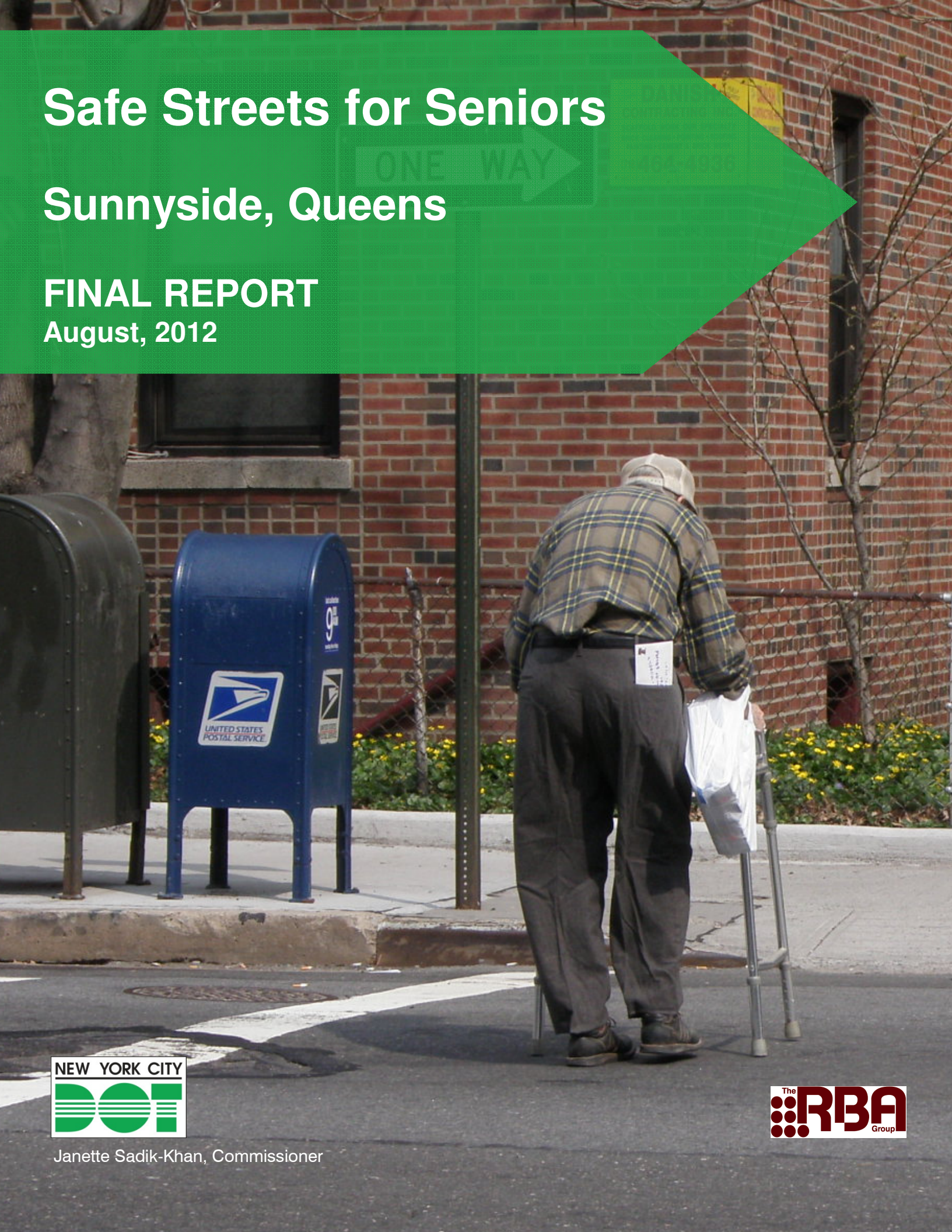
Safe Streets for Seniors

Sunnyside, Queens

FINAL REPORT

August, 2012



NEW YORK CITY DOT

Janette Sadik-Khan, Commissioner

The RBA Group

Safe Streets for Seniors

SUNNYSIDE

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1 Project Description

1. PROJECT DESCRIPTION

Since 1990 the number of pedestrian fatalities in New York City has decreased by 56%. Moreover, prior to 1950, pedestrians accounted for three-fourths of all traffic fatalities and since then, that percentage has decreased to account for about one-half of all traffic fatalities. Despite these statistical improvements, pedestrians continue to be the largest at risk mode – with older adults more likely to suffer serious injuries or fatalities from traffic crashes than other pedestrians. The rate of pedestrian fatalities for every 100,000 persons in the City has decreased by nearly half since 1991 – to 2.0 from 3.8 – while the rate of senior pedestrian fatalities per 100,000 seniors has decreased even more sharply – to 6.6 from 13.1. Nevertheless, while seniors make up only 12% of the population in New York City, they still comprise 39% of pedestrian fatalities. The recognition of the disproportional representation of the senior population among severe pedestrian injuries and fatalities led to the development of the Department of Transportation's Safe Streets for Seniors (SSS) Program.

The purpose of this project is to address senior pedestrian safety issues at 25 Senior Pedestrian Focus Areas (SPFAs) in the five boroughs of New York City and to develop and implement mitigation measures to improve the safety of seniors and other pedestrians within the 25 SPFAs. DOT identified SPFAs to include the top senior pedestrian crash (severe injury and fatality) areas within each borough. Four of the SPFAs are located in the Bronx, seven in Brooklyn, five in Queens, eight in Manhattan and one in Staten Island. The SPFAs have been selected based on the density of senior pedestrian crashes resulting in fatalities or severe injuries in a five-year period. DOT conducted in-house studies for five pilot SPFAs and is utilizing consultant services to perform a comprehensive study of pedestrian safety conditions at intersections and along corridors within 20 selected SPFAs.

The project evaluates the crash history and existing traffic conditions and controls (e.g., roadway geometry, signal timing) at selected intersections and corridors within each SPFA in order to develop short- and long-term measures to reduce pedestrian crashes specifically for seniors, and improve safety and traffic operations for all users. DOT makes specific safety recommendations consisting of low-cost as well as capital engineering and design improvements for these 20 areas. In addition, DOT conducts data analysis as needed, prepares engineering and design schematics and related services, as necessary, for capital improvements.

2. BACKGROUND

Land-use in the Sunnyside Study Area is a mix of commercial and residential buildings.

There are two schools in the study area:

- Queen of Angels Elementary School at 4112 44th Street between Skillman Avenue and 43rd Avenue
- Little Friends Nursery School at 4342 47th Street between 43rd Avenue and Queens Boulevard

Bicycle Facilities

In the vicinity of Sunnyside Study Area, Skillman Avenue, 43rd Avenue and 48th Street are existing bike routes. There are no planned/proposed routes in the study area based on NYC DOT 2010 Bicycle Master Plan (Exhibit 2).

Truck Routes

Queens Boulevard and Greenpoint Avenue are through truck route and Greenpoint Avenue/Roosevelt Avenue is a local truck route in the vicinity of the study area (Exhibit 3).

Bus Lines and Subway

Ten bus lines operate in the study area including:

- Q32: Operates along Queens Boulevard and Greenpoint Avenue/Roosevelt Avenue
- Q60: Operates along Queens Boulevard
- Q104: Operates along 48th Street
- QM1, QM1A, QM4, X51, X63, X64, X68: Operates along Queens Boulevard

The 7 Flushing Subway Line runs through the study area (Exhibit 4). A subway station for the 7 line is located at the following intersections:

- Queens Boulevard and 40th Street
- Queens Boulevard and 46th Street
- Greenpoint Avenue and 52nd Street

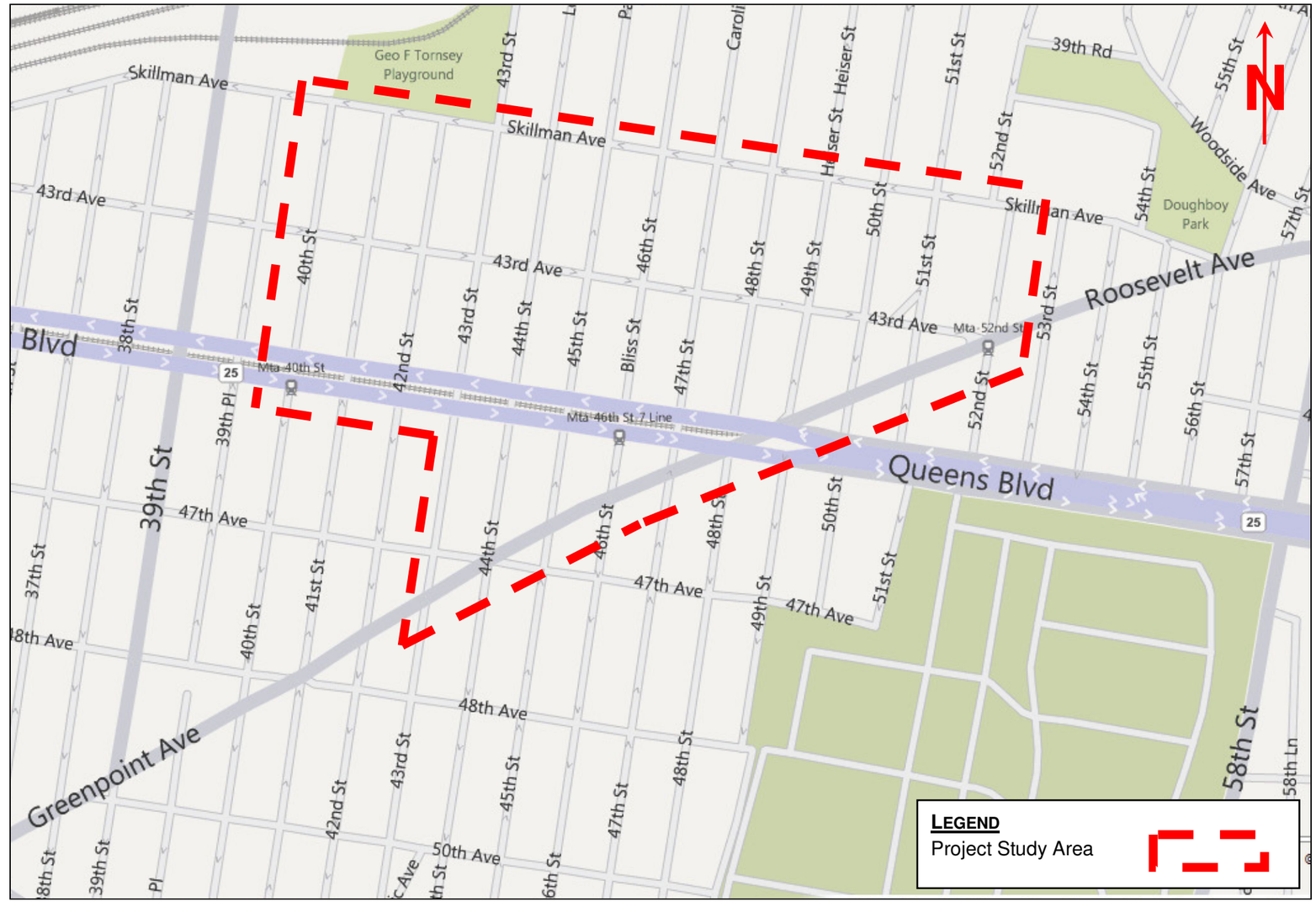


EXHIBIT 1 – AREA MAP

2 Background

Exhibit 2 – Bike Map

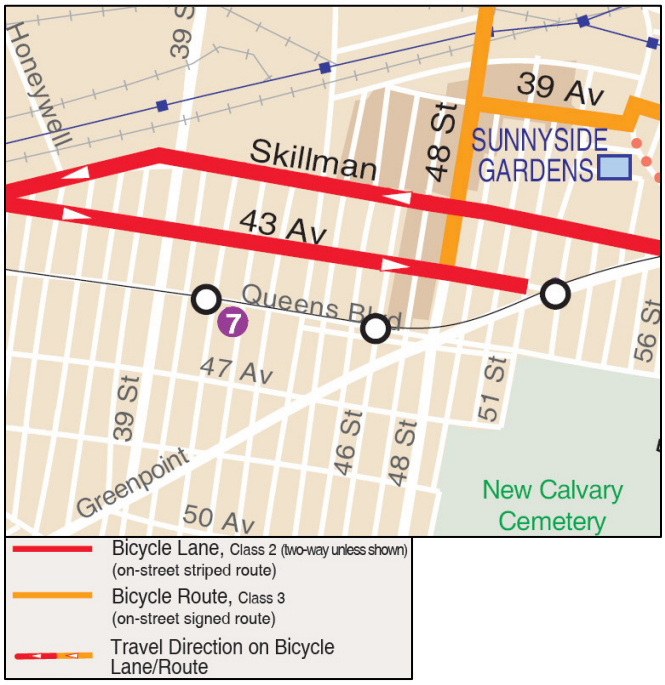


Exhibit 3 – Truck Map

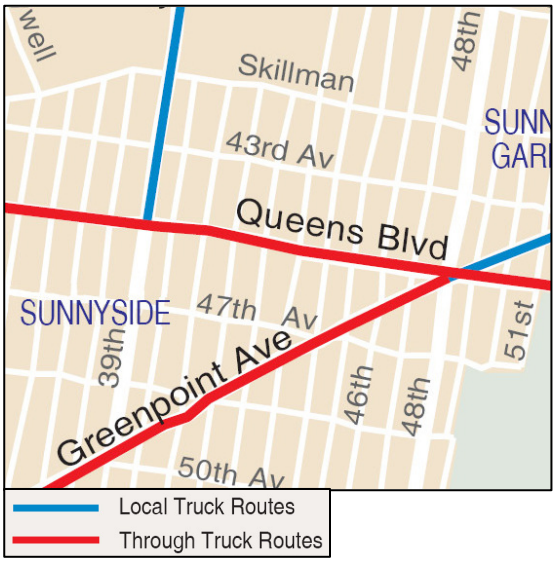
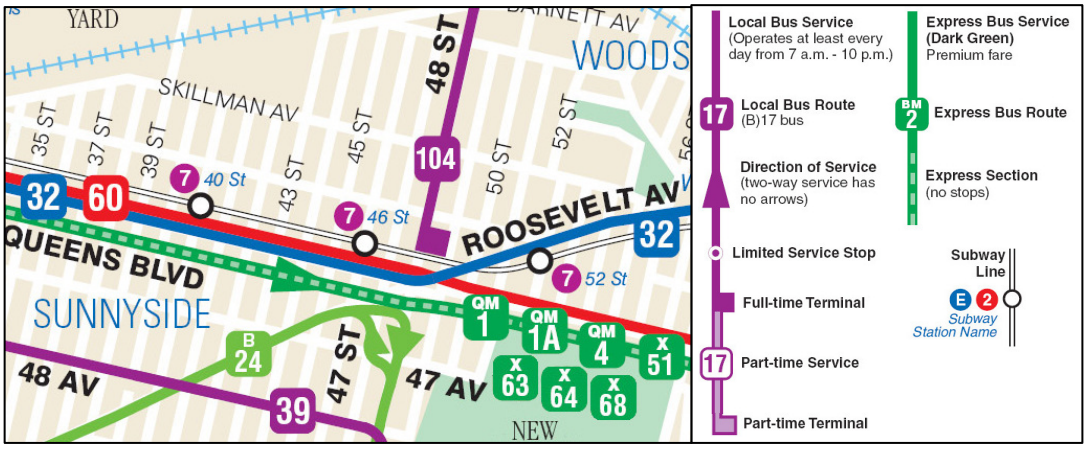


Exhibit 4 – Transit Map



3 Existing Conditions

3. EXISTING CONDITIONS

3.1 About the Study Area

The Sunnyside Study Area consists of three major west-east corridors: Skillman Avenue, 43rd Avenue and Queens Boulevard and one major north-south corridor: Greenpoint Avenue/Roosevelt Avenue. The existing street geometry of Skillman Avenue and 43rd Avenue includes two moving lanes with a bike lane in one direction and parking on both sides. Queens Boulevard includes four moving lanes in each direction divided by the elevated 7 train line with parking below. There is also parking on both sides along the outer curbs. The major north-south corridor, Greenpoint Avenue/Roosevelt Avenue includes two moving lanes, one in each direction, with parking on both sides.

Photo No. 1: 43rd Street & Queens Boulevard

There were several accidents in the study area, including ten senior pedestrian accidents between 2001 and 2006. Six of the accidents were located along Queens Boulevard and one of which resulted in a fatality. The combination of heavy traffic volumes, operational factors and geometric factors make these corridors difficult for a senior pedestrian to safely cross.

There is a planned NYCDDC project, Pedestrian circulation improvements on Queens Boulevard that include the study area (Appendix H). The project includes neckdowns, relocating catch basins to accommodate the new neckdowns, traffic signal and street lighting work at the following intersections along Queens Boulevard: 32nd Place, 35th Street, 37th Street, 38th Street, 39th Place, 41st Street, 44th Street, 45th Street, Roosevelt Avenue, 65th Place and Woodhaven Boulevard.

3.2 Field Observations and Pedestrians Concerns

There were numerous issues that were repeatedly observed during the field visits and/or conveyed by senior pedestrians during interviews. Those issues are listed here:

- Insufficient crossing time
- Turning vehicles not yielding to pedestrians
- Missing crosswalk striping
- Missing or non-standard ADA pedestrian ramps

4 Traffic Operations

4. TRAFFIC OPERATIONS

4.1 Crash Summary

Crash data was obtained from the New York City Department of Transportation (NYCDOT) in the Sunnyside Study Area from 2001 through 2006. This data provides some detail relating the circumstances and cause of each crash. Table 1 and Exhibit 5 show a summary of crashes.

Table 1: DMV Six Year Crash Summary (2001-2006)

INTERSECTION		SENIOR PEDESTRIAN CRASHES	SENIOR PEDESTRIAN FATALITIES
Skillman Avenue	43rd Street	1	0
	51st Street	1	0
43rd Avenue	52nd Street	1	0
Queens Boulevard	40th Street	2	1
	43rd Street	1	0
	44th Street	1	0
	46th Street	1	0
	Greenpoint Avenue/Roosevelt Avenue	1	0
47th Avenue	43rd Street	1	0
TOTAL		**10**	**1**

EXHIBIT 5 – PEDESTRIAN CRASH STATISTICS (2001-2006)

4 Traffic Operations

4.2 Traffic Volumes

The level of vehicle and pedestrian conflicts at the intersections utilized by senior pedestrians, in the Sunnyside Study Area, was assessed using traffic volume data collected at key locations in June of 2010 (Table 2).

Table 2: Traffic Volume Data

Locations	ATR[1]	TMC[2]	PED COUNTS	SPEED SURVEY
Eastbound 43rd Avenue between 50th Street & island at 51st Street	x			x
43rd Avenue & 51st Street		x	x	
Westbound Skillman Avenue between 51st Street & 52nd Street	x			x
Skillman Avenue & 51st Street		x	x	
Northbound 51st Street & Skillman Avenue	x			
Northbound 51st Street & 43rd Avenue	x			
Westbound Queens Boulevard & 48th Street		x	x	
Westbound Queens Boulevard & Greenpoint Avenue/Roosevelt Avenue/49th Street		x	x	
Eastbound Queens Boulevard & Greenpoint Avenue/Roosevelt Avenue/48th Street		x	x	
Queens Boulevard & 43rd Street		x	x	
Queens Boulevard & 45th Street		x	x	
Queens Boulevard & 47th Street		x	x	

Notes:
1. Twenty-four hour Automatic Traffic Recorder (ATR)
2. Turning Movement Counts (TMC's)

The results of the ATR, TMC, pedestrian counts and speed survey are included in Appendices A, B, C, D and the Technical Supplement.

4.3 EXISTING LEVEL OF SERVICE

The common practices used to evaluate both un-signalized and signalized intersections are level-of-service (LOS), delay, and volume-to-capacity ratio (v/c). The intersections and corridors to be evaluated were selected based on the pedestrian crash locations and what was observed during the field visit. At some signalized intersections, delay and v/c were analyzed. The baseline conditions at a specific intersection are measured in the amount of time (delay) that a vehicle has to wait at that intersection. This delay is measured in seconds per vehicle (sec/veh) during the busiest one hour (peak hour) in both the morning (AM) and evening (PM), and referred to as total delay. Total delay is adjusted for additional accrued time due to traffic controls and queuing conditions. A volume-to-capacity ratio indicates the amount of congestion that occurs at a particular location. An intersection with a v/c that is greater than or equal to one proves that the traffic conditions are above or at capacity; whereas an intersection with a v/c less than one indicates that traffic operations are below capacity.

For un-signalized intersections, the level of service is determined by the time spent while the vehicle is not moving (stopped delay). The two approaches can be used to measure the average stopped delay, either by minor movements of the intersection as a whole or by lane grouping.

The results of the existing level of service analysis for the studied corridors during both AM and PM peak hours are indicated in Table 3. The detailed results of the analysis are included in Appendix D and existing signal timings are shown in Appendix G.

TABLE 3: EXISTING (2010) INTERSECTION LEVEL OF SERVICE AND DELAYS (SEC)

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Queens Boulevard WB & 43rd Street	30.6	C	24.2	C
Queens Boulevard EB & 43rd Street	21.8	C	27.7	C
Queens Boulevard WB & 47th Street	7.6	A	11.9	B
Queens Boulevard EB & 47th Street	24.2	C	31.3	C
Queens Boulevard WB & 48th Street	7.0	A	13.7	B
Queens Boulevard WB & Greenpoint Avenue/Roosevelt Avenue/49th Street	42.9	D	43.1	D
Queens Boulevard EB & Greenpoint Avenue/48th Street	29.1	C	13.9	B

Notes:
- WB = Westbound, EB = eastbound

4.4 SIGNAL TIMING: PEDESTRIAN INTERVAL

According to MUTCD 2009 (Manual on Uniform Traffic Control Devices) Section 4E.06, a minimum of seven seconds is allocated for a walk interval, in addition to a pedestrian clearance time based on a walking speed of 3.5 feet per second. All signalized intersections in the study area were modified to provide a clearance interval of three feet per second to accommodate slower walking speeds.

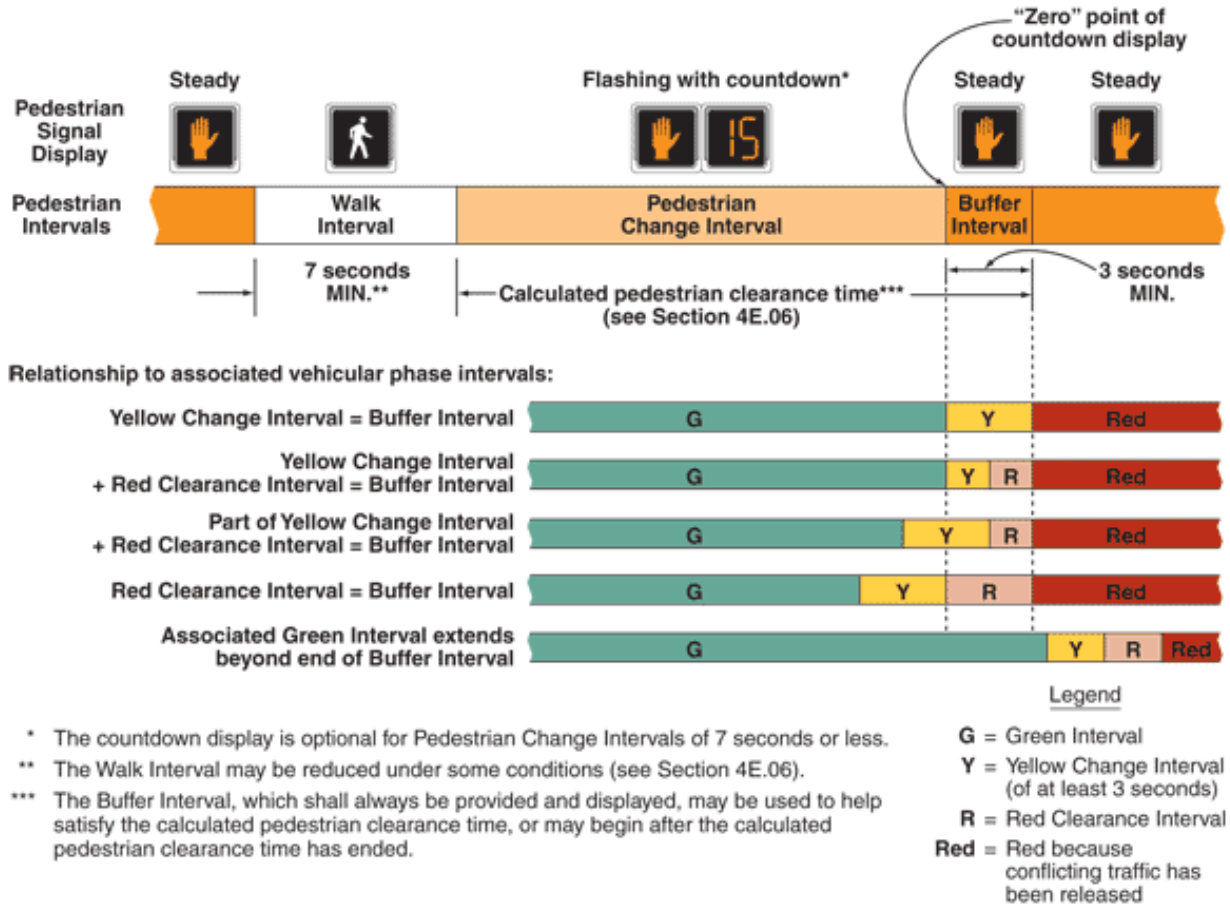


Figure No. 1: Pedestrian Intervals from MUTCD 2009

5 Illustrating The Solution

5. ILLUSTRATING THE SOLUTION

5.1 Executive Summary and General Recommendations

Table 4: Summary of Specific Recommendations

Section	Locations	Install Pedestrian Signal	Install/Relocate A Sign	Add All Pedestrian Phase	Curb Extension	Stripe Travel Arrows	Stripe Parking Lanes	Standard Crosswalk	Remove Rush Hr Regulations	Convert to One-way Roadway	Reconstruct Corner Quadrant
5.2	Queens Blvd Westbound & 43rd St				x						
5.2	Queens Blvd Westbound & 44th St										x
5.2	Queens Blvd Westbound & 46th St										x
5.2	Queens Blvd Westbound & 48th St										x
5.2	Queens Blvd Westbound & Roosevelt Ave										x
5.2	Queens Blvd Eastbound & Roosevelt Ave				x	x					x
5.2	Queens Blvd & 48th St			x							x
5.2	Queens Blvd, Roosevelt Ave & 48th St				x						
5.3	Roosevelt Ave & 49th St										x
5.3	Roosevelt Ave & 50th St										x
5.3	Roosevelt Ave & 51st St										x
5.3	51st St between 43rd Ave & Roosevelt Ave									x	
5.3	Roosevelt Ave, 43rd Ave & 52nd St	x									x
5.3	43rd Ave & 51st St		x					x			x
5.3	43rd Ave between 51st St & 52nd St								x		
5.4	47th Ave between 37th St & Barnett Ave						x				

5 Illustrating The Solution

General Recommendations

- *Place stop bars ten feet in advance of all crosswalks*
  The NYCDOT standard for placement of a stop bar is ten feet in advance of any marked pedestrian crosswalk, including school and high-visibility crosswalks. This helps to maximize pedestrian visibility and to minimize the potential for pedestrian/vehicle conflicts. Therefore, it is recommended that stop bars be placed ten feet in advance of all crosswalks.

- *Provide additional crossing time where feasible*
  Number of senior residents interviewed, indicated that there was not enough time to cross a lot of the streets. All the signals, where possible, will be retimed to allow more crossing time for pedestrians.

5.2 QUEENS BOULEVARD

Queens Boulevard is a two-way street with four moving lanes in each direction. The westbound and eastbound streets are both 50-foot wide and separated by an elevated subway line. The elevated subway line has two entrance/exits in the project area. At street level, there are a series of parking lots. It is a designated through truck route and has heavy pedestrian and vehicular volumes (Photo No. 2).

Photo No. 2: Queens Blvd & 47th St

NYCDDC recommended neckdowns in the study area at the following intersections (see Appendix H):

- Northwest corner of 41st Street and Queens Boulevard Westbound
- Southwest corner of 41st Street and Queens Boulevard Eastbound
- Northeast corner of 44th Street and Queens Boulevard Westbound
- Southeast corner of 44th Street and Queens Boulevard Westbound
- Northwest corner of 45th Street and Queens Boulevard Westbound
- Southwest corner of 45th Street and Queens Boulevard Eastbound

Photo No. 3: Queens Blvd & Greenpoint Ave/Roosevelt Ave

At the following intersections, a new pedestrian ramp is recommended or an existing pedestrian ramp is in poor condition and should be replaced:

- Southeast corner of 44th Street and Queens Boulevard Westbound
- Northeast corner of 46th Street and Queens Boulevard Westbound
- Southwest corner of 48th Street and Queens Boulevard Westbound
- Northwest and southeast corners of Greenpoint Avenue/Roosevelt Avenue and Queens Boulevard Eastbound (Photo No. 3)
- Southeast corner of Queens Boulevard Eastbound and 48th Street

On the northwest corner of Queens Boulevard Westbound and 43rd Street, a neckdown is recommended to shorten the crossing distance and slow turning traffic. Vehicle turning was reviewed and the proposed neckdown allow for vehicles to safely complete all legal turns (Appendix F).

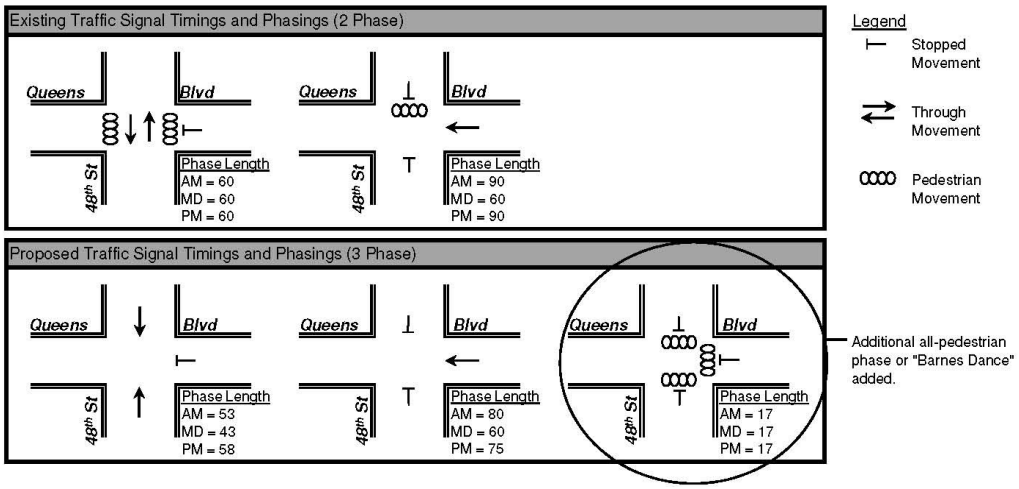
5 Illustrating The Solution

At Queens Boulevard Eastbound, Greenpoint Avenue/Roosevelt Avenue and 48th Street, new traffic striping lanes and arrows are recommended for the west leg along Queens Boulevard. The new striping will alert and remind the drivers that they cannot make a right-turn onto Greenpoint Avenue/Roosevelt Avenue at this intersection. NYCDOT recommended closing the slip ramp that is currently blocked off from Queens Boulevard Eastbound to Greenpoint Avenue/Roosevelt Avenue and creating a pedestrian plaza (Photo No. 4). Many seniors also raised concerns about this particular intersection.

Photo No. 4: Queens Blvd & Greenpoint Ave/Roosevelt Ave

At Queens Boulevard Westbound and 48th Street, pedestrians were observed to have difficulty crossing Queens Boulevard because of heavy conflicting turning volumes to/from 48th Street. Because of this, it was decided to examine the possibility of implementing an all-pedestrian crossing-phase, often referred to as a "Barnes Dance", at the intersection to improve pedestrian safety. During Barnes Dance, all vehicular traffic is stopped, allowing pedestrians to cross the intersection in all directions (including diagonally) at the same time. Traffic data were collected at Queens Boulevard Westbound and 48th Street, as well as at the adjacent Queens Boulevard intersections with which the 48th Street intersection is coordinated. It should be noted that the eastbound and westbound directions of Queens Boulevard operate on the same controller; therefore, the Synchro model that was developed to evaluate levels of service at the intersections included Queens Boulevard Westbound at 48th Street, Queens Boulevard Eastbound and Westbound at 47th Street, and Queens Boulevard Eastbound and Westbound at Greenpoint Avenue/Roosevelt Avenue.

Based on the Synchro analysis, it was found that a Barnes Dance could be implemented at Queens Boulevard Westbound and 48th Street without adversely affecting adjacent intersections; however, minor signal timing changes at the Greenpoint Avenue/Roosevelt Avenue intersections are required. Detailed analysis results are provided in Appendix G. An illustration of the Barnes Dance timing requirements are provided in Figure No. 2.



Note: Existing and Proposed cycle lengths are the same: 150 seconds for the weekday AM and PM periods and 120 seconds for the weekday midday period.

Figure No. 2: Signal Timings and Phasings at Queens Boulevard Westbound and 48th Street

Photo No. 5: Queens Blvd & 48th St (looking west)

At the southeast corner of Queens Boulevard Eastbound and 48 Street, a neckdown is recommended in-line with existing striping to slow turning traffic and shorten the crossing distance (Photo No. 5). This measure will also provide a safe refuge for pedestrians.

5.3 GREENPOINT AVENUE / ROOSEVELT AVENUE & 43RD AVENUE

Greenpoint Avenue/Roosevelt Avenue

Greenpoint Avenue turns into Roosevelt Avenue north of Queens Boulevard. This corridor is a 40-foot wide two-way street with one travel lane in each direction and parking on both sides.

Several intersections along Greenpoint Avenue/Roosevelt Avenue are missing pedestrian ramps. New NYCDOT standard pedestrian ramps and ADA safety surfaces are recommended for the following intersections:

- Northwest corner of 49th Street and Greenpoint Avenue/Roosevelt Avenue
- Northeast corner of 50th Street and Roosevelt Avenue
- Northeast corner of 51st Street and Roosevelt Avenue
- Northeast and southeast corners of 52nd Street, 43rd Avenue and Roosevelt Avenue

5 Illustrating The Solution

Photo No. 6: Vincent Daniels Square (looking north)

43rd Avenue

Vincent Daniels Square is bounded by Roosevelt Avenue to the south, 43rd Avenue to the north and 51st Street to the west (Photo No. 6). The park as well as the subway entrance/exit for the '7' line creates heavy pedestrian traffic in this area. 43rd Avenue is a 40-foot wide eastbound street with two moving lanes with a bike lane and parking on both sides.

Along the south side of 43rd Avenue between 51st Street and 52nd Street, it is recommended that the rush hour regulations, 'No Standing 4PM – 7PM Mon thru Fri', be removed to provide additional parking spaces for the commuters.

During the field visit, it was observed that pedestrians were confused about when to cross at the intersection of 43rd Avenue, Roosevelt Avenue and 52nd Street. Although this intersection is a controlled intersection, pedestrian signals are missing. To define a pedestrian phase for safely crossing the different intersection legs and reduce confusion, pedestrian signals are recommended for the following intersections:

- 43rd Avenue & 52nd Street (Photo No. 7)
- Roosevelt Avenue & 52nd Street

Photo No. 7: 43rd Ave & 52nd St

At the intersection of Roosevelt Avenue and 52nd Street, there are no crosswalks across the south and east legs. It is recommended that a standard crosswalk be striped at these locations.

Vehicles making left turns from 43rd Avenue onto northbound 51st Street fail to yield to pedestrians. Traffic data (Automatic Traffic Recorder Counts and Spot Speed Survey) was collected in May of 2010 and evaluated to determine if the existing triangle island can be turned into a pedestrian plaza by closing off 51st Street, west of the island. The results of the spot speed survey are shown in Table 5. Detailed Automatic Traffic Recorder and spot speed survey are presented in Appendices A, D and the Technical Supplement.

5 Illustrating The Solution

Table 5: Spot Speed Survey for 43rd Avenue			
Location	**Time**	**Median Speed (mph)**	**85th Percentile Speed (mph)**
43rd Avenue from 50th Street to 51st Street	AM	23.7	30.3
	PM	22.8	29.0

Based on the analysis, it is not recommended that the leg for left turns at 43rd Avenue and 51st Street be closed off to create a pedestrian plaza (Photo No. 8). Although the 43rd Avenue left-turn volumes, that would be added to the intersection if the pedestrian plaza were implemented are low, they would cause conditions on the northbound approach to deteriorate. Also, the queues along the 43rd Avenue approach would lengthen and it has very limited storage space (less than 150') which is not a sufficient amount of room.

Photo No. 8: 43rd Avenue & 51st Street

A yield to pedestrian sign is recommended for eastbound traffic along 43rd Avenue between 50th Street and 51st Street to alert the drivers of pedestrians crossing. Along the west side of the island between 43rd Avenue and 51st Street is a northbound stop-controlled street, there are no crosswalks at the north and south ends of the intersections and standard crosswalks are recommended for both ends. At the north end, the existing stop signs should be relocated further south, in front of the proposed crosswalk.

Photo No. 9: 51st St & Roosevelt Ave (looking north)

It is recommended that 51st Street between Roosevelt Avenue and 43rd Avenue be converted from a two-way roadway to a one-way northbound to match the traffic pattern of 51st Street south of Roosevelt Avenue and north of 43rd Avenue (Photo No. 9).

5.4 47TH AVENUE & 43RD STREET

For the following corridors, it is recommended that parking lanes be striped on both sides. This measure will narrow the travel lanes and in an attempt to calm vehicular traffic (Exhibits 9 & 10).

- 47th Avenue between 37th Street to 48th Street
- 43rd Street between Greenpoint Avenue to Barnett Avenue

5.5 SKILLMAN AVENUE

Skillman Avenue is a 44-foot wide westbound street with two moving lanes and a bike lane with parking on both sides. At the intersection of Skillman Avenue and 51st Street, Skillman Avenue is uncontrolled and 51st Street is stop-controlled. During the field visit, pedestrians were observed crossing mid-block at this intersection and traffic data (Automatic Traffic Recorder Counts and Spot Speed Survey) was collected to determine if a signal is warranted. The results are shown in Table 6. Detailed Automatic Traffic Recorder and spot speed survey are presented in Appendices A, D and the Technical Supplement.

TABLE 6: SPOT SPEED SURVEY FOR SKILLMAN AVENUE

Location	Time	Median Speed (mph)	85th Percentile Speed (mph)
Skillman Avenue from 52nd Street to 51st Street	AM	22.5	27.0
	PM	23.7	29.0

Under the MUTCD Section 4C.Traffic Control Signal, the following traffic signal warrants were examined to determine if a signal is warranted at the intersection of Skillman Avenue and 51st Street:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four-Hour Vehicular Volume
- Warrant 4, Pedestrian Volume

The analysis showed that a signal is not warranted at this intersection.

