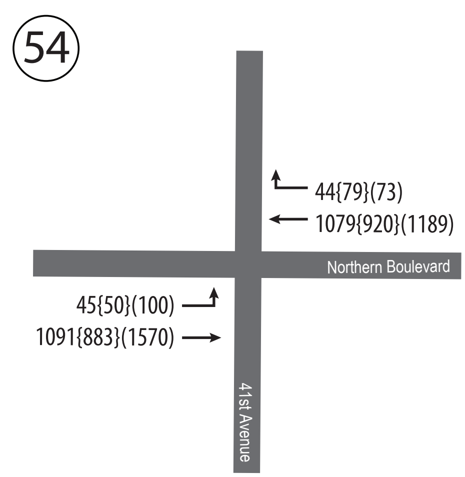


LEGEND:

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







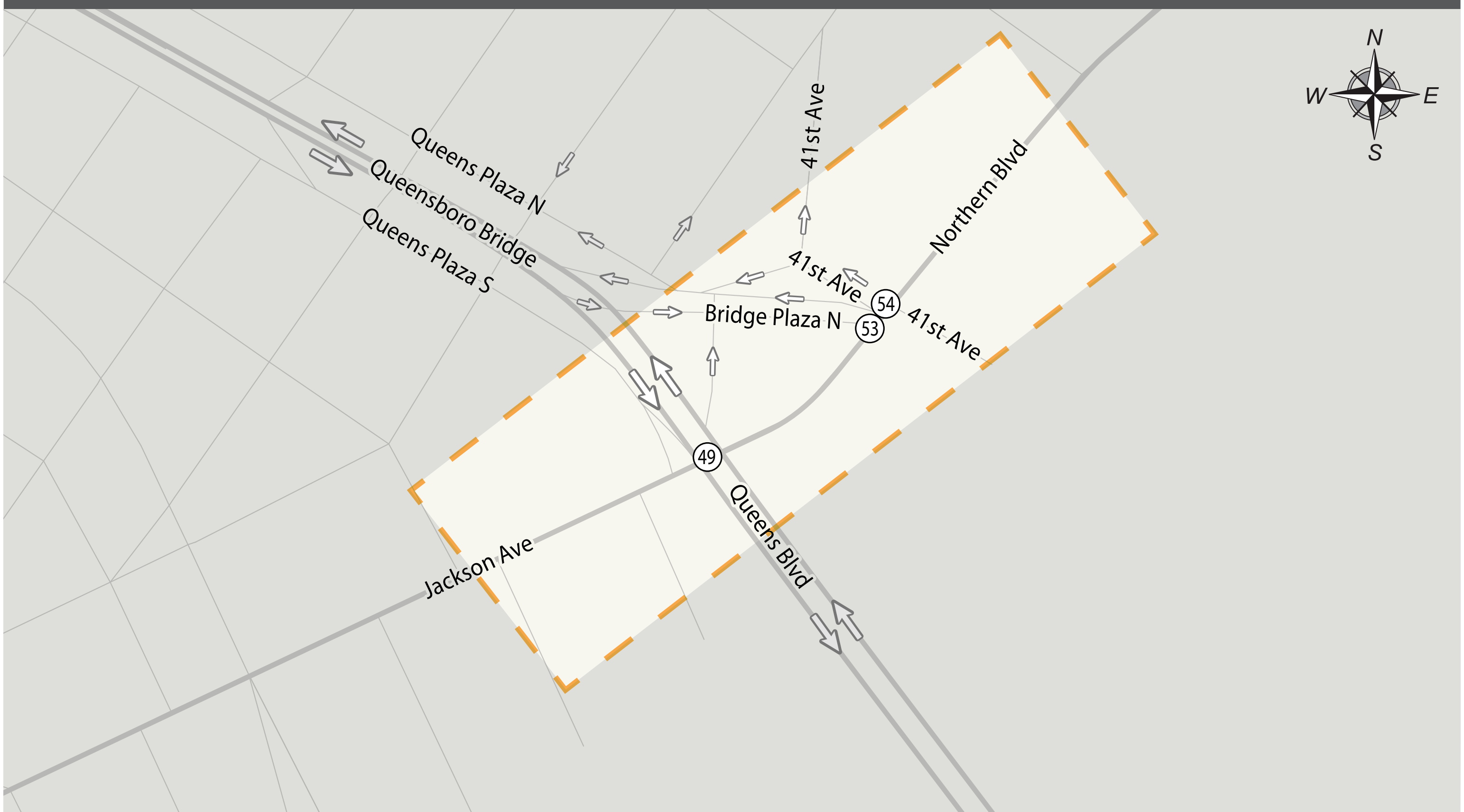
HDR

NYC Taxi and Limousine Commission

2015 Taxi Medallion Increase – DEIS

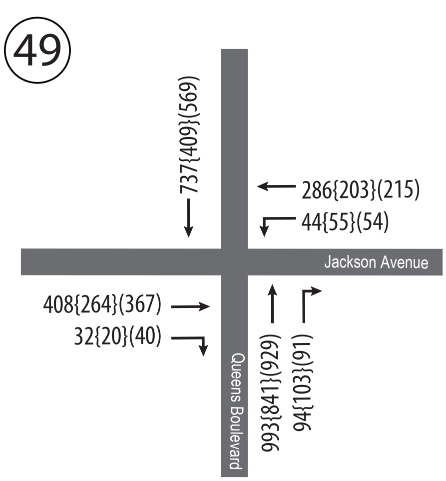
FIGURE 15-23c | **Future Conditions With the Proposed Action AM, Midday, and PM Peak Hour Volumes (Queens)**

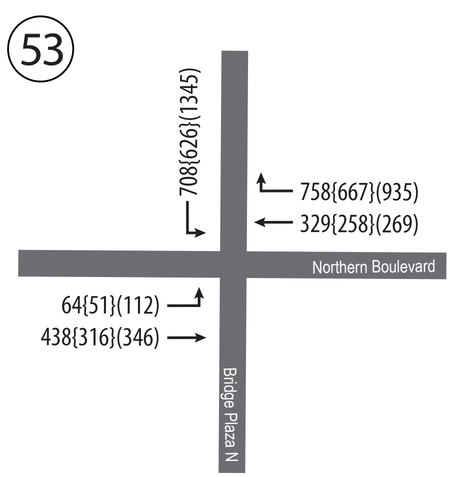
Queens Location Map

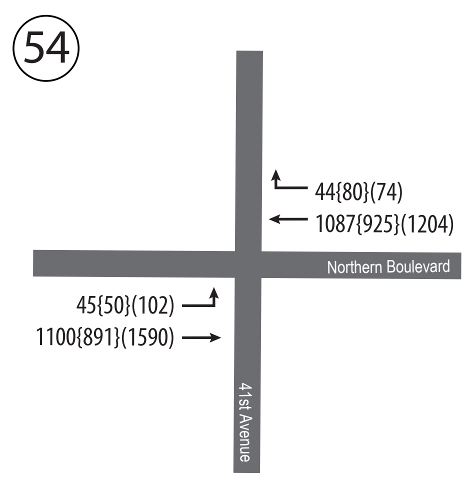


LEGEND:

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







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

Traffic volumes and LOSs at the 54 study intersections in the future (2013, 2014, and 2015) 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 15-11, many of the study intersections would operate in 2015 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 2015 AM peak hour, 23 intersections in the 2015 midday peak hour and 28 intersections in the 2015 PM peak hour. The results for the interim years (2013 and 2014) indicate that fewer intersections and lane groups would exceed the CEQR threshold. The detailed LOS results for all three analysis years are provided in Tables 15-12 through 15-14.[2] Lane groups, approaches, and whole intersections with average delay values above the CEQR threshold have been highlighted.

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 15-11: 2015 with Proposed Action
LOS Comparison to CEQR Threshold

		LOS	AM	Midday	PM
2015	Overall Intersections	High LOS D	7	7	8
		LOS E	18	14	12
		LOS F	7	2	8
	Total Number of Intersections Analyzed		54	54	54
	Individual Lane Groups	High LOS D	17	18	16
		LOS E	28	24	24
		LOS F	59	35	51
	Total Number of Lane Groups Analyzed		216	212	217

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.

[2] 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 15-12: 2013 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	1.07	117.7	F	L	0.95	89.2	F	L	0.62	47.3	D
			T	0.86	34.6	C	T	0.67	23.5	C	T	0.62	20.8	C
		NB 3rd Avenue	T	0.75	30.6	C	T	0.84	30.2	C	T	0.65	23.4	C
			R	0.6	35.1	D	R	1.05	121.4	F	R	0.5	30.3	C
		INTERSECTION			39.7	D			38.8	D			24.6	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.88	51.6	D	T	0.82	48.3	D	T	0.89	54.6	D
			R	0.76	44.3	D	R	0.88	74.5	E	R	0.88	65.4	E
		NB 3rd Avenue	LT	0.81	23.2	C	LT	0.79	8.2	A	LT	0.56	3.2	A
		INTERSECTION			28.6	C			16.5	B			15.4	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.88	42.7	D	LT	1.04	81.9	F	LT	0.81	35.7	D
		NB 3rd Avenue	T	0.94	14.1	B	T	0.98	20.3	C	T	0.98	25.9	C
			R	0.48	7.4	A	R	0.83	30.7	C	R	0.49	10.9	B
		INTERSECTION			19.3	B			31.5	C			26.9	C
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.08	59.3	E	LT	1.04	35.9	D	LT	0.95	22.5	C
		WB 57th Street	TR	0.94	52	D	T	0.58	28.9	C	T	0.45	21.4	C
			R	0.93	62.9	E	R	0.55	33.8	C	R	0.31	21.2	C
		NB 3rd Avenue	LTR	1.06	149.5	F	LTR	1.02	64.2	E	LTR	1.08	80.1	F
			R	0.2	19.6	B	R	0.87	39.1	D	R	1.08	84.5	F
		INTERSECTION			106	F			50.7	D			59.6	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.4	20	B								
			T	0.41	19.9	B	LT	0.99	60.1	E	LT	0.74	25.7	C
		NB 3rd Avenue	TR	1.05	65.3	E	TR	0.99	27.9	C	TR	1.06	41.1	D
		INTERSECTION			58.9	E			35	D			37	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.69	24.3	C	LT	0.99	59.1	E	LT	0.7	25.4	C
		NB 3rd Avenue	T	1.06	71.1	E	T	0.79	19.5	B	T	0.93	20	C
			R	1.05	59.6	E	R	1.05	65.7	E	R	1.05	55.6	E
		INTERSECTION			59.4	E			36.6	D			26.1	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.6	20.9	C	T	0.47	20.1	C	TR	0.53	19	B
			R	1.01	97.2	F	R	1.06	115.1	F	R	1.01	94.9	F
		NB 3rd Avenue	LT	1.06	53.9	D	LT	0.79	48	D	LT	0.69	2.8	A
		INTERSECTION			51.3	D			50.2	D			16.4	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.91	54.7	D	T	1.08	78.9	E	T	1.08	81.9	F
			R	1.08	101.7	F	R	0.82	45.7	D	R	0.45	41.7	D
		WB 57th Street	LT	1.02dl	30.7	C	LT	0.34	20.2	C	LT	0.27	19.8	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.2	18.4	B
			T	1.15	102.9	F	T	1.11	82.7	F	T	1.08	72	E
			R	0.89	62.9	E	R	0.78	40.7	D	R	1.05	96	F
		INTERSECTION			74.2	E			70.9	E			71.2	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.9	39.5	D	T	0.98	52.2	D	T	0.91	39.1	D
			R	0.58	28.5	C	R	0.47	25.4	C	R	0.41	24.2	C
		WB 57th Street	LT	0.98	40.2	D	LT	0.94	43.8	D	LT	0.93	44.5	D
		SB Lexington Avenue	LT	0.76	22.7	C	LT	0.96	43.1	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			31.8	C			44.8	D			31.7	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.66	26.5	C	LT	0.64	24.7	C	LT	0.85	32.8	C
		SB 7th Avenue	T	0.61	7.2	A	T	0.57	3.8	A	T	0.64	4.3	A
			R	0.6	11.4	B	R	0.43	5.8	A	R	0.48	6.8	A
		INTERSECTION			12.7	B			10	A			13.1	B
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.92	10.1	B	LT	0.81	4.3	A	LT	0.81	4.7	A
		INTERSECTION			10.1	B			4.3	A			4.7	A

Table 15-12: 2013 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 and 33rd Street	WB 33rd Street	L	1.04	113	F	L	0.64	45	D	L	0.97	94.7	F
			T	0.88	63.1	E	T	0.51	33	C	T	0.38	32	C
		SB 7th Avenue	TR	0.69	5.7	A	TR	0.68	3.4	A	TR	0.64	3.5	A
			R	1.55	268.8	F	R	1.32	167.3	F	R	1.12	79.4	E
		INTERSECTION			44.5	D			25	C			19.2	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.07	73	E	T	1.09	101.6	F	T	1.02	82	F
			R	0.06	13	B	R	0.19	33.2	C	R	0.1	32.5	C
		WB 34th Street	LT	1.14	91.2	F	LT	0.93	14.7	B	LT	0.9	19.1	B
		SB 7th Avenue	LTR	1.05	118.1	F	LTR	1.02	89.4	F	LTR	1.08	62.7	E
		INTERSECTION			103.7	F			71.9	E			55	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.08	109.2	F	L	0.96	84.6	F	L	0.61	32	C
			T	1.33	194.9	F	T	0.77	42.9	D	T	0.7	36.5	D
		SB 7th Avenue	T	1.06	43.8	D	T	1.01	40.1	D	T	0.67	3.3	A
			R	1.66	332.4	F	R	1.24	151.7	F	R	0.66	19.5	B
		INTERSECTION			95.7	F			50.4	D			10.7	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.88	45.2	D	TR	0.79	36.9	D	TR	0.88	42.7	D
		SB 7th Avenue	LT	0.87	33.5	C	LT	0.91	46	D	LT	0.78	8.7	A
		INTERSECTION			35.8	D			44.3	D			17.3	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.03	71.5	E	LT	0.91	48.2	D	LT	1.04	72.9	E
		SB 7th Avenue	T	0.69	16.9	B	T	0.66	16.5	B	T	0.64	15.8	B
			R	0.69	34.3	C	R	0.54	22.8	C	R	0.61	27.2	C
		INTERSECTION			32.9	C			24.9	C			33.5	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.11	82.4	F	T	1.03	69.6	E	T	0.91	42.5	D
		WB 34th Street	T	0.77	30.9	C	T	0.92	43.7	D	T	0.98	53.6	D
			R	0.36	29.1	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.89	8.6	A	T	1.01	30.7	C	T	1.1	64.5	E
		INTERSECTION			25.9	C			38.4	D			57.9	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.9	42	D	LT	0.71	27.3	C	LT	0.68	25.4	C
		WB 34th Street	T	0.43	9.7	A	T	0.49	2.5	A	T	0.49	32.1	C
			R	0.42	10	B	R	0.83	17.5	B	R	0.7	40.2	D
		NB 8th Avenue	L	0.62	20.6	C	L	0.59	16.4	B	L	0.83	57.2	E
			T	0.92	19	B	T	0.83	12.6	B	T	0.95	51.1	D
			R	1.1	156.2	F	R	0.68	24.1	C	R	0.93	81.5	F
		INTERSECTION			23.5	C			13.9	B			44.7	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.8	35.8	D	T	0.87	42.2	D	T	0.9	46.3	D
			R	1.06	137.8	F	R	1.06	130.2	F	R	1.07	136.4	F
		NB Madison Avenue	LT	0.89	31.2	C	LT	0.74	21.1	C	LT	0.64	18.4	B
		INTERSECTION			39	D			34.9	C			33.1	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.7	58.4	E	L	0.64	51.9	D	L	0.63	52.5	D
			T	0.81	38.5	D	T	0.68	28.8	C	T	0.59	25.9	C
		NB Madison Avenue	TR	1.06	56.8	E	TR	1.04	55.6	E	TR	0.93	18.1	B
		INTERSECTION			53.6	D			50.5	D			21.3	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43.2	D	L	0.41	43	D	L	0.35	41.2	D
			T	0.36	20.1	C	T	0.22	17.7	B	T	0.22	17.4	B
		NB Madison Avenue	TR	0.98	36.5	D	TR	0.98	38.5	D	TR	0.99	25.8	C
		INTERSECTION			35.2	D			37.5	D			25.8	C

Table 15-12: 2013 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	1.3	169.4	F	LT	0.47	21.3	C	LT	0.73	33.9	C
		WB 42nd Street	T	1.22	126	F	TR	0.88	30.9	C	T	1.01	66.6	E
			R	0.1	19.8	B					R	0.14	18.7	B
		NB Madison Avenue	LT	1.07	63.8	E	LT	1.07	54.4	D	LT	1.03	34.5	C
			R	0.2	7	A	R	0.23	8.1	A	R	0.16	7	A
		INTERSECTION			110.3	F			38.5	D			44.3	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.53	26.2	C	T	0.6	28.5	C	T	0.63	29.4	C
			R	0.82	52.8	D	R	0.74	41.6	D	R	0.88	69.6	E
		NB Madison Avenue	LT	1.01	48.9	D	LT	0.99	28.7	C	LT	0.94	29.1	C
		INTERSECTION			46.6	D			30.1	C			32.5	C
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.77	35.6	D	LT	0.93	57.3	E	LT	0.92	61.4	E
		NB Madison Avenue	TR	0.96	26.7	C	TR	0.9	17	B	T	1	37.4	D
											R	0.12	5.3	A
		INTERSECTION			28.3	C			25.3	C			40.9	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.87	40.8	D	TR	0.99	61.3	E	TR	0.53	23.9	C
		NB Madison Avenue	LT	1	43.1	D	LT	1.03	34.4	C	LT	0.93	31	C
		INTERSECTION			42.5	D			42.5	D			29.4	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.82	34.1	C	T	0.69	32.7	C	T	0.59	34.4	C
			R	0.26	25.5	C	R	0.13	23.4	C	R	0.12	26.4	C
		WB 42nd Street	LT	1	40.9	D	LT	0.76	31.9	C	LT	1.14	99.8	F
		SB 5th Avenue	LT	0.83	23.1	C	LT	0.76	20.6	C	LT	1.06	62	E
			R	0.11	13.6	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			29.9	C			25.5	C			67.9	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.02	49.9	D	T	0.84	21.9	C	T	0.74	8.6	A
		WB 42nd Street	TR	0.96	34.5	C	TR	0.92	24.2	C	TR	0.88	29.6	C
		INTERSECTION			42	D			23	C			20.6	C
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.59	15.4	B	T	0.53	9.7	A	T	0.48	12.1	B
			R				R				R			
		WB 42nd Street	LT	0.74	22.5	C	T	0.81	23.2	C	T	0.73	23	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			19.2	B			17.3	B			18.2	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.92	23.2	C	TR	1.02	49	D	TR	0.93	212.3	F
		NB 8th Avenue	L	1.18	137.4	F	L	1.06	96	F	L	1.05	77	E
			T	0.85	16.2	B	T	0.8	12.4	B	T	0.89	14.3	B
		INTERSECTION			29.7	C			27.9	C			54.9	D
30	8th Avenue and 31st Street	WB 31st Street	T	0.66	32.4	C	T	0.54	27.4	C	T	0.86	46.2	D
			R	0.54	29.8	C	R	0.47	26	C	R	0.72	40	D
		NB 8th Avenue	L	1.35	211	F	L	1.16	141.4	F	L	1.38	231.3	F
			T	0.69	22.2	C	T	0.7	23.7	C	T	0.8	26.3	C
		INTERSECTION			49.5	D			37.5	D			47.3	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.23	13.3	B	T	0.29	14.2	B	T	0.4	16.2	B
			R	1.07	97.8	F	R	0.75	38.5	D	R	1.05	95.2	F
		NB 8th Avenue	LT	0.78	28.3	C	LT	0.79	28.7	C	LT	1.07	71.9	E
		INTERSECTION			37.9	D			28.7	C			69.7	E

Table 15-12: 2013 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
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.85	29.2	C	LT	0.92	38.2	D	LT	0.56	15.9	B
		WB 42nd Street	TR	0.75	12	B	TR	0.77	12.5	B	TR	0.58	6.4	A
		NB 8th Avenue	L	0.09	8.9	A	L	0.46	13.3	B	L	0.08	9.7	A
			LT	1.08	59.1	E	LT	0.99	26.5	C	LT	1.04	57.1	E
			R	0.76	27.1	C	R	0.69	22.9	C	R	0.17	9.9	A
		INTERSECTION			44	D			26.4	C			41.6	D
33	8th Avenue and 58th Street	EB 58th Street	LT	0.68	20.8	C	LT	0.86	28.5	C	LT	0.76	20.2	C
		NB 8th Avenue	TR	0.57	17	B	TR	0.62	17.8	B	TR	0.68	18.9	B
		INTERSECTION			18.3	B			21.5	C			19.3	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.78	38.7	D	T	0.89	50.5	D	T	1.04	86.3	F
			R	0.75	47.5	D	R	0.77	50	D	R	0.55	37.8	D
		SB 9th Avenue	LT	0.76	17.4	B	LT	0.66	15.1	B	LT	0.61	14.1	B
		INTERSECTION			23.4	C			25.1	C			30.9	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.86	35.7	D	T	0.8	31.3	C	T	0.77	30	C
			R	0.86	50.9	D	R	0.79	45.4	D	R	0.76	43.1	D
		WB 57th Street	LT	1.06	69.9	E	LT	0.86	33.2	C	LT	0.84	33.4	C
		SB 7th Avenue	LTR	0.75	20.7	C	LTR	0.35	14.2	B	LTR	0.39	14.7	B
		INTERSECTION			39	D			28.6	C			27.4	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.88	49.6	D	T	0.85	46	D	T	0.88	48	D
			R	0.58	29.3	C	R	0.62	31.9	C	R	0.52	27.3	C
		WB Central Park South	L	1.07	80.8	F	L	1.07	90.1	F	L	1.07	84.1	F
			T	0.6	14.3	B	T	0.99	48.4	D	T	1.02	49	D
		SB Central Park Driveway	L	1.07	118.3	F	L	0.01	29	C	L	0.01	30	C
			TR	1.04	76.9	E	TR				TR			
		INTERSECTION			54.2	D			54.3	D			54	D
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.04	81.1	F	LT	0.96	67	E	LT	0.97	66.6	E
		WB 23rd Street	TR	1.07	111.1	F	TR	1.02	78.8	E	TR	0.96	81.4	F
		NB 6th Avenue	LT	0.94	30.8	C	LT	0.98	38.2	D	LT	0.79	21.4	C
			R	0.5	21.5	C	R	0.7	32.9	C	R	0.49	21.5	C
		INTERSECTION			52.3	D			48.7	D			40.1	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.59	25.5	C	TR	0.74	30.5	C	TR	0.84	35.6	D
		NB 6th Avenue	LT	0.97	35.6	D	LT	0.86	24.2	C	LT	0.83	23	C
		INTERSECTION			33.9	C			25.6	C			26.3	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.93	36.6	D	LT	0.88	32.4	C	LT	0.73	30.8	C
		WB 42nd Street	T	0.78	27.9	C	T	0.87	30.8	C	T	1.01	22.2	C
			R	1.18	118.6	F	R	1.14	121.8	F	R	1.17	95	F
		NB 6th Avenue	LTR	0.84	20.8	C	LTR	0.59	14.7	B	LT	1.01	43.3	D
											R	0.43	17.1	B
		INTERSECTION			31.3	C			29.3	C			40.9	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1	41.1	D	LT	1.06	60.4	E	LT	1.11	81.2	F
		WB 57th Street	T	0.97	58.9	E	T	1	69.3	E	T	0.96	56.1	E
			R	0.78	51	D	R	0.71	49.9	D	R	0.91	62.7	E
		NB 6th Avenue	LT	0.72	21.1	C	LT	0.61	18.9	B	LT	0.61	18.5	B
			R	0.48	21.8	C	R	0.49	21.2	C	R	0.64	29.9	C
		INTERSECTION			36	D			42.9	D			43.4	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.58	29.6	C	L	0.63	29.5	C	L	0.89	56.8	E
			T	0.72	22.1	C	T	0.56	13	B	T	0.5	10.5	B
		WB Central Park South	TR	0.81	33.6	C	TR	0.77	31.3	C	TR	0.79	32	C
		NB 6th Avenue	L	1.08	97.5	F	L	1.04	93.8	F	L	1.04	84.3	F
			LTR	0.96dl	38.9	D	LTR	0.86dr	29.3	C	LTR	1.06	72.1	E
		INTERSECTION			41.4	D			34.1	C			52.8	D

Table 15-12: 2013 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	0.77	36.7	D	T	0.71	20.6	C	T	0.73	34	C
			R	0.66	41.1	D	R	0.74	34.5	C	R	0.76	55.8	E
		WB 23rd Street	LT	0.38	17.5	B	LT	0.34	17	B	LT	0.34	17	B
		SB 5th Avenue	TR	0.7	23.1	C	TR	0.71	23.3	C	TR	0.8	25.9	C
		INTERSECTION			26.7	C			21.9	C			27.4	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.08	67.3	E	T	1.08	68.1	E	T	0.92	24.2	C
			R	0.99	50.4	D	R	0.86	34.7	C	R	0.65	19	B
		WB 57th Street	LT	1.09	86.9	F	LT	0.96	50.5	D	LT	1.04	63.2	E
		SB 5th Avenue	LT	1.06	64.2	E	LT	0.76	21.5	C	LT	0.71	20.4	C
			R	0.37	17.5	B	R	0.38	17.1	B	R	0.52	21.5	C
		INTERSECTION			67.1	E			41.1	D			32.4	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.87	23.2	C	T	0.92	29.8	C	T	0.42	6.2	A
			R	1.07	88.9	F	R	0.97	73.9	E	R	0.87	46.2	D
		SB 5th Avenue	LT	1.05	63	E	LT	0.78	23.9	C	LT	1.04	62.6	E
			R	0.08	14.1	B	R	0.07	13.9	B	R	0.14	17	B
		INTERSECTION			55.5	E			30.3	C			49.7	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.1	56.3	E	LT	1.02	26.3	C	LT	1.07	47.9	D
		WB 57th Street	T	0.86	36.4	D	T	0.67	27	C	T	0.96	52.9	D
			R	0.78	42.8	D	R	0.68	40.4	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.74	20.9	C	LTR	0.54	16.6	B	LT	0.94	34.7	C
											R	0.12	13.7	B
		INTERSECTION			35.6	D			23.4	C			42.7	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.52	15.8	B	L	0.75	27.8	C	L	0.48	16.4	B
			T	0.76	17.8	B	T	0.78	19.8	B	T	0.77	19.2	B
		INTERSECTION			17.5	B			21.3	C			18.8	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	1	66	E	TR	1.03	64.8	E	T	0.68	26.9	C
											R	0.5	31	C
		WB 36th Street	L	0.73	37.9	D								
		SB 2nd Avenue	L	1.42	227.5	F	L	0.03	10.5	B	L	0.12	11.3	B
			T	1.44	228	F	T	0.74	19	B	T	0.83	21.7	C
		INTERSECTION			174.8	F			36.8	D			22.9	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.63	19	B	TR	0.82	25.9	C	TR	0.77	23.9	C
			R	1.49	270.9	F	R	1.21	156.3	F	R	1.12	126	F
		NB 3rd Avenue	LT	0.73	23.4	C	LT	0.63	20.8	C	LT	0.57	19.6	B
		INTERSECTION			47.4	D			37.8	D			32.9	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.62	48.8	D	T	0.35	30.1	C	T	0.5	44	D
		WB Jackson Avenue	T	0.33	0.8	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.9	43.5	D	T	0.75	31	C	T	0.83	34.9	C
			R	1.09	91.5	F	R	1.06	85.3	F	R	1.05	81.5	F
		INTERSECTION			55.6	E			44.8	D			45.2	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.82	16.6	B	T	0.46	4.3	A	T	1	52	D
			R	0.16	1.2	A	R	0.09	0.7	A	R	0.15	1	A
		WB Northern Boulevard	LT	0.6	22.8	C	LT	0.35	22.7	C	LT	0.9	88.8	F
		NB Queens Plaza S	LTR	1.17	112.6	F	LTR	0.44	13	B	LTR	1.16	107	F
		SB Queens Plaza S	T	0.56	22.5	C	T	0.37	19.5	B	T	0.89	43.9	D
		INTERSECTION			61.5	E			14.2	B			78.3	E

Table 15-12: 2013 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	0.74	46.6	D	TR	0.69	44.3	D	TR	0.87	57.6	E
		WB Tillary Street	L	0.73	68.8	E	L	1	111.1	F	L	1.2	137.8	F
			T	0.8	48.9	D	T	0.79	36.7	D	T	1.4	218.4	F
			R	1.04	66	E	R	0.81	39	D	R	1.08	67	E
		NB Adams Street	T	1.16	126.4	F	T	1.05	91	F	T	1.16	122.6	F
		SB Adams Street	L	1.16	133.3	F	L	1.11	115.6	F	L	1.13	122.2	F
			T	0.8	30.6	C	T	0.68	26.7	C	T	1.09	81.6	F
		NB Service Road	TR	1.1	122.2	F	TR	1.01	95	F	TR	0.82	56	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	E			112.1	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	33.8	C	L	0.35	27	C	L	0.32	34.1	C
			TR	0.87	40.3	D	TR	0.61	30.4	C	TR	0.88	36.6	D
		WB Tillary Street	L	1.05	89	F	L	0.43	45.1	D	L	0.51	30.9	C
			TR	0.94	61.5	E	TR	0.63	16.8	B	TR	1.12	86	F
		NB Jay Street	L	0.45	39.8	D	L	0.53	45.2	D	L	0.65	49.1	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	32.9	C
			R	0.52	21.2	C	R	0.56	21.6	C	R	0.69	28.5	C
		SB Jay Street	L	0.24	34.2	C	L	0.41	42.9	D	L	0.5	46	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	D
		INTERSECTION			49.8	D			26.6	C			57	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	111.7	F	L	0.52	44.3	D	L	0.32	49.4	D
			TR	1.26	146.4	F	TR	1.16	125	F	TR	1.24	161.2	F
		WB Tillary Street	L	1.37	219.4	F	L	1.15	136.2	F	L	1.26	174.5	F
			TR	1.14	116.8	F	TR	1.07	96.6	F	TR	1.18	131.6	F
			R	1.19	146.9	F	R	1.14	137.3	F	R	0.63	48.1	D
		NB Flatbush Avenue	L	1.03	78.5	E	L	0.92	49	D	L	1.17	117.6	F
			T	0.99	57.6	E	T	0.51	26.1	C	T	0.62	29	C
			R	1.01	76.8	E	R	0.98	69.3	E	R	1.02	76.9	E
		SB Flatbush Avenue	T	1.09	97.8	F	T	0.56	39	D	T	1.08	89.4	F
			R	0.26	34.3	C	R	0.44	40.6	D	R	0.42	37.7	D
		INTERSECTION			113.4	F			84.7	F			110.6	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.44	39.4	D	LT	0.24	14.6	B	LT	0.53	28.5	C
		WB Northern Boulevard	T	0.55	28	C	T	0.4	22.8	C	T	0.45	23.3	C
			R	1.06	77.1	E	R	1.12	102.3	F	R	1.15	108.6	F
		SB Queens Plaza N	L	0.98	62.7	E	L	0.99	85.1	F	L	1.1	215.3	F
		INTERSECTION			58.4	E			71.1	E			135.3	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.44	0.5	A	LTR	0.61	4.9	A	LTR	0.61	6	A
		WB Northern Boulevard	LTR	0.61	8.6	A	LTR	0.57	7.6	A	LTR	0.63	12.4	B
		INTERSECTION			4.8	A			6.3	A			9.1	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
1	3rd Avenue and 54th Street	EB 54th Street	L	1.1	125.6	F	L	0.97	93.7	F	L	0.63	47.9	D
			T	0.89	37.6	D	T	0.69	24	C	T	0.63	21.2	C
		NB 3rd Avenue	T	0.77	34.8	C	T	0.86	31.9	C	T	0.67	23.6	C
			R	0.62	36.2	D	R	1.09	131.8	F	R	0.51	30.5	C
		INTERSECTION			43.8	D			41.2	D			24.9	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.89	53.8	D	T	0.83	49.6	D	T	0.9	56.6	E
			R	0.77	45.6	D	R	0.89	76.7	E	R	0.9	68.6	E
		NB 3rd Avenue	LT	0.83	31.1	C	LT	0.81	10	B	LT	0.58	3.3	A
		INTERSECTION			35.2	D			18.2	B			16	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.91	46.2	D	LT	1.06	88.4	F	LT	0.82	36.8	D
		NB 3rd Avenue	T	0.96	17.3	B	T	1	25.4	C	T	1	115	F
			R	0.49	7.7	A	R	0.84	32.2	C	R	0.5	11.1	B
		INTERSECTION			22.4	C			36.6	D			97	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.09	64	E	LT	1.05	35	C	LT	0.97	23.9	C
		WB 57th Street	TR	0.96	53.4	D	T	0.59	29.1	C	T	0.45	23.4	C
			R	0.94	63.4	E	R	0.56	34.4	C	R	0.31	23.3	C
		NB 3rd Avenue	LTR	1.09	116.8	F	LTR	1.04	71.4	E	LTR	1.1	89.7	F
			R	0.2	19.8	B	R	0.89	32.8	C	R	1.09	86	F
		INTERSECTION			89.9	F			54.3	D			66.1	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.41	20.3	C								
			T	0.42	20	B	LT	1	64.9	E	LT	0.75	26	C
		NB 3rd Avenue	TR	1.08	75.2	E	TR	1.01	34	C	TR	1.08	50.3	D
		INTERSECTION			67.5	E			40.8	D			44	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.7	24.6	C	LT	1	62.7	E	LT	0.71	25.7	C
		NB 3rd Avenue	T	1.09	89.8	F	T	0.81	29.1	C	T	0.95	23.8	C
			R	1.06	55.4	E	R	1.05	59.8	E	R	1.05	55.5	E
		INTERSECTION			70.8	E			42.2	D			28.3	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.6	21	C	T	0.48	20.2	C	TR	0.54	19.1	B
			R	1.01	98.1	F	R	1.07	117.7	F	R	1.03	100.3	F
		NB 3rd Avenue	LT	1.09	68.2	E	LT	0.82	60.3	E	LT	0.7	2.8	A
		INTERSECTION			62	E			59.7	E			17.1	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.93	50.4	D	T	1.1	86.5	F	T	1	53.3	D
			R	1.09	94.5	F	R	0.85	47.5	D	R	0.41	38.1	D
		WB 57th Street	LT	1.04dl	31.4	C	LT	0.35	20.3	C	LT	0.29	20	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.19	17	B
			T	1.16	107.5	F	T	1.12	88.1	F	T	1.05	57.4	E
			R	0.89	63.5	E	R	0.78	41.3	D	R	1.01	80.8	F
		INTERSECTION			76	E			75.6	E			54.8	D
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.91	41	D	T	1	56.6	E	T	0.92	40	D
			R	0.6	29.5	C	R	0.48	25.9	C	R	0.42	24.4	C
		WB 57th Street	LT	0.99	42.9	D	LT	0.96	46.1	D	LT	0.94	46.9	D
		SB Lexington Avenue	LT	0.78	23.4	C	LT	0.99	48.7	D	LT	0.77	23.2	C
			R	0.26	16.3	B	R	0.76	38.7	D	R	0.44	20.7	C
		INTERSECTION			33.2	C			48.8	D			32.7	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.67	26.9	C	LT	0.66	25.1	C	LT	0.87	33.7	C
		SB 7th Avenue	T	0.64	7.8	A	T	0.59	4.1	A	T	0.66	4.7	A
			R	0.61	11.7	B	R	0.45	6.1	A	R	0.5	7	A
		INTERSECTION			13.3	B			10.3	B			13.5	B
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.95	13.6	B	LT	0.83	4.9	A	LT	0.84	5.5	A
		INTERSECTION			13.6	B			4.9	A			5.5	A

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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**
12	7th Avenue and and 33rd Street	WB 33rd Street	L	1.08	124	F	L	0.65	46.2	D	L	0.99	100.3	F
			T	0.89	65.4	E	T	0.52	33.3	C	T	0.39	32.1	C
		SB 7th Avenue	TR	0.72	9.8	A	TR	0.7	4.8	A	TR	0.66	5.1	A
			R	1.58	280.6	F	R	1.34	174.6	F	R	1.15	89.4	F
		INTERSECTION			49.2	D			26.6	C			21.7	C
13	7th Avenue and 34th Street	EB 34th Street	T	1.07	74.7	E	T	1.1	104.1	F	T	1.03	84.4	F
			R	0.06	13	B	R	0.19	33	C	R	0.1	32.8	C
		WB 34th Street	LT	1.16	99.7	F	LT	0.95	16.6	B	LT	0.91	20.1	C
		SB 7th Avenue	LTR	1.09	139.2	F	LTR	1.05	107.5	F	LTR	1.11	73.9	E
		INTERSECTION			118.9	F			83.5	F			62.5	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.11	117.2	F	L	0.97	86.8	F	L	0.63	33	C
			T	1.35	200.5	F	T	0.78	43.1	D	T	0.7	36.8	D
		SB 7th Avenue	T	1.1	59.6	E	T	1.04	53.6	D	T	0.69	3.4	A
			R	1.68	340.8	F	R	1.25	152.3	F	R	0.68	19.8	B
		INTERSECTION			107.7	F			60.8	E			10.8	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	46	D	TR	0.79	37.4	D	TR	0.9	44.4	D
		SB 7th Avenue	LT	0.9	53.4	D	LT	0.93	65	E	LT	0.81	9.2	A
		INTERSECTION			51.9	D			59.9	E			18	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.05	78.8	E	LT	0.92	49.7	D	LT	1.05	78.3	E
		SB 7th Avenue	T	0.71	17.5	B	T	0.69	17	B	T	0.66	16.3	B
			R	0.71	35.7	D	R	0.55	23.5	C	R	0.62	27.5	C
		INTERSECTION			35.2	D			25.6	C			35.3	D
17	6th Avenue and 34th Street	EB 34th Street	T	1.12	86.4	F	T	1.04	72	E	T	0.92	43	D
		WB 34th Street	T	0.78	31.5	C	T	0.94	46.6	D	T	1	56.9	E
			R	0.36	29.1	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.92	9.9	A	T	1.05	42.4	D	T	1.14	79.1	E
		INTERSECTION			27.1	C			46.9	D			67.3	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.9	42.7	D	LT	0.71	27.5	C	LT	0.69	25.7	C
		WB 34th Street	T	0.44	9.8	A	T	0.5	2.5	A	T	0.5	31.9	C
			R	0.44	10.1	B	R	0.86	19.2	B	R	0.72	40.2	D
		NB 8th Avenue	L	0.64	21.3	C	L	0.61	17.8	B	L	0.85	58.2	E
			T	0.95	22.2	C	T	0.85	14.1	B	T	0.98	58.7	E
			R	1.1	153.3	F	R	0.69	25	C	R	0.96	85	F
		INTERSECTION			25.1	C			14.8	B			48.9	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.81	37	D	T	0.89	44.4	D	T	0.92	48.5	D
			R	1.09	147	F	R	1.08	135.8	F	R	1.08	140.6	F
		NB Madison Avenue	LT	0.92	31.9	C	LT	0.77	21.9	C	LT	0.66	18.7	B
		INTERSECTION			40.3	D			36.3	D			34	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.72	59.8	E	L	0.66	53.3	D	L	0.65	53.7	D
			T	0.83	40.2	D	T	0.7	29.4	C	T	0.6	26.2	C
		NB Madison Avenue	TR	1.09	62.2	E	TR	1.08	77	E	TR	0.95	22.4	C
		INTERSECTION			58.1	E			67	E			24.8	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.5	49.6	D	L	0.42	44.4	D	L	0.35	41.3	D
			T	0.39	22.1	C	T	0.22	17.7	B	T	0.22	17.5	B
		NB Madison Avenue	TR	0.96	30.9	C	TR	1.01	53	D	TR	1.01	32.4	C
		INTERSECTION			30.8	C			50.7	D			31.8	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	1.36	194.5	F	LT	0.48	21.2	C	LT	0.74	34.3	C
		WB 42nd Street	T	1.24	136.5	F	TR	0.91	35.3	D	T	1.04	76.3	E
			R	0.1	19.8	B					R	0.14	18.8	B
		NB Madison Avenue	LT	1.1	87.5	F	LT	1.11	78.6	E	LT	1.05	47.6	D
			R	0.21	8.3	A	R	0.24	8.1	A	R	0.16	7	A
		INTERSECTION			129.5	F			50.6	D			53.1	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.55	26.8	C	T	0.62	29.2	C	T	0.65	30.2	C
			R	0.85	58	E	R	0.77	44.4	D	R	0.89	72.6	E
		NB Madison Avenue	LT	1.04	61	E	LT	1.03	44.1	D	LT	0.97	38.2	D
		INTERSECTION			56.6	E			42	D			39.8	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.8	38	D	LT	0.96	63.9	E	LT	0.94	64.6	E
		NB Madison Avenue	TR	0.99	36.8	D	TR	0.94	26.7	C	T	1.02	42.9	D
											R	0.12	5.3	A
		INTERSECTION			37	D			34.4	C			46	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.9	43.7	D	TR	1.01	65.2	E	TR	0.54	24.1	C
		NB Madison Avenue	LT	1.03	56.7	E	LT	1.07	48.6	D	LT	0.95	38.5	D
		INTERSECTION			53.3	D			53.5	D			35.4	D
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.84	34.7	C	T	0.71	32.8	C	T	0.6	34.4	C
			R	0.26	25.4	C	R	0.13	23.2	C	R	0.12	25.9	C
		WB 42nd Street	LT	1.03	50	D	LT	0.78	32.3	C	LT	1.16	110.2	F
		SB 5th Avenue	LT	0.86	24.5	C	LT	0.79	21.4	C	LT	1.09	74.1	E
			R	0.11	13.6	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			33.1	C			26.1	C			77.5	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.05	67.8	E	T	0.86	23.6	C	T	0.76	9.2	A
		WB 42nd Street	TR	0.98	45.6	D	TR	0.95	32	C	TR	0.9	43.8	D
		INTERSECTION			56.4	E			27.9	C			29.1	C
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.6	15.6	B	T	0.55	9.7	A	T	0.5	12.6	B
			R				R				R			
		WB 42nd Street	LT	0.76	24.2	C	T	0.83	24.4	C	T	0.74	24.5	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			20.2	C			18	B			19.2	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.93	23.8	C	TR	1.03	52	D	TR	0.95	224.4	F
		NB 8th Avenue	L	1.21	145	F	L	1.09	102.3	F	L	1.06	80.3	F
			T	0.87	17.7	B	T	0.82	13	B	T	0.92	17.2	B
		INTERSECTION			31.6	C			29.4	C			59.2	E
30	8th Avenue and 31st Street	WB 31st Street	T	0.67	32.7	C	T	0.55	27.6	C	T	0.88	47.6	D
			R	0.56	30.4	C	R	0.49	26.2	C	R	0.73	40.8	D
		NB 8th Avenue	L	1.36	212.8	F	L	1.17	143.1	F	L	1.38	233.9	F
			T	0.71	22.6	C	T	0.72	24.2	C	T	0.82	27.1	C
		INTERSECTION			49.6	D			37.8	D			48.1	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.23	13.3	B	T	0.29	14.3	B	T	0.41	16.2	B
			R	1.12	114.4	F	R	0.78	41.3	D	R	1.09	107.2	F
		NB 8th Avenue	LT	0.8	29.1	C	LT	0.81	29.3	C	LT	1.09	80.7	F
		INTERSECTION			41.2	D			29.4	C			78.2	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.86	30.2	C	LT	0.94	41.1	D	LT	0.57	16	B
		WB 42nd Street	TR	0.76	12.3	B	TR	0.78	12.5	B	TR	0.59	6.5	A
		NB 8th Avenue	L	0.09	9.5	A	L	0.47	13.9	B	L	0.08	10	A
			LT	1.12	74.7	E	LT	1.02	34.4	C	LT	1.07	70.2	E
			R	0.79	29	C	R	0.71	24.3	C	R	0.18	10.1	B
		INTERSECTION			53.8	D			31.5	C			50.4	D

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
33	8th Avenue and 58th Street	EB 58th Street	LT	0.69	21.1	C	LT	0.88	30	C	LT	0.78	20.7	C
		NB 8th Avenue	TR	0.59	17.3	B	TR	0.64	18.2	B	TR	0.7	19.2	B
		INTERSECTION			18.5	B			22.3	C			19.7	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.8	39.6	D	T	0.91	53.8	D	T	1.07	93.5	F
			R	0.77	48.6	D	R	0.78	51.6	D	R	0.55	38.1	D
		SB 9th Avenue	LT	0.77	17.8	B	LT	0.67	15.4	B	LT	0.62	14.3	B
		INTERSECTION			23.9	C			26.2	C			32.7	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.89	37.8	D	T	0.82	32.3	C	T	0.79	30.8	C
			R	0.88	53.8	D	R	0.83	48.9	D	R	0.79	46	D
		WB 57th Street	LT	1.08	77.1	E	LT	0.87	33.6	C	LT	0.86	33.8	C
		SB 7th Avenue	LTR	0.78	21.4	C	LTR	0.36	14.3	B	LTR	0.4	14.8	B
		INTERSECTION			41.7	D			29.4	C			28	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.9	52.4	D	T	0.87	48.2	D	T	0.9	50.4	D
			R	0.6	29.9	C	R	0.64	32.8	C	R	0.54	27.8	C
		WB Central Park South	L	1.1	90.3	F	L	1.1	99.8	F	L	1.1	93.1	F
			T	0.62	14.3	B	T	1.02	56.1	E	T	1.05	58.5	E
		SB Central Park Driveway	L	1.1	126.7	F	L	0.01	29	C	L	0.01	30	C
			TR	1.08	89.4	F	TR				TR			
		INTERSECTION			60	E			60.2	E			60.9	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.07	90.2	F	LT	0.98	71.6	E	LT	1	74.3	E
		WB 23rd Street	TR	1.09	118.2	F	TR	1.05	84.8	F	TR	0.98	85.6	F
		NB 6th Avenue	LT	0.97	35.5	D	LT	1.02	47	D	LT	0.81	22.2	C
			R	0.51	22	C	R	0.72	35	C	R	0.51	22	C
		INTERSECTION			57.8	E			55.9	E			42.5	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.61	25.9	C	TR	0.76	31.2	C	TR	0.85	36.5	D
		NB 6th Avenue	LT	1.01	43.3	D	LT	0.88	25.9	C	LT	0.85	24	C
		INTERSECTION			40.4	D			27	C			27.3	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.95	39.2	D	LT	0.9	34.1	C	LT	0.75	31.9	C
		WB 42nd Street	T	0.8	27.4	C	T	0.89	33.4	C	T	1.03	29.3	C
			R	1.21	124.6	F	R	1.17	131.4	F	R	1.22	113.2	F
		NB 6th Avenue	LTR	0.87	22.1	C	LTR	0.6	15	B	LT	1.05	54.2	D
											R	0.45	17.5	B
		INTERSECTION			32.8	C			30.9	C			50.1	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1.03	47.9	D	LT	1.08	67.8	E	LT	1.14	93.9	F
		WB 57th Street	T	0.98	60	E	T	1.02	72.3	E	T	0.97	57.9	E
			R	0.81	51.4	D	R	0.73	50.4	D	R	0.94	65.5	E
		NB 6th Avenue	LT	0.75	21.8	C	LT	0.63	19.3	B	LT	0.63	18.8	B
			R	0.5	22.3	C	R	0.5	21.6	C	R	0.65	30.5	C
		INTERSECTION			38.2	D			45.4	D			46.9	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.61	30.7	C	L	0.69	33.9	C	L	0.95	67.5	E
			T	0.74	22.3	C	T	0.57	13.1	B	T	0.52	10.6	B
		WB Central Park South	TR	0.83	34.6	C	TR	0.79	32.3	C	TR	0.81	32.9	C
		NB 6th Avenue	L	1.12	111.5	F	L	1.07	105.1	F	L	1.07	94.8	F
			LTR	1.00dl	43	D	LTR	0.89dr	30.4	C	LTR	1.09	83.8	F
		INTERSECTION			45.2	D			36.4	D			59.8	E
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.79	37.1	D	T	0.73	20.9	C	T	0.75	34.7	C
			R	0.69	41.2	D	R	0.76	35.3	D	R	0.78	56.4	E
		WB 23rd Street	LT	0.39	17.6	B	LT	0.35	17.1	B	LT	0.35	17.1	B
		SB 5th Avenue	TR	0.73	23.7	C	TR	0.73	24	C	TR	0.82	26.9	C
		INTERSECTION			27.1	C			22.4	C			28.1	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**
43	5th Avenue and 57th Street	EB 57th Street	T	1.11	78.7	E	T	1.1	75.8	E	T	0.94	25.1	C
			R	1.03	59.9	E	R	0.89	38.4	D	R	0.68	19.7	B
		WB 57th Street	LT	1.13	100.9	F	LT	0.98	54.5	D	LT	1.07	70.6	E
		SB 5th Avenue	LT	1.1	79.4	E	LT	0.79	22.5	C	LT	0.73	21	C
			R	0.37	17.7	B	R	0.39	17.4	B	R	0.53	21.8	C
		INTERSECTION			80.2	F			44.5	D			34.8	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.89	24.9	C	T	0.94	33.2	C	T	0.42	6.5	A
			R	1.11	100.5	F	R	1	82.3	F	R	0.9	49	D
		SB 5th Avenue	LT	1.09	77	E	LT	0.81	24.9	C	LT	1.06	70.2	E
			R	0.08	14.1	B	R	0.07	14	B	R	0.15	17.1	B
		INTERSECTION			66.2	E			32.8	C			55.4	E
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.13	69.3	E	LT	1.04	32.7	C	LT	1.08	53.4	D
		WB 57th Street	T	0.88	37.8	D	T	0.68	27.4	C	T	0.98	57	E
			R	0.81	45.8	D	R	0.69	41.8	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.77	21.7	C	LTR	0.56	16.9	B	LT	0.96	37.7	D
											R	0.12	13.7	B
		INTERSECTION			39.9	D			25.8	C			46.7	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.53	16	B	L	0.76	28.8	C	L	0.49	16.5	B
			T	0.77	18.3	B	T	0.8	20.4	C	T	0.79	19.8	B
		INTERSECTION			17.9	B			21.9	C			19.3	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.01	69	E	TR	1.05	68.1	E	T	0.68	27.1	C
											R	0.5	31.2	C
		WB 36th Street	L	0.75	38.4	D								
		SB 2nd Avenue	L	1.43	232.4	F	L	0.03	10.5	B	L	0.12	11.3	B
			T	1.46	237.3	F	T	0.76	19.4	B	T	0.86	22.6	C
		INTERSECTION			180.9	F			38.2	D			23.5	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.64	19.1	B	TR	0.82	26.3	C	TR	0.78	24.2	C
			R	1.5	274.6	F	R	1.22	160.2	F	R	1.14	130.6	F
		NB 3rd Avenue	LT	0.74	23.7	C	LT	0.65	21.1	C	LT	0.58	19.8	B
		INTERSECTION			47.8	D			38.4	D			33.5	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.62	48.9	D	T	0.35	30.1	C	T	0.5	44.1	D
		WB Jackson Avenue	T	0.34	0.8	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.91	44.3	D	T	0.76	31.4	C	T	0.84	35.6	D
			R	1.1	93.9	F	R	1.07	88.4	F	R	1.06	86	F
		INTERSECTION			56.7	E			46	D			46.8	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.83	17	B	T	0.47	4.4	A	T	1	54.3	D
			R	0.16	1.2	A	R	0.09	0.7	A	R	0.16	1	A
		WB Northern Boulevard	LT	0.61	23	C	LT	0.35	22.7	C	LT	0.91	89.6	F
		NB Queens Plaza S	LTR	1.18	115.5	F	LTR	0.45	13.1	B	LTR	1.17	112.7	F
		SB Queens Plaza S	T	0.56	22.6	C	T	0.37	19.6	B	T	0.9	45	D
		INTERSECTION			62.8	E			14.3	B			81.6	F

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**
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	46.8	D	TR	0.7	44.4	D	TR	0.87	58.3	E
		WB Tillary Street	L	0.73	69.6	E	L	1.01	113.6	F	L	1.21	140.8	F
			T	0.8	49.2	D	T	0.8	37	D	T	1.41	222.5	F
			R	1.05	68.5	E	R	0.81	39.4	D	R	1.09	70.4	E
		NB Adams Street	T	1.17	130.3	F	T	1.06	93.1	F	T	1.18	128.6	F
		SB Adams Street	L	1.17	135.6	F	L	1.11	117.8	F	L	1.14	124.4	F
			T	0.81	30.9	C	T	0.68	26.9	C	T	1.1	84.8	F
		NB Service Road	TR	1.11	124.1	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			74.3	E			58.9	E			115.5	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	34	C	L	0.36	26.9	C	L	0.32	34.2	C
			TR	0.87	40.6	D	TR	0.61	30.4	C	TR	0.88	36.8	D
		WB Tillary Street	L	1.05	88.6	F	L	0.43	45.1	D	L	0.51	31	C
			TR	0.95	62	E	TR	0.63	16.8	B	TR	1.12	89.6	F
		NB Jay Street	L	0.45	40	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	C
			R	0.52	21.3	C	R	0.56	21.7	C	R	0.7	28.6	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.5	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	D
		INTERSECTION			50	D			26.6	C			58.6	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	113.3	F	L	0.52	44.4	D	L	0.32	49.4	D
			TR	1.27	149.1	F	TR	1.16	127	F	TR	1.25	163.9	F
		WB Tillary Street	L	1.37	221.3	F	L	1.16	138.6	F	L	1.27	177.9	F
			TR	1.15	119	F	TR	1.08	98.4	F	TR	1.18	133.4	F
			R	1.19	149.9	F	R	1.15	139.6	F	R	0.64	48.4	D
		NB Flatbush Avenue	L	1.03	80.7	F	L	0.93	50.8	D	L	1.17	120.4	F
			T	1	59.1	E	T	0.52	26.2	C	T	0.62	29.2	C
			R	1.01	77.8	E	R	0.99	70.8	E	R	1.02	78.8	E
		SB Flatbush Avenue	T	1.1	100.3	F	T	0.57	39.1	D	T	1.09	92.6	F
			R	0.26	34.3	C	R	0.44	40.6	D	R	0.43	37.8	D
		INTERSECTION			115.4	F			86.2	F			112.8	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.44	39.6	D	LT	0.24	14.6	B	LT	0.54	28.7	C
		WB Northern Boulevard	T	0.55	28.1	C	T	0.4	22.8	C	T	0.45	23.3	C
			R	1.07	79.7	E	R	1.13	104.8	F	R	1.16	114.7	F
		SB Queens Plaza N	L	0.99	64.9	E	L	1	89.7	F	L	1.11	231.8	F
		INTERSECTION			60	E			73.5	E			144.6	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.45	0.5	A	LTR	0.62	5.2	A	LTR	0.62	6.4	A
		WB Northern Boulevard	LTR	0.62	8.9	A	LTR	0.57	7.7	A	LTR	0.63	14.2	B
		INTERSECTION			5	A			6.5	A			10.1	B

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	0.98	97.3	F	L	0.64	48.4	D
			T	0.91	40.5	D	T	0.7	24.7	C	T	0.64	21.6	C
		NB 3rd Avenue	T	0.79	42	D	T	0.88	34.5	C	T	0.68	23.9	C
			R	0.63	37.5	D	R	1.11	138.3	F	R	0.52	30.9	C
		INTERSECTION			50.1	D			43.7	D			25.3	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.91	56.2	E	T	0.85	51.7	D	T	0.91	58.3	E
			R	0.79	47.3	D	R	0.91	80.2	F	R	0.91	70.2	E
		NB 3rd Avenue	LT	0.85	40.8	D	LT	0.82	13.1	B	LT	0.59	3.4	A
		INTERSECTION			43.3	D			21.3	C			16.3	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.94	50.6	D	LT	1.08	93.9	F	LT	0.83	37.8	D
		NB 3rd Avenue	T	0.98	22	C	T	1.02	31.7	C	T	1.02	133.5	F
			R	0.5	8.2	A	R	0.86	34.5	C	R	0.52	11.5	B
		INTERSECTION			26.9	C			42.5	D			111.7	F
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.11	70.3	E	LT	1.07	42.8	D	LT	0.98	26	C
		WB 57th Street	TR	0.96	53	D	T	0.59	29.4	C	T	0.45	21.7	C
			R	0.95	64.6	E	R	0.57	34.8	C	R	0.32	21.6	C
		NB 3rd Avenue	LTR	1.11	134.1	F	LTR	1.06	79.4	E	LTR	1.12	98.5	F
			R	0.21	19.8	B	R	0.89	33.2	C	R	1.1	77.9	E
		INTERSECTION			100.6	F			60.7	E			71.2	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.42	20.5	C								
			T	0.42	20.1	C	LT	1.03	70.2	E	LT	0.76	26.3	C
		NB 3rd Avenue	TR	1.1	85	F	TR	1.03	41.2	D	TR	1.1	60.6	E
		INTERSECTION			75.9	E			47.6	D			51.7	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.71	24.9	C	LT	1.02	66.3	E	LT	0.71	25.9	C
		NB 3rd Avenue	T	1.12	85.4	F	T	0.83	45.8	D	T	0.97	29.2	C
			R	1.07	60	E	R	1.06	61.5	E	R	1.05	57.6	E
		INTERSECTION			69	E			53.3	D			31.9	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.61	21.1	C	T	0.48	20.3	C	TR	0.54	19.3	B
			R	1.02	100	F	R	1.07	119	F	R	1.04	104.2	F
		NB 3rd Avenue	LT	1.12	82.8	F	LT	0.84	72.1	E	LT	0.72	2.9	A
		INTERSECTION			73.2	E			68.8	E			17.5	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.94	51.2	D	T	1.12	90.8	F	T	1.1	85.3	F
			R	1.12	103.7	F	R	0.86	41.5	D	R	0.46	40.3	D
		WB 57th Street	LT	1.07dl	32.2	C	LT	0.36	20.4	C	LT	0.28	19.9	B
		SB 2nd Avenue	L	0.32	24.9	C	L	0.26	20	C	L	0.2	18.5	B
			T	1.17	111.9	F	T	1.13	93.7	F	T	1.12	86.1	F
			R	0.89	64.2	E	R	0.79	41.5	D	R	1.06	99	F
		INTERSECTION			78.9	E			79.5	E			80.6	F
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.93	42.9	D	T	1.02	61.1	E	T	0.93	41.4	D
			R	0.62	30.5	C	R	0.5	26.7	C	R	0.44	24.9	C
		WB 57th Street	LT	1.01	46.7	D	LT	0.97	48.6	D	LT	0.96	50.1	D
		SB Lexington Avenue	LT	0.8	24.2	C	LT	1.01	54.6	D	LT	0.79	23.9	C
			R	0.27	16.4	B	R	0.76	39.2	D	R	0.45	21	C
		INTERSECTION			35.1	D			52.8	D			34	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.69	27.4	C	LT	0.67	25.6	C	LT	0.89	34.9	C
		SB 7th Avenue	T	0.66	8.5	A	T	0.61	4.6	A	T	0.69	5	A
			R	0.63	11.8	B	R	0.46	6.5	A	R	0.52	7.3	A
		INTERSECTION			13.8	B			10.7	B			14	B
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.99	19.8	B	LT	0.86	6	A	LT	0.87	7	A
		INTERSECTION			19.8	B			6	A			7	A

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**
12	7th Avenue and and 33rd Street	WB 33rd Street	L	1.1	130.7	F	L	0.68	47.8	D	L	1.01	104.5	F
			T	0.9	66.1	E	T	0.53	33.6	C	T	0.4	32.3	C
		SB 7th Avenue	TR	0.74	18.2	B	TR	0.73	7.6	A	TR	0.69	8.6	A
			R	1.59	286.5	F	R	1.36	184.4	F	R	1.17	101.6	F
		INTERSECTION			55.7	E			29.7	C			25.8	C
13	7th Avenue and 34th Street	EB 34th Street	T	1.08	77.8	E	T	1.11	107.5	F	T	1.04	87.5	F
			R	0.06	12.9	B	R	0.19	32.8	C	R	0.1	32.6	C
		WB 34th Street	LT	1.18	109.7	F	LT	0.97	19.5	B	LT	0.93	18.8	B
		SB 7th Avenue	LTR	1.13	159.3	F	LTR	1.08	124.6	F	LTR	1.15	90.3	F
		INTERSECTION			134.1	F			94.9	F			73	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.14	126.9	F	L	0.99	90.3	F	L	0.65	33.7	C
			T	1.35	203.8	F	T	0.79	43.8	D	T	0.71	37.6	D
		SB 7th Avenue	T	1.13	76.3	E	T	1.07	68.1	E	T	0.72	3.5	A
			R	1.69	342.5	F	R	1.25	149.5	F	R	0.68	18.6	B
		INTERSECTION			119.7	F			71.9	E			11	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	47	D	TR	0.8	37.7	D	TR	0.91	45.5	D
		SB 7th Avenue	LT	0.93	74.9	E	LT	0.96	85	F	LT	0.84	9.7	A
		INTERSECTION			69.4	E			76.5	E			18.6	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.08	86.3	F	LT	0.94	51.9	D	LT	1.07	83.7	F
		SB 7th Avenue	T	0.74	18.1	B	T	0.71	17.6	B	T	0.68	16.8	B
			R	0.73	37.3	D	R	0.56	23.6	C	R	0.62	27.7	C
		INTERSECTION			37.6	D			26.4	C			37	D
17	6th Avenue and 34th Street	EB 34th Street	T	1.12	88.9	F	T	1.05	75.3	E	T	0.93	43.6	D
		WB 34th Street	T	0.8	32.3	C	T	0.95	49.8	D	T	1.01	60.9	E
			R	0.36	29.1	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.96	9.9	A	T	1.08	56.1	E	T	1.17	93.8	F
		INTERSECTION			27.4	C			57	E			77	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.91	43.4	D	LT	0.72	27.8	C	LT	0.69	26	C
		WB 34th Street	T	0.45	10	A	T	0.5	2.6	A	T	0.5	31.6	C
			R	0.45	10.3	B	R	0.89	20.6	C	R	0.74	40.2	D
		NB 8th Avenue	L	0.65	22	C	L	0.62	18.2	B	L	0.87	59.2	E
			T	0.97	26.4	C	T	0.88	15.3	B	T	1.01	68	E
			R	1.1	150	F	R	0.69	24.7	C	R	0.98	86.6	F
		INTERSECTION			27.2	C			15.6	B			53.9	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.83	38.4	D	T	0.9	46.7	D	T	0.93	51.1	D
			R	1.11	151.9	F	R	1.09	139.7	F	R	1.1	145	F
		NB Madison Avenue	LT	0.95	35.5	D	LT	0.8	22.9	C	LT	0.68	19.1	B
		INTERSECTION			43.5	D			37.6	D			35	D
20	Madison Avenue and 40th Street	EB 40th Street	L	0.74	62	E	L	0.68	54.7	D	L	0.66	54.5	D
			T	0.85	41.9	D	T	0.71	29.9	C	T	0.61	26.6	C
		NB Madison Avenue	TR	1.12	81.9	F	TR	1.12	72.9	E	TR	0.97	31	C
		INTERSECTION			73.5	E			64.2	E			31.7	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.5	51.3	D	L	0.43	46.1	D	L	0.35	41.3	D
			T	0.4	22.2	C	T	0.23	17.8	B	T	0.22	17.5	B
		NB Madison Avenue	TR	0.99	42.1	D	TR	1.04	70.6	E	TR	1.04	41.1	D
		INTERSECTION			40.6	D			66.6	E			39.7	D

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22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.42	221.1	F	LT	0.48	21	C	LT	0.76	34.7	C
		WB 42nd Street	T	1.28	151.3	F	TR	0.92	38.5	D	T	1.06	85.7	F
			R	0.1	19.9	B					R	0.14	19	B
		NB Madison Avenue	LT	1.12	105.3	F	LT	1.15	82.7	F	LT	1.07	55.7	E
			R	0.21	8.3	A	R	0.25	7.9	A	R	0.16	6.8	A
		INTERSECTION			148.1	F			53.4	D			59.7	E
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.57	27.3	C	T	0.64	29.9	C	T	0.67	31.1	C
			R	0.89	64	E	R	0.79	46.9	D	R	0.9	74.7	E
		NB Madison Avenue	LT	1.07	71.9	E	LT	1.06	74.5	E	LT	0.99	46.6	D
		INTERSECTION			65.7	E			65.1	E			46.5	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.83	40.7	D	LT	0.99	71.6	E	LT	0.96	68.9	E
		NB Madison Avenue	TR	1.02	57.9	E	TR	0.97	32.2	C	T	1.04	55.2	E
											R	0.13	5.3	A
		INTERSECTION			54.8	D			40.3	D			56.7	E
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.93	47.5	D	TR	1.03	69.8	E	TR	0.55	24.3	C
		NB Madison Avenue	LT	1.06	70.3	E	LT	1.1	63.2	E	LT	0.97	47.6	D
		INTERSECTION			64.4	E			65.1	E			42.6	D
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.86	35.2	D	T	0.73	33	C	T	0.62	34.3	C
			R	0.26	25.3	C	R	0.13	23.1	C	R	0.12	25.7	C
		WB 42nd Street	LT	1.06	61.2	E	LT	0.8	32.7	C	LT	1.19	119.5	F
		SB 5th Avenue	LT	0.89	26.3	C	LT	0.82	22.3	C	LT	1.12	86.4	F
			R	0.11	13.6	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			37	D			26.7	C			86.9	F
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1.08	85.5	F	T	0.88	25.7	C	T	0.77	10	B
		WB 42nd Street	TR	1.01	58.7	E	TR	0.92	25	C	TR	0.92	28	C
		INTERSECTION			71.7	E			25.3	C			20.3	C
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.62	15.8	B	T	0.56	9.7	A	T	0.51	13	B
			R				R				R			
		WB 42nd Street	LT	0.78	27	C	T	0.85	25.9	C	T	0.76	26.4	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			21.7	C			18.8	B			20.4	C
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.94	24.6	C	TR	1.04	54.8	D	TR	0.97	313.9	F
		NB 8th Avenue	L	1.22	150.6	F	L	1.1	105	F	L	1.09	86.9	F
			T	0.89	19.9	B	T	0.84	13.9	B	T	0.94	23.8	C
		INTERSECTION			33.8	C			30.7	C			80	E
30	8th Avenue and 31st Street	WB 31st Street	T	0.68	33	C	T	0.56	27.8	C	T	0.89	49	D
			R	0.58	31	C	R	0.5	26.5	C	R	0.75	41.5	D
		NB 8th Avenue	L	1.36	214.6	F	L	1.18	146.5	F	L	1.39	239.1	F
			T	0.72	23	C	T	0.74	24.7	C	T	0.84	27.9	C
		INTERSECTION			49.8	D			38.4	D			49.1	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.23	13.3	B	T	0.3	14.3	B	T	0.41	16.4	B
			R	1.17	132.6	F	R	0.81	44.4	D	R	1.12	118.9	F
		NB 8th Avenue	LT	0.83	29.9	C	LT	0.83	30.1	C	LT	1.12	90.4	F
		INTERSECTION			44.8	D			30.4	C			87.3	F
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.87	31.2	C	LT	0.96	44.4	D	LT	0.58	16.2	B
		WB 42nd Street	TR	0.77	12.3	B	TR	0.79	12.5	B	TR	0.59	6.5	A
		NB 8th Avenue	L	0.09	10.3	B	L	0.47	14.2	B	L	0.08	10	A
			LT	1.16	90.5	F	LT	1.05	44.1	D	LT	1.09	82.9	F
			R	0.82	32	C	R	0.73	25.5	C	R	0.18	10	A
		INTERSECTION			63.8	E			37.8	D			59.1	E

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33	8th Avenue and 58th Street	EB 58th Street	LT	0.7	21.3	C	LT	0.9	31.8	C	LT	0.8	21.3	C
		NB 8th Avenue	TR	0.6	17.5	B	TR	0.66	18.6	B	TR	0.72	19.7	B
		INTERSECTION			18.8	B			23.1	C			20.1	C
34	9th Avenue and 58th Street	EB 58th Street	T	0.81	40.3	D	T	0.93	57.8	E	T	1.09	99.8	F
			R	0.77	49.4	D	R	0.8	52.9	D	R	0.55	38.1	D
		SB 9th Avenue	LT	0.79	18.2	B	LT	0.69	15.7	B	LT	0.62	14.4	B
		INTERSECTION			24.4	C			27.3	C			34.3	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.91	40.1	D	T	0.83	33.4	C	T	0.8	31.6	C
			R	0.89	56.6	E	R	0.85	52.2	D	R	0.82	48.9	D
		WB 57th Street	LT	1.11	84.8	F	LT	0.89	34.1	C	LT	0.87	34.1	C
		SB 7th Avenue	LTR	0.8	22.3	C	LTR	0.37	14.4	B	LTR	0.41	14.9	B
		INTERSECTION			44.7	D			30.2	C			28.6	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.93	55.9	E	T	0.9	50.9	D	T	0.92	53.7	D
			R	0.61	30.5	C	R	0.66	33.6	C	R	0.55	28.2	C
		WB Central Park South	L	1.13	98	F	L	1.13	107.7	F	L	1.13	103.9	F
			T	0.64	14.2	B	T	1.05	64.9	E	T	1.08	68.9	E
		SB Central Park Driveway	L	1.12	135.5	F	L	0.01	29	C	L	0.01	30	C
			TR	1.12	103	F	TR				TR			
		INTERSECTION			66	E			66.4	E			68.8	E
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.1	99.7	F	LT	1.01	76.7	E	LT	1.03	82.4	F
		WB 23rd Street	TR	1.11	125	F	TR	1.06	90.5	F	TR	1	89.8	F
		NB 6th Avenue	LT	1	42.1	D	LT	1.05	57.3	E	LT	0.84	23.1	C
			R	0.52	22.4	C	R	0.74	36.5	D	R	0.52	22.3	C
		INTERSECTION			64.6	E			64.2	E			45.1	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.62	26.3	C	TR	0.77	32	C	TR	0.86	37.4	D
		NB 6th Avenue	LT	1.04	53.3	D	LT	0.91	27.8	C	LT	0.88	25.3	C
		INTERSECTION			48.7	D			28.7	C			28.4	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.97	42.2	D	LT	0.92	36	D	LT	0.77	33	C
		WB 42nd Street	T	0.83	28	C	T	0.91	36.2	D	T	1.05	36.9	D
			R	1.25	140	F	R	1.2	141.5	F	R	1.25	126.6	F
		NB 6th Avenue	LTR	0.9	23.9	C	LTR	0.62	15.3	B	LT	1.08	67.1	E
											R	0.47	18.2	B
		INTERSECTION			35.4	D			32.7	C			60.1	E
40	6th Avenue and 57th Street	EB 57th Street	LT	1.05	56.5	E	LT	1.1	76.2	E	LT	1.18	108.2	F
		WB 57th Street	T	1	61.7	E	T	1.03	76.4	E	T	0.99	60.2	E
			R	0.84	51.5	D	R	0.76	51.2	D	R	0.97	67.1	E
		NB 6th Avenue	LT	0.78	22.5	C	LT	0.66	19.7	B	LT	0.65	19.1	B
			R	0.51	22.7	C	R	0.51	22	C	R	0.66	30.9	C
		INTERSECTION			41	D			48.5	D			50.7	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.66	32.3	C	L	0.75	39.2	D	L	1.01	81.4	F
			T	0.76	22.4	C	T	0.59	13.2	B	T	0.53	10.7	B
		WB Central Park South	TR	0.84	35.8	D	TR	0.81	33.5	C	TR	0.82	33.9	C
		NB 6th Avenue	L	1.16	126.6	F	L	1.11	116.4	F	L	1.09	101.3	F
			LTR	1.04dl	48.9	D	LTR	0.92dr	31.8	C	LTR	1.13	99.4	F
		INTERSECTION			50	D			38.8	D			67.9	E
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.81	37.5	D	T	0.75	21.2	C	T	0.77	35.2	D
			R	0.7	41	D	R	0.79	36.8	D	R	0.79	56.5	E
		WB 23rd Street	LT	0.4	17.7	B	LT	0.36	17.1	B	LT	0.36	17.2	B
		SB 5th Avenue	TR	0.75	24.5	C	TR	0.76	24.7	C	TR	0.84	27.9	C
		INTERSECTION			27.6	C			22.9	C			28.7	C

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43	5th Avenue and 57th Street	EB 57th Street	T	1.14	90.1	F	T	1.12	82.9	F	T	0.95	25.6	C
			R	1.07	71.5	E	R	0.93	43.9	D	R	0.71	20	C
		WB 57th Street	LT	1.17	115.4	F	LT	1	59.1	E	LT	1.1	80.9	F
		SB 5th Avenue	LT	1.14	95.1	F	LT	0.82	23.5	C	LT	0.75	21.6	C
			R	0.38	17.8	B	R	0.39	17.5	B	R	0.53	22	C
		INTERSECTION			93.7	F			48	D			37.8	D
44	5th Avenue and Central Park South	EB Central Park South	T	0.92	27.3	C	T	0.96	37.4	D	T	0.42	6.9	A
			R	1.15	112.9	F	R	1.05	93.7	F	R	0.92	52.2	D
		SB 5th Avenue	LT	1.13	91.9	F	LT	0.83	26	C	LT	1.09	79.1	E
			R	0.08	14.2	B	R	0.07	14	B	R	0.15	17.2	B
		INTERSECTION			77.8	E			35.8	D			62.2	E
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.16	82.5	F	LT	1.06	41	D	LT	1.09	58.7	E
		WB 57th Street	T	0.89	39.4	D	T	0.69	27.8	C	T	0.99	61	E
			R	0.83	48.2	D	R	0.71	42.8	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.79	22.4	C	LTR	0.58	17.2	B	LT	0.98	41.5	D
											R	0.12	13.7	B
		INTERSECTION			44.1	D			28.7	C			50.9	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.54	16.3	B	L	0.77	29.8	C	L	0.5	16.8	B
			T	0.79	18.7	B	T	0.81	21	C	T	0.8	20.4	C
		INTERSECTION			18.3	B			22.6	C			19.8	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.03	73.5	E	TR	1.06	72.6	E	T	0.69	27.2	C
											R	0.51	31.4	C
		WB 36th Street	L	0.76	39	D								
		SB 2nd Avenue	L	1.45	237.2	F	L	0.03	10.5	B	L	0.12	11.3	B
			T	1.48	246.3	F	T	0.77	19.9	B	T	0.88	23.7	C
		INTERSECTION			187	F			40.1	D			24.3	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.64	19.1	B	TR	0.83	26.8	C	TR	0.79	24.6	C
			R	1.5	278.3	F	R	1.23	164.2	F	R	1.15	135.3	F
		NB 3rd Avenue	LT	0.76	24.1	C	LT	0.66	21.3	C	LT	0.59	20.1	C
		INTERSECTION			48.2	D			39	D			34.2	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.62	49.1	D	T	0.35	30.1	C	T	0.51	44.3	D
		WB Jackson Avenue	T	0.34	0.8	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.91	45.2	D	T	0.77	31.7	C	T	0.85	36.2	D
			R	1.11	96.8	F	R	1.08	90.3	F	R	1.07	89.5	F
		INTERSECTION			58	E			46.7	D			48	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.83	17.2	B	T	0.47	4.5	A	T	1.02	58.4	E
			R	0.17	1.2	A	R	0.09	0.7	A	R	0.16	1	A
		WB Northern Boulevard	LT	0.62	23.1	C	LT	0.35	22.7	C	LT	0.92	92.1	F
		NB Queens Plaza S	LTR	1.19	119.5	F	LTR	0.45	13.1	B	LTR	1.19	120	F
		SB Queens Plaza S	T	0.56	22.7	C	T	0.37	19.6	B	T	0.91	46.6	D
		INTERSECTION			64.7	E			14.3	B			86.3	F
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	47.1	D	TR	0.7	44.6	D	TR	0.88	60	E
		WB Tillary Street	L	0.74	70.4	E	L	1.03	118.1	F	L	1.22	146.6	F
			T	0.81	49.5	D	T	0.8	37.3	D	T	1.42	225.2	F
			R	1.06	71.6	E	R	0.82	39.8	D	R	1.1	74.5	E
		NB Adams Street	T	1.18	132.8	F	T	1.07	96.1	F	T	1.19	135	F
		SB Adams Street	L	1.18	139.6	F	L	1.12	121.6	F	L	1.15	126.6	F
			T	0.82	31.2	C	T	0.69	27.1	C	T	1.11	88.4	F
		NB Service Road	TR	1.12	126.2	F	TR	1.02	97.2	F	TR	0.83	57.1	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.3	33.5	C
		INTERSECTION			75.9	E			60.3	E			119.2	F

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
51	Tillary Street and Jay Street	EB Tillary Street	L	0.38	34	C	L	0.36	27	C	L	0.32	34.1	C
			TR	0.88	41	D	TR	0.62	30.6	C	TR	0.88	36.9	D
		WB Tillary Street	L	1.05	89.9	F	L	0.43	45	D	L	0.52	31.3	C
			TR	0.95	62.2	E	TR	0.63	16.9	B	TR	1.13	92.9	F
		NB Jay Street	L	0.46	40.1	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	C
			R	0.52	21.3	C	R	0.56	21.8	C	R	0.7	28.7	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.5	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	0.29	36.2	D
		INTERSECTION			50.4	D			26.7	C			60.1	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.98	115	F	L	0.53	44.6	D	L	0.33	49.4	D
			TR	1.28	153.2	F	TR	1.17	129.8	F	TR	1.26	166.9	F
		WB Tillary Street	L	1.38	223.1	F	L	1.16	141.1	F	L	1.26	176	F
			TR	1.16	124.8	F	TR	1.08	100.2	F	TR	1.19	136.3	F
			R	1.19	146.9	F	R	1.16	142	F	R	0.64	48.3	D
		NB Flatbush Avenue	L	1.04	82.5	F	L	0.94	52.5	D	L	1.18	123.3	F
			T	1	60.9	E	T	0.52	26.3	C	T	0.63	29.3	C
			R	1.02	79.4	E	R	0.99	71.8	E	R	1.03	80.7	F
		SB Flatbush Avenue	T	1.11	101.7	F	T	0.57	39.2	D	T	1.1	96.1	F
			R	0.27	34.4	C	R	0.44	40.7	D	R	0.43	37.9	D
		INTERSECTION			117.8	F			87.7	F			114.8	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.45	39.6	D	LT	0.24	14.7	B	LT	0.54	28.9	C
		WB Northern Boulevard	T	0.55	28.1	C	T	0.4	22.8	C	T	0.45	23.3	C
			R	1.08	82.3	F	R	1.13	107.2	F	R	1.18	121.7	F
		SB Queens Plaza N	L	1	66.9	E	L	1.01	93.6	F	L	1.13	249.2	F
		INTERSECTION			61.6	E			75.7	E			154.5	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.45	0.5	A	LTR	0.62	5.4	A	LTR	0.63	6.7	A
		WB Northern Boulevard	LTR	0.62	9.3	A	LTR	0.57	7.9	A	LTR	0.64	16.6	B
		INTERSECTION			5.1	A			6.7	A			11.4	B

15.2.9 Identification of Significant Adverse Environmental Impacts

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.* As mentioned previously, 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; and

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 with 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 with Proposed Action condition should be considered a significant impact.

The results of this assessment indicate that, in 2013, 30 of the 54 study intersections would have one or more significant adverse traffic impacts during one or more peak hours, in 2014, 45 of the 54 study intersections would have one or more significant adverse traffic impacts and, in 2015, 47 of the 54 study intersections would have one or more significant adverse traffic impacts. Table 15-15 summarizes the significant adverse traffic impacts by year and peak hour. As shown, there would be more significant impacts during the AM peak hour than during the other two hours.

Measures to mitigate identified significant adverse impacts were evaluated for each intersection at which a significant adverse impact was projected to occur. If full mitigation could not be achieved, improvements were proposed to decrease impact to the extent possible. These potential mitigation measures are presented in the next section.

Table 15-15: Summary of Significant Traffic Impacts

	Intersections with One or More Impacts				All Lane Groups with Impacts		
	AM	Midday	PM		AM	Midday	PM
2013	23	11	16		36	11	21
2014	35	32	33		57	41	50
2015	41	37	38		68	59	67

15.2.10 Identification of Measures to Mitigate Identified Significant Adverse Impacts

In accordance with the *2012 CEQR Technical Manual*, measures have been developed to mitigate identified significant adverse impacts for each analysis year and peak hour. The goal of the mitigation measures is to reduce the impacts to a non-significant level, while not causing new impacts at other locations. An impact is not considered to be significant if in the Future Condition with the Proposed Action the lane group 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. 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.

The detailed recommended mitigation measures for each year and time period are presented in Tables 15-16 through 15-24. The mitigation measures have been categorized by type of measure. Relevant before and after information concerning each proposed mitigation measure are also presented (e.g. signal timing before and after mitigation). Locations that could not be fully mitigated are also noted.

Table 15-25a presents a summary of the results of the mitigation analysis, including how many intersections were unmitigatable or could not be fully mitigated by year and peak hour. The number of locations that could not be mitigated increased each year from a low of 4 in the 2013 midday scenario to a high of 24 during the midday peak hour in 2015.

Table 15-16: 2013 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	Signal Timing Changes	NB: Split =41s EBT: Split =27s EBLT: Split =22s	Reduce 1s green time from NB and allocate 1s green time to EBLT. NB: Split=40s EBT: Split=27s EBLT: Split=23s
2	3rd Avenue and 55th Street	No Mitigation Needed		
3	3rd Avenue and 56th Street	No Mitigation Needed		
4	3rd Avenue and 57th Street	No Mitigation Needed		
5	3rd Avenue and 58th Street	Signal Timing Changes	NBT: Split =45s EBLT: Split =45s	Reduce 1s green time from EBLT and allocate 1s green time to NBT. NBT: Split =46s EBLT: Split =44s
6	3rd Avenue and 59th Street	Signal Timing Changes	NBT w/o PED: Split=28s EBLT: Split=45s NBT: Split=17s	Reduce 2s green time from EBLT and allocate 2s green time to NBT. NBT w/o PED: Split=30s EBLT: Split=43s NBT: Split=17s
7	3rd Avenue and 60th Street	Impacts Cannot Be Fully Mitigated	NBLT: Split = 45s WBT: Split = 24s WBT w/o PED: Split = 21s	Reduce 1s green time from WBT w/o PED and allocate 1s green time to NBLT. NBLT: Split = 46s WBT: Split = 24s WBT w/o PED: Split = 20s
8	2nd Avenue and 57th Street	No Mitigation Needed		
9	Lexington Avenue and 57th Street	No Mitigation Needed		
10	7th Avenue and 31st Street	No Mitigation Needed		
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	Unmitigatable		
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and 35th Street	Impacts Cannot Be Fully Mitigated	SBT: Split=53s WBLT: Split=37s	Reduce 1s green time from WBLT and allocate 1s green time to SBT SBT: Split=54s WBLT: Split=36s
15	7th Avenue and 36th Street	No Mitigation Needed		
16	7th Avenue and 37th Street	No Mitigation Needed		
17	6th Avenue and 34th Street	No Mitigation Needed		
18	8th Avenue and	No Mitigation Needed		

Table 15-16: 2013 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
	34th Street			
19	Madison Avenue and 39th Street	No Mitigation Needed		
20	Madison Avenue and 40th Street	Signal Timing Changes	NBT: Split = 50s EBT: Split = 21s EBT w/o PED: Split = 19s	Reduce 1s green time from EBT and allocate 1s green time to NB. NBLT: Split = 51s EBT: Split = 20s EBT w/o PED: Split = 19s
21	Madison Avenue and 41st Street	No Mitigation Needed		
22	Madison Avenue and 42nd Street	Impacts Cannot Be Fully Mitigated	NBT: Split =50s EB-WB: Split =40s	Reduce 1s green time from NBT and allocate 1s green time to EB-WB. NBT: Split =49s EB-WB: Split =41s
23	Madison Avenue and 43rd Street	No Mitigation Needed		Benefits from improvements at the upstream intersection.
24	Madison Avenue and 44th Street	No Mitigation Needed		
25	Madison Avenue and 45th Street	No Mitigation Needed		
26	5th Avenue and 42nd Street	No Mitigation Needed		
27	Vanderbilt Avenue and 42nd Street	Signal Timing Changes	EB-WB: Split=47s HOLD: Split=43s	Reduce 1s green time from HOLD phase and allocate 1s green time to EB-WB. EB-WB: Split=48s HOLD: Split=42s
28	Park Avenue and 42nd Street	No Mitigation Needed		
29	8th Avenue and 33rd Street	No Mitigation Needed		
30	8th Avenue and 31st Street	No Mitigation Needed		
31	8th Avenue and 41st Street	Signal Timing Changes	NBT: Split =38s WBT: Split =52s	Reduce 1s green time from NBT and allocate 1s green time to WBT. NBT: Split =37s EBLT: Split =53s
32	8th Avenue and 42nd Street	Signal Timing Changes	NB: Split =38s EBLT: Split =18s EB-WB: Split =34s	Reduce 1s green time from EB-WB and allocate 1s green time to NB. NB: Split =39s EBLT: Split =18s EB-WB: Split =33s
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	No Mitigation Needed		
35	7th Avenue and 57th Street	No Mitigation Needed		

Table 15-16: 2013 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
36	7th Avenue and Central Park South	Signal Timing Changes	SBLT: Split = 23sEB-WB: Split = 28sWBLT+EBR: Split = 31sEBR: Split = 8s	Reduce 1s green time from EBR and allocate 1s green to SBLT.SBLT: Split = 24sEB-WB: Split = 28sWBLT+EBR: Split = 31sEBR: Split = 7s
37	6th Avenue and 23rd Street	Signal Timing Changes	NBLT: Split = 50s PED(NB): Split = 7s EB-WB: Split = 26s PED(EB-WB): Split = 7s	Reduce 1s green time from NBLT and allocate 1s green time to EB-WB. NBLT: Split = 49s PED(NB): Split = 7s EB-WB: Split = 27s PED(EB-WB): Split = 7s
38	6th Avenue and 31st Street	No Mitigation Needed		
39	6th Avenue and 42nd Street	Signal Timing Changes	NB: Split=54s EB-WB: Split=36s	Reduce 1s green time from NB and allocate 1s green time to EB-WB. NB: Split=53s EB-WB: Split=37s
40	6th Avenue and 57th Street	No Mitigation Needed		
41	6th Avenue and Central Park South	Signal Timing Changes	NBLT: Split =40s EB-WB: Split =38s PED: Split =12s	Reduce 1s green time from EB-WB and allocate 1s green time to NBLT. NBLT: Split =41s EB-WB: Split =37s PED: Split =12s
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	Unmitigatable		
44	5th Avenue and Central Park South	Unmitigatable		
45	Madison Avenue and 57th Street	Signal Timing Changes	NBT: Split =50s EB-WB: Split =40s	Reduce 1s green time from NBT and allocate 1s green time to EB-WB. NBT: Split =49s EB-WB: Split =41s
46	1st Avenue and 33rd Street	No Mitigation Needed		
47	2nd Avenue and 36th Street	Signal Timing Changes	SBT: Split=33s EBT: Split=32s WBL: Split=25s	Reduce 1s green time from WBL and allocate 1s green time to SBT. SBT: Split=34s EBT: Split=32s WBL: Split=24s
48	3rd Avenue and 37th Street	No Mitigation Needed		
49	Queens Plaza S and Northern Boulevard	No Mitigation Needed		

Table 15-16: 2013 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
50	Tillary Street and Adams Street	No Mitigation Needed		
51	Tillary Street and Jay Street	No Mitigation Needed		
52	Tillary Street and Flatbush Avenue	Unmitigatable		
53	Queens Plaza N and Northern Boulevard	No Mitigation Needed		
54	41st Avenue and Northern Boulevard	No Mitigation Needed		