EXHIBIT 6 - RECOMMENDATION INDEX

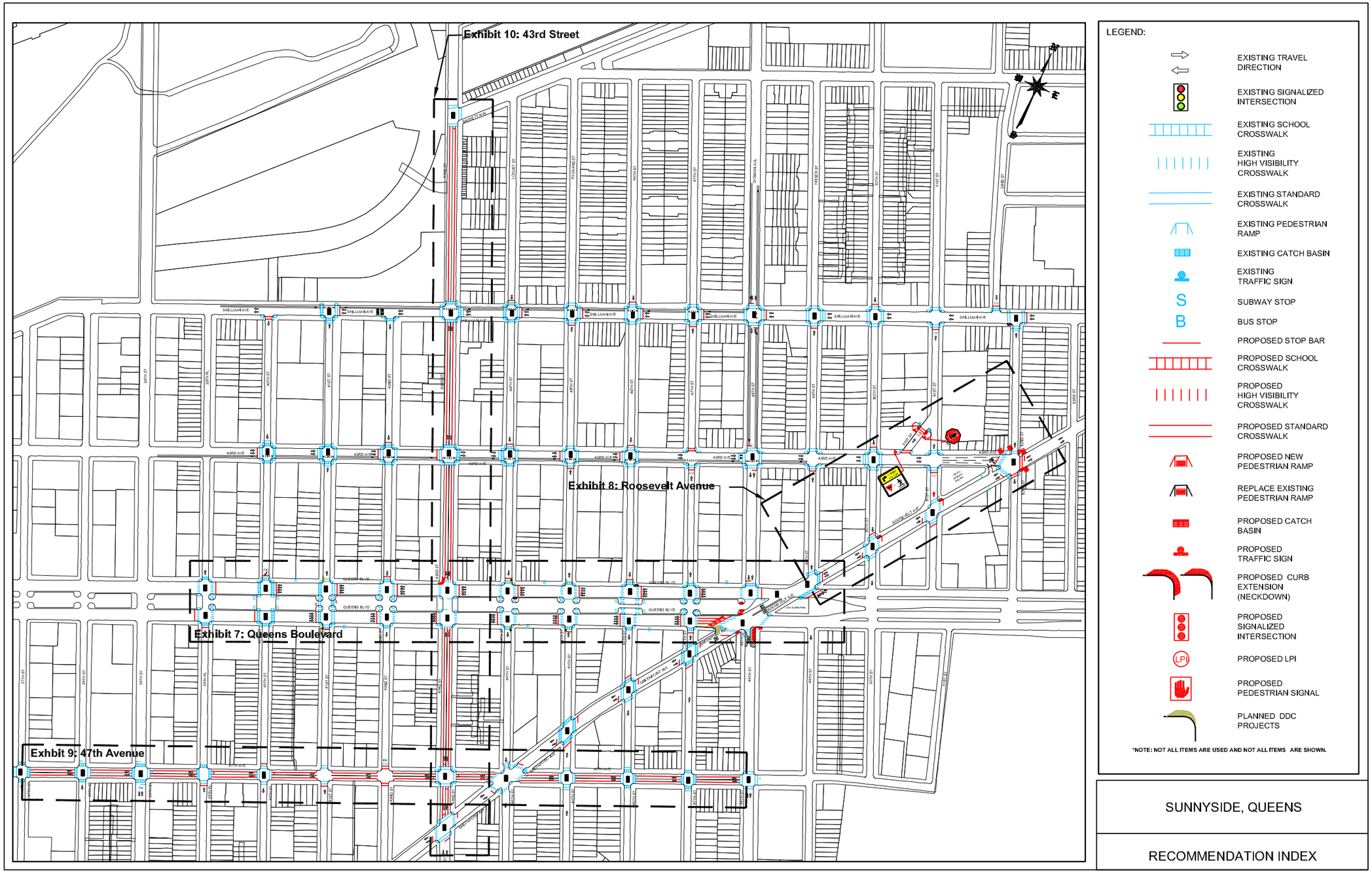
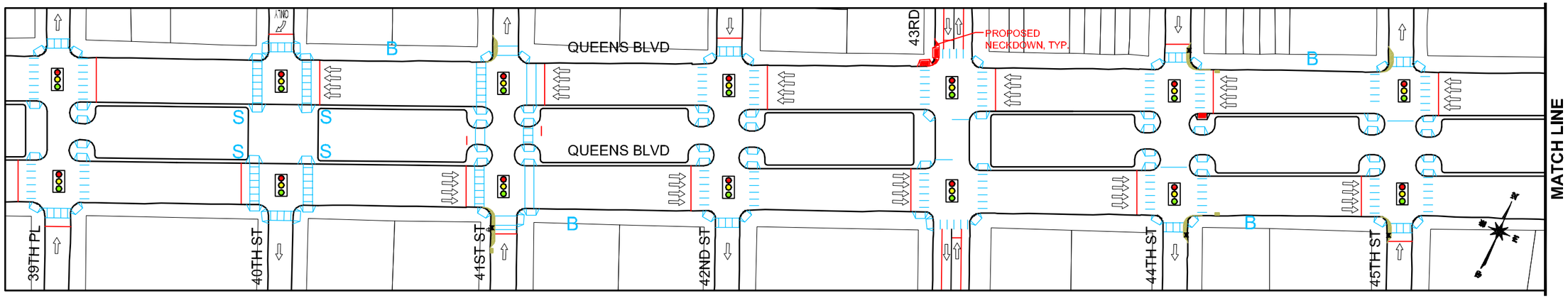
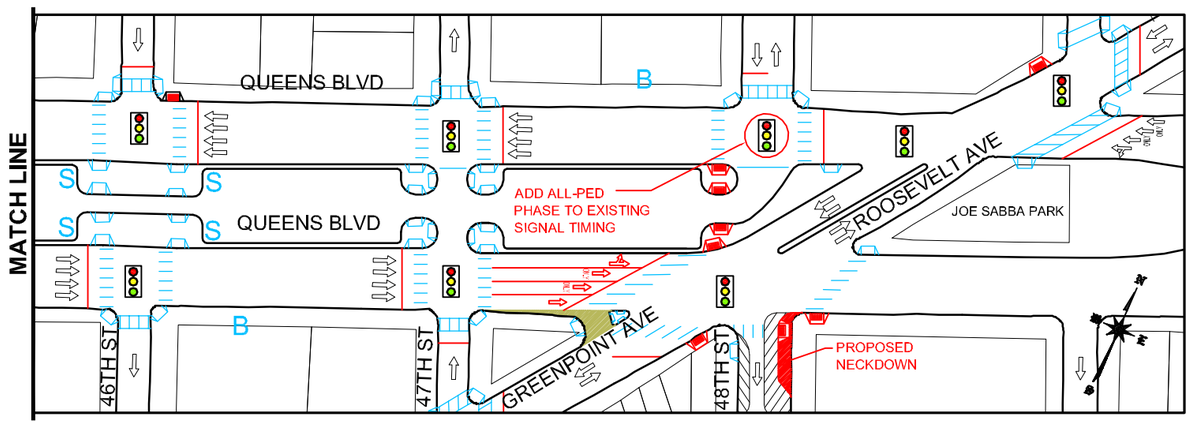
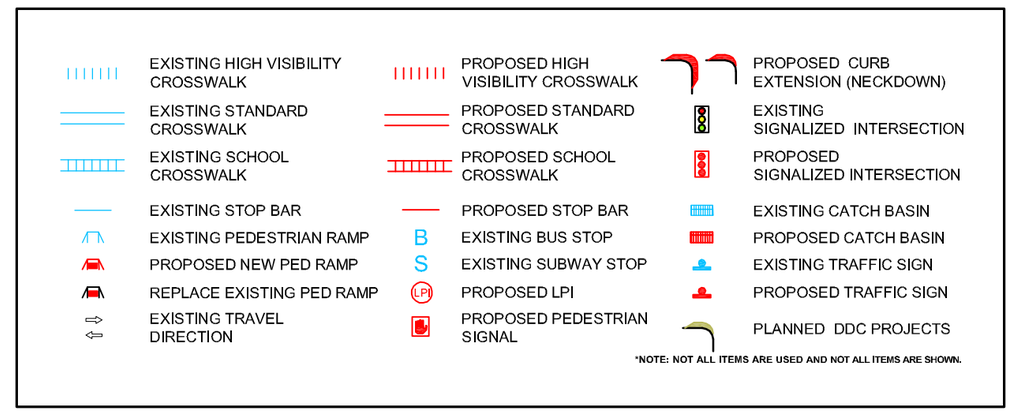


EXHIBIT 7 - Queens Boulevard (From 39th Place to 49th Street)







Pedestrian concerns in this area:

- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)

Recommended improvements include:

- Time all signals for seniors or where feasible, the crossing time will be extended
- Install new advanced stop bars
- Install a neckdown
  - -northwest corner of Queens Boulevard Westbound & 43rd Street
  - -southeast corner of Queens Boulevard Eastbound, Greenpoint Avenue/Roosevelt Avenue & 48th Street
- Stripe trafiic striping lanes and arrow markings for eastbound approach at Queens Boulevard & Greenpoint Avenue/Roosevelt Avenue
- Add all pedestrian phase to existing signal at Queens Boulevard Westbound & 48th Street with minor timing changes at Queens Boulevard Eastbound and Westbound at Greenpoint Avenue/Roosevelt Avenue

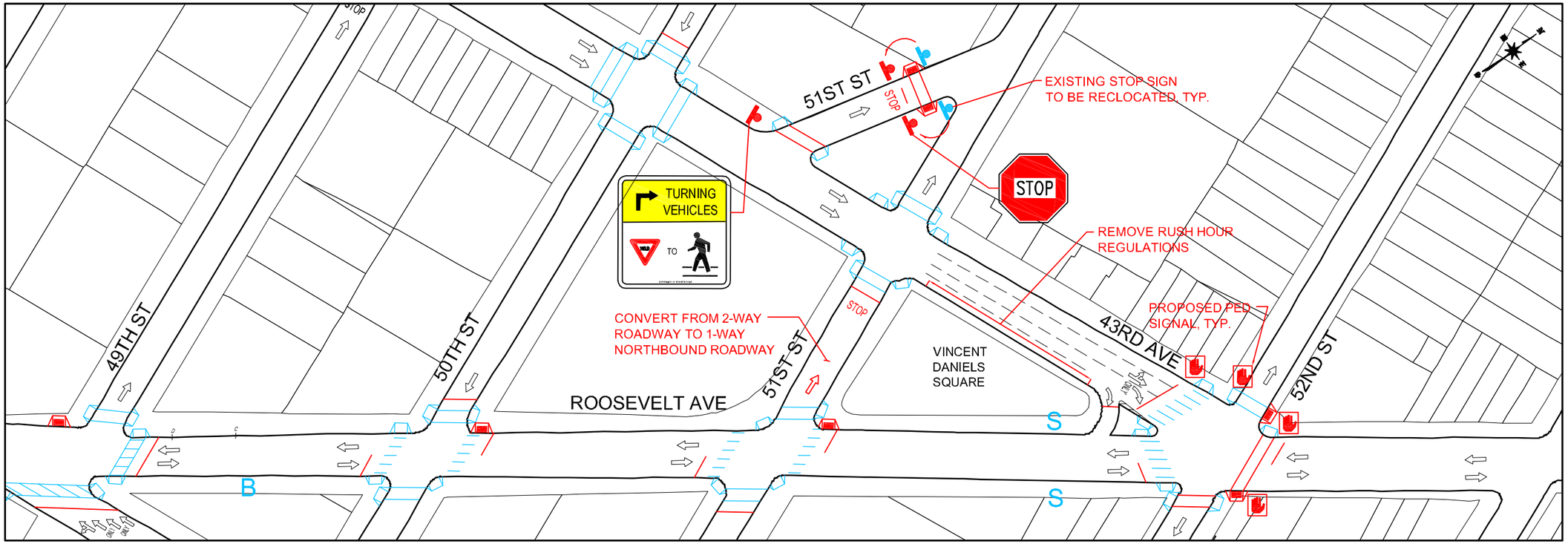
Additional Information:

- This study area was visited on April 6th, 2010
- Autoturn for the intersection of Queens Boulevard Westbound & 43rd Street is shown in Appendix F
- DDC final design for Project No.HWC988QB4 is shown in Appendix H

Traffic Analysis:

- *Turning Movement Counts (TMC)*
  - Queens Boulevard & 43rd Street
  - Queens Boulevard Westbound & 48th Street
  - Queens Eastbound Boulevard & Greenpoint Avenue/Roosevelt Avenue/48th Street
  - Queens Boulevard Westbound & Greenpoint Avenue/Roosevelt Avenue/49th Street
- *Pedestrian Counts*
  - Queens Boulevard & 43rd Street
  - Queens Boulevard Westbound & 48th Street
  - Queens Boulevard Eastbound & Greenpoint Avenue/Roosevelt Avenue/48th Street
  - Queens Boulevard Westbound & Greenpoint Avenue/Roosevelt Avenue/49th Street
- *Synchro Analysis*
  - Queens Boulevard & 43rd Street
  - Queens Boulevard & 47th Street
  - Queens Boulevard & 48th Street
  - Queens Boulevard Westbound & Greenpoint Avenue/Roosevelt Avenue/ 49th Street

EXHIBIT 8 - Roosevelt Avenue (From 49th Street to 52nd Street)



EXISTING HIGH VISIBILITY CROSSWALK	PROPOSED HIGH VISIBILITY CROSSWALK	PROPOSED CURB EXTENSION (NECKDOWN)
EXISTING STANDARD CROSSWALK	PROPOSED STANDARD CROSSWALK	EXISTING SIGNALIZED INTERSECTION
EXISTING SCHOOL CROSSWALK	PROPOSED SCHOOL CROSSWALK	PROPOSED SIGNALIZED INTERSECTION
EXISTING STOP BAR	PROPOSED STOP BAR	EXISTING CATCH BASIN
EXISTING PEDESTRIAN RAMP	B EXISTING BUS STOP	PROPOSED CATCH BASIN
PROPOSED NEW PED RAMP	S EXISTING SUBWAY STOP	EXISTING TRAFFIC SIGN
REPLACE EXISTING PED RAMP	LPI PROPOSED LPI	PROPOSED TRAFFIC SIGN
EXISTING TRAVEL DIRECTION	PROPOSED PEDESTRIAN SIGNAL	PLANNED DDC PROJECTS

*NOTE: NOT ALL ITEMS ARE USED AND NOT ALL ITEMS ARE SHOWN.

Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new advanced stop bars
- Install signs
  - -Yield to Pedestrian Sign for eastbound 43rd Avenue between 50th Street & 51st Street
  - -relocate existing Stop Signs at the north tip of the island at 43rd Avenue & 51st Street
- Stripe new standard crosswalk
  - -at the south end of the island at 43rd Avenue & 51st Street
  - -at the north tip of the island at 43rd Avenue & 51st Street
- Convert 51st Street from 2-way roadway to 1-way northbound roadway
- Remove rush hour regulations along 43rd Avenue between 51st Street & 52nd Street
- Install pedestrian signals
  - -north, west, and east leg of 43rd Avenue, 52nd Street & Roosevelt Avenue

Pedestrian concerns in this area:

- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)

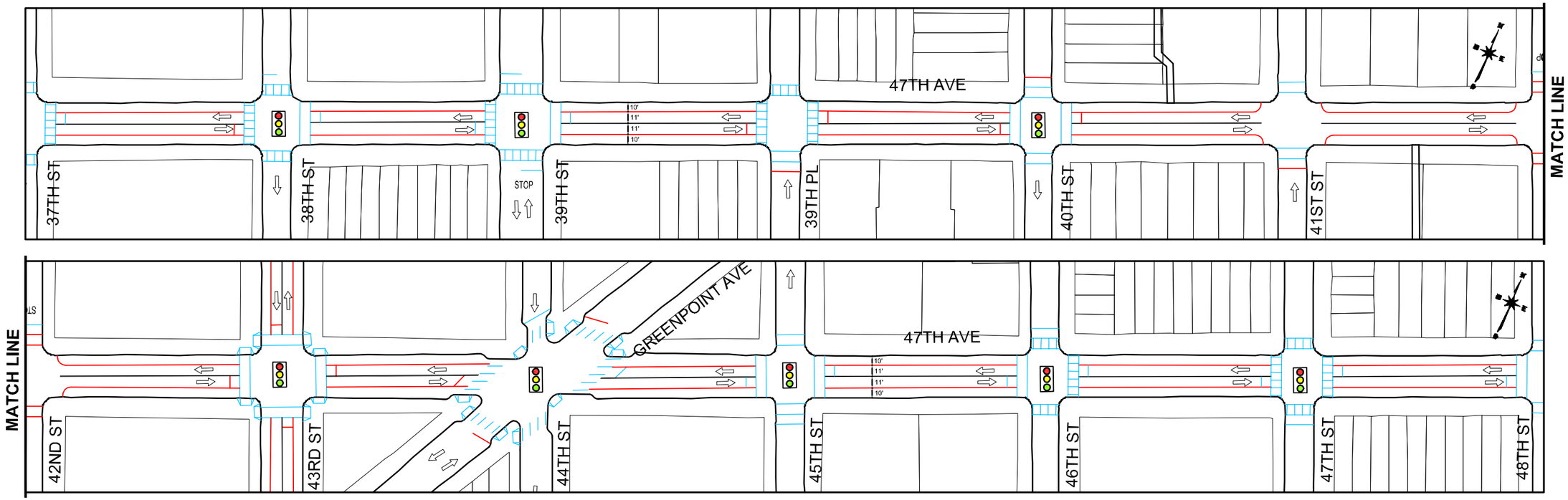
Additional Information:

- This study area was visited on April 6th, 2010

Traffic Analysis:

- *Automatic Traffic Recorder (ATR)*
  - 43rd Avenue & 50th Street
  - 43rd Avenue & 51st Street
- *Turning Movement Counts (TMC)*
  - 43rd Avenue & 51st Street
- *Pedestrian Counts*
  - 43rd Avenue & 50th Street
  - 43rd Avenue & 51st Street

EXHIBIT 9 - 47th Avenue (From 37th Street to 48th Street)



EXISTING HIGH VISIBILITY CROSSWALK	PROPOSED HIGH VISIBILITY CROSSWALK	PROPOSED CURB EXTENSION (NECKDOWN)
EXISTING STANDARD CROSSWALK	PROPOSED STANDARD CROSSWALK	EXISTING SIGNALIZED INTERSECTION
EXISTING SCHOOL CROSSWALK	PROPOSED SCHOOL CROSSWALK	PROPOSED SIGNALIZED INTERSECTION
EXISTING STOP BAR	PROPOSED STOP BAR	EXISTING CATCH BASIN
EXISTING PEDESTRIAN RAMP	B EXISTING BUS STOP	PROPOSED CATCH BASIN
PROPOSED NEW PED RAMP	S EXISTING SUBWAY STOP	EXISTING TRAFFIC SIGN
REPLACE EXISTING PED RAMP	LPI PROPOSED LPI	PROPOSED TRAFFIC SIGN
EXISTING TRAVEL DIRECTION	PROPOSED PEDESTRIAN SIGNAL	PLANNED DDC PROJECTS

*NOTE: NOT ALL ITEMS ARE USED AND NOT ALL ITEMS ARE SHOWN.

Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new advanced stop bars
- Stripe parking lanes along 47th Avenue between 37th Street and 48th Street

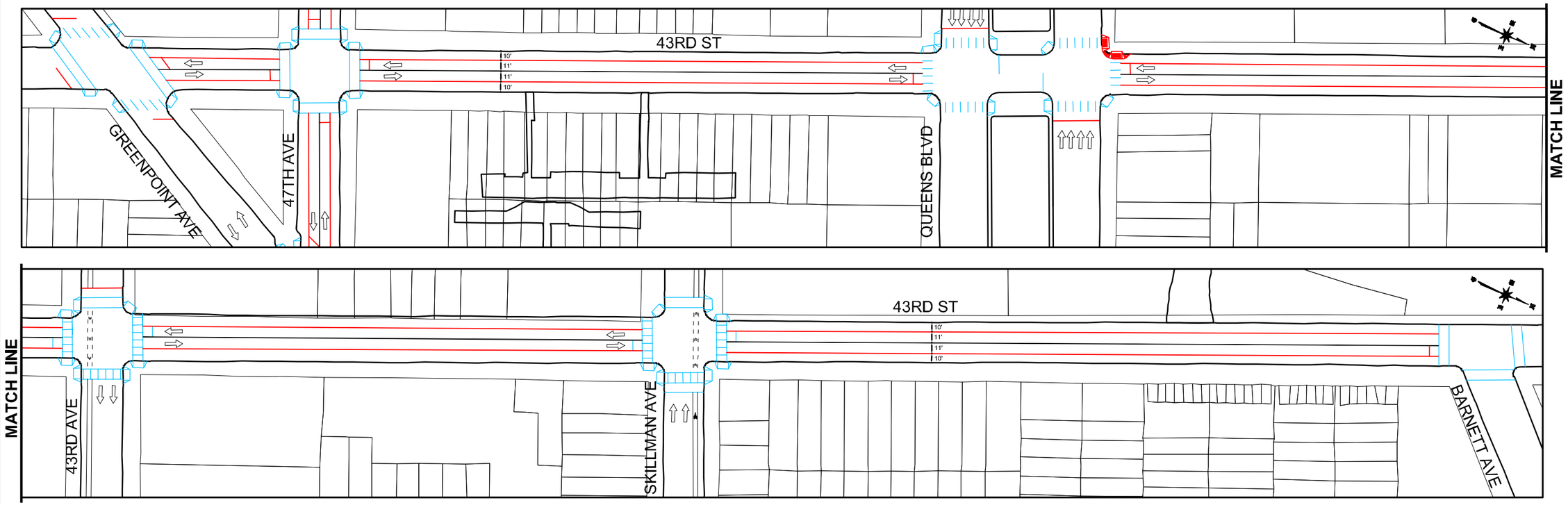
Pedestrian concerns in this area:

- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)

Additional Information:

- This study area was visited on April 6th, 2010

EXHIBIT 10 - 43rd Street (From Greenpoint Avenue to Barnett Avenue)



EXISTING HIGH VISIBILITY CROSSWALK	PROPOSED HIGH VISIBILITY CROSSWALK	PROPOSED CURB EXTENSION (NECKDOWN)
EXISTING STANDARD CROSSWALK	PROPOSED STANDARD CROSSWALK	EXISTING SIGNALIZED INTERSECTION
EXISTING SCHOOL CROSSWALK	PROPOSED SCHOOL CROSSWALK	PROPOSED SIGNALIZED INTERSECTION
EXISTING STOP BAR	PROPOSED STOP BAR	EXISTING CATCH BASIN
EXISTING PEDESTRIAN RAMP	B EXISTING BUS STOP	PROPOSED CATCH BASIN
PROPOSED NEW PED RAMP	S EXISTING SUBWAY STOP	EXISTING TRAFFIC SIGN
REPLACE EXISTING PED RAMP	LPI PROPOSED LPI	PROPOSED TRAFFIC SIGN
EXISTING TRAVEL DIRECTION	PROPOSED PEDESTRIAN SIGNAL	PLANNED DDC PROJECTS

*NOTE: NOT ALL ITEMS ARE USED AND NOT ALL ITEMS ARE SHOWN.

Pedestrian concerns in this area:

- Turning vehicles not yielding to pedestrians
- Signal timing (insufficient crossing time)

Recommended improvements include:

- Time all signals for seniors and where feasible, the crossing time will be extended
- Install new advanced stop bars
- Stripe parking lanes along 43rd Street between Greenpoint Avenue and Barnett Avenue

Additional Information:

- This study area was visited on April 6th, 2010

New York City Department of Transportation
Office of School Safety Engineering

SAFE STREETS FOR SENIORS
SUNNYSIDE
BOROUGH OF QUEENS

APPENDIX

Prepared by
The RBA Group

August, 2012

SUNNYSIDE
APPENDIX

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APPENDIX A

ATR

Twenty-four hour Automatic Traffic Recorder (ATR) Counts were collected in June of 2010. The results are shown in Table 1. Detailed ATR data are presented in the Technical Supplement.

TABLE 1: EXISTING TRAFFIC VOLUMES		
Locations	**Direction**	**ADT* (veh/day)**
43 Avenue east of 50 Street	Eastbound	7250
51 Street south of 43 Avenue	Northbound	1350
51 Street south of Skillman Avenue	Northbound	2791
Skillman Avenue east of 51 Street	Westbound	6523

*Note: ADT is Average Daily Traffic

APPENDIX B

TMC

Turning Movement Counts (TMC's) in 15-minute increments were collected in June of 2010 during the morning (7:30 am to 9:30 am) and evening (4:30 pm to 6:30 pm) peak periods. The results of turning movement counts during both AM and PM peak hours are indicated in Table 2. Detailed TMC data are presented in the Technical Supplement.

TABLE 2: TURNING MOVEMENT COUNTS

Intersection	Time	Class	Northbound			Southbound			Eastbound			Westbound		
			L	T	R	L	T	R	L	T	R	L	T	R
Queens Boulevard EB & 43 Street	AM	Car	-	130	21	24	152	-	19	569	22	-	-	-
		HV	-	0	0	1	0	-	1	3	1	-	-	-
		Total	**-**	**130**	**21**	**25**	**152**	**-**	**20**	**572**	**23**	**-**	**-**	**-**
	Mid-day	Car	-	137	50	34	120	-	30	1014	78	-	-	-
		HV	-	1	0	1	0	-	0	9	3	-	-	-
		Total	**-**	**138**	**50**	**35**	**120**	**-**	**30**	**1023**	**81**	**-**	**-**	**-**
	PM	Car	-	183	56	59	164	-	38	2203	27	-	-	-
		HV	-	0	0	0	0	-	0	39	0	-	-	-
		Total	**-**	**183**	**56**	**59**	**164**	**-**	**38**	**2242**	**27**	**-**	**-**	**-**
Queens Boulevard WB & 43 Street	AM	Car	28	101	-	-	144	43	-	-	-	35	2414	98
		HV	1	0	-	-	4	0	-	-	-	0	6	0
		Total	**29**	**101**	**-**	**-**	**148**	**43**	**-**	**-**	**-**	**35**	**2420**	**98**
	Mid-day	Car	38	120	-	-	104	18	-	-	-	28	754	53
		HV	0	1	-	-	3	0	-	-	-	0	4	2
		Total	**38**	**121**	**-**	**-**	**107**	**18**	**-**	**-**	**-**	**28**	**759**	**55**
	PM	Car	42	161	-	-	57	8	-	-	-	25	912	48
		HV	0	0	-	-	1	1	-	-	-	0	1	0
		Total	**42**	**161**	**-**	**-**	**58**	**9**	**-**	**-**	**-**	**25**	**913**	**48**
Queens Boulevard WB & 48 Street	AM	Car	1	7	-	-	11	92	-	-	-	4	2360	78
		HV	0	0	-	-	0	3	-	-	-	0	6	0
		Total	**1**	**7**	**-**	**-**	**11**	**95**	**-**	**-**	**-**	**4**	**2366**	**78**
	Mid-day	Car	5	7	-	-	8	89	-	-	-	1	812	93
		HV	0	0	-	-	0	3	-	-	-	0	6	0
		Total	**5**	**7**	**-**	**-**	**8**	**92**	**-**	**-**	**-**	**1**	**818**	**93**
	PM	Car	3	7	-	-	3	100	-	-	-	9	919	74
		HV	0	0	-	-	0	1	-	-	-	0	2	0
		Total	**3**	**7**	**-**	**-**	**3**	**101**	**-**	**-**	**-**	**9**	**921**	**74**

Intersection	Time	Class	Northbound			Southbound			Eastbound			Westbound		
			L	T	R	L	T	R	L	T	R	L	T	R
Queens Boulevard WB & Roosevelt Avenue	AM	Car	4	123	-	-	83	86	-	-	-	175	2491	8
		HV	0	4	-	-	1	2	-	-	-	3	5	1
		Total	**4**	**127**	**-**	**-**	**84**	**88**	**-**	**-**	**-**	**178**	**2496**	**9**
	Mid-day	Car	21	148	-	-	70	141	-	-	-	94	791	6
		HV	1	2	-	-	1	1	-	-	-	1	8	1
		Total	**22**	**150**	**-**	**-**	**71**	**142**	**-**	**-**	**-**	**95**	**799**	**7**
	PM	Car	20	230	-	-	95	137	-	-	-	118	878	4
		HV	0	0	-	-	0	0	-	-	-	0	0	0
		Total	**20**	**230**	**-**	**-**	**95**	**137**	**-**	**-**	**-**	**118**	**878**	**4**
Roosevelt Avenue & 49 Street	AM	Car	10	-	-	-	-	18	-	-	-	-	-	-
		HV	0	-	-	-	-	0	-	-	-	-	-	-
		Total	**10**	**-**	**-**	**-**	**-**	**18**	**-**	**-**	**-**	**-**	**-**	**-**
	Mid-day	Car	20	-	-	-	-	6	-	-	-	-	-	-
		HV	1	-	-	-	-	1	-	-	-	-	-	-
		Total	**21**	**-**	**-**	**-**	**-**	**7**	**-**	**-**	**-**	**-**	**-**	**-**
	PM	Car	13	-	-	-	-	5	-	-	-	-	-	-
		HV	0	-	-	-	-	0	-	-	-	-	-	-
		Total	**13**	**-**	**-**	**-**	**-**	**5**	**-**	**-**	**-**	**-**	**-**	**-**
Queens Boulevard WB & 49 Street	AM	Car	-	-	-	-	-	-	-	-	-	-	-	6
		HV	-	-	-	-	-	-	-	-	-	-	-	0
		Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**6**
	Mid-day	Car	-	-	-	-	-	-	-	-	-	-	-	23
		HV	-	-	-	-	-	-	-	-	-	-	-	1
		Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**24**
	PM	Car	-	-	-	-	-	-	-	-	-	-	-	16
		HV	-	-	-	-	-	-	-	-	-	-	-	0
		Total	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**16**
Queens Boulevard EB & Greenpoint Avenue	AM	Car	-	69	52	12	180	-	66	421	1	-	-	-
		HV	-	3	1	0	2	-	1	2	0	-	-	-
		Total	**-**	**72**	**53**	**12**	**182**	**-**	**67**	**423**	**1**	**-**	**-**	**-**
	Mid-day	Car	-	71	47	13	101	-	120	842	35	-	-	-
		HV	-	1	1	1	1	-	1	8	1	-	-	-
		Total	**-**	**72**	**48**	**14**	**102**	**-**	**121**	**850**	**34**	**-**	**-**	**-**
	PM	Car	-	57	71	1414	146	-	206	2366	43	-	-	-
		HV	-	0	0	0	0	-	0	0	0	-	-	-
		Total	**-**	**57**	**71**	**14**	**146**	**-**	**206**	**2366**	**43**	**-**	**-**	**-**

Intersection	Time	Class	Northbound			Southbound			Eastbound			Westbound		
			L	T	R	L	T	R	L	T	R	L	T	R
Queens Boulevard EB & 48 Street	AM	Car	-	-	24	-	-	-	-	-	64	-	-	-
		HV	-	-	0	-	-	-	-	-	1	-	-	-
		Total	**-**	**-**	**24**	**-**	**-**	**-**	**-**	**-**	**65**	**-**	**-**	**-**
	Mid-day	Car	-	-	21	-	-	-	-	-	41	-	-	-
		HV	-	-	0	-	-	-	-	-	0	-	-	-
		Total	**-**	**-**	**21**	**-**	**-**	**-**	**-**	**-**	**41**	**-**	**-**	**-**
	PM	Car	-	-	19	-	-	-	-	-	62	-	-	-
		HV	-	-	0	-	-	-	-	-	0	-	-	-
		Total	**-**	**-**	**19**	**-**	**-**	**-**	**-**	**-**	**62**	**-**	**-**	**-**
Greenpoint Avenue & 48 Street	AM	Car	-	-	-	61	-	-	-	-	-	-	-	-
		HV	-	-	-	1	-	-	-	-	-	-	-	-
		Total	**-**	**-**	**-**	**62**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	Mid-day	Car	-	-	-	49	-	-	-	-	-	-	-	-
		HV	-	-	-	1	-	-	-	-	-	-	-	-
		Total	**-**	**-**	**-**	**50**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	PM	Car	-	-	-	52	-	-	-	-	-	-	-	-
		HV	-	-	-	0	-	-	-	-	-	-	-	-
		Total	**-**	**-**	**-**	**52**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Skillman Avenue & 51 Street	AM	Car	72	40	-	-	-	-	-	-	-	-	444	74
		HV	0	0	-	-	-	-	-	-	-	-	2	2
		Total	**72**	**40**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**446**	**76**
	PM	Car	73	96	-	-	-	-	-	-	-	-	300	95
		HV	1	0	-	-	-	-	-	-	-	-	0	0
		Total	**74**	**95**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**300**	**95**
43 Avenue & 51 Street	AM	Car	-	43	15	-	-	-	8	284	4	-	-	-
		HV	-	1	0	-	-	-	0	1	0	-	-	-
		Total	**-**	**44**	**15**	**-**	**-**	**-**	**8**	**285**	**4**	**-**	**-**	**-**
	Mid-day	Car	-	81	23	-	-	-	15	346	8	-	-	-
		HV	-	0	0	-	-	-	0	0	0	-	-	-
		Total	**-**	**81**	**23**	**-**	**-**	**-**	**15**	**346**	**8**	**-**	**-**	**-**
		Car	-	95	26	-	-	-	11	511	9	-	-	-
		HV	-	0	0	-	-	-	0	0	0	-	-	-
		Total	**-**	**95**	**26**	**-**	**-**	**-**	**11**	**511**	**9**	**-**	**-**	**-**

Intersection	Time	Class	Northbound			Southbound			Eastbound			Westbound		
			L	T	R	L	T	R	L	T	R	L	T	R
43 Avenue & West of Island at 51 Street	AM	Car	-	-	-	-	-	-	62	-	-	-	-	-
		HV	-	-	-	-	-	-	0	-	-	-	-	-
		Total	**-**	**-**	**-**	**-**	**-**	**-**	**62**	**-**	**-**	**-**	**-**	**-**
	Mid-day	Car	-	-	-	-	-	-	58	-	-	-	-	-
		HV	-	-	-	-	-	-	0	-	-	-	-	-
		Total	**-**	**-**	**-**	**-**	**-**	**-**	**58**	**-**	**-**	**-**	**-**	**-**
	PM	Car	-	-	-	-	-	-	61	-	-	-	-	-
		HV	-	-	-	-	-	-	0	-	-	-	-	-
		Total	**-**	**-**	**-**	**-**	**-**	**-**	**61**	**-**	**-**	**-**	**-**	**-**

*Note: WB = Westbound, EB = Eastbound

APPENDIX C

PEDESTRIAN COUNTS

Pedestrian crossing counts in 15-minute increments were collected in April of 2011 during the morning (7:30 am to 9:30 am) and evening (4:30 pm to 6:30 pm) peak periods. The results of pedestrian counts during both AM and PM peak hours are indicated in Table 3. Detailed Pedestrian Counts Data are presented in the Technical Supplement.