Table 15-17: 2013 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	No Mitigation Needed		
2	3rd Avenue and 55th Street	No Mitigation Needed		
3	3rd Avenue and 56th Street	No Mitigation Needed		
4	3rd Avenue and 57th Street	Signal Timing Changes	NBTL: Split = 40s PED: Split = 6s EB-WB: Split = 30s EBTL: Split = 14s	Reduce 4s green time from EB-WB and allocate 1s green time to NBTL and 3s green time to EBTL. NBTL: Split = 41s PED: Split = 6s EB-WB: Split = 26s EBTL: Split = 17s
5	3rd Avenue and 58th Street	No Mitigation Needed		
6	3rd Avenue and 59th Street	No Mitigation Needed		
7	3rd Avenue and 60th Street	Unmitigatable		
8	2nd Avenue and 57th Street	Unmitigatable		
9	Lexington Avenue and 57th Street	No Mitigation Needed		
10	7th Avenue and 31st Street	No Mitigation Needed		
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	No Mitigation Needed		
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and 35th Street	No Mitigation Needed		
15	7th Avenue and 36th Street	Signal Timing Changes	SBTL: Split=54s EBT: Split=36s	Reduce 1s green time from EBT and allocate 1s green time to SBTL SBTL: Split=55s EBT: Split=35s

Table 15-17: 2013 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
16	7th Avenue and 37th Street	No Mitigation Needed		
17	6th Avenue and 34th Street	No Mitigation Needed		
18	8th Avenue and 34th Street	No Mitigation Needed		
19	Madison Avenue and 39th Street	No Mitigation Needed		
20	Madison Avenue and 40th Street	Signal Timing Changes	NBT: Split = 50sEBT: Split = 21sEBT w/o PED: Split = 19s	Reduce 1s green time from EBT allocate 1s green time to NBNBTL: Split = 51sEBT: Split = 20sEBT w/o PED: Split = 19s
21	Madison Avenue and 41st Street	No Mitigation Needed		
22	Madison Avenue and 42nd Street	Signal Timing Changes	NBT: Split =49s EB-WB: Split =41s	Reduce 1s green time from EB-WB and allocate 1s green time to NBT. NBT: Split =50s EB-WB Split =40s
23	Madison Avenue and 43rd Street	No Mitigation Needed		
24	Madison Avenue and 44th Street	No Mitigation Needed		
25	Madison Avenue and 45th Street	No Mitigation Needed		
26	5th Avenue and 42nd Street	No Mitigation Needed		
27	Vanderbilt Avenue and 42nd Street	No Mitigation Needed		
28	Park Avenue and 42nd Street	No Mitigation Needed		
29	8th Avenue and 33rd Street	No Mitigation Needed		
30	8th Avenue and 31st Street	No Mitigation Needed		

Table 15-17: 2013 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
31	8th Avenue and 41st Street	No Mitigation Needed		
32	8th Avenue and 42nd Street	No Mitigation Needed		
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	No Mitigation Needed		
35	7th Avenue and 57th Street	No Mitigation Needed		
36	7th Avenue and Central Park South	Signal Timing Changes	SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 31s EBR: Split = 8s	Reduce 1s green time from EBR and allocate 1s green time to WBTL. SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 32s EBR: Split = 7s
37	6th Avenue and 23rd Street	No Mitigation Needed		
38	6th Avenue and 31st Street	No Mitigation Needed		
39	6th Avenue and 42nd Street	Signal Timing Changes	NB: Split=54sEB-WB: Split=36s	Reduce 1s green time from NB and allocate 1s green time to EB-WB.NB: Split=53sEB-WB: Split=37s
40	6th Avenue and 57th Street	No Mitigation Needed		
41	6th Avenue and Central Park South	Signal Timing Changes	NBTL: Split =40s EB-WB: Split =38s PED: Split =12s	Reduce 1s green time from EB-WB and allocate 1s green time to NBTL. NBTL: Split =41s EB-WB: Split =37s PED: Split =12s
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	No Mitigation Needed		

Table 15-17: 2013 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
44	5th Avenue and Central Park South	Signal Timing Changes	SB: Split=47s EBT: Split=23s EBT w/o PED: Split=20s	Reduce 1s green time from SB and allocate 1s green time to EBT w/o PED. SB: Split=46s EBT: Split=23s EBT w/o PED: Split=21s
45	Madison Avenue and 57th Street	No Mitigation Needed		
46	1st Avenue and 33rd Street	No Mitigation Needed		
47	2nd Avenue and 36th Street	No Mitigation Needed		
48	3rd Avenue and 37th Street	No Mitigation Needed		
49	Queens Plaza S and Northern Boulevard	No Mitigation Needed		
50	Tillary Street and Adams Street	No Mitigation Needed		
51	Tillary Street and Jay Street	No Mitigation Needed		
52	Tillary Street and Flatbush Avenue	Impacts Cannot Be Fully Mitigated	NBTL: Split=19s NB-SB: Split=39s EBL-WBL: Split=24s EBT-WBT: Split=38s	Reduce 1s from NB-SB and allocate 1s green time to EBT-WBT. NBTL: Split=19s NB-SB: Split=38s EBL-WBL: Split=24s EBT-WBT: Split=39s
53	Queens Plaza N and Northern Boulevard	No Mitigation Needed		
54	41st Avenue and Northern Boulevard	No Mitigation Needed		

Table 15-18: 2013 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	No Mitigation Needed		
2	3rd Avenue and 55th Street	No Mitigation Needed		
3	3rd Avenue and 56th Street	No Mitigation Needed		
4	3rd Avenue and 57th Street	Signal Timing Changes	NBTL: Split = 40s PED: Split = 6s EB-WB: Split = 30s EBTL: Split = 14s	Reduce 1s green time from EBTL and allocate 1s green time to NBTL. NBTL: Split = 41s PED: Split = 6s EB-WB: Split = 30s EBTL: Split = 13s
5	3rd Avenue and 58th Street	Signal Timing Changes	NB: Split =45s EBTL: Split =45s	Reduce 1s green time from EBTL and allocate 1s green time to NB. NB: Split=46s EBTL: Split=44s
6	3rd Avenue and 59th Street	No Mitigation Needed		
7	3rd Avenue and 60th Street	Signal Timing Changes	NBTL: Split = 45s WBT: Split = 24s WBT w/o PED: Split = 21s	Reduce 1s green time from NBTL and allocate 1s green time to WBT w/o PED. NBTL: Split = 44s WBT: Split = 24s WBT w/o PED: Split = 22s
8	2nd Avenue and 57th Street	No Mitigation Needed		
9	Lexington Avenue and 57th Street	No Mitigation Needed		
10	7th Avenue and 31st Street	No Mitigation Needed		
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	No Mitigation Needed		
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and 35th Street	No Mitigation Needed		

Table 15-18: 2013 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
15	7th Avenue and 36th Street	No Mitigation Needed		
16	7th Avenue and 37th Street	No Mitigation Needed		
17	6th Avenue and 34th Street	Unmitigatable		
18	8th Avenue and 34th Street	No Mitigation Needed		
19	Madison Avenue and 39th Street	No Mitigation Needed		
20	Madison Avenue and 40th Street	No Mitigation Needed		
21	Madison Avenue and 41st Street	No Mitigation Needed		
22	Madison Avenue and 42nd Street	Signal Timing Changes	NB: Split=50s EB-WB: Split=40s	Reduce 1s green time from NB and allocate 1s green time to EB-WB. NB: Split=49s EB-WB: Split=41s
23	Madison Avenue and 43rd Street	No Mitigation Needed		
24	Madison Avenue and 44th Street	No Mitigation Needed		
25	Madison Avenue and 45th Street	No Mitigation Needed		
26	5th Avenue and 42nd Street	Unmitigatable		
27	Vanderbilt Avenue and 42nd Street	No Mitigation Needed		
28	Park Avenue and 42nd Street	No Mitigation Needed		
29	8th Avenue and 33rd Street	Unmitigatable		
30	8th Avenue and 31st Street	No Mitigation Needed		
31	8th Avenue and 41st Street	Unmitigatable		

Table 15-18: 2013 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
32	8th Avenue and 42nd Street	Signal Timing Changes	NB: Split =38s EBTL: Split =18s EB-WB: Split =34s	Reduce 1s green time from EB-WB and allocate 1s green time to NB. NB: Split =39s EBTL: Split =18s EB-WB: Split =33s
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	Signal Timing Changes	SBTL: Split = 56s EBTL: Split =34s	Reduce 1s green time from SBL and allocate 1s green time to EBTL. SBTL: Split = 55s EBTL: Split =35s
35	7th Avenue and 57th Street	No Mitigation Needed		
36	7th Avenue and Central Park South	Signal Timing Changes	SBTL: Split = 23sEB-WB: Split = 28sWBTL+EBR: Split = 31sEBR: Split = 8s	Reduce 1s green time from EBR and allocate 1s green time to WBTL.SBTL: Split = 23sEB-WB: Split = 28sWBTL+EBR: Split = 32sEBR: Split = 7s
37	6th Avenue and 23rd Street	No Mitigation Needed		
38	6th Avenue and 31st Street	No Mitigation Needed		
39	6th Avenue and 42nd Street	Unmitigatable		
40	6th Avenue and 57th Street	Signal Timing Changes	NBTL: Split =48s EB-WB: Split =35s PED: Split =7s	Reduce 2s green time from NBTL and allocate 2s green time to EB-WB. NBTL: Split =46s EB-WB: Split =37s PED: Split =7s
41	6th Avenue and Central Park South	Unmitigatable		
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	No Mitigation Needed		
44	5th Avenue and Central Park South	No Mitigation Needed		

Table 15-18: 2013 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
45	Madison Avenue and 57th Street	No Mitigation Needed		
46	1st Avenue and 33rd Street	No Mitigation Needed		
47	2nd Avenue and 36th Street	No Mitigation Needed		
48	3rd Avenue and 37th Street	No Mitigation Needed		
49	Queens Plaza S and Northern Boulevard	No Mitigation Needed		
50	Tillary Street and Adams Street	No Mitigation Needed		
51	Tillary Street and Jay Street	No Mitigation Needed		
52	Tillary Street and Flatbush Avenue	Unmitigatable		
53	Queens Plaza N and Northern Boulevard	Signal Timing Changes	EB-WB: Split = 55s SBL+WBR: Split = 50s EBTL: Split = 15s	Reduce 1s green time from EB-WB and allocate 1s green time to SBL+WBR. EB-WB: Split = 54s SBL+WBR: Split = 51s EBTL: Split = 15s
54	41st Avenue and Northern Boulevard	No Mitigation Needed	signal timing same as Queens Plaza N and Northern Boulevard	signal timing same as Queens Plaza N and Northern Boulevard

Table 15-19 2014 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	Unmitigatable		
2	3rd Avenue and 55th Street	No Mitigation Needed		
3	3rd Avenue and 56th Street	Signal Timing Changes	NB: Split=50s EBTL: Split=40s	Reduce 1s green time from NB and allocate 1s green time to EBTL. NB: Split=49s EBTL: Split=41s
4	3rd Avenue and 57th Street	Signal Timing Changes	NBTL: Split = 40s PED: Split = 6s EB-WB: Split = 30s EBTL: Split = 14s	Reduce 1s green time from NBTL and allocate 1s green time to EB-WB. NBTL: Split = 39s PED: Split = 6s EB-WB: Split = 31s EBTL: Split = 14s
5	3rd Avenue and 58th Street	Signal Timing Changes	NBT: Split =45s EBTL: Split =45s	Reduce 2s green time from EBTL and allocate 2s green time to NBT. NBT: Split =47s EBTL: Split =43s
6	3rd Avenue and 59th Street	Signal Timing Changes	NBT w/o PED: Split=28s EBTL: Split=45s NBT: Split=17s	Reduce 3s green time from EBTL and allocate 3s green time to NBT w/o PED. NBT w/o PED: Split=31s EBTL: Split=42s NBT: Split=17s
7	3rd Avenue and 60th Street	Impacts Cannot Be Fully Mitigated	NBTL: Split = 45s WBT: Split = 24s WBT w/o PED: Split = 21s	Reduce 1s green time from WBT w/o PED and allocate 1s green time to NBTL. NBTL: Split = 46s WBT: Split = 24s WBT w/o PED: Split = 20s
8	2nd Avenue and 57th Street	Unmitigatable		
9	Lexington Avenue and 57th Street	No Mitigation Needed		
10	7th Avenue and 31st Street	No Mitigation Needed		

Table 15-19 2014 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	Unmitigatable		
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and 35th Street	Impacts Cannot Be Fully Mitigated	SBT: Split=53s WBTL: Split=37s	Reduce 1s green time from WBTL and allocate 1s green time to SBTL. SBTL: Split = 54s WBTL: Split = 36s
15	7th Avenue and 36th Street	Unmitigatable		
16	7th Avenue and 37th Street	Signal Timing Changes	SB: Split=54s WB: Split=36s	Reduce 1s green time from SB and allocate 1s green time to WB. SB: Split=53s WB: Split=37s
17	6th Avenue and 34th Street	Signal Timing Changes	NBT: Split =48s EB-WB: Split =42s	Reduce 1s green time from NBT and allocate 1s green time to EB-WB. NBT: Split =47s EB-WB: Split =43s
18	8th Avenue and 34th Street	No Mitigation Needed		
19	Madison Avenue and 39th Street	Signal Timing Changes	NBTL: Split = 50s WBT: Split = 21s WBT w/o PED: Split = 19s	Reduce 1s green time from WBT and allocate 1s green time to WBT w/o PED. NBTL: Split = 50s WBT: Split = 20s WBT w/o PED: Split = 20s

Table 15-19 2014 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
20	Madison Avenue and 40th Street	Impacts Cannot Be Fully Mitigated	NBT: Split = 50s EBT: Split = 21s EBTL: Split = 19s	Reduce 1s green time from EBT, and allocate 1s green time to NBTL. NBTL: Split = 51s EBT: Split = 20s EBTL: Split= 19s
21	Madison Avenue and 41st Street	No Mitigation Needed		
22	Madison Avenue and 42nd Street	Impacts Cannot Be Fully Mitigated	NBT: Split =50s EB-WB: Split =40s	Reduce 2s green time from NBT and allocate 2s green time to EB-WB. NBT: Split =48s EB-WB: Split =42s
23	Madison Avenue and 43rd Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s WB: Split=40s	Reduce 1s green time from WB and allocate 1s green time to NB. NB: Split=51s WB: Split=39s
24	Madison Avenue and 44th Street	No Mitigation Needed		
25	Madison Avenue and 45th Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s WB: Split=40s	Reduce 1s green time from WB and allocate 1s green time to NB. NB: Split=51s WB: Split=39s
26	5th Avenue and 42nd Street	Signal Timing Changes	SB: Split=50sEB-WB: Split=40s	Reduce 2s green time from SB and allocate 2s green time to EB-WB.NB: Split=48sWB: Split=42s
27	Vanderbilt Avenue and 42nd Street	Signal Timing Changes	EB-WB: Split=47s HOLD: Split=43s	Reduce 2s green time from HOLD phase and allocate 2s green time to EB-WB. EB-WB: Split=49s PED: Split=41s
28	Park Avenue and 42nd Street	No Mitigation Needed		

Table 15-19 2014 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
29	8th Avenue and 33rd Street	Signal Timing Changes	NB: Split=38s WB: Split=52s	Reduce 1s green time from WB and allocate 1s green time to NB. NB: Split=39s WB: Split=51s
30	8th Avenue and 31st Street	No Mitigation Needed		
31	8th Avenue and 41st Street	Signal Timing Changes	NBT: Split =38s WBT: Split =52s	Reduce 2s green time from NBT and allocate 2s green time to WBT. NBT: Split =36s EBTL: Split =54s
32	8th Avenue and 42nd Street	Signal Timing Changes	NB: Split =38s EBTL: Split =18s EB-WB: Split =34s	Reduce 2s green time from EB-WB and allocate 2s green time to NB. NB: Split =40s EBTL: Split =18s EB-WB: Split =32s
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	No Mitigation Needed		
35	7th Avenue and 57th Street	Signal Timing Changes	SBTL: Split = 50s EB-WB: Split = 40s	Reduce 2s green time from SBTL and allocate 2s green time to EB-WB. SBTL: Split=48s EB-WB: Split=42s
36	7th Avenue and Central Park South	Signal Timing Changes	SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 31s EBR: Split = 8s	Reduce 2s green time from EBR and allocate 1s green time to EB-WB and 1s green time to WBTL+EBR. SBTL: Split = 23s EB-WB: Split = 29s WBTL+EBR: Split = 32s EBR: Split = 6s
		Lane Reconfiguration	SB: two through lanes with shared right turn lane and one exclusive left turn lane.	Convert the SB left turn lane to a shared through and left turn lane and restripe.

Table 15-19 2014 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
37	6th Avenue and 23rd Street	Impacts Cannot Be Fully Mitigated	NBTL: Split = 50sPED(NB): Split = 7sEB-WB: Split = 26sPED(EB-WB): Split = 7s	Reduce 1s green time from NBTL and allocate 1s green time to EB-WB.NBTL: Split = 49sPED(NB): Split = 7sEB-WB: Split = 27sPED(EB-WB): Split = 7s
38	6th Avenue and 31st Street	No Mitigation Needed		
39	6th Avenue and 42nd Street	Signal Timing Changes	NB: Split=54s EB-WB: Split=36s	Reduce 2s green time from NB and allocate 2s green time to EB-WB. NB: Split=52s EB-WB: Split=38s
40	6th Avenue and 57th Street	Signal Timing Changes	NBTL: Split =48s EB-WB: Split =35s PED: Split =7s	Reduce 1s green time from NBTL and allocate 1s green time to EB-WB. NBTL: Split =47s EB-WB: Split =36s PED: Split =7s
41	6th Avenue and Central Park South	Signal Timing Changes	NBTL: Split =40s EB-WB: Split =38s PED: Split =12s	Reduce 2s green time from EB-WB and allocate 2s green time to NBTL. NBTL: Split =42s EB-WB: Split =38s PED: Split =10s
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	Unmitigatable		
44	5th Avenue and Central Park South	Unmitigatable		
45	Madison Avenue and 57th Street	Signal Timing Changes	NBT: Split =50s EB-WB: Split =40s	Reduce 1s green time from NBT and allocate 1s green time to EB-WB. NBT: Split =49s EB-WB: Split =41s
46	1st Avenue and 33rd Street	No Mitigation Needed		

Table 15-19 2014 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
47	2nd Avenue and 36th Street	Signal Timing Changes	SB: Split=33s EB: Split=32s WBL: Split=25s	Reduce 2s green time from WBL and allocate 1s green time to SB and 1s green time to EB. SB: Split=34s EB: Split=33s WBL: Split=23s
48	3rd Avenue and 37th Street	Signal Timing Changes	NB: Split=44s WBT : Split=24s WBT w/o PED: Split=22s	Reduce 2s green time from NB and allocate 2s green time to WBT w/o PED. NB: Split=42s WBT: Split=24s WBT w/o PED: Split=24s
49	Queens Plaza S and Northern Boulevard	No Mitigation Needed		
50	Tillary Street and Adams Street	No Mitigation Needed		
51	Tillary Street and Jay Street	No Mitigation Needed		
52	Tillary Street and Flatbush Avenue	Unmitigatable		
53	Queens Plaza N and Northern Boulevard	No Mitigation Needed		
54	41st Avenue and Northern Boulevard	No Mitigation Needed		

Table 15-20: 2014 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	Unmitigatable		
2	3rd Avenue and 55th Street	No Mitigation Needed		
3	3rd Avenue and 56th Street	Signal Timing Changes	NB: Split =50s EBTL: Split =40s	Reduce 1s green time from NB and allocate 1s green time to EBTL. NB: Split=49s EBTL: Split=41s
4	3rd Avenue and 57th Street	Impacts Cannot Be Fully Mitigated	NBTL: Split = 40s PED: Split = 6s EB-WB: Split = 30s EBTL: Split = 14s	Reduce 1s green time from EB-WB and allocate 1s green time to EBTL. NBTL: Split = 40s PED: Split = 6s EB-WB: Split = 29s EBTL: Split = 15s
5	3rd Avenue and 58th Street	Impacts Cannot Be Fully Mitigated	NB: Split =45s EBTL: Split =45s	Reduce 1s green time from NB and allocate 1s green time to EBTL. NB: Split=44s EBTL: Split=46s
6	3rd Avenue and 59th Street	Signal Timing Changes	NBT: Split=17s EBTL: Split=45s NBT w/o PED: Split=28s	Reduce 1s green time from NBT and allocate 1s green time to EBTL. NBT: Split=16s EBTL: Split=46s NBT w/o PED: Split=28s
7	3rd Avenue and 60th Street	Unmitigatable		
8	2nd Avenue and 57th Street	Unmitigatable		
9	Lexington Avenue and 57th Street	Unmitigatable		
10	7th Avenue and 31st Street	No Mitigation Needed		
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	Unmitigatable		

Table 15-20: 2014 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and 35th Street	Unmitigatable		
15	7th Avenue and 36th Street	Signal Timing Changes	SBTL: Split=54s EBT: Split=36s	Reduce 2s green time from EBT and allocate 2s green time to SBTL SBTL: Split=56s EBT: Split=34s
16	7th Avenue and 37th Street	No Mitigation Needed		
17	6th Avenue and 34th Street	Unmitigatable		
18	8th Avenue and 34th Street	No Mitigation Needed		
19	Madison Avenue and 39th Street	Signal Timing Changes	NBTL: Split = 50s WBT: Split = 21s WBT w/o PED: Split = 19s	Reduce 1s green time from WBT and allocate 1s green time to WBT w/o PED. NBTL: Split = 50s WBT: Split = 20s WBT w/o PED: Split = 20s
20	Madison Avenue and 40th Street	Unmitigatable		
21	Madison Avenue and 41st Street	Signal Timing Changes	NBT: Split =49s EBT: Split =23s EBTL: Split =18s	Reduce 3s green time from EBT and allocate 1s green time to EBTL and 2s green time to NBT. NBT: Split=50s EBT: Split=21s EBTL: Split=19s
22	Madison Avenue and 42nd Street	Impacts Cannot Be Fully Mitigated	NBT: Split =49s EB-WB: Split =41s	Reduce 1s green time from EB-WB and allocate 1s green time to NBT. NBT: Split =50s EB-WB Split =40s
23	Madison Avenue and 43rd Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s WB: Split=40s	Reduce 1s green time from WB and allocate 1s green time to NB. NB: Split=51s WB: Split=39s

Table 15-20: 2014 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
24	Madison Avenue and 44th Street	Signal Timing Changes	NB: Split=50s EB: Split=40s	Reduce 2s green time from NB and allocate 2s green time to EB. NB: Split=49s WB: Split=41s
25	Madison Avenue and 45th Street	Unmitigatable		
26	5th Avenue and 42nd Street	No Mitigation Needed		
27	Vanderbilt Avenue and 42nd Street	No Mitigation Needed		
28	Park Avenue and 42nd Street	No Mitigation Needed		
29	8th Avenue and 33rd Street	Unmitigatable		
30	8th Avenue and 31st Street	Signal Timing Changes	NB: Split=43s WB: Split=47s	Reduce 2s green time from WB and allocate 2s green time to NB. NB: Split=45s WB: Split=45s
31	8th Avenue and 41st Street	No Mitigation Needed		
32	8th Avenue and 42nd Street	No Mitigation Needed		
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	No Mitigation Needed		
35	7th Avenue and 57th Street	No Mitigation Needed		
36	7th Avenue and Central Park South	Signal Timing Changes	SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 31s EBR: Split = 8s	Reduce 2s green time from EBR and allocate 2s green time to WBTL+EBR. SBTL: Split = 22s EB-WB: Split = 28s WBTL+EBR: Split = 33s EBR: Split = 6s
		Lane Reconfiguration	SB: two through lanes with shared right turn lane and one exclusive left turn lane.	Convert the SB left turn lane to a shared through and left turn lane and restripe.

Table 15-20: 2014 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
37	6th Avenue and 23rd Street	Unmitigatable		
38	6th Avenue and 31st Street	No Mitigation Needed		
39	6th Avenue and 42nd Street	Signal Timing Changes	NB: Split=54s EB-WB: Split=36s	Reduce 2s green time from NB and allocate 2s green time to EB-WB. NB: Split=52s EB-WB: Split=38s
40	6th Avenue and 57th Street	Signal Timing Changes	NBTL: Split =48s EB-WB: Split =35s PED: Split =7s	Reduce 1s green time from NBTL and allocate 1s green time to EB-WB. NBTL: Split =47s EB-WB: Split =36s PED: Split =7s
41	6th Avenue and Central Park South	Impacts Cannot Be Fully Mitigated	NBTL: Split =40s EB-WB: Split =38s PED: Split =12s	Reduce 1s green time from EB-WB , allocate 1s green time to NBTL. NBTL: Split =41s EB-WB: Split =37s PED: Split =12s
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	Signal Timing Changes	SBTL: Split =50s EB-WB: Split =40s	Reduce 2s green time from SBTL and allocate 2s green time to EB-WB. SBTL: Split =48s EB-WB: Split =42s
44	5th Avenue and Central Park South	Signal Timing Changes	SB: Split=47s EBT: Split=23s EBT w/o PED: Split=20s	Reduce 1s green time from SB and allocate 1s green time to EBT w/o PED. SB: Split=46s EBT: Split=23s EBT w/o PED: Split=21s
45	Madison Avenue and 57th Street	No Mitigation Needed		
46	1st Avenue and 33rd Street	No Mitigation Needed		
47	2nd Avenue and 36th Street	Signal Timing Changes	SBTL: Split=52s EBT: Split=38s	Reduce 1s green time from SBTL and allocate 1s green time to EBT. SBTL: Split=51s EBT: Split=39s

Table 15-20: 2014 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
48	3rd Avenue and 37th Street	Signal Timing Changes	NB: Split=45s WBT : Split=24s WBT w/o PED: Split=21s	Reduce 2s green time from NB and allocate 2s green time to WBT w/o PED. NB: Split=43s WBT: Split=24s WBT w/o PED: Split=23s
49	Queens Plaza S and Northern Boulevard	No Mitigation Needed		
50	Tillary Street and Adams Street	No Mitigation Needed		
51	Tillary Street and Jay Street	No Mitigation Needed		
52	Tillary Street and Flatbush Avenue	Impacts Cannot Be Fully Mitigated	NBTL: Split=19s NB-SB: Split=39s EBL-WBL: Split=24s EBT-WBT: Split=38s	Reduce 1s from NB-SB and allocate 1s green time to EBT-WBT. NBTL: Split=19s NB-SB: Split=38s EBL-WBL: Split=24s EBT-WBT: Split=39s
53	Queens Plaza N and Northern Boulevard	Signal Timing Changes	EB-WB: Split = 55s SBL+WBR: Split = 50s EBTL: Split = 15s	Reduce 1s green time from EB-WB and allocate 1s green time to SBL+WBR. EB-WB: Split = 54s SBL+WBR: Split = 51s EBTL: Split = 15s
54	41st Avenue and Northern Boulevard	Signal Timing Changes	Signal timing is the same as Queens Plaza N and Northern Boulevard	Signal timing is the same as Queens Plaza N and Northern Boulevard

Table 15-21: 2014 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	No Mitigation Needed		
2	3rd Avenue and 55th Street	Signal Timing Changes	NB: Split=52s WB: Split=38s	Reduce 2s green time from NB and allocate 2s green time to WB. NB: Split=50s WB: Split=40s
3	3rd Avenue and 56th Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s EBTL: Split=40s	Reduce 2s green time from EBTL and allocate 2s green time to NB. NB: Split=52s EBTL: Split=38s
4	3rd Avenue and 57th Street	Signal Timing Changes	NBTL: Split = 40s PED: Split = 6s EB-WB: Split = 30s EBTL: Split = 14s	Reduce 1s green time from EB-WB and allocate 1s green time to NBTL. NBTL: Split = 41s PED: Split = 6s EB-WB: Split = 29s EBTL: Split = 14s
5	3rd Avenue and 58th Street	Signal Timing Changes	NBT: Split =45s EBTL: Split =45s	Reduce 1s green time from EBTL and allocate 1s green time to NBT. NBT: Split =46s EBTL: Split =44s
6	3rd Avenue and 59th Street	No Mitigation Needed		
7	3rd Avenue and 60th Street	Signal Timing Changes	NBTL: Split = 45s WBT: Split = 24s WBT w/o PED: Split = 21s	Reduce 1s green time from NBTL and allocate 1s green time to WBT w/o PED. NBTL: Split = 44s WBT: Split = 24s WBT w/o PED: Split = 22s
8	2nd Avenue and 57th Street	Signal Timing Changes	SBTL: Split = 45s PED: Split = 5s EB-WB: Split = 27s WBTL: Split = 13s	Reduce 1s green time from WBTL and allocate 1s green time to SBTL. SBTL: Split = 46s PED: Split =5s EB-WB: Split = 27s WBTL: Split = 12s
9	Lexington Avenue and 57th Street	No Mitigation Needed		
10	7th Avenue and 31st Street	No Mitigation Needed		
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	Unmitigatable		

Table 15-21: 2014 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and 35th Street	No Mitigation Needed		
15	7th Avenue and 36th Street	No Mitigation Needed		
16	7th Avenue and 37th Street	Signal Timing Changes	SB: Split=54s WB: Split=36s	Reduce 1s green time from SB and allocate 1s green time to WB. SB: Split=53s WB: Split=37s
17	6th Avenue and 34th Street	Unmitigatable		
18	8th Avenue and 34th Street	Unmitigatable		
19	Madison Avenue and 39th Street	Signal Timing Changes	NBTL: Split = 50s WBT: Split = 21s WBT w/o PED: Split = 19s	Reduce 2s green time from NBTL, allocate 1s green time to WBT and 1s green time to WBT w/o PED. NBTL: Split = 48s WBT: Split = 22s WBT w/o PED: Split = 20s
20	Madison Avenue and 40th Street	No Mitigation Needed		
21	Madison Avenue and 41st Street	No Mitigation Needed		
22	Madison Avenue and 42nd Street	Unmitigatable		
23	Madison Avenue and 43rd Street	Unmitigatable		
24	Madison Avenue and 44th Street	Unmitigatable		
25	Madison Avenue and 45th Street	No Mitigation Needed		
26	5th Avenue and 42nd Street	Unmitigatable		
27	Vanderbilt Avenue and 42nd Street	No Mitigation Needed		
28	Park Avenue and 42nd Street	No Mitigation Needed		
29	8th Avenue and 33rd Street	Unmitigatable		
30	8th Avenue and 31st Street	No Mitigation Needed		
31	8th Avenue and 41st Street	Unmitigatable		
32	8th Avenue and	Signal Timing Changes	NB: Split =38s	Reduce 2s green time from EB-

Table 15-21: 2014 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
	42nd Street		EBTL: Split =18s EB-WB: Split =34s	WB and allocate 2s green time to NB. NB: Split =40s EBTL: Split =18s EB-WB: Split =32s
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	Signal Timing Changes	SB: Split =56s EBTL: Split =34s	Reduce 1s green time from SB and allocate 1s green time to EBTL. SB: Split=55s EBTL: Split=35s
35	7th Avenue and 57th Street	No Mitigation Needed		
36	7th Avenue and Central Park South	Signal Timing Changes	SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 31s EBR: Split = 8s	Reduce 2s green time from EBR and allocate 1s green time to EB-WB and 1s green time to WBTL+EBR. SBTL: Split = 23s EB-WB: Split = 29s WBTL+EBR: Split = 32s EBR: Split = 6s
		Lane Reconfiguration	SB: two through lanes with shared right turn lane and one exclusive left turn lane.	Convert the SB left turn lane to a shared through and left turn lane and restripe.
37	6th Avenue and 23rd Street	Signal Timing Changes	NBTL: Split = 50s PED(NB): Split = 7s EB-WB: Split = 26s PED(EB-WB): Split = 7s	Reduce 1s green time from NBTL and allocate 1s green time to EB-WB. NBTL: Split = 49s PED(NB): Split = 7s EB-WB: Split = 27s PED(EB-WB): Split = 7s
38	6th Avenue and 31st Street	No Mitigation Needed		
39	6th Avenue and 42nd Street	Unmitigatable		
40	6th Avenue and 57th Street	Signal Timing Changes	NBTL: Split =48s EB-WB: Split =35s PED: Split =7s	Reduce 2s green time from NBTL and allocate 2s green time to EB-WB. NBTL: Split =46s EB-WB: Split =37s PED: Split =7s
41	6th Avenue and Central Park South	Unmitigatable		
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	Signal Timing Changes	SBTL: Split =50s EB-WB: Split =40s	Reduce 1s green time from SBTL and allocate 1s green time

Table 15-21: 2014 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
				to EB-WB. SBTL: Split =49s EB-WB: Split =41s
44	5th Avenue and Central Park South	Unmitigatable		
45	Madison Avenue and 57th Street	Signal Timing Changes	NBT: Split =50s EB-WB: Split =40s	Reduce 1s green time from NBT and allocate 1s green time to EB-WB. NBT: Split =49s EB-WB: Split =41s
46	1st Avenue and 33rd Street	No Mitigation Needed		
47	2nd Avenue and 36th Street	No Mitigation Needed		
48	3rd Avenue and 37th Street	Signal Timing Changes	NB: Split=45s WBT : Split=24s WBT w/o PED: Split=21s	Reduce 1s green time from NB and allocate 1s green time to WBT w/o PED. NB: Split=44s WBT: Split=24s WBT w/o PED: Split=22s
49	Queens Plaza S and Northern Boulevard	Unmitigatable		
50	Tillary Street and Adams Street	Unmitigatable		
51	Tillary Street and Jay Street	No Mitigation Needed		
52	Tillary Street and Flatbush Avenue	Unmitigatable		
53	Queens Plaza N and Northern Boulevard	Signal Timing Changes	EB-WB: Split = 55s SBL+WBR: Split = 50s EBTL: Split = 15s	Reduce 1s green time from EB-WB and allocate 1s green time to SBL+WBR. EB-WB: Split = 54s SBL+WBR: Split = 51s EBTL: Split = 15s
54	41st Avenue and Northern Boulevard	Signal Timing Changes	Signal timing is the same as Queens Plaza N and Northern Boulevard	Signal timing is the same as Queens Plaza N and Northern Boulevard

Table 15-22: 2015 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	Unmitigatable		
2	3rd Avenue and 55th Street	Signal Timing Changes	NB: Split=52s WB: Split=38s	Reduce 1s green time from NB and allocate 1s green time to WB. NB: Split=51s WB: Split=39s
3	3rd Avenue and 56th Street	Signal Timing Changes	NB: Split=50s EBTL: Split=40s	Reduce 1s green time from NB and allocate 1s green time to EBTL. NB: Split=49s EBTL: Split=41s
4	3rd Avenue and 57th Street	Signal Timing Changes	NBTL: Split = 40s PED: Split = 6s EB-WB: Split = 30s EBTL: Split = 14s	Reduce 1s green time from NBTL and allocate 1s green time to EB-WB. NBTL: Split = 39s PED: Split = 6s EB-WB: Split = 31s EBTL: Split = 14s
5	3rd Avenue and 58th Street	Signal Timing Changes	NBT: Split =45s EBTL: Split =45s	Reduce 2s green time from EBTL and allocate 2s green time to NBT. NBT: Split =47s EBTL: Split =43s
6	3rd Avenue and 59th Street	Signal Timing Changes	NBT w/o PED: Split=28s EBTL: Split=45s NBT: Split=17s	Reduce 4s green time from EBTL and allocate 4s green time to NBT w/o PED. NBT w/o PED: Split=32s EBTL: Split=41s NBT: Split=17s
7	3rd Avenue and 60th Street	Impacts Cannot Be Fully Mitigated	NBTL: Split = 45s WBT: Split = 24s WBT w/o PED: Split = 21s	Reduce 1s green time from WBT w/o PED and allocate 1s green time to NBTL. NBTL: Split = 46s WBT: Split = 24s WBT w/o PED: Split = 20s
8	2nd Avenue and 57th Street	Unmitigatable		
9	Lexington Avenue and 57th Street	Signal Timing Changes	SBTL: Split =48s EB-WB: Split =42s	Reduce 1s green time from SBL and allocate 1s green time to EB-WB. SBTL: Split=47s EB-WB: Split=43s
10	7th Avenue and 31st Street	No Mitigation Needed		
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	Unmitigatable		
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and	Impacts Cannot Be Fully	SBT:	Reduce 2s green time from WBTL

Table 15-22: 2015 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
	35th Street	Mitigated	Split=53sWBTL: Split=37s	and allocate 2s green time to SBT. SBT: Split=55sWBTL: Split=35s
15	7th Avenue and 36th Street	Unmitigatable		
16	7th Avenue and 37th Street	Signal Timing Changes	SB: Split=54s WB: Split=36s	Reduce 2s green time from SB and allocate 2s green time to WB. SB: Split=53s WB: Split=38s
17	6th Avenue and 34th Street	Signal Timing Changes	NBT: Split =48s EBTL: Split =42s	Reduce 1s green time from NBT and allocate 1s green time to EBTL. NBT: Split=47s EBTL: Split=43s
18	8th Avenue and 34th Street	No Mitigation Needed		
19	Madison Avenue and 39th Street	Signal Timing Changes	NBTL: Split = 50s WBT: Split = 21s WBT w/o PED: Split = 19s	Reduce 1s green time from WBT and allocate 1s green time to WBT w/o PED. NBTL: Split = 50s WBT: Split = 20s WBT w/o PED: Split = 20s
20	Madison Avenue and 40th Street	Unmitigatable		
21	Madison Avenue and 41st Street	Signal Timing Changes	NB: Split =51s EB: Split =23s EBTL: Split =16s	Reduce 1s green time from EB and allocate 1s green time to EBTL. NB: Split =51s EB: Split =22s EBTL: Split =17s
22	Madison Avenue and 42nd Street	Impacts Cannot Be Fully Mitigated	NBT: Split =50s EB-WB: Split =40s	Reduce 3s green time from NBT and allocate 3s green time to EB-WB. NBT: Split =47s EB-WB Split =43s
23	Madison Avenue and 43rd Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s WB: Split=40s	Reduce 2s green time from WB and allocate 2s green time to NB. NB: Split=52s WB: Split=38s
24	Madison Avenue and 44th Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s EB: Split=40s	Reduce 1s green time from EB and allocate 1s green time to NB. NB: Split=51s EB: Split=39s
25	Madison Avenue and 45th Street	Unmitigatable		

Table 15-22: 2015 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
26	5th Avenue and 42nd Street	Signal Timing Changes	SB: Split=50sEB-WB: Split=40s	Reduce 2s green time from SB and allocate 2s green time to EB-WB.NB: Split=48sEB-WB: Split=42s
27	Vanderbilt Avenue and 42nd Street	Impacts Cannot Be Fully Mitigated	EB-WB: Split=47s HOLD: Split=43s	Reduce 4s green time from HOLD phase and allocate 4s green time to EB-WB. EB-WB: Split=51s PED: Split=39s
28	Park Avenue and 42nd Street	No Mitigation Needed		
29	8th Avenue and 33rd Street	Signal Timing Changes	NB: Split=38s WB: Split=52s	Reduce 1s green time from WB and allocate 1s green time to NB. NB: Split=39s WB: Split=51s
30	8th Avenue and 31st Street	No Mitigation Needed		
31	8th Avenue and 41st Street	Impacts Cannot Be Fully Mitigated	NBT: Split =38s WBT: Split =52s	Reduce 4s green time from NBT and allocate 4s green time to WBT. NBT: Split =34s WBT: Split =56s
32	8th Avenue and 42nd Street	Impacts Cannot Be Fully Mitigated	NB: Split =38s EBTL: Split =18s EB-WB: Split =34s	Reduce 3s green time from EB-WB and allocate 3s green time to NB. NB: Split =41s EBTL: Split =18s EB-WB: Split =31s
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	No Mitigation Needed		
35	7th Avenue and 57th Street	Signal Timing Changes	SBTL: Split = 50s EB-WB: Split = 40s	Reduce 2s green time from SBTL and allocate 2s green time to EB-WB. SBTL: Split=48s EB-WB: Split=42s
36	7th Avenue and Central Park South	Impacts Cannot Be Fully Mitigated	SBTL: Split = 23sEB-WB: Split = 28sWBTL+EBR: Split = 31sEBR: Split = 8s	Reduce 2s green time from EBR and allocate 1s green time to EB-WB and 1s green time to WBTL.SBTL: Split = 23sEB-WB: Split = 29sWBTL+EBR: Split = 32sEBR: Split = 6s
		Lane Reconfiguration	SB: two through lanes with shared right turn lane and one exclusive left turn lane.	Convert the SB left turn lane to a shared through and left turn lane and restripe.

Table 15-22: 2015 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
37	6th Avenue and 23rd Street	Impacts Cannot Be Fully Mitigated	NBTL: Split = 50s PED(NB): Split = 7s EB-WB: Split = 26s PED(EB-WB): Split = 7s	Reduce 1s green time from NBLT and allocate 1s green time to EB-WB. NBTL: Split = 49s PED(NB): Split = 7s EB-WB: Split = 27s PED(EB-WB): Split = 7s
38	6th Avenue and 31st Street	Signal Timing Changes	NB: Split=50s WB: Split=40s	Reduce 2s green time from WB and allocate 2s green time to NB. NB: Split=52s WB: Split=38s
39	6th Avenue and 42nd Street	Signal Timing Changes	NB: Split=54s EB-WB: Split=36s	Reduce 2s green time from NB and allocate 2s green time to EB-WB. NB: Split=52s EB-WB: Split=38s
40	6th Avenue and 57th Street	Signal Timing Changes	NBTL: Split =48s EB-WB: Split =35s PED: Split =7s	Reduce 2s green time from NBTL and allocate 2s green time to EB-WB. NBTL: Split =46s EB-WB: Split =37s PED: Split =7s
41	6th Avenue and Central Park South	Impacts Cannot Be Fully Mitigated	NBTL: Split =40s EB-WB: Split =38s PED: Split =12s	Reduce 2s green time from EB-WB and allocate 2s green time to NBTL. NBTL: Split =42s EB-WB: Split =36s PED: Split =12s
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	Unmitigatable		
44	5th Avenue and Central Park South	Unmitigatable		
45	Madison Avenue and 57th Street	Signal Timing Changes	NBT: Split =50s EB-WB: Split =40s	Reduce 2s green time from NBT and allocate 2s green time to EB-WB. NBT: Split =48s EB-WB: Split =42s
46	1st Avenue and 33rd Street	No Mitigation Needed		
47	2nd Avenue and 36th Street	Impacts Cannot Be Fully Mitigated	SB: Split=33s EB: Split=32s WBL: Split=25s	Reduce 1s green time from WBL and allocate 1s green time to SB. SB: Split=34s EB: Split=32s WBL: Split=24s

Table 15-22: 2015 AM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
48	3rd Avenue and 37th Street	Signal Timing Changes	NB: Split=44s WBT : Split=24s WBT w/o PED: Split=22s	Reduce 2s green time from NB and allocate 2s green time to WBT w/o PED. NB: Split=42s WBT: Split=24s WBT w/o PED: Split=24s
49	Queens Plaza S and Northern Boulevard	Signal Timing Changes	NB-SB: Split=65s EB-WB: Split=29s WBTL: Split=11s NBTL: Split=15s	Reduce 1s green time from EB-WB and allocate 1s green time to NBTL. NB-SB: Split=65s EB-WB: Split=28s WBTL: Split=11s NBTL: Split=16s
50	Tillary Street and Adams Street	Unmitigatable		
51	Tillary Street and Jay Street	No Mitigation Needed		
52	Tillary Street and Flatbush Avenue	Unmitigatable		
53	Queens Plaza N and Northern Boulevard	No Mitigation Needed		
54	41st Avenue and Northern Boulevard	Signal Timing Changes	Signal timing is the same as Queens Plaza N and Northern Boulevard	Signal timing is the same as Queens Plaza N and Northern Boulevard

Table 15-23: 2015 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	Unmitigatable		
2	3rd Avenue and 55th Street	Signal Timing Changes	NB: Split=52s WB: Split=38s	Reduce 1s green time from NB and allocate 1s green time to WB. NB: Split=51s WB: Split=39s
3	3rd Avenue and 56th Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s EBTL: Split=40s	Reduce 1s green time from NB and allocate 1s green time to EBTL. NB: Split=49s EBTL: Split=41s
4	3rd Avenue and 57th Street	Unmitigatable		
5	3rd Avenue and 58th Street	Unmitigatable		
6	3rd Avenue and 59th Street	Unmitigatable		
7	3rd Avenue and 60th Street	Unmitigatable		
8	2nd Avenue and 57th Street	Unmitigatable		
9	Lexington Avenue and 57th Street	Unmitigatable		
10	7th Avenue and 31st Street	No Mitigation Needed		
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	Unmitigatable		
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and 35th Street	Unmitigatable		
15	7th Avenue and 36th Street	Impacts Cannot Be Fully Mitigated	SBTL: Split =54s EBT: Split =36s	Reduce 3s green time from EBT and allocate 3s green time to SBTL. SBTL: Split=57s EBT: Split=33s
16	7th Avenue and 37th Street	No Mitigation Needed		
17	6th Avenue and 34th Street	Unmitigatable		
18	8th Avenue and 34th Street	No Mitigation Needed		
19	Madison Avenue and 39th Street	Signal Timing Changes	NBTL: Split = 50s WBT: Split = 21s	Reduce 1s green time from NBTL and allocate 1s green

Table 15-23: 2015 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
			WBT w/o PED: Split = 19s	time to WBT w/o PED. NBTL: Split = 49s WBT: Split = 21s WBT w/o PED: Split = 20s
20	Madison Avenue and 40th Street	Unmitigatable		
21	Madison Avenue and 41st Street	Signal Timing Changes	NBTL: Split = 49s EBT: Split = 23s EBT w/o PED: Split = 18s	Reduce 3s green time from EBT and allocate 3s green time to NBT. NBTL: Split = 52s EBT: Split =20s EBT w/o PED: Split = 18s
22	Madison Avenue and 42nd Street	Unmitigatable		
23	Madison Avenue and 43rd Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s WB: Split=40s	Reduce 2s from WB and allocate 2s green time to NB. NB: Split=52s WB: Split=38s
24	Madison Avenue and 44th Street	Unmitigatable		
25	Madison Avenue and 45th Street	Unmitigatable		
26	5th Avenue and 42nd Street	No Mitigation Needed		
27	Vanderbilt Avenue and 42nd Street	No Mitigation Needed		
28	Park Avenue and 42nd Street	No Mitigation Needed		
29	8th Avenue and 33rd Street	Unmitigatable		
30	8th Avenue and 31st Street	Signal Timing Changes	NB: Split=43s WB: Split=47s	Reduce 2s from WB and allocate 2s green time to NB. NB: Split=45s WB: Split=45s
31	8th Avenue and 41st Street	No Mitigation Needed		
32	8th Avenue and 42nd Street	No Mitigation Needed		
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	Signal Timing Changes	SBTL: Split = 56s EBTL: Split = 34s	Reduce 2s green time from SBTL and allocate 2s green time to EBTL. SBTL: Split = 54s EBTL: Split = 36s
35	7th Avenue and 57th Street	Signal Timing Changes	SBTL: Split = 50s EB-WB: Split = 40s	Reduce 2s green time from SBTL and allocate 2s green

Table 15-23: 2015 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
				time to EB-WB. SBTL: Split = 48s EB-WB: Split = 42s
36	7th Avenue and Central Park South	Impacts Cannot Be Fully Mitigated	SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 31s EBR: Split = 8s	Reduce 2s green time from EBR and allocate 2s green to WBTL+EBR. SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 33s EBR: Split = 6s
		Lane Reconfiguration	SB: two through lanes with shared right turn lane and one exclusive left turn lane.	Convert the SB left turn lane to a shared through and left turn lane and restripe.
37	6th Avenue and 23rd Street	Unmitigatable		
38	6th Avenue and 31st Street	No Mitigation Needed		
39	6th Avenue and 42nd Street	Signal Timing Changes	NB: Split=54sEB-WB: Split=36s	Reduce 2s from NB and allocate 2s green time to WB.NB: Split=52sWB: Split=38s
40	6th Avenue and 57th Street	Signal Timing Changes	NBTL: Split =48s EB-WB: Split =35s PED: Split =7s	Reduce 2s from NBTL and allocate 2s green time to EB-WB. NBTL: Split =46s EB-WB: Split =37s PED: Split =7s
41	6th Avenue and Central Park South	Impacts Cannot Be Fully Mitigated	NBTL: Split =40s EB-WB: Split =38s PED: Split =12s	Reduce 1s green time from EB-WB and allocate 1s green time to NBTL. NBTL: Split =41s EB-WB: Split =37s PED: Split =12s
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	Signal Timing Changes	SBT: Split =50s EB-WB: Split =40s	Reduce 2s green time from SBTL and allocate 2s green time to EB-WB. SBTL: Split =48s EB-WB: Split =42s
44	5th Avenue and Central Park South	Signal Timing Changes	SB: Split=47s EBT: Split=23s EBT w/o PED: Split=20s	Reduce 2s from SB and allocate 2s green time to EBT w/o PED. SB: Split=45s EBT: Split=23s EBT w/o PED: Split=22s
45	Madison Avenue and 57th Street	No Mitigation Needed		

Table 15-23: 2015 Midday Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
46	1st Avenue and 33rd Street	No Mitigation Needed		
47	2nd Avenue and 36th Street	Signal Timing Changes	SBTL: Split=52s EBT: Split=38s	Reduce 1s from SBTL and allocate 1s green time to EBT. SBTL: Split=51s EBT: Split=39s
48	3rd Avenue and 37th Street	Signal Timing Changes	NB: Split=45s WBT : Split=24s WBT w/o PED: Split=21s	Reduce 2s from NB and allocate 2s green time to WBT. NB: Split=43s WBT: Split=24s WBT w/o PED: Split=23s
49	Queens Plaza S and Northern Boulevard	No Mitigation Needed		
50	Tillary Street and Adams Street	Unmitigatable		
51	Tillary Street and Jay Street	No Mitigation Needed		
52	Tillary Street and Flatbush Avenue	Impacts Cannot Be Fully Mitigated	NBTL: Split=19s NB-SB: Split=39s EBL-WBL: Split=24s EBT-WBT: Split=38s	Reduce 1s from NB-SB and allocate 1s green time to EBT-WBT. NBTL: Split=19s NB-SB: Split=38s EBL-WBL: Split=24s EBT-WBT: Split=39s
53	Queens Plaza N and Northern Boulevard	Signal Timing Changes	EB-WB: Split = 55s SBL+WBR: Split = 50s EBTL: Split = 15s	Reduce 1s from EB-WB and allocate 1s green time to SBL+WBR. EB-WB: Split = 54s SBL+WBR: Split = 51s EBTL: Split = 15s
54	41st Avenue and Northern Boulevard	Signal Timing Changes	Signal timing is the same as Queens Plaza N and Northern Boulevard	Signal timing is the same as Queens Plaza N and Northern Boulevard

Table 15-24: 2015 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
1	3rd Avenue and 54th Street	No Mitigation Needed		
2	3rd Avenue and 55th Street	Signal Timing Changes	NB: Split=52s WB: Split=38s	Reduce 2s green time from NB and allocate 2s green time to WB. NB: Split=50s WB: Split=40s
3	3rd Avenue and 56th Street	Impacts Cannot Be Fully Mitigated	NB: Split=50s EBTL: Split=40s	Reduce 2s green time from EBTL and allocate 2s green time to NB. NB: Split=52s EBTL: Split=38s
4	3rd Avenue and 57th Street	Signal Timing Changes	NBTL: Split = 40s PED: Split = 6s EB-WB: Split = 30s EBTL: Split = 14s	Reduce 1s green time from EB-WB and reduce 1s green time from EBTL, allocate 2s green time to NBTL. NBTL: Split = 42s PED: Split = 6s EB-WB: Split = 29s EBTL: Split = 13s
5	3rd Avenue and 58th Street	Signal Timing Changes	NBT: Split =45s EBTL: Split =45s	Reduce 2s green time from EBTL and allocate 2s green time to NBT. NBT: Split =47s EBTL: Split =43s
6	3rd Avenue and 59th Street	No Mitigation Needed		
7	3rd Avenue and 60th Street	Signal Timing Changes	NBTL: Split = 45s WBT: Split = 24s WBT w/o PED: Split = 21s	Reduce 1s green time from NBT and allocate 1s green time to WBT w/o PED. NBTL: Split = 44s WBT: Split = 24s WBT w/o PED: Split = 22s
8	2nd Avenue and 57th Street	Unmitigatable		
9	Lexington Avenue and 57th Street	Signal Timing Changes	SBTL: Split=48s EB-WB: Split=42s	Reduce 1s green time from SBTL and allocate 1s green time to EB-WB. SBTL: Split=47s EB-WB: Split=43s
10	7th Avenue and 31st Street	No Mitigation Needed		
11	7th Avenue and 32nd Street	No Mitigation Needed		
12	7th Avenue and 33rd Street	Unmitigatable		
13	7th Avenue and 34th Street	Unmitigatable		
14	7th Avenue and 35th Street	No Mitigation Needed		
15	7th Avenue and 36th Street	No Mitigation Needed		

Table 15-24: 2015 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
16	7th Avenue and 37th Street	Signal Timing Changes	SB: Split=54s WB: Split=36s	Reduce 1s green time from SB and allocate 1s green time to WB. SB: Split=53s WB: Split=37s
17	6th Avenue and 34th Street	Unmitigatable		
18	8th Avenue and 34th Street	Unmitigatable		
19	Madison Avenue and 39th Street	Signal Timing Changes	NBTL: Split = 50s WBT: Split = 21s WBT w/o PED: Split = 19s	Reduce 2s green time from NBTL, allocate 1s green time to WBT and 1s green time to WBT w/o PED. NBTL: Split = 48s WBT: Split = 22s WBT w/o PED: Split = 20s
20	Madison Avenue and 40th Street	No Mitigation Needed		
21	Madison Avenue and 41st Street	No Mitigation Needed		
22	Madison Avenue and 42nd Street	Unmitigatable		
23	Madison Avenue and 43rd Street	Unmitigatable		
24	Madison Avenue and 44th Street	Unmitigatable		
25	Madison Avenue and 45th Street	Signal Timing Changes	NB: Split=50s WB: Split=40s	Reduce 3s green time from NB and allocate 3s green time to WB. NB: Split=53s WB: Split=37s
26	5th Avenue and 42nd Street	Unmitigatable		
27	Vanderbilt Avenue and 42nd Street	No Mitigation Needed		
28	Park Avenue and 42nd Street	No Mitigation Needed		
29	8th Avenue and 33rd Street	Unmitigatable		
30	8th Avenue and 31st Street	Unmitigatable		
31	8th Avenue and 41st Street	Unmitigatable		
32	8th Avenue and 42nd Street	Signal Timing Changes	NB: Split =38s EBTL: Split =18s EB-WB: Split =34s	Reduce 2s green time from EB-WB and allocate 2s green time to NB. NB: Split =40s EBTL: Split =18s EB-WB: Split =32s
33	8th Avenue and 58th Street	No Mitigation Needed		
34	9th Avenue and 58th Street	Signal Timing Changes	SB: Split =56s EBTL: Split =34s	Reduce 2s green time from SB and allocate 2s green time to EBTL. SB: Split=54s EBTL: Split=36s

Table 15-24: 2015 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
35	7th Avenue and 57th Street	Signal Timing Changes	SBTL: Split=50s EB-WB: Split=40s	Reduce 1s green time from SBTL and allocate 1s green time to EB-WB. SBTL: Split=49s EB-WB: Split=41s
36	7th Avenue and Central Park South	Impacts Cannot Be Fully Mitigated	SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 31s EBR: Split = 8s	Reduce 2s green time from SBTL and allocate 2s green time to WBTL+EBR. SBTL: Split = 23s EB-WB: Split = 28s WBTL+EBR: Split = 33s EBR: Split = 6s
		Lane Reconfiguration	SB: two through lanes with shared right turn lane and one exclusive left turn lane.	Convert the SB left turn lane to a shared through and left turn lane and restripe.
37	6th Avenue and 23rd Street	Signal Timing Changes	NBTL: Split = 50s PED(NB): Split = 7s EB-WB: Split = 26s PED(EB-WB): Split = 7s	Reduce 1s green time from NBTL and allocate 1s green time to EB-WB. NBTL: Split = 49s PED(NB): Split = 7s EB-WB: Split = 27s PED(EB-WB): Split = 7s
38	6th Avenue and 31st Street	No Mitigation Needed		
39	6th Avenue and 42nd Street	Unmitigatable		
40	6th Avenue and 57th Street	Signal Timing Changes	NBTL: Split =48s EB-WB: Split =35s PED: Split =7s	Reduce 2s green time from NBTL and allocate 2s green time to EB-WB. NBTL: Split =46s EB-WB: Split =37s PED: Split =7s
41	6th Avenue and Central Park South	Unmitigatable		
42	5th Avenue and 23rd Street	No Mitigation Needed		
43	5th Avenue and 57th Street	Signal Timing Changes	SBTL: Split =50s EB-WB: Split =40s	Reduce 2s green time from SBTL and allocate 2s green time to EB-WB. SBTL: Split =48s EB-WB: Split =42s
44	5th Avenue and Central Park South	Unmitigatable		
45	Madison Avenue and 57th Street	Impacts Cannot Be Fully Mitigated	NBT: Split =50s EB-WB: Split =40s	Reduce 1s green time from NBT and allocate 1s green time to EB-WB. NBT: Split =49s EB-WB: Split =41s
46	1st Avenue and 33rd Street	No Mitigation Needed		
47	2nd Avenue and	No Mitigation		

Table 15-24: 2015 PM Peak - Proposed Mitigations

No.	Intersection	Category of Mitigation	Before Mitigation	Proposed Mitigation
	36th Street	Needed		
48	3rd Avenue and 37th Street	Signal Timing Changes	NB: Split=45s WBT : Split=24s WBT w/o PED: Split=21s	Reduce 1s green time from NB and allocate 1s green time to WBT w/o PED. NB: Split=44s WBT: Split=24s WBT w/o PED: Split=22s
49	Queens Plaza S and Northern Boulevard	Unmitigatable		
50	Tillary Street and Adams Street	Unmitigatable		
51	Tillary Street and Jay Street	Signal Timing Changes	EBT-WBT: Split = 52sEBL-WBL: Split = 28sNB-SB: Split = 40s	Reduce 1s green time from EBL-WBL and allocate 1s green time to EBT-WBT.EBT-WBT: Split = 53sEBL-WBL: Split = 27sNB-SB: Split = 40s
52	Tillary Street and Flatbush Avenue	Unmitigatable		
53	Queens Plaza N and Northern Boulevard	Signal Timing Changes	EB-WB: Split = 55s SBL+WBR: Split = 50s EBTL: Split = 15s	Reduce 2s green time from EB-WB and allocate 2s green time to SBL+WBR. EB-WB: Split = 53s SBL+WBR: Split = 52s EBTL: Split = 15s
54	41st Avenue and Northern Boulevard	Signal Timing Changes	Signal timing is the same as Queens Plaza N and Northern Boulevard	Signal timing is the same as Queens Plaza N and Northern Boulevard

Table 15-25a: Summary of the With Proposed Action Plus Mitigation Analysis Results

	2013			2014			2015		
	AM	MD	PM	AM	MD	PM	AM	MD	PM
No Mitigation Needed	33	42	37	19	20	20	11	16	15
Signal Timing Changes	13	8	9	20	16	17	20	14	18
Impacts Cannot Be Fully Mitigated	3	1	0	7	6	1	12	6	3
Unmitigatable	5	3	8	8	12	16	11	18	18

The individual lane groups that were either unmitigatable or could not be fully mitigated were also tabulated as shown in Table 15-25b. During the AM peak hour, there would a potential 4% increase in the number of lane groups that are unmitigatable between 2013 and 2014. In the midday peak hour, there would be a potential 8% increase in the number of lane groups that are unmitigatable between 2013 and 2014, and a 7% increase between 2014 and 2015. In the PM peak hour, there would be a potential 7% increase in the number of lane groups that are unmitigatable between 2013 and 2014, and a 5% increase between 2014 and 2015.

Table 15-25b: Percent of Study Intersection Lane Groups that could not be Fully Mitigated or were Unmitigatable

	AM Peak Hour					Midday Peak Hour					PM Peak Hour				
	Lane Group Impacts Cannot Be Fully Mitigated (1)		Lane Groups are Unmitigatable (2)		Total Lane Groups	Lane Group Impacts Cannot Be Fully Mitigated (1)		Lane Groups are Unmitigatable (2)		Total Lane Groups	Lane Group Impacts Cannot Be Fully Mitigated (1)		Lane Groups are Unmitigatable (2)		Total Lane Groups
Year	No. Count	%	No. Count	%		No. Count	%	No. Count	%		No. Count	%	No. Count	%	
2013	4	2%	13	6%	216	3	1%	3	1%	212	0	-	12	6%	217
2014	7	3%	22	10%	215	6	3%	20	9%	212	1	<1%	28	13%	217
2015	17	8%	22	10%	215	12	6%	33	16%	212	5	2%	40	18%	217

Notes:
(1) Lane groups with impacts at intersections that could not be fully mitigated.
(2) Lane groups with impacts at intersections that were unmitigatable.

Locations that could not be fully mitigated are also noted. The detailed level of service results of the mitigation analysis by year and peak hour are shown in Tables 15-26 through Table 15-28.

Table 15-26: 2013 Future Conditions with the Proposed Action (With Mitigations) - 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
1	3rd Avenue and 54th Street	EB 54th Street	L	1.01	99.9	F	L	0.95	89.2	F	L	0.62	47.3	D
			T	0.85	32	C	T	0.67	23.5	C	T	0.62	20.8	C
		NB 3rd Avenue	T	0.77	36.7	D	T	0.84	30.2	C	T	0.65	23.4	C
			R	0.62	38	D	R	1.05	121.4	F	R	0.5	30.3	C
		INTERSECTION			41.5	D			38.8	D			24.6	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.88	51.6	D	T	0.82	48.3	D	T	0.89	54.6	D
			R	0.76	44.3	D	R	0.88	74.5	E	R	0.88	65.4	E
		NB 3rd Avenue	LT	0.81	31.8	C	LT	0.79	8.2	A	LT	0.56	3.2	A
		INTERSECTION			35.4	D			16.5	B			15.4	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.88	42.7	D	LT	1.04	81.9	F	LT	0.81	35.8	D
		NB 3rd Avenue	T	0.94	14.1	B	T	0.98	30.1	C	T	0.98	25.9	C
			R	0.48	7.4	A	R	0.83	30.7	C	R	0.49	10.9	B
		INTERSECTION			19.4	B			39	D			26.9	C
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.08	59.3	E	LT	1.03	34.7	C	LT	0.99	28.5	C
		WB 57th Street	TR	0.94	52	D	T	0.69	34.8	C	T	0.45	21.1	C
			R	0.93	62.9	E	R	0.66	45.1	D	R	0.31	20.9	C
		NB 3rd Avenue	LTR	1.06	130.4	F	LTR	0.99	52.5	D	LTR	1.04	67	E
			R	0.2	19.6	B	R	0.85	35.3	D	R	1.05	72.9	E
		INTERSECTION			95.8	F			44.9	D			52.8	D
5	3rd Avenue and 58th Street	EB 58th Street	L	0.41	20.9	C								
			T	0.42	20.7	C	LT	0.99	60.1	E	LT	0.76	27.2	C
		NB 3rd Avenue	TR	1.03	54.4	D	TR	0.99	29.2	C	TR	1.03	40.5	D
		INTERSECTION			49.7	D			36.1	D			37	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.73	26.9	C	LT	0.99	59.1	E	LT	0.7	25.4	C
		NB 3rd Avenue	T	1.01	44.5	D	T	0.79	19.4	B	T	0.93	21	C
			R	0.97	37.3	D	R	1.05	65.5	E	R	1.05	56.5	E
		INTERSECTION			39.6	D			36.5	D			26.8	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.61	21.9	C	T	0.47	20.1	C	TR	0.52	18.2	B
			R	1.07	114.7	F	R	1.06	115.1	F	R	0.95	80.2	F
		NB 3rd Avenue	LT	1.04	45.4	D	LT	0.79	48	D	LT	0.7	4.1	A
		INTERSECTION			46.6	D			50.1	D			15.6	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.91	54.7	D	T	1.08	80.1	F	T	1.08	78.1	E
			R	1.08	101.7	F	R	0.82	47.2	D	R	0.45	40.5	D
		WB 57th Street	LT	1.02dl	30.7	C	LT	0.34	20.2	C	LT	0.27	19.8	B
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.2	18.4	B
			T	1.15	102.9	F	T	1.11	82.7	F	T	1.08	72	E
			R	0.89	62.9	E	R	0.78	40.7	D	R	1.05	96	F
		INTERSECTION			74.2	E			71.2	E			70.3	E
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.9	39.5	D	T	0.98	52.2	D	T	0.91	39.1	D
			R	0.58	28.5	C	R	0.47	25.4	C	R	0.41	24.2	C
		WB 57th Street	LT	0.98	40.2	D	LT	0.94	44.9	D	LT	0.93	46.4	D
		SB Lexington Avenue	LT	0.76	22.7	C	LT	0.96	43.1	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			31.8	C			45.1	D			32.1	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.66	26.5	C	LT	0.64	24.7	C	LT	0.85	32.8	C
		SB 7th Avenue	T	0.61	7.2	A	T	0.57	3.8	A	T	0.64	4.3	A
			R	0.6	11.3	B	R	0.43	5.8	A	R	0.48	6.8	A
		INTERSECTION			12.7	B			10	A			13.1	B
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.92	10.1	B	LT	0.81	4.3	A	LT	0.81	4.7	A
		INTERSECTION			10.1	B			4.3	A			4.7	A

Table 15-26: 2013 Future Conditions with the Proposed Action (With Mitigations) - 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 and 33rd Street	WB 33rd Street	L	1.04	113	F	L	0.64	45	D	L	0.97	94.7	F
			T	0.88	63.1	E	T	0.51	33	C	T	0.38	32	C
		SB 7th Avenue	TR	0.69	5.7	A	TR	0.68	3.4	A	TR	0.64	3.5	A
			R	1.55	268.8	F	R	1.32	167.3	F	R	1.12	79.4	E
		INTERSECTION			44.5	D			25	C			19.2	B
13	7th Avenue and 34th Street	EB 34th Street	T	1.07	73	E	T	1.09	101.6	F	T	1.02	82	F
			R	0.06	13	B	R	0.19	33.2	C	R	0.1	32.5	C
		WB 34th Street	LT	1.14	91.2	F	LT	0.93	14.7	B	LT	0.9	19.1	B
		SB 7th Avenue	LTR	1.05	118.3	F	LTR	1.02	89.4	F	LTR	1.08	62.7	E
		INTERSECTION			103.9	F			71.9	E			55	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.13	126.7	F	L	0.96	84.6	F	L	0.61	32	C
			T	1.37	212.5	F	T	0.77	42.9	D	T	0.7	36.5	D
		SB 7th Avenue	T	1.03	34.7	C	T	1.01	32.2	C	T	0.67	3.3	A
			R	1.62	316.2	F	R	1.24	152.8	F	R	0.66	19.5	B
		INTERSECTION			93.1	F			44.4	D			10.7	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.88	45.2	D	TR	0.81	39.7	D	TR	0.88	42.7	D
		SB 7th Avenue	LT	0.87	27.6	C	LT	0.89	33.7	C	LT	0.78	8.7	A
		INTERSECTION			31.1	C			34.8	C			17.3	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.03	71.5	E	LT	0.91	48.2	D	LT	1.04	72.9	E
		SB 7th Avenue	T	0.69	16.9	B	T	0.66	16.5	B	T	0.64	15.8	B
			R	0.69	34.3	C	R	0.54	22.8	C	R	0.61	27.2	C
		INTERSECTION			32.9	C			24.9	C			33.5	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.11	82.4	F	T	1.03	69.6	E	T	0.91	42.5	D
		WB 34th Street	T	0.77	30.9	C	T	0.92	43.7	D	T	0.98	53.6	D
			R	0.36	29.1	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.89	8.6	A	T	1.01	30.7	C	T	1.1	64.5	E
		INTERSECTION			25.9	C			38.4	D			57.9	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.9	42	D	LT	0.71	27.3	C	LT	0.68	25.4	C
		WB 34th Street	T	0.43	9.7	A	T	0.49	2.5	A	T	0.49	32.1	C
			R	0.42	10	B	R	0.83	17.5	B	R	0.69	39.7	D
		NB 8th Avenue	L	0.62	20.6	C	L	0.59	16.4	B	L	0.83	57.2	E
			T	0.92	19	B	T	0.83	12.6	B	T	0.95	51.1	D
			R	1.1	156.2	F	R	0.68	24.1	C	R	0.93	81.5	F
		INTERSECTION			23.5	C			13.9	B			44.6	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.8	35.8	D	T	0.87	42.2	D	T	0.9	46.3	D
			R	1.06	137.8	F	R	1.06	130.2	F	R	1.07	136.4	F
		NB Madison Avenue	LT	0.89	30.8	C	LT	0.74	21.1	C	LT	0.64	18.4	B
		INTERSECTION			38.7	D			34.9	C			33.1	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.7	58.4	E	L	0.64	51.9	D	L	0.63	52.5	D
			T	0.84	41.5	D	T	0.7	30.4	C	T	0.59	25.9	C
		NB Madison Avenue	TR	1.04	49.7	D	TR	1.02	48.8	D	TR	0.93	18.1	B
		INTERSECTION			48.7	D			45.6	D			21.3	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.41	43.2	D	L	0.41	43	D	L	0.35	41.2	D
			T	0.36	20.1	C	T	0.22	17.7	B	T	0.22	17.4	B
		NB Madison Avenue	TR	0.98	37.2	D	TR	0.98	42.6	D	TR	0.99	25.8	C
		INTERSECTION			35.8	D			41.2	D			25.8	C

Table 15-26: 2013 Future Conditions with the Proposed Action (With Mitigations) - 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	142.2	F	LT	0.48	22.3	C	LT	0.71	32.4	C
		WB 42nd Street	T	1.19	111.9	F	TR	0.91	35.1	D	T	0.98	54.8	D
			R	0.09	19.5	B					R	0.13	18.3	B
		NB Madison Avenue	LT	1.09	73.8	E	LT	1.05	43.8	D	LT	1.05	42.2	D
			R	0.21	8	A	R	0.22	7	A	R	0.17	8	A
		INTERSECTION			102.4	F			35.2	D			43.3	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.53	26.2	C	T	0.6	28.5	C	T	0.63	29.4	C
			R	0.82	52.8	D	R	0.74	41.6	D	R	0.88	69.6	E
		NB Madison Avenue	LT	1.01	47.4	D	LT	0.99	30.9	C	LT	0.94	27.7	C
		INTERSECTION			45.4	D			31.7	C			31.4	C
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.77	35.6	D	LT	0.93	57.3	E	LT	0.92	61.4	E
		NB Madison Avenue	TR	0.96	26.7	C	TR	0.9	17	B	T	1	37.4	D
											R	0.12	5.3	A
		INTERSECTION			28.3	C			25.3	C			41	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.87	40.8	D	TR	0.99	61.3	E	TR	0.53	23.9	C
		NB Madison Avenue	LT	1	43.1	D	LT	1.03	34.4	C	LT	0.93	31	C
		INTERSECTION			42.5	D			42.5	D			29.4	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.82	34.9	C	T	0.69	33.5	C	T	0.59	34.5	C
			R	0.26	26.1	C	R	0.13	24.1	C	R	0.12	26.4	C
		WB 42nd Street	LT	1	41.4	D	LT	0.76	31	C	LT	1.14	100.7	F
		SB 5th Avenue	LT	0.83	23.1	C	LT	0.76	20.6	C	LT	1.06	62	E
			R	0.11	13.6	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			30.2	C			25.5	C			68.1	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1	37.5	D	T	0.84	22.6	C	T	0.74	8.5	A
		WB 42nd Street	TR	0.94	27.2	C	TR	0.92	25.3	C	TR	0.88	24.3	C
		INTERSECTION			32.2	C			24	C			17.6	B
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.59	15.8	B	T	0.53	9.8	A	T	0.48	11.3	B
			R				R				R			
		WB 42nd Street	LT	0.74	22.2	C	T	0.81	23.2	C	T	0.73	23	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			19.2	B			17.3	B			17.9	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.92	23.2	C	TR	1.02	48.9	D	TR	0.93	212.3	F
		NB 8th Avenue	L	1.18	137.4	F	L	1.06	96	F	L	1.05	77	E
			T	0.85	16.2	B	T	0.8	12.4	B	T	0.89	14.3	B
		INTERSECTION			29.7	C			27.9	C			54.9	D
30	8th Avenue and 31st Street	WB 31st Street	T	0.66	32.4	C	T	0.54	27.4	C	T	0.86	46.2	D
			R	0.54	29.8	C	R	0.47	26	C	R	0.72	40	D
		NB 8th Avenue	L	1.35	211	F	L	1.16	141.4	F	L	1.38	231.3	F
			T	0.69	22.2	C	T	0.7	23.7	C	T	0.8	26.3	C
		INTERSECTION			49.5	D			37.5	D			47.3	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.22	12.7	B	T	0.29	14.2	B	T	0.4	16.2	B
			R	1.04	87	F	R	0.75	38.5	D	R	1.05	95.2	F
		NB 8th Avenue	LT	0.8	29.7	C	LT	0.79	28.7	C	LT	1.07	71.9	E
		INTERSECTION			37.4	D			28.7	C			69.7	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.87	31.7	C	LT	0.92	38.2	D	LT	0.58	16.8	B
		WB 42nd Street	TR	0.78	14.5	B	TR	0.77	13.1	B	TR	0.6	6.8	A
		NB 8th Avenue	L	0.09	7.7	A	L	0.46	13.3	B	L	0.08	8.2	A
			LT	1.05	45.3	D	LT	0.99	26.5	C	LT	1.01	41.1	D
			R	0.74	23.4	C	R	0.69	22.9	C	R	0.16	8.3	A
		INTERSECTION			36.5	D			26.5	C			31.2	C

Table 15-26: 2013 Future Conditions with the Proposed Action (With Mitigations) - 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	0.68	20.8	C	LT	0.86	28.5	C	LT	0.76	20.9	C
		NB 8th Avenue	TR	0.57	17	B	TR	0.62	17.8	B	TR	0.68	18.9	B
		INTERSECTION			18.3	B			21.5	C			19.5	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.78	38.7	D	T	0.89	50.5	D	T	1.01	76.2	E
			R	0.75	47.5	D	R	0.77	50	D	R	0.53	35.7	D
		SB 9th Avenue	LT	0.76	17.4	B	LT	0.66	15.1	B	LT	0.62	14.9	B
		INTERSECTION			23.4	C			25.1	C			29.2	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.86	35.7	D	T	0.8	31.3	C	T	0.77	30	C
			R	0.86	50.9	D	R	0.79	45.4	D	R	0.76	43.1	D
		WB 57th Street	LT	1.06	69.9	E	LT	0.86	33.2	C	LT	0.84	34.8	C
		SB 7th Avenue	LTR	0.75	20.7	C	LTR	0.35	14.2	B	LTR	0.39	14.7	B
		INTERSECTION			39	D			28.6	C			27.8	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.88	49.6	D	T	0.85	46	D	T	0.88	48	D
			R	0.6	30.7	C	R	0.62	31.9	C	R	0.52	27.3	C
		WB Central Park South	L	1.07	81.3	F	L	1.03	78.1	E	L	1.03	71.2	E
			T	0.6	14.5	B	T	0.97	44.2	D	T	1	42.7	D
		SB Central Park Driveway	L	0.99	96	F	L	0.01	29	C	L	0.01	30	C
			TR	0.99	63.1	E	TR				TR			
		INTERSECTION			49.2	D			50.1	D			48.4	D
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1	69	E	LT	0.96	67	E	LT	0.97	66.6	E
		WB 23rd Street	TR	1.02	98.6	F	TR	1.02	78.8	E	TR	0.96	81.4	F
		NB 6th Avenue	LT	0.96	34.5	C	LT	0.98	38.2	D	LT	0.79	21.4	C
			R	0.51	22.7	C	R	0.7	32.9	C	R	0.49	21.5	C
		INTERSECTION			50.4	D			48.7	D			40.1	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.59	25.5	C	TR	0.74	30.5	C	TR	0.84	35.6	D
		NB 6th Avenue	LT	0.97	35.6	D	LT	0.86	24.2	C	LT	0.83	23	C
		INTERSECTION			33.9	C			25.6	C			26.3	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.9	31.5	C	LT	0.85	29.4	C	LT	0.73	30.5	C
		WB 42nd Street	T	0.76	27	C	T	0.84	28.4	C	T	1.01	22.2	C
			R	1.15	106	F	R	1.11	110.3	F	R	1.17	95.1	F
		NB 6th Avenue	LTR	0.86	22.1	C	LTR	0.6	15.5	B	LT	1.01	42.3	D
											R	0.43	17.1	B
		INTERSECTION			30.2	C			27.8	C			40.3	D
40	6th Avenue and 57th Street	EB 57th Street	LT	1	41.1	D	LT	1.06	60.4	E	LT	1	44.4	D
		WB 57th Street	T	0.97	58.9	E	T	1	69.3	E	T	0.9	49.1	D
			R	0.78	51	D	R	0.71	49.9	D	R	0.84	53.5	D
		NB 6th Avenue	LT	0.72	21.1	C	LT	0.61	18.9	B	LT	0.64	20.2	C
			R	0.48	21.8	C	R	0.49	21.2	C	R	0.68	34.6	C
		INTERSECTION			36	D			42.9	D			34.2	C
41	6th Avenue and Central Park South	EB Central Park South	L	0.61	32.8	C	L	0.67	34.4	C	L	0.89	56.8	E
			T	0.74	22.8	C	T	0.58	14.2	B	T	0.5	10.5	B
		WB Central Park South	TR	0.83	36	D	TR	0.79	33.3	C	TR	0.79	32	C
		NB 6th Avenue	L	1.04	86.4	F	L	1	83.1	F	L	1.04	84.3	F
			LTR	0.93dl	35.3	D	LTR	0.74	27.7	C	LTR	1.06	72.1	E
		INTERSECTION			39.4	D			33.3	C			52.8	D
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.77	35	D	T	0.71	20.6	C	T	0.73	34	C
			R	0.66	40.1	D	R	0.74	34.5	C	R	0.76	55.8	E
		WB 23rd Street	LT	0.38	17.5	B	LT	0.34	17	B	LT	0.34	17	B
		SB 5th Avenue	TR	0.7	23.1	C	TR	0.71	23.3	C	TR	0.8	25.9	C
		INTERSECTION			26.2	C			21.9	C			27.4	C

Table 15-26: 2013 Future Conditions with the Proposed Action (With Mitigations) - 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	1.08	67.3	E	T	1.08	68.1	E	T	0.92	25	C
			R	0.99	50.4	D	R	0.86	34.7	C	R	0.65	19.3	B
		WB 57th Street	LT	1.09	86	F	LT	0.96	50.5	D	LT	1.04	63.2	E
		SB 5th Avenue	LT	1.06	64.2	E	LT	0.76	21.5	C	LT	0.71	20.4	C
			R	0.37	17.5	B	R	0.38	17.1	B	R	0.52	21.5	C
		INTERSECTION			67	E			41.1	D			32.7	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.87	24.3	C	T	0.9	27.4	C	T	0.42	6.2	A
			R	1.07	89.3	F	R	0.91	58.9	E	R	0.87	46.2	D
		SB 5th Avenue	LT	1.05	63	E	LT	0.8	25.2	C	LT	1.04	62.6	E
			R	0.08	14.1	B	R	0.07	14.5	B	R	0.14	17	B
		INTERSECTION			55.8	E			29	C			49.7	D
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.07	41.5	D	LT	1.02	26.3	C	LT	1.07	47.9	D
		WB 57th Street	T	0.84	33.8	C	T	0.67	27	C	T	0.96	52.9	D
			R	0.75	39.8	D	R	0.68	40.4	D	R	0.22	20.9	C
		NB Madison Avenue	LTR	0.76	22.1	C	LTR	0.54	16.6	B	LT	0.94	34.7	C
											R	0.12	13.7	B
		INTERSECTION			31.4	C			23.4	C			42.7	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.52	15.8	B	L	0.75	27.8	C	L	0.48	16.4	B
			T	0.76	17.8	B	T	0.78	19.8	B	T	0.77	19.2	B
		INTERSECTION			17.5	B			21.3	C			18.8	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	1	66	E	TR	1.03	64.8	E	T	0.68	26.9	C
											R	0.5	31	C
		WB 36th Street	L	0.77	40.4	D								
		SB 2nd Avenue	L	1.37	204.3	F	L	0.03	10.5	B	L	0.12	11.3	B
			T	1.39	206.1	F	T	0.74	19	B	T	0.83	21.7	C
		INTERSECTION			159.6	F			36.8	D			22.9	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.63	19	B	TR	0.82	25.9	C	TR	0.77	23.9	C
			R	1.49	270.9	F	R	1.21	156.3	F	R	1.12	126	F
		NB 3rd Avenue	LT	0.73	23.4	C	LT	0.63	20.8	C	LT	0.57	19.6	B
		INTERSECTION			47.4	D			37.8	D			32.9	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.62	48.8	D	T	0.35	30.1	C	T	0.5	44	D
		WB Jackson Avenue	T	0.33	0.8	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.9	43.5	D	T	0.75	31	C	T	0.83	34.9	C
			R	1.09	91.5	F	R	1.06	85.3	F	R	1.05	82.7	F
		INTERSECTION			55.6	E			44.8	D			45.6	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.82	16.6	B	T	0.46	4.3	A	T	1	52	D
			R	0.16	1.2	A	R	0.09	0.7	A	R	0.15	1	A
		WB Northern Boulevard	LT	0.6	22.8	C	LT	0.35	22.7	C	LT	0.9	88.9	F
		NB Queens Plaza S	LTR	1.17	112.6	F	LTR	0.44	13	B	LTR	1.16	107.4	F
		SB Queens Plaza S	T	0.56	22.5	C	T	0.37	19.5	B	T	0.89	43.9	D
		INTERSECTION			61.5	E			14.2	B			78.5	E

Table 15-26: 2013 Future Conditions with the Proposed Action (With Mitigations) - 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	0.74	46.6	D	TR	0.69	44.3	D	TR	0.87	57.6	E
		WB Tillary Street	L	0.73	68.8	E	L	1	111.2	F	L	1.2	137.8	F
			T	0.8	48.9	D	T	0.79	36.8	D	T	1.4	218.4	F
			R	1.04	66	E	R	0.81	38.9	D	R	1.08	67	E
		NB Adams Street	T	1.16	126.4	F	T	1.05	91	F	T	1.16	122.6	F
		SB Adams Street	L	1.16	133.3	F	L	1.11	115.6	F	L	1.13	122.2	F
			T	0.8	30.6	C	T	0.68	26.7	C	T	1.09	81.6	F
		NB Service Road	TR	1.1	122.2	F	TR	1.01	95	F	TR	0.82	56	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			58.1	E			112.1	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	33.8	C	L	0.35	27	C	L	0.32	34.1	C
			TR	0.87	40.3	D	TR	0.61	30.4	C	TR	0.88	36.6	D
		WB Tillary Street	L	1.05	89	F	L	0.43	45.6	D	L	0.51	30.9	C
			TR	0.94	61.5	E	TR	0.63	16.9	B	TR	1.12	86	F
		NB Jay Street	L	0.45	39.8	D	L	0.53	45.2	D	L	0.65	49.1	D
			T	0.17	31.6	C	T	0.16	33.7	C	T	0.16	32.9	C
			R	0.52	21.2	C	R	0.56	21.6	C	R	0.69	28.5	C
		SB Jay Street	L	0.24	34.2	C	L	0.41	42.9	D	L	0.5	46	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	D
		INTERSECTION			49.8	D			26.6	C			57	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	111.7	F	L	0.52	44.1	D	L	0.32	49.4	D
			TR	1.26	146.4	F	TR	1.12	111.7	F	TR	1.24	161.2	F
		WB Tillary Street	L	1.37	219.4	F	L	1.15	136.2	F	L	1.26	174.5	F
			TR	1.14	116.8	F	TR	1.04	86.6	F	TR	1.18	131.6	F
			R	1.19	146.9	F	R	1.11	126.1	F	R	0.63	48.1	D
		NB Flatbush Avenue	L	1.03	78.5	E	L	0.94	53.1	D	L	1.17	117.6	F
			T	0.99	57.6	E	T	0.52	27	C	T	0.62	29	C
			R	1.01	76.8	E	R	1	74.7	E	R	1.02	76.9	E
		SB Flatbush Avenue	T	1.09	97.8	F	T	0.58	40.1	D	T	1.08	89.4	F
			R	0.26	34.3	C	R	0.45	41.8	D	R	0.42	37.7	D
		INTERSECTION			113.4	F			80.7	F			110.6	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.44	39.4	D	LT	0.24	14.6	B	LT	0.54	28.8	C
		WB Northern Boulevard	T	0.55	28	C	T	0.4	22.8	C	T	0.46	24.1	C
			R	1.06	77.1	E	R	1.12	102.3	F	R	1.12	98.3	F
		SB Queens Plaza N	L	0.98	62.7	E	L	0.99	85.1	F	L	1.08	191.2	F
		INTERSECTION			58.4	E			71.1	E			121.7	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.44	0.5	A	LTR	0.61	4.9	A	LTR	0.61	5.6	A
		WB Northern Boulevard	LTR	0.61	8.6	A	LTR	0.57	7.6	A	LTR	0.63	11.2	B
		INTERSECTION			4.8	A			6.3	A			8.3	A