TABLE 3: PEDESTRIAN COUNTS

Intersection	Time	Crosswalks (Legs)				Totals
		N	S	E	W	
Queens Blvd WB & 48 St	AM	273	51	162	80	566
	Midday	322	31	99	57	509
	PM	364	35	160	132	691
Queens Blvd WB & 43 St	AM	178	33	81	60	352
	Midday	266	44	98	57	465
	PM	228	34	98	33	393
Queens Blvd EB & 43 St	AM	10	130	41	28	209
	Midday	14	344	58	40	456
	PM	23	381	36	28	468
Queens Blvd EB & Roosevelt Ave	AM	44	-	143	-	187
Queens Blvd EB & 48 St	AM	-	165	-	26	181
Queens Blvd EB & Greenpoint Ave	AM	-	216[1]	-	85	301
49 St & Roosevelt Ave	AM	-	-	20	160	180
Queens Blvd WB & Roosevelt Ave	AM	6	-	112	-	118
Queens Blvd WB & Greenpoint Ave	AM	-	24	-	90	114
43 Avenue & 51 Street	AM	121	99	203	31	454
	Midday	77	110	151	77	415
	PM	94	78	181	29	382
43 Avenue & West of Island at 51 Street	AM	49	-	-	107	156
	Midday	66	-	-	28	94
	PM	22	-	-	74	96
Skillman Avenue & 51 Street	AM	106	111	108	104	429
	PM	79	80	27	55	241

Notes:

1. 216 is for SW leg of the intersection
2. WB = Westbound, EB = Eastbound

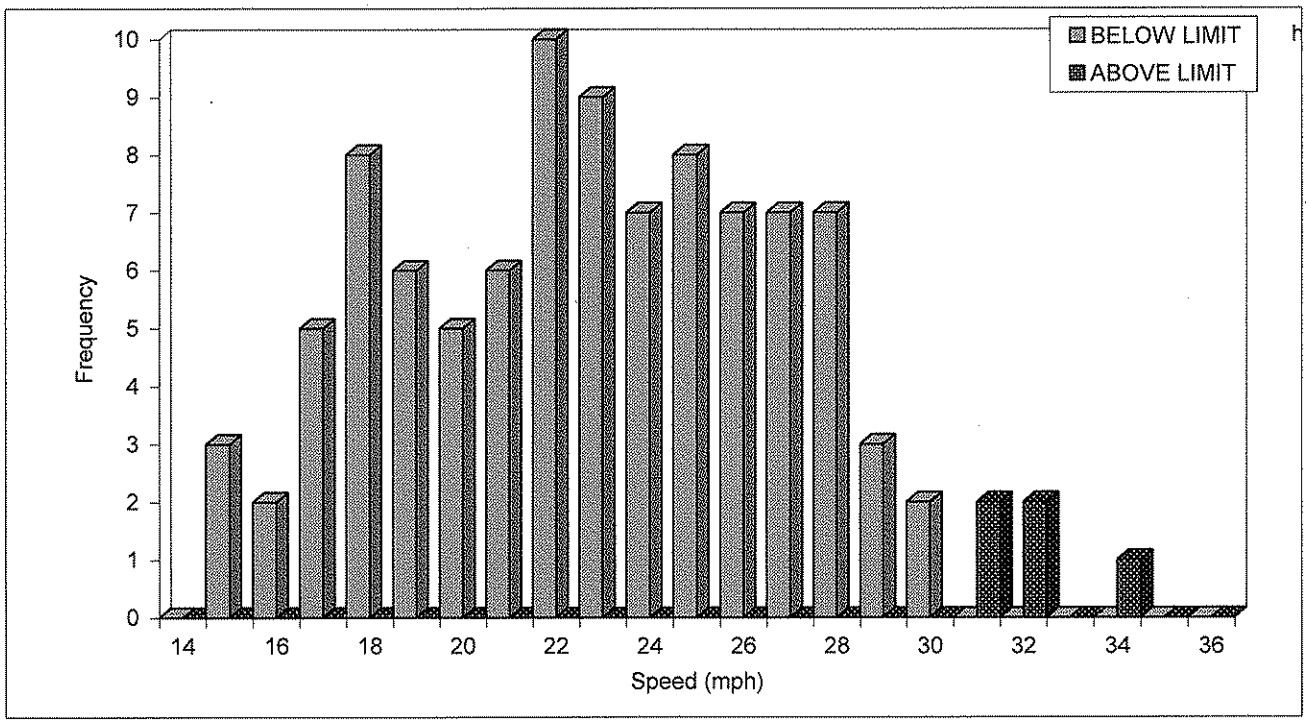
APPENDIX D

SPOT SPEED SURVEY

RADAR SPEED SURVEY

Arterial: SKILLMAN AV W/B From: 52 ST To: 51 ST

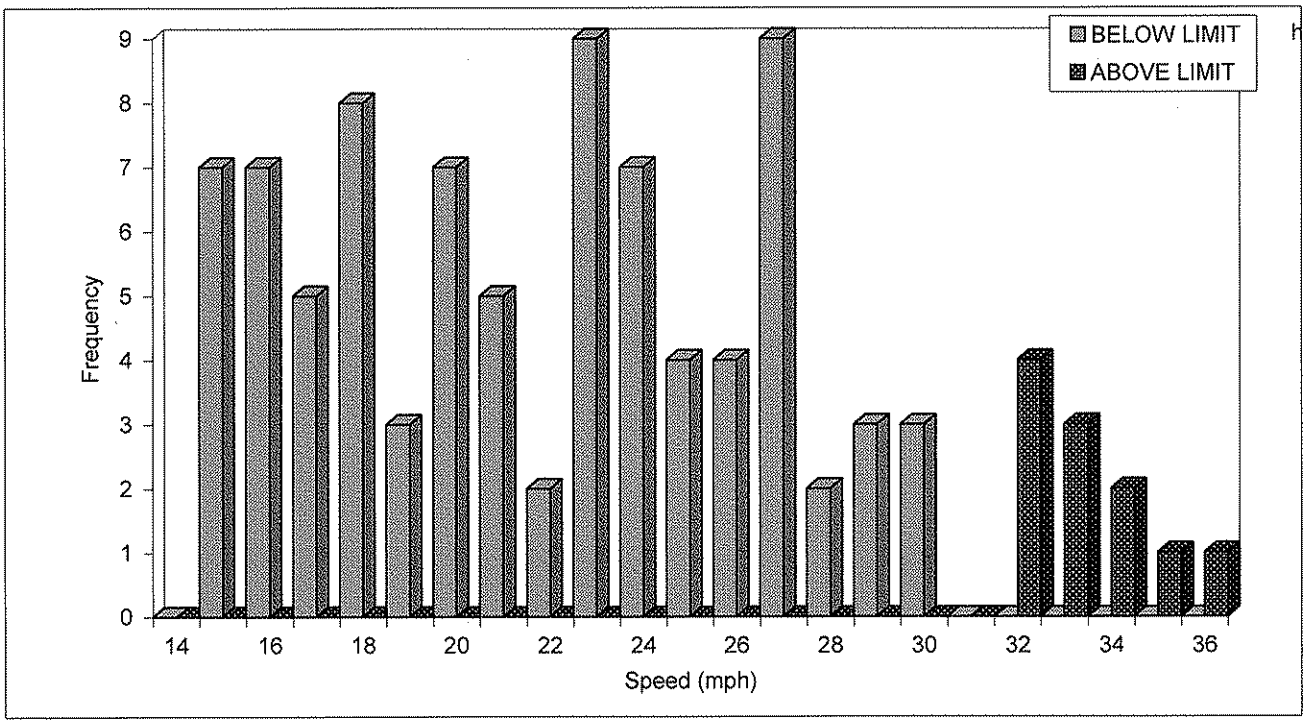
Boro:	QN	Average Speed:	22.9 mph
Date:	05/22/10		
Day:	Sat.	15th Percentile:	18.0 mph
Weather:	Clear	50th Percentile:	23.0 mph
Time:	1:50 PM - 2:19 PM	85th Percentile:	28.0 mph
Speed Limit:	30 mph	Above Speed Limit:	5.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	34.0 mph
Type of Roadway:	One-way	Pace:	18.0 - 28.0 mph
Width of Road by Direction:	44'	In Pace:	80.0 %
Number of Moving Lanes:	2	Below Pace:	10.0 %
Number of Parking Lanes:	2	Above Pace:	10.0 %
Observer:	Berliner V	Standard Deviation:	4.9 mph



RADAR SPEED SURVEY

Arterial: 43 AV E/B From: 50 ST To: 51 ST

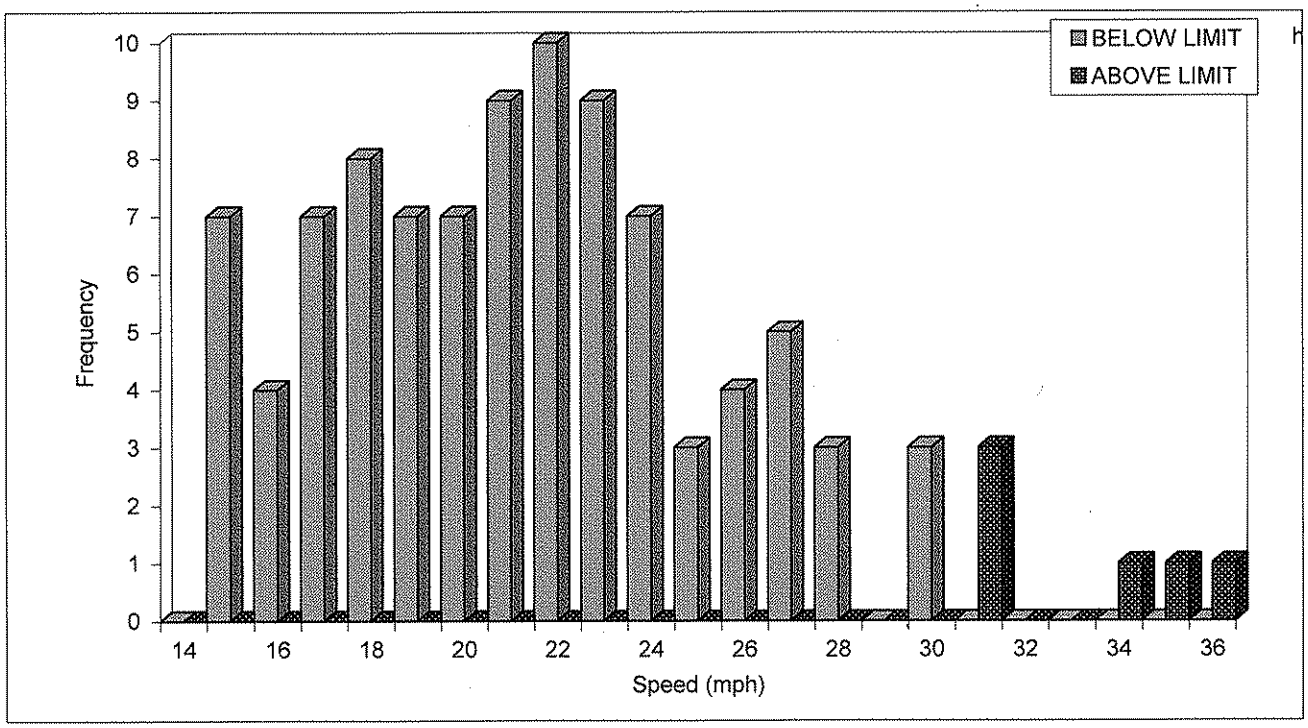
Boro:	QN	Average Speed:	23.7 mph
Date:	05/20/10		
Day:	Thu.	15th Percentile:	17.0 mph
Weather:	Clear	50th Percentile:	23.0 mph
Time:	11:25 AM - 11:54 AM	85th Percentile:	30.3 mph
Speed Limit:	30 mph	Above Speed Limit:	15.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	41.0 mph
Type of Roadway:	One-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	44'	In Pace:	64.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	36.0 %
Observer:	Berliner V	Standard Deviation:	6.4 mph



RADAR SPEED SURVEY

Arterial: 43 AV E/B From: 50 ST To: 51 ST

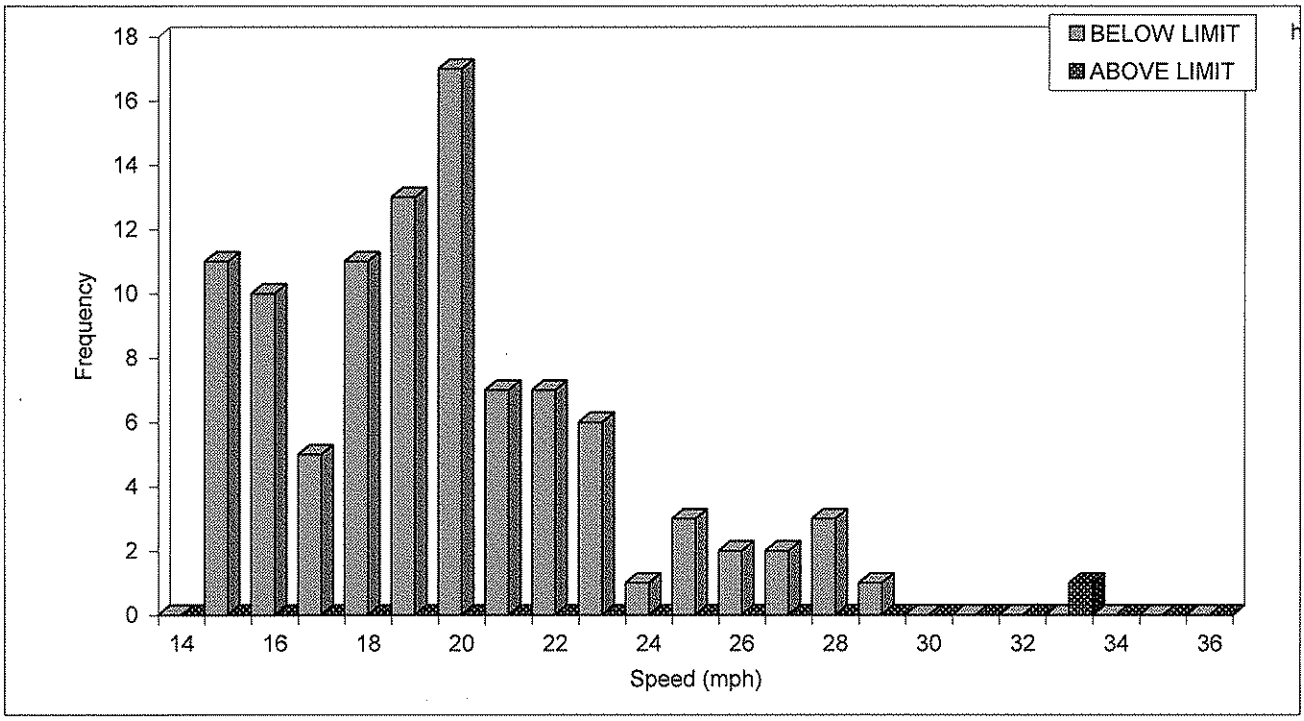
Boro:	QN	Average Speed:	22.2 mph
Date:	05/22/10		
Day:	Sat.	15th Percentile:	17.0 mph
Weather:	Clear	50th Percentile:	22.0 mph
Time:	12:50 pm - 1:16 pm	85th Percentile:	27.0 mph
Speed Limit:	30 mph	Above Speed Limit:	7.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	41.0 mph
Type of Roadway:	One-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	44'	In Pace:	78.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	22.0 %
Observer:	Berliner V	Standard Deviation:	5.1 mph



RADAR SPEED SURVEY

Arterial: WESTCHESTER AV E/B From: CAULDWELL AV To: TRINITY AV

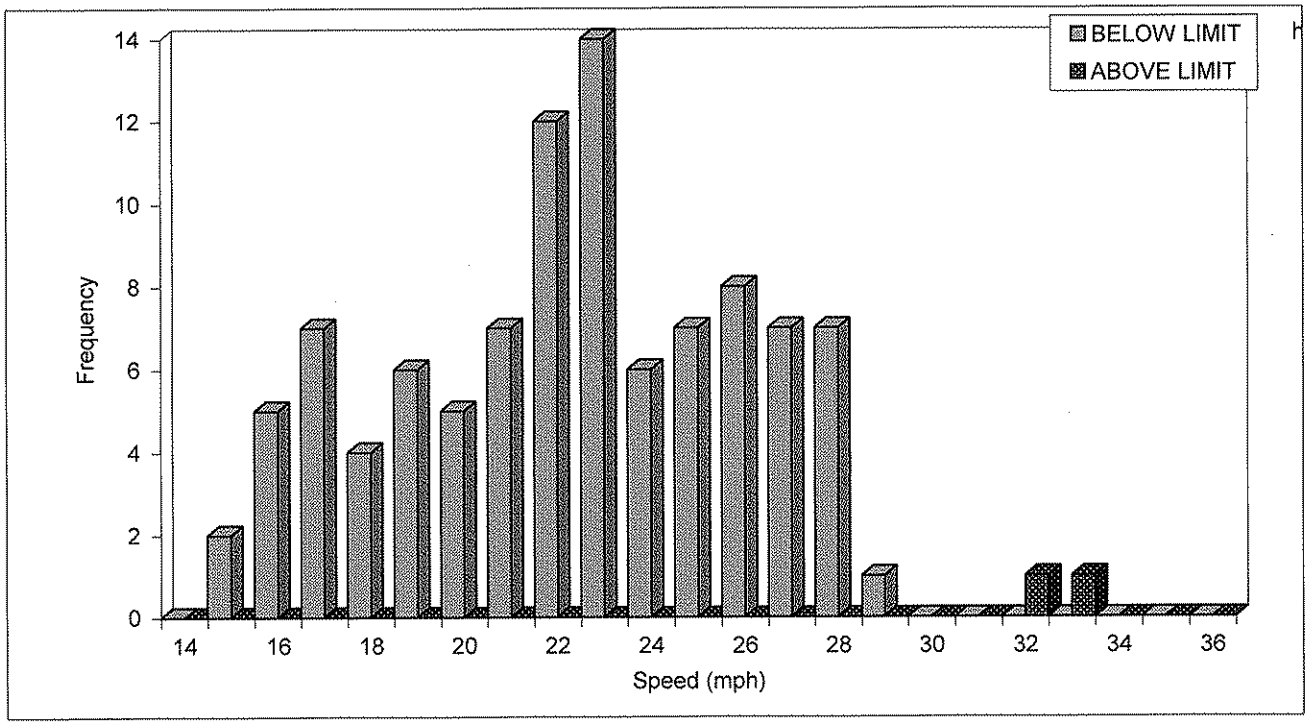
Boro:	BX	Average Speed:	19.9 mph
Date:	05/22/10		
Day:	Sat.	15th Percentile:	16.0 mph
Weather:	Clear	50th Percentile:	19.5 mph
Time:	10:50 AM - 11:32 AM	85th Percentile:	23.0 mph
Speed Limit:	30 mph	Above Speed Limit:	1.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	33.0 mph
Type of Roadway:	Two-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	35'	In Pace:	91.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	1	Above Pace:	9.0 %
Observer:	Berliner V	Standard Deviation:	3.7 mph



RADAR SPEED SURVEY

Arterial: SKILLMAN AV W/B From: 52 ST To: 51 ST

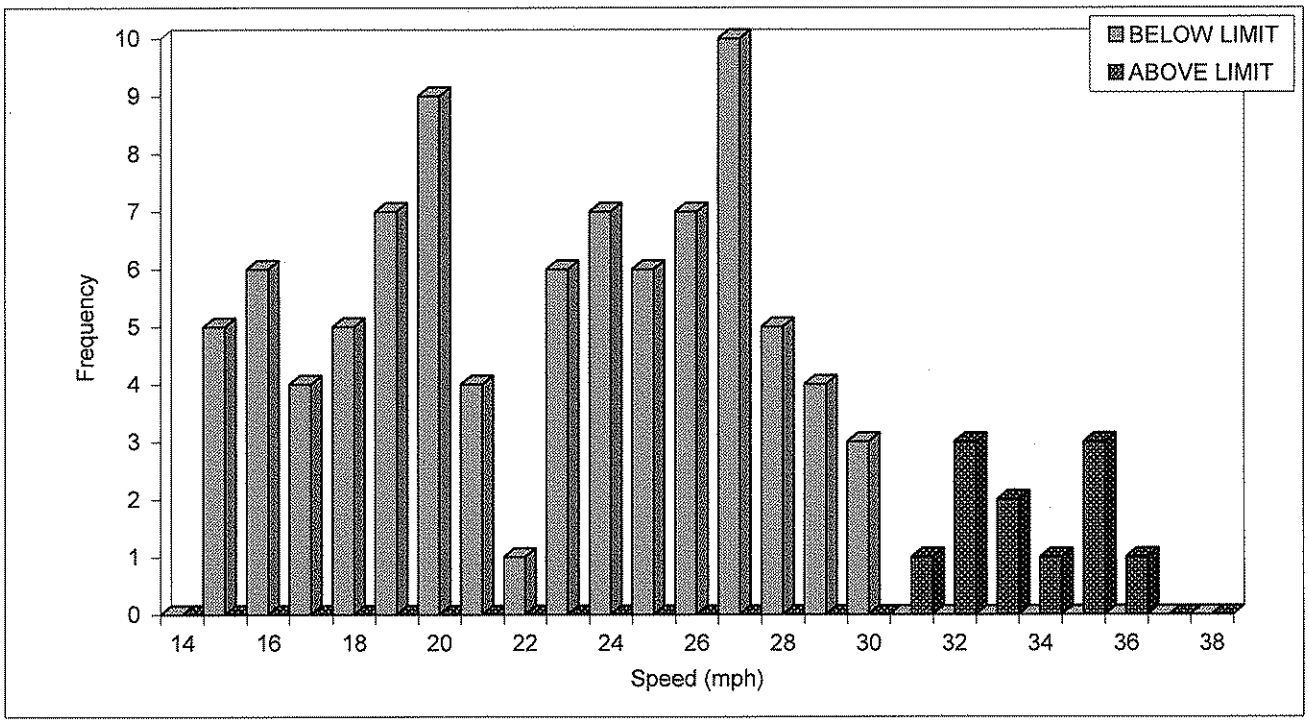
Boro:	BX	Average Speed:	22.5 mph
Date:	05/20/10		
Day:	Thu.	15th Percentile:	18.0 mph
Weather:	Clear	50th Percentile:	23.0 mph
Time:	10:45 AM - 11:16 AM	85th Percentile:	27.0 mph
Speed Limit:	30 mph	Above Speed Limit:	2.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	33.0 mph
Type of Roadway:	One-way	Pace:	17.0 - 27.0 mph
Width of Road by Direction:	44'	In Pace:	83.0 %
Number of Moving Lanes:	2	Below Pace:	7.0 %
Number of Parking Lanes:	2	Above Pace:	10.0 %
Observer:	Berliner V	Standard Deviation:	3.9 mph



RADAR SPEED SURVEY

Arterial: SKILLMAN AV W/B From: 52 ST To: 51 ST

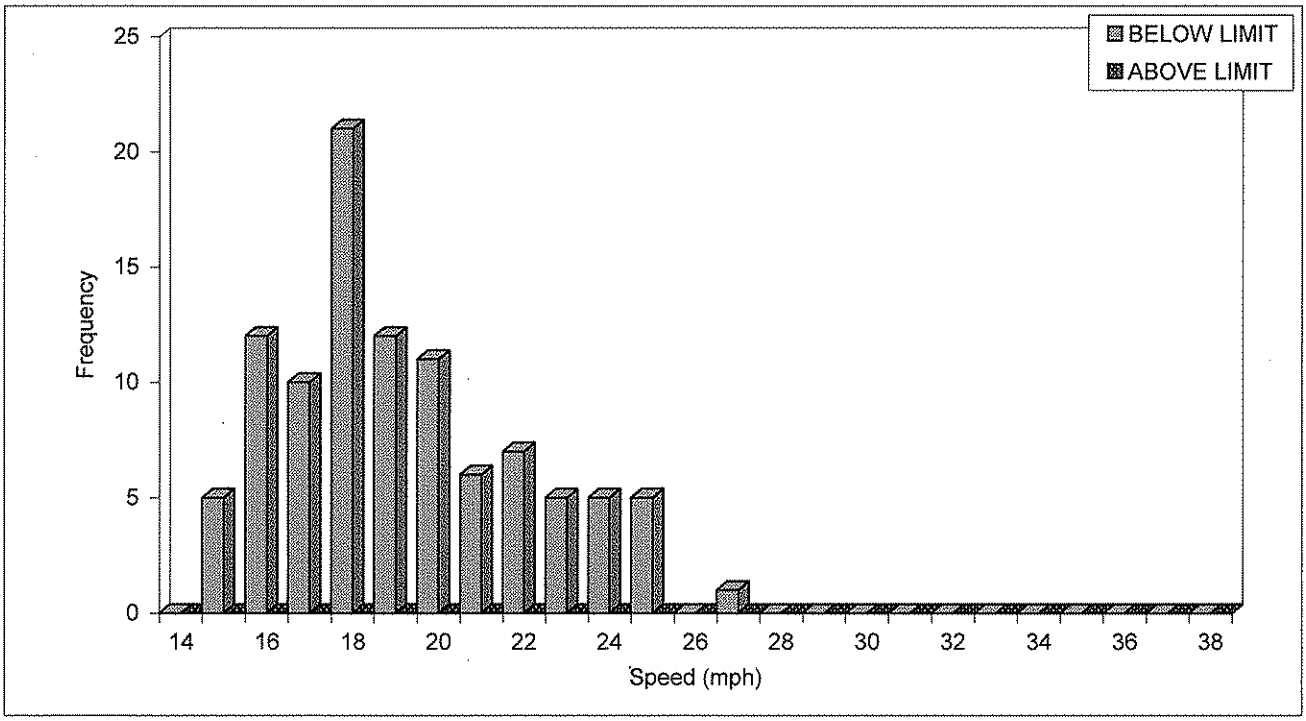
Boro:	QN	Average Speed:	23.7 mph
Date:	05/21/10		
Day:	Fri.	15th Percentile:	17.9 mph
Weather:	Clear	50th Percentile:	24.0 mph
Time:	1:20PM - 1:46PM	85th Percentile:	29.0 mph
Speed Limit:	30 mph	Above Speed Limit:	11.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	36.0 mph
Type of Roadway:	One-way	Pace:	18.0 - 28.0 mph
Width of Road by Direction:	44'	In Pace:	67.0 %
Number of Moving Lanes:	2	Below Pace:	15.0 %
Number of Parking Lanes:	2	Above Pace:	18.0 %
Observer:	Berliner V	Standard Deviation:	5.5 mph



RADAR SPEED SURVEY

Arterial: WESTCHESTER AV W/B From: JACKSON AV To: TRINITY AV

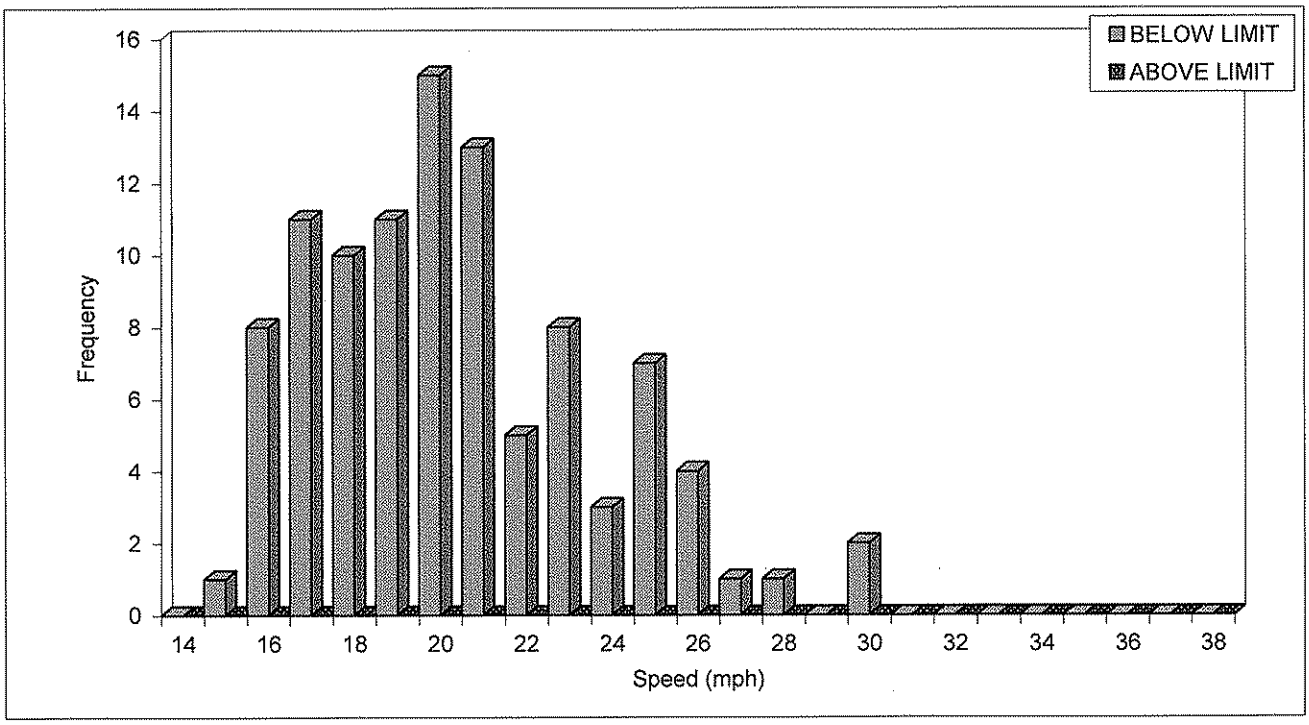
Boro:	BX	Average Speed:	19.3 mph
Date:	05/21/10		
Day:	Fri.	15th Percentile:	16.0 mph
Weather:	Clear	50th Percentile:	19.0 mph
Time:	10:00 am - 10:38 am	85th Percentile:	23.0 mph
Speed Limit:	30 mph	Above Speed Limit:	0.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	27.0 mph
Type of Roadway:	Two-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	28'	In Pace:	99.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	1	Above Pace:	1.0 %
Observer:	Berliner V	Standard Deviation:	2.8 mph



RADAR SPEED SURVEY

Arterial: WESTCHESTER AV E/B From: CAULDWELL AV To: TRINITY AV

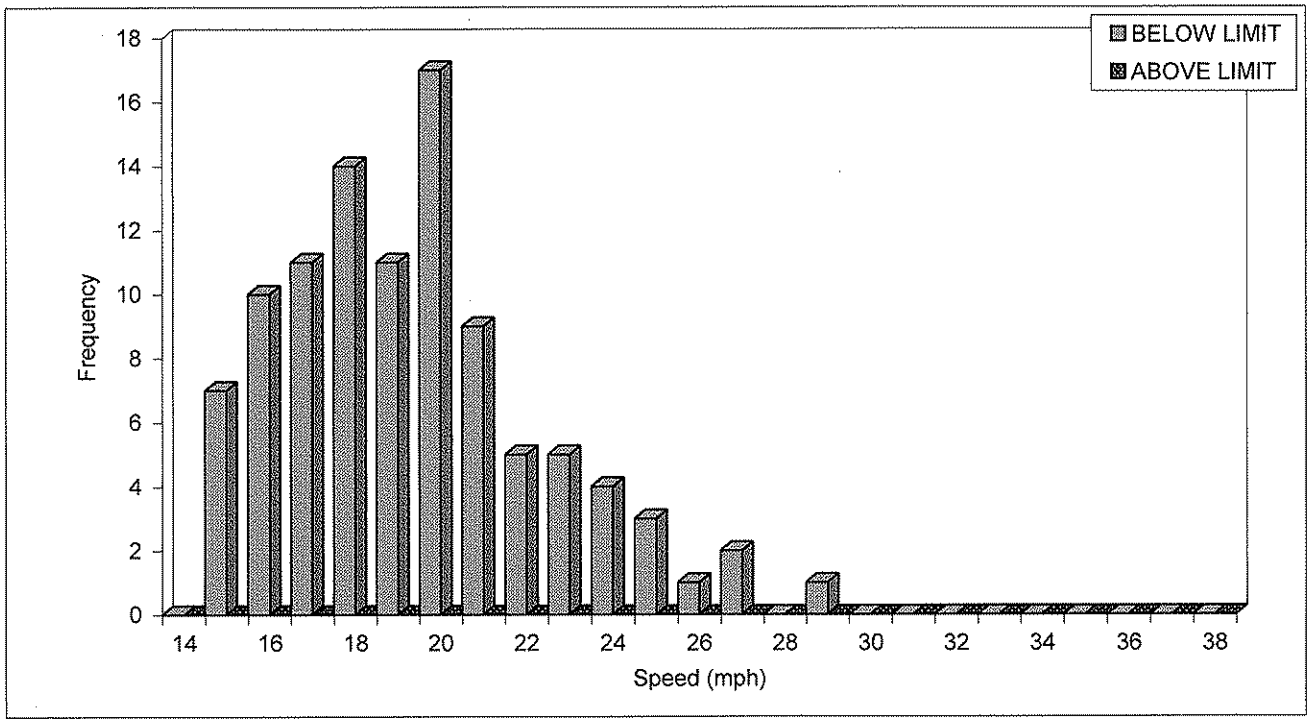
Boro:	BX	Average Speed:	20.5 mph
Date:	05/21/10		
Day:	Fri.	15th Percentile:	17.0 mph
Weather:	Clear	50th Percentile:	20.0 mph
Time:	10:45 am - 11:32 am	85th Percentile:	24.2 mph
Speed Limit:	30 mph	Above Speed Limit:	0.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	30.0 mph
Type of Roadway:	Two-way	Pace:	16.0 - 26.0 mph
Width of Road by Direction:	35'	In Pace:	95.0 %
Number of Moving Lanes:	2	Below Pace:	1.0 %
Number of Parking Lanes:	1	Above Pace:	4.0 %
Observer:	Berliner V	Standard Deviation:	3.3 mph



RADAR SPEED SURVEY

Arterial: WESTCHESTER AV W/B From: JACKSON AV To: TRINITY AV

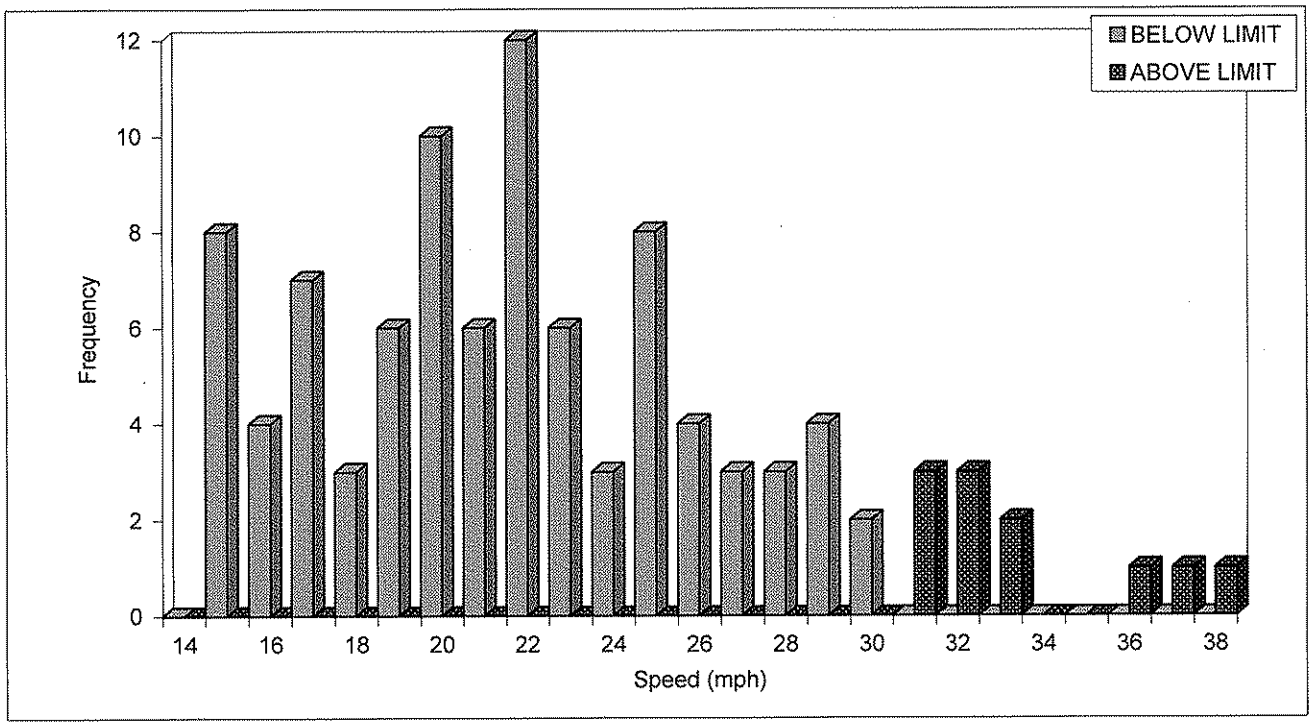
Boro:	BX	Average Speed:	19.5 mph
Date:	05/22/10		
Day:	Sat.	15th Percentile:	16.0 mph
Weather:	Clear	50th Percentile:	19.0 mph
Time:	10:15 am - 10:44 am	85th Percentile:	23.0 mph
Speed Limit:	30 mph	Above Speed Limit:	0.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	29.0 mph
Type of Roadway:	Two-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	28'	In Pace:	96.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	1	Above Pace:	4.0 %
Observer:	Berliner V	Standard Deviation:	3.0 mph



RADAR SPEED SURVEY

Arterial: 43 AV E/B From: 50 ST To: 51 ST

Boro:	QN	Average Speed:	22.8 mph
Date:	05/21/10		
Day:	Fri.	15th Percentile:	17.0 mph
Weather:	Clear	50th Percentile:	22.0 mph
Time:	12:45 pm - 1:10 pm	85th Percentile:	29.0 mph
Speed Limit:	30 mph	Above Speed Limit:	11.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	38.0 mph
Type of Roadway:	One-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	44'	In Pace:	73.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	27.0 %
Observer:	Berliner V	Standard Deviation:	5.4 mph



APPENDIX E

LEVEL OF SERVICE

The results of existing condition Synchro Analysis for the studied corridor of Queens Boulevard during AM (7:30 am to 8:45 am), midday (1:00 pm to 2:00 pm) and PM (4:30 pm to 5:30 pm) peak hours are indicated in Table 4. Detailed existing level of service analysis is presented in the Technical Supplement.

TABLE 4: EXISTING (2011) INTERSECTION LEVEL OF SERVICE AND DELAYS (SEC)

Intersection Approach[1]	AM Peak Hour						Midday Peak Hour						PM Peak Hour					
	Mvmt[2]	v/c	Delay (secs/veh)	LOS	Queue Delay (secs/veh)	Queue Length[3,4] (ft)	Mvmt[2]	v/c	Delay (secs/veh)	LOS	Queue Delay (secs/veh)	Queue Length[3,4] (ft)	Mvmt[2]	v/c	Delay (secs/veh)	LOS	Queue Delay (secs/veh)	Queue Length[3,4] (ft)
Queens Boulevard WB at 43 Street																		Signal
WB	**LTR**	0.76	30.7	C	0.5	550	**LTR**	0.40	22.8	C	0.1	179	**LTR**	0.37	21.8	C	0.1	207
NB	**L**	0.15	13.7	B	0.0	13	**L**	0.12	13.1	B	0.0	18	**L**	0.23	18.1	B	0.0	23
NB	**T**	0.20	13.4	B	0.0	36	**T**	0.21	13.3	B	0.0	45	**T**	0.34	18.2	B	0.0	**73**
SB	**TR**	0.48	41.3	D	0.0	286	**TR**	0.32	27.2	C	0.0	115	**TR**	0.46	40.6	D	0.0	267
	Overall		**30.6**	**C**			**Overall**		**22.0**	**C**			**Overall**		**24.2**	**C**		
Queens Boulevard EB at 43 Street																		Signal
EB	**LT**	0.26	20.3	C	0.0	129	**LTR**	0.39	22.6	C	0.0	182	**LTR**	0.67	27.9	C	0.3	452
EB	**R**	0.05	18.1	B	0.0	29												
NB	**TR**	0.36	38.2	D	0.0	188	**TR**	0.42	29.3	C	0.0	186	**TR**	0.49	41.7	D	0.0	293
SB	**L**	0.10	12.6	B	0.0	m14	**L**	0.12	13.5	B	0.0	18	**L**	0.27	13.9	B	0.0	22
SB	**T**	0.29	13.4	B	0.0	m55	**T**	0.20	13.7	B	0.0	46	**T**	0.30	13.1	B	0.0	49
	Overall		**21.8**	**C**			**Overall**		**22.6**	**C**			**Overall**		**27.7**	**C**		
Queens Boulevard WB at 47 Street																		Signal
WB	**TR**	0.35	6.2	A	0.3	41	**TR**	0.40	7.3	A	0.1	37	**TR**	0.37	11.8	B	0.2	84
NB	**L**	0.20	14.4	B	0.0	26	**L**	0.07	11.0	B	0.0	15	**L**	0.14	11.8	B	0.0	m20
NB	**T**	0.29	14.8	B	0.0	49	**T**	0.09	11.2	B	0.0	23	**T**	0.26	12.4	B	0.0	m47
	Overall		**7.7**	**A**			**Overall**		**7.6**	**A**			**Overall**		**11.9**	**B**		
Queens Boulevard EB at 47 Street																		Signal
EB	**LT**	0.25	20.2	C	0.0	126	**LT**	0.43	23.1	C	0.0	197	**LT**	0.77	30.9	C	0.4	565
NB	**TR**	0.35	37.7	D	0.0	210	**TR**	0.13	24.1	C	0.0	80	**T**	0.28	36.2	D	0.0	**195**
													R	0.07	32.9	C	0.0	46
	Overall		**24.2**	**C**			**Overall**		**23.2**	**C**			**Overall**		**31.3**	**C**		
Queens Boulevard WB at 48 Street																		Signal
WB	**LTR**	0.68	5.3	A	2.8	28	**LT**	0.33	12.2	B	0.4	m66	**LT**	0.31	10.6	B	0.3	m79
							R	0.28	14.0	B	1.0	m36	**R**	0.17	11.6	B	1.2	m32
NB	**LT**	0.02	31.9	C	0.0	16	**LT**	0.02	19.1	B	0.0	17	**LT**	0.02	32.0	C	0.0	21
SB	**T**	0.04	32.3	C	0.0	20	**T**	0.02	19.1	B	0.0	11	**T**	0.01	31.7	C	0.0	8
SB	**R**	0.31	37.9	D	0.0	130	**R**	0.24	22.5	C	0.0	94	**R**	0.33	38.6	D	0.0	140
	Overall		**7.0**	**A**			**Overall**		**13.6**	**B**			**Overall**		**13.7**	**B**		
Queens Boulevard WB at Greenpoint Avenue/Roosevelt Avenue/49 Street																		Signal
WB	**LTR**	0.94	38.4	D	0.5	772	**LTR**	0.41	23.1	C	0.0	173	**LTR**	0.34	18.6	B	0.0	183
NE	**L**	0.09	24.5	C	0.0	m17	**L**	0.14	21.5	C	0.0	m33	**L**	0.14	46.6	D	0.0	m31
NE	**T**	0.28	31.1	C	5.4	m91	**T**	0.20	22.8	C	1.4	95	**T**	0.37	83.6	F	33.4	**m236**
SW	**T**	0.32	54.3	D	0.0	141	**T**	0.18	36.8	D	0.0	89	**T**	0.29	53.7	D	0.0	143
SW	**R**	1.05	148.8	F	0.0	#265	**R**	0.90	91.5	F	0.0	#253	**R**	1.05	144.5	F	0.0	#307
	Overall		**42.9**	**D**			**Overall**		**31.4**	**C**			**Overall**		**43.1**	**D**		
Queens Boulevard EB at Greenpoint Avenue/48 Street																		Signal
EB	**LTR**	0.30	15.0	B	0.1	67	**LTR**	0.55	16.6	B	0.2	81	**LTR**	0.82	9.5	A	0.3	50
NE	**TR**	0.91	100.4	F	0.0	#308	**TR**	0.49	45.0	D	0.0	169	**TR**	0.74	83.6	F	5.5	#255
SW	**L**	0.24	16.7	B	0.5	m60	**L**	0.12	8.3	A	0.0	46	**L**	0.16	19.4	B	0.3	58
SW	**T**	0.33	22.7	C	4.6	**m128**	**T**	0.13	9.8	A	0.9	69	**T**	0.22	22.2	C	1.7	**110**
	Overall		**29.1**	**C**			**Overall**		**18.7**	**B**			**Overall**		**13.9**	**B**		

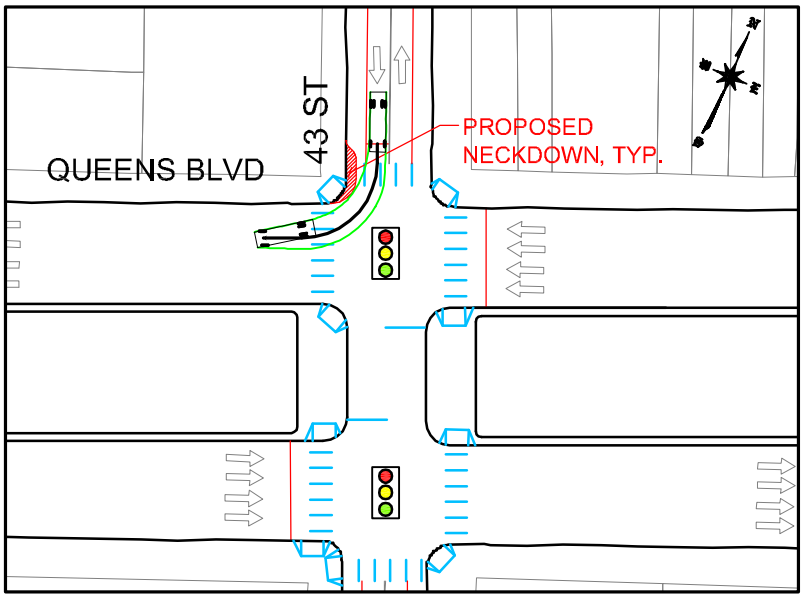
Notes:
1. Intersection approaches: EB = eastbound, WB = westbound, NB = northbound, SB = southbound, NE = northeastbound, SW = southwestbound.
2. Lane group movements: L = left-turn, T = through, R = right-turn, LT = shared left-turn/through, TR = shared through/right-turn, LTR = shared left-turn/through/right-turn.
3. #: 95th percentile volume exceeds capacity, queue may be longer.
4. m: Volume for 95th percentile queue is metered by upstream signal.
5. Queue lengths in red are those that exceed storage capacity.