Table 15-27: 2014 Future Conditions with the Proposed Action (With Mitigations) - 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	1.1	125.6	F	L	0.97	93.7	F	L	0.63	47.9	D
			T	0.89	37.6	D	T	0.69	24	C	T	0.63	21.2	C
		NB 3rd Avenue	T	0.77	34.8	C	T	0.86	31.9	C	T	0.67	23.6	C
			R	0.62	36.2	D	R	1.09	131.8	F	R	0.51	30.5	C
		INTERSECTION			43.8	D			41.2	D			24.9	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.89	53.8	D	T	0.83	49.6	D	T	0.84	46.9	D
			R	0.77	45.6	D	R	0.89	76.7	E	R	0.84	55.6	E
		NB 3rd Avenue	LT	0.83	31.1	C	LT	0.81	10	B	LT	0.6	3.4	A
		INTERSECTION			35.2	D			18.2	B			13.6	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.88	41.8	D	LT	1.03	78.1	E	LT	0.87	43.3	D
		NB 3rd Avenue	T	0.98	22.4	C	T	1.03	33.6	C	T	0.95	73.8	E
			R	0.5	8.4	A	R	0.87	38.3	D	R	0.47	9.9	A
		INTERSECTION			25.4	C			41.5	D			65.7	E
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.06	53.2	D	LT	1.04	30.4	C	LT	0.99	29.1	C
		WB 57th Street	TR	0.92	47.4	D	T	0.61	30.3	C	T	0.47	24.6	C
			R	0.9	56.3	E	R	0.58	36.5	D	R	0.33	24.6	C
		NB 3rd Avenue	LTR	1.12	107.7	F	LTR	1.02	63.2	E	LTR	1.06	77.7	E
			R	0.21	20.7	C	R	0.69	24.2	C	R	1.06	76.9	E
		INTERSECTION			81.3	F			48.4	D			59.9	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.44	22.3	C								
			T	0.44	21.7	C	LT	0.98	57.1	E	LT	0.77	27.6	C
		NB 3rd Avenue	TR	1.02	51.6	D	TR	1.03	43.8	D	TR	1.05	37.5	D
		INTERSECTION			47.5	D			46.7	D			34.9	C
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.76	28.9	C	LT	0.97	54.9	D	LT	0.71	25.7	C
		NB 3rd Avenue	T	1.02	54.1	D	T	0.83	33.4	C	T	0.95	24.6	C
			R	0.94	33.6	C	R	1.05	58.9	E	R	1.05	56.5	E
		INTERSECTION			45.6	D			42.7	D			29	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.62	22	C	T	0.48	20.2	C	TR	0.52	18.3	B
			R	1.07	115.9	F	R	1.07	117.7	F	R	0.98	85.1	F
		NB 3rd Avenue	LT	1.06	59.5	E	LT	0.82	59.6	E	LT	0.73	4.3	A
		INTERSECTION			57.2	E			59.2	E			16.2	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.93	55.8	E	T	1.1	89.1	F	T	1	47.4	D
			R	1.09	105.9	F	R	0.85	52.2	D	R	0.41	36.9	D
		WB 57th Street	LT	1.04dl	31.4	C	LT	0.35	20.3	C	LT	0.3	20.8	C
		SB 2nd Avenue	L	0.31	24.6	C	L	0.25	19.9	B	L	0.18	16.3	B
			T	1.16	107.5	F	T	1.12	88.1	F	T	1.02	48.6	D
			R	0.89	63.5	E	R	0.78	41.3	D	R	0.97	69.9	E
		INTERSECTION			77	E			76.2	E			47.4	D
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.91	41	D	T	1	56.6	E	T	0.92	40	D
			R	0.6	29.5	C	R	0.48	25.9	C	R	0.42	24.4	C
		WB 57th Street	LT	0.99	42.2	D	LT	0.96	46.1	D	LT	0.94	48.7	D
		SB Lexington Avenue	LT	0.78	23.4	C	LT	0.99	48.7	D	LT	0.77	23.2	C
			R	0.26	16.3	B	R	0.76	38.7	D	R	0.44	20.7	C
		INTERSECTION			33	C			48.8	D			33	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.67	26.9	C	LT	0.66	25.1	C	LT	0.87	33.7	C
		SB 7th Avenue	T	0.64	7.8	A	T	0.59	4.1	A	T	0.66	4.7	A
			R	0.61	11.7	B	R	0.45	6.1	A	R	0.5	7	A
		INTERSECTION			13.3	B			10.3	B			13.5	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**
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.95	13.6	B	LT	0.83	4.9	A	LT	0.84	5.5	A
		INTERSECTION			13.6	B			4.9	A			5.5	A
12	7th Avenue and and 33rd Street	WB 33rd Street	L	1.08	124	F	L	0.65	46.2	D	L	0.99	100.3	F
			T	0.89	65.4	E	T	0.52	33.3	C	T	0.39	32.1	C
		SB 7th Avenue	TR	0.72	9.8	A	TR	0.7	4.8	A	TR	0.66	5.1	A
			R	1.58	280.6	F	R	1.34	174.6	F	R	1.15	89.4	F
		INTERSECTION			49.2	D			26.6	C			21.7	C
13	7th Avenue and 34th Street	EB 34th Street	T	1.07	74.7	E	T	1.1	104.1	F	T	1.03	84.4	F
			R	0.06	13	B	R	0.19	33	C	R	0.1	32.8	C
		WB 34th Street	LT	1.16	99.2	F	LT	0.95	16.6	B	LT	0.91	20.1	C
		SB 7th Avenue	LTR	1.09	139.6	F	LTR	1.05	107.5	F	LTR	1.11	73.9	E
		INTERSECTION			119	F			83.5	F			62.5	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.15	132.6	F	L	0.97	86.8	F	L	0.63	33	C
			T	1.39	218.3	F	T	0.78	43.1	D	T	0.7	36.8	D
		SB 7th Avenue	T	1.07	49	D	T	1.04	36.1	D	T	0.69	3.4	A
			R	1.61	308.6	F	R	1.25	154.6	F	R	0.68	19.8	B
		INTERSECTION			102.7	F			47.5	D			10.8	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	46	D	TR	0.85	43.8	D	TR	0.9	44.4	D
		SB 7th Avenue	LT	0.9	46.5	D	LT	0.9	38.5	D	LT	0.81	8.6	A
		INTERSECTION			46.4	D			39.5	D			17.6	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.02	68.1	E	LT	0.92	49.7	D	LT	1.02	67.8	E
		SB 7th Avenue	T	0.73	18.4	B	T	0.69	17	B	T	0.67	17.2	B
			R	0.73	38.1	D	R	0.55	23.5	C	R	0.63	29.1	C
		INTERSECTION			33.1	C			25.6	C			32.8	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.09	73.7	E	T	1.04	72	E	T	0.92	43	D
		WB 34th Street	T	0.76	29.8	C	T	0.94	46.6	D	T	1	56.9	E
			R	0.34	27.1	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.95	12.3	B	T	1.05	42.4	D	T	1.14	79.1	E
		INTERSECTION			26.2	C			46.9	D			67.3	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.9	42.7	D	LT	0.71	27.5	C	LT	0.69	25.7	C
		WB 34th Street	T	0.44	9.7	A	T	0.5	2.5	A	T	0.5	31.9	C
			R	0.44	10	B	R	0.86	19.2	B	R	0.72	40.2	D
		NB 8th Avenue	L	0.64	22.2	C	L	0.61	17.8	B	L	0.85	58.2	E
			T	0.95	23	C	T	0.85	14.1	B	T	0.98	58.7	E
			R	1.1	157.1	F	R	0.69	25	C	R	0.96	85	F
		INTERSECTION			25.5	C			14.8	B			48.9	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.81	37	D	T	0.89	44.4	D	T	0.87	40.2	D
			R	1.01	121	F	R	1.01	112.9	F	R	0.99	113.2	F
		NB Madison Avenue	LT	0.92	31.9	C	LT	0.77	22	C	LT	0.69	20.6	C
		INTERSECTION			38.7	D			34.6	C			31.5	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.72	59.8	E	L	0.66	53.3	D	L	0.65	53.7	D
			T	0.86	43.6	D	T	0.7	29.4	C	T	0.6	26.2	C
		NB Madison Avenue	TR	1.07	55.2	E	TR	1.08	63	E	TR	0.95	21.2	C
		INTERSECTION			53.4	D			56.4	E			23.8	C

Table 15-27: 2014 Future Conditions with the Proposed Action (With Mitigations) - 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**
21	Madison Avenue and 41st Street	EB 41st Street	L	0.5	52	D	L	0.39	41.7	D	L	0.35	41.3	D
			T	0.39	22.1	C	T	0.24	19.2	B	T	0.22	17.5	B
		NB Madison Avenue	TR	0.96	31.7	C	TR	0.97	33.8	C	TR	1.01	32.4	C
		INTERSECTION			31.6	C			33.3	C			31.8	C
22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.23	141.1	F	LT	0.49	22.3	C	LT	0.74	34.3	C
		WB 42nd Street	T	1.18	107.2	F	TR	0.93	41	D	T	1.04	76.3	E
			R	0.09	19.6	B					R	0.14	18.8	B
		NB Madison Avenue	LT	1.15	101.5	F	LT	1.09	63.2	E	LT	1.05	47.7	D
			R	0.22	10.3	B	R	0.23	8.5	A	R	0.16	7	A
		INTERSECTION			111.4	F			45.7	D			53.2	D
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.57	28.1	C	T	0.64	30.7	C	T	0.65	30.2	C
			R	0.89	64.7	E	R	0.79	48.1	D	R	0.89	72.6	E
		NB Madison Avenue	LT	1.02	48.4	D	LT	1.01	57.8	E	LT	0.97	38.2	D
		INTERSECTION			47.6	D			52.8	D			39.8	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.8	38	D	LT	0.91	51.3	D	LT	0.97	73.2	E
		NB Madison Avenue	TR	0.99	35.2	D	TR	0.98	43	D	T	1	44.1	D
											R	0.12	4.4	A
		INTERSECTION			35.7	D			44.7	D			48.4	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.93	49	D	TR	1.01	65.2	E	TR	0.54	24.1	C
		NB Madison Avenue	LT	1	45.3	D	LT	1.07	45.9	D	LT	0.95	41.6	D
		INTERSECTION			46.3	D			51.6	D			37.8	D
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.8	33	C	T	0.71	34.3	C	T	0.6	34.4	C
			R	0.24	24.1	C	R	0.13	24.5	C	R	0.12	26	C
		WB 42nd Street	LT	0.98	35.3	D	LT	0.78	31.4	C	LT	1.16	110.2	F
		SB 5th Avenue	LT	0.9	28.4	C	LT	0.79	21.4	C	LT	1.09	74.1	E
			R	0.12	14.8	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			31	C			26.2	C			77.5	E
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	1	47.6	D	T	0.86	24.4	C	T	0.76	9.2	A
		WB 42nd Street	TR	0.94	27.8	C	TR	0.95	33.9	C	TR	0.9	43.8	D
		INTERSECTION			37.5	D			29.3	C			29.1	C
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.6	16	B	T	0.55	9.9	A	T	0.5	12.6	B
			R				R				R			
		WB 42nd Street	LT	0.76	23.3	C	T	0.83	24.4	C	T	0.74	24.5	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			19.9	B			18	B			19.2	B
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.95	26.1	C	TR	1.03	52	D	TR	0.95	224.4	F
		NB 8th Avenue	L	1.16	124.4	F	L	1.09	104.3	F	L	1.06	80.3	F
			T	0.85	15.3	B	T	0.82	14.3	B	T	0.92	17.2	B
		INTERSECTION			28.5	C			30.5	C			59.2	E
30	8th Avenue and 31st Street	WB 31st Street	T	0.67	32.7	C	T	0.58	29.8	C	T	0.88	47.6	D
			R	0.56	30.4	C	R	0.52	28.3	C	R	0.73	40.8	D
		NB 8th Avenue	L	1.36	212.8	F	L	1.1	117.6	F	L	1.38	233.9	F
			T	0.71	22.6	C	T	0.69	22.1	C	T	0.82	27.1	C
		INTERSECTION			49.6	D			34.2	C			48.1	D

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			AM				MIDDAY				PM			
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31	8th Avenue and 41st Street	WB 41st Street	T	0.22	12.1	B	T	0.29	14.3	B	T	0.41	16.2	B
			R	1.06	91.1	F	R	0.78	41.3	D	R	1.09	107.2	F
		NB 8th Avenue	LT	0.85	32.5	C	LT	0.81	29.3	C	LT	1.09	80.7	F
		INTERSECTION			40.4	D			29.4	C			78.2	E
32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.9	36.3	D	LT	0.94	41.1	D	LT	0.6	17.8	B
		WB 42nd Street	TR	0.82	17.8	B	TR	0.78	13.8	B	TR	0.63	7.4	A
		NB 8th Avenue	L	0.08	6.6	A	L	0.47	13.9	B	L	0.08	6.9	A
			LT	1.06	45.2	D	LT	1.02	34.4	C	LT	1.01	38.9	D
			R	0.74	21.1	C	R	0.71	24.3	C	R	0.17	6.9	A
		INTERSECTION			37.9	D			31.7	C			30	C
33	8th Avenue and 58th Street	EB 58th Street	LT	0.69	21.1	C	LT	0.88	30	C	LT	0.78	21.5	C
		NB 8th Avenue	TR	0.59	17.3	B	TR	0.64	18.2	B	TR	0.7	19.2	B
		INTERSECTION			18.5	B			22.3	C			19.9	B
34	9th Avenue and 58th Street	EB 58th Street	T	0.8	39.6	D	T	0.91	53.8	D	T	1.03	82.3	F
			R	0.77	48.6	D	R	0.78	51.6	D	R	0.53	35.9	D
		SB 9th Avenue	LT	0.77	17.8	B	LT	0.67	15.4	B	LT	0.63	15	B
		INTERSECTION			23.9	C			26.2	C			30.7	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.84	32.3	C	T	0.82	32.3	C	T	0.79	30.8	C
			R	0.81	43	D	R	0.83	48.9	D	R	0.79	46	D
		WB 57th Street	LT	1.03	57.1	E	LT	0.87	34.4	C	LT	0.86	35.4	D
		SB 7th Avenue	LTR	0.81	23.9	C	LTR	0.36	14.3	B	LTR	0.4	14.8	B
		INTERSECTION			35.7	D			29.7	C			28.5	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.86	46.7	D	T	0.87	48.2	D	T	0.86	45.3	D
			R	0.62	31.4	C	R	0.64	32.8	C	R	0.55	29.1	C
		WB Central Park South	L	1.06	76.9	E	L	1.03	74.3	E	L	1.06	78.2	E
			T	0.6	13.4	B	T	0.99	44.9	D	T	1.02	43.8	D
		SB Central Park Driveway												
			LTR	0.96	52.6	D	LTR	0	29	C	LTR	0	29	C
		INTERSECTION			42.1	D			50.3	D			49.8	D
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.03	76.2	E	LT	0.98	71.6	E	LT	0.93	58.3	E
		WB 23rd Street	TR	1.05	104.2	F	TR	1.05	84.8	F	TR	0.94	76.8	E
		NB 6th Avenue	LT	0.99	40.8	D	LT	1.02	47	D	LT	0.83	23.6	C
			R	0.53	23.3	C	R	0.72	35	C	R	0.53	23.4	C
		INTERSECTION			56.4	E			55.9	E			39.1	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.61	25.9	C	TR	0.76	31.2	C	TR	0.85	36.5	D
		NB 6th Avenue	LT	1.01	43.3	D	LT	0.88	25.9	C	LT	0.85	24	C
		INTERSECTION			40.4	D			27	C			27.3	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.89	29	C	LT	0.85	27.9	C	LT	0.75	31.2	C
		WB 42nd Street	T	0.76	24.9	C	T	0.84	28.2	C	T	1.03	29.3	C
			R	1.14	104.6	F	R	1.11	108.1	F	R	1.22	113.2	F
		NB 6th Avenue	LTR	0.9	25.7	C	LTR	0.63	16.6	B	LT	1.05	54.2	D
											R	0.45	17.5	B
		INTERSECTION			31.4	C			27.8	C			50	D
40	6th Avenue and 57th Street	EB 57th Street	LT	0.99	41.2	D	LT	1.04	54.3	D	LT	1.03	52.1	D
		WB 57th Street	T	0.95	54.4	D	T	0.98	66.7	E	T	0.91	51.1	D
			R	0.78	49	D	R	0.71	50.4	D	R	0.87	56.8	E
		NB 6th Avenue	LT	0.77	22.9	C	LT	0.65	20.2	C	LT	0.66	20.6	C
			R	0.51	23.5	C	R	0.51	22.7	C	R	0.69	35.4	D
		INTERSECTION			35.8	D			41.3	D			36.7	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
41	6th Avenue and Central Park South	EB Central Park South	L	0.71	43.6	D	L	0.73	39.8	D	L	0.95	71.1	E
			T	0.79	25.5	C	T	0.59	14.3	B	T	0.52	10.5	B
		WB Central Park South	TR	0.88	40.4	D	TR	0.81	34.5	C	TR	0.81	32.9	C
		NB 6th Avenue	L	1.05	88.6	F	L	1.05	95.1	F	L	1.07	94.8	F
			LTR	0.94dl	34.8	C	LTR	0.87dr	28.8	C	LTR	1.09	83.8	F
		INTERSECTION			41.5	D			35.7	D			59.9	E
42	5th Avenue and 23rd Street	EB 23rd Street	T	0.79	35.5	D	T	0.73	20.9	C	T	0.75	32.6	C
			R	0.69	40.3	D	R	0.76	35.3	D	R	0.78	56.2	E
		WB 23rd Street	LT	0.39	17.6	B	LT	0.35	17.1	B	LT	0.35	17.1	B
		SB 5th Avenue	TR	0.73	23.7	C	TR	0.73	24	C	TR	0.82	26.9	C
		INTERSECTION			26.6	C			22.4	C			27.6	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.11	78.7	E	T	1.04	52.5	D	T	0.91	22.8	C
			R	1.03	61	E	R	0.83	30.3	C	R	0.66	18.8	B
		WB 57th Street	LT	1.13	100.1	F	LT	0.92	44.1	D	LT	1.02	55.5	E
		SB 5th Avenue	LT	1.1	79.4	E	LT	0.83	25.3	C	LT	0.75	22.1	C
			R	0.37	17.7	B	R	0.41	19.1	B	R	0.55	23.4	C
		INTERSECTION			80.1	F			36.7	D			30.7	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.89	26.9	C	T	0.92	30	C	T	0.42	6.5	A
			R	1.11	101.4	F	R	0.94	65	E	R	0.9	49	D
		SB 5th Avenue	LT	1.09	77	E	LT	0.83	26.5	C	LT	1.06	70.2	E
			R	0.08	14.1	B	R	0.07	14.6	B	R	0.15	17.1	B
		INTERSECTION			66.8	E			31.1	C			55.4	E
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.1	53.9	D	LT	1.04	33.5	C	LT	1.05	42.3	D
		WB 57th Street	T	0.85	34.9	C	T	0.68	27.4	C	T	0.95	50.1	D
			R	0.78	42.4	D	R	0.69	41.8	D	R	0.21	20.1	C
		NB Madison Avenue	LTR	0.78	22.9	C	LTR	0.56	16.9	B	LT	0.97	41.2	D
											R	0.12	14.3	B
		INTERSECTION			35.4	D			26	C			42.9	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.53	16	B	L	0.76	28.8	C	L	0.49	16.5	B
			T	0.77	18.3	B	T	0.8	20.4	C	T	0.79	19.8	B
		INTERSECTION			17.9	B			21.9	C			19.3	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	0.97	58.8	E	TR	1.01	58.1	E	T	0.68	27.1	C
											R	0.5	31.2	C
		WB 36th Street	L	0.82	44.6	D								
		SB 2nd Avenue	L	1.38	208.9	F	L	0.03	11	B	L	0.12	11.3	B
			T	1.41	215	F	T	0.77	20.5	C	T	0.86	22.6	C
		INTERSECTION			164.2	F			34.9	C			23.5	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.61	17.4	B	TR	0.79	23.3	C	TR	0.77	22.9	C
			R	1.36	215	F	R	1.1	115	F	R	1.08	109.8	F
		NB 3rd Avenue	LT	0.78	26.1	C	LT	0.68	23	C	LT	0.59	20.7	C
		INTERSECTION			42.3	D			33.2	C			31.2	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.62	48.9	D	T	0.35	30.1	C	T	0.5	44.1	D
		WB Jackson Avenue	T	0.34	0.8	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.91	44.3	D	T	0.76	31.4	C	T	0.84	35.6	D
			R	1.1	93.9	F	R	1.07	88.4	F	R	1.06	86.7	F
		INTERSECTION			56.7	E			46	D			47	D

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49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.83	17	B	T	0.47	4.4	A	T	1	54.3	D
			R	0.16	1.2	A	R	0.09	0.7	A	R	0.16	1	A
		WB Northern Boulevard	LT	0.61	23	C	LT	0.35	22.7	C	LT	0.91	89.7	F
		NB Queens Plaza S	LTR	1.18	115.5	F	LTR	0.45	13.1	B	LTR	1.17	112.7	F
		SB Queens Plaza S	T	0.56	22.6	C	T	0.37	19.6	B	T	0.9	45	D
		INTERSECTION			62.8	E			14.3	B			81.6	F
50	Tillary Street and Adams Street	EB Tillary Street	TR	0.75	46.8	D	TR	0.7	44.4	D	TR	0.87	58.3	E
		WB Tillary Street	L	0.73	69.6	E	L	1.01	113.7	F	L	1.21	140.8	F
			T	0.8	49.2	D	T	0.8	37.1	D	T	1.41	222.5	F
			R	1.05	68.5	E	R	0.81	39.4	D	R	1.09	70.4	E
		NB Adams Street	T	1.17	130.3	F	T	1.06	93.1	F	T	1.18	128.6	F
		SB Adams Street	L	1.17	135.6	F	L	1.11	117.8	F	L	1.14	124.4	F
			T	0.81	30.9	C	T	0.68	26.9	C	T	1.1	84.8	F
		NB Service Road	TR	1.11	124.1	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			74.3	E			58.9	E			115.5	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.37	34	C	L	0.36	26.9	C	L	0.32	34.2	C
			TR	0.87	40.6	D	TR	0.61	30.4	C	TR	0.88	36.8	D
		WB Tillary Street	L	1.05	88.6	F	L	0.43	45.6	D	L	0.51	31	C
			TR	0.95	62	E	TR	0.63	16.9	B	TR	1.12	89.6	F
		NB Jay Street	L	0.45	40	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	C
			R	0.52	21.3	C	R	0.56	21.7	C	R	0.7	28.6	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.5	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	D
		INTERSECTION			50	D			26.6	C			58.6	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.97	113.3	F	L	0.52	44.2	D	L	0.32	49.4	D
			TR	1.27	149.1	F	TR	1.13	113.6	F	TR	1.25	163.9	F
		WB Tillary Street	L	1.37	221.3	F	L	1.16	138.6	F	L	1.27	177.9	F
			TR	1.15	119	F	TR	1.05	88.2	F	TR	1.18	133.4	F
			R	1.19	149.9	F	R	1.12	128.2	F	R	0.64	48.4	D
		NB Flatbush Avenue	L	1.03	80.7	F	L	0.95	54.9	D	L	1.17	120.4	F
			T	1	59.1	E	T	0.53	27.1	C	T	0.62	29.2	C
			R	1.01	77.8	E	R	1	76.1	E	R	1.02	78.8	E
		SB Flatbush Avenue	T	1.1	100.3	F	T	0.59	40.2	D	T	1.09	92.6	F
			R	0.26	34.3	C	R	0.45	41.8	D	R	0.43	37.8	D
		INTERSECTION			115.4	F			82	F			112.8	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.44	39.6	D	LT	0.24	15.2	B	LT	0.55	29	C
		WB Northern Boulevard	T	0.55	28.1	C	T	0.41	23.6	C	T	0.46	24.1	C
			R	1.07	79.7	E	R	1.1	94.8	F	R	1.14	104.2	F
		SB Queens Plaza N	L	0.99	64.9	E	L	0.98	77.6	E	L	1.09	206.6	F
		INTERSECTION			60	E			66	E			130.4	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.45	0.5	A	LTR	0.62	4.8	A	LTR	0.62	6	A
		WB Northern Boulevard	LTR	0.62	8.9	A	LTR	0.57	7.4	A	LTR	0.63	12.6	B
		INTERSECTION			5	A			6.1	A			9.2	A

Table 15-28: 2015 Future Conditions with the Proposed Action (With Mitigations) - Delay and Level of Service Summary

			AM				MIDDAY				PM			
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1	3rd Avenue and 54th Street	EB 54th Street	L	1.13	135.5	F	L	0.98	97.3	F	L	0.64	48.4	D
			T	0.91	40.5	D	T	0.72	26.2	C	T	0.64	21.6	C
		NB 3rd Avenue	T	0.79	29.2	C	T	0.88	35	D	T	0.68	23.9	C
			R	0.63	37.5	D	R	1.11	138.3	F	R	0.52	30.9	C
		INTERSECTION			41.9	D			44.3	D			25.3	C
2	3rd Avenue and 55th Street	WB 55th Street	T	0.88	51	D	T	0.82	47.5	D	T	0.85	48	D
			R	0.76	43	D	R	0.88	72.6	E	R	0.85	56.7	E
		NB 3rd Avenue	LT	0.87	43.7	D	LT	0.85	14.5	B	LT	0.61	3.5	A
		INTERSECTION			44.6	D			21.5	C			13.9	B
3	3rd Avenue and 56th Street	EB 56th Street	LT	0.91	45.4	D	LT	1.05	84.3	F	LT	0.88	45.2	D
		NB 3rd Avenue	T	1.01	29.2	C	T	1.05	41.5	D	T	0.97	80	E
			R	0.52	8.7	A	R	0.89	40.7	D	R	0.49	10.2	B
		INTERSECTION			31.3	C			48.8	D			70.9	E
4	3rd Avenue and 57th Street	EB 57th Street	LT	1.08	59	E	LT	1.07	42.8	D	LT	1.04	43.6	D
		WB 57th Street	TR	0.92	47.2	D	T	0.59	29.4	C	T	0.47	22.3	C
			R	0.91	57.1	E	R	0.57	34.8	C	R	0.33	22.1	C
		NB 3rd Avenue	LTR	1.14	124.6	F	LTR	1.03	71.4	E	LTR	1.05	73.8	E
			R	0.21	20.8	C	R	0.69	24.4	C	R	1.02	63.7	E
		INTERSECTION			91.8	F			55.9	E			60.1	E
5	3rd Avenue and 58th Street	EB 58th Street	L	0.45	22.5	C								
			T	0.44	21.9	C	LT	1.03	70.2	E	LT	0.8	29.7	C
		NB 3rd Avenue	TR	1.05	60.7	E	TR	1.03	40.4	D	TR	1.04	37.4	D
		INTERSECTION			55.3	E			47	D			35.4	D
6	3rd Avenue and 59th Street	EB 59th Street	LT	0.79	31.3	C	LT	1.02	66.3	E	LT	0.71	25.9	C
		NB 3rd Avenue	T	1.02	62.5	E	T	0.83	45.9	D	T	0.97	30.8	C
			R	0.91	29.6	C	R	1.06	61.6	E	R	1.05	59.2	E
		INTERSECTION			51	D			53.3	D			33.2	C
7	3rd Avenue and 60th Street	WB 60th Street	TR	0.62	22.2	C	T	0.48	20.3	C	TR	0.53	18.5	B
			R	1.08	118.3	F	R	1.07	119	F	R	0.99	88.5	F
		NB 3rd Avenue	LT	1.09	74.2	E	LT	0.84	72.2	E	LT	0.75	4.3	A
		INTERSECTION			68.4	E			68.8	E			16.5	B
8	2nd Avenue and 57th Street	EB 57th Street	TR	0.94	50.4	D	T	1.12	95.4	F	T	1.1	85.2	F
			R	1.12	103.2	F	R	0.86	51.8	D	R	0.46	41.1	D
		WB 57th Street	LT	1.07dl	32.2	C	LT	0.36	20.4	C	LT	0.28	19.9	B
		SB 2nd Avenue	L	0.32	24.9	C	L	0.26	20	C	L	0.2	18.5	B
			T	1.17	111.9	F	T	1.13	93.7	F	T	1.12	86.1	F
			R	0.89	64.2	E	R	0.79	41.5	D	R	1.06	99	F
		INTERSECTION			78.8	E			80.7	F			80.6	F
9	Lexington Avenue and 57th Street	EB 57th Street	T	0.9	38.7	D	T	1.02	61.1	E	T	0.91	37.5	D
			R	0.61	29	C	R	0.5	26.7	C	R	0.42	23.7	C
		WB 57th Street	LT	0.98	39.2	D	LT	0.97	48.7	D	LT	0.92	46.3	D
		SB Lexington Avenue	LT	0.82	25.7	C	LT	1.01	54.6	D	LT	0.81	25.3	C
			R	0.28	17.2	B	R	0.76	39.2	D	R	0.46	22.2	C
		INTERSECTION			32.5	C			52.9	D			32.7	C
10	7th Avenue and and 31st Street	WB 31st Street	LT	0.69	26.8	C	LT	0.67	25.6	C	LT	0.89	34.9	C
		SB 7th Avenue	T	0.66	8.5	A	T	0.61	4.6	A	T	0.69	5	A
			R	0.63	11.8	B	R	0.46	6.5	A	R	0.52	7.3	A
		INTERSECTION			13.6	B			10.7	B			14	B
11	7th Avenue and and 32nd Street	SB 7th Avenue	LT	0.99	19.8	B	LT	0.86	6	A	LT	0.87	7	A
		INTERSECTION			19.8	B			6	A			7	A

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12	7th Avenue and and 33rd Street	WB 33rd Street	L	1.1	130.7	F	L	0.68	47.8	D	L	1.01	104.5	F
			T	0.9	66.1	E	T	0.53	33.6	C	T	0.4	32.3	C
		SB 7th Avenue	TR	0.74	18.2	B	TR	0.73	7.6	A	TR	0.69	8.6	A
			R	1.59	286.5	F	R	1.36	184.4	F	R	1.17	101.6	F
		INTERSECTION			55.7	E			29.7	C			25.8	C
13	7th Avenue and 34th Street	EB 34th Street	T	1.08	77.8	E	T	1.11	107.5	F	T	1.04	87.5	F
			R	0.06	12.9	B	R	0.19	32.8	C	R	0.1	32.6	C
		WB 34th Street	LT	1.18	109.3	F	LT	0.97	19.5	B	LT	0.93	18.8	B
		SB 7th Avenue	LTR	1.13	160	F	LTR	1.08	124.6	F	LTR	1.15	90.3	F
		INTERSECTION			134.4	F			94.9	F			73	E
14	7th Avenue and 35th Street	WB 35th Street	L	1.23	161.4	F	L	0.99	90.3	F	L	0.65	33.7	C
			T	1.44	242.7	F	T	0.79	43.8	D	T	0.71	37.6	D
		SB 7th Avenue	T	1.09	54.2	D	T	1.07	47.2	D	T	0.72	3.5	A
			R	1.62	310.2	F	R	1.25	153.4	F	R	0.68	18.6	B
		INTERSECTION			111.9	F			56	E			11	B
15	7th Avenue and 36th Street	EB 36th Street	TR	0.89	47	D	TR	0.89	48.8	D	TR	0.91	45.5	D
		SB 7th Avenue	LT	0.93	59.2	E	LT	0.91	46.3	D	LT	0.84	9.2	A
		INTERSECTION			56.8	E			46.7	D			18.2	B
16	7th Avenue and 37th Street	WB 37th Street	LT	1.01	65.1	E	LT	0.94	51.9	D	LT	1.04	72.3	E
		SB 7th Avenue	T	0.77	20.3	C	T	0.71	17.5	B	T	0.7	17.7	B
			R	0.76	42.5	D	R	0.56	23.6	C	R	0.63	29.4	C
		INTERSECTION			33.6	C			26.4	C			34.3	C
17	6th Avenue and 34th Street	EB 34th Street	T	1.09	76	E	T	1.05	75.3	E	T	0.93	43.6	D
		WB 34th Street	T	0.77	30.4	C	T	0.95	49.8	D	T	1.01	60.9	E
			R	0.36	28.5	C	R	0.14	22.6	C	R	0.2	24.1	C
		NB 6th Avenue	T	0.98	18.1	B	T	1.08	56.1	E	T	1.17	93.8	F
		INTERSECTION			30	C			57	E			77	E
18	8th Avenue and 34th Street	EB 34th Street	LT	0.91	43.4	D	LT	0.72	27.8	C	LT	0.69	26	C
		WB 34th Street	T	0.45	9.9	A	T	0.5	2.6	A	T	0.5	31.6	C
			R	0.45	10.2	B	R	0.89	20.6	C	R	0.74	40.2	D
		NB 8th Avenue	L	0.65	22.9	C	L	0.62	18.1	B	L	0.87	59.2	E
			T	0.97	27.3	C	T	0.88	15.3	B	T	1.01	68	E
			R	1.1	154.1	F	R	0.69	24.7	C	R	0.98	86.6	F
		INTERSECTION			27.8	C			15.6	B			53.9	D
19	Madison Avenue and 39th Street	WB 39th Street	T	0.83	38.4	D	T	0.88	42.5	D	T	0.89	42	D
			R	1.02	124.7	F	R	1.02	116	F	R	1.01	116.7	F
		NB Madison Avenue	LT	0.95	35.5	D	LT	0.82	24.3	C	LT	0.71	21	C
		INTERSECTION			41.8	D			35.8	D			32.4	C
20	Madison Avenue and 40th Street	EB 40th Street	L	0.74	62	E	L	0.68	54.7	D	L	0.66	54.5	D
			T	0.85	41.9	D	T	0.71	29.9	C	T	0.61	26.6	C
		NB Madison Avenue	TR	1.12	82	F	TR	1.12	75.1	E	TR	0.97	29.7	C
		INTERSECTION			73.6	E			65.9	E			30.7	C
21	Madison Avenue and 41st Street	EB 41st Street	L	0.46	49.5	D	L	0.43	46.1	D	L	0.35	41.3	D
			T	0.4	22.2	C	T	0.25	20.1	C	T	0.22	17.5	B
		NB Madison Avenue	TR	0.99	42.1	D	TR	0.98	36	D	TR	1.04	41.2	D
		INTERSECTION			40.5	D			35.5	D			39.8	D

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22	Madison Avenue and 42nd Street	EB 42nd Street	LT	1.17	128.6	F	LT	0.48	21	C	LT	0.76	34.7	C
		WB 42nd Street	T	1.15	94.8	F	TR	0.92	39.4	D	T	1.06	85.7	F
			R	0.08	18.9	B					R	0.14	19	B
		NB Madison Avenue	LT	1.23	124.4	F	LT	1.15	88.2	F	LT	1.06	55.3	E
			R	0.24	12.7	B	R	0.25	11.6	B	R	0.16	6.8	A
		INTERSECTION			113.1	F			56.3	E			59.6	E
23	Madison Avenue and 43rd Street	WB 43rd Street	T	0.6	30	C	T	0.68	33.3	C	T	0.67	31.1	C
			R	0.96	82.7	F	R	0.85	56.4	E	R	0.9	74.7	E
		NB Madison Avenue	LT	1.02	73.6	E	LT	1.02	53.8	D	LT	0.99	46.4	D
		INTERSECTION			69.3	E			51.1	D			46.4	D
24	Madison Avenue and 44th Street	EB 44th Street	LT	0.85	44.3	D	LT	0.99	71.6	E	LT	0.97	72.4	E
		NB Madison Avenue	TR	1	50.4	D	TR	0.97	41.6	D	T	1.04	49.4	D
											R	0.13	5.3	A
		INTERSECTION			49.3	D			47.8	D			52.6	D
25	Madison Avenue and 45th Street	WB 45th Street	TR	0.93	48.4	D	TR	1.03	70.2	E	TR	0.61	27.7	C
		NB Madison Avenue	LT	1.06	71.9	E	LT	1.1	62.9	E	LT	0.91	21.5	C
		INTERSECTION			65.8	E			65	E			22.8	C
26	5th Avenue and 42nd Street	EB 42nd Street	T	0.82	33.5	C	T	0.73	34.5	C	T	0.62	34.3	C
			R	0.24	24.2	C	R	0.13	24.3	C	R	0.12	25.7	C
		WB 42nd Street	LT	1	41.3	D	LT	0.8	32.8	C	LT	1.19	119.5	F
		SB 5th Avenue	LT	0.93	31.2	C	LT	0.82	22.3	C	LT	1.12	86.4	F
			R	0.12	14.8	B	R	0.05	12.6	B	R	0.08	13.1	B
		INTERSECTION			34.1	C			27	C			86.9	F
27	Vanderbilt Avenue and 42nd Street	EB 42nd Street	T	0.98	55.3	E	T	0.88	25.8	C	T	0.77	10	B
		WB 42nd Street	TR	0.92	22.8	C	TR	0.97	41.1	D	TR	0.92	28	C
		INTERSECTION			38.6	D			33.7	C			20.3	C
28	Park Avenue and 42nd Street	EB 42nd Street	T	0.62	16.6	B	T	0.56	9.7	A	T	0.51	13	B
			R				R				R			
		WB 42nd Street	LT	0.78	24.2	C	T	0.85	25.9	C	T	0.76	26.4	C
		NB Park Avenue	L				L				L			
			R				R				R			
		INTERSECTION			20.7	C			18.8	B			20.4	C
29	8th Avenue and 33rd Street	WB 33rd Street	TR	0.96	27.2	C	TR	1.04	54.8	D	TR	0.97	313.9	F
		NB 8th Avenue	L	1.17	129.4	F	L	1.1	107.1	F	L	1.09	86.9	F
			T	0.87	16.8	B	T	0.84	15.2	B	T	0.94	23.8	C
		INTERSECTION			30.1	C			31.8	C			80	E
30	8th Avenue and 31st Street	WB 31st Street	T	0.68	33	C	T	0.59	30	C	T	0.89	49	D
			R	0.58	31	C	R	0.53	28.6	C	R	0.75	41.5	D
		NB 8th Avenue	L	1.36	214.6	F	L	1.11	120.5	F	L	1.39	239.1	F
			T	0.72	23	C	T	0.7	22.5	C	T	0.84	27.9	C
		INTERSECTION			49.8	D			34.7	C			49.1	D
31	8th Avenue and 41st Street	WB 41st Street	T	0.21	11	B	T	0.3	14.3	B	T	0.41	16.4	B
			R	1.06	88.2	F	R	0.81	44.4	D	R	1.12	118.9	F
		NB 8th Avenue	LT	0.94	40.8	D	LT	0.83	30.1	C	LT	1.12	90.4	F
		INTERSECTION			46.6	D			30.4	C			87.3	F

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32	8th Avenue and 42nd Street	EB 42nd Street	LT	0.93	42	D	LT	0.96	44.4	D	LT	0.6	17.9	B
		WB 42nd Street	TR	0.86	21.4	C	TR	0.79	13.9	B	TR	0.64	7.4	A
		NB 8th Avenue	L	0.09	5.9	A	L	0.47	14.2	B	L	0.08	6.9	A
			LT	1.06	66.1	E	LT	1.05	44.1	D	LT	1.03	51	D
			R	0.75	19	B	R	0.73	25.5	C	R	0.17	6.9	A
		INTERSECTION			51.9	D			38	D			38.2	D
33	8th Avenue and 58th Street	EB 58th Street	LT	0.7	21.3	C	LT	0.9	33.2	C	LT	0.8	22.8	C
		NB 8th Avenue	TR	0.6	17.5	B	TR	0.66	18.6	B	TR	0.72	19.7	B
		INTERSECTION			18.8	B			23.6	C			20.6	C
34	9th Avenue and 58th Street	EB 58th Street	T	0.81	40.3	D	T	0.87	46.7	D	T	1.02	77	E
			R	0.77	49.4	D	R	0.74	45.3	D	R	0.51	33.9	C
		SB 9th Avenue	LT	0.79	18.2	B	LT	0.72	17.5	B	LT	0.65	16	B
		INTERSECTION			24.4	C			25.7	C			30.2	C
35	7th Avenue and 57th Street	EB 57th Street	T	0.86	33.8	C	T	0.79	29.3	C	T	0.78	29.7	C
			R	0.83	44.7	D	R	0.8	44.5	D	R	0.79	44.5	D
		WB 57th Street	LT	1.05	64	E	LT	0.84	31.9	C	LT	0.85	33.8	C
		SB 7th Avenue	LTR	0.84	25.1	C	LTR	0.38	15.7	B	LTR	0.42	15.6	B
		INTERSECTION			38.4	D			27.9	C			27.8	C
36	7th Avenue and Central Park South	EB Central Park South	T	0.89	49.2	D	T	0.9	50.9	D	T	0.92	53.7	D
			R	0.63	32.1	C	R	0.66	33.6	C	R	0.55	28.2	C
		WB Central Park South	L	1.09	83.3	F	L	1.05	79.8	E	L	1.06	74.3	E
			T	0.62	13.4	B	T	1.02	51.4	D	T	1.04	52.1	D
		SB Central Park Driveway												
			LTR	0.99	59	E	LTR	0	29	C	LTR	0	29	C
		INTERSECTION			45.6	D			55	D			54.9	D
37	6th Avenue and 23rd Street	EB 23rd Street	LT	1.06	83.6	F	LT	1.01	76.7	E	LT	0.96	64	E
		WB 23rd Street	TR	1.07	109.7	F	TR	1.06	90.5	F	TR	0.96	80	F
		NB 6th Avenue	LT	1.02	48.9	D	LT	1.05	57.3	E	LT	0.85	24.6	C
			R	0.53	23.6	C	R	0.74	36.5	D	R	0.54	23.8	C
		INTERSECTION			63.6	E			64.2	E			41.3	D
38	6th Avenue and 31st Street	WB 31st Street	TR	0.66	28.9	C	TR	0.77	32	C	TR	0.86	37.4	D
		NB 6th Avenue	LT	0.99	39	D	LT	0.91	27.8	C	LT	0.88	25.3	C
		INTERSECTION			37.3	D			28.7	C			28.4	C
39	6th Avenue and 42nd Street	EB 42nd Street	LT	0.91	29.9	C	LT	0.86	28.8	C	LT	0.77	32.3	C
		WB 42nd Street	T	0.78	25.4	C	T	0.86	29.8	C	T	1.05	36.9	D
			R	1.18	116	F	R	1.14	116.7	F	R	1.25	126.6	F
		NB 6th Avenue	LTR	0.93	28.4	C	LTR	0.65	16.9	B	LT	1.08	67.1	E
											R	0.47	18.2	B
		INTERSECTION			34	C			29.1	C			60	E
40	6th Avenue and 57th Street	EB 57th Street	LT	0.99	39	D	LT	1.03	52	D	LT	1.07	63.7	E
		WB 57th Street	T	0.93	50.8	D	T	0.97	62.4	E	T	0.93	53.5	D
			R	0.77	47	D	R	0.71	49.3	D	R	0.89	60	E
		NB 6th Avenue	LT	0.82	25.1	C	LT	0.69	21.6	C	LT	0.68	21	C
			R	0.54	25.4	C	R	0.54	24.4	C	R	0.7	35.9	D
		INTERSECTION			35.3	D			40.2	D			40.1	D
41	6th Avenue and Central Park South	EB Central Park South	L	0.76	47.8	D	L	0.8	47.5	D	L	1.01	81.4	F
			T	0.81	25.8	C	T	0.6	14.4	B	T	0.53	10.7	B
		WB Central Park South	TR	0.9	42.4	D	TR	0.83	35.9	D	TR	0.82	33.9	C
		NB 6th Avenue	L	1.1	102.2	F	L	1.08	105.4	F	L	1.09	101.3	F
			LTR	0.98dl	38.3	D	LTR	0.89dr	29.9	C	LTR	1.13	99.4	F
		INTERSECTION			45.4	D			38.1	D			67.9	E

Table 15-28: 2015 Future Conditions with the Proposed Action (With Mitigations) - 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	36	D	T	0.75	21.2	C	T	0.77	33.3	C
			R	0.7	40.4	D	R	0.79	36.8	D	R	0.79	56.8	E
		WB 23rd Street	LT	0.4	17.7	B	LT	0.36	17.1	B	LT	0.36	17.2	B
		SB 5th Avenue	TR	0.75	24.5	C	TR	0.76	24.7	C	TR	0.84	27.9	C
		INTERSECTION			27.1	C			22.9	C			28.3	C
43	5th Avenue and 57th Street	EB 57th Street	T	1.14	90.1	F	T	1.06	58.3	E	T	0.9	20.6	C
			R	1.07	73.7	E	R	0.87	34.1	C	R	0.67	18	B
		WB 57th Street	LT	1.17	114	F	LT	0.94	46.9	D	LT	1.01	49.7	D
		SB 5th Avenue	LT	1.11	82.8	F	LT	0.86	26.8	C	LT	0.79	24.1	C
			R	0.38	17.8	B	R	0.41	19.2	B	R	0.57	24.8	C
		INTERSECTION			88.2	F			39.6	D			29.4	C
44	5th Avenue and Central Park South	EB Central Park South	T	0.92	29.1	C	T	0.91	29.1	C	T	0.42	6.9	A
			R	1.15	113.7	F	R	0.92	59.9	E	R	0.92	52.2	D
		SB 5th Avenue	LT	1.1	80	F	LT	0.87	29.9	C	LT	1.09	79.1	E
			R	0.08	14.2	B	R	0.08	15.2	B	R	0.15	17.2	B
		INTERSECTION			70.6	E			32.4	C			62.2	E
45	Madison Avenue and 57th Street	EB 57th Street	LT	1.09	53.6	D	LT	1.06	41.9	D	LT	1.06	48	D
		WB 57th Street	T	0.84	33.5	C	T	0.69	27.8	C	T	0.96	53.2	D
			R	0.78	41	D	R	0.71	42.8	D	R	0.21	20.2	C
		NB Madison Avenue	LTR	0.83	25.3	C	LTR	0.58	17.2	B	LT	1	47.6	D
											R	0.12	14.3	B
		INTERSECTION			35.8	D			29	C			48.2	D
46	1st Avenue and 33rd Street	NB 1st Avenue	L	0.54	16.3	B	L	0.77	29.8	C	L	0.5	16.8	B
			T	0.79	18.7	B	T	0.81	21	C	T	0.8	20.4	C
		INTERSECTION			18.3	B			22.6	C			19.8	B
47	2nd Avenue and 36th Street	EB 36th Street	TR	1.03	73.9	E	TR	1.03	61.8	E	T	0.69	27.2	C
											R	0.51	31.4	C
		WB 36th Street	L	0.79	41.8	D								
		SB 2nd Avenue	L	1.39	213.6	F	L	0.03	11	B	L	0.12	11.3	B
			T	1.43	223.7	F	T	0.79	21	C	T	0.88	23.7	C
		INTERSECTION			171.6	F			36.6	D			24.3	C
48	3rd Avenue and 37th Street	WB 37th Street	TR	0.61	17.4	B	TR	0.79	23.6	C	TR	0.77	23.3	C
			R	1.36	218.2	F	R	1.11	118	F	R	1.09	113.8	F
		NB 3rd Avenue	LT	0.8	26.6	C	LT	0.7	23.3	C	LT	0.61	20.9	C
		INTERSECTION			42.9	D			33.8	C			31.8	C
491	Jackson Avenue and West Service Road (West of Intersection #49)	EB Jackson Avenue	T	0.65	51.1	D	T	0.35	30.1	C	T	0.51	44.3	D
		WB Jackson Avenue	T	0.35	0.9	A	T	0.19	1.3	A	T	0.26	0.2	A
		SB West Service Road	T	0.91	45.2	D	T	0.77	31.7	C	T	0.85	36.2	D
			R	1.11	96.8	F	R	1.08	90.3	F	R	1.07	90.2	F
		INTERSECTION			58.4	E			46.7	D			48.2	D
49	Queens Plaza S and Northern Boulevard	EB Northern Boulevard	T	0.87	21.1	C	T	0.47	4.5	A	T	1.02	58.4	E
			R	0.17	1.2	A	R	0.09	0.7	A	R	0.16	1	A
		WB Northern Boulevard	LT	0.64	24.1	C	LT	0.35	22.7	C	LT	0.92	92.4	F
		NB Queens Plaza S	LTR	1.17	112.2	F	LTR	0.45	13.1	B	LTR	1.19	120	F
		SB Queens Plaza S	T	0.56	22.7	C	T	0.37	19.6	B	T	0.91	46.6	D
		INTERSECTION			62.2	E			14.3	B			86.3	F

Table 15-28: 2015 Future Conditions with the Proposed Action (With Mitigations) - 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	0.7	44.6	D	TR	0.88	59.9	E
		WB Tillary Street	L	0.74	70.4	E	L	1.03	118.2	F	L	1.22	146.9	F
			T	0.81	49.5	D	T	0.8	37.4	D	T	1.42	225.4	F
			R	1.06	71.6	E	R	0.82	39.8	D	R	1.1	74.2	E
		NB Adams Street	T	1.18	132.8	F	T	1.07	96.1	F	T	1.19	135	F
		SB Adams Street	L	1.18	139.6	F	L	1.12	121.6	F	L	1.15	126.6	F
			T	0.82	31.2	C	T	0.69	27.1	C	T	1.11	88.4	F
		NB Service Road	TR	1.12	126.2	F	TR	1.02	97.2	F	TR	0.83	57.1	E
		SB Service Road	TR	0.08	31.8	C	TR	0.06	30.6	C	TR	0.3	33.5	C
		INTERSECTION			75.9	E			60.3	E			119.2	F
51	Tillary Street and Jay Street	EB Tillary Street	L	0.38	34	C	L	0.36	27	C	L	0.34	35.1	D
			TR	0.88	41	D	TR	0.62	30.6	C	TR	0.87	36.4	D
		WB Tillary Street	L	1.05	89.9	F	L	0.43	45.5	D	L	0.55	32.3	C
			TR	0.95	62.2	E	TR	0.63	17	B	TR	1.11	83.1	F
		NB Jay Street	L	0.46	40.1	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	C
			R	0.52	21.3	C	R	0.56	21.8	C	R	0.71	30.4	C
		SB Jay Street	L	0.25	34.3	C	L	0.42	43.1	D	L	0.5	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	0.29	36.2	D
		INTERSECTION			50.4	D			26.7	C			56	E
52	Tillary Street and Flatbush Avenue	EB Tillary Street	L	0.98	115	F	L	0.53	44.4	D	L	0.33	49.5	D
			TR	1.28	153.2	F	TR	1.14	116.2	F	TR	1.26	166.8	F
		WB Tillary Street	L	1.38	223.1	F	L	1.16	141.1	F	L	1.26	176	F
			TR	1.16	124.8	F	TR	1.05	89.7	F	TR	1.19	136.3	F
			R	1.19	146.9	F	R	1.13	130.4	F	R	0.64	48.3	D
		NB Flatbush Avenue	L	1.04	82.5	F	L	0.96	56.8	E	L	1.18	123.3	F
			T	1	60.9	E	T	0.53	27.1	C	T	0.63	29.3	C
			R	1.02	79.4	E	R	1.01	77.1	E	R	1.03	80.7	F
		SB Flatbush Avenue	T	1.11	101.7	F	T	0.59	40.3	D	T	1.1	96.1	F
			R	0.27	34.4	C	R	0.45	41.9	D	R	0.43	37.9	D
		INTERSECTION			117.8	F			83.5	F			114.8	F
53	Queens Plaza N and Northern Boulevard	EB Northern Boulevard	LT	0.45	39.5	D	LT	0.25	15.2	B	LT	0.57	29.5	C
		WB Northern Boulevard	T	0.55	28.1	C	T	0.41	23.6	C	T	0.47	25	C
			R	1.08	82.3	F	R	1.11	97.1	F	R	1.13	100.7	F
		SB Queens Plaza N	L	1	66.9	E	L	0.99	81.8	F	L	1.08	197.5	F
		INTERSECTION			61.6	E			68.3	E			125.4	F
54	41st Avenue and Northern Boulevard	EB Northern Boulevard	LTR	0.45	0.5	A	LTR	0.62	5.1	A	LTR	0.63	6	A
		WB Northern Boulevard	LTR	0.62	9.3	A	LTR	0.57	7.6	A	LTR	0.64	12.9	B
		INTERSECTION			5.1	A			6.3	A			9.3	A

The following intersections have approaches or overall intersection that could not be mitigated with reasonable mitigation measures.

- #1 – Third Avenue and 54th Street (2014 AM/Midday, 2015 AM/Midday)
- #3 - Third Avenue and 56th Street (2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #4 - Third Avenue and 57th Street (2014 Midday, 2015 Midday)
- #5 - Third Avenue and 58th Street (2014 Midday, 2015 Midday)
- #6 - Third Avenue and 59th Street (2015 Midday)
- #7 - Third Avenue and 60th Street (2013 AM/Midday, 2014 AM/Midday, 2015 AM/Midday)
- #8 – Second Avenue and 57th Street (2013 Midday, 2014 AM/Midday, 2015 AM/Midday/PM)
- #9 - Lexington Avenue and 57th Street (2014 Midday, 2015 Midday)
- #12 - Seventh Avenue and 33rd Street (2013 AM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #13 - Seventh Avenue and 34th Street (2013 AM/Midday/PM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #14 - Seventh Avenue and 35th Street (2013 AM, 2014 AM/Midday, 2015 AM/Midday)
- #15 - Seventh Avenue and 36th Street (2014 AM, 2015 AM/Midday)
- #17 - Sixth Avenue and 34th Street (2013 PM, 2014 Midday/PM, 2015 Midday/PM)
- #18 - Eighth Avenue and 34th Street (2014 PM, 2015 PM)
- #20 - Madison Avenue and 40th Street (2014 AM/Midday, 2015 AM/Midday)
- #22 - Madison Avenue and 42nd Street (2013 AM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #23 - Madison Avenue and 43rd Street (2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #24 - Madison Avenue and 44th Street (2014 PM, 2015 AM/Midday/PM)
- #25 - Madison Avenue and 45th Street (2014 AM/Midday, 2015 AM/Midday)
- #26 - Fifth Avenue and 42nd Street (2013 PM, 2014 PM, 2015 PM)
- #27 - Vanderbilt Avenue and 42nd Street (2015 AM)
- #29 - Eighth Avenue and 33rd Street (2013 PM, 2014 Midday/PM, 2015 Midday/PM)
- #30 - Eighth Avenue and 31st Street (2015 PM)
- #31 - Eighth Avenue and 41st Street (2013 PM, 2014 PM, 2015 AM/PM)
- #32 - Eighth Avenue and 42nd Street (2015 AM)

- #36 - Seventh Avenue and Central Park South (2015 AM/Midday/PM)
- #37 - Sixth Avenue and 23rd Street (2014 AM/Midday, 2015 AM/Midday)
- #39 - Sixth Avenue and 42nd Street (2013 PM, 2014 PM, 2015 PM)
- #41 - Sixth Avenue and Central Park South (2013 PM, 2014 Midday/PM, 2015 AM/Midday/PM)
- #43 - Fifth Avenue and 57th Street (2013 AM, 2014 AM, 2015 AM)
- #44 - Fifth Avenue and Central Park South (2013 AM, 2014 AM/PM, 2015 AM/PM)
- #45 - Madison Avenue and 57th Street (2015 PM)
- #47 - Second Avenue and 36th Street (2015 AM)
- #49 - Queens Plaza S and Northern Boulevard (2014 PM, 2015 PM)
- #50 - Tillary Street and Adams Street (2014 PM, 2015 AM/Midday/PM)
- #52 - Tillary Street and Flatbush Avenue (2013 AM/Midday/PM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)

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. Traffic operations at intersections that were unmitigatable or could not be fully mitigated would be monitored by TLC in coordination with NYCDOT in order to improve the traffic conditions and reduce congestion. New York Police Department (NYPD) traffic enforcers would continue to be present at many of these locations and NYCDOT and NYPD would continue to coordinate their efforts to ensure safe and efficient operations at these study locations.

Additionally, NYCDOT has implemented a real-time traffic management system to reduce congestion in midtown Manhattan. The system is called Midtown in Motion and includes 100 microwave sensors, 32 traffic video cameras and E-ZPass readers at 23 intersections to measure traffic volumes, congestion and record vehicle travel times in the approximately 110-square block area bound by Second to Sixth Avenues and 42nd to 57th streets. The combined data is transmitted wirelessly to the City's Traffic Management Center in Long Island City, allowing engineers to quickly identify congestion choke points as they occur and remotely adjust Midtown traffic signal patterns to clear traffic jams (Source: http://www.nyc.gov/portal/site/nycgov/). Midtown in Motion will be able to monitor traffic within Midtown and help reduce adverse impacts associated with the increase in taxi medallions.

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. 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 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.

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

The most recent three years of available NYSDOT accident data for the period January 1, 2008 through December 31, 2010 for the study intersections were obtained from NYCDOT, a summary of which is presented in Table 15-29. 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." An analysis of the data revealed that 25 intersections exceeded the vehicle accident and/or pedestrian/bicycle accident threshold annually. 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 15-29: 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 15-29: 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 developed 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 in 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 16.6.5 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 15-4, there were 25 intersections in the Study Area that would exceed exceeding 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 54^{th} Street
2. Third Avenue and East 56^{th} Street
3. Third Avenue and East 57^{th} Street
4. Third Avenue and East 58^{th} Street

Madison Avenue

5. Madison Avenue and East 42^{nd} Street

Fifth Avenue

6. Fifth Avenue and East 42^{nd} Street

Sixth Avenue

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

Seventh Avenue

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

Eighth Avenue

17. Eighth Avenue and West 31^{st} Street
18. Eighth Avenue and West 34^{th} Street
19. Eighth Avenue and West 42^{nd} 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 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). With 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 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 to ambient air quality would occur as a result of the Proposed Action.

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 for AM, midday and PM peak travel periods.

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:

<u>Carbon Monoxide</u>

The projected number of project-generated vehicles that would pass through the intersections of Seventh Avenue and 34th Street and Madison 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 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 peak travel periods.

<u>Inhalable Fine Particulate Matter</u>

A review of the $PM_{2.5}$ screening criteria indicated that neither the four intersections selected above, nor the remaining 48 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 $\mu g/m^3$	0.15 $\mu g/m^3$
NO_2		
Annual Average	53 ppb	0.053 ppm
1-hour Average[3]	100 ppb	
O_3[4]		
8-Hour Average (2008 std)	0.075 ppm	0.075 ppm
8-Hour Average (1997 std)	0.08 ppm	0.08 ppm
$PM_{2.5}$		
24-Hour Average[5]	35 $\mu g/m^3$	35 $\mu g/m^3$
Annual Average[6]	15 $\mu g/m^3$	15 $\mu g/m^3$
PM_{10}		
24-Hour Average[7]	150 $\mu g/m^3$	150 $\mu g/m^3$
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 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 interim 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 interim significance thresholds of 2 micrograms per cubic meter ($\mu g/m^3$) for 24-hour impacts, 0.3 $\mu g/m^3$ for annual impacts and 0.1 $\mu g/m^3$ for annual neighborhood impacts that had been established by NYCDEP. The following approach was applied to $PM_{2.5}$:

- Per USEPA policy, potential incremental 24-hour and annual impacts for the proposed project were estimated using the same modeling methodologies used for assessing the impacts of the Proposed Action on CO. The incremental impact would be equal to the difference between Future Conditions with the Proposed Action and Future Conditions without the Proposed Action.

- Per NYCDEP policy, 24-hour average $PM_{2.5}$ concentration increments that are predicted to be greater than 5 µg/m^3 at a discrete receptor location would be considered a significant adverse impact on air quality. Per NYCDEP policy, 24-hour average $PM_{2.5}$ concentration increments that are predicted to be greater than 2 µg/m^3 but no greater than 5 µg/m^3 would be considered a significant adverse impact on air quality depending on magnitude, frequency, duration, location and size of the area of the predicted concentrations. The lead agency must consult with NYCDEP to determine the significance of results between 2 µg/m^3 and 5 µg/m^3.

- Per NYCDEP policy, predicted annual average $PM_{2.5}$ concentration increments greater than 0.1 µg/m^3 at ground level on a neighborhood scale would be considered a significant adverse impact on air quality.

- Per NYCDEP policy, predicted annual average $PM_{2.5}$ concentration increments greater than 0.3 µg/m^3 at a discrete or ground level receptor location would be considered a significant adverse impact on air quality.

In addition to the NAAQS and $PM_{2.5}$ interim significance thresholds, "de minimus" 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 minimus levels are:

- An increase of 0.5 ppm or more for the 8-hour period, when baseline CO concentrations are 8.0 ppm or between 8 ppm and 9 ppm; or

- An increase of one-half the difference between the baseline and the standard concentration (9 ppm) for the 8-hour period when baseline CO 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 NYMA reclassified from "moderate" to "serious" nonattainment. Serious nonattainment areas are required to demonstrate attainment within nine years of designation, or June 15, 2013.

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. This petition has not been acted on by the USEPA.

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}, and 24-hour, annual 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. The highest levels predicted at any of these locations were reported as an indication of the maximum levels for the analysis site as a whole.

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), and set back from the corner of each intersection at 11, 22, 44 and 110 meters. 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 and queued approaches (approximately 15-feet from the curb line), and set back from the corner of each intersection at 11, 22, 44 and 110 meters (i.e., at the corner of each intersection and set back at 25, 50 and 75 meters from the corner, as well as at the mid-block location, as appropriate). Additional details regarding dispersion modeling analysis techniques are provided below.

16.2.3.1 Analysis Years

Analyses were conducted for the year 2015, 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 and PM peak hours 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, and PM peak hour traffic volumes;
- 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);
- Signal timing data (cycle length, red time length);
- Number of effective moving lanes and exclusive turn lanes;
- Saturation flow rates (i.e., the maximum amount of vehicular throughput) per lane; and
- Arrival rate at signalized approaches.

For each roadway link, 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 MOBILE6.2 emissions model (dated September 24, 2003) for idling and moving vehicles emissions. NYCDEP MOBILE6.2 default input files, which include taxi-specific emissions data, were used to predict emission factors for non-taxi vehicles. To predict emission factors for taxis, these files were modified, as described below, to account for the age and mileage accumulation distribution of the taxi fleet that is projected to be in place in 2015. 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 <u>Taxi Emissions</u>

As mentioned above, NYCDEP MOBILE6.2 default input file package includes files specific to taxis. These files were modified to account for the age and mileage accumulation distribution of the taxi fleet that would be in place in 2015. For this assessment, conventional taxis were classified as Light Duty Gasoline Vehicles (LDGV) and hybrid taxis were classified as Super Ultra-Low Emissions Vehicles (SULEV). The current NYC taxi fleet contains 13,237 vehicles, consisting of 64% conventional vehicles and 36% hybrid vehicles.

In 2013, the first year in which the ToT would be available, it is assumed that the vehicle would be a conventional vehicle. (During subsequent years (2014 – 2020), it is assumed that the ToT vehicle would be a microhybrid vehicle[2,3]. A microhybrid vehicle is defined by Nissan as a gasoline powered vehicle containing an advanced start-stop system with secondary battery system that can offer up to 10 percent or more reduction in fuel consumption and Carbon

[2] Per the ToT Contract Documents.
[3] A microhybrid vehicle is not a hybrid vehicle.

Dioxide (CO_2) emissions in NYC traffic conditions.) Emissions estimates for use in air quality modeling are not yet available for this vehicle. Lacking these emissions estimates, the ToT vehicle was conservatively modeled as an LDGV.

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 (2012), 800 in Year Two (2013), and 800 in Year Three (2014).

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). Accessible taxi vehicles were modeled as LDGVs.

Vehicle Mileage Accumulation Data

Current TLC safety and emissions inspections data of taxi medallions has determined that, on average, a NYC taxi is driven approximately 70,000 miles per year. Therefore, the total mileage accumulation rate by vehicle age was assumed to be 0.70, since a mileage accumulation rate of 1.0 is defined in MOBILE6.2 as equivalent to 100,000 miles per year.

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 MOBILE6.2 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.

Re-entrained dust was considered for the moving vehicles in the 24-hour and annual $PM_{2.5}$ 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 MOBILE6.2 Emission Factors

The MOBILE6.2 emissions program was used to estimate the emissions for the fleet under Future Conditions without and with the Proposed Action. The vehicle mix was distributed into three categories: non-taxi automobiles, taxis, and heavy trucks. Light-duty trucks and buses were conservatively included in the heavy truck count during data collection. Emissions estimates were completed using emission factors for the following vehicle classifications:

- LDGV - including non-taxi automobiles, conventional and accessible taxis and conventional and accessible ToT vehicles;
- SULEV - hybrid taxis.
- HDGV8A – vehicles other than passenger cars or taxis were classified as heavy-duty gasoline vehicles for the CO analysis (since this is the most conservative CO emission factor for trucks); and
- HDDV8A – vehicles other than passenger cars or taxis were classified as heavy-duty diesel vehicles for the PM_{10} and $PM_{2.5}$ analysis (since this is the most conservative PM emission factor for trucks).

Since the vehicle distribution in the Future Conditions with and without the Proposed Action will be a mix of these vehicle classifications, a weighted average emission factor was calculated by multiplying the vehicle volume by their appropriate emission factor for each vehicle class, summing this and then dividing by the overall vehicle volume.

16.2.3.3.4 Ambient Temperature

Emission estimates were computed using an ambient temperature of 50°F in Manhattan for winter conditions.

16.2.3.3.5 Meteorological Conditions

Concentrations were estimated using five consecutive years of hourly meteorological data from LaGuardia Airport (2007 to 2011).

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). 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	27	35	PS 19 (2009-2011)
	Annual	12	15	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	2,788	40,000	CCNY (2009-2011)
	8-hr	2,024	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. Source: New York State *Ambient Air Quality Report for 2011.*
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.

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 peak hour non-taxi traffic volumes to project future non-taxi background traffic in the year 2015. 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 2015. Any changes to roadway geometry and signal timing/phasing that would be implemented by the year 2015 due to these planned developments were also included in the analysis for Future Conditions without the Proposed Action.

Applicable maximum pollutant concentrations predicted near the four selected intersections are shown in Table 16-3. The results of the analyses were below the applicable state and federal ambient air quality standards.

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.[4] The results of the analyses were below the applicable state and federal ambient air quality standards and CEQR thresholds. Therefore, based on the detailed microscale analysis, no significant adverse impacts to ambient air quality would occur as a result of the Proposed Action.

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[4] 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

Air Quality Receptor Site	$PM_{2.5}$			PM_{10}	CO	
	24-hr $PM_{2.5}$ Pollutant Concentrations (1),(2) µg/m³ (STV: 2 µg/m³)	Annual $PM_{2.5}$ Pollutant Concentrations (1),(2) µg/m³ (STV: 0.3 µg/m³)	Annual Neighborhood $PM_{2.5}$ Pollutant Concentrations (1),(3) µg/m³ (STV: 0.1 µg/m³)	24-hr PM_{10} Pollutant Concentrations (4) µg/m³ (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						
2015 Future Conditions with the Proposed Action	-	-	-	103	9.1	5.2
2015 Future Conditions without the Proposed Action	-	-	-	-	-	3.8
Increment due to the Proposed Action(6)	0.66	0.18	0.06	-	-	1.4
5th Avenue and 42nd Street						
2015 Future Conditions with the Proposed Action	-	-	-	102	8.3	5.0
2015 Future Conditions without the Proposed Action	-	-	-	-	-	3.5
Increment due to the Proposed Action(7)	0.67	0.24	0.07	-	-	1.5
6th Avenue and 23rd Street						
2015 Future Conditions with the Proposed Action	-	-	-	101	8.0	4.9
2015 Future Conditions without the Proposed Action	-	-	-	-	-	3.0
Increment due to the Proposed Action(8)	0.74	0.24	0.06	-	-	1.9
7th Avenue & 34th Street						
2015 Future Conditions with the Proposed Action	-	-	-	98	8.0	4.7
2015 Future Conditions without the Proposed Action	-	-	-	-	-	2.8
Increment due to the Proposed Action(9)	0.61	0.22	0.07	-	-	1.9

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 and annual 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 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 $\mu g/m^3$.

(5) CO 1-hour concentrations are the maximum concentrations estimated plus background concentration of 2.4 ppm. CO 8-hour concentrations are the maximum concentrations estimated plus background concentration of 1.8 ppm.

(6) Third Avenue and 57th Street 24-hr $PM_{2.5}$ Incremental Pollutant Concentration of 0.66 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 7.44 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 6.78 ug/m^3, not including existing ambient pollutant concentrations. Annual $PM_{2.5}$ Incremental Pollutant Concentration of 0.18 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 4.12 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 3.94 ug/m^3, not including existing ambient pollutant concentrations. Annual neighborhood $PM_{2.5}$ Incremental Pollutant Concentration of 0.06 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 0.36 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 0.30 ug/m^3, not including existing ambient pollutant concentrations.

(7) Fifth Avenue and 42nd Street 24-hr $PM_{2.5}$ Incremental Pollutant Concentration of 0.67 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 4.19 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 3.52 ug/m^3, not including existing ambient pollutant concentrations. Annual $PM_{2.5}$ Incremental Pollutant Concentration of 0.24 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 1.55 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 1.31 ug/m^3, not including existing ambient pollutant concentrations. Annual neighborhood $PM_{2.5}$ Incremental Pollutant Concentration of 0.07 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 0.28 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 0.21 ug/m^3, not including existing ambient pollutant concentrations.

(8) Sixth Avenue and 23rd Street 24-hr $PM_{2.5}$ Incremental Pollutant Concentration of 0.74 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 3.48 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 2.74 ug/m^3, not including existing ambient pollutant concentrations. Annual $PM_{2.5}$ Incremental Pollutant Concentration of 0.24 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 3.54 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 3.30 ug/m^3, not including existing ambient pollutant concentrations. Annual neighborhood $PM_{2.5}$ Incremental Pollutant Concentration of 0.06 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 0.33 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 0.27 ug/m^3, not including existing ambient pollutant concentrations.

(9) 24-hr $PM_{2.5}$ Incremental Pollutant Concentration of 0.61 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 8.07 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 7.46 ug/m^3, not including existing ambient pollutant concentrations. Annual $PM_{2.5}$ Incremental Pollutant Concentration of 0.22 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 2.83 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 2.61 ug/m^3, not including existing ambient pollutant concentrations. Annual neighborhood $PM_{2.5}$ Incremental Pollutant Concentration of 0.07 ug/m^3 based on a 2015 Future Conditions with the Proposed Action concentration of 0.16 ug/m^3 and a 2015 Future Conditions without the Proposed Action concentration of 0.09 ug/m^3, not including existing ambient pollutant concentrations.

ppm = parts per million
$\mu g/m^3$ = 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. Also, because the conversion of NO_x to NO_2 in the atmosphere can vary substantially over short distances, a detailed quantitative assessment of the impact of NO_x emissions from the Proposed Action on 1-hour ambient levels of NO_2 would not provide for a meaningful ability to predict exceedances of the one-hour standard. As a consequence, 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 MOBILE6.2 mobile source emission factor model for the following scenarios:

- The existing taxi fleet of 13,237 taxis in 2011;
- Future Conditions without the Proposed Action (taxi fleet of 13,237 taxis) in 2015; and
- Future Conditions with the Proposed Action (taxi fleet of 15,237 taxis) in 2015.

As shown on Table 16-5, the existing taxi fleet of 13,237 vehicles in 2011 is estimated to produce approximately 430 tons of NO_x per year, and the taxi fleet of 13,237 vehicles in the 2015 Future Condition without the Proposed Action is predicted to produce approximately 390 tons of NO_x per year. The reduction in emissions between these two scenarios is due to the lower NO_x emission rate of the 2015 taxi vehicle fleet under Future Conditions without the Proposed Action (0.386 grams per vehicle mile, or 5,110 grams per fleet-mile) compared to the NO_x emission rate of the existing (2011) taxi vehicle fleet (0.417 grams per vehicle mile, or 5,520 grams per fleet-mile). The future fleet of 15,237 vehicles in 2015, based on the Proposed Action, would produce approximately 440 tons of NO_x per year, which is an increase of 50 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),(2)	Fleet NO_x Emissions (tons/year)(3)
2011 Existing Conditions	0.417(4)	13,237	5,520	430
2015 Future Conditions without the Proposed Action	0.386(5)	13,237	5,110	390
2015 Future Conditions with the Proposed Action	0.374(6)	15,237	5,690	440
Change from Existing to Future Conditions without the Proposed Action				**(40)**
Change from Future Conditions without the Proposed Action to Future Conditions with the Proposed Action				**50**

Notes:

(1) Emissions were estimated at 5 mph, which are more conservative since the slower the speed the higher the NO_x emissions.

(2) The grams per fleet-mile represent the total NO_x emissions for each mile the total taxi fleet travels.

(3) Based on information provided by the TLC, which shows that each taxi vehicle travels approximately 70,000 miles per year.

(4) Weighted emission factor for existing conditions is based on an emission factor for conventional and accessible taxis of 0.505 multiplied by the 8,486 conventional and accessible taxis, plus the emission factor for hybrid taxis of 0.26 multiplied by 4,751 hybrid taxis, divided by a total of 13,237 taxis in the existing conditions.

(5) Weighted emission factor for Future Conditions without the Proposed Action based on an emission factor for conventional and accessible taxis of 0.567 multiplied by the 2,441 conventional and accessible taxis, plus the emission factor for hybrid taxis of 0.539 multiplied by 4,049 hybrid taxis, plus the conventional ToT taxi emission factor of 0.229 multiplied by the 6,713 conventional ToT taxis, plus the accessible ToT taxi emission factor of 0.242 multiplied by 34 accessible ToT taxis, divided by the total 13,237 taxis in the Future Conditions without the Proposed Action.

(6) Weighted emission factor for Future Conditions with the Proposed Action based on an emission factor for conventional and accessible taxis of 0.467 multiplied by the 3,939 conventional and accessible taxis, plus the emission factor for hybrid taxis of 0.539 multiplied by 4,049 hybrid taxis, plus the conventional ToT taxi emission factor of 0.229 multiplied by the 6,713 conventional ToT taxis, plus the accessible ToT taxi emission factor of 0.251 multiplied by 536 accessible ToT taxis, divided by the total 15,237 taxis in the Future Conditions with the Proposed Action.

As shown in Table 16-5, NO_x emissions for the entire taxi fleet are expected to increase by approximately two percent[5] between the existing and the 2015 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

[5] Increase of two percent in NO_x emissions for the taxi fleet calculated based on the following calculation: concentration in 2015 Future Conditions with the Proposed Action (440 tons/year) minus existing conditions concentration (430 tons/year) divided by the concentration in the existing conditions (430 tons/year).

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 54 percent[6] 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 13 percent[7], based on the difference between 2015 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. Overall NO_2 emissions from the total motor vehicle fleet in New York City are also expected to decrease as a consequence of the replacement of the existing motor fleet with newer vehicles with lower NO_x emission rates, as required under USEPA emissions standards applicable to new gasoline and diesel-fueled highway vehicles.

16.6 Identification of Significant Adverse Environmental Impacts

As shown in Table 16-3, the results of the detailed microscale analysis were below the applicable state and federal ambient air quality standards and CEQR thresholds for CO, PM_{10} and $PM_{2.5}$. In addition, the Proposed Action is not expected to significantly impact NO_x and NO_2 concentrations in the New York City. Therefore, the proposed addition of 2,000 taxicab medallions would not result in a significant adverse impact to air quality.

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.

[6] Based on the AM Peak volume at the intersection of Fifth Avenue and 42nd Street, which contains the highest percentage of existing taxis out of the four intersections evaluated for air quality.

[7] Increase of less than 13 percent in NO_x emissions for the taxi fleet calculated based on the following calculation: concentration in 2015 Future Conditions with the Proposed Action (440 tons/year) minus concentration in 2015 Future Conditions without the Proposed Action (390 tons/year) divided by the concentration in the 2015 Future Conditions without the Proposed Action (390 tons/year).

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.

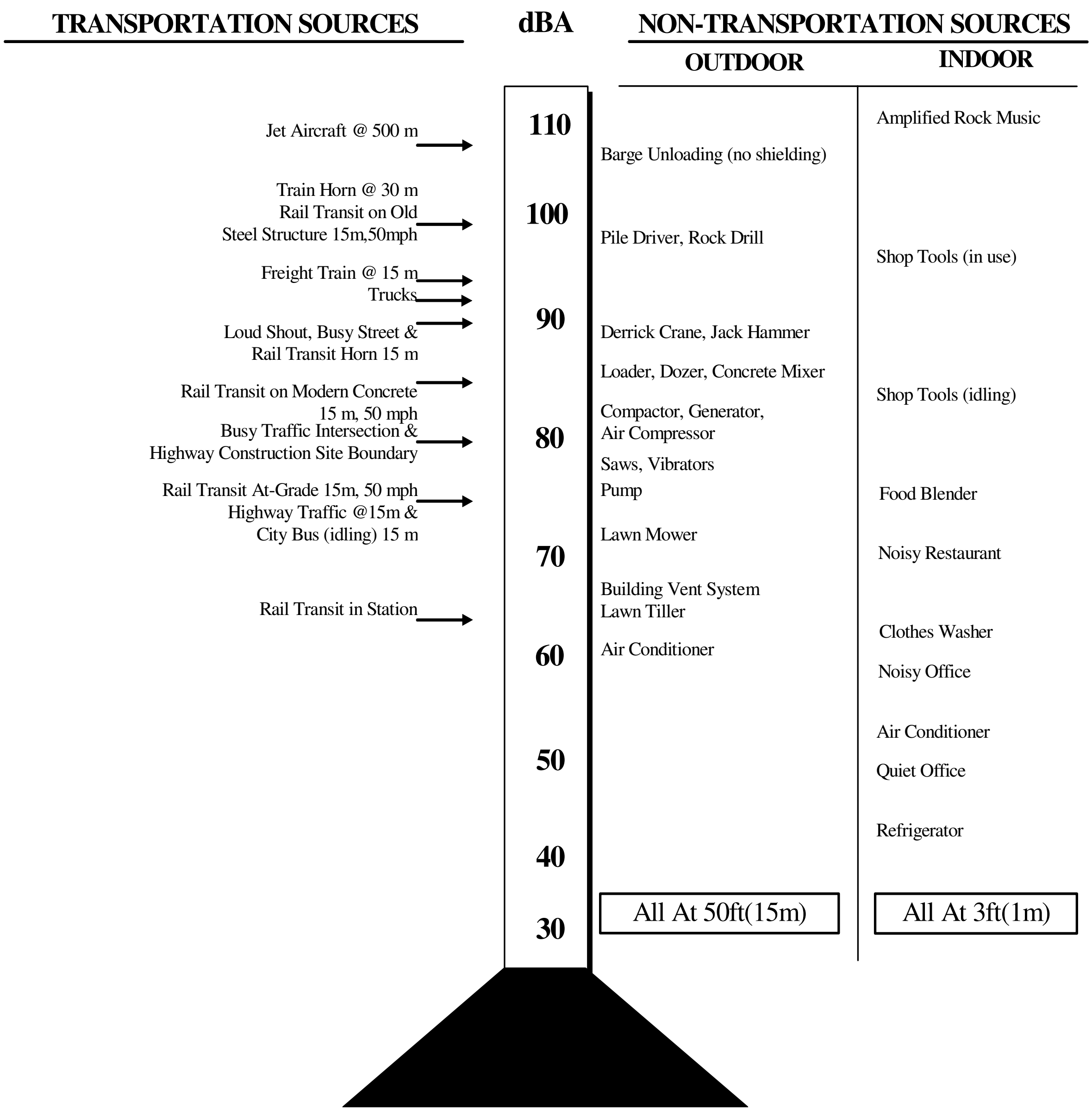
The Proposed Action would introduce vehicular mobile noise sources to the City's roadways through the proposed sale of 2,000 new taxi medallions. Therefore, a noise impact screening assessment was deemed appropriate. Provided below is a brief discussion of general noise characteristics and the results 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, 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, the Proposed Action would not result in a significant averse 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.

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, 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; and noise. Transportation-related significant adverse impacts and related mitigation measures, where applicable, are described in Chapter 15: Transportation. 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, 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; and noise. Traffic-related significant adverse impacts and related mitigation measures, where applicable, are described in Chapter 15: Transportation. However, traffic 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

The purpose of an analysis of alternatives to the proposed project, as set forth in the *2012 CEQR Technical Manual*, is to provide the decision makers with the opportunity to consider practicable alternatives that are consistent with the project's purpose, and that could potentially reduce or eliminate significant adverse environmental impacts identified in the EIS.

Consideration of a No Action Alternative is mandated by SEQRA and CEQR, and is intended to provide the lead and involved agencies with an assessment of the consequences of not selecting the proposed actions. Consistent with these requirements, this chapter examines a No Action Alternative to the Proposed Action. The technical chapters presented in this DEIS have described the No Action Alternative (referred to in previous chapters as "Future Conditions without the Proposed Action") and have used it as the basis to assess the potential impacts and associated mitigation for the Proposed Action.

21.2 No Action Alternative

Under this alternative, the sale of 2,000 additional taxi medallions accessible to persons with disabilities would not be authorized. The No Action Alternative includes 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 replacement of the existing taxi fleet with the ToT beginning 2013 is currently undergoing independent environmental review under CEQR.

2. **Increased Enforcement of TLC Regulations**

   As part of comprehensive strategy, TLC is increasing its enforcement staffing. Since May 2011 TLC has doubled its enforcement staff from 60 to 120. This projected to increase another 25 percent by middle of 2012.

3. Implementation of HAIL Licenses for Livery Vehicles

The TLC approved, on April 19, 2012, the issuance of up to 18,000 HAIL licenses to allow livery vehicles to accepted riders by street hail. Since it is anticipated that the sale of the additional medallions allowed under the Proposed Action will not be completed until 2014, the issuance of the HAIL licenses has been included as a No Action project, and will be in place by the 2015 Analysis Year.

Under the No Action Alternative, as with the Proposed Action, a CEQR analysis for the following environmental categories could be screened out in conformance to the *2012 CEQR Technical Manual*: land use, zoning, and public policy; 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; and noise.

Socioeconomic Conditions

As detailed in Chapter 4: Socioeconomic Conditions, the increasing demand for yellow taxicabs would remain unmet under the No Action Alternative. However, the No Action Alternative would not result in either direct or indirect business or residential displacement, and would not have adverse effects on specific industries. Therefore, the No Action Alternative would not result in a significant adverse impact on socioeconomic conditions.

Transportation

The No Action Alternative itself would not generate new vehicular traffic, but there would be increased volumes from background growth and other proposed projects independent of the Proposed Action. Significant adverse impacts identified in Chapter 15: Transportation would not occur under the No Action Alternative.

Air Quality

As with the Proposed Action, the No Action Alternative would not result in significant adverse impacts on air quality from stationary or mobile sources. Maximum predicted pollutant concentrations would be less than the applicable state and federal ambient air quality standards.

Public Health

The No Action Alternative would not result in potentially adverse impacts on public health since no air quality significant adverse impacts would occur as a result of increases in vehicular traffic, nor would there be significant adverse impacts related to noise, hazardous materials, or water quality.

Neighborhood Character

The No Action Alternative would not result in a significant adverse impact on neighborhood character since there would be no significant adverse impacts on land use, zoning, and public policy; socioeconomic conditions; open space; historic and cultural resources; urban design and visual resources; shadows; transportation; or noise.

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 15: Transportation, the following intersections have approaches or overall intersection that could not be mitigated with reasonable mitigation measures.

- #1 – Third Avenue and 54th Street (2014 AM/Midday, 2015 AM/Midday)
- #3 - Third Avenue and 56th Street (2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #4 - Third Avenue and 57th Street (2014 Midday, 2015 Midday)
- #5 - Third Avenue and 58th Street (2014 Midday, 2015 Midday)
- #6 - Third Avenue and 59th Street (2015 Midday)
- #7 - Third Avenue and 60th Street (2013 AM/Midday, 2014 AM/Midday, 2015 AM/Midday)
- #8 – Second Avenue and 57th Street (2013 Midday, 2014 AM/Midday, 2015 AM/Midday/PM)
- #9 - Lexington Avenue and 57th Street (2014 Midday, 2015 Midday)

- #12 - Seventh Avenue and 33rd Street (2013 AM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #13 - Seventh Avenue and 34th Street (2013 AM/Midday/PM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #14 - Seventh Avenue and 35th Street (2013 AM, 2014 AM/Midday, 2015 AM/Midday)
- #15 - Seventh Avenue and 36th Street (2014 AM, 2015 AM/Midday)
- #17 - Sixth Avenue and 34th Street (2013 PM, 2014 Midday/PM, 2015 Midday/PM)
- #18 - Eighth Avenue and 34th Street (2014 PM, 2015 PM)
- #20 - Madison Avenue and 40th Street (2014 AM/Midday, 2015 AM/Midday)
- #22 - Madison Avenue and 42nd Street (2013 AM, 2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #23 - Madison Avenue and 43rd Street (2014 AM/Midday/PM, 2015 AM/Midday/PM)
- #24 - Madison Avenue and 44th Street (2014 PM, 2015 AM/Midday/PM)
- #25 - Madison Avenue and 45th Street (2014 AM/Midday, 2015 AM/Midday)
- #26 - Fifth Avenue and 42nd Street (2013 PM, 2014 PM, 2015 PM)
- #27 - Vanderbilt Avenue and 42nd Street (2015 AM)
- #29 - Eighth Avenue and 33rd Street (2013 PM, 2014 Midday/PM, 2015 Midday/PM)
- #30 - Eighth Avenue and 31st Street (2015 PM)
- #31 - Eighth Avenue and 41st Street (2013 PM, 2014 PM, 2015 AM/PM)
- #32 - Eighth Avenue and 42nd Street (2015 AM)
- #36 - Seventh Avenue and Central Park South (2015 AM/Midday/PM)
- #37 - Sixth Avenue and 23rd Street (2014 AM/Midday, 2015 AM/Midday)
- #39 - Sixth Avenue and 42nd Street (2013 PM, 2014 PM, 2015 PM)
- #41 - Sixth Avenue and Central Park South (2013 PM, 2014 Midday/PM, 2015 AM/Midday/PM)
- #43 - Fifth Avenue and 57th Street (2013 AM, 2014 AM, 2015 AM)
- #44 - Fifth Avenue and Central Park South (2013 AM, 2014 AM/PM, 2015 AM/PM)
- #45 - Madison Avenue and 57th Street (2015 PM)
- #47 - Second Avenue and 36th Street (2015 AM)
- #49 - Queens Plaza S and Northern Boulevard (2014 PM, 2015 PM)
- #50 - Tillary Street and Adams Street (2014 PM, 2015 AM/Midday/PM)
- #52 - Tillary Street and Flatbush Avenue (2013 AM/Midday/PM, 2014 AM/Midday/PM, 2015 AM/Midday/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

+1 212 676 1003 tel
+1 212 676 1100 fax

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

33 Beaver Street, 22nd floor
New York, NY 10004

+1 212 676 1003 tel
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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
- ☐ FUNDING OF CONSTRUCTION; SPECIFY:
- ☐ POLICY OR PLAN; SPECIFY:
- ☐ LANDMARKS PRESERVATION COMMISSION APPROVAL *(not subject to CEQR)*
- ☐ 384(b)(4) APPROVAL
- ☐ PERMITS FROM DOT'S OFFICE OF CONSTRUCTION MITIGATION AND COORDINATION (OCMC) *(not subject to CEQR)*
- ☐ RULEMAKING
- ☐ CONSTRUCTION OF PUBLIC FACILITIES
- ☐ FUNDING OF PROGRAMS; SPECIFY:
- ☐ PERMITS; SPECIFY:
- ☑ OTHER; EXPLAIN Discretionary action by TLC of the issuance/public sale

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:

LEAD AGENCY REPRESENTATIVE NAME: Conan Freud, Deputy Commissioner for Finance and Administration

SIGNATURE: Conan Freud

DATE: 3-9-12

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

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:

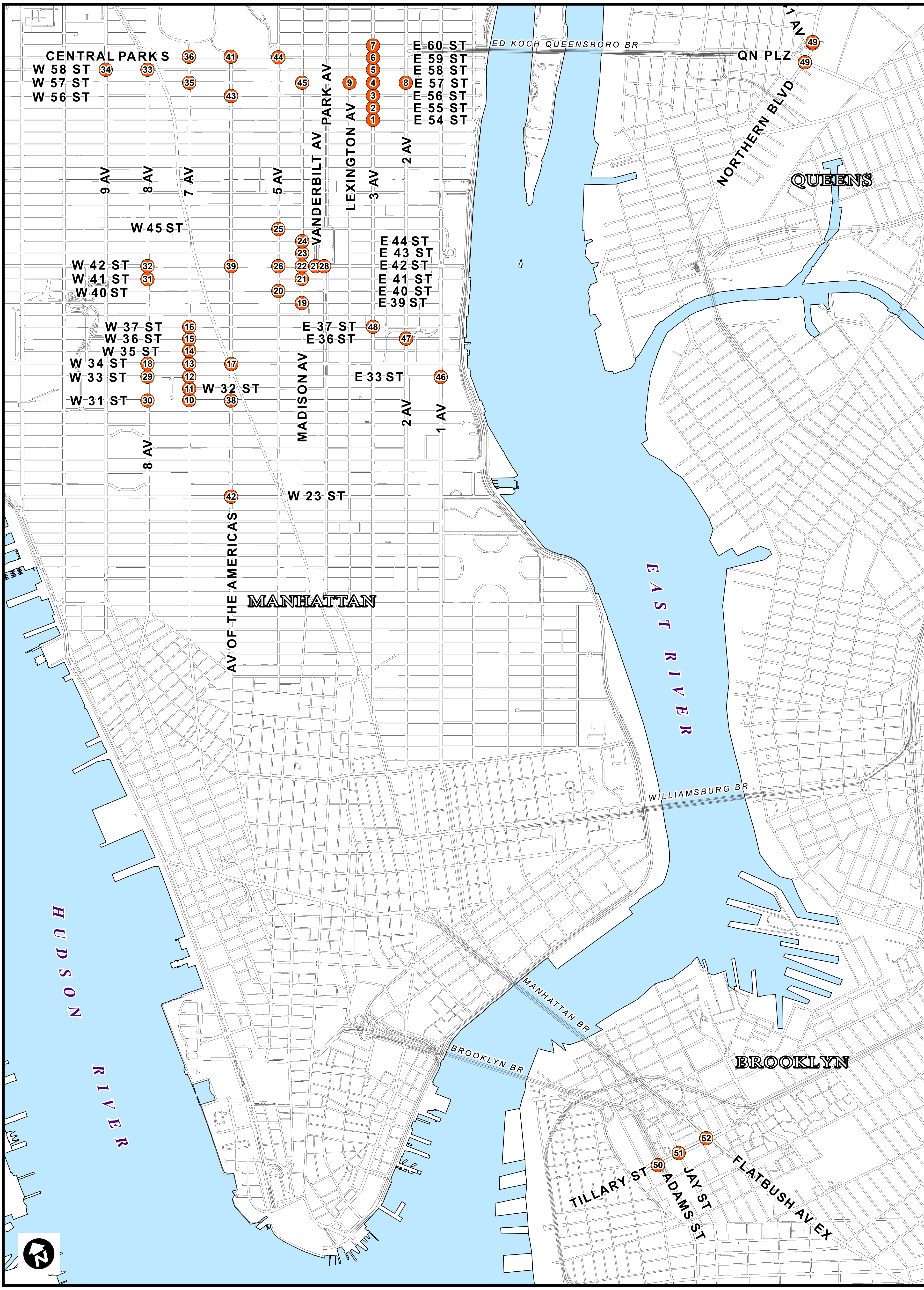
- Major origins/destinations (i.e., Penn Station, Grand Central Terminal, PA Bus Terminal, etc.);
- Next to the area with greatest concentration of taxi pick-up/drop-off volumes;
- High percentage of taxi cabs in baseline traffic;
- Taxi stands; and
- Portals (Brooklyn, Manhattan and Queens Borough Bridges)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

0 1,000 2,000 Feet

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.