APPENDIX F

AUTOTURN

AUTOTURN

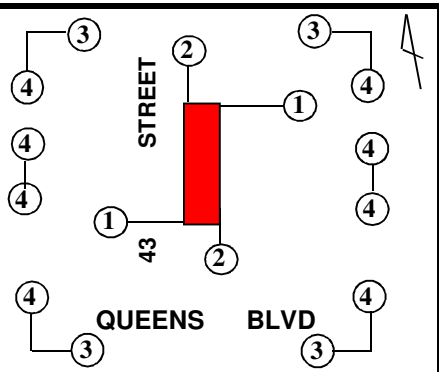
QUEENS BLVD AND 43RD STREET



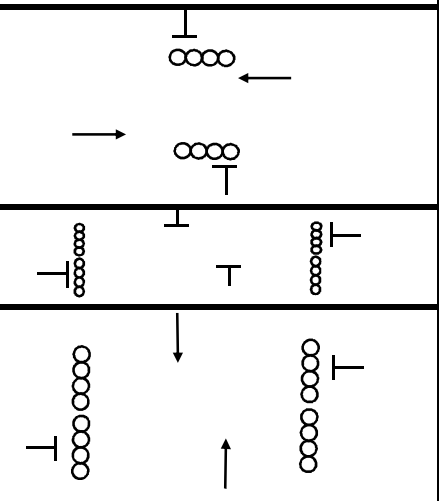
APPENDIX G

SIGNAL TIMING

1	2	3	4	5	6	7	8
R	R	DW	DW				
A	A	WK	WK				
G	G						



									MON-FRI 05:00-10:30	MON-FRI 10:30-14:30 20:00-05:00 WEEKEND AAT	MON-FRI 14:30-20:00	
									150 SEC	120 SEC	150 SEC	
PHASE A	G	R	WK	DW					70	46	70	
SPARE	G	R	WK	DW					2	2	2	
PED CL	G	R	FLDW	DW					6	6	6	
VEH CL	A	R	FLDW	DW					3	3	3	
VEH CL	R	R	FLDW	DW					2	2	2	
									83	59	83	
PHASE B	R	R	FLDW	WK					3	3	3	
(LPI)	R	R	DW	WK					4	4	4	
									7	7	7	
PHASE C	R	G	DW	WK					39	33	39	
SPARE	R	G	DW	WK					2	2	2	
PED CL	R	G	DW	FLDW					12	12	12	
VEH CL	R	A	DW	DW					3	3	3	
VEH CL	R	R	DW	DW					4	4	4	
									60	54	60	



CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd. Long Island City, NY 11101

OFFSET

125	65	120

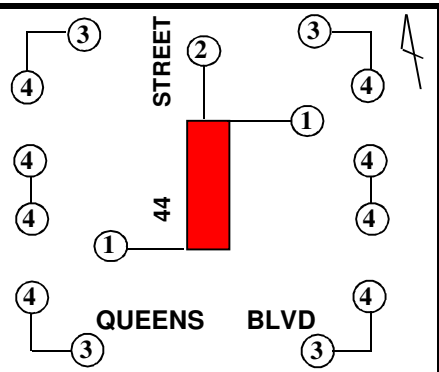
DATE	BY	REVISIONS
02/18/11	GN	MODIFY TIMING

NOTES: NON-ACTUATED
PC = 3.0 ft/sec
(PEDESTRIAN COUNTDOWN)
CABINET TYPE: ASTC-6
CABINET ADDRESS: 6682

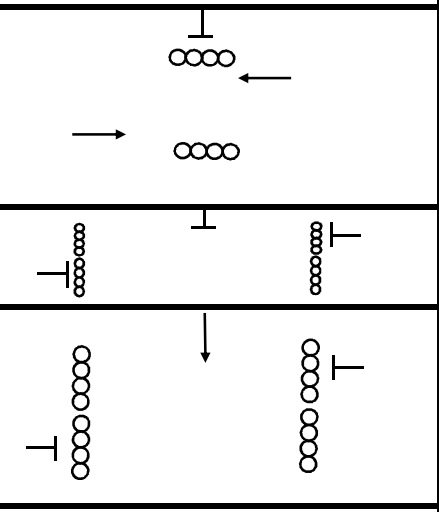
QUEENS BOULEVARD @ 43 STREET

Prep GENIA NUNEZ Date 02/18/11
Appr. Date

1	2	3	4	5	6	7	8
R	R	DW	DW				
A	A	WK	WK				
G	G						



									MON-FRI 05:00-10:30	MON-FRI 10:30-14:30 20:00-05:00 WEEKEND AAT	MON-FRI 14:30-20:00	
									150 SEC	120 SEC	150 SEC	
PHASE A	G	R	WK	DW					74	50	74	
SPARE	G	R	WK	DW					2	2	2	
PED CL	G	R	FLDW	DW					2	2	2	
VEH CL	A	R	FLDW	DW					3	3	3	
VEH CL	R	R	FLDW	DW					2	2	2	
									83	59	83	
PHASE B	R	R	FLDW	WK					3	3	3	
(LPI)	R	R	DW	WK					4	4	4	
									7	7	7	
PHASE C	R	G	DW	WK					39	33	39	
SPARE	R	G	DW	WK					2	2	2	
PED CL	R	G	DW	FLDW					12	12	12	
VEH CL	R	A	DW	DW					3	3	3	
VEH CL	R	R	DW	DW					4	4	4	
									60	54	60	



CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd. Long Island City, NY 11101

OFFSET

120	60	124

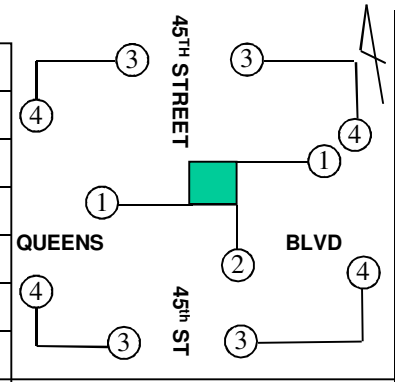
DATE	BY	REVISIONS
02/18/11	GN	MODIFY TIMING

NOTES: NON-ACTUATED
PC = 3.0 ft/sec
(PEDESTRIAN COUNTDOWN)
CABINET TYPE: ASTC-6
CABINET ADDRESS: 6683

QUEENS BOULEVARD @ 44 STREET

Prep GENIA NUNEZ Date 02/18/11
Appr. Date

	1	2	3	4	5	6	7	8	9	10	11	12	5:00 – 10:30 MON-FRI	10:30 – 14:30 20:00 – 05:00 Weekend - AAT	14:30 – 20:00 MON-FRI
	R	R	DW	DW											
	A	A	WK	WK											
	G	G													
													150 SEC CYCLE	120 SEC CYCLE	150 SEC CYCLE
Phase A	G	R	WK	DW									74	50	74
SPARE	G	R	WK	DW									2	2	2
PED CL	G	R	FLDW	DW									2	2	2
VEH CL	A	R	FLDW	DW									3	3	3
VEH CL	R	R	FLDW	DW									2	2	2
Phase B	R	R	FLDW	WK									3	3	3
(LPI)	R	R	DW	WK									4	4	4
Phase C	R	G	DW	WK									39	33	39
SPARE	R	G	DW	WK									2	2	2
PED CL	R	G	DW	FLDW									12	12	12
VEH CL	R	A	DW	DW									3	3	3
VEH CL	R	R	DW	DW									4	4	4
													OFFSET		
													116	57	129



03/07	TH	Modify LPI
DATE	BY	REVISIONS

NOTES: **NON - ACTUATED**

ASTC – 6 Type Controller

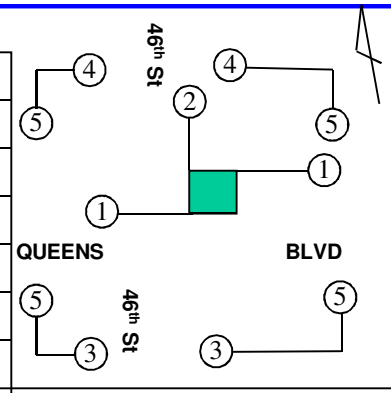
CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd, Long Island City, NY 11101

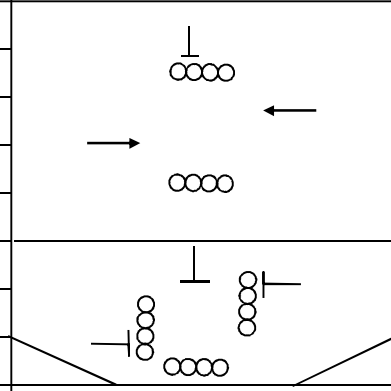
QUEENS BOULEVARD @ 45TH STREET

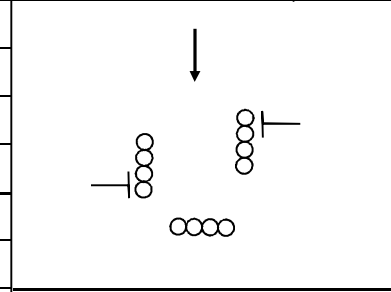
Prep. I.LIPSKY Date 04-20-04
Appr. _____ Date _____

Dwg No. LB-4353Q

	1	2	3	4	5	6	7	8	9	10	11	12	5:00 – 10:30 MON-FRI	10:30 – 14:30 20:00 – 05:00 MON-FRI Weekend - AAT	14:30 – 20:00 MON-FRI
	R	R	DW	DW	DW								150 SEC CYCLE	120 SEC CYCLE	150 SEC CYCLE
	A	A	WK	WK	WK										
	G	G													
Phase A	G	R	WK	WK	DW								74	50	74
SPARE	G	R	WK	WK	DW								2	2	2
PED CL	G	R	WK	FLDW	DW								2	2	2
VEH CL	A	R	WK	FLDW	DW								3	3	3
VEH CL	R	R	WK	FLDW	DW								2	2	2
Phase B	R	R	WK	FLDW	WK								3	3	3
(LPI)	R	R	WK	DW	WK								4	4	4
Phase C	R	G	WK	DW	WK								39	33	39
SPARE	R	G	WK	DW	WK								2	2	2
PED CL	R	G	WK	DW	FLDW								12	12	12
VEH CL	R	A	WK	DW	DW								3	3	3
VEH CL	R	R	WK	DW	DW								4	4	4
													OFFSET		
													111	43	134







10/07	TH	Phase Change
3/08/07	TH	Modify LPI
DATE	BY	REVISIONS

NOTES: **NON - ACTUATED**

ASTC – 6 Type Controller

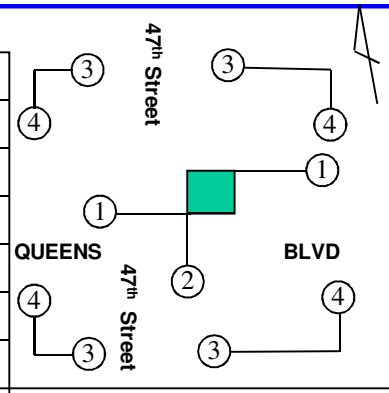
CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd, Long Island City, NY 11101

Queens Boulevard @ 46th Street

Prep. T Hom Date 10-02-07
Appr. _____ Date _____

Dwg No. LB-4354Q

	1	2	3	4	5	6	7	8	9	10	11	12	5:00 – 10:30 MON-FRI	10:30 – 14:30 20:00 – 05:00 MON-FRI Weekend - AAT	14:30 – 20:00 MON-FRI
	R	R	DW	DW											
	A	A	WK	WK											
	G	G													
													150 SEC CYCLE	120 SEC CYCLE	150 SEC CYCLE
Phase A	G	R	WK	DW									74	50	74
SPARE	G	R	WK	DW									2	2	2
PED CL	G	R	FLDW	DW									2	2	2
VEH CL	A	R	FLDW	DW									3	3	3
VEH CL	R	R	FLDW	DW									2	2	2
Phase B	R	R	FLDW	WK									3	3	3
(LPI)	R	R	DW	WK									4	4	4
Phase C	R	G	DW	WK									39	33	39
SPARE	R	G	DW	WK									2	2	2
PED CL	R	G	DW	FLDW									12	12	12
VEH CL	R	G	DW	DW									3	3	3
VEH CL	R	A	DW	DW									4	4	4
													OFFSET		
													106	35	140



3/09/07	TH	Modify LPI
DATE	BY	REVISIONS

NOTES: **NON - ACTUATED**

ASTC – 6 Type Controller

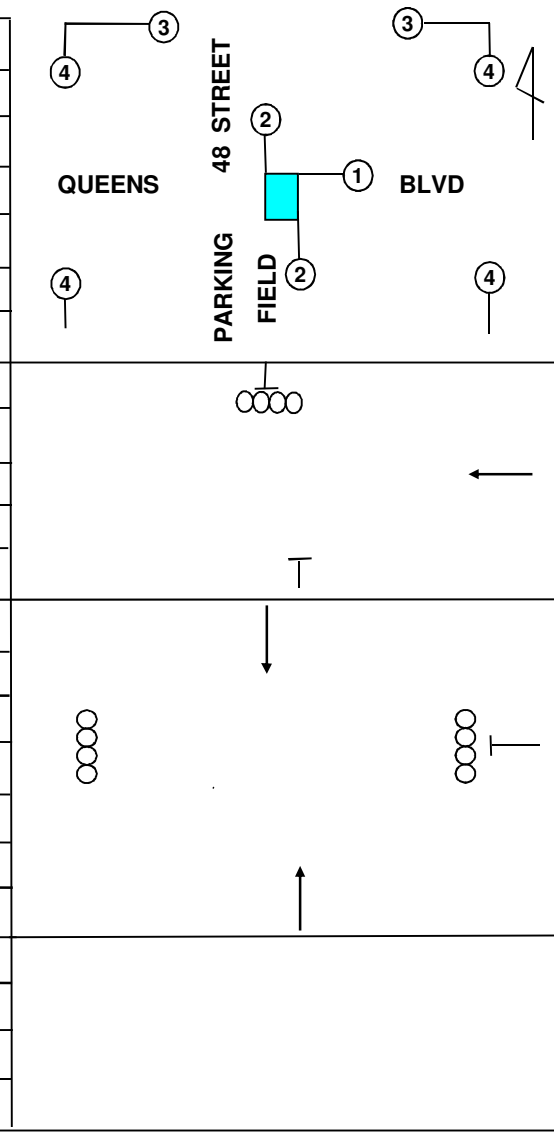
CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd, Long Island City, NY 11101

Queens Boulevard @ 47th Street

Prep. T Hom Date 04-20-04
Appr. _____ Date _____

Dwg No. LB-4355Q

	1	2	3	4	5	6	7	8	9	10	05:00-10:30 MON-FRI	10:30-14:30 20:00-05:00 MON-FRI WEEKEND-AAT	14:30-20:00 MON-FRI	
	R	R	DW	DW										
	A	A	WK	WK										
	G	G												
											150 SEC CYCLE	120 SEC CYCLE	150 SEC CYCLE	
PHASE A	G	R	WK	DW							71	41	71	
SPARE	G	R	WK	DW							2	2	2	
PED CL	G	R	FLDW	DW							12	12	12	
VEH CL	A	R	DW	DW							3	3	3	
VEH CL	R	R	DW	DW							2	2	2	
PHASE B	R	G	DW	WK							37	37	37	
SPARE	R	G	DW	WK							2	2	2	
SPARE	R	G	DW	WK							2	2	2	
SPARE	R	G	DW	WK							2	2	2	
PED CL	R	G	DW	FLDW							10	10	10	
VEH CL	R	A	DW	DW							3	3	3	
VEH CL	R	R	DW	DW							4	4	4	
											OFFSET			
											102	30	1	



DATE	BY	REVISIONS
09-09	FM	Modify timing (for senior pedestrian)

NOTES: **NON - ACTUATED**

ASTC – 6 Type Controller

CONTROLLER # 2

CABINET ADDRESS 6707

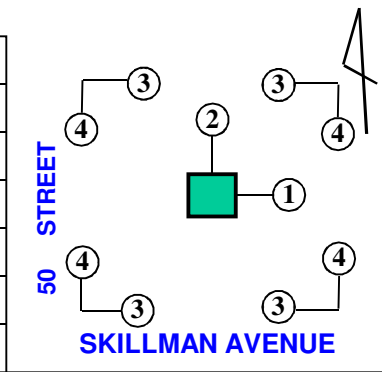
CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd, Long Island City, NY 11101

QUEENS BLVD @ 48 STREET

Prep. F. Mikhail Date 09-24-09
Appr. _____ Date _____

Dwg. No. LB-408Q

	1	2	3	4	5	6	7	8	9	10	11	12	AT ALL TIMES		
	R	R	DW	DW											
	A	A	WK	WK											
	G	G													
Phase A	G	R	WK	DW									16		
SPARE	G	R	WK	DW									2		
PED CL	G	R	FLDW	DW									7		
VEH CL	A	R	DW	DW									3		
VEH CL	R	R	DW	DW									2		
Phase B	R	G	DW	WK									9		
SPARE	R	G	DW	WK									2		
SPARE	R	G	DW	WK									2		
SPARE	R	G	DW	WK									2		
PED CL	R	G	DW	FLDW									10		
VEH CL	R	A	DW	DW									3		
VEH CL	R	R	DW	DW									2		



60 SEC CYCLE

OFFSET 41

DATE	BY	REVISIONS

NOTES: **NON – ACTUATED**

ASTC – 6 TYPE CONTROLLER

CABINET ADDRESS: 66A9

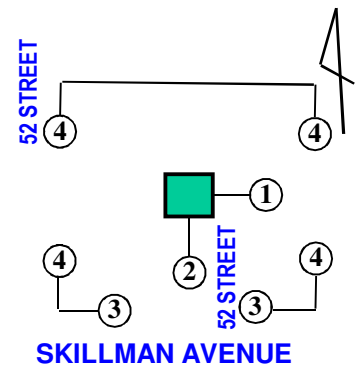
CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd, Long Island City, NY 11101

SKILLMAN AVENUE @ 50 STREET

Prep. GENIA NUNEZ Date 3-28-09
Appr. _____ Date _____

Dwg No.

	1	2	3	4	5	6	7	8	9	10	11	12	AT ALL TIMES		
	R	R	DW	DW											
	A	A	WK	WK											
	G	G													
Phase A	G	R	WK	DW									16		
SPARE	G	R	WK	DW									2		
PED CL	G	R	FLDW	DW									7		
VEH CL	A	R	DW	DW									3		
VEH CL	R	R	DW	DW									2		
Phase B	R	G	DW	WK									9		
SPARE	R	G	DW	WK									2		
SPARE	R	G	DW	WK									2		
SPARE	R	G	DW	WK									2		
PED CL	R	G	DW	FLDW									10		
VEH CL	R	A	DW	DW									3		
VEH CL	R	R	DW	DW									2		



60 SEC CYCLE

OFFSET 23

DATE	BY	REVISIONS

NOTES: **NON – ACTUATED**

ASTC – 6 TYPE CONTROLLER

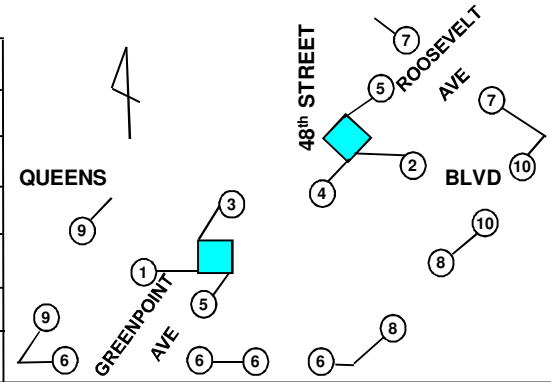
CABINET ADDRESS: 66AA

CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd, Long Island City, NY 11101

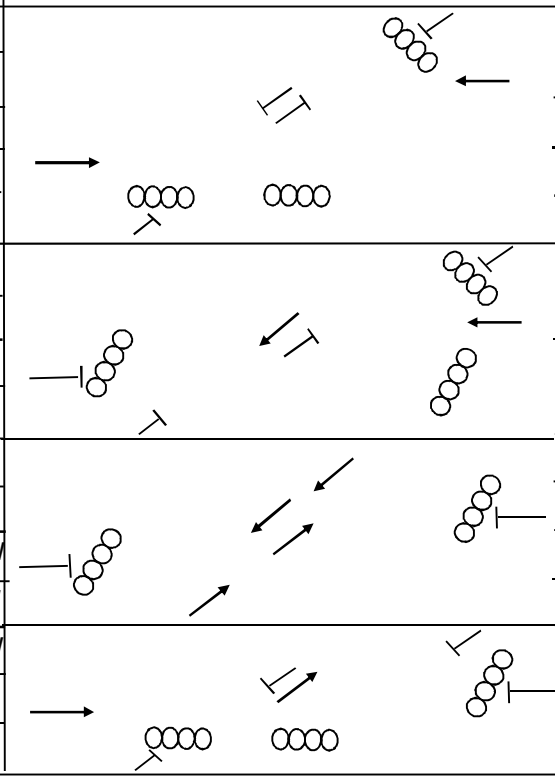
SKILLMAN AVENUE @ 52 STREET

Prep. GENIA NUNEZ Date 3-28-09
Appr. _____ Date _____

Dwg No.



	1	2	3	4	5	6	7	8	9	10	05:00-10:30 MON-FRI	10:30-14:30 20:00-05:00 MON-FRI WEEKEND-AAT	14:30-20:00 MON-FRI	
	R	R	R	R	R	DW	DW	DW	DW	DW				
	A	A	A	A	A	WK	WK	WK	WK	WK				
	G	G	G	G	G									
											150 SEC CYCLE	120 SEC CYCLE	150 SEC CYCLE	
PHASE A	G	G	R	R	R	WK	WK	DW	DW	DW	37	7	37	
SPARE	G	G	R	R	R	WK	WK	DW	DW	DW	2	2	2	
PED CL	G	G	R	R	R	FLDW	WK	DW	DW	DW	15	15	15	
VEH CL	A	G	R	R	R	DW	WK	DW	DW	DW	3	3	3	
VEH CL	R	G	R	R	R	DW	WK	DW	DW	DW	2	2	2	
PHASE B	R	G	G	R	R	DW	WK	WK	WK	DW	7	7	7	
PED CL	R	G	G	R	R	DW	FLDW	FLDW	WK	DW	17	17	17	
VEH CL	R	A	G	R	R	DW	DW	DW	WK	DW	3	3	3	
VEH CL	R	R	G	R	R	DW	DW	DW	WK	DW	2	2	2	
PHASE C	R	R	G	G	G	DW	DW	DW	WK	WK	7	7	7	
PED CL	R	R	G	G	G	DW	DW	DW	FLDW	WK	23	23	23	
VEH CL	R	R	A	G	A	DW	DW	DW	DW	FLDW	3	3	3	
VEH CL	R	R	R	G	R	DW	DW	DW	DW	FLDW	4	4	4	
PHASE D	G	R	R	G	R	WK	DW	DW	DW	FLDW	20	20	20	
VEH CL	G	R	R	A	R	WK	DW	DW	DW	DW	3	3	3	
VEH CL	G	R	R	R	R	WK	DW	DW	DW	DW	2	2	2	
											OFFSET	**97**	**40**	**11**



NOTES: **NON - ACTUATED**

ASTC – 12 Type Controller

SENIOR PEDESTRIAN CROSSING

(PC: 3.0 FT/SEC)

CABINET ADDRESS: 668F

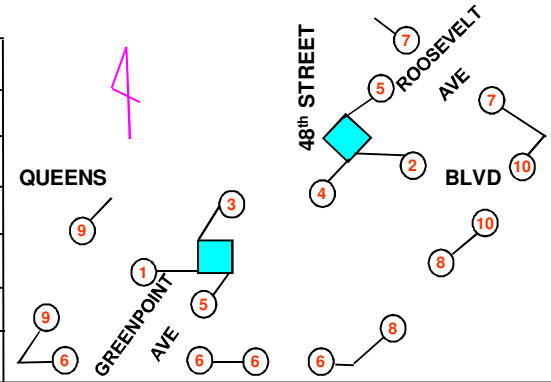
DATE	BY	REVISIONS
8-10	TV	MODIFY PEDESTRIAN CLEARANCE

CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd, Long Island City, NY 11101

QUEENS BOULEVARD @ 48 STREET, GREENPOINT AVENUE & ROOSEVELT AVENUE

Prep. T. Valite Date 8-23-10
Appr. _____ Date _____

Dwg. No. LB 408Q



	1	2	3	4	5	6	7	8	9	10	05:00-10:30 MON-FRI	10:30-14:30 20:00-05:00 MON-FRI WEEKEND-AAT	14:30-20:00 MON-FRI	
	R	R	R	R	R	DW	DW	DW	DW	DW				
	A	A	A	A	A	WK	WK	WK	WK	WK				
	G	G	G	G	G									
											150 SEC CYCLE	120 SEC CYCLE	150 SEC CYCLE	
PHASE A	G	G	R	R	R	WK	WK	DW	DW	DW	50	25	53	
SPARE	G	G	R	R	R	WK	WK	DW	DW	DW	2	2	2	
PED CL	G	G	R	R	R	FLDW	WK	DW	DW	DW	7	7	7	
VEH CL	A	G	R	R	R	DW	WK	DW	DW	DW	3	3	3	
VEH CL	R	G	R	R	R	DW	WK	DW	DW	DW	2	2	2	
PHASE B	R	G	G	R	R	DW	WK	WK	WK	DW	9	6	6	
PED CL	R	G	G	R	R	DW	FLDW	FLDW	WK	DW	15	15	15	
VEH CL	R	A	G	R	R	DW	DW	DW	WK	DW	3	3	3	
VEH CL	R	R	G	R	R	DW	DW	DW	WK	DW	2	2	2	
PHASE C	R	R	G	G	G	DW	DW	DW	WK	WK	10	8	10	
PED CL	R	R	G	G	G	DW	DW	DW	FLDW	WK	20	20	20	
VEH CL	R	R	A	G	A	DW	DW	DW	DW	FLDW	3	3	3	
VEH CL	R	R	R	G	R	DW	DW	DW	DW	FLDW	4	4	4	
PHASE D	G	R	R	G	R	WK	DW	DW	DW	FLDW	15	15	15	
VEH CL	G	R	R	A	R	WK	DW	DW	DW	DW	3	3	3	
VEH CL	G	R	R	R	R	WK	DW	DW	DW	DW	2	2	2	
											OFFSET	**97**	40	**11**

DATE	BY	REVISIONS

NOTES: **NON - ACTUATED**

ASTC – 12 Type Controller

(See data base for absolute offsets)

CABINET ADDRESS 668F

CITY OF NEW YORK
BUREAU OF TRAFFIC OPERATIONS
34-02 Queens Blvd, Long Island City, NY 11101

QUEENS BLVD @ 48th STREET, GREENPOINT AVE & ROOSEVELT AVE

Prep. F. Mikhail Date 01-14-09
Appr. _____ Date _____

Dwg. No. LB-408Q

APPENDIX H

NYCDDC DRAWINGS

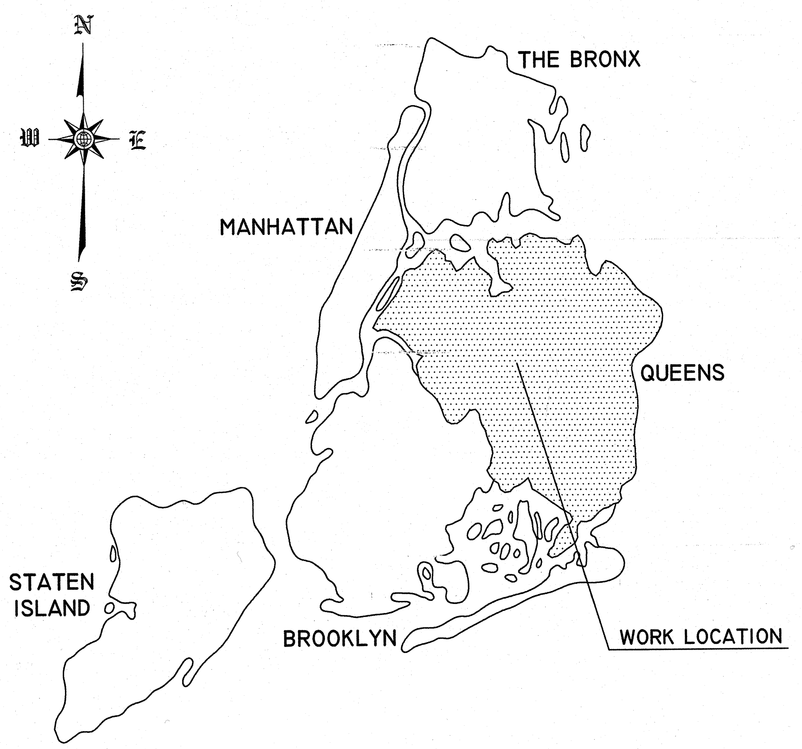
NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

PROJECT ID: HWC988QB4

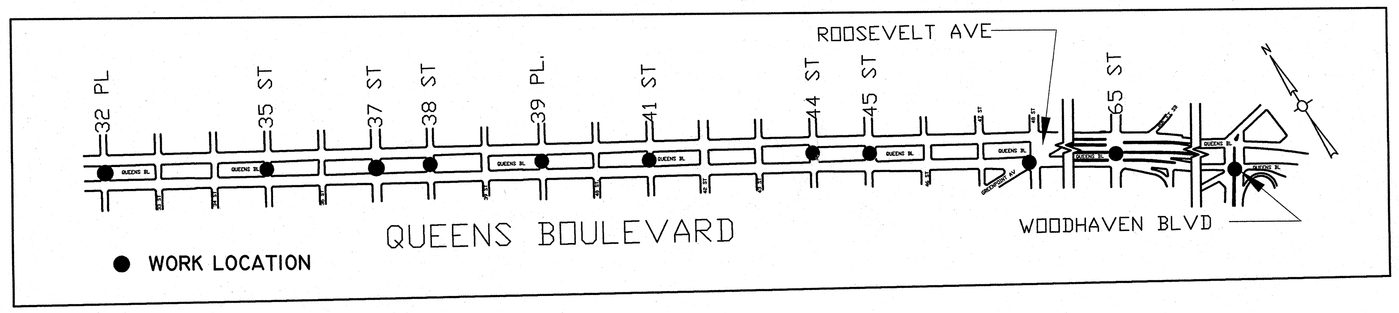
PEDESTRIAN CIRCULATION IMPROVEMENTS ON QUEENS BOULEVARD AT VARIOUS INTERSECTIONS:

32ND PL. AND QUEENS BLVD.
35TH ST. AND QUEENS BLVD.
37TH ST. AND QUEENS BLVD.
38TH ST. AND QUEENS BLVD.
39TH PL. AND QUEENS BLVD.
41ST ST. AND QUEENS BLVD.
44TH ST. AND QUEENS BLVD.
45TH ST. AND QUEENS BLVD.
ROOSEVELT AVE. AND QUEENS BLVD.
65TH PL. AND QUEENS BLVD.
WOODHAVEN BLVD. AND QUEENS BLVD.



INCLUDING TRAFFIC SIGNAL AND STREET LIGHTING WORK TOGETHER WITH ALL WORK INCIDENTAL THERETO

BOROUGH OF QUEENS



LOCATION PLAN
N.T.S.

COMMUNITY BOARDS NO. 2, 4

ERIC MACFARLANE, P.E.
DEPUTY COMMISSIONER — DATE

YUN POY (DINO) NG, P.E.
ASSOCIATE COMMISSIONER — DATE

GURDIP SAINI, P.E.
ASSISTANT COMMISSIONER — DATE

SERGIU REBARBER, P.E.
DEPUTY ASSISTANT COMMISSIONER — DATE

GEORGE FRANZ, P.E.
DIRECTOR — DATE

NO.	DATE	DESCRIPTIONS	BY	APPR'D

REVISIONS

PROJECT NO. HWC988QB4 | DATE 10/14/09 | SHEET 1 OF 16 | 1/1

PROJECT I.D. HWC988QB4 QUEENS BLVD., BOROUGH OF QUEENS.

IN-HOUSE DESIGN

0 1 2 3 4
ORIGINAL SIZE IN INCHES

F:\HW-DESIGN\HWC\QUEENS\HWC988QB4\FINAL\HWC988QB4 - TITLE.dwg, Title Sheet, 05/12/2010 2:02:54 PM,
CLDesk,3-279-DOE\TD5800.pc3

ABBREVIATIONS

ABANDONED	ABDN.
APARTMENT	APT.
ASPHALT	ASPH.
BASEMENT	BSMT.
BITUMINOUS	BIT.
BLOCK	BLK.
BLUESTONE	B.S.
BLUESTONE CURB	B.S.C.
BLUESTONE WALK	B.S.W.
BOTTOM OF CURB	B.C.
BRICK	BRK.
BUILDING	BLDG.
BUILT	BLT.
CAST IRON	C.I.
CENTER LINE	C.L.
CHAIN LINK FENCE	C.L.F.
CHAMBER	CH.
CLASS NUMBER	CL. #
COMBINED	COMB.
COMMERCIAL	COML.
CONCRETE	CONC.
CONCRETE CURB	C.C.
CONCRETE WALK	C.W.
DIAMETER	DIA.
DOUBLE BARREL	D.B.
DOWN	DN.
DRAWING	DWG.
DUCTILE IRON PIPE	D.I.P.
EXISTING	EXIST.
EXTRA STRENGTH VITRIFIED PIPE	E.S.V.P.
FIRE ALARM	F.A.
FIRE DEPARTMENT	F.D.
FLAT TOP REINFORCED CONCRETE	F.T.R.C.
FRAME	FR.
GRANITE	GRAN.
GRANITE CURB	GRAN. C.
INTERCEPTOR	INT.
INVERT ELEVATION	INV. EL.
IRREGULAR	IRR.
MANHOLE	MH
NOT IN CONTRACT	N.I.C.
NOT TO SCALE	N.T.S.
PAVEMENT	PVMT.
POINT OF CURVATURE	P.C.
POINT OF INTERSECTION	P.I.
POINT OF TANGENCY	P.T.
PRECAST REINFORCED CONCRETE	P.R.C.
RADIUS	R
REINFORCED CONCRETE PIPE	R.C.P.
ROADWAY	RDWY.
SANITARY	SAN.
SEWER	SWR.
SIDEWALK	SWK.
STANDARD	STD.
STEAM	SM.
STEEL	STL.
STEEL FACED	ST.F.
STEEL FACED CONCRETE CURB	ST.F.C.C.
STONE	STN.
STORM	STM.
STORY	STY.
TOP OF CURB	T.C.
TRAFFIC SIGN	T.S.
VACANT	VAC.
WORKING POINT	W.P.