[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 2,0000 ADDITIONAL MEDALLIONS

ONE COMPANY *Many Solutions*℠			Memo
To:	Dawn Miller, Justine Johnson, Richard Johns, Conan Freud		
From:	Talha Muhammad, May Raad	Project:	
CC:	Elena Barnett, James Brown, HDR		
Date:	May 18th, 2012	Job No:	
Technical Memorandum on Socioeconomic Impacts of 2,000 Additional Medallions			

1. INTRODUCTION

The Taxi and Limousine Commissions (TLC) proposes to sell up to 2,000 taxicab licenses (medallions) (Proposed Action). 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 in 2012. Medallions would be sold at a public auction according to the following schedule: 400 in 2012, 800 in 2013, and 800 in 2014.

This document discusses and details the approach and findings of an assessment of the expected impacts on socioeconomic conditions due to the sale of 2,000 additional medallions. Section 2 describes the impacts that were studied as part of this analysis. Section 3 summarizes the approach that was applied to quantify the socioeconomic impacts due to the sale of additional medallions. Section 4 discusses key assumptions that were made in completing the analysis. Section 5 discusses the results of the analysis. Section 6 discusses additional technical details and presents coefficient estimates (statistical level of precision) from the regression based analysis used to assess impacts.

2. SOCIOECONOMIC IMPACTS DUE TO ADDITIONAL MEDALLIONS

The socioeconomic conditions impacts assessed the impact of the additional medallions on the:

- Value of the medallion;
- Income of a taxi driver;
- Overall New York City economy; and
- Mode share of taxicab trips.

An assessment of the impact of the increase in the number of medallions on the livery industry is documented in a separate memorandum prepared by Appleseed Inc., Economic Development Consultants.

The primary impacts on the value of additional medallions arise because the additional new medallions would result in an increased level of competition for taxi ridership with existing medallion holders. As described below, the impact of the Proposed Action on taxi ridership and revenue trips was quantified based on an assessment of the observed effect of the most recent prior increase in the number of medallions on their value.

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. 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). Revenues could thus decline for drivers (holding all other factors constant). In full (equilibrium) lease rates would change to adjust to a lower level due to decline in fare revenues, however, it is also possible that lease rates, which are currently capped by the TLC at $800 per week for a conventional medallion only lease and $842 per week for a hybrid medallion only lease would remain unchanged. Both scenarios for costs are quantified and impacts on driver income are calculated as part of our analysis. In actuality, demand for taxis is likely to increase over time due to growth employment and visitation to New York City. The analysis takes into account increases in taxi trips due to increases in employment in New York City.

The additional medallions would provide employment to additional taxi drivers and result in additional economic benefits to New York City. An assessment of these effects is included in a separate analysis of the impact of the Proposed Action on the New York City economy.

The improved availability of taxis in New York City due to the increase in the supply of taxis would likely cause people to shift from other modes to taxis. These impacts are evaluated in a modal diversion analysis based on application of travel mode algorithms included in the most recent version of the New York Metropolitan Transportation Council Regional Best Practices Mode.

Finally, taxi fare increases are considered as a measure to mitigate the effects of the Proposed Action on the decline in value of the taxi medallion and loss of income of taxi drivers.

3. SUMMARY METHODOLOGY

This section discusses the methodologies used to assess the impact of the Proposed Action on socioeconomic conditions, as defined in the *2012 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.

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 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 methodologies used to assess each of these impacts are detailed in the following discussion. As indicated previously, the impact of the Proposed Action on liveries is assessed in a separate technical memorandum prepared by Appleseed, Inc.

3.1 Impacts on the value of the medallion

The approach used to quantify the impact of the 2,000 additional medallions consisted of three steps as outlined below:

- 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.
- Revenue trips per mile driven were input into a financial model that translated the impact of the reduction in revenue trips per mile driven into an impact on the financial value of a medallion.
- In full equilibrium as revenues decline for drivers (due to estimated impacts on revenue trips) they may be less willing to pay the maximum lease cap, and some decline in the equilibrium lease rate is possible. Our analysis incorporates this scenario where equilibrium lease rates decline due to the impact on driver revenues[1].

[1] 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.

The effects on revenue are estimated and quantified based on historical data of taximeter inspections from the TLC for the period June 2004 to December 2011. During that period, 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). Additionally, 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 predict the impact on revenue trips per mile due to an increase in the number of medallions, taking into account changes in fares, economic activity and seasonality factors. The model applies the following functional form:

$$Revenue\ Trips\ Per\ Mile = f(Economic\ \ Activity, Fare, Total\ Medallions, Seasonality\ )$$

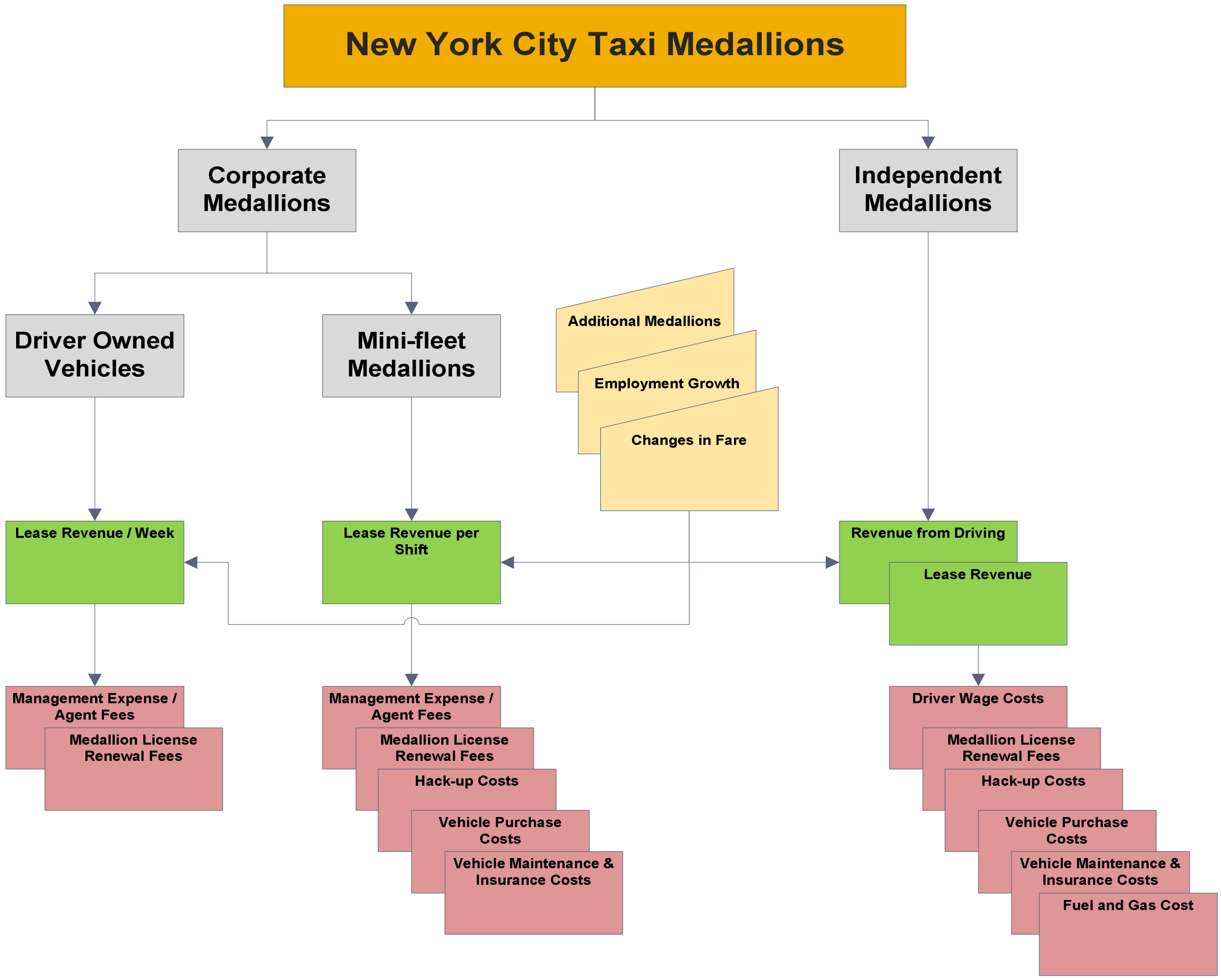
The above model estimates how revenue trips per mile driven have been affected by the introduction of additional medallion over the historical analysis period. The model yields an estimate of the degree to which a change in the number of medallions would affect the number of revenue trips per taxi and the consequently the value of the medallion, holding all other variables (such as economic conditions and taxi fares) constant. This process is used to identify the "elasticity" of the value of a medallion to the change in the supply of medallion. Using an estimate on the average annual miles travelled by each taxi, estimates of impacts on revenue trips per mile are translated to revenue trips per taxi. Since the value of a medallion is a function of the anticipated net stream of revenues that would accrue through ownership of a medallion, the change in the value of a medallion is estimated as follows:

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

As indicated in this formula, 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 individual medallions and corporate (i.e, mini fleet) medallions. Figure 1 depicts the structure and logic diagram of the different ownership structures of taxi medallions and how they were reflected in the medallion valuation analysis.

Figure 1: Structure and Logic Diagram for Medallion Valuation[2]



The impact of the Proposed Action on the values of corporate and independent medallions was estimated in two steps:

- An assessment of the impact of the Proposed Action on the number of revenue trips, based on an estimation ("regression analysis") of the change in the number of revenue trips per mile that occurred as a consequence of the increase in the number of medallions during 2003-2006 period, controlling for the effects of changes in taxi fares and the fares of competing modes. The regression analysis was completed for the period June 2004 thru December 2011, and compared the number of revenue trips that occurred before, during and after the period during which the number of medallions increased approximately 6.0% from 12,487 medallions to the current level of 13,237 medallions.

[2] For presentation purposes vehicle depreciation expense, medallion asset amortization, salvage revenues from old vehicles and taxes are not shown in the figure above but are included in the calculation. Some independent medallions are operated as fleets or driver-owned vehicles (those without owner must drive requirement).

- Based on the projected change in the number of revenue trips that would occur with the increase in the number of medallions allowed under the Proposed Action, a financial model was developed to estimate the change in the value of corporate and independent medallions. This assessment included, where applicable, 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 medallion amortization.

The analysis incorporated the effects of:

- Implementation in 2006 of a flat fare of $45 between Manhattan and John F. Kennedy International Airport (JFK),
- Increase in November 2006 of the fare for time spent in traffic,
- Medallion lease arrangements as permitted by the TLC,
- Vehicle costs, including the costs of taxi maintenance, insurance and fuel, and
- Taxi driver wages.

Since the replacement of the existing taxi fleet by the Taxi or Tomorrow (ToT) will be underway during the period in which the additional medallions will be sold at auction, the analysis incorporated the effects of this separate initiative by the TLC.

Mini-fleet medallion holders generally own and lease the taxi vehicle 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 $105 per shift to $129 per shift) and pay for gasoline out of their fare income. In completing this analysis, it was assumed that corporate medallions operate either as mini-fleet medallions or as driver owned vehicles[3]. Driver owned vehicles lease the medallion only from the medallion owner on a weekly basis. Typically agents manage medallions on behalf of the owner[4]. Most independent medallion owners own the medallion as well as the vehicle and pay for vehicle operating costs. Many Independent medallion owners are required to personally drive a minimum of 180 (9 hour shifts) a year. Many lease their medallion for a second shift to other drivers.

The financial valuation explicitly values and evaluates impacts on the three ownership structures (independent, mini-fleet and driver owned vehicles) of medallions described above since the economics of each differ. The analysis assumes different discount rates (which reflect the cost of financing and the opportunity cost of capital) for corporate medallions owners and independent medallion owners. 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

[3] This is a simplifying assumption, TLC estimates that about a third of medallions are operated as owner-drivers, a third operate as fleets and another third are operated as driver-owned vehicles. About 58% of all medallions are classified as corporate and half those are assumed to operate as driver-owned vehicles in our analysis which is close to the TLC estimates.

[4] For simplicity we assume 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.

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. Assumptions used to quantify the valuation are discussed in further detail in Section 4 of this memorandum.

3.2 Impacts on Taxi Driver Income

Estimated impacts on revenue trips due to the additional medallions are likely to most directly impact taxi drivers. Using assumptions on the average number of revenue trips per shift and regression based analysis to quantify the impact on revenue trips per mile due to medallion sales the impact on driver revenues per shift are quantified for the year 2015. Fuel costs and lease costs are likely to remain relatively fixed but are quantified using assumptions presented Section 4 of this memorandum. Since there is no basis to anticipate that there would be a change in the length of a revenue trip with the Proposed Action, it was assumed that the average length of trip in the future (2015) with the Proposed Action would be the same as the average existing (2011) length of a revenue trip.

3.3 Impacts on the Overall New York City Economy

Impacts on the economy (primarily increases in employment) due to the sale of additional 2,000 medallions are quantified using 2007 input-output multipliers for New York City taxi service from RIMS II, the input-output model developed by the Bureau of Economic Analysis[5]. Important assumptions used to quantify these impacts are shown in Section 4, and the results of the analysis are presented in Section 5 of this memorandum. Additional technical discussions on input – output multipliers are presented in Section 6 of this memorandum.

3.4 Impacts on Mode Share

It is anticipated that there will be a diversion of taxi riders from other modes as a result of the increased availability of taxis that would occur with the additional medallions. This modal shift was assessed using the mode choice model included in the New York Best Practices Model (NYBPM)[6].

The NYBPM's mode choice model contains parameters which allow for the assessment of the response of users to changing travel characteristics between modes. In particular, the mode choice model contains parameter estimates for the mode share of taxis. For this analysis, simulations using parameters from the mode choice model were conducted "out of model" and in a spreadsheet environment to estimate the effect of changing wait times for users on taxi ridership. The expected impacts projected in this analysis are illustrative and do not take into account additional travel time due to increased congestion as a result of the additional taxi medallions.

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[5] Bureau of Economic Analysis 2007 RIMS II Multipliers for New York City for the Transit and Ground Passenger Transportation Industry

[6] (www.nymtc.org/project/bpm/bpmindex.html)

Simulations were developed for the average increase in mode share of different journey types using the mode choice model developed and estimated in NYBPM[7]. Impacts on current taxi mode share in Manhattan were estimated for a 15% decreases in wait time, using estimates of wait-time based on survey data. Estimates of changes in mode share for the three different categories of trips, journey to work (commuting), discretionary journeys (such as entertainment, sport, visiting friends and relatives, eating out) as well as maintenance journeys (such shopping, visiting doctor, banking) were estimated. The change in total daily taxi trips was quantified using survey data on actual taxi trip purpose and the projected increases taxicab mode share due to estimated changes in taxicab wait-time.

The modal shift analysis was used separately to understand the magnitude of expected changes in taxicab mode share due to changes in wait-times for taxicab customers. Impacts estimated through the regression analysis implicitly include estimates of changes in mode share since historical sales of medallions would have increased taxi availability and reduced wait-times caused some changes in taxicab mode share. Thus, the regression based analysis implicitly accounts for observed changes in wait-time. As such impacts of changes in mode share were not explicitly (i.e. in addition to the impacts found in the regression analysis) included in the analysis on the value of the medallion and the impacts on taxi driver income.

3.5 Mitigation of Economic Impacts of the Increase in Number of Medallions Through Increased Taxi Fares

The impact on the value of the medallion and driver income could be mitigated by increases in fare. As described in subsection 3.1 of this memorandum, a regression based analysis was used to quantify the impact on revenue trips of the proposed increase in the number of medallions. That analysis also quantified the impacts of fare changes on revenue trips. Although an increase in fare would reduce the total number of revenue trips (more expensive fares will reduce demand holding all other factors constant), it would also result in a net increase in overall revenues (since the increase in fare per trip would be enough to offset any decreases in the number of total trips). These estimates were then input into the financial analysis of medallion valuation and the impact of fare increases on medallion valuation was incorporated. As part of this analysis the impact on the taxi driver due to additional revenue was also quantified, and the impact of fare increases on taxi driver incomes was quantified.

4. ASSUMPTIONS

Important assumptions are presented below for quantifying impacts on the financial value of the medallions each step of the analysis as described above.

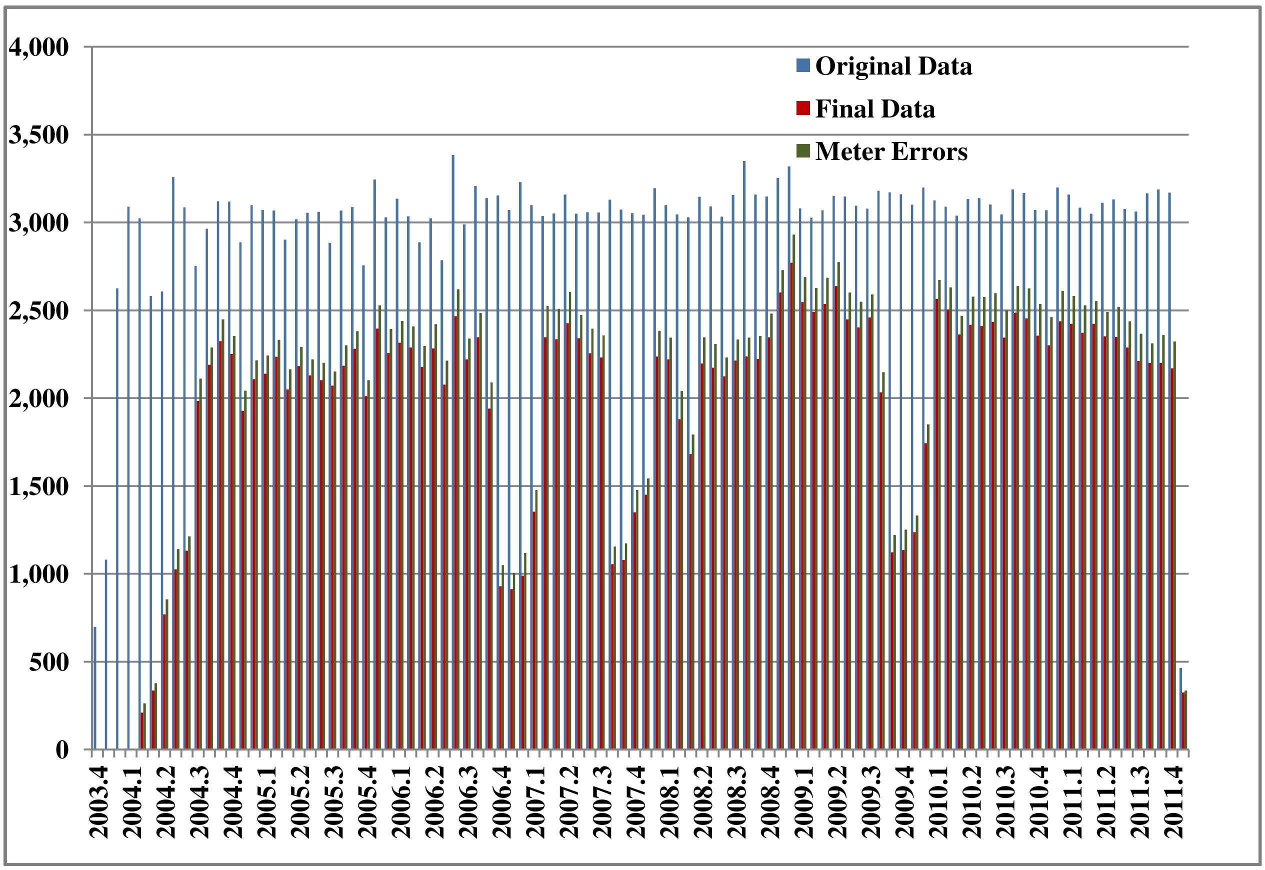
[7] Transportation Models and Data Initiative: General Final Report New York Best Practice Model (NYBPM) 2005.

4.1 Assumptions Applied in the Quantification of Impacts of Additional Medallions on Revenue Trips

a) Dataset preparation and cleaning

Assumptions made in assessing the impact on revenue trips per mile due to additional medallions consisted primarily of the elimination of outliers for observed revenue miles. Figure 2 shows the data observations by month for the taximeter inspection data provided by the TLC. Overall, the original dataset consisted of 294,477 data observations.

Figure 2: Observations by Month for Miles and Meter Trip Data



Source: HDR Analysis of TLC Taximeter Data 2004 - 2011

The data consisted of mileage observations from taxi odometers and taxi meters. In order to conduct the analysis we were interested in the *changes in miles, changes in meter trips* and *changes in meter units* between two consecutive inspections for all taxi medallions. These changes were calculated for each taxi medallion between two consecutive periods. Observations on *changes in miles, changes in meter trips* and *changes in meter units* need to be checked for validity when:

- A taxi vehicle has been hacked-up 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

- A taxi meter has to be restarted due to repairs and hence changes in meter units and meter trips do not accurately the changes in miles traveled and meter trips in between inspections

Calculating changes in miles and meter trips between two consecutive inspections results in the first observation on miles and meter trips being removed from the dataset. Additionally if changes in miles, changes in meter trips or meter units were negative (i.e. a taxi had been hacked-up or replaced or the meter was repaired) these observations were removed from the analysis. These changes reduced the sample size by 31% to 203,432 observations.

In addition, the following assumptions were used in completing 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)[8].

- 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 (only 177 observations) these were eliminated from the data set[9].

- Based on the one day TPEP trip data (March 22, 2011) provided by the TLC the following assumptions were made[10]:

  - If average miles travelled per day[11] (for an individual taxi) were greater than 700 miles per day these observations were eliminated from the dataset[12]

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[8] 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.

[9] Most taxicabs are inspected 3 times a year or once in every four months

[10] This was necessary since (for a few observations) miles and trip changes were unrealistically large. These were likely to bias the results.

[11] This was calculated as the change in miles between two consecutive inspections divided by the number of days between the two inspection days

[12] The maximum 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% utilization. Assuming the same percentage held for the ratio of revenue miles to total miles, results in 634 miles for the maximum taxi. A conservative cutoff of 700 miles per day was used to eliminate any other outliers.

- If average trips per day (for an individual taxi) were greater than 100 trips per day, then these observations were eliminated from the dataset[13]

All these additional assumptions reduced the size of the dataset to 191,545 observations.

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.

b) 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 of observations for the different medallion types (independent or mini-fleet) were not representative of their proportions in the sample. In other words, for certain months in the *cleaned* dataset the number of mini-fleet observations formed a majority of the dataset while in others the number of independents medallions formed a majority of the dataset.

These changes in the number of usable observations 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.

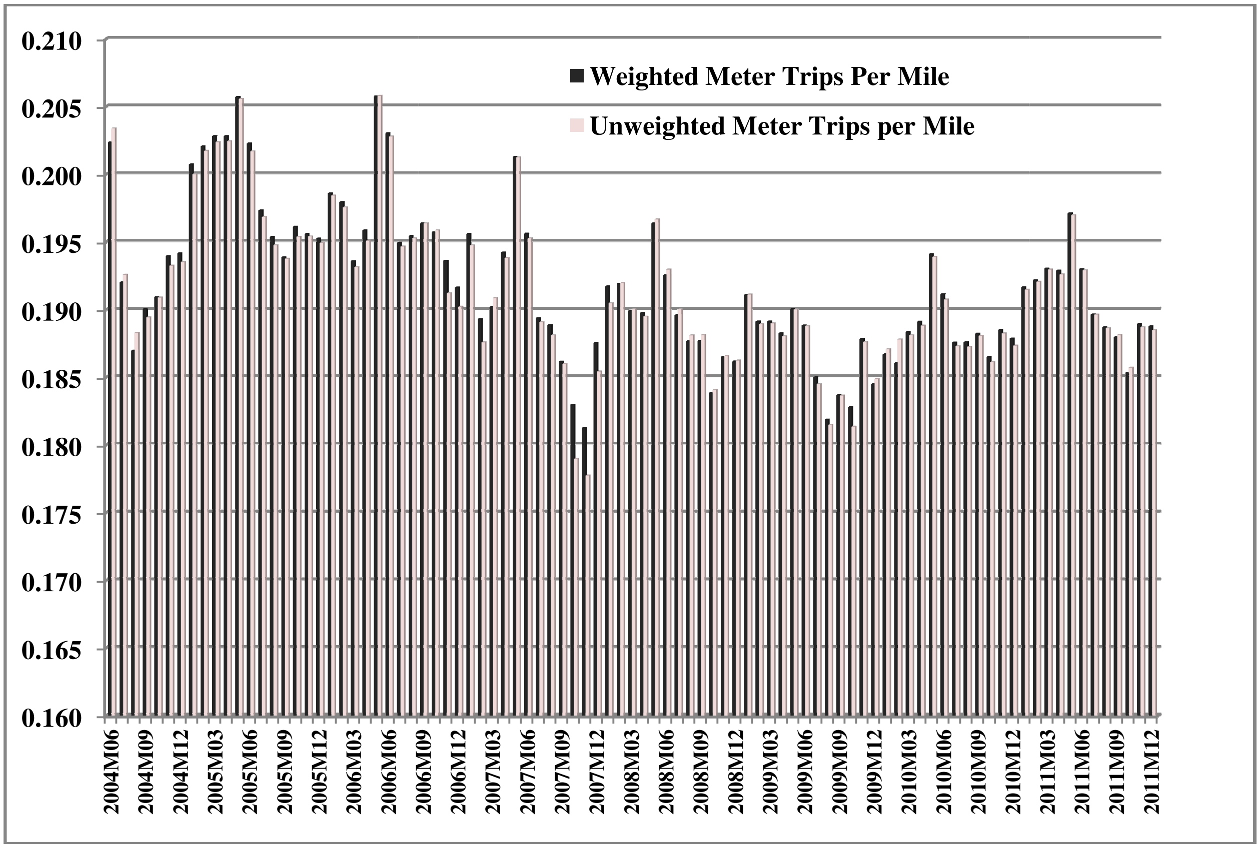
To correct for this under-sampling, the dataset was weighted to reflect their true sample populations. A similar technique was used by Schaller 1999 to account for the more frequent replacement of mini-fleet vehicles[14]. For example, in October 2007 a large proportion of mini-fleet medallions were either hacked-up or had meter repairs and therefore yielded only 441 usable observations from 1892 taxi-meter inspections (of mini-fleet) medallions that were recorded during that month. To account for this each mini-fleet record for October 2007 was given a weight of 4.3 (1,892 divided by 441). A similar weighting procedure was conducted for independent medallions.

Error! Not a valid bookmark self-reference. shows the weighted and un-weighted revenue trips per mile. As can be seen from the data the weighted dataset is very consistent with the unweighted dataset but does correct for those periods (for example Fall 2007) where a large number of vehicles were hacked-up or their meters were repaired.

13 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.

14 *Transportation* 26:283-297 “Elasticities for taxicab fares and service availability”

Figure 3: Weighted and Un-weighted Meter Trips per Mile

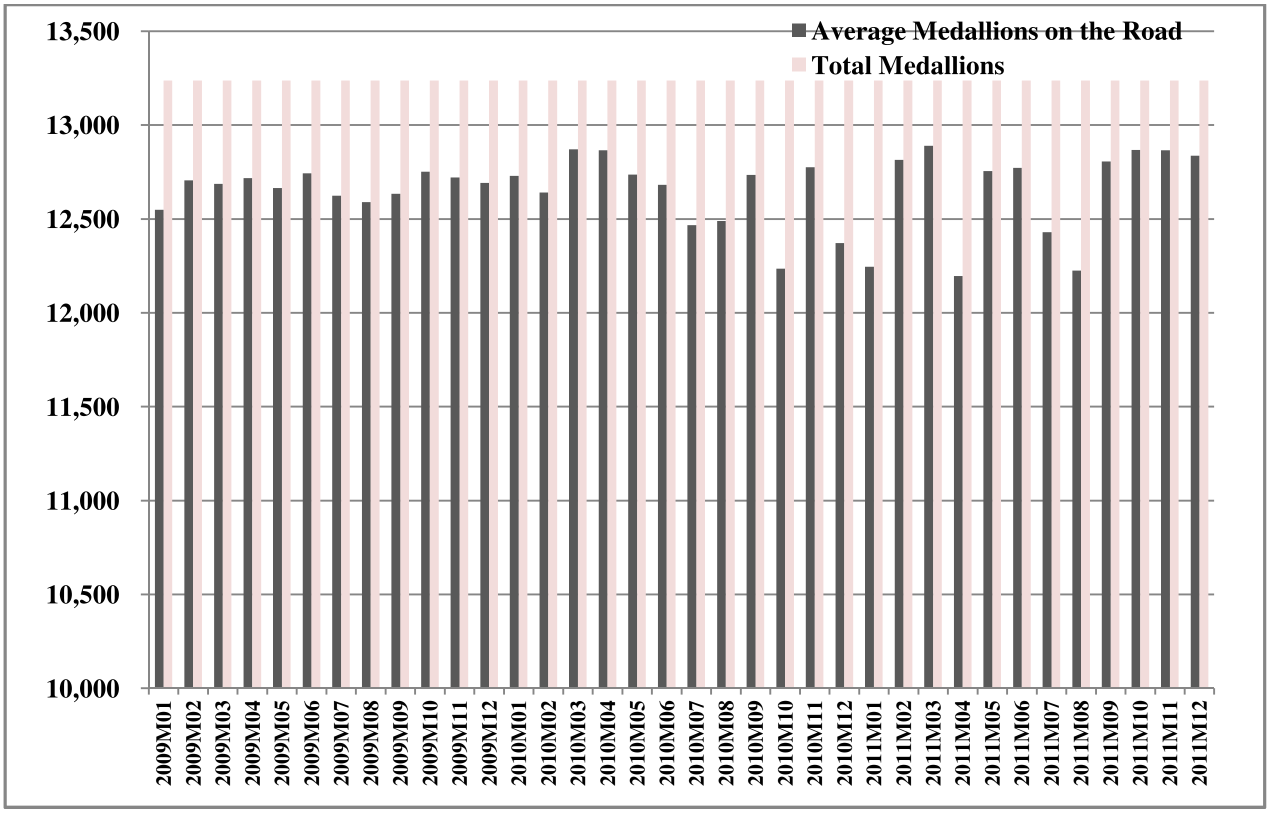


Source: TLC Taxi Meter Inspection Data and HDR Analysis (2004 – 2011)

c) Other Assumptions

The regression based model developed a relationship between revenue trips per mile (dependent variable) and economic variables. Different economic variables were tested for significance and explanatory power including but not limited to total employment in New York City, employment in various industries, and coincident indicators of economic activity in New York City from the New York Federal Reserve. The primary economic variable included in the model was unemployment in New York City which is a good reflection of economic activity in New York City. Changes in the fare were incorporated into the analysis. Fares changed a couple of times over the historical period. Fares were calculated for a representative fare (based on Schaller 2005) assuming an average trip length of 2.8 miles with 4.77 minutes of wait-time. 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.

Figure 4: Average Number of Medallions on the Road and Total Medallions



Source: TLC TPEP data (2009 – 2011)

The numbers of total medallions inspected were used as a proxy for the number of active taxi medallions for which taxi meter inspections were available. 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 data provides a representative snap shot 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. Changes in the total number of medallions are captured in the monthly changes in the number of active taxis tested and recorded in the TLC database. The observed changes in miles, meter trips and meter units is best explained by observed changes in those taxis tested each month as these taxis are the source of the measured changes (dependent variables).
- The analysis seeks to understand how revenue trips per mile are impacted by the number of active taxi medallions during consecutive inspections. The dataset tracks miles and trips completed by active taxis since the last inspection. 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 4 shows data on the number of average medallions on the road per day based on TPEP data during 2009 – 2011.

- Finally, an important technical reason to use the proxy variable is that during the period of our dataset the numbers of active medallions are relatively constant. While taxi medallions do increase a total of 8.6% during the period the increases only take place periodically. The numbers of active medallions as proxied by the taximeter inspections data vary more while they track the increases in the medallions due to additional sales.

Results of the regression analysis are presented in Section 5, Results of this memorandum.

4.2 Assumptions used to calculate the impact on the Value of a Medallion

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 Taxi of Tomorrow under both the current conditions as well as with the proposed changes. It was further assumed that additional medallions will be sold according to the schedule presented in the table below:

Table 1: Sale of Additional Medallions

Year	Non-Accessible	Accessible	Total	Fleet Size Before Additional Medallions	% Increase In Fleet
2012	0	400	400	13237	3.0%
2013	0	800	800	13637	5.9%
2014	0	800	800	14437	5.5%
Total	**0**	**2000**	**2000**	**15237**	

Source: TLC (2012)

The financial analysis estimates the medallion value for the three different ownership structures of medallions. For simplicity it was assumed that corporate medallions consisted primarily of driver owned vehicles (who lease the medallion only on a weekly basis) and mini-fleet medallions. Independent medallions were accounted for separately. The primary sources of revenues for corporate medallions that lease to driver owned vehicles consist of weekly lease revenues. Corporate medallions that operate as mini-fleets lease on a per shift basis (12 hour per shift) and their revenues comprise primarily of lease revenues as well. Independent medallions owners collect revenues from fares as well as lease revenues if they lease their vehicle for a second shift.

Lease revenue assumptions used to estimate revenues for the corporate medallions are presented in Table 2. Maximum weekly lease rates for (hybrid) medallions only are capped at $842 while the lease rate for a 12 hour day shift is capped at $105 per day. The maximum lease rate for a 12 hour night shift varies from $115 to $129 depending on the day of the week. An average rate of $122 per night shift was used. Based on this an average lease revenue per shift of $113 was calculated and used to quantify revenues for corporate medallions that operate under a mini-fleet ownership structure. The same lease rate assumption of $113 per shift was used for independent medallions that lease for a second shift.

Table 2: Lease Revenue Assumptions

Metric	Assumed Value	Source	Unit
12 hour day Shift	$105	TLC 2011 Rule book, ch 58	Dollars / shift
Average 12 hour night shift	$122	TLC 2011 Rule book, ch 58	Dollars / shift
Average 12 hour Shift	$113	Calculated	Dollars / Shift
Weekly Lease Rate for Driver Owned Vehicles	$842[15]	TLC Medallion Only Hybrid Lease Rate	Dollars / Week

Based on an assumption of 365 days per year or 52 weeks per year for the weekly lease medallions and taxi medallion utilization rates as shown in Table **3** 3 annual lease revenues were calculated for the corporate medallions.

Table 3: Taxi Utilization Assumptions for Corporate Medallions

Metric	Assumed Value	Source	Unit
Corporate Utilization Rate	98.8%	TLC	% rate
Days / Year	365		Days
Weeks / Year	52		Weeks

Revenues for independent medallions were calculated based on lease revenues and fare revenues. As shown in Table 4 4 average shifts per day for independent medallions were calculated using an assumption that 43.7% of independent medallions are double shifted[16] while about 76.3% of the whole taxi fleet is double shifted.

Table 4: Taxi Utilization Assumptions for Independent Medallions

Metric	Assumed Value	Source	Unit
Fleet Average Double Shifted Taxis	76.3%	TLC Surveys	%
Fleet Average Shifts / Day	1.8	Calculated	Shifts / Day
Independent Taxi Utilization Rate	95.1%	TLC Taxi Utilization	%
Independent Double Shifted Taxis	43.7%	Calculated[17]	%
Independent Shifts per day	1.4	Calculated	
Hours / Shift	12.0	TLC	Hours

[15] According to TLC most drivers who lease medallions only (Driver Owned Vehicles) pay the hybrid lease rate.
[16] This corroborates well with Schaller 2006 who finds 41% owner drivers lease their cabs for a second shift
[17] Calculated assuming 100% of corporate medallions are double shifted, the percent of corporate medallions (57.9%) in the fleet as well as independent medallions (42.1%) in the fleet

Metric	Assumed Value	Source	Unit
Working Hours Per Shift	8.0	Mean working hours for US taxi drivers, Bureau of Labor Statistics	
Independent Medallions Shifts / Taxi	499	Calculated	Shifts / Year
Independent Leased Shifts	239	Calculated[18]	Shifts / Year
Independent Owner Shifts	260	Based on 5 work days, 52 weeks a year	Shifts / Year
Days / Year	365		Days

Assuming an independent utilization rate of 95.1% based on TLC data and a calculated 1.4 independent shifts per day results in 499 annual shifts operated per independent medallion. Assuming an independent owner works 5 days a week for 52 weeks a year results in 260[19] independent owner shifts – that those shifts that will be driven by the independent driver himself. The difference between total shifts per independent medallion and independent owner shifts were assumed to be leased shifts.

Table 5 shows the revenue trip assumptions used in the analysis. Revenue trips per mile were estimated for current conditions to be 0.192 trips per mile based on the annual fleet trips of 178 million annual trips for the existing taxi fleet. Using the number of taxi medallions, the average taxi was calculated to complete approximately 13,450 trips per year or using the calculated 616 shifts per year that the average taxi operates this translates to 22 revenue trips per shift.

Table 5: Trip Assumptions

Metric	Assumed Value	Source	Unit
Taxi Annual Mileage	70,000	TLC Safety and Emissions Inspection Data	Miles
Total Annual Fleet Trips	178,000	TLC Trip Data	Trips in thousands
Total Taxis	13,237	TLC Medallion Count	Medallions
Average Trips / Taxi	13,447	Calculated	Annual Trips
Average Miles Driven Per Shift	114	Calculated	Miles per Shift
Average Trips Per Shift	22	Calculated	Trips per Shift
Revenue Trips / Mile	0.192	Calculated	Trips / Mile

[18] Based on the difference between total independent shifts per medallion and independent owner shifts

[19] Anecdotally evidence, according to TLC, suggests many taxi drivers work 6 days a week with vacation time during the year.

Revenues per trip assumptions were used to convert trips to revenues. Weighted average (between cash and credit card paying) fare was estimated to be $12 per trip net of all taxes. These are presented in Table **6** 6. Credit card fare per trip was based on TPEP data from TLC at $13.6 per trip. Cash fare trip was estimated at $11.0 per trip. No data is readily available on the cash tipping rate, and the cash tipping rate (13%) was based on Schaller's analysis of fleet driver and owner income[20].

Table 6: Revenue per Trip Assumptions

Metric	Assumed Value	Source	Unit
Weighted Fare / Trip	$12.0	Calculated	2011 Dollars
Credit Fare / Trip	$13.6	TLC Fare Data (Aug 10 - Jul 11)	2011 Dollars
Cash Fare / Trip	$11.00	TLC Fare Data (Aug 10 - Jul 11)	2011 Dollars
Cash Tip %	13.0%	New York Taxi Medallion System, Schaller et al, Table 3	%
Credit Fare %	40.7%	TLC Fare Data (Aug 10 - Jul 11)	%
Cash Fare %	59.3%	TLC Fare Data (Aug 10 - Jul 11)	%

A major component of the cost for independent medallions owners consisted of the cost of driver incomes. These were considered as costs and quantified as wage income and subtracted from total revenues. These assumptions are presented in Table 7. According the Bureau of Labor Statistics average hourly incomes of taxi drivers were $13.6 per hour. As discussed above independent medallions operate about 499 shifts per year. Given a 12 hour shift which includes breaks, and travel to and from the garage or other vehicle swap point and thus actual work hours are assumed to be 8 hours and along with an hourly wage assumption, wage costs per shift calculated to be $111 per shift. Based on the calculation of 260 calculated shifts per year that owners operate a taxi, total annual wage costs for per taxi were approximately $28,800 per year[21].

Table 7: Wage Cost Assumptions

Metric	Assumed Value	Source	Unit
Taxi Driver Wages $ / Hr	$13.85	Bureau of Labor Statistics, New York MSA 2010 inflated to 2011	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	$110.8	Calculated	Dollars / Shift
Independent Owner Shifts / Taxi	260	Calculated	Shifts Per Year
Implied Driver Wage	$28,800	Calculated	Dollars

[20] http://www.schallerconsult.com/taxi/taxi2.htm#promise

[21] These wage costs are included for valuation purposes only as compensation for the owners time driving the vehicles and do not impact the analysis on taxi driver incomes.

The evolution of the taxi fleet was forecasted on an annual basis through the year 2020. As vehicles came up for retirement based on 4 years for conventional vehicles, 6 years for hybrid vehicles and 5 years for accessible vehicles they were removed from the fleet and new vehicles were added (retirement schedules were calculated based on actual hack-up dates and projected retirement dates from TLC). As vehicles were replaced the cost of new purchased vehicles was accounted as fixed capital investment. After 2013 these primarily consist of TOT purchases (NV 200) priced at $29,500[22] for non-accessible vehicles and for accessible vehicles these consist of a combination of Toyota Siennas, MV-1 by VPG Autos and accessible TOT (NV 200). Table 8 presents the different per mile costs including those for maintenance and insurance of the vehicles. Fuel prices per gallon were based on Energy Information Agency (EIA) data. Fuel costs were calculated based on the assumed mileage per taxi (70,000 miles), the fuel price per gallon and assumed fuel efficiencies for each vehicle type. Fuel costs, vehicle purchase costs and maintenance costs were estimated for the fleet and then included as costs on a per medallion basis. The analysis also takes into account vehicle hack-up costs and the salvage value of vehicles as they are sold once they are retired from service in New York City.

Table 8: Vehicle Cost Assumptions

Metric	Assumed Value	Source	Unit
Maintenance	$0.03	FHWA Complete Car Cost Guide	Dollars / Mile
Insurance	$0.19	FHWA Complete Car Cost Guide	Dollars / Mile
Gas Price	$3.74	Energy Information Agency, 2012 Price	Dollars / Gallon

An important factor in the analysis is the selection of a discount rate for the valuation of the medallions. One potential value is the cost of debt required to purchase a medallion. The best available information on the cost of debt is the average interest rate charged by Medallion Financial, the principal lender to taxi medallion owners whose portfolio of New York Taxi medallion loans had an average interest rate of 5.5% during 2010[23]. This interest rate is a nominal interest and takes into account inflation expectations. During 2009-2011 average inflation for urban areas in the US not considering volatile food and fuel prices was 1.4% per year. This yields a real discount rate of 4.1% per annum. Our analysis calculates an observed market discount rate such that discounted cash flows equal the observed market price of corporate and independent medallions. The weighted average (of corporate and independent) calculated discount rates are 4.8% which is close to the 4.1% estimate discussed above.

[22] For comparison purposes this was converted to 2011 dollars accounting for inflation.
[23] Medallion Financial 2010 Annual Report

Table 9: Additional Valuation Assumptions

Metric	Assumed Value	Source	Unit
Corporate Medallion Discount Rate	3.2%	Calculated	%
Independent Medallion Discount Rate	7.0%	Calculated	%
Tax Rate	40%	KPMG Corporate and Indirect Tax Survey 2010	%
Average Depreciable Life	5	Calculated average based on projected vehicle retirement and hack-up date	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

Table 9 presents additional assumptions used to calculate the financial value of the medallion. Tax rates were assumed to be 40% based corporate tax rates in the US. Accounting for intangibles which include taxicab medallions allows for amortization of medallions over a period of 15 years, thus taxes were reduced to reflect this amortization. An assumption of 5 years was used for vehicle depreciation which would primarily have tax impacts. 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 approximately $1,068 per month. These management fees were included for corporate medallions (both mini-fleets and driver owned vehicles). The TLC charges a small annual fee for taxi meter inspections and other miscellaneous charges. These fees were also included.

Table 10: Economic Growth Assumptions

Metric	Assumed Value	Source	Unit
Annual Employment Growth	0.4%	NY State Department of Labor	%
Elasticity of Trip growth / Employment	0.743	Regression Based Estimate Using TLC TPEP data, 2009- 2011	

Economic growth assumptions incorporated in the analysis are presented in
Table 10 10 and were assumed to occur with the Proposed Action as well as without the Proposed Action. Employment growth assumptions were based on long term employment projections from the NY State Department of Labor (2008 – 2018). A separate regression model was developed based on monthly TLC TPEP data on taxi fleet trips between 2009 – 2011. During this period nominal fares were kept constant, and there were no sales of additional

medallions and thus changes in average daily trips per taxi were primarily due improvement in economic conditions both employment as well tourism. Tourism was proxied with monthly estimates of hotel occupancy in New York City, while employment was measured as the total employment in New York City from the Bureau of Labor Statistics.