LEGEND

	EXISTING	PROPOSED
MANHOLES		
ELECTRIC	(E) (E)	
CABLE TV	(C)	
TELEPHONE	(T)	
TRAFFIC	(TT)	
NYC MH	□NYC	
GAS	(G)	
WATER	(W)	
FIRE DEPT.	(F)	
SUBWAY	(SU)	
COAL CHUTE	○CC	
STORM SEWER	(S)STM	●STM
COMBINED SEWER	(S)COMB	●COMB
SANITARY SEWER	(S)SAN	●SAN
INTERCEPTOR SEWER	(S)INT	●INT
UNIDENTIFIED MANHOLE (NO RECORD AVAILABLE)	(MH)	
BUILT MANHOLE REPLACED BY NEW MANHOLE		◉
RECORD MANHOLE	(S)	
HARDWARE RIM EL. & INV. EL. (SEWER, ETC.)	(S) 61.23 INV.47.89	
BASINS		
CATCH BASIN WITH CURB PIECE – TYPE 1	1	
CATCH BASIN WITHOUT CURB PIECE – TYPE 2	2	
CATCH BASIN WITHOUT CURB PIECE – TYPE 3	3	
EXISTING CATCH BASIN TO BE REMOVED		R
TO BE ABANDONED		A
TO BE MODIFIED		M
TO BE ADJUSTED		A
CATCH BASIN – NON-STANDARD		N
NEW CATCH BASIN TO BE CONSTRUCTED IN SAME LOCATION AS OLD BASIN		
INLET	◪	
SEEPAGE BASIN	○SB	●SB
HYDRANTS		
LOW PRESSURE HYDRANT		
HIGH PRESSURE HYDRANT		
LOW PRESSURE HYDRANT TO BE RELOCATED		R
HIGH PRESSURE HYDRANT TO BE RELOCATED		R
LOW PRESSURE HYDRANT TO BE ADJUSTED (VERTICALLY)		A
HIGH PRESSURE HYDRANT TO BE ADJUSTED (VERTICALLY)		A
SIAMESE CONNECTION		
STREET LIGHTING AND TRAFFIC SIGNALS		
WOOD UTILITY POLE		
WOOD UTILITY POLE WITH STREET LIGHT		
WOOD UTILITY POLE WITH TRAFFIC SIGNAL	T	
WOOD UTILITY POLE WITH STREET LIGHT AND FIRE ALARM BOX	F	
WOOD UTILITY POLE WITH FIRE ALARM BOX	F	
WOOD UTILITY POLE WITH PEDESTRIAN SIGNAL	PS	
WOOD UTILITY POLE WITH TRAFFIC AND PEDESTRIAN SIGNAL	TPS	
WOOD UTILITY POLE WITH STREET LIGHT AND TRAFFIC AND PEDESTRIAN SIGNAL	TPS	
WOOD UTILITY POLE WITH STREET LIGHT AND PEDESTRIAN SIGNAL	PS	
STREET LIGHT (METAL POLE)		
STREET LIGHT AND TRAFFIC SIGNAL	T	
STREET LIGHT AND TRAFFIC SIGNAL WITH PEDESTRIAN SIGNAL	TPS	
STREET LIGHT WITH PEDESTRIAN SIGNAL	PS	
STREET LIGHT WITH FIRE ALARM BRACKET	F	
TRAFFIC SIGNAL POST	T	
TRAFFIC SIGNAL CONTROL BOX	◫	
STANCHION WITH TRAFFIC SIGNAL	T	
STANCHION W/PEDESTRIAN SIGNAL	TPS	
TRAFFIC SIGNAL POST W/PEDESTRIAN SIGNAL	TPS	

LEGEND

	EXISTING	PROPOSED
VALVE BOXES		
GAS	□G	
WATER	□W	
STEAM	□St	
TREES		
EXISTING TREE (SIZE AS LABELED)	7"	
EXISTING TREE TO BE REMOVED		7"
NEW TREE TO BE PLANTED		
SHRUB		
HEDGE (HEIGHT AS LABELED)		
MISCELLANEOUS		
VAULT (SIDEWALK)	(V)	
CELLAR WINDOW GRATING		
CELLAR DOOR	CD	
SUBWAY GRATING		
SURFACE WATER FLOW		
TRAFFIC DIRECTION		
PARKING METER	○PM	
OIL FILL CAP OR OIL VENT	◎ OR ○FILL	
FIRE ALARM BOX	□F	
POLICE CALL BOX	□P	
MAIL BOX, PUBLIC PHONE	□MB □TEL.	
COLUMN – FOUNDATION (OF ELEVATED STRUCTURES)	⊠ OR ⊞	
HEADER		
AREA OF ADJUSTMENT		
LIMIT OF NEW PAVEMENT		
BUS PAD		
SIGN (GROUND MOUNTED)		
SIGN (OVERHEAD)		
TRAIN STATION ENTRANCE	DOWN	
SHAFT TO BUILDING BASEMENT	SH	
PEDESTRIAN RAMP		
CURB (CONCRETE UNLESS OTHERWISE INDICATED)		
CURB WITH DROP CURB (DRIVEWAY)	D C	D C
EDGE OF PAVEMENT WITHOUT CURB		
PROPOSED CONSTRUCTION (TOP OF CURB) ELEVATION AND STATION		T.C. 13.8 / STA. 26+33
ROCK OUTCROP		
NORTH ARROW	N	
BARRIERS		
BEAM TYPE MALL BARRIER		
PORTABLE PRECAST CONCRETE BARRIER		
CAST IN PLACE CONCRETE BARRIER		
RETAINING WALL (W/TYPE)	RW (STN.)	
RAILROAD/TROLLEY TRACK		
FENCE (WITH HEIGHT AND TYPE)		
CHAIN LINK FENCE	6'	
IRON PICKET FENCE	5'	
WIRE FENCE	5'	
IRON ON CONCRETE COPING		
WOOD PICKET FENCE	4'	
GUARD POST	GP	
BUILDINGS		
HOUSE INFORMATION – HOUSE NUMBER, BLDG TYPE, FIRST FLOOR ELEV., (CE) CELLAR ENTR., (GE) GARAGE ENTR.	95-02 / 2-STY.FR. / ▼ 25.3 / C.E.17.5	
STAIRS OR STOOPS		
CANOPY	CANOPY	

* LINE SPACING IN SYMBOL TO BE SCALED TO CONDUIT SIZE

LEGEND

	EXISTING	PROPOSED
CONDUITS		
6" WATER MAIN		
8" WATER MAIN		
12" WATER MAIN		
16" WATER MAIN		
20" WATER MAIN		
24" WATER MAIN		
STORM SEWER (WITH SIZE – LESS THAN 24")	15"STM.	15"STM.
STORM SEWER (WITH SIZE – 24" AND GREATER)*	24"STM.	24"STM.
SANITARY SEWER (WITH SIZE – LESS THAN 24")	15"SAN.	15"SAN.
SANITARY SEWER (WITH SIZE – 24" AND GREATER)*	24"SAN.	24"SAN.
COMBINED SEWER (WITH SIZE – LESS THAN 24")	15"COMB.	15"COMB.
COMBINED (WITH SIZE – 24" AND GREATER)*	24"COMB.	24"COMB.
INTERCEPTOR SEWER (WITH SIZE – LESS THAN 24")	15"INT.	15"INT.
INTERCEPTOR SEWER (WITH SIZE – 24" AND GREATER)*	24"INT.	24"INT.
CATCH BASIN CONNECTION		
GAS LINE (WITH SIZE)	4" G.	
STEAM (WITH SIZE)	16" ST.	
ELECTRIC		
TELEPHONE		
FIRE ALARM		
OVERHEAD (AERIAL) UTILITY LINE	A/E,T,F	
TA SUBWAY CONDUIT		
LEGAL DATA		
LOT & BLOCK NUMBER	39 BLOCK 2109	
ESTABLISHED/LEGAL GRADE	0.00	
ANGLE	86°-30'-48"	
BLOCK LENGTH	167.01' (65.75 m)	
INTERPOLATED/CALCULATED ANGLE OR LENGTH	[86°-30'-48"] [167.01'(65.75 m)]	
PROPERTY POSSESSION LINE		
MAPPED PROPERTY LINE (RIGHT-OF-WAY LINE)		
LOT LINE		
SURVEY MONUMENT (CITY) – IDENTIFY BY TOPO NUMBER	⊞M#	
BENCH MARK (LABEL)	BM#	
SURVEY CONTROLS		
CONTROL SURVEY TRAVERSE		
CENTER LINE BASE LINE	10+00 11+00	

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NO.	DATE	DESCRIPTIONS	BY	APPR'D

REVISIONS

TOPOGRAPHIC SURVEY PREPARED BY:
NAME OF SURVEYING FIRM

LICENSED LAND SURVEYOR

DESIGNED M.H.
DRAWN O.S./C.B.
CHECKED K.R.

SCALE AS SHOWN

CADD FILE

KRISHNA REDDY, P.E.
ENGINEER-IN-CHARGE

GEORGE FRANZ, P.E.
DIRECTOR

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

ABBREVIATIONS, LEGEND AND TABLE OF CONTENTS

PEDESTRIAN CIRCULATION IMPROVEMENTS ON QUEENS BLVD AT VARIOUS INTERSECTIONS
BOROUGH OF QUEENS

PROJECT ID: HWC988QB4 | DATE: 10-26-09 | SHEET 2 OF 16 | G2

— CAPITAL PROJECT ID. HWC988QB4, QUEENS BOULEVARD, ETC., BOROUGH OF QUEENS

F:\HW-DESIGN\HWC988QB4\ENGINEERING\HWC988QB4G2.dwg HWC988QB4G2 10/02/2010 2:02:22 PM

1. GENERAL

1.01 ELEVATION 0.0 IS 2.725 FEET ABOVE THE MEAN SEA LEVEL AS ESTABLISHED BY THE U.S.C.&G SURVEY AT SANDY HOOK, NEW JERSEY.

1.02 BLOCK INTERIOR ANGLES, BLOCK LENGTHS AND LEGAL GRADES WERE OBTAINED FROM THE FINAL MAPS OF THE BOROUGH OF QUEENS.

1.03 EXISTING UNDERGROUND AND OVERHEAD UTILITIES AS SHOWN HERE HAVE BEEN DETERMINED BY STANDARD SURVEYING METHODS AND AVAILABLE RECORDS. NEITHER THE EXACT LOCATION NOR THE INFORMATION OF THESE EXISTING UTILITIES IS GUARANTEED TO BE COMPLETE OR CORRECT.

1.04 BUS ROUTES AFFECTED BY THE PROJECT WILL OR MAY REQUIRE BUS DIVERSIONS. ARRANGEMENTS SHALL BE MADE THROUGH:

A. MR. KARL STRICKER, SUPERINTENDENT SPECIAL OPERATIONS, SURFACE TRANSIT
NEW YORK CITY TRANSIT AUTHORITY
130 LIVINGSTON STREET, ROOM 3033 BROOKLYN, NY 11201
(718) - 694 - 3655

1.05 ALL COMMUNICATIONS AND COORDINATION MEETINGS RELATIVE TO THIS PROJECT BETWEEN THE CONTRACTOR AND AGENCY, UTILITY COMPANY OR ORGANIZATION WILL BE CONDUCTED AND/OR APPROVED BY THE ENGINEER.

1.06 (NO TEXT).

1.07 (NO TEXT).

1.08 ALL SHEETING PLACED UNDER THIS CONTRACT, NO MATTER UNDER WHICH ITEMS, SHALL BE REMOVED, AND THE COST SHALL BE DEEMED INCLUDED IN THE PRICES BID FOR ALL SCHEDULED ITEMS.

1.09 THE FOLLOWING SHALL PERTAIN TO ALL ITEMS HAVING BACKFILL: "THE BACKFILLING SHALL COMPLY WITH SUBSECTION 4.11.3 OF THE STANDARD SPECIFICATIONS, AND THE COST THEREOF SHALL BE DEEMED INCLUDED IN THE PRICES BID FOR ALL RELATED ITEMS."

1.10 ALL HYDRANTS, LIGHT POLES, TREES OR OTHER FIXED OBJECTS THAT ARE TO BE CONSTRUCTED, PLANTED, RESET, OR RELOCATED AS A RESULT OF THE PROJECT SHALL BE CONSTRUCTED OR PLANTED SO AS TO PROVIDE AT LEAST ONE AND ONE HALF (1 1/2) FOOT CLEAR DISTANCE FROM THE FACE OF THE CURB TO THE FACE OF THE OBJECT.

1.11 (NO TEXT)

1.12 (NO TEXT)

1.13 AS A RESULT OF CURB RELOCATION WITHIN THE CONTRACT LIMITS, EXISTING STREET APPURTENANCES PROJECTING ABOVE PAVED SURFACES, SUCH AS HYDRANTS, LAMPPOSTS AND TRAFFIC SIGNAL POLES, BUS SHELTERS, ETC., WILL HAVE TO BE RELOCATED. NOT WITHSTANDING ANY CONSTRUCTION SEQUENCE AS DEFINED BY THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PLAN HIS CONSTRUCTION OPERATIONS TO INSURE THAT THESE APPURTENANCES ARE CONSTRUCTED OR RELOCATED IN CONJUNCTION WITH THE INSTALLATION OF THE NEW CURB.

IN PARTICULAR, IN THE EVENT THE SIDEWALK IS WIDENED, THE STREET APPURTENANCES SHALL BE MAINTAINED AT THEIR EXISTING LOCATION BEHIND THE EXISTING CURB UNTIL THE NEW SIDEWALK IS CONSTRUCTED. IF THE SIDEWALK IS NARROWED, THE STREET APPURTENANCES MUST BE MOVED TO THEIR NEW LOCATIONS BEHIND THE PROPOSED NEW CURB PRIOR TO REMOVAL OF THE EXISTING CURB.

SERVICES MUST BE MAINTAINED BY INSTALLING AND ENERGIZING NEW APPURTENANCES OR BY USING TEMPORARY APPURTENANCES, AS DIRECTED BY THE ENGINEER. UNLESS OTHERWISE PROVIDED FOR, ALL TEMPORARY APPURTENANCES SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE CITY.

2. GRADING WORK

2.01 REMOVAL OF ALL SHRUBBERY, DEBRIS, FENCES, AND OTHER ENCROACHMENTS ON THE RIGHT OF WAY WHICH INTERFERE WITH THE NEW WORK ARE DEEMED INCLUDED IN THE PRICES BID FOR ALL SCHEDULED ITEMS.

3. CURB WORK

3.01 CURBS AND DEPRESSED CURBS IN DRIVEWAYS ARE TO BE CONSTRUCTED WHERE SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

3.02 ALL NEW STEEL FACED CONCRETE CURB WITH RADIUS GREATER THAN 100 FEET WILL BE PAID FOR AS STRAIGHT CURB. ALL NEW STEEL FACED CONCRETE CURB WITH RADIUS LESS THAN OR EQUAL TO 100 FEET WILL BE PAID FOR AS CORNER CURB.

3.03 ALL NEW CORNERS ARE TO BE STEEL FACED CONCRETE CURB AND TURNED TO A 12 FT. RADIUS, UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. ALL CORNER STEEL FACING IS TO BE SHOP FABRICATED.

3.04 THE COST OF THE FOLLOWING ARE TO BE INCLUDED IN THE UNIT PRICES BID FOR VARIOUS SCHEDULED ITEMS: PAINTING CURBS YELLOW ADJACENT TO FIRE HYDRANTS (15 FEET ON EITHER SIDE), AND AT BUS STOPS (LENGTH AS DESIGNATED AS PER THE DEPARTMENT OF TRANSPORTATION, OFFICE OF TRAFFIC ENGINEERING AND SAFETY STANDARDS.)

3.05 WHEN NEW CURBING IS TO BE EXTENDED INTO CROSS STREETS, IT SHALL BE CONCRETE CURB, UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. WHERE CURB BEYOND THE CORNER IS NOT STEEL FACED CONCRETE CURB, STEEL CURB IS TO BE EXTENDED TO CLEAR PEDESTRIAN RAMPS AND/OR TO THE NEW CATCH BASINS AS CONSTRUCTED, CLEAR OF THE PEDESTRIAN CROSSWALK, THE COST OF THE ADDITIONAL TANGENT LENGTH OF STEEL FACED CONCRETE CURB WILL BE PAID UNDER STRAIGHT STEEL CURB ITEM .

3.06 WHERE NEW CURBING IS REQUIRED ADJACENT TO EXISTING CONCRETE SIDEWALK, WHICH IS NOT TO BE REPLACED, A CONCRETE SAW-CUT SHALL BE MADE ALONG A LINE PARALLEL TO AND TWO (2) FEET BACK FROM THE NEW CURB. THE COST OF THE SAW-CUT IS INCLUDED IN THE PRICES BID FOR THE CURB ITEMS.

3.07 WHERE THE PROPOSED TOP OF CURB LINE PROFILE VARIES FROM THE EXISTING PROFILE ALONG THE TOP OF SUBWAY/SIDEWALK VENTILATORS BY MORE THAN 1", THE ENGINEER WILL DIRECT THE CONTRACTOR TO ADJUST THE TOP OF THE NEW CURB, DURING CONSTRUCTION, TO CONFORM WITH THE PROFILE OF EACH VENTILATOR AND WITH THE PROPOSED GRADES AT THE POINTS OF TANGENCY AND CURVATURE IN EACH BLOCK. THE GUTTER LINE PROFILE SHALL BE 7" BELOW PROPOSED TOP OF CURB PROFILE.

3.08 TOP OF CURB ELEVATIONS AT CORNER PEDESTRIAN RAMPS SHALL BE ESTABLISHED IN CONJUNCTION WITH ROADWAY PAVEMENT CONSTRUCTION SO AS TO PROVIDE POSITIVE SURFACE DRAINAGE FROM THE APEX TOWARDS THE CATCH BASINS, WHERE APPLICABLE.

4. SIDEWALK WORK

4.01 SIDEWALK PEDESTRIAN RAMPS ARE TO BE INSTALLED AT ALL CORNERS, UNLESS OTHERWISE DIRECTED. THE COST FOR SUCH IS TO BE INCLUDED IN THE SIDEWALK AND STEEL FACED CORNER CURB ITEMS USED.

4.02 THE LOCATION AND THE EXTENT OF NEW SIDEWALK TO BE CONSTRUCTED IS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

4.03 THE CONTRACTOR IS HEREBY ADVISED THAT UNDER-SIDEWALK BUILDING VAULTS ARE PRESENT IN THE SIDEWALK AREA WITHIN THE PROJECT LIMITS.

4.04 (NO TEXT)

4.05 (NO TEXT)

4.06 VAULT INFORMATION MAY BE AVAILABLE FROM THE FOLLOWING SOURCES:

A. NEW YORK CITY DEPARTMENT OF BUILDINGS

B. NEW YORK CITY BUREAU OF FRANCHISES

C. NEW YORK CITY DEPARTMENT OF FINANCE

D. (NO TEXT)

4.07 THE CONTRACTOR SHALL RESET/ADJUST ANCHORAGE FOR SECURITY GATES WITHIN SIDEWALK AREAS, AS NECESSARY OR AS DIRECTED BY THE ENGINEER. COST OF THIS WORK SHALL BE DEEMED INCLUDED IN PRICES BID FOR SIDEWALK WORK.

4.08 (NO TEXT)

5. DRAINAGE WORK

5.01 ALL PROPOSED DRAINAGE WORK SHALL BE DONE IN CONFORMANCE WITH THE LATEST STANDARDS OF THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION (N.Y.C.D.E.P.) BUREAU OF SEWERS.

5.02 ALL EXISTING SEWER MANHOLES WITHIN THE CONTRACT LIMITS SHALL BE ADJUSTED, AS NECESSARY, SO THAT THEY WILL BE FLUSH WITH THE FINISHED GRADES AFTER COMPLETION OF THE WORK. ANY MANHOLES WHICH HAVE DAMAGED, WORN OR NON-STANDARD FRAMES AND COVERS SHALL BE PROVIDED WITH NEW TWENTY-SEVEN (27) INCH CASTINGS IN ACCORDANCE WITH THE LATEST STANDARDS OF N.Y.C.D.E.P. BUREAU OF SEWERS.

5.03 ANY DAMAGE TO EXISTING SEWERS, MANHOLES, BASINS AND CONNECTIONS CAUSED BY THE CONTRACTOR'S WORK SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE CITY.

5.04 WHERE THE HEIGHT OF AN EXISTING MANHOLE PERMITS MORE THAN ONE BASIN CONNECTION TO BE MADE ON THE SAME WALL, SPECIAL PRECAUTION SHALL BE TAKEN TO PROTECT THE STRUCTURAL INTEGRITY OF THE MANHOLE. THE MINIMUM CLEARANCE BETWEEN THE OUTSIDE WALLS OF ANY TWO BASIN CONNECTIONS OR BETWEEN A BASIN CONNECTION AND SEWER, VERTICALLY OR HORIZONTALLY, SHALL BE 12 INCHES.

5.05 THE COST OF RAISING OR LOWERING CITY OWNED MANHOLE, BASIN, AND INLET HEADS TO PROPOSED GRADES WILL BE DEEMED INCLUDED IN THE PRICES BID FOR ALL THE SCHEDULED ITEMS WHEN THE VERTICAL UPWARD MOVEMENT OF ALL HEADS IS TWENTY FOUR (24) INCHES OR LESS, WHEN THE VERTICAL DOWNWARD MOVEMENT OF MANHOLE HEADS IS SIX (6) INCHES OR LESS, AND WHEN THE VERTICAL DOWNWARD MOVEMENT OF BASIN HEADS IS THREE (3) INCHES OR LESS, UNLESS OTHERWISE PROVIDED OR DIRECTED, AND WHERE THE ADJUSTMENT IS WITHIN THE BRICK WORK LIMIT. WHEN THE EXISTING STRUCTURE CONSISTS OF A BRICK CHIMNEY OR A CONCRETE ROOF SLAB OR BRICK ON CONCRETE WALLS, THE MAXIMUM ALLOWABLE HEIGHT OF BRICK, AFTER ADJUSTMENT, SHALL BE TWENTY-FOUR (24) INCHES. ALL OTHER ADJUSTMENTS WILL BE PAID FOR UNDER THE APPROPRIATE MANHOLE, BASIN, OR INLET MODIFICATION ITEMS.

5.06 ALL EXISTING SEWERS, MANHOLES, BASINS, AND CONNECTIONS WITHIN THE LIMITS OF THIS CONTRACT AND CONTIGUOUS THERETO ARE TO BE REPAIRED, IF DAMAGED, BY THE CONTRACTOR, AT NO COST TO THE CITY.

5.07 ALL EXISTING BASINS AND CONNECTIONS WITHIN THE LIMITS OF THIS CONTRACT AND CONTIGUOUS THERETO ARE TO BE CLEANED, FLUSHED AND OTHERWISE MADE OPERABLE TO THE SATISFACTION OF THE ENGINEER, ITEM NO. 6.50.

5.08 CATCH BASINS SHALL NOT, UNDER ANY CIRCUMSTANCES, BE CONNECTED TO A SANITARY SEWER. CATCH BASINS SHALL NOT BE LOCATED WITHIN PEDESTRIAN CROSSWALKS.

5.09 ALL NEW CATCH BASIN CONNECTIONS SHALL BE MADE TO EXISTING SEWERS AT MANHOLES, WITH 12" DIAMETER DUCTILE IRON PIPE, CLASS 56, WITH INTERNALLY LOCKED "PUSH-ON" JOINTS LAID ON 6" OF BROKEN STONE FOR THE ENTIRE WIDTH OF THE TRENCH AND FOR ONE-HALF THE PIPE DIAMETER. THE BROKEN STONE SHALL BE HARD, UN-WEATHERED STONE, UNIFORMLY GRADED FROM 1/4" TO 3/4" IN DIAMETER. IT SHALL CONFORM TO COMMERCIAL 1/4" TO 3/4" STONE. ALL NEW CATCH BASINS SHALL HAVE A HOOD ON THE OUTLET PIPE.

5.10 ALL CATCH BASINS SHALL BE TYPE 1 UNLESS OTHERWISE INDICATED ON THE DRAWINGS. ALL CATCH BASIN SHALL BE INSTALLED 8" BELOW TOP OF CURB.

5.11 (NO TEXT).

5.12 SLOPE ON ALL NEW CATCH BASIN CONNECTIONS SHALL BE A MINIMUM OF 1/2% AND A MAXIMUM OF 4%, PROVIDED THE TOTAL DROP BETWEEN BASIN AND BASIN/ MANHOLE SHALL BE AT LEAST SIX (6) INCHES.

5.13 WHERE THE CONTRACT DRAWINGS SPECIFY A NEW CATCH BASIN IN THE SAME LOCATION AS THE EXISTING CATCH BASIN AND THE CONTRACTOR ELECTS, FOR HIS OWN CONVENIENCE, TO RELOCATE THE NEW CATCH BASIN ADJACENT TO THE PRE-EXISTING LOCATION WHILE MAINTAINING BASIN AND PIPE CONNECTION, THE CONTRACTOR SHALL PERFORM ALL WORK ASSOCIATED WITH ABANDONING THE EXISTING BASIN, AS PER SECTION 6.57 OF THE STANDARD SPECIFICATIONS, AND THE COST OF THIS WORK SHALL BE INCLUDED IN THE COST OF THE NEW BASIN, ITEM NO. 6.13AE .

5.14 ALL EXISTING SEWER HOUSE CONNECTIONS SHOULD BE CONTINUOUSLY MAINTAINED DURING ALL STAGES OF CONSTRUCTION. IF ANY HOUSE CONNECTION MUST BE DISCONNECTED FOR CONSTRUCTION PURPOSES, FLOW MUST BE MAINTAINED BY FLUMING OR OTHER SUITABLE MEANS AS DIRECTED BY THE ENGINEER AND IN SUCH A MANNER THAT NO BACK-UPS OCCUR. ANY AND ALL EXISTING SEWERS, HOUSE CONNECTIONS OR OTHER SEWER APPURTENANCES WHICH ARE TO REMAIN, AND WHICH MUST BE DISTURBED FOR CONSTRUCTION PURPOSES, SHALL BE RESTORED TO THEIR PRESENT CONDITION AFTER COMPLETION OF THE WORK, AND ANY DAMAGE DONE AS A RESULT OF THE WORK SHALL BE REPAIRED AT NO COST TO THE CITY.

5.15 CATCH BASINS IN THE PROJECT AREA SHALL BE MAINTAINED OPERABLE AT ALL TIMES. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO AVOID CLOGGING CATCH BASINS WITH DEBRIS DURING THE CONTRACTOR'S OPERATIONS. IF, AS A RESULT OF CONSTRUCTION, A FLOODING CONDITION OCCURS OR IN THE EVENT THE CONTRACTOR'S OPERATIONS DAMAGE OR BLOCK THE DRAINAGE SYSTEM, THE CONTRACTOR SHALL AT HIS/HER OWN EXPENSE IMMEDIATELY REPAIR OR RESTORE THE DRAINAGE SYSTEM AS DIRECTED BY THE ENGINEER AT NO EXTRA COST TO THE CITY.

6. WATER MAIN WORK

6.01 THE CONTRACTOR SHALL LOCATE ALL EXISTING WATER MAINS VALVE BOX HEADS, AND SHALL INDICATE THEM IN THE FIELD TO THE SATISFACTION OF THE ENGINEER. FURTHERMORE, THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT HE/SHE WILL BE RESPONSIBLE FOR THE REPLACEMENT AND RESETTING OF ALL VALVE BOXES WHICH ARE DAMAGED OR DISTURBED AS A RESULT OF HIS/HER OPERATIONS.

6.02 EXISTING WATER HYDRANTS ARE TO BE RELOCATED AS SHOWN ON THE PLANS, AS DIRECTED BY THE ENGINEER, AND IN ACCORDANCE WITH THE SPECIFICATIONS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, BUREAU OF WATER SUPPLY.

6.03 ALL NEW WATER MAIN WORK IS TO BE INSTALLED AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE N.Y.C.D.E.P. BUREAU OF WATER SUPPLY.

6.04 EXCEPT WHERE NOTED OTHERWISE, NEW WATER MAINS ARE BEING REPLACED IN THE SAME LOCATION AS THE EXISTING ONES.

6.05 FOR WATER MAINS CROSSING EXISTING SEWERS:

WHEREVER THE CLEARANCE BETWEEN THE TOP OF AN EXISTING SEWER AND THE BOTTOM OF THE PROPOSED WATER MAIN, AT THEIR CROSSING, IS LESS THAN 1.0', THE WATER MAIN IS TO BE SUPPORTED BY A TRUSS ARRANGEMENT AND THE CLEARANCE SPACE IS TO BE FILLED WITH LAYERS OF COMPRESSIBLE MATERIAL TO AVOID EXCESSIVE BEARING PRESSURE ON THE SEWER PIPE. IN NO CASE, HOWEVER, SHOULD THIS CLEARANCE BE LESS THAN 6".

6.06 ALL HORIZONTAL CLEARANCE BETWEEN NEW WATER MAINS INSTALLED PARALLEL TO EXISTING SEWERS ARE TO CONFORM TO THE FOLLOWING:

A. HORIZONTAL CLEARANCE BETWEEN THE OUTSIDE OF NEW WATER MAINS AND CENTER LINE OF SEWER SHALL NOT BE LESS THAN 6 FEET PLUS ONE HALF SEWER DIAMETER, WHERE THE DEPTH TO THE BOTTOM OF THE SEWER CRADLE IS LESS THAN 10 FEET.

B. WHERE THE DEPTH TO THE BOTTOM OF SEWER CRADLE IS 10 FEET OR MORE, THE HORIZONTAL CLEARANCE SHALL BE INCREASED BY 1 FOOT FOR EACH ADDITIONAL 5 FEET OF DEPTH OVER THE 10 FEET, OR PORTION THEREOF.

6.07 WHERE A HYDRANT TO BE RELOCATED OR RESET IS NOT OF A BREAKAWAY TYPE, IT SHALL BE REPLACED WITH A BREAKAWAY TYPE HYDRANT WHICH WILL BE FURNISHED TO THE CONTRACTOR BY THE CITY.

6.08 THE CONTRACTOR SHALL ADJUST ALL HYDRANT VALVE BOXES AND MAIN LINE VALVE BOXES TO THE NEW GRADE.

6.09 THE CONTRACTOR SHALL PROVIDE AND INSTALL HYDRANT FENDERS AT ALL HYDRANTS WITHIN THE PROJECT LIMITS IN ACCORDANCE WITH THE BUREAU OF WATER SUPPLY STANDARDS.

6.10 THE CONTRACTOR SHALL NOTIFY THE BUREAU OF WATER SUPPLY 72 HOURS PRIOR TO THE START OF HYDRANT WORK.

6.11 (NO TEXT)

6.12 (NO TEXT)

6.13 (NO TEXT)

7. TRAFFIC WORK

7.01 "REGULATORY" AND/OR "NO PARKING-CONSTRUCTION" SIGNS USED DURING THE CONSTRUCTION PERIOD ARE TO BE FURNISHED BY THE CONTRACTOR, AS REQUIRED. THE CONTRACTOR SHALL INSTALL THESE SIGNS WHERE DIRECTED BY THE ENGINEER, AND, WHEN NO LONGER REQUIRED, SHALL CAREFULLY REMOVE THESE SIGNS AND DELIVER THEM TO THE BUREAU OF TRAFFIC. THESE SIGNS WILL BE MEASURED FOR PAYMENT UNDER ITEM 6.70. THE COST OF SAID REMOVING AND DELIVERING SHALL BE DEEMED INCLUDED IN THE PRICE BID FOR ITEM 6.70. A CREDIT OF $50 WILL BE TAKEN FOR EACH SIGN NOT SO DELIVERED. RELOCATION OF SIGNS SHALL NOT ENTITLE THE CONTRACTOR TO ADDITIONAL PAYMENT.

7.02 THE ENGINEER SHALL NOTIFY THE BUREAU OF TRAFFIC OPERATION, HIGHWAY CONTROL DIVISION (718-433-3184) TO VERIFY ALL THERMOPLASTIC PAVEMENT MARKINGS DETAIL DRAWINGS SEVEN (7) CALENDAR DAYS PRIOR TO THE START OF WORK ON PAVEMENT MARKINGS.

7.03 (NO TEXT).

7.04 ALL REGULATORY AND WARNING TRAFFIC SIGNS SHALL CONFORM WITH THE NEW YORK CITY BUREAU OF TRAFFIC OPERATIONS STANDARD DRAWINGS AND THEIR STANDARD SIGN LIST.

7.05 (NO TEXT)

8. FIRE ALARM WORK

8.01 THE CONTRACTOR SHALL NOTIFY THE FIRE DEPARTMENT'S BUREAU OF FIRE COMMUNICATIONS, TELEPHONE (718) 624-4194 OR (718) 624-3752, AT LEAST ONE (1) MONTH IN ADVANCE OF STARTING CONSTRUCTION AND TO MAKE AN APPOINTMENT TO PICK UP FDNY BASE MAPS AT 87 UNION STREET, BROOKLYN, N.Y. 11231.

8.02 ALL EXISTING FIRE DEPARTMENT COMMUNICATION FACILITIES SHALL BE PROTECTED AND PROVISIONS MADE FOR THEIR CONTINUOUS OPERATION DURING CONSTRUCTION. IF, DUE TO THE CONTRACTOR'S OPERATION, FIRE ALARM SERVICE IS INADVERTENTLY INTERRUPTED OR FIRE COMMUNICATION SYSTEM EQUIPMENT OR FACILITIES ARE DAMAGED, THE CONTRACTOR WILL BE HELD RESPONSIBLE AND SHALL REPLACE THEM AT HIS/HER OWN EXPENSE AND IN ACCORDANCE WITH FIRE DEPARTMENT REQUIREMENTS.

8.03 FIRE DEPARTMENT CABLES RUN OVERHEAD, AS WELL AS IN THE FIRE DEPARTMENT'S AND VERIZON'S CONDUIT SYSTEMS UNDERGROUND. THESE FACILITIES MUST BE SUPPORTED AND PROPERLY PROTECTED DURING CONSTRUCTION. IF UNABLE TO MAINTAIN OVERHEAD FD CABLES, PLEASE NOTIFY THE BUREAU OF COMMUNICATIONS IN ADVANCE TO TEMPORARILY DISCONNECT AND RELOCATE THEM.

8.04 TO REQUEST MARKOUTS OF FIRE DEPARTMENT'S UNDERGROUND CONDUITS, THE BUREAU OF FIRE COMMUNICATIONS SHALL BE CONTACTED AT LEAST ONE MONTH PRIOR TO COMMENCEMENT OF WORK AT 718-624-3752 OF 718-624-4194

9. OTHER UTILITIES WORK

9.01 THE CONTRACTOR IS ALERTED TO THE RULES AND REGULATIONS OF INDUSTRIAL CODE RULE 53 AND IS DIRECTED TO COMPLY. THE CITY SHALL NOT BE LIABLE FOR ANY COSTS INCURRED BY THE CONTRACTOR AS A RESULT OF THE COMPLIANCE, NON-COMPLIANCE, OR IMPROPER COMPLIANCE BY THE FRANCHISED OPERATORS OF UNDERGROUND FACILITIES, WITH SUB- PART 53-3 OF RULE 53 OF THE INDUSTRIAL CODE.

9.02 CON EDISON, KEYSPAN, EMPIRE CITY SUBWAY, JAMAICA WATER, AND VERIZON FACILITIES ARE LOCATED WITHIN THE PROJECT LIMITS. AS A RESULT OF THIS PROJECT, THESE PRIVATE UTILITIES WILL BE REQUIRED TO PROTECT, REMOVE, REPLACE OR RELOCATE SOME OR ALL OF THEIR FACILITIES. THIS WORK WILL BE PERFORMED BY THEM OR THEIR AGENTS AT THEIR EXPENSE. CONTRACTOR TO COORDINATE ACTIVITIES WITH THEM.

9.03 ALL UTILITY POLES WILL BE REMOVED AND/OR RELOCATED BY OTHERS.

9.04 THE ENGINEER WILL CONTACT THE SPECIAL PROJECT UNIT COMMUNICATIONS DIVISION OF THE POLICE DEPARTMENT (212-374-5900) IF ANY RELOCATION OR DISCONNECTION OF POLICE DEPARTMENT FACILITIES IS REQUIRED.

10. PAVEMENT WORK

10.01 ALL HEADERS ABUTTING NEW PAVEMENT SHALL BE REMOVED WHERE DIRECTED BY THE ENGINEER; THE PRICE OF WHICH SHALL BE INCLUDED IN THE PRICE BID FOR EXCAVATION.

10.02 ASPHALTIC CONCRETE MIXTURE IS TO BE USED IN THE AREAS OF ADJUSTMENT, AND AS DIRECTED BY THE ENGINEER (SEE ITEM NO. 4.02 CB).

10.03 FINISHED ROADWAY PAVEMENT AT THE APEX OF ALL CORNERS SHALL BE CONSTRUCTED TO ELEVATIONS SO AS TO PROVIDE POSITIVE SURFACE DRAINAGE FROM THE APEX TOWARDS THE CATCH BASINS, WHERE APPLICABLE.

11. LANDSCAPING WORK

11.01 REPLACEMENT TREES SHALL BE PLANTED WITHIN THE PROJECT SITE IN ACCORDANCE WITH DEPARTMENT OF PARKS AND RECREATION (D.P.R.) STANDARDS. TREE PLANTING SHALL EXTEND BEYOND THE STREET BOUNDARIES UP TO ONE QUARTER-MILE RADIUS OF THE PROJECT SITE, AS DIRECTED BY THE ENGINEER, IN ACCORDANCE WITH THE EQUAL CALIPER REPLACEMENT RULE.

11.02 THE CONTRACTOR SHALL OBTAIN THE NECESSARY TREE PLANTING PERMIT FROM D.P.R. PRIOR TO THE START OF WORK. ALL NECESSARY TREE PLANTING SHALL BE PERFORMED BY QUALIFIED ARBORISTS.

11.03 NO TREE SHALL BE REMOVED BY THE CONTRACTOR UNTIL HE IS SPECIFICALLY ORDERED IN WRITING TO DO SO BY THE ENGINEER. EVERY CONSCIONABLE EFFORT IS TO BE MADE TO SAVE TREES BY THE USE OF: THE CURB DETAIL AT EXISTING TREES, BY SLIGHT MODIFICATION IN CURB ALIGNMENT, OR BY OTHER METHODS SO ORDERED BY THE ENGINEER, IN ACCORDANCE WITH ACCEPTABLE ENGINEERING PRACTICES.

11.04 TREE STAKES ARE TO BE REMOVED BY THE CONTRACTOR NOT LESS THAN ONE YEAR AFTER PLANTING OF SAID TREES AND PRIOR TO THE FINAL ACCEPTANCE OF THE WORK.

11.05 TREE PITS SHALL BE PROVIDED FOR ALL NEW TREES AND FOR EXISTING TREES IN AREAS OF FULL WIDTH SIDEWALK. PITS SHALL BE FIVE (5) FEET X FOUR (4) FEET UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED, AND SHALL BE CONSTRUCTED WITH NEW GRANITE BLOCK (ITEM NO. 6.06 AC).

11.06 THE CONTRACTOR SHALL NOT BE PERMITTED TO OPERATE AUXILIARY EQUIPMENT WHICH GENERATES EXHAUST OR OTHER HEAT UPWARD (E.G., GENERATORS AND COMPRESSORS), UNDER THE BRANCHES OF TREES WHERE THE BRANCHES ARE LESS THAN 25' ABOVE THE GROUND, UNLESS APPROVED BY THE ENGINEER IN CONSULTATION WITH THE TREE CONSULTANT.

11.07 THE CONTRACTOR SHALL NOT BE PERMITTED TO STORE, STOCKPILE, OR LAY DOWN, ANY CONSTRUCTION MATERIAL INCLUDING, BUT NOT LIMITED TO, LUMBER, FUEL, AND OIL CONTAINERS, PIPES, AND/OR PIPE FITTINGS, BARRICADES, HAND TOOLS, HOSES, RECEPTACLES, AND ASPHALT WITHIN ANY EXISTING TREE PIT.

12. BUS STOP SHELTER WORK (NO TEXT)

13. STREET LIGHTING WORK

13.01 THE CONTRACTOR SHALL FURNISH, INSTALL, AND REMOVE ALL NECESSARY STREET LIGHTING EQUIPMENT PRIOR TO NEW PAVING.

13.02 NEW INSTALLATION SHALL BE ENERGIZED BEFORE THE REMOVAL OF EXISTING POLES.

13.03 THE CONTRACTOR SHALL NOTIFY THE BUREAU OF TRAFFIC OPERATIONS, DIVISION OF STREET LIGHTING, DEPARTMENT OF TRANSPORTATION AT LEAST 72 HOURS PRIOR TO THE START OF WORK (212) 786-5822.

13.04 ANY DAMAGE TO THE EXISTING STREET LIGHTING EQUIPMENT, AS A RESULT OF THE CONTRACTORS WORK AND/OR WORK FORCE, SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT NO COST TO THE CITY.

14. MEDIAN EXTENSIONS, CROSSWALK, ETC.

14.1 CONTRACTOR SHALL PROVIDE LAYOUT FOR ALL THE MEDIAN EXTENSIONS, CROSSWALKS, FENCE REMOVAL, ETC., TO AVOID INTERFERENCES WITH EXISTING STREET LIGHTS, SIGNALS AND OTHER NYC FACILITIES FOR APPROVAL BY THE ENGINEER, PRIOR TO START OF WORK. THE COST OF THE ABOVE IS INCLUDED IN THE ITEM NO.6.41 LINE AND GRADE SURVEYS.

NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

DESIGNED ____M.H.____ DRAWN ____O.S.____ CHECKED ____K.R.____

SCALE AS SHOWN

CADD FILE ________

KRISHNA REDDY, P.E.
ENGINEER-IN-CHARGE

GEORGE FRANZ, P.E.
DIRECTOR

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

GENERAL NOTES - 1

PEDESTRIAN CIRCULATION IMPROVEMENTS
ON QUEENS BLVD AT VARIOUS INTERSECTIONS
BOROUGH OF QUEENS

PROJECT ID: HWC988QB3 | DATE: 10-26-09 | SHEET 3 OF 16 | G1/1

PROJECT I.D. HWC988QB4 QUEENS BLVD., BOROUGH OF QUEENS.

IN-HOUSE DESIGN

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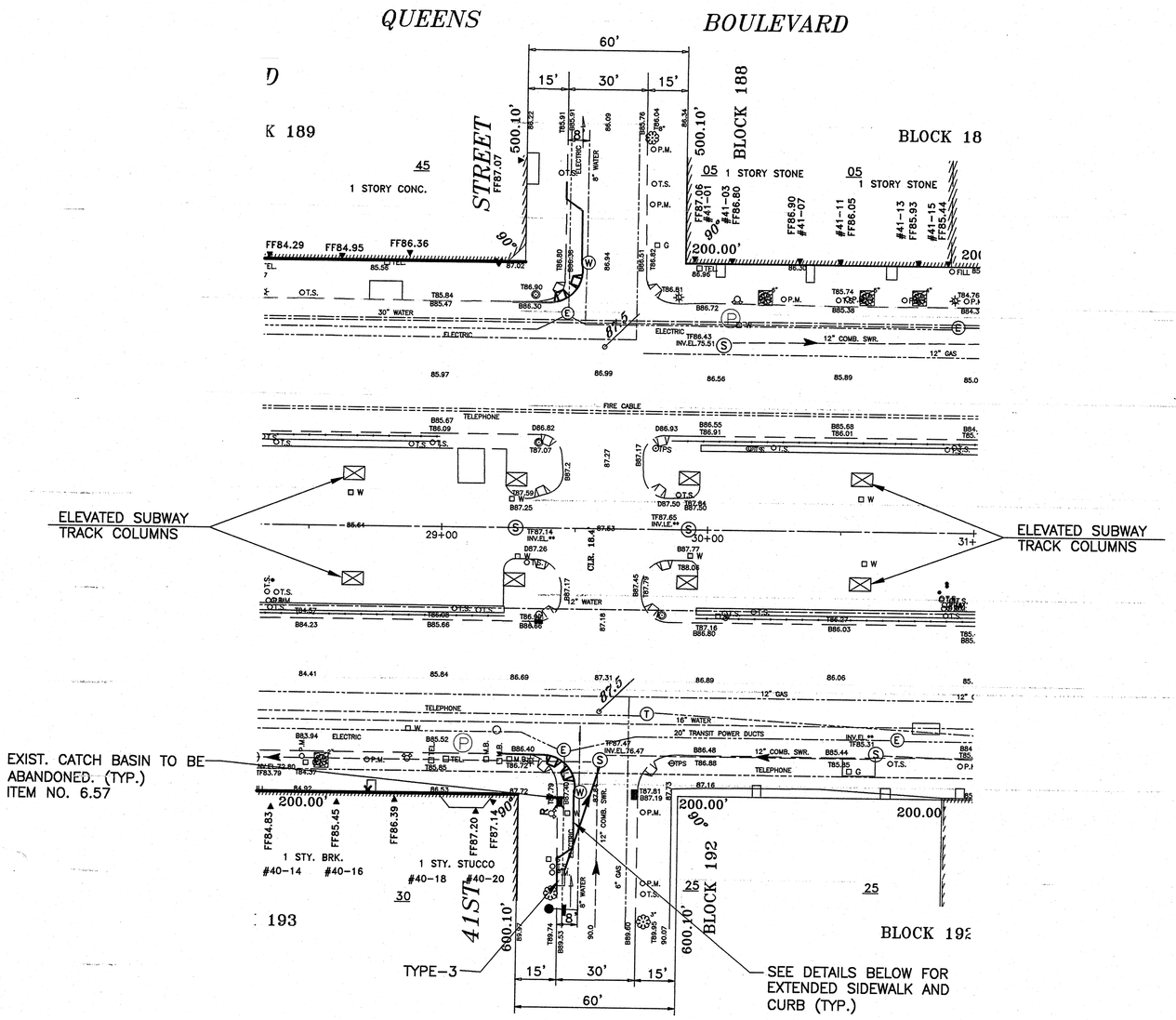
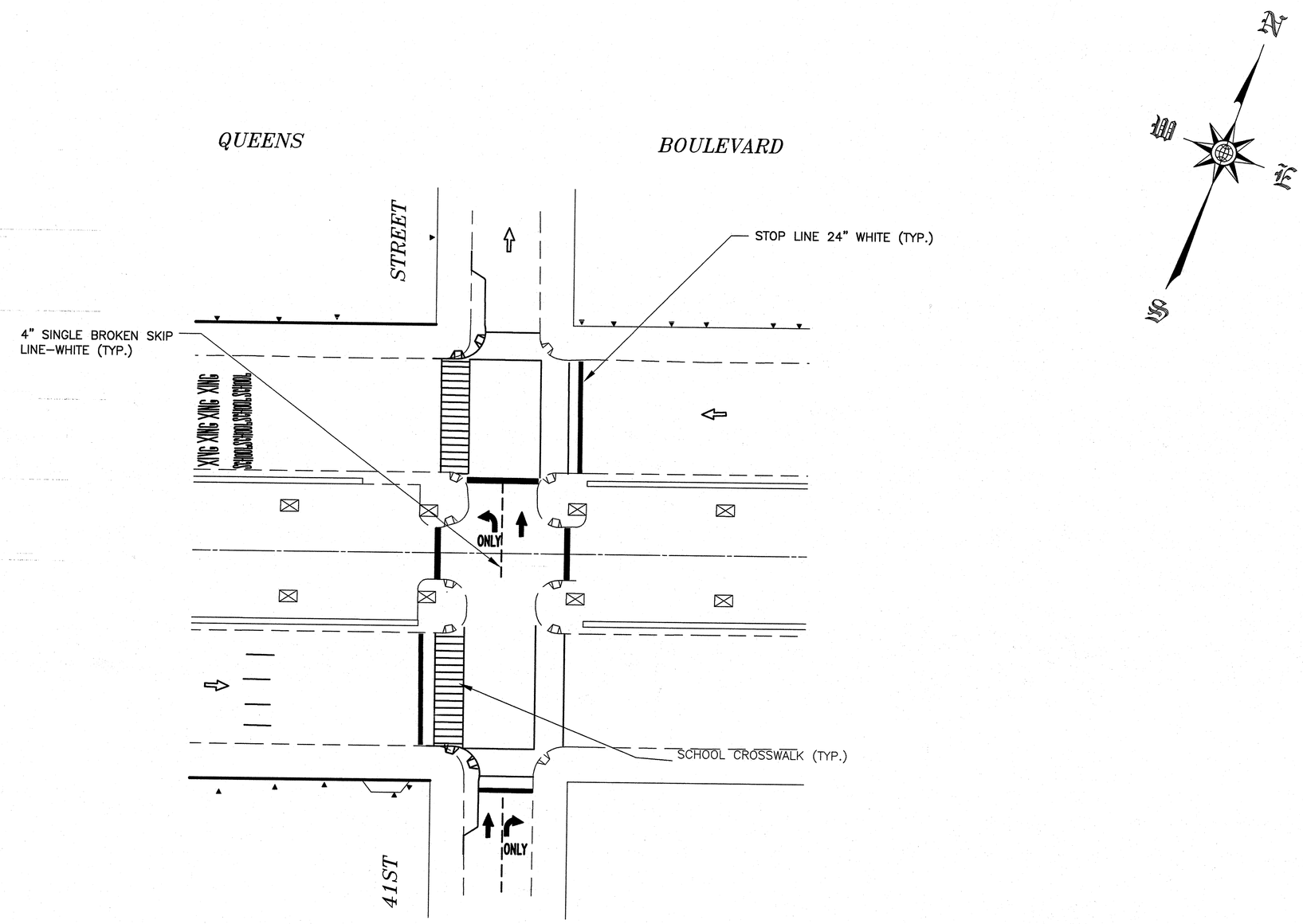


CONSTRUCTION PLAN



SIGNAGE AND STRIPING PLAN

INTERSECTION AT 41ST STREET AND QUEENS BOULEVARD

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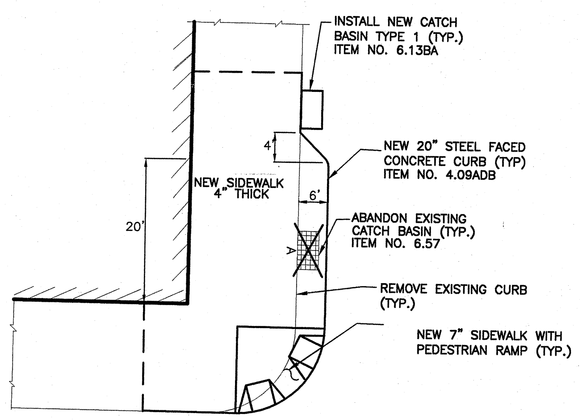

DETAIL OF EXTENDED SIDEWALK AND CURB (TYP.)

N.T.S.

NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

TOPOGRAPHIC SURVEY PREPARED BY:
NAME OF SURVEYING FIRM
LICENSED LAND SURVEYOR

DESIGNED M.H.
DRAWN O.S.
CHECKED K.R.

SCALE AS SHOWN
CADD FILE

KRISHNA REDDY, P.E.
ENGINEER-IN-CHARGE
GEORGE FRANZ, P.E.
DIRECTOR

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

HIGHWAY CONSTRUCTION & PAVEMENT MARKING PLAN
41ST STREET AND QUEENS BLVD

PEDESTRIAN CIRCULATION IMPROVEMENTS
ON QUEENS BLVD AT VARIOUS INTERSECTIONS
BOROUGH OF QUEENS

PROJECT ID: HWC988QB4 | DATE: 05-05-10 | SHEET 10 OF 16 | 6/11

CAPITAL PROJECT ID. HWC988QB4. QUEENS BOULEVARD, ETC., BOROUGH OF QUEENS

HWC988QB2\HWQ988C\FINAL\HWC988QB2-40TH ST.DWG REV. ON 12/26/06

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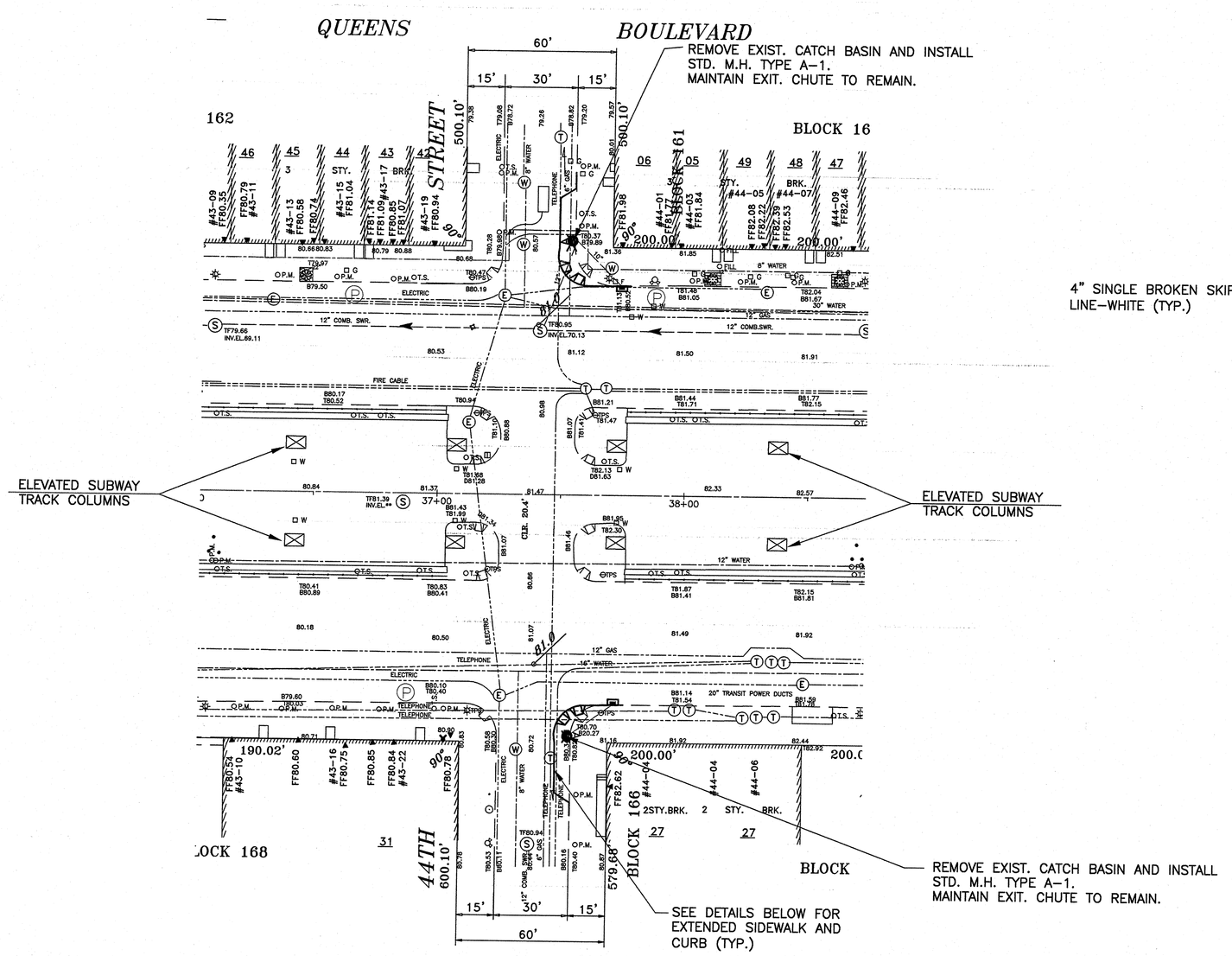

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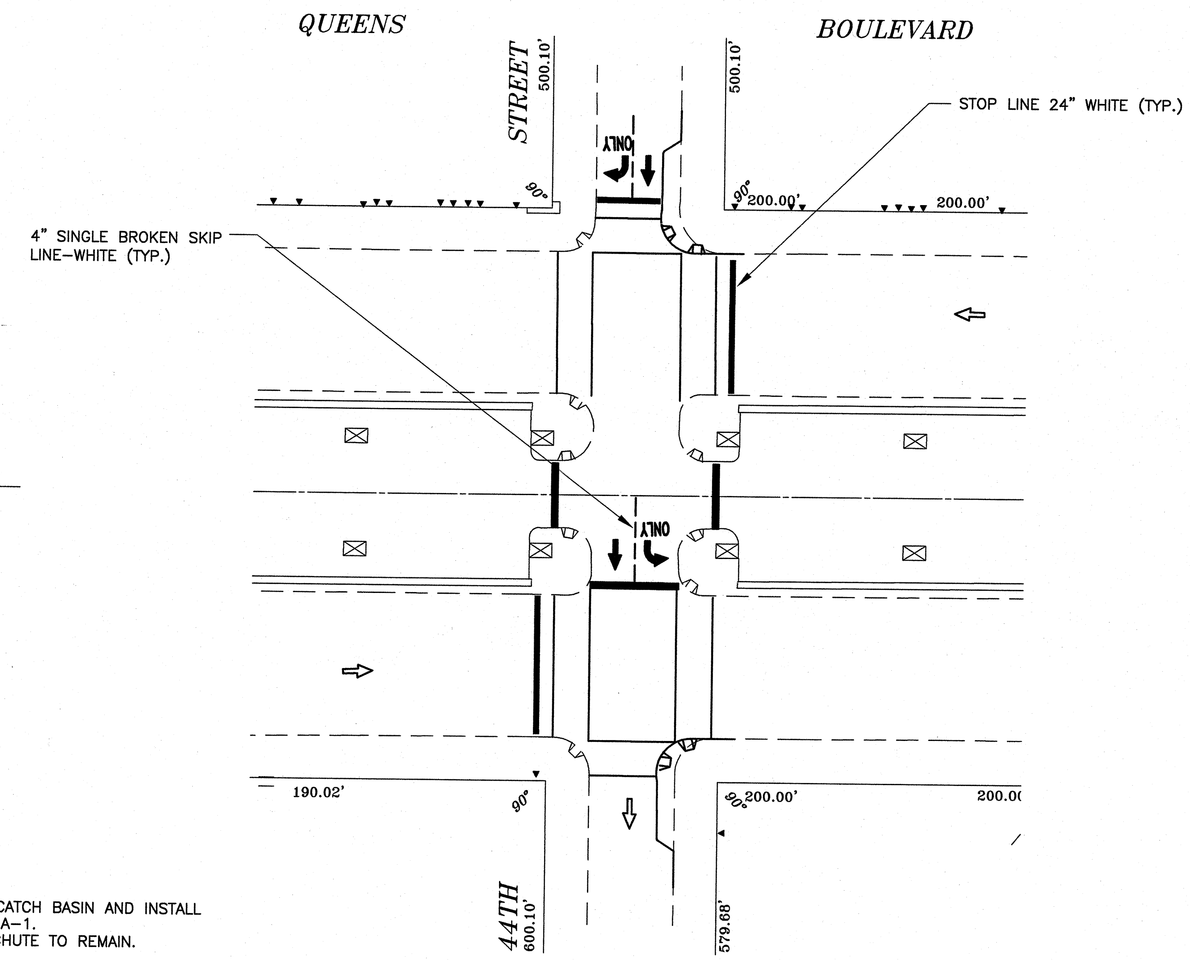

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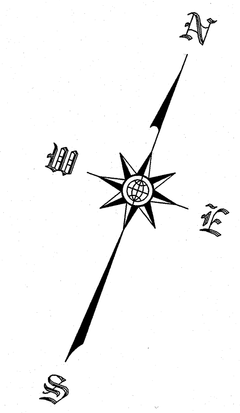

INTERSECTION AT 44TH STREET AND QUEENS BOULEVARD

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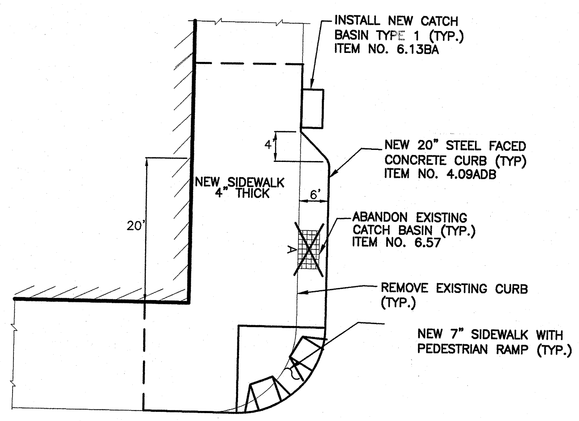

DETAIL OF EXTENDED SIDEWALK AND CURB (TYP.)

N.T.S.

NO.	DATE	DESCRIPTIONS	BY	APPR'D
		REVISIONS		

TOPOGRAPHIC SURVEY PREPARED BY:
NAME OF SURVEYING FIRM
LICENSED LAND SURVEYOR

DESIGNED M.H.
DRAWN O.S.
CHECKED K.R.

SCALE AS SHOWN
CADD FILE

KRISHNA REDDY, P.E.
ENGINEER-IN-CHARGE
GEORGE FRANZ, P.E.
DIRECTOR

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

HIGHWAY CONSTRUCTION & PAVEMENT MARKING PLAN
44TH STREET AND QUEENS BLVD

PEDESTRIAN CIRCULATION IMPROVEMENTS ON QUEENS BLVD AT VARIOUS INTERSECTIONS
BOROUGH OF QUEENS

PROJECT ID: HWC988QB4 | DATE: 05-12-10 | SHEET 11 OF 16 | 7/11

CAPITAL PROJECT ID. HWC988QB4. QUEENS BOULEVARD, ETC., BOROUGH OF QUEENS

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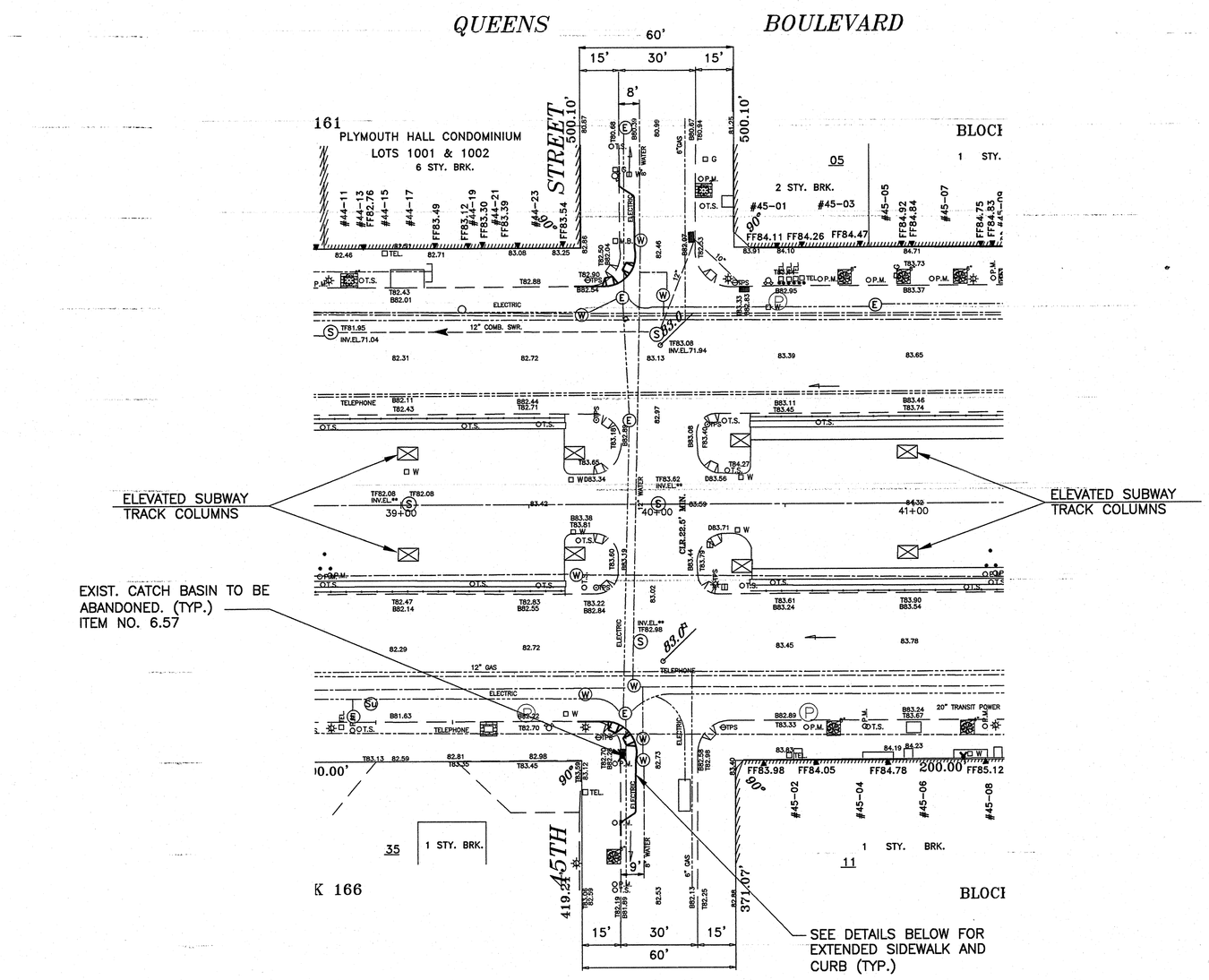

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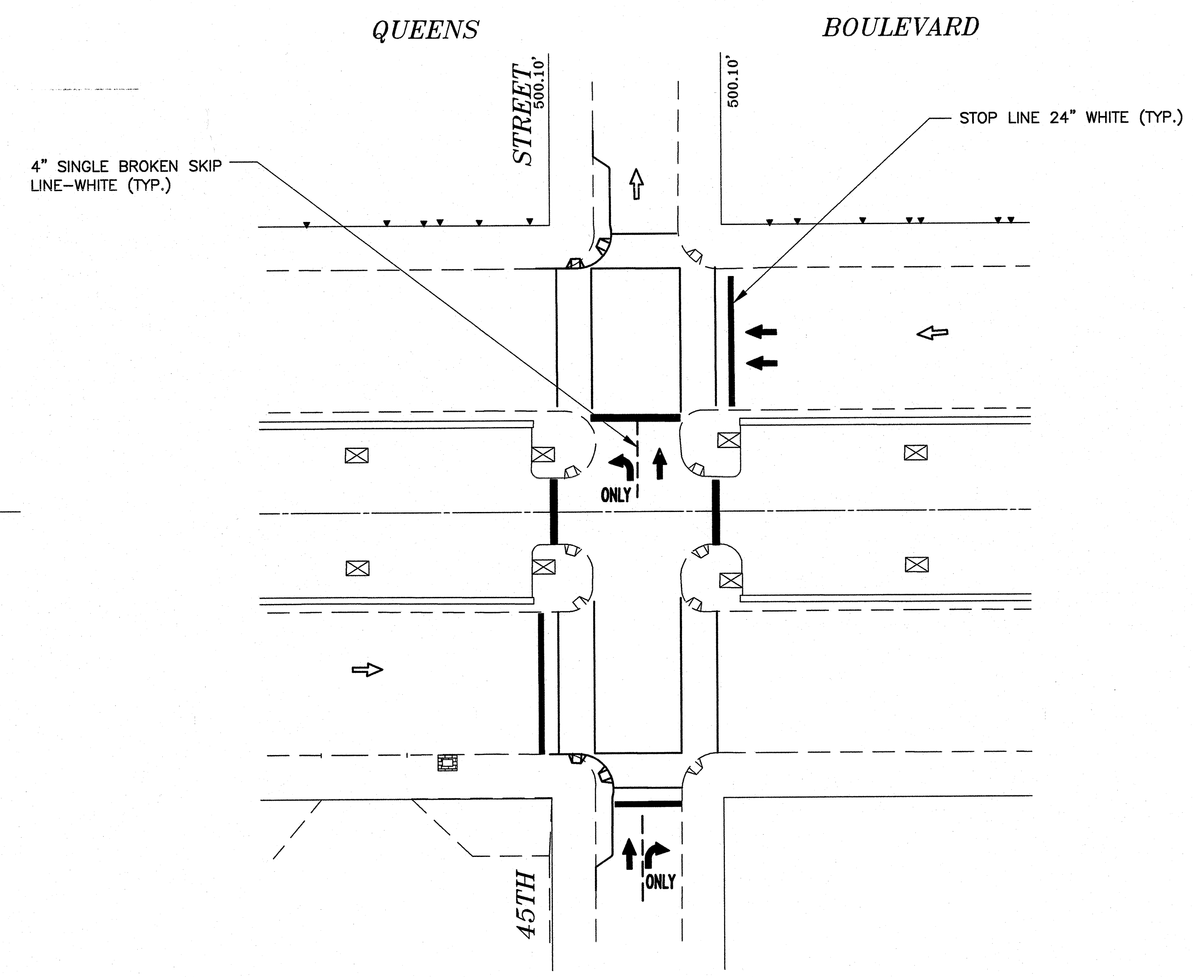

SIGNAGE AND STRIPING PLAN

INTERSECTION AT 45TH STREET AND QUEENS BOULEVARD

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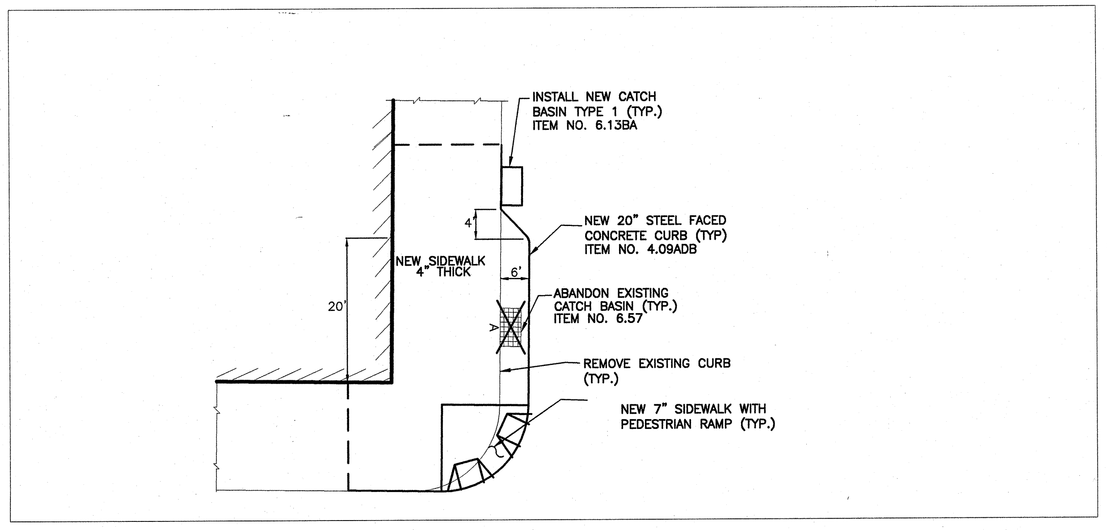

DETAIL OF EXTENDED SIDEWALK AND CURB (TYP.)

N.T.S.

NO.	DATE	DESCRIPTIONS	BY	APPR'D

REVISIONS

TOPOGRAPHIC SURVEY PREPARED BY: *NAME OF SURVEYING FIRM* LICENSED LAND SURVEYOR	DESIGNED M.H. DRAWN O.S. CHECKED K.R.	SCALE AS SHOWN CADD FILE	KRISHNA REDDY, P.E. ENGINEER-IN-CHARGE GEORGE FRANZ, P.E. DIRECTOR

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

HIGHWAY CONSTRUCTION & PAVEMENT MARKING PLAN
45TH STREET AND QUEENS BLVD

PEDESTRIAN CIRCULATION IMPROVEMENTS ON QUEENS BLVD AT VARIOUS INTERSECTIONS
BOROUGH OF QUEENS

PROJECT ID: HWC988QB4 | DATE: 05-05-10 | SHEET 12 OF 16 | 8/11

CAPITAL PROJECT ID. HWC988QB4. QUEENS BOULEVARD, ETC., BOROUGH OF QUEENS

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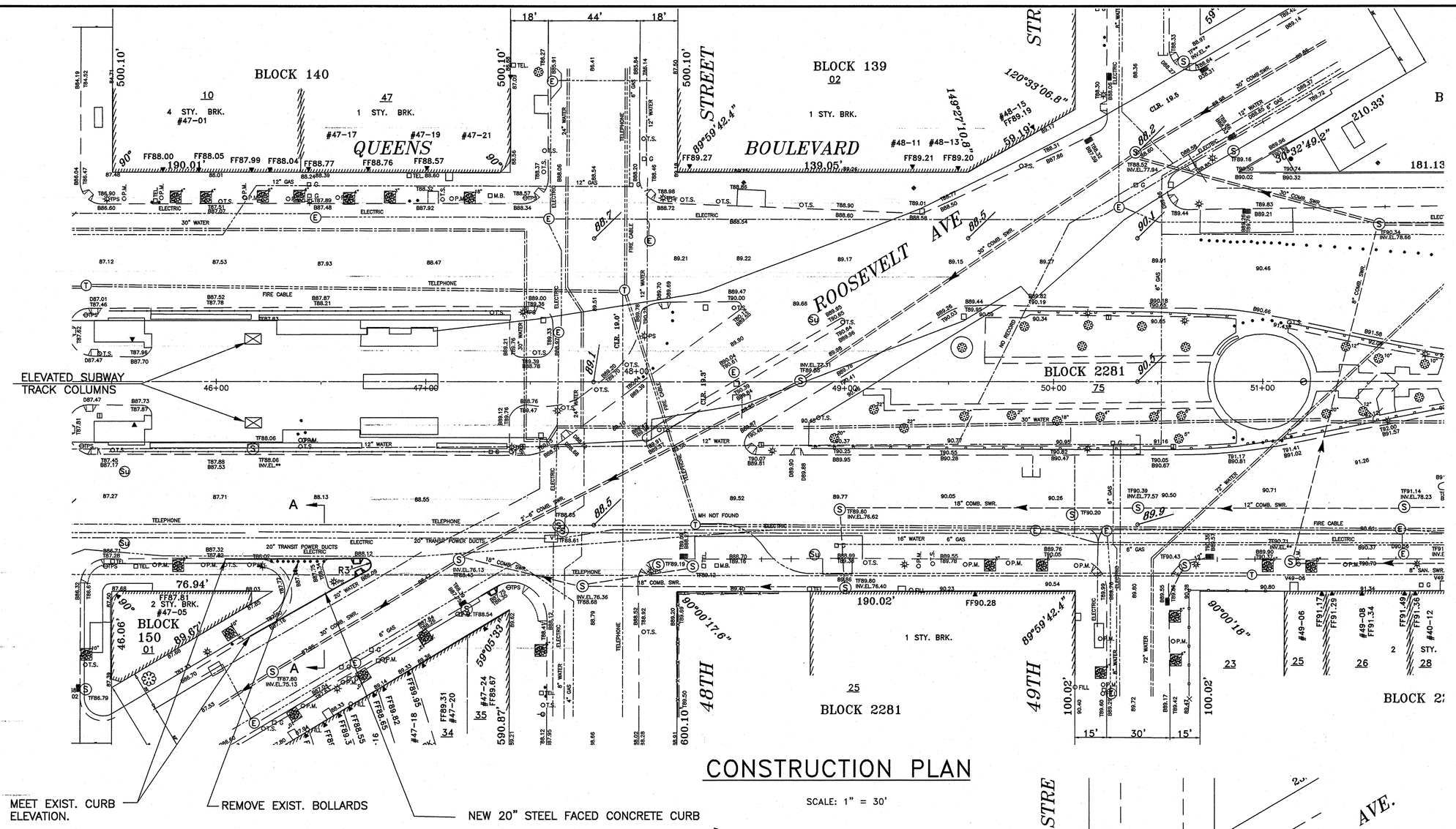
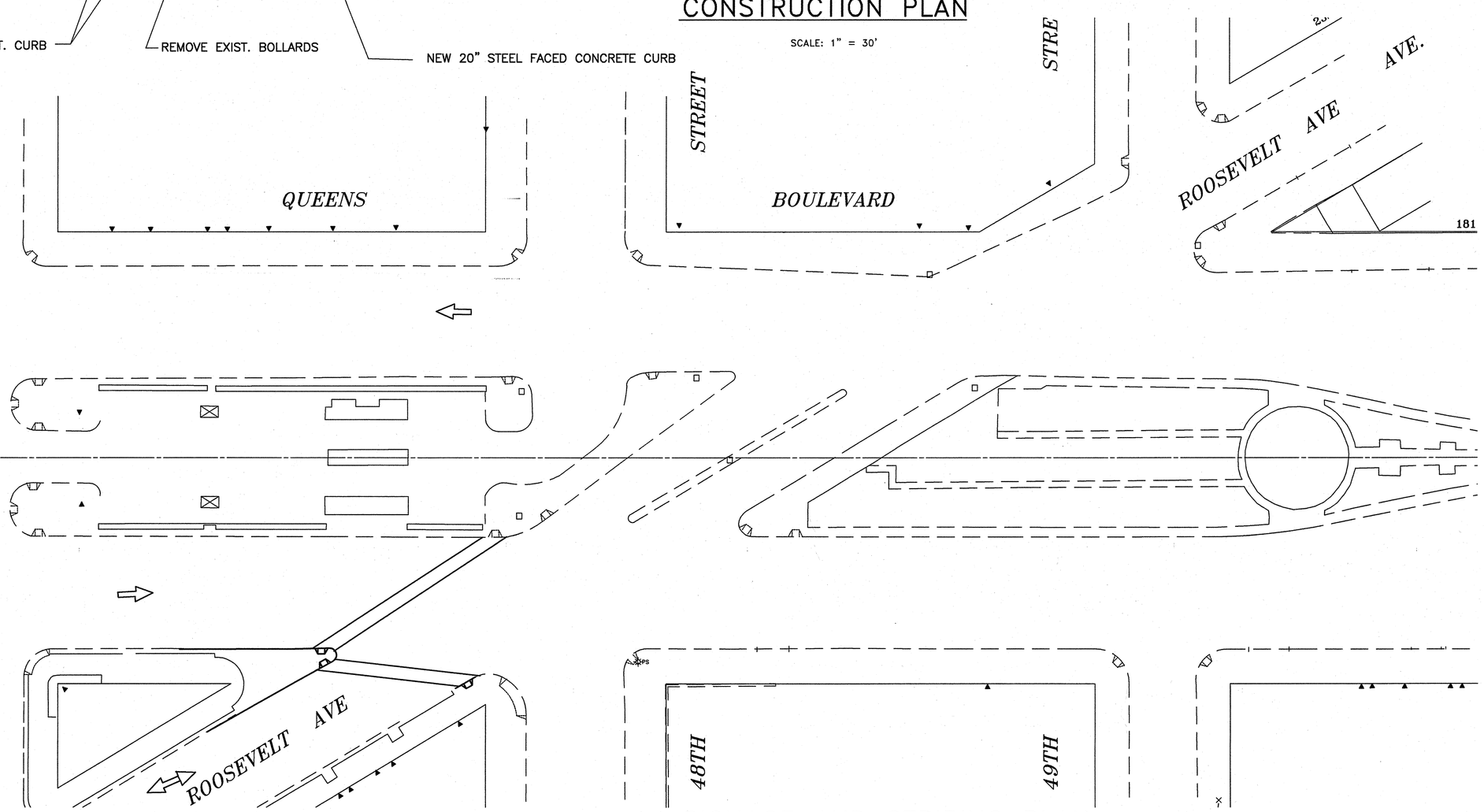


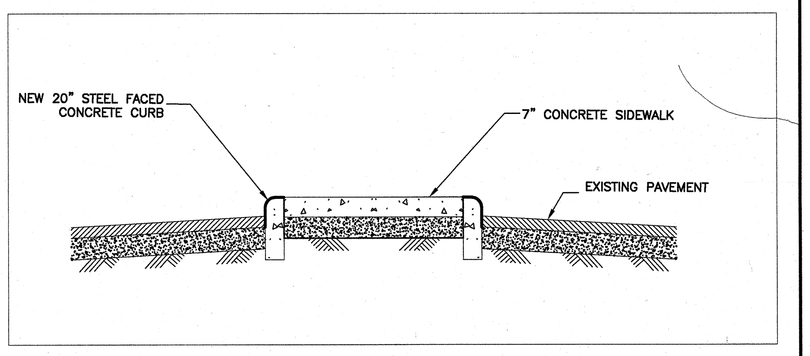
CONSTRUCTION PLAN

SCALE: 1" = 30'



SIGNAGE AND STRIPING PLAN

N.T.S.



SECTION A–A

N.T.S.

NO.	DATE	DESCRIPTIONS	BY	APPR'D

REVISIONS

TOPOGRAPHIC SURVEY PREPARED BY:
NAME OF SURVEYING FIRM

LICENSED LAND SURVEYOR

DESIGNED M.H.
DRAWN O.S.
CHECKED K.R.