4.3 Assumptions Used to Calculate Taxi Driver Income Impacts

Important assumptions used to calculate impacts on the driver were presented above and presented again for ease of reference in Table 11.

Table 11: Taxi Driver Impact Assumptions

Metric	Assumed Value	Source	Unit
Taxi Annual Mileage	70,000	TLC Safety and Emissions Inspection Data	Miles
Fleet Taxi Utilization Rate	95.6%	TLC TPEP Taxi Utilization (Jan 2009-Dec 2011)	%
Fleet Average Shifts / day	1.8	Calculated	Shifts / day
Shifts / Year	616	Calculated	Shifts / Year
Weighted Fare / Trip	$12.0	Calculated	2011 Dollars
Fuel Price	$3.74	Energy Information Agency, 2012 Price	Dollars / Gallon
Average Trips / Taxi	13,447	Calculated	Annual Trips
Average Miles Driven Per Shift	114	Calculated	Miles per Shift
Average Trips Per Shift	22	Calculated	Trips per Shift
Revenue Trips / Mile	0.192	Calculated	Trips / Mile

4.4 Assumptions Used to Calculate Impacts on the New York City Economy

Detailed assumptions used to calculate impacts on the economy are presented in Table 12. Based on taxi utilization rate of 95.6% and an assumption of 1.8 shifts per taxi, each additional medallion sold would create 616 shifts per year. Using an assumption that full time drivers would work 260 days per year additional driver employment was calculated. Average annual earnings of drivers were based on the average wage of drivers in dollars per hour and the number of hours per shift.

Table 12: Assumptions Used to Calculate Impacts on the New York City Economy

Metric	Assumed Value	Source	Unit
Additional Medallions	2000	TLC	Taxis
Shifts / Year	616	Calculated	Shifts / Year
Taxi Driver Working Days Per Year	260	5 days per week for 52 weeks	Days / Year
Taxi Driver Wages $ / Hr	$13.85	Bureau of Labor Statistics, New York MSA 2010, inflated to 2011 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	$28,800	Calculated	Trips per Shift

5. RESULTS

5.1 Impact on the Value of a Medallion

As discussed above, the regression based analysis resulted into a single statistical model for both types of medallions – corporate and individual. The variable of interest (dependent variable) for the model was revenue trips per mile. This was calculated as the number of total revenue trips divided by total number of miles travelled by the fleet for each month (these only included relevant observations from the data). The model included real taxi fare variable as an independent variable. The analysis indicates the following:

- A 10% increase in the number of medallions reduces revenue trips per mile for existing medallions by 0.7%. The analysis indicates that this impact could vary between a 0.2% reduction in revenue trips per mile to 1.2% reduction in revenue trips per mile for a 10% increase in the number of medallions. Our analysis therefore indicates that a 15% increase in medallions would result in a 1% decline in revenue trips per mile with an estimated range of decline in revenue trips from 0.24% to 1.82%[24].

- Estimated fare elasticities indicate that a 10% increase in real taxi fares results in a 2.5% decrease in revenue trips per mile

- Elasticities with respect to unemployment indicate that a 10% increase in the unemployment *rate* results in 0.4% decline in revenue trips per mile.

[24] This range is based on the confidence interval around our coefficient estimate, of two standard deviations around our mean estimate

As discussed earlier, economic growth assumptions were incorporated in the analysis and are presented in Table 10. Economic growth assumptions were assumed to occur with the Proposed Action as well as without the Proposed Action. Employment growth assumptions were based on long term employment projections from the NY State Department of Labor (2008 – 2018). A separate regression model was developed based on monthly TLC TPEP data on taxi fleet trips using data from 2009 to 2011.

In full equilibrium lease rates would also decline to reflect reduced driver revenues. These assumed declines in equilibrium lease rates have been incorporated into the analysis.

All these impacts were incorporated into the valuation analysis. Table 13 shows the impact on the medallion value for corporate and independent medallions. We find that the sale of addition medallions will have a 2.0% decline on the financial value of independent medallions and a 1.5% decline on the financial value of corporate medallions.

Table 13: Impact of the Sale of Additional Medallions on Average 2011 Medallion Market Price[25]

Medallion Type	Calculated Discount Rate	Average 2011 Medallion Value under Current Conditions	Average 2011 Medallion Value With Additional Medallions	Impact on Medallion Value
Corporate	3.2%	$959,153	$944,671	-1.5%
Independent	7.0%	$662,105	$648,599	-2.0%

In addition based on the range of impacts on revenue trips per mile we estimate that for corporate medallions the impacts in terms of valuation could vary from -0.4% ($955,724) to a high impact of -2.7% ($933,672). For individual medallions these impacts could vary from a low impact of -0.5% ($658,907) to a high impact of -3.6% ($638,326).

Table 14 presents revenues and costs for owners who lease their medallions only to driver owned vehicles. As discussed above lease rate per week under current conditions were assumed to be capped at $842 dollars per week. Under future conditions, under equilibrium it was assumed that lease revenues would decline by a similar amount as revenue trips per mile. Weeks per year the taxis are leased were based on corporate utilization rates and 52 weeks per year and accounting for economic growth which would cause increases utilization of 0.3% per annum. Management

[25] Discount rates were calculated to reflect observed market price in 2011. The medallion value under current conditions included expected impacts from the introduction of the Taxi of Tomorrow (TOT) and is therefore slightly lower than that actually observed in the market for corporate medallions that was $974,000 while for independent medallions that was $671,177

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 2027 (the first year after the medallion purchase has been completely amortized) and a terminal value of the asset was calculated (see additional technical details in Section 6).

Table 14: Revenues and Costs for Lease Medallions (DOVs) in 2015

Revenues and Costs	Under Current Conditions	Under Future Conditions
(Hybrid Medallion only) Lease Rate Per Week[26]	$842	$834
Weeks Per Year	51.99	51.99
Total Revenue	**$43,775**	**$43,342**
Less Annual Management Expense	$12,816	$12,816
Less License Renewal Fees	$825	$825
Operating Income	**$30,134**	**$29,701**
Medallion Amortization Expense[27]	$48,792	$48,124
Less Tax[28]	$ -	$ -
Total Cash Flow	$30,134	$29,701
Discounted Cash Flow	$27,430	$27,036

Revenues and costs for medallions being operated under the fleet mode ("Mini-Fleet") are shown in Table 15. Lease revenues were calculated on a daily basis. Days per year that the medallion is leased was based on the taxi cab utilization rate for corporate medallions and incorporates increases in leasing due to economic growth at 0.3% per annum. Hack-up costs were calculated on a fleet basis and then calculated on an average basis based on the total number of medallions outstanding. Similarly fixed capital investment includes the cost of total purchases of vehicles divided by the number of outstanding medallions. Vehicle maintenance costs, insurance costs, 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 2027 (the first year after the medallion purchase has been completely amortized) and a terminal value of the asset was calculated (see additional technical details in Section 6).

[26] According to TLC most drivers who lease medallions only (Driver Owned Vehicles) pay the hybrid lease rate.

[27] Medallion purchase is assumed to capitalized and then expensed on a 15 year schedule based on the classification of taxi medallion as a section 197 intangible.

[28] 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

Table 15: Revenues and Costs for Mini-fleet Medallions in 2015

Revenues and Costs	Under Current Conditions	Under Future Conditions
Lease Revenue / day	$227	$224
Days Per Year	364.93	364.93
Total Revenue	**$ 82,734**	**$81,916**
Less Average Hack-up Cost per Medallion	$ 94.25	$ 94.25
Plus Average Salvage Value per Medallion	$461.8	$461.8
Less Maintenance Costs per Medallion	$2,218	$2,218
Less Insurance Costs per Medallion	$11,978	$11,978
Less Annual Management Expense per Medallion	$12,816	$12,816
Less License Renewal Fees	$825	$825
Operating Income	$55,265	$54,447
Revenues and Costs	**Under Current Conditions**	**Under Future Conditions**
Vehicle Depreciation Expense[29]	$ 5,122	$5,122
Medallion Amortization Expense[30]	$79,095	$77,833
Plus Fixed Capital Investment[31]	$4,256	$4,256
Less Tax[32]	$ -	$ -
Cash Flow	$51,009	$50,190
Discounted Cash Flow	$46,431	$45,686

Table 16 presents revenues and costs for independent medallions in year 2015 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 $12 per trip and about 22 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 $13.6 dollars an hour and 260 shifts per year. Depreciation expense and medallion amortization expense was included. Cash flows and discounted cash flows were projected to year 2027 (the first year after the medallion purchase has been completely amortized) and a terminal value of the asset was calculated (see additional technical details in Section 6).

[29] Vehicle purchase is depreciated using an assumption of 5 years based on average fleet life calculated based hack-up date and projected vehicle replacement

[30] Medallion purchase is assumed to capitalized and then expensed on a 15 year schedule based on the classification of taxi medallion as a section 197 intangible.

[31] These are the purchase costs of new vehicles, which impact cash flows but are excluded from tax and income calculations

[32] 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

Table 16: Revenues and Costs for Independent Medallions in 2015

Revenues and Costs	Under Current Conditions	Under Future Conditions
Revenue from Driving	$69,237	$68,552
Lease Revenue Per Shift	$113	$112
Lease Revenue Shifts	239	239
Lease Revenue	$27,092	$26,824
Total Revenue	$96,330	$95,377
Less Average Fuel Costs per Medallion	$4,661	$4,661
Less Average Hack-up Cost per Medallion	$94	$94
Less Taxi Driver Wages	$28,800	$28,800
Plus Average Salvage Value per Medallion	$462	$462
Less Average Maintenance Costs per Medallion	$2,218	$2,218
Less Average Insurance Costs per Medallion	$11,978	$11,978
Less Medallion License Renewal Fees	$825	$825
Operating Income	$48,216	$47,263
Vehicle Depreciation Expense[33]	$5,122	$5,122
Medallion Amortization Expense[34]	$44,140	$43,240
Plus Fixed Capital Investment[35]	$4,256	$4,256
Less Taxes[36]	$ -	$ -
Total Cash Flow Per Medallion	$43,960	$43,007
Discounted Cash Flow	$35,925	$35,146

5.2 Impacts on Taxi Driver Income

Impacts on the average taxicab driver who leases a vehicle and a medallion for a shift are shown in Table 17. Revenues per shift are expected to go down from $268 to $265 for the average shift that completes 22 trips per shift and drives some 114 miles. In equilibrium as fare revenues fall it is reasonable to expect that lease costs would fall below the maximum capped rates that are allowed by the TLC. The expected impact on the income of driver per shift is decline of 1.1%. Assuming no impacts on lease rates in equilibrium (i.e. lease rates continue to remain at the current TLC capped rates) driver income is expected to decline 2.0% for the average driver in real terms.

[33] Vehicle purchase is depreciated using an assumption of 5 years based on average fleet life calculated based hack-up date and projected vehicle replacement

[34] Medallion purchase is assumed to capitalized and then expensed on a 15 year schedule based on the classification of taxi medallion as a section 197 intangible.

[35] These are the purchase costs of new vehicles, which impact cash flows but are excluded from tax and income calculations

[36] 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

Table 17: Impacts on Taxi Driver Income in 2015 ($/shift)

Metric	Under Current Conditions	Under Future Conditions (Lease Costs Decline with Revenues)	Under Future Conditions (Lease Costs Constant)
Revenues Per Shift	$266	$264	$264
Trips Per Shift	22.1	21.9	21.9
Average Miles per Shift	114	114	114
Fuel Gallons per Shift	4.75	4.75	4.75
Real Gas Price 2015	$ 4.16	$4.16	$4.16
Average Fuel Cost	$19.7	$19.7	$19.7
Average Lease Costs	$113.4	$ 112.2	$113.4
Driver Income per Shift	**$133.21**	**$131.69**	**$ 130.57**
Impact in %		**-1.1%**	**-2.0%**

Impacts on driver income assuming constant lease rates are shown in Table 18. Impacts are expected to range from a low from a decline 0.5% to a decline of 3.5% on driver incomes per shift.

Table 18: Impacts on Driver Income Assuming Constant Lease Rates

Estimated Impact Range	Under Current Conditions	Under Future Conditions	Impact in %
Low	$ 133.21	$ 132.58	-0.5%
Medium	$ 133.21	$ 130.57	-2.0%
High	$ 133.21	$ 128.57	-3.5%

5.3 Impact on the New York City Economy

Table 19 19 shows the employment impacts as a result of the additional taxicabs. The 2000 additional taxicabs are expected to add almost 1.23 million twelve hour shifts for taxicab drivers. As a result of the additional drivers City-wide earnings are expected to increase $206.7 million dollars per year. In addition the Proposed Action is expected to create employment for an additional 4,700 drivers and a city-wide increase in employment of 5,800 per year.

Table 19: Employment and Earnings Impact from Additional Medallions

	2012	2013	2014	2015 and Onwards
Additional Medallions	400	1,200	2,000	2,000
Additional Shifts	246,400	739,200	1,232,000	1,232,000
Days / Year or Shifts per year Taxi Driver works	260	260	260	260
Average Earnings / Driver	$28,800	$ 28,800	$28,800	$28,800
Additional Taxi Driver Employment	948	2,843	4,738	4,738
Additional Total Earnings for Taxi Drivers ($M)	$ 27.3	$81.9	$136.5	$136.5
City Wide Impact in Earnings in $ M	**$41.3**	**$124.0**	**$206.7**	**$206.7**
Citywide Impact in Employment in Person Years	**1,165**	**3,496**	**5,827**	**5,827**

Source: HDR Analysis, Bureau of Economic Analysis (RIMS II)

5.4 Impact on Modal Share

New York taxicabs offer convenient transportation options for a modest premium. As a result taxicab users who are willing to pay for premium service are able to avail themselves of the opportunity to do so. Reduced wait times for taxicab users improve economic efficiency of the city's transportation system. Given the approximate 0.5 million trips per day that make use of the taxicab service reduced wait times can generate significant travel time savings and improve the efficiency of the economy. The expected increases in taxicab mode share as a result of the reduction in wait-times are quantified as part of the analysis below.

The NYMTC NYBPM mode choice parameters allow for the estimation of the response of users to a change travel characteristics, including anticipated reduction in taxi wait times that would accrue due to the increase in the number of taxi medallions. In particular, the mode choice model contains parameter estimates for the mode share of taxis. Simulations using these parameters were used to estimate the effect of changing wait time for users on taxi ridership. Expected changes in wait-time were calculated using TPEP survey data on wait-time.

Table 20: Estimated Taxi Wait-Time for Hailing a Taxi

Survey Response	Minutes Assumed
Less than 2 minutes	2
About 5 minutes	5
More than 10 minutes	11
About 10 minutes	10
Weighted Average Wait Time	**4.36**
Average Wait Time After Additional Medallions[37]	**3.71**

Source: HDR Assumptions, TPEP Survey 2011 - 2012

The expected change in travel mode as a consequence of approximately half a minute change in wait time (holding all other mode attributes constant) that could be anticipated with the increase in the number of taxi medallions are summarized in Table 21 and table 22. Table 22 provides estimates of the change in mode for discretionary trips (such as entertainment, sports, visiting friends, etc.).[38] (See section 6 for additional details of this analysis). Mode share impacts, including existing mode share of taxis are evaluated primarily for Manhattan.

Table 21: Mode Share for Journey to Work

Mode Share For Journey To Work			
Income Level	**Low**	**Medium**	**High**
Mode	Taxi	Taxi	Taxi
Change in Wait Time (minutes)[39]	-0.66	-0.66	-0.66
New Mode Share	3.5%	6.0%	17.7%
Mode Share Change	0.9%	1.6%	4.2%
Existing Taxi Cab Mode Share (in Manhattan)			
Work	2.6%	4.4%	13.5%

Source: NYBPM and HDR Analysis

Table 21 provides estimates of the change in mode by income for journey to work trips. The analysis indicates that an approximately half minute reduction in wait time would result in the current mode share of taxis for journey to work trips in Manhattan would increase 0.9% to 4.2% depending on the level of income of taxi customers. Based on the Regional Travel – Household Interview Survey (HIS) developed as part of the NYBPM as well as based on Census Journey to Work Data (1990) for work travel purposes the data indicate that about 13.5% of high income earners (15% of respondents with the highest income) use taxi for journey to work currently, which is expected to increase to 17.7% as a result of an approximately half a minute change in wait time while mode share for medium income workers is expected to increase 0.3% to 4.7% and increase 0.2% for low income workers to 2.8% as result of a minute reduction in wait time.

[37] Assuming 15% decrease in wait-time due to the 15% increase in additional medallions
[38] Transportation Models and Data Initiative: General Final Report New York Best Practice Model (NYBPM) 2005.
[39] Based on the difference between current weighted average wait-time (4.36) and wait-time with additional medallions (3.71)

Table 22: Mode Share for Discretionary Journeys

Mode	Taxi
Change in Wait Time (minutes)	-0.66
New Mode Share	12.1%
Mode Share Change	1.1%
Existing Taxi Cab Mode Share (in Manhattan)	11.0%

Source: NYBPM and HDR Analysis

Mode share increases for discretionary trips are shown in Table 22. Mode share for discretionary journeys is expected to increase from current 11% (based on the HIS) to 12.1% due to approximately half a minute reduction in wait time an increase of approximately 1.1%. Increases in mode share for maintenance trips due to half a minute reduction in wait time are shown in Table 23 and mode share is expected to increase from 5.7% to 6.2% - an increase of approximate 0.3%.

Table 23: Mode Share for Maintenance Journeys

Mode	Taxi
Change in Wait Time (minutes)	-0.66
New Mode Share	6.02%
Mode Share Change	0.32%
Existing Taxi Cab Mode Share (in Manhattan for Maintenance Journeys)	5.70%

Source: NYBPM and HDR Analysis

Taxi trip purpose is shown in Table 24 based on the TPEP taxi survey data. About 45.7% of taxi takers report leisure as the main purpose for taking taxi, this followed by business, shopping errands and tourism. Future trips can be calculated using results from the NYBPM mode choice analysis and assuming that leisure trips represent increases in mode share due to discretionary trips in the NYBPM analysis, shopping / errands represent increases in maintenance trips in the NYBPM analysis and finally increases in business trips were assumed to represent increases in mode share due to journey to work.

Table 24: Taxi Trip Purpose

Metric	Value	Source	Unit
Average Fleet Trips / Day	488,935	TLC, 2011 TPEP Data	Trips / day
Trips Purpose – Leisure	45.7%	TLC, TPEP Survey	%
Trips Purpose – Business	25.3%	TLC, TPEP Survey	%
Trips Purpose - Shopping Errands	16.4%	TLC, TPEP Survey	%
Trips Purpose – Tourism	12.6%	TLC, TPEP Survey	%

Source: TLC TPEP data 2011, TPEP Survey 2011 - 2012

The NYBPM separates out impacts for Journey to work by type of income. As shown in Table 25 about 27.5% of taxi cab customers had household income of less than fifty thousand dollars. Another 22% had incomes between fifty thousand and a hundred thousand dollars while 50.5%

of respondents had household incomes in excess of a hundred thousand dollars. A weighted average increase in mode share was calculated for journey to work trips using on a 27.5% weight on low-income workers, 22% on medium income workers and 50.5% weight on high income workers.

Table 25: Income of Taxi Customers

What is your annual household income?	Survey Respondents	% of Total
Under $10,000	1,737	13.1%
$10,000-$50,000	1,899	14.4%
$50,000-$100,000	2,907	22.0%
$100,000 or higher	6,679	50.5%
Prefer not to answer	2,781	
Total	**16,003**	**100.0%**

Table 26 shows estimates of current daily trips by trip purpose using the TPEP survey data. The survey data implies that on a daily basis about two hundred thousand trips take place for leisure purposes while for business and shopping as well tourism about a hundred thousand trip take place per day for each.

Future trips (due to changes in wait-time) are calculated assuming current taxicab mode share of all discretionary trips (as documented in the NYBPM) equals the current number of daily trips per day by trip purpose. For example current overall taxi mode share in Manhattan for discretionary trips, according to the NYBPM is 11%. Based on the survey data and daily trip data we estimate that this accounts for about two hundred thousand trips per day. Then using projected increases in taxicab mode share (from 11% to 12.1%) due to changes in wait-time we estimate the new number of discretionary trips that would likely use taxicab services.

Table 26: Current and Future Trips by Trip Purpose

Taxi Trip Purpose	Current Share	Trips After Wait-time Decrease
Leisure	223,379	246,437
Business	123,728	164,242
Shopping/Errands	80,028	84,499
Tourism[40]	61,801	68,180
	488,935	**563,359**

Source: TLC TPEP data 2011, TPEP Survey 2011 - 2012

[40] Increase in trips from tourism is assumed to be similar to the increase in trips from leisure

Table 27 shows the range of impacts on taxi trips per day based on our range of assumptions on expected impacts on taxi wait time. Overall total fleet taxi trips per day increase by 12.3% to 16.7% due to decreases in wait time. Accounting for the 15% increase in medallions indicates that the impacts on average taxi trips per day range from 2.4% decrease in taxi trips per day to 1.4% increase in taxi trips per day due to increases in taxi cab mode share.

Table 27: Range of Impacts on Taxi Trips Per Day

Change In Wait Time (in minutes)	Current Trips Per Day	Trips Per Day with Medallion Increase	Average Taxi Trips Per Day Current Conditions	Average Taxi Trips Per Day With Medallion Increase	% Impact
-0.66	488,935	562,233	36.9	36.9	-0.1%
-0.55[41]	488,935	549,171	36.9	36.0	-2.4%
-0.73[42]	488,935	570,719	36.9	37.5	1.4%

Source: HDR Analysis

5.5 Increases in Fares as a Mitigation Measure

An increase in taxi fares could eliminate all potential adverse effects on the value of a taxi medallion and driver income. As summarized below, although increased fares would result in a decrease in the number of revenue trips, the increase in revenue per trip with the increased fares would result in a net increase in driver income and value of a medallion. In summary:

- A 1.25% increase in fares would neutralize any adverse impact on the value of an independent medallion assuming our most likely estimate of 1% decline in revenue trips due to a 15% increase in medallions.
- A 1.25% increase in fares would neutralize the impact on the value of a corporate medallion, assuming our most likely estimate of 1% decline in revenue trips due to a 15% increase in medallions.
- Assuming a maximum decrease of 1.8% in revenue trips per mile due to the 15% projected increase in medallions (based on our high estimate from the regression analysis), a 2.2% increase in fares would neutralize any adverse impact on the value of independent medallions and corporate medallions.

[41] Average wait-time was calculated conservatively using the assumption that survey respondents who report less than 2 minutes of wait time waited an average of 1 minute, those reporting about 5 minutes of wait time waited an average of 5 minutes, those reporting about 10 minutes of wait time waited an average of 10 minutes, and those who reported longer than 10 minutes of wait time also waited an average of 10 minutes

[42] Average wait-time was calculated less conservatively using the assumption that survey respondents who report less than 2 minutes of wait time waited an average of 2 minutes, those reporting about 5 minutes of wait time waited an average of 5 minutes, those reporting about 10 minutes of wait time waited an average of 10 minutes, and those who reported longer than 10 minutes of wait time waited an average of 15 minutes

As discussed above the increase in medallions would have a potential adverse impact on driver income. As summarized below, fare increases could neutralize this impact.

- Assuming a 1.0% decline in revenue trips per mile with the Proposed Action (our most likely impact), and the resulting 1.1% decrease in driver income (assuming a decline in equilibrium lease rates), could be negated by 1.4% increase in fares. A similar increase would be sufficient to reduce negative impacts on driver income assuming medallion lease costs will remain at existing caps.

- A 1.8% decline in revenue trips per mile with the Proposed Action, and the resulting 3.5% decrease in driver income could be negated by a 2.5% increase in fares (assuming a decline in equilibrium lease rates). A similar increase would be sufficient to reduce negative impacts on driver income assuming medallion lease costs will remain at existing caps.

Our analysis has indicated a range of expected impacts on revenue trips due to additional medallions. The regression analysis suggests a 1.8% decline in revenue trips due to the 15% increase in medallions. Our mode share analysis suggests the decline could be as high as 2.4% in revenue trips due to the 15% increase in medallions. Even assuming twice our highest estimated impact, i.e. a 4.8% decline in revenue trips due to the additional medallions, our analysis indicates:

- A 6.5% increase in fares would neutralize impacts on the value of the corporate medallion. It would increase the valuation of the independent medallion 0.6% and would neutralize any negative impacts on taxi driver earnings.

6. ADDITIONAL TECHNICAL DISCUSSIONS

6.1 Technical details on Mode Choice Impacts

The estimated net change in wait time (including congestion effects) is the basis for modeling the mode share impact of the increased medallions: Specifically, the NYBPM parameters, in an incremental logit model structure, were used to estimate the change in taxicab mode share for different trips In the incremental logit approach only relative changes matter, and the analysis here would only require an estimate of the impact of decreased wait time for those considering hailing a taxi. The new mode share for a mode (P'(i)) was evaluated within the logit model (where P(i)) is the existing mode share:

$$P'(i) = \frac{e^{V_i + \Delta V_i}}{\sum e^{V_j + \Delta V_j}}$$

Where $\Delta V_i = \sum \beta_k \Delta x_{ik}$ is the change in the utility for alternative i

$$P^{'}(i) = \frac{P(i)e^{\Delta V_i}}{\sum P(j)e^{\Delta V_j}}$$

Existing mode shares were obtained from target mode shares presented in the *Transportation Models and Data Initiative: General Final Report* New York Best Practice Model (NYBPM) 2005. The NYBPM used the Journey to Work data set from the Census and its own Regional Travel – Household Interview Survey (HIS). Detail coefficients for the models by journey type were obtained from the above source.

Three different journey types were accounted for including journey to work for different levels of income, discretionary journeys and maintenance journeys. For journey to work trips the relevant parameter of interest was the coefficient of first wait time (FWAIT) while for discretionary and maintenance journeys out of vehicle time (OVT) were the relevant parameters. The equation presented above was applied to existing mode shares for journey to work, discretionary and maintenance journeys. Table 28 shows existing mode shares as presented in the NYBPM for the journey to work.

Table 28: Existing Mode Share for Journey To Work

Existing Mode Share For Journey To Work			
Income Level	**Low Income**	**Medium Income**	**High Income**
Drive Alone	3.4%	4.6%	3.8%
Share Ride & Transit			
Driver & 1 Pass	1.1%	1.4%	2.5%
Driver & 2 Pass	0.4%	0.3%	0.5%
Driver & 3+ Pass	0.4%	0.3%	0.5%
Commuter Rail With Walk Access	0.9%	0.2%	0.2%
Commuter Rail With Drive Access	0.0%	0.3%	0.2%
Other Transit (bus, subway, ferry) with Walk	51.8%	58.4%	52.9%
Other Transit (bus, subway, ferry) with Drive	5.8%	2.5%	1.1%
School Bus		0.0%	0.0%
Non Motorized	33.6%	27.6%	24.8%

Source: NYBPM

Relevant existing mode shares for discretionary and maintenance journeys used to calculate impacts of mode shift are presented in Table 29 which have been taken from the NYBPM.

Table 29: Existing Mode Share for Discretionary and Maintenance Journeys

Existing Mode Share		
by Journey Type	**Discretionary Journeys**	**Maintenance Journeys**
Drive Alone	3.4%	1.8%
Share Ride & Transit		
Driver & 1 Pass	1.9%	2.5%
Driver & 2 Pass	1.1%	1.0%
Driver & 3+ Pass	0.3%	0.3%
Commuter Rail With Walk Access	0.1%	0.0%
Commuter Rail With Drive Access	0.1%	0.0%
Other Transit (bus, subway, ferry) with Walk	22.3%	25.0%
Other Transit (bus, subway, ferry) with Drive	0.7%	0.7%
School Bus	0.0%	0.0%
Non Motorized	59.1%	63.0%

Source: NYBPM

Mode choice models that were developed as part of the NYBPM fall under the class of nested logit models. Nested logit models relax assumptions made as part of simple multinomial logit models allowing for correlation between mode alternatives. Nesting parameters typically lie between zero and one and when the nesting parameter is equal to one, the nested model collapses to become the simple multinomial logit choice model.

Detailed coefficient parameters used as part of the analysis are shown in Table 30 For discretionary and maintenance journeys the nesting parameter was 0.93 and 0.91 respectively and therefore very close to 1 and for the purposes of calculating impacts of mode shift for a minute change in wait-time it was assumed that model was a multinomial logit and the equation presented above was used to calculate impacts.

Table 30: Relevant Coefficient and Nesting Parameters

Relevant Coefficients and Nesting Parameters			
by Journey Type	**Journey To Work**	**Discretionary**	**Maintenance Journeys**
First Wait Time (FWAIT)	-0.9604		
Out of Vehicle Time (OVT)		-0.1683	-0.0875
Nesting Parameters			
Upper Nest	0.5062	-	-

Source: NYBPM

Nesting coefficients for Journey to work (0.5062) were however significantly different from 1 and were thus incorporated into calculations of expected impacts on mode shift. In addition the NYBPM 2005 report discusses the high coefficient (-0.9604) on taxi wait time for journey to work purposes in the following way "the extremely high weight for waiting time for taxi results from the synthetic specification of the taxi wait time. It was set to 2 minutes in Manhattan and 10 minutes elsewhere." Wait-times were changed for Journey to work which has a specific first wait-time coefficient while other journey types wait-times are included as part of overall out of vehicle time (OVT).

6.2 Technical details on Medallion Valuation Impacts

Econometric models estimated to evaluate the impacts on existing revenue trips per mile are presented in Table 31 below:

As discussed in the results section a 10% increase in medallions is expected to decrease revenue trips per mile by 0.7%. A range of impacts was developed using the standard error of the estimate and a 95% confidence interval was developed. Therefore the range of the likely impacts were estimated to be within two standard deviations of the mean estimate of the coefficient (-0.017, -0.121). Seasonal dummy variables were included in the regression to account for expected changes in seasonal demand. The model approach also includes a first order auto regressive term.

Table 31: Models to Evaluate Impacts of Additional Medallions

Dependent Variable: Log(Revenue Meter Trips / Total Miles)				
Sample: 2004M06 2011M12				
Included observations: 91				
White heteroskedasticity-consistent standard errors & covariance				
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			

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 **32** 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 changed mostly because changes in the economic environment (tourism, employment etc).

Table 32: Impact on Taxi Trips Due to Economic Growth

Dependent Variable: LOG(Average Daily Trips per Taxi)				
Sample: 2009M01 2011M12				
Included observations: 36				
White heteroskedasticity-consistent standard errors & covariance				
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			

Impacts on revenue trips per mile due to the sale of additional medallions and impacts of economic growth were included in the financial analysis which calculated the revenues and costs for the different medallions and cash flows were calculated.

The method used to estimate the discounted cash flows of a taxicab medallion is summarized in the following equations for both corporate and individual medallions:

1. Initial Outlay (FClnv) = Vehicle Purchase Price Plus Hack-Up Cost
2. Annual after tax operating costs (“Cash flow” or CF) = (S – C – D)*(1-T) + D

   S (“Sales”) = revenue (fare) per mile

   C= Operating costs, including fuel costs + maintenance cost + insurance + labor cost

D = Depreciation on the purchase of the vehicle. (Depreciation is a non-cash expense that is added to cash flow, resulting in a lower tax expense)

As part of the depreciation, medallion asset amortization was also included as medallions can be amortized over a 15 year period.

3. Terminal year after tax cash flow = Salvage Value (Sal) at retirement year less Taxes due on the difference between the salvage value at termination and book value (Salvage value is assumed to be equal to book value at the terminal year)
4. Estimated cash flow discounted at the Cost of Capital: The cost of capital is assumed to be 3.2% for corporate medallions and 7.0% for independent medallions.

An average of discounted cash flows for the period 2017-20 and projected forward to 2027 after which cash flows divided 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 in perpetuity. This is called the terminal value of the asset and gives the valuation of owning the asset indefinitely into the future. Discounted cash flows for the analysis horizon are added to this terminal value to give the economic value of the medallion.

6.3 Technical details on Input Output Analysis

An input-output model contains very detailed data on earnings and labor used to produce specific goods and services, and is a suitable tool to analyze 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 (the direct effect is also called the final demand for the goods). 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 effect are added to the direct effect (the $1 million in sales), we get an estimate of the total (direct and indirect) output effect.

However, the total economic effect of the $1 million in sales extends further beyond the output effect. As all production of output outline 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 also estimates the employment generated throughout the regional economy from the increased activity[43].

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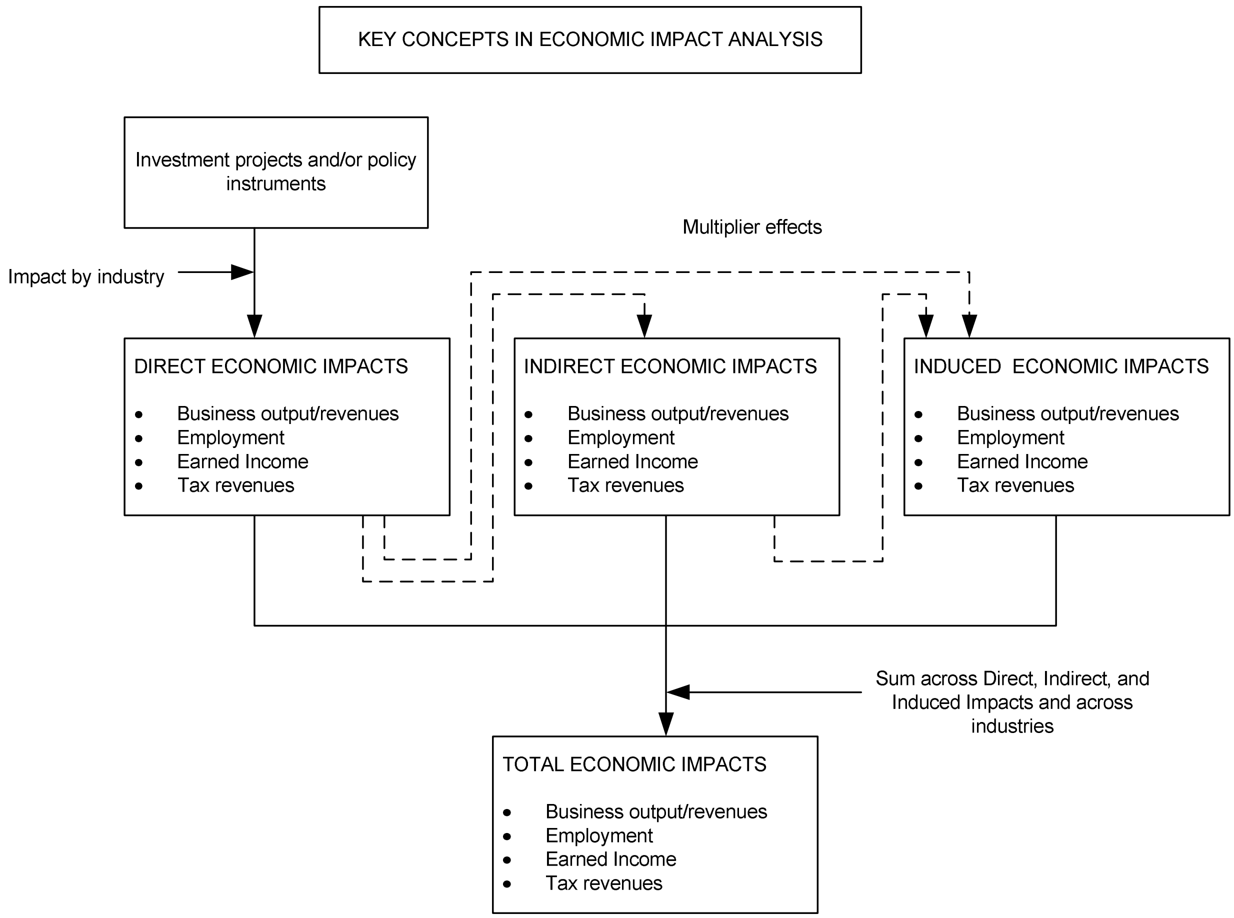
[43]In the input-output model, the estimate of increased employment will always be in terms of the employment required for a given level of production, usually referred to as *person-years* of employment. These estimates should never be interpreted as specifying *permanent jobs.*

We can represent how the Input Output model functions in the following way. 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.

Figure 5: The Input - Output Model



The multipliers shown in Table 33 suggest that a \$1 increase in output for the Taxi Industry results in \$1.67 increase in overall demand in the regional economy. Similarly, \$ 1 increase in output results in \$0.38 increase in earnings while a \$1 million increase in output results in the increase of 18.1 jobs City-wide. Using an input model we can also single out the direct impacts that occur in the industry due to increased in employment in the industry. In particular we estimate worker earnings change 1.51 per \$1 change in the Industry earnings and 1.23 city-wide jobs increase due to an additional job in Taxi Industry.

Table 33: Input - Output Multipliers for Transit and Ground Passenger Transportation Industry in New York City

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

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

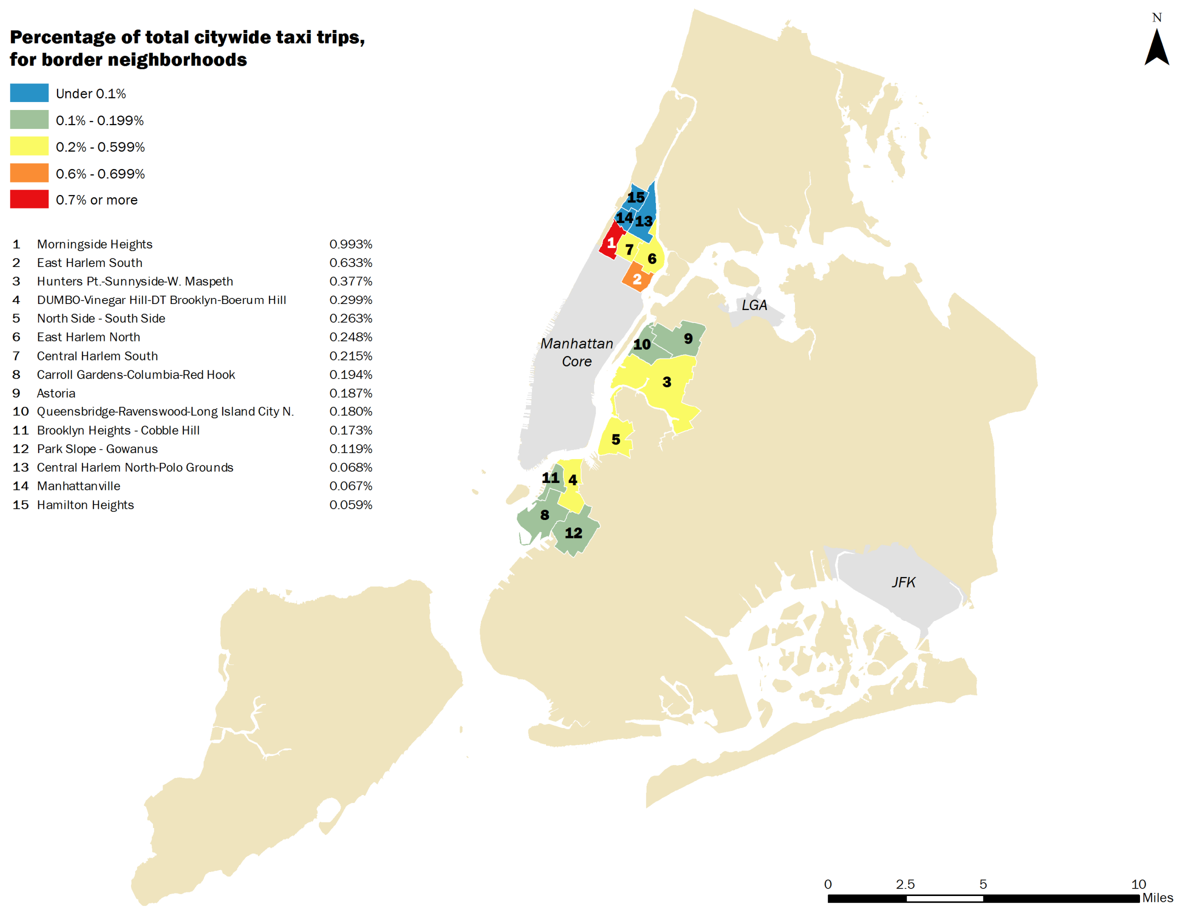
There is currently little direct competition between yellow cabs and livery cars. The services they provide differ – yellow taxis primarily serve passengers who hail them on the street, while livery car pick-ups are generally arranged by phone. Moreover, they serve geographically distinct markets. TLC 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.

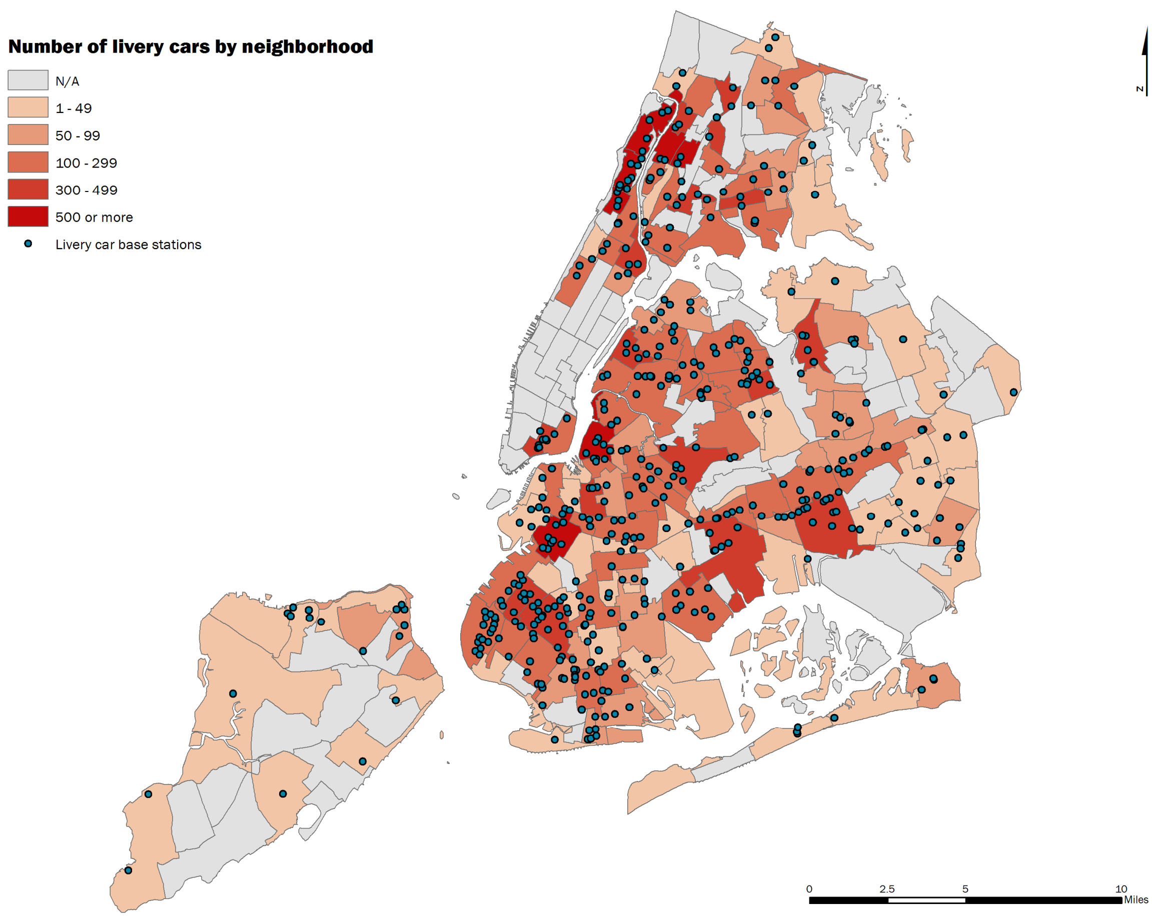
Table 2: Top 20 neighborhoods by number of livery cars affiliated with local base stations

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 125th 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