SCALE AS SHOWN

CADD FILE

KRISHNA REDDY, P.E.
ENGINEER-IN-CHARGE

GEORGE FRANZ, P.E.
DIRECTOR

CITY OF NEW YORK
DEPARTMENT OF DESIGN + CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF DESIGN

HIGHWAY CONSTRUCTION & PAVEMENT MARKING PLAN
SOUTWEST CORNER OF ROOSEVELT AVENUE
AND QUEENS BLVD

PEDESTRIAN CIRCULATION IMPROVEMENTS
ON QUEENS BLVD AT VARIOUS INTERSECTIONS
BOROUGH OF QUEENS

PROJECT ID: HWC988QB4 | DATE: 10-14-09 | SHEET 13 OF 16 | 9/11

CAPITAL PROJECT ID. HWC988QB4. QUEENS BOULEVARD, ETC., BOROUGH OF QUEENS

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OSMAN, STOYCHEVSKI

New York City Department of Transportation
Office of School Safety Engineering

SAFE STREETS FOR SENIORS

SUNNYSIDE

BOROUGH OF QUEENS

TECHNICAL SUPPLEMENT

Prepared by
The RBA Group

August, 2012

SUNNYSIDE
TECHNICAL SUPPLEMENT

TABLE OF CONTENTS

Automatic Traffic Recorder Counts (ATR)

Turning Movement Counts (TMC)

Pedestrian Counts

Spot Speed Survey

Synchro Analysis

HCS Analysis

NYCDOT Queens Blvd Safety Study Phase II

ATR

NB 51ST Sof43AV

Raw ATR Data Summary

Start Time	Wed 06/02 2010		Thu 06/03 2010		Fri 06/04 2010		Sat 06/05 2010		Sun 06/06 2010		Mon 06/07 2010		Tue 06/08 2010		Wed 06/09 2010		Thu 06/10 2010		Fri 06/11 2010		Sat 06/12 2010		Sun 06/13 2010		Mon 06/14 2010		Tue 06/15 2010	
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NB 51ST Sof43AV

ATR Count Averages

Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
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1:00	5	18	3	18	10	20	5	11	4	29	9	25	16	19	5	19	13	22
1:15	4	21	5	14	7	25	5	23	5	21	9	26	9	24	5	21	9	25
1:30	6	19	5	19	4	16	3	21	4	20	8	23	10	21	4	19	9	22
1:45	4	21	5	29	3	11	4	18	4	22	11	26	9	22	4	20	10	24
2:00	5	23	3	23	4	14	4	27	2	23	7	20	5	20	3	22	6	20
2:15	4	27	6	21	1	18	3	16	2	20	9	24	3	12	3	20	6	18
2:30	2	23	2	20	3	19	1	24	0	16	6	20	5	21	2	20	5	20
2:45	3	17	1	27	0	21	3	17	4	23	4	15	4	18	2	21	4	17
3:00	2	28	2	29	1	19	1	21	3	22	7	20	10	21	2	24	9	20
3:15	2	21	2	23	2	20	6	25	5	16	6	19	2	22	3	21	4	20
3:30	3	22	2	16	2	17	2	16	3	19	4	20	6	18	2	18	5	19
3:45	2	24	5	21	2	17	2	21	2	23	4	15	6	21	2	21	5	18
4:00	0	25	3	22	4	24	4	25	2	20	6	18	3	15	3	23	4	16
4:15	1	29	2	25	1	24	2	18	2	26	4	19	5	17	2	24	4	18
4:30	3	28	1	29	5	19	3	25	5	20	6	21	8	24	3	24	7	22
4:45	1	25	2	24	3	28	3	28	4	25	6	26	7	19	2	26	7	22
5:00	3	25	3	21	5	20	4	26	3	17	8	23	5	15	4	22	7	19
5:15	4	26	4	25	2	21	4	27	5	22	8	16	5	17	4	24	6	16
5:30	3	25	6	21	4	33	6	24	5	25	7	17	6	14	5	25	6	16
5:45	7	24	4	27	2	20	1	22	4	23	4	16	8	12	3	23	6	14
6:00	3	29	4	19	5	29	4	26	3	24	4	18	6	28	4	25	5	23
6:15	5	20	11	32	5	18	8	23	8	19	5	16	6	20	7	22	5	18
6:30	7	24	9	22	8	22	9	23	8	23	2	26	3	13	8	22	3	19
6:45	16	20	8	19	7	23	7	17	12	20	7	20	2	18	10	20	4	19
7:00	13	19	11	22	9	20	12	20	14	20	13	19	8	19	12	20	11	19
7:15	14	21	16	19	15	20	19	17	16	12	11	20	3	21	16	17	7	20
7:30	14	25	14	22	17	19	13	19	15	25	10	20	8	17	14	22	9	18
7:45	14	14	21	15	23	17	14	21	19	18	9	17	5	20	18	17	7	18
8:00	13	16	21	25	18	16	16	18	14	17	14	22	7	17	16	18	10	20
8:15	27	14	21	16	23	15	15	16	21	21	14	16	13	20	21	16	13	18
8:30	15	18	18	19	11	20	16	14	17	22	15	19	8	19	15	18	11	19
8:45	17	13	21	16	11	13	18	19	21	23	16	16	10	17	18	17	13	16
9:00	16	12	21	17	16	20	14	16	15	14	13	13	10	18	16	16	11	15
9:15	13	15	20	19	32	14	15	18	17	15	20	17	8	17	19	16	14	17
9:30	11	18	21	14	13	13	16	16	18	19	17	20	13	12	16	16	15	16
9:45	19	9	12	13	15	12	16	14	15	14	12	21	4	10	15	12	8	15
10:00	18	18	17	11	19	11	13	14	21	18	15	10	12	11	17	14	13	10
10:15	16	12	19	14	14	13	13	14	12	16	18	16	13	16	15	14	15	16
10:30	18	12	15	13	16	13	13	11	14	17	26	15	12	9	15	13	19	12
10:45	23	10	22	7	18	12	13	9	13	17	21	13	15	11	18	11	18	12
11:00	13	10	28	5	13	12	15	8	13	14	20	14	19	10	16	10	19	12
11:15	18	6	17	12	10	8	13	12	22	20	16	13	16	9	16	12	16	11
11:30	22	9	22	13	14	8	16	12	15	13	16	15	14	6	18	11	15	10
11:45	19	12	21	5	15	9	17	10	18	8	22	15	13	9	18	9	17	12

NB 51ST Sof43AV

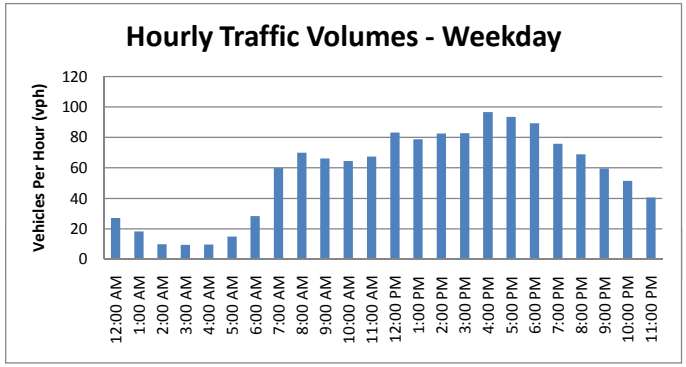
Hourly Volumes in 15-Minute Intervals

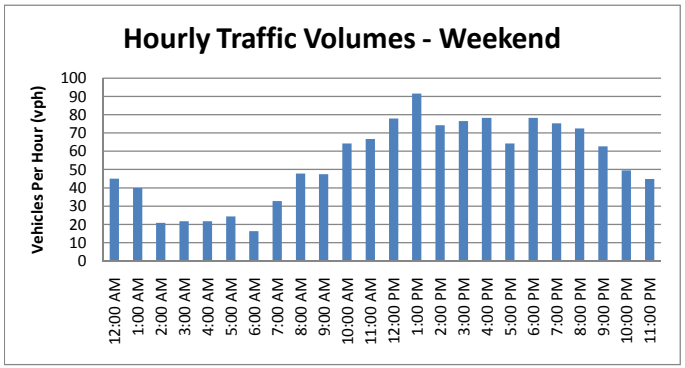
Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	38	101	23	89	31	71	21	81	24	75	34	90	56	67	27	83	45	78
12:15	32	93	21	86	31	72	18	74	22	84	35	94	58	69	25	82	46	81
12:30	25	87	17	71	28	81	21	72	20	83	36	93	53	81	22	78	45	87
12:45	23	80	16	72	25	76	17	73	17	88	37	95	48	85	20	78	42	90
1:00	19	78	17	80	24	72	16	73	16	91	37	99	44	84	18	79	40	92
1:15	19	83	17	85	18	66	15	89	14	85	34	95	33	85	16	81	33	90
1:30	18	89	18	92	12	59	13	81	11	85	35	93	26	74	14	81	30	83
1:45	14	93	16	93	11	62	11	84	7	80	33	90	21	74	12	82	27	82
2:00	13	89	12	90	8	72	10	83	7	81	26	79	16	70	10	83	21	74
2:15	10	94	11	97	5	76	7	77	8	80	26	78	21	71	8	85	24	75
2:30	9	88	6	98	6	78	10	86	11	75	23	73	21	81	8	85	22	77
2:45	10	87	6	94	5	75	10	79	14	79	20	73	22	78	9	83	21	75
3:00	9	95	10	88	7	71	10	83	12	79	20	73	24	80	9	83	22	77
3:15	7	91	11	81	10	77	13	86	11	77	19	71	17	75	10	82	18	73
3:30	5	99	12	83	9	81	10	79	9	87	17	71	19	70	9	85	18	70
3:45	5	105	11	96	12	83	11	88	11	88	20	72	21	76	10	92	20	74
4:00	4	106	8	99	13	94	12	95	13	90	22	83	22	74	10	97	22	78
4:15	7	106	8	98	14	90	12	96	14	87	24	88	24	74	11	95	24	81
4:30	10	103	10	98	15	87	13	105	17	83	28	85	24	74	13	95	26	79
4:45	10	100	15	90	14	101	16	104	16	88	28	81	22	64	14	96	25	73
5:00	16	99	17	93	13	93	14	98	16	86	26	71	23	58	15	94	24	64
5:15	16	103	18	91	13	102	14	99	16	94	22	66	23	71	15	98	22	68
5:30	17	97	25	98	16	99	18	95	19	90	19	66	24	74	19	96	21	70
5:45	21	96	27	100	20	88	20	93	22	88	14	75	22	72	22	93	18	74
6:00	30	92	31	92	25	91	27	88	30	85	17	79	16	78	28	89	16	78
6:15	40	82	38	95	29	81	35	81	41	81	26	80	19	70	36	84	22	75
6:30	49	84	43	82	39	83	46	75	49	74	33	84	16	71	45	79	24	77
6:45	56	85	48	81	48	80	50	72	56	76	40	78	21	75	52	79	31	76
7:00	55	79	60	77	64	75	57	76	64	74	42	75	24	76	60	76	33	75
7:15	55	75	70	80	73	71	61	74	63	71	43	78	23	74	64	74	33	76
7:30	68	68	75	77	81	66	57	73	68	81	46	74	32	73	70	73	39	73
7:45	69	61	79	74	75	67	60	68	70	78	51	74	32	75	71	69	41	74
8:00	72	59	80	75	63	63	64	66	72	83	58	73	38	72	70	69	48	73
8:15	75	56	80	67	61	67	62	64	74	80	58	64	40	73	70	67	49	68
8:30	60	57	79	70	70	67	63	66	70	74	63	64	36	70	68	67	49	67
8:45	56	57	82	66	72	59	63	68	71	71	65	65	41	63	69	64	53	64
9:00	57	53	73	63	76	59	61	63	65	61	61	70	35	56	66	60	48	63
9:15	60	59	69	57	79	50	59	61	71	65	62	67	37	49	67	58	49	58
9:30	63	55	68	52	61	48	57	57	66	67	60	67	41	48	63	56	51	57
9:45	70	49	62	51	64	48	54	52	62	65	70	62	40	45	62	53	55	53
10:00	74	50	72	45	67	48	50	47	60	68	79	54	50	46	65	52	64	50
10:15	69	43	83	39	61	49	52	41	52	64	84	57	58	45	63	47	71	51
10:30	71	37	82	37	57	44	53	40	62	68	82	54	61	38	65	45	71	46
10:45	76	35	88	37	55	39	56	41	62	63	72	54	63	36	67	43	67	45
11:00	72	37	87	35	52	36	60	41	67	54	73	56	61	34	67	41	67	45
11:15	65	29	67	43	73	48	18	6	20	9	21	14	17		48	27	19	14
11:30	82	30	83	41	67	31	43	12	42	16	82	28	28		63	26	55	28
11:45	94	28	85	37	74	24	63	19	57	23	86	43	45		74	26	65	43

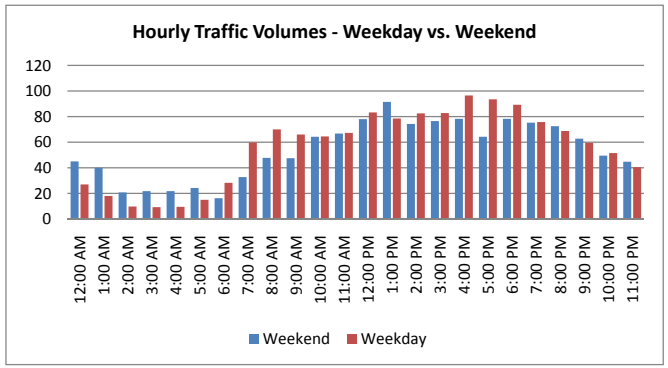
NB 51ST Sof43AV

Hourly Volumes in 1-Hour Intervals

Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	38	101	23	89	31	71	21	81	24	75	34	90	56	67	27	83	45	78
1:00	19	78	17	80	24	72	16	73	16	91	37	99	44	84	18	79	40	92
2:00	13	89	12	90	8	72	10	83	7	81	26	79	16	70	10	83	21	74
3:00	9	95	10	88	7	71	10	83	12	79	20	73	24	80	9	83	22	77
4:00	4	106	8	99	13	94	12	95	13	90	22	83	22	74	10	97	22	78
5:00	16	99	17	93	13	93	14	98	16	86	26	71	23	58	15	94	24	64
6:00	30	92	31	92	25	91	27	88	30	85	17	79	16	78	28	89	16	78
7:00	55	79	60	77	64	75	57	76	64	74	42	75	24	76	60	76	33	75
8:00	72	59	80	75	63	63	64	66	72	83	58	73	38	72	70	69	48	73
9:00	57	53	73	63	76	59	61	63	65	61	61	70	35	56	66	60	48	63
10:00	74	50	72	45	67	48	50	47	60	68	79	54	50	46	65	52	64	50
11:00	72	37	87	35	52	36	60	41	67	54	73	56	61	34	67	41	67	45







NB 51st s of Skillman

Raw ATR Data Summary

Start Time	Wed 06/02 2010		Thu 06/03 2010		Fri 06/04 2010		Sat 06/05 2010		Sun 06/06 2010		Mon 06/07 2010		Tue 06/08 2010		Wed 06/09 2010		Thu 06/10 2010		Fri 06/11 2010		Sat 06/12 2010		Sun 06/13 2010		Mon 06/14 2010		Tue 06/15 2010	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	*	*	11	29	18	34	23	42	41	40	16	49	15	55	22	41	13	39	18	22	27	33	26	28	17	45	17	33
12:15	*	*	11	29	20	35	19	53	25	34	19	42	27	45	16	43	7	45	13	37	17	47	23	21	25	47	17	21
12:30	*	*	18	41	7	34	19	32	32	31	14	39	16	42	17	39	19	31	9	26	19	43	32	36	15	36	18	26
12:45	*	*	18	24	12	25	20	42	31	34	17	44	8	29	9	32	8	27	15	32	27	52	19	34	20	35	6	41
1:00	*	*	11	25	3	55	20	51	24	35	12	32	7	28	11	34	6	32	13	45	13	38	25	35	18	43	9	37
1:15	*	*	8	38	8	46	13	47	18	48	6	37	9	35	13	26	12	34	13	36	13	53	14	43	5	41	14	42
1:30	*	*	6	44	7	38	13	39	17	28	11	32	7	28	9	34	9	28	7	37	14	42	23	33	8	29	6	46
1:45	*	*	3	41	6	43	21	46	24	38	8	35	8	49	3	31	11	36	12	45	10	40	26	28	6	40	8	30
2:00	*	*	10	40	7	48	8	33	10	36	6	48	6	35	9	35	2	41	8	50	13	37	9	36	7	31	8	42
2:15	*	*	9	35	3	45	15	52	11	35	12	55	14	40	4	36	5	32	4	43	14	65	12	27	11	51	8	40
2:30	*	*	1	29	6	39	11	43	7	5	5	42	9	30	12	35	2	49	2	33	6	29	7	38	3	36	4	43
2:45	*	20	4	37	6	49	9	41	10	0	3	50	7	47	6	51	3	33	2	46	10	38	14	43	5	36	5	50
3:00	*	51	6	54	5	45	10	50	17	0	1	45	4	59	3	43	4	28	5	38	8	39	15	47	4	40	3	48
3:15	*	29	5	54	2	42	7	34	12	0	5	46	2	35	2	49	8	57	4	25	8	32	8	34	3	61	2	63
3:30	*	43	5	59	4	42	12	33	16	0	4	37	2	34	4	46	2	43	5	34	10	39	6	32	6	56	2	34
3:45	*	28	7	43	5	50	14	34	12	0	1	54	5	44	4	39	5	54	5	46	9	33	6	33	3	43	7	50
4:00	*	68	4	63	2	41	13	45	16	0	2	40	6	48	8	48	6	40	6	42	7	24	9	37	1	48	2	39
4:15	*	56	2	48	4	49	4	56	8	0	1	53	3	36	4	58	5	33	2	55	10	27	10	25	1	51	6	32
4:30	*	61	9	40	9	54	14	50	12	0	4	55	4	58	11	57	2	48	15	40	8	38	12	41	5	49	2	52
4:45	*	36	2	39	4	54	11	62	20	0	3	50	4	57	2	54	2	66	9	36	12	47	19	47	4	65	7	48
5:00	*	37	5	37	7	45	8	35	8	0	11	43	6	40	9	54	9	55	5	44	13	49	13	50	4	51	7	44
5:15	*	54	9	53	9	78	13	40	5	0	11	49	5	61	7	47	7	52	10	70	12	41	7	38	8	51	7	43
5:30	*	58	12	54	22	45	11	48	9	0	9	51	13	39	11	63	10	43	4	47	10	50	5	44	16	55	11	55
5:45	*	38	8	57	9	49	11	49	9	0	10	60	14	62	8	61	4	60	11	53	5	32	7	18	13	52	10	58
6:00	*	76	6	38	7	53	14	46	12	0	12	53	7	38	9	72	10	71	13	58	12	52	10	44	7	63	5	56
6:15	*	59	9	54	14	42	20	37	6	0	16	49	11	43	11	62	14	59	14	53	11	29	11	51	14	42	15	69
6:30	*	48	7	42	16	46	16	50	7	0	19	31	16	54	13	75	12	57	18	58	7	44	8	22	13	50	13	47
6:45	*	46	16	41	27	48	6	36	6	0	22	37	17	45	15	63	14	72	13	46	7	42	7	33	17	55	15	42
7:00	*	56	21	39	29	39	17	44	12	0	27	39	25	51	16	62	19	59	29	29	12	32	9	30	23	40	22	31
7:15	*	52	26	35	29	46	12	33	6	0	27	44	21	46	26	72	26	38	27	44	19	30	9	35	21	36	41	45
7:30	*	39	21	41	38	43	12	50	13	0	27	48	38	32	33	51	21	37	16	44	17	39	6	37	24	54	28	42
7:45	*	59	27	36	36	38	18	44	8	3	29	28	31	35	36	43	20	53	45	42	17	43	10	29	34	27	32	29
8:00	*	35	38	44	27	40	24	57	16	63	35	32	29	37	32	40	26	34	39	42	15	32	12	29	38	21	45	39
8:15	*	32	31	37	38	31	22	36	17	41	42	43	39	36	45	47	37	33	32	57	30	44	11	41	41	40	37	38
8:30	*	36	22	41	30	46	27	37	18	27	30	46	46	48	36	39	33	34	27	33	41	42	16	46	32	33	38	40
8:45	*	40	45	44	46	30	34	46	17	28	45	26	29	30	30	23	35	42	37	57	31	31	14	30	38	36	32	44
9:00	*	60	26	27	42	36	32	36	17	34	31	45	34	31	32	39	32	31	39	37	24	30	19	47	32	23	36	32
9:15	*	35	27	37	36	39	28	35	10	47	22	39	30	32	43	36	24	42	33	36	31	35	15	25	22	39	32	40
9:30	*	40	23	53	26	35	28	37	33	33	33	28	38	32	32	20	26	38	36	24	38	48	16	29	27	18	34	27
9:45	*	20	36	29	37	36	27	42	19	35	37	18	30	29	33	30	31	28	25	28	27	34	19	25	26	37	25	39
10:00	*	23	39	31	33	42	36	9	27	27	37	35	38	39	35	12	28	29	34	32	34	30	13	20	25	40	47	31
10:15	*	28	18	27	29	37	39	30	28	24	37	24	20	21	20	21	26	26	34	36	36	27	30	34	28	24	37	32
10:30	*	37	27	29	22	29	41	34	33	23	36	26	30	34	29	26	16	27	34	40	40	18	19	23	31	21	37	26
10:45	*	24	33	31	31	27	43	24	29	27	42	24	45	21	28	19	32	32	23	48	44	23	24	18	55	16	46	19
11:00	*	25	27	21	21	31	40	20	38	17	45	26	37	25	28	21	24	18	20	30	50	26	43	22	39	22	45	*
11:15	*	23	24	22	37	25	33	38	28	16	51	16	35	23	40	18	31	26	30	33	41	20	38	19	44	25	32	*
11:30	*	9	24	26	30	23	33	26	32	16	35	15	32	24	25	22	38	18	25	25	39	19	29	11	51	14	31	*
11:45	*	17	35	18	39	26	34	32	26	15	49	23	31	23	35	16	25	15	24	13	43	17	33	19	43	14	26	*

NB 51st s of Skillman

ATR Count Averages

Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	17	47	16	44	22	41	12	34	18	28	25	38	34	34	17	39	29	36
12:15	22	45	22	33	16	43	9	37	17	36	18	50	24	28	17	39	21	39
12:30	15	38	17	34	17	39	19	36	8	30	19	38	32	34	15	35	26	36
12:45	19	40	7	35	9	32	13	26	14	29	24	47	25	34	12	32	24	41
1:00	15	38	8	33	11	34	9	29	8	50	17	45	25	35	10	37	21	40
1:15	6	39	12	39	13	26	10	36	11	41	13	50	16	46	10	36	15	48
1:30	10	31	7	37	9	34	8	36	7	38	14	41	20	31	8	35	17	36
1:45	7	38	8	40	3	31	7	39	9	44	16	43	25	33	7	38	20	38
2:00	7	40	7	39	9	35	6	41	8	49	11	35	10	36	7	41	10	36
2:15	12	53	11	40	4	36	7	34	4	44	15	59	12	31	7	41	13	45
2:30	4	39	7	37	12	35	2	39	4	36	9	36	7	22	6	37	8	29
2:45	4	43	6	49	6	36	4	35	4	48	10	40	12	22	5	42	11	31
3:00	3	43	4	54	3	47	5	41	5	42	9	45	16	24	4	45	13	34
3:15	4	54	2	49	2	39	7	56	3	34	8	33	10	17	4	46	9	25
3:30	5	47	2	34	4	45	4	51	5	38	11	36	11	16	4	43	11	26
3:45	2	49	6	47	4	34	6	49	5	48	12	34	9	17	5	45	10	25
4:00	2	44	4	44	8	58	5	52	4	42	10	35	13	19	5	48	11	27
4:15	1	52	5	34	4	57	4	41	3	52	7	42	9	13	3	47	8	27
4:30	5	52	3	55	11	59	6	44	12	47	11	44	12	21	7	51	12	32
4:45	4	58	6	53	2	45	2	53	7	45	12	55	20	24	4	51	16	39
5:00	8	47	7	42	9	46	7	46	6	45	11	42	11	25	7	45	11	34
5:15	10	50	6	52	7	51	8	53	10	74	13	41	6	19	8	56	9	30
5:30	13	53	12	47	11	61	11	49	13	46	11	49	7	22	12	51	9	36
5:45	12	56	12	60	8	50	6	59	10	51	8	41	8	9	10	55	8	25
6:00	10	58	6	47	9	74	8	55	10	56	13	49	11	22	9	58	12	36
6:15	15	46	13	56	11	61	12	57	14	48	16	33	9	26	13	53	12	29
6:30	16	41	15	51	13	62	10	50	17	52	12	47	8	11	14	51	10	29
6:45	20	46	16	44	15	55	15	57	20	47	7	39	7	17	17	50	7	28
7:00	25	40	24	41	16	59	20	49	29	34	15	38	11	15	23	45	13	27
7:15	24	40	31	46	26	62	26	37	28	45	16	32	8	18	27	46	12	25
7:30	26	51	33	37	33	45	21	39	27	44	15	45	10	19	28	43	12	32
7:45	32	28	32	32	36	51	24	45	41	40	18	44	9	16	33	39	13	30
8:00	37	27	37	38	32	38	32	39	33	41	20	45	14	46	34	36	17	45
8:15	42	42	38	37	45	40	34	35	35	44	26	40	14	41	39	39	20	41
8:30	31	40	42	44	36	38	28	38	29	40	34	40	17	37	33	40	26	38
8:45	42	31	31	37	30	32	40	43	42	44	33	39	16	29	37	37	24	34
9:00	32	34	35	32	32	50	29	29	41	37	28	33	18	41	34	36	23	37
9:15	22	39	31	36	43	36	26	40	35	38	30	35	13	36	31	38	21	36
9:30	30	23	36	30	32	30	25	46	31	30	33	43	25	31	31	32	29	37
9:45	32	28	28	34	33	25	34	29	31	32	27	38	19	30	31	29	23	34
10:00	31	38	43	35	35	18	34	30	34	37	35	20	20	24	35	31	28	22
10:15	33	24	29	27	20	25	22	27	32	37	38	29	29	29	27	28	33	29
10:30	34	24	34	30	29	32	22	28	28	35	41	26	26	23	29	30	33	25
10:45	49	20	46	20	28	22	33	32	27	38	44	24	27	23	36	26	35	23
11:00	42	24	41	25	28	23	26	20	21	31	45	23	41	20	31	24	43	21
11:15	48	21	34	23	40	21	28	24	34	29	37	29	33	18	36	23	35	23
11:30	43	15	32	24	25	16	31	22	28	24	36	23	31	14	32	20	33	18
11:45	46	19	29	23	35	17	30	17	32	20	39	25	30	17	34	19	34	21

NB 51st s of Skillman

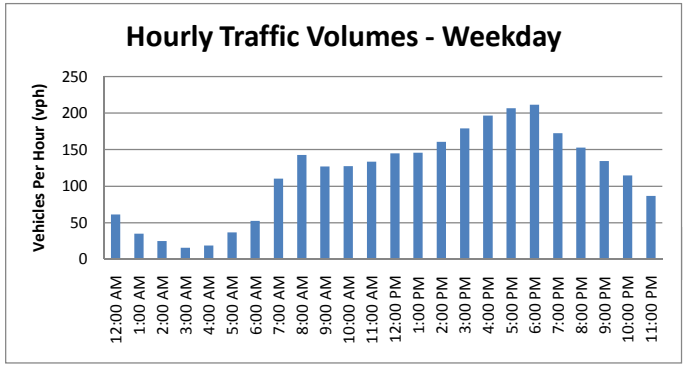
Hourly Volumes in 15-Minute Intervals

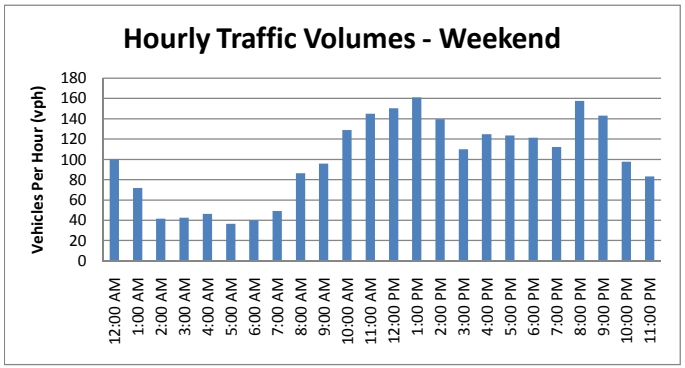
Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	72	169	62	146	64	155	53	133	56	123	86	172	115	129	61	145	100	151
12:15	70	159	54	135	53	148	49	127	46	145	77	179	106	130	54	143	91	155
12:30	54	154	44	140	50	131	50	126	40	150	72	179	98	148	47	140	85	164
12:45	49	147	33	143	42	126	39	126	39	157	67	182	86	145	40	140	76	164
1:00	37	145	34	148	36	125	33	139	35	173	59	178	86	144	35	146	72	161
1:15	29	147	33	154	34	126	31	151	34	172	53	169	71	145	32	150	62	157
1:30	35	161	33	155	25	136	28	149	27	175	54	177	66	131	29	155	60	154
1:45	29	169	33	155	28	137	22	152	24	173	49	173	53	122	27	157	51	147
2:00	26	175	31	164	31	142	18	148	19	177	43	169	40	110	25	161	42	140
2:15	22	178	27	179	25	154	17	149	17	169	42	179	47	98	22	165	44	138
2:30	15	178	18	188	23	157	17	171	16	159	35	153	45	84	18	170	40	118
2:45	16	186	14	185	15	166	19	183	17	161	37	153	49	78	16	176	43	116
3:00	14	191	14	184	13	164	21	196	18	161	39	147	46	73	16	179	43	110
3:15	13	193	14	174	18	175	21	207	17	161	40	137	43	68	16	182	41	103
3:30	10	191	17	159	20	193	18	192	17	180	40	146	42	64	16	183	41	105
3:45	9	197	18	180	27	208	20	185	24	189	40	154	43	68	20	191	41	111
4:00	11	206	17	185	25	219	16	189	26	186	40	175	53	75	19	197	46	125
4:15	17	209	20	184	26	207	18	183	28	189	40	182	51	82	22	194	46	132
4:30	25	207	21	202	29	200	23	195	34	211	46	181	48	88	26	203	47	135
4:45	33	208	30	194	29	202	28	200	35	210	45	186	43	90	31	202	44	138
5:00	41	206	37	201	35	206	32	206	39	216	42	172	32	75	37	207	37	124
5:15	43	217	36	206	35	235	33	214	43	227	44	179	32	72	38	220	38	126
5:30	49	213	43	210	39	245	37	218	47	200	47	172	35	79	43	217	41	125
5:45	52	200	46	214	41	246	35	219	51	206	48	170	35	68	45	217	42	119
6:00	60	190	50	197	48	251	44	217	61	202	47	168	34	75	53	211	40	122
6:15	76	172	67	191	55	236	56	212	80	181	48	157	33	68	67	198	41	113
6:30	85	166	85	181	70	237	71	192	94	178	48	156	32	60	81	191	40	108
6:45	94	177	104	167	90	221	82	181	104	170	51	153	34	68	95	183	43	110
7:00	106	158	119	156	111	217	91	169	125	163	62	158	37	67	110	172	49	112
7:15	118	145	133	153	127	196	103	159	129	170	67	164	40	98	122	164	54	131
7:30	135	147	140	144	146	173	111	158	136	169	78	173	47	122	133	158	62	147
7:45	141	135	149	151	149	166	117	156	137	165	97	168	54	140	138	154	76	154
8:00	151	139	148	156	143	146	134	155	138	168	112	163	61	153	143	153	86	158
8:15	146	146	146	150	143	158	131	145	146	164	121	151	65	147	142	152	93	149
8:30	126	144	139	149	141	154	122	149	145	157	124	146	63	142	135	150	94	144
8:45	125	127	133	134	137	147	119	157	148	147	123	149	71	137	132	142	97	143
9:00	115	124	130	131	140	140	113	143	137	136	118	149	74	138	127	135	96	143
9:15	115	127	137	135	143	108	117	144	130	136	125	135	76	121	128	130	100	128
9:30	125	112	135	125	120	97	114	131	127	135	133	129	93	114	124	120	113	121
9:45	129	113	132	126	117	99	111	113	124	140	140	112	94	106	122	118	117	109
10:00	146	105	150	112	112	95	110	116	120	146	157	98	102	98	127	115	129	98
10:15	157	92	149	102	105	101	102	106	107	139	167	101	122	94	124	108	144	98
10:30	172	88	154	98	125	97	107	103	109	132	166	102	126	83	133	103	146	92
10:45	181	79	152	92	121	81	117	97	109	121	162	98	131	73	136	94	146	86
11:00	179	78	135	95	128	76	114	82	113	103	157	99	134	68	134	87	145	83
11:15	147	69	133	85	134	85	34	18	28	25	38	34	34		95	56	36	34
11:30	152	70	138	77	143	65	71	35	64	43	153	58	62		114	58	107	58
11:45	164	72	141	72	155	59	107	43	94	62	159	90	95		132	61	127	90

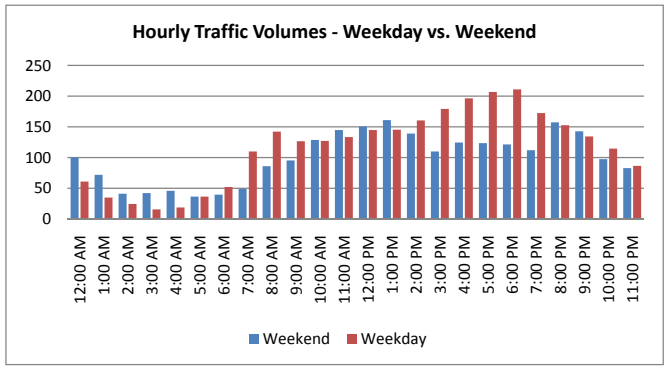
NB 51st s of Skillman

Hourly Volumes in 1-Hour Intervals

Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	72	169	62	146	64	155	53	133	56	123	86	172	115	129	61	145	100	151
1:00	37	145	34	148	36	125	33	139	35	173	59	178	86	144	35	146	72	161
2:00	26	175	31	164	31	142	18	148	19	177	43	169	40	110	25	161	42	140
3:00	14	191	14	184	13	164	21	196	18	161	39	147	46	73	16	179	43	110
4:00	11	206	17	185	25	219	16	189	26	186	40	175	53	75	19	197	46	125
5:00	41	206	37	201	35	206	32	206	39	216	42	172	32	75	37	207	37	124
6:00	60	190	50	197	48	251	44	217	61	202	47	168	34	75	53	211	40	122
7:00	106	158	119	156	111	217	91	169	125	163	62	158	37	67	110	172	49	112
8:00	151	139	148	156	143	146	134	155	138	168	112	163	61	153	143	153	86	158
9:00	115	124	130	131	140	140	113	143	137	136	118	149	74	138	127	135	96	143
10:00	146	105	150	112	112	95	110	116	120	146	157	98	102	98	127	115	129	98
11:00	179	78	135	95	128	76	114	82	113	103	157	99	134	68	134	87	145	83







Raw ATR Data Summary

Start Time	Wed 06/02 2010		Thu 06/03 2010		Fri 06/04 2010		Sat 06/05 2010		Sun 06/06 2010		Mon 06/07 2010		Tue 06/08 2010		Wed 06/09 2010		Thu 06/10 2010		Fri 06/11 2010		Sat 06/12 2010		Sun 06/13 2010		Mon 06/14 2010		Tue 06/15 2010	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	*	*	25	75	28	84	46	96	57	95	32	101	27	75	25	91	18	97	28	98	29	110	51	66	19	95	25	88
12:15	*	*	18	73	29	69	33	98	48	83	29	71	26	79	29	70	22	78	25	75	41	84	50	91	27	79	13	86
12:30	*	*	14	76	21	77	34	80	54	101	27	86	18	75	24	97	23	74	21	72	32	102	52	84	28	64	11	62
12:45	*	*	23	66	26	81	39	87	34	69	25	92	19	60	21	78	21	85	29	78	43	109	43	83	27	54	14	73
1:00	*	*	23	83	24	82	29	97	30	88	20	61	13	85	17	98	12	98	25	67	38	92	47	94	14	83	21	79
1:15	*	*	20	81	17	91	31	79	36	100	15	78	14	92	17	85	16	80	17	97	22	92	37	83	18	76	30	67
1:30	*	*	11	71	13	78	24	93	45	81	25	73	13	73	12	90	12	79	19	92	25	102	40	81	19	87	6	90
1:45	*	*	13	68	12	97	20	102	31	90	7	97	14	64	14	99	13	70	19	81	28	108	34	69	12	100	16	80
2:00	*	*	16	84	14	79	33	108	31	70	20	80	11	83	15	91	11	65	13	106	26	92	38	72	16	105	16	76
2:15	*	*	18	82	9	137	28	87	32	105	6	95	10	75	14	113	11	65	15	108	19	103	25	71	15	121	12	89
2:30	*	*	6	103	13	95	26	90	40	91	13	105	10	89	12	106	4	80	16	99	18	107	31	97	7	76	10	96
2:45	*	*	8	103	13	89	36	85	29	87	12	70	5	88	19	87	11	94	15	101	17	98	29	86	6	87	11	89
3:00	*	*	12	85	3	108	19	91	19	56	11	107	10	79	4	94	9	96	14	103	15	94	29	80	15	83	6	81
3:15	*	83	4	87	13	137	10	95	37	95	13	73	13	93	17	107	9	88	20	87	17	82	19	82	10	97	11	85
3:30	*	80	14	118	16	119	20	96	25	71	14	86	17	95	18	87	12	82	10	106	13	72	23	74	14	99	10	74
3:45	*	100	14	97	13	79	13	79	24	62	14	103	9	87	6	95	21	80	19	98	26	91	21	71	14	96	5	66
4:00	*	98	11	88	12	82	18	80	23	78	15	93	3	73	16	99	16	73	21	83	24	67	18	67	11	64	9	88
4:15	*	94	20	80	19	122	28	89	31	78	11	90	17	84	18	75	15	85	18	93	22	77	21	75	10	95	16	83
4:30	*	112	21	90	21	96	25	109	30	110	14	101	15	83	10	94	21	73	28	117	23	81	32	67	28	98	19	81
4:45	*	98	18	104	23	117	28	110	26	64	34	101	19	95	22	98	25	94	22	68	24	89	32	89	15	117	18	101
5:00	*	103	24	90	30	129	34	95	24	78	22	91	20	97	23	115	33	130	31	121	31	95	35	80	22	114	25	84
5:15	*	98	30	104	41	132	20	65	34	82	27	106	30	93	40	101	32	101	35	98	29	96	26	86	31	132	35	98
5:30	*	114	42	101	40	127	41	83	31	61	45	103	41	105	52	119	43	109	54	108	32	80	33	64	39	112	56	103
5:45	*	109	60	109	50	127	50	106	30	61	56	94	61	100	49	103	49	108	56	94	37	78	40	76	55	103	55	94
6:00	*	88	59	105	59	84	45	86	38	76	61	80	44	73	59	88	71	80	53	100	36	84	29	64	46	98	57	113
6:15	*	102	60	98	79	104	38	79	44	73	73	109	77	114	72	101	63	88	73	99	44	75	38	68	59	102	62	91
6:30	*	96	96	87	104	106	55	79	39	71	81	95	84	100	98	105	87	87	98	99	49	93	32	55	84	95	103	88
6:45	*	79	83	87	96	121	38	96	30	66	66	89	89	85	88	89	92	73	83	90	63	82	44	67	79	86	90	86
7:00	*	82	106	76	129	109	59	86	36	81	101	87	123	74	111	104	128	87	122	100	55	88	27	54	102	85	116	66
7:15	*	88	143	92	149	96	69	85	42	69	114	65	132	76	126	68	116	69	132	78	58	95	38	76	110	58	131	81
7:30	*	105	141	82	126	74	73	92	41	60	135	70	133	81	160	60	119	75	133	75	61	85	39	68	113	66	143	77
7:45	*	79	163	67	147	105	73	95	46	64	153	72	143	61	143	69	141	77	144	64	71	82	42	73	147	73	140	82
8:00	*	68	148	60	160	85	76	92	55	83	152	84	178	79	167	67	119	74	136	76	74	73	39	63	163	62	153	78
8:15	*	80	106	69	161	100	84	65	60	48	125	57	124	74	142	74	129	79	118	76	69	94	62	69	127	62	135	74
8:30	*	79	128	72	120	76	102	84	53	49	119	72	89	70	109	65	116	71	83	60	81	74	50	60	118	67	126	65
8:45	*	58	123	66	113	73	80	80	75	69	121	65	101	55	117	58	82	64	97	73	89	57	62	62	86	53	92	52
9:00	*	73	86	77	86	71	102	75	63	69	89	61	87	51	86	56	95	69	89	61	48	60	76	89	75	59	91	74
9:15	*	76	100	69	87	65	93	53	65	66	89	66	80	49	83	48	96	51	89	66	81	69	60	63	66	49	90	59
9:30	*	50	82	61	94	60	77	67	73	63	74	49	68	43	59	42	91	54	62	53	94	66	63	42	66	45	91	67
9:45	*	60	72	66	107	61	103	73	75	68	71	44	79	50	95	50	74	64	91	66	75	74	72	51	76	54	60	56
10:00	*	49	71	58	85	64	91	83	55	49	86	53	83	51	78	54	64	63	75	66	78	48	68	31	53	46	74	53
10:15	*	43	78	56	71	63	96	75	87	49	86	26	75	40	73	46	87	48	53	68	55	59	73	51	74	53	79	41
10:30	*	48	74	67	88	48	105	75	87	54	89	40	92	44	76	53	77	54	76	52	72	71	71	46	82	31	76	*
10:45	*	47	61	43	73	49	91	57	78	49	101	40	74	32	61	35	93	50	81	50	96	54	66	29	149	29	101	*
11:00	*	42	76	29	85	46	92	42	74	31	118	27	121	32	70	18	93	29	59	59	72	61	89	46	104	36	87	*
11:15	*	39	88	42	84	36	119	48	75	36	93	35	77	29	80	32	77	30	61	56	76	54	72	36	94	28	77	*
11:30	*	36	84	48	90	47	94	47	76	32	89	30	129	28	74	24	60	24	73	44	75	42	86	38	110	33	75	*
11:45	*	35	83	47	64	43	82	77	66	22	83	24	91	35	75	29	77	27	59	45	93	46	87	32	85	40	81	*

WB Skillman Eof51ST

ATR Count Averages

Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	26	98	26	82	25	91	22	86	28	91	38	103	54	81	25	90	46	92
12:15	28	75	20	83	29	70	20	76	27	72	37	91	49	87	25	75	43	89
12:30	28	75	15	69	24	97	19	75	21	75	33	91	53	93	21	78	43	92
12:45	26	73	17	67	21	78	22	76	28	80	41	98	39	76	23	75	40	87
1:00	17	72	17	82	17	98	18	91	25	75	34	95	39	91	19	83	36	93
1:15	17	77	22	80	17	85	18	81	17	94	27	86	37	92	18	83	32	89
1:30	22	80	10	82	12	90	12	75	16	85	25	98	43	81	14	82	34	89
1:45	10	99	15	72	14	99	13	69	16	89	24	105	33	80	13	86	28	92
2:00	18	93	14	80	15	91	14	75	14	93	30	100	35	71	15	86	32	86
2:15	11	108	11	82	14	113	15	74	12	123	24	95	29	88	12	100	26	92
2:30	10	91	10	93	12	106	5	92	15	97	22	99	36	94	10	96	29	96
2:45	9	79	8	89	19	87	10	99	14	95	27	92	29	87	12	90	28	89
3:00	13	95	8	80	4	94	11	91	9	106	17	93	24	68	9	93	21	80
3:15	12	85	12	89	17	95	7	88	17	112	14	89	28	89	13	94	21	89
3:30	14	93	14	85	18	84	13	100	13	113	17	84	24	73	14	95	20	78
3:45	14	100	7	77	6	98	18	89	16	89	20	85	23	67	12	90	21	76
4:00	13	79	6	81	16	99	14	81	17	83	21	74	21	73	13	84	21	73
4:15	11	93	17	84	18	85	18	83	19	108	25	83	26	77	16	90	26	80
4:30	21	100	17	82	10	103	21	82	25	107	24	95	31	89	19	95	28	92
4:45	25	109	19	98	22	98	22	99	23	93	26	100	29	77	22	99	28	88
5:00	22	103	23	91	23	109	29	110	31	125	33	95	30	79	25	107	31	87
5:15	29	119	33	96	40	100	31	103	38	115	25	81	30	84	34	106	27	82
5:30	42	108	49	104	52	117	43	105	47	118	37	82	32	63	46	110	34	72
5:45	56	99	58	97	49	106	55	109	53	111	44	92	35	69	54	104	39	80
6:00	54	89	51	93	59	88	65	93	56	92	41	85	34	70	57	91	37	78
6:15	66	106	70	103	72	102	62	93	76	102	41	77	41	71	69	101	41	74
6:30	83	95	94	94	98	101	92	87	101	103	52	86	36	63	93	96	44	75
6:45	73	88	90	86	88	84	88	80	90	106	51	89	37	67	85	89	44	78
7:00	102	86	120	70	111	93	117	82	126	105	57	87	32	68	115	87	44	77
7:15	112	62	132	79	126	78	130	81	141	87	64	90	40	73	128	77	52	81
7:30	124	68	138	79	160	83	130	79	130	75	67	89	40	64	136	77	54	76
7:45	150	73	142	72	143	74	152	72	146	85	72	89	44	69	146	75	58	79
8:00	158	73	166	79	167	68	134	67	148	81	75	83	47	73	154	73	61	78
8:15	126	60	130	74	142	77	118	74	140	88	77	80	61	59	131	75	69	69
8:30	119	70	108	68	109	72	122	72	102	68	92	79	52	55	112	70	72	67
8:45	104	59	97	54	117	58	103	65	105	73	85	69	69	66	105	62	77	67
9:00	82	60	89	63	86	65	91	73	88	66	75	68	70	79	87	65	72	73
9:15	78	58	85	54	83	62	98	60	88	66	87	61	63	65	86	60	75	63
9:30	70	47	80	55	59	46	87	58	78	57	86	67	68	53	75	52	77	60
9:45	74	49	70	53	95	55	73	65	99	64	89	74	74	60	82	57	81	67
10:00	70	50	79	52	78	52	68	61	80	65	85	66	62	40	75	56	73	53
10:15	80	40	77	41	73	45	83	52	62	66	76	67	80	50	75	48	78	59
10:30	86	36	84	44	76	51	76	61	82	50	89	73	79	50	81	48	84	62
10:45	125	35	88	32	61	41	77	47	77	50	94	56	72	39	86	41	83	47
11:00	111	32	104	32	70	30	85	29	72	53	82	52	82	39	88	35	82	45
11:15	94	32	77	29	80	36	83	36	73	46	98	51	74	36	81	36	86	44
11:30	100	32	102	28	74	30	72	36	82	46	85	45	81	35	86	34	83	40
11:45	84	32	86	35	75	32	80	37	62	44	88	62	77	27	77	36	82	44

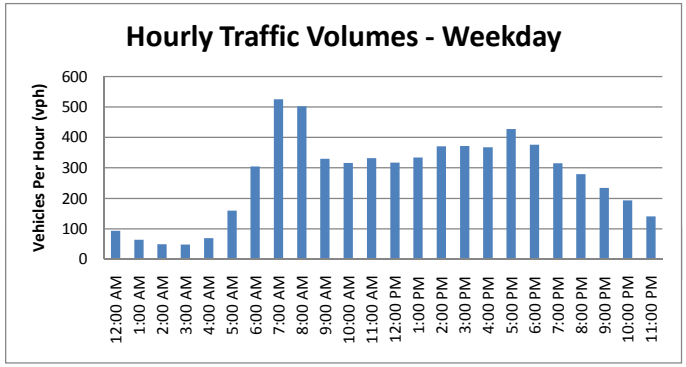
Hourly Volumes in 15-Minute Intervals

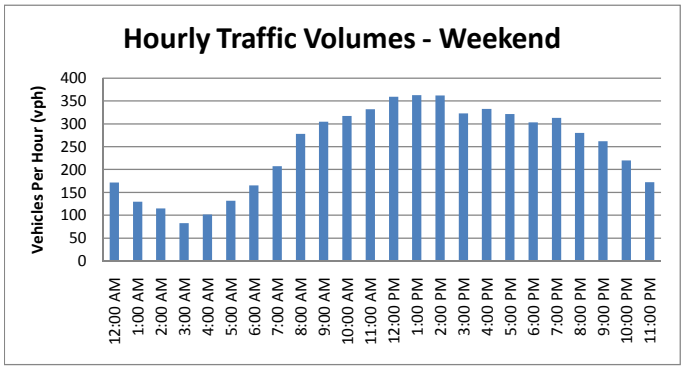
Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	107	321	77	299	99	336	82	312	104	317	149	383	195	336	94	317	172	360
12:15	99	295	68	300	91	343	78	317	100	301	145	375	179	347	87	311	162	361
12:30	87	297	70	297	79	358	76	322	90	323	134	369	167	351	80	319	150	360
12:45	82	302	65	310	67	351	69	322	85	333	126	376	156	340	74	323	141	358
1:00	65	328	64	315	60	372	60	315	73	343	109	383	150	343	64	334	129	363
1:15	66	348	60	313	58	365	56	299	62	361	105	388	146	323	60	337	125	356
1:30	60	379	49	315	55	393	53	292	57	389	102	398	138	320	55	354	120	359
1:45	48	390	50	326	55	409	46	309	56	401	99	399	131	333	51	367	115	366
2:00	48	370	43	343	60	397	43	338	54	407	102	385	128	340	49	371	115	362
2:15	43	372	37	343	49	400	40	354	49	420	89	378	117	337	43	378	103	357
2:30	44	349	38	350	52	382	32	368	54	410	79	371	117	337	44	372	98	354
2:45	48	351	42	342	58	360	40	377	52	425	74	357	105	316	48	371	89	336
3:00	53	372	41	330	45	370	48	367	54	419	67	350	99	296	48	371	83	323
3:15	53	356	39	331	57	375	51	357	62	396	71	331	95	300	52	363	83	316
3:30	52	363	43	325	58	364	62	352	64	391	82	326	93	288	56	359	88	307
3:45	59	370	47	323	50	384	70	333	76	385	90	337	100	304	60	359	95	320
4:00	69	380	58	344	66	384	74	344	82	389	96	351	107	314	70	368	101	333
4:15	78	404	75	354	73	395	89	373	96	432	108	373	116	321	82	391	112	347
4:30	97	430	91	366	95	410	102	393	116	439	107	370	120	328	100	408	113	349
4:45	118	438	122	388	137	423	124	417	138	450	120	357	121	302	128	423	120	329
5:00	149	428	162	387	164	431	157	426	169	468	137	349	127	294	160	428	132	322
5:15	180	414	190	390	200	410	193	409	194	435	145	339	131	285	191	411	138	312
5:30	217	401	227	397	232	412	224	399	232	422	162	336	142	272	226	406	152	304
5:45	258	388	272	387	278	396	273	381	286	407	177	340	145	272	273	392	161	306
6:00	275	377	303	375	317	374	306	353	323	402	184	337	147	270	305	376	166	304
6:15	323	374	372	352	369	379	358	342	392	414	201	339	145	268	363	372	173	303
6:30	369	330	434	328	423	356	426	329	457	400	223	352	144	270	422	348	184	311
6:45	410	303	479	313	485	338	464	321	485	372	238	355	149	271	465	329	193	313
7:00	488	288	531	299	540	328	529	313	541	351	260	354	156	273	526	316	208	313
7:15	544	275	577	308	596	302	545	298	564	327	278	350	171	278	565	302	224	314
7:30	558	273	575	303	612	301	533	292	563	328	291	339	192	264	568	299	241	302
7:45	552	275	544	292	561	291	525	285	535	321	315	330	204	255	543	292	259	292
8:00	506	261	499	274	535	275	476	278	494	310	328	310	228	252	502	279	278	281
8:15	430	248	423	258	454	272	433	284	434	295	328	295	251	258	435	271	289	276
8:30	382	246	378	238	395	257	413	270	382	273	338	276	252	264	390	256	295	270
8:45	333	224	350	225	345	231	378	256	359	261	332	264	269	262	353	239	300	263
9:00	303	214	323	225	323	228	348	256	353	252	337	269	274	256	330	235	305	262
9:15	291	203	313	214	315	215	325	243	345	251	346	267	266	217	318	225	306	242
9:30	293	185	305	201	305	197	310	235	319	251	335	273	283	202	306	214	309	237
9:45	309	174	309	190	322	202	299	238	323	244	338	279	294	200	312	209	316	239
10:00	360	159	327	169	288	188	303	220	301	230	342	261	293	179	316	193	317	220
10:15	402	141	353	149	280	166	320	188	293	218	340	247	313	178	329	172	326	212
10:30	415	133	353	137	287	157	320	172	304	198	362	231	306	164	336	159	334	197
10:45	429	129	371	121	285	137	316	148	303	194	358	203	308	149	341	146	333	176
11:00	388	127	369	124	299	128	319	138	288	188	352	209	313	137	333	141	332	173
11:15	327	124	316	134	307	157	86	28	91	38	103	54	81		225	96	92	54
11:30	322	108	316	127	304	131	162	55	163	75	357	103	168		253	99	262	103
11:45	323	92	313	115	320	104	237	76	238	108	362	156	260		286	99	311	156

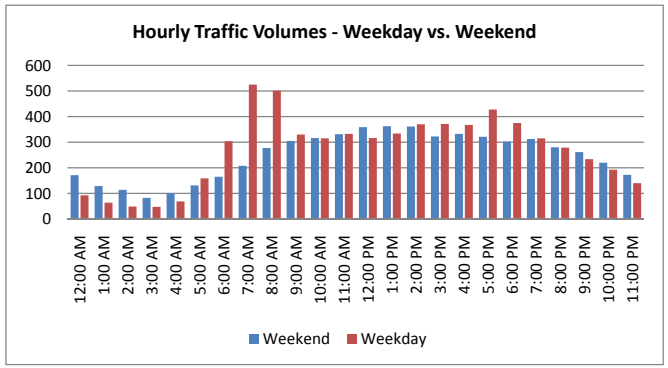
WB Skillman Eof51ST

Hourly Volumes in 1-Hour Intervals

Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	107	321	77	299	99	336	82	312	104	317	149	383	195	336	94	317	172	360
1:00	65	328	64	315	60	372	60	315	73	343	109	383	150	343	64	334	129	363
2:00	48	370	43	343	60	397	43	338	54	407	102	385	128	340	49	371	115	362
3:00	53	372	41	330	45	370	48	367	54	419	67	350	99	296	48	371	83	323
4:00	69	380	58	344	66	384	74	344	82	389	96	351	107	314	70	368	101	333
5:00	149	428	162	387	164	431	157	426	169	468	137	349	127	294	160	428	132	322
6:00	275	377	303	375	317	374	306	353	323	402	184	337	147	270	305	376	166	304
7:00	488	288	531	299	540	328	529	313	541	351	260	354	156	273	526	316	208	313
8:00	506	261	499	274	535	275	476	278	494	310	328	310	228	252	502	279	278	281
9:00	303	214	323	225	323	228	348	256	353	252	337	269	274	256	330	235	305	262
10:00	360	159	327	169	288	188	303	220	301	230	342	261	293	179	316	193	317	220
11:00	388	127	369	124	299	128	319	138	288	188	352	209	313	137	333	141	332	173







Raw ATR Data Summary

Start Time	Wed 06/02 2010		Thu 06/03 2010		Fri 06/04 2010		Sat 06/05 2010		Sun 06/06 2010		Mon 06/07 2010		Tue 06/08 2010		Wed 06/09 2010		Thu 06/10 2010		Fri 06/11 2010		Sat 06/12 2010		Sun 06/13 2010		Mon 06/14 2010		Tue 06/15 2010	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	*	*	49	65	50	82	65	114	79	80	38	104	49	83	49	77	54	102	52	98	55	129	75	82	34	109	39	87
12:15	*	*	48	103	46	80	83	98	77	95	53	89	53	99	45	91	39	86	41	82	52	103	63	42	46	65	40	84
12:30	*	*	41	78	40	77	65	108	74	95	45	99	38	81	45	74	44	83	35	84	66	97	67	89	43	58	44	76
12:45	*	*	42	73	44	92	62	88	67	100	39	97	38	62	30	50	27	86	42	84	47	105	56	95	33	111	32	94
1:00	*	*	25	90	30	83	58	123	56	77	32	84	24	92	29	110	32	81	40	83	52	114	72	91	36	70	35	95
1:15	*	*	28	89	23	96	39	114	64	96	26	92	33	92	31	97	35	67	33	98	54	98	59	92	27	93	34	74
1:30	*	*	22	89	19	87	37	106	53	93	20	95	28	74	17	61	17	89	28	90	34	91	54	91	26	88	21	87
1:45	*	*	19	88	27	97	39	93	63	102	27	82	18	79	27	77	27	83	25	95	50	121	57	94	17	97	21	83
2:00	*	*	34	104	21	70	33	111	58	90	26	94	31	100	16	87	19	93	21	119	39	111	47	95	28	112	25	87
2:15	*	*	13	109	10	126	35	120	42	84	26	98	21	102	16	100	13	108	19	105	38	113	34	114	24	99	20	108
2:30	*	*	13	92	18	111	29	98	40	87	20	105	15	88	31	91	30	111	18	115	30	101	41	98	19	116	9	101
2:45	*	*	9	104	20	127	36	121	34	104	15	101	20	113	16	101	19	87	16	118	27	111	34	98	19	105	25	86
3:00	*	*	13	131	20	115	32	116	41	81	11	121	18	115	15	96	14	105	24	109	26	102	53	104	18	125	14	107
3:15	*	*	11	122	21	145	20	109	45	117	17	127	16	118	10	98	10	149	13	108	24	93	37	90	18	135	9	136
3:30	*	121	21	139	15	120	31	95	32	100	16	122	19	119	18	101	21	137	21	101	21	96	26	83	16	121	13	96
3:45	*	135	18	129	20	147	29	113	36	92	15	132	16	111	17	107	20	120	19	140	27	90	41	100	13	144	19	129
4:00	*	156	12	165	21	125	31	113	30	103	15	140	19	150	10	174	9	127	26	142	25	89	22	95	15	115	10	109
4:15	*	155	16	161	14	155	30	128	40	133	21	143	20	139	16	137	15	145	11	153	29	100	50	97	16	140	17	113
4:30	*	157	24	150	26	163	31	115	42	128	15	154	16	148	21	156	18	127	24	135	37	125	49	93	18	154	15	148
4:45	*	137	13	127	15	157	31	149	41	88	18	141	13	141	13	131	13	146	15	121	28	111	42	115	11	166	22	148
5:00	*	141	22	146	21	171	21	111	39	98	20	130	21	158	26	185	23	147	23	155	38	108	34	132	8	164	14	149
5:15	*	122	14	150	19	177	29	105	35	103	13	168	21	180	17	204	20	157	29	169	39	114	37	107	13	163	13	151
5:30	*	163	30	137	27	165	29	114	19	86	19	173	21	136	32	116	34	172	17	137	19	90	30	91	26	181	28	150
5:45	*	138	40	162	19	159	28	105	31	87	31	142	27	146	19	161	23	173	22	140	25	101	18	84	30	154	27	158
6:00	*	166	27	139	31	136	28	100	29	90	34	155	30	126	26	144	17	157	20	131	24	103	15	99	32	131	17	147
6:15	*	153	31	136	34	152	38	87	17	86	39	123	26	143	25	169	34	135	35	148	25	93	30	90	23	140	31	138
6:30	*	131	47	127	45	118	29	105	26	89	53	116	44	133	53	144	42	128	45	131	32	112	25	93	34	121	43	134
6:45	*	121	51	116	64	132	25	114	29	83	51	115	63	120	63	108	54	162	62	107	34	113	19	90	69	122	61	107
7:00	*	133	74	101	68	140	41	109	28	92	57	117	72	117	59	113	79	147	78	133	46	109	19	66	68	101	68	121
7:15	*	118	62	123	65	127	46	121	23	88	63	100	54	127	56	120	71	120	60	107	35	111	26	93	58	111	51	120
7:30	*	110	86	100	84	95	29	110	27	93	88	120	83	88	90	104	69	109	80	124	43	94	25	74	66	103	65	112
7:45	*	118	77	103	90	122	47	101	32	112	69	108	99	82	115	117	72	138	78	111	37	97	33	85	96	99	73	79
8:00	*	91	97	112	100	122	57	95	35	119	92	75	80	93	84	105	105	100	94	100	46	101	36	85	116	86	91	103
8:15	*	111	96	116	74	115	50	92	34	96	94	92	86	106	77	102	83	88	86	139	61	115	33	76	93	88	75	98
8:30	*	96	83	90	69	103	61	89	50	80	77	74	83	84	76	96	67	99	63	127	69	98	34	81	78	78	69	101
8:45	*	92	94	99	96	86	67	104	35	77	102	87	71	87	77	88	80	105	77	95	75	93	37	68	79	83	62	98
9:00	*	101	75	91	77	84	70	103	39	87	64	90	69	79	59	94	75	110	79	95	84	98	39	96	64	83	58	93
9:15	*	100	73	86	78	94	67	98	42	95	58	78	61	69	58	66	63	91	76	110	70	76	38	56	59	72	68	92
9:30	*	77	45	87	71	78	61	86	44	74	73	72	69	79	66	70	68	74	76	92	66	90	55	58	58	55	81	73
9:45	*	80	69	69	77	105	69	88	62	82	64	62	58	83	59	87	60	80	54	72	72	64	48	54	60	65	64	71
10:00	*	72	81	69	66	71	86	69	62	72	69	61	62	69	63	57	62	75	53	85	85	77	53	45	77	79	92	75
10:15	*	71	78	78	72	72	105	87	63	65	84	50	82	62	94	55	60	65	71	59	76	76	65	71	66	53	69	60
10:30	*	68	72	58	66	84	79	75	59	61	77	66	72	58	86	68	58	62	59	90	80	58	59	52	74	44	82	58
10:45	*	75	81	64	72	74	94	76	62	57	92	51	82	53	66	47	60	66	72	86	82	53	69	46	89	42	93	70
11:00	*	66	80	68	74	69	94	71	64	37	105	57	98	53	103	49	69	58	70	65	78	75	71	60	128	60	100	14
11:15	*	48	71	49	70	71	88	74	71	61	120	45	90	55	88	65	86	47	80	60	94	59	72	51	105	65	80	*
11:30	*	48	78	49	79	76	103	74	90	51	113	47	92	52	109	51	81	55	64	67	98	57	83	44	111	52	67	*
11:45	*	45	93	61	80	60	98	64	81	45	115	47	93	49	87	53	73	51	73	60	89	55	78	54	104	47	93	*

EB 43rdAV Eof50

ATR Count Averages

Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	36	107	44	85	49	77	52	84	51	90	60	122	77	81	46	88	69	101
12:15	50	77	47	92	45	91	44	95	44	81	68	101	70	69	46	87	69	85
12:30	44	79	41	79	45	74	43	81	38	81	66	103	71	92	42	78	68	97
12:45	36	104	35	78	30	50	35	80	43	88	55	97	62	98	36	80	58	97
1:00	34	77	30	94	29	110	29	86	35	83	55	119	64	84	31	90	60	101
1:15	27	93	34	83	31	97	32	78	28	97	47	106	62	94	30	90	54	100
1:30	23	92	25	81	17	61	20	89	24	89	36	99	54	92	22	82	45	95
1:45	22	90	20	81	27	77	23	86	26	96	45	107	60	98	24	86	52	103
2:00	27	103	28	94	16	87	27	99	21	95	36	111	53	93	24	95	44	102
2:15	25	99	21	105	16	100	13	109	15	116	37	117	38	99	18	106	37	108
2:30	20	111	12	95	31	91	22	102	18	113	30	100	41	93	20	102	35	96
2:45	17	103	23	100	16	101	14	96	18	123	32	116	34	101	18	104	33	109
3:00	15	123	16	111	15	96	14	118	22	112	29	109	47	93	16	112	38	101
3:15	18	131	13	127	10	98	11	136	17	127	22	101	41	104	14	124	32	102
3:30	16	122	16	108	18	111	21	138	18	111	26	96	29	92	18	118	28	94
3:45	14	138	18	120	17	121	19	125	20	144	28	102	39	96	17	129	33	99
4:00	15	128	15	130	10	165	11	146	24	134	28	101	26	99	15	140	27	100
4:15	19	142	19	126	16	146	16	153	13	154	30	114	45	115	16	144	37	115
4:30	17	154	16	148	21	157	21	139	25	149	34	120	46	111	20	149	40	115
4:45	15	154	18	145	13	134	13	137	15	139	30	130	42	102	15	142	36	116
5:00	14	147	18	154	26	163	23	147	22	163	30	110	37	115	20	155	33	112
5:15	13	166	17	166	17	163	17	154	24	173	34	110	36	105	18	164	35	107
5:30	23	177	25	143	32	140	32	155	22	151	24	102	25	89	27	153	24	95
5:45	31	148	27	152	19	150	32	168	21	150	27	103	25	86	26	153	26	94
6:00	33	143	24	137	26	155	22	148	26	134	26	102	22	95	26	143	24	98
6:15	31	132	29	141	25	161	33	136	35	150	32	90	24	88	30	144	28	89
6:30	44	119	44	134	53	138	45	128	45	125	31	109	26	91	46	128	28	100
6:45	60	119	62	114	63	115	53	139	63	120	30	114	24	87	60	121	27	100
7:00	63	109	70	119	59	123	77	124	73	137	44	109	24	79	68	122	34	94
7:15	61	106	53	124	56	119	67	122	63	117	41	116	25	91	60	117	33	103
7:30	77	112	74	100	90	107	78	105	82	110	36	102	26	84	80	107	31	93
7:45	83	104	86	81	115	118	75	121	84	117	42	99	33	99	88	108	37	99
8:00	104	81	86	98	84	98	101	106	97	111	52	98	36	102	94	99	44	100
8:15	94	90	81	102	77	107	90	102	80	127	56	104	34	86	84	106	45	95
8:30	78	76	76	93	76	96	75	95	66	115	65	94	42	81	74	95	54	87
8:45	91	85	67	93	77	90	87	102	87	91	71	99	36	73	82	92	54	86
9:00	64	87	64	86	59	98	75	101	78	90	77	101	39	92	68	92	58	96
9:15	59	75	65	81	58	83	68	89	77	102	69	87	40	76	65	86	54	81
9:30	66	64	75	76	66	74	57	81	74	85	64	88	50	66	67	76	57	77
9:45	62	64	61	77	59	84	65	75	66	89	71	76	55	68	62	77	63	72
10:00	73	70	77	72	63	65	72	72	60	78	86	73	58	59	69	71	72	66
10:15	75	52	76	61	94	63	69	72	72	66	91	82	64	68	77	63	77	75
10:30	76	55	77	58	86	68	65	60	63	87	80	67	59	57	73	66	69	62
10:45	91	47	88	62	66	61	71	65	72	80	88	65	66	52	77	63	77	58
11:00	117	59	99	34	103	58	75	63	72	67	86	73	68	49	93	56	77	61
11:15	113	55	85	55	88	57	79	48	75	66	91	67	72	56	88	56	81	61
11:30	112	50	80	52	109	50	80	52	72	72	101	66	87	48	90	55	94	57
11:45	110	47	93	49	87	49	83	56	77	60	94	60	80	50	90	52	87	55

EB 43rdAV Eof50

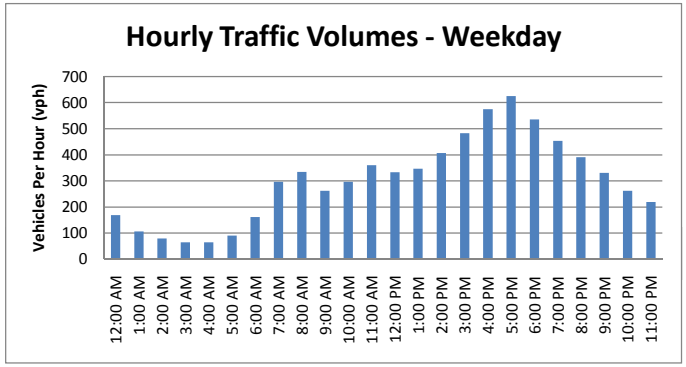
Hourly Volumes in 15-Minute Intervals

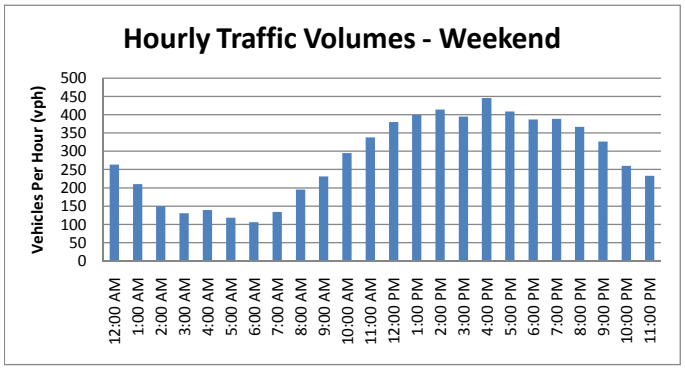
Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	166	366	167	333	169	292	172	338	175	340	248	421	279	339	170	334	263	380
12:15	164	337	152	342	149	325	149	340	159	333	243	418	266	342	155	335	254	380
12:30	141	352	139	333	135	331	137	324	144	349	222	424	258	368	139	338	240	396
12:45	120	365	123	335	107	318	114	332	130	357	192	420	241	368	119	341	216	394
1:00	106	351	107	338	104	345	103	338	113	365	182	430	239	368	106	347	210	399
1:15	99	377	106	338	91	322	101	351	99	376	163	423	228	377	99	353	195	400
1:30	97	383	93	360	76	325	82	382	85	395	153	433	204	382	87	369	178	407
1:45	94	402	80	374	90	355	84	394	80	419	147	434	191	382	85	389	169	408
2:00	89	415	83	393	79	379	75	404	72	446	134	443	165	385	79	407	149	414
2:15	76	435	71	410	78	388	62	424	73	463	127	441	160	385	72	424	143	413
2:30	69	468	63	432	72	386	60	451	75	474	112	426	163	390	68	442	137	408
2:45	65	479	67	445	59	406	59	487	75	472	109	422	151	389	65	458	130	405
3:00	62	514	62	466	60	426	64	516	77	493	105	407	156	384	65	483	130	395
3:15	63	518	61	484	55	495	61	544	78	514	104	399	135	390	63	511	119	395
3:30	64	529	67	483	61	543	66	562	74	542	112	412	139	402	66	532	125	407
3:45	64	561	66	524	64	589	66	562	81	580	120	437	155	421	68	563	137	429
4:00	65	577	66	548	60	602	60	574	76	576	121	465	158	426	65	575	140	446
4:15	64	596	69	572	76	600	72	575	75	605	123	474	169	442	71	589	146	458
4:30	58	620	68	612	77	617	74	575	86	624	127	469	160	432	72	609	143	451
4:45	64	643	77	607	88	600	85	591	83	626	117	451	139	410	79	613	128	431
5:00	80	638	86	614	94	615	103	622	89	637	114	424	122	394	90	625	118	409
5:15	99	634	92	597	94	607	103	624	92	607	111	416	107	374	96	614	109	395
5:30	117	600	104	572	102	605	118	606	103	584	108	397	95	357	109	593	101	377
5:45	138	541	123	563	123	603	131	579	126	558	115	403	96	359	128	569	105	381
6:00	168	512	158	524	167	568	152	550	168	528	118	414	95	360	162	536	106	387
6:15	197	478	204	507	200	536	206	526	216	531	135	421	97	345	205	515	116	383
6:30	227	452	228	490	231	494	240	512	244	498	144	447	98	347	234	489	121	397
6:45	260	445	259	456	268	464	273	489	281	483	150	441	98	340	268	467	124	390
7:00	283	430	283	423	320	467	295	471	302	480	162	426	107	352	296	454	134	389
7:15	324	401	298	402	345	442	320	453	326	454	170	415	119	375	322	430	144	395
7:30	357	386	326	381	366	429	343	433	343	464	185	403	128	370	347	418	156	386
7:45	358	350	328	373	352	418	340	423	327	470	214	394	144	367	341	407	179	381
8:00	366	332	309	385	314	391	353	405	330	444	243	394	147	341	334	391	195	367
8:15	326	338	287	373	289	390	327	399	311	422	269	396	151	331	308	384	210	363
8:30	291	323	271	352	270	367	305	386	308	397	282	380	157	320	289	365	219	350
8:45	279	310	270	335	260	344	287	372	315	367	280	374	165	306	282	346	222	340
9:00	250	289	264	320	242	338	264	344	294	365	280	352	184	301	263	331	232	326
9:15	259	272	278	306	246	305	261	316	276	354	288	324	202	268	264	310	245	296
9:30	276	249	289	286	282	285	262	299	270	317	310	319	226	261	276	287	268	290
9:45	286	240	291	268	302	279	270	278	259	319	326	297	236	251	281	277	281	274
10:00	314	223	317	253	309	257	276	269	266	311	344	286	246	235	296	262	295	260
10:15	358	212	339	214	349	250	279	260	278	300	344	286	256	225	321	247	300	255
10:30	395	215	349	208	343	243	289	236	282	300	345	271	264	213	331	240	304	242
10:45	432	210	351	202	366	225	303	228	291	284	366	270	291	204	348	230	328	237
11:00	451	210	357	190	387	213	316	219	295	264	371	265	305	202	361	219	338	233
11:15	391	199	326	205	300	249	84	51	90	60	122	77	81		238	153	101	77
11:30	380	189	339	202	316	227	178	95	171	128	402	147	150		277	168	276	147
11:45	349	181	338	195	319	198	259	132	252	193	414	218	242		303	180	328	218

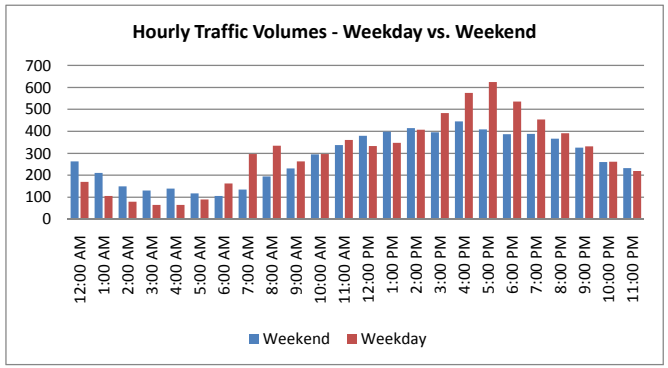
EB 43rdAV Eof50

Hourly Volumes in 1-Hour Intervals

Start Time	Monday Average		Tuesday Average		Wednes-day Average		Thursday Average		Friday Average		Saturday Average		Sunday Average		Weekday Average		Weekend Average	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	166	366	167	333	169	292	172	338	175	340	248	421	279	339	170	334	263	380
1:00	106	351	107	338	104	345	103	338	113	365	182	430	239	368	106	347	210	399
2:00	89	415	83	393	79	379	75	404	72	446	134	443	165	385	79	407	149	414
3:00	62	514	62	466	60	426	64	516	77	493	105	407	156	384	65	483	130	395
4:00	65	577	66	548	60	602	60	574	76	576	121	465	158	426	65	575	140	446
5:00	80	638	86	614	94	615	103	622	89	637	114	424	122	394	90	625	118	409
6:00	168	512	158	524	167	568	152	550	168	528	118	414	95	360	162	536	106	387
7:00	283	430	283	423	320	467	295	471	302	480	162	426	107	352	296	454	134	389
8:00	366	332	309	385	314	391	353	405	330	444	243	394	147	341	334	391	195	367
9:00	250	289	264	320	242	338	264	344	294	365	280	352	184	301	263	331	232	326
10:00	314	223	317	253	309	257	276	269	266	311	344	286	246	235	296	262	295	260
11:00	451	210	357	190	387	213	316	219	295	264	371	265	305	202	361	219	338	233





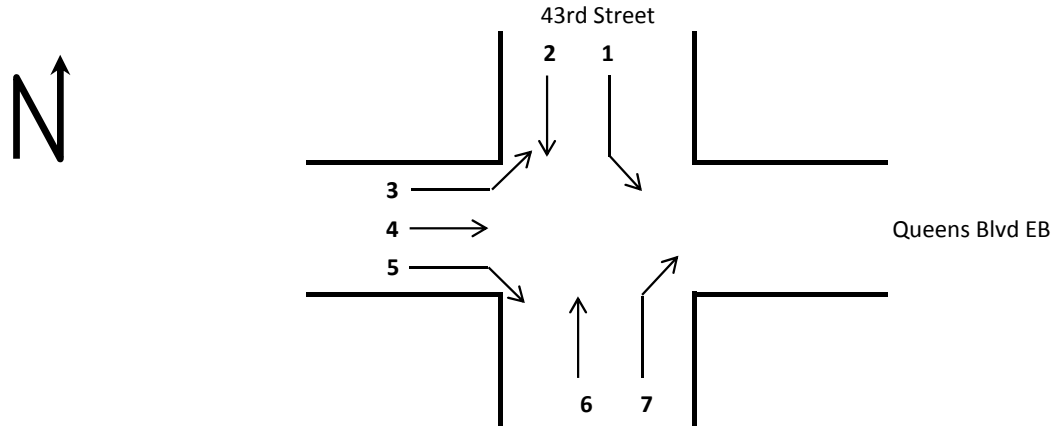


TMC

Location: #5) EB Queens Blvd & 43rd St

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011 **pg 1**

Sketch



Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
7:45	Auto	7	35	1	100	5	31	5					
	2Axle T/B	2	4	1	14	0	1	2					
AM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	0	0	0	2	1					
8:00	Auto	2	45	8	131	7	39	5					
	2Axle T/B	1	2	0	12	0	2	0					
AM	3Axle T/B	1	0	1	0	0	0	0					
	Bike	0	3	0	0	0	1	0					
8:15	Auto	9	36	5	181	4	29	7					
	2Axle T/B	0	2	0	14	0	0	1					
AM	3Axle T/B	0	0	0	0	1	0	0					
	Bike	0	0	0	0	0	2	0					
8:30	Auto	6	36	5	157	6	31	4					
	2Axle T/B	0	3	2	11	2	0	1					
AM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	0	0	3	0	2	0					
8:45	Auto	7	42	8	149	4	38	6					
	2Axle T/B	1	2	0	15	0	3	0					
AM	3Axle T/B	0	2	0	0	0	0	1					
	Bike	0	1	0	0	0	2	0					
9:00	Auto	11	37	4	157	4	16	10					
	2Axle T/B	0	1	0	10	0	1	1					
AM	3Axle T/B	0	1	0	0	1	0	0					
	Bike	0	0	0	0	0	1	0					
9:15	Auto	9	24	6	116	2	31	5					
	2Axle T/B	0	2	0	10	0	3	0					
AM	3Axle T/B	1	0	0	1	0	0	0					
	Bike	0	0	0	0	0	0	0					
9:30	Auto	9	30	10	119	11	23	4					
	2Axle T/B	0	3	0	6	1	2	3					
AM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	0	0	0	0	0					

2 Axle T/B - 2 Axle Trucks/ Buses, 3 Axle T/B - 3 Axle Trucks/ Buses

Location: #5) EB Queens Blvd & 43rd St

Surveyors: _____ **Weather:** 0 **Date:** 4/6/2011

Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
12:15	Auto	6	23	15	260	9	25	8					
	2Axle T/B	0	0	0	11	0	4	0					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	0	0	0	2	0					
12:30	Auto	9	29	8	227	17	29	15					
	2Axle T/B	0	0	0	10	0	0	0					
PM	3Axle T/B	1	1	0	1	0	0	0					
	Bike	0	0	0	3	0	1	0					
12:45	Auto	6	24	5	250	4	37	15					
	2Axle T/B	2	0	0	19	0	2	0					
PM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	1	0	0	2	0	0	0					
1:00	Auto	9	29	7	207	9	36	13					
	2Axle T/B	2	0	0	14	2	0	1					
PM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	3	0	2	0	1	1					
1:15	Auto	13	36	5	220	27	32	8					
	2Axle T/B	0	0	0	12	0	2	0					
PM	3Axle T/B	1	0	0	1	0	0	0					
	Bike	0	1	0	5	0	0	1					
1:30	Auto	8	33	13	261	29	38	15					
	2Axle T/B	0	1	1	13	1	1	3					
PM	3Axle T/B	0	0	0	0	2	0	0					
	Bike	0	0	0	2	0	1	0					
1:45	Auto	11	31	5	278	14	35	9					
	2Axle T/B	0	1	0	20	1	0	1					
PM	3Axle T/B	0	0	0	2	1	1	0					
	Bike	0	0	0	1	0	2	0					
2:00	Auto	2	20	7	255	8	32	18					
	2Axle T/B	1	1	1	15	0	2	2					
PM	3Axle T/B	0	0	0	6	0	0	0					
	Bike	0	0	0	0	0	1	0					

Location: #5) EB Queens Blvd & 43rd St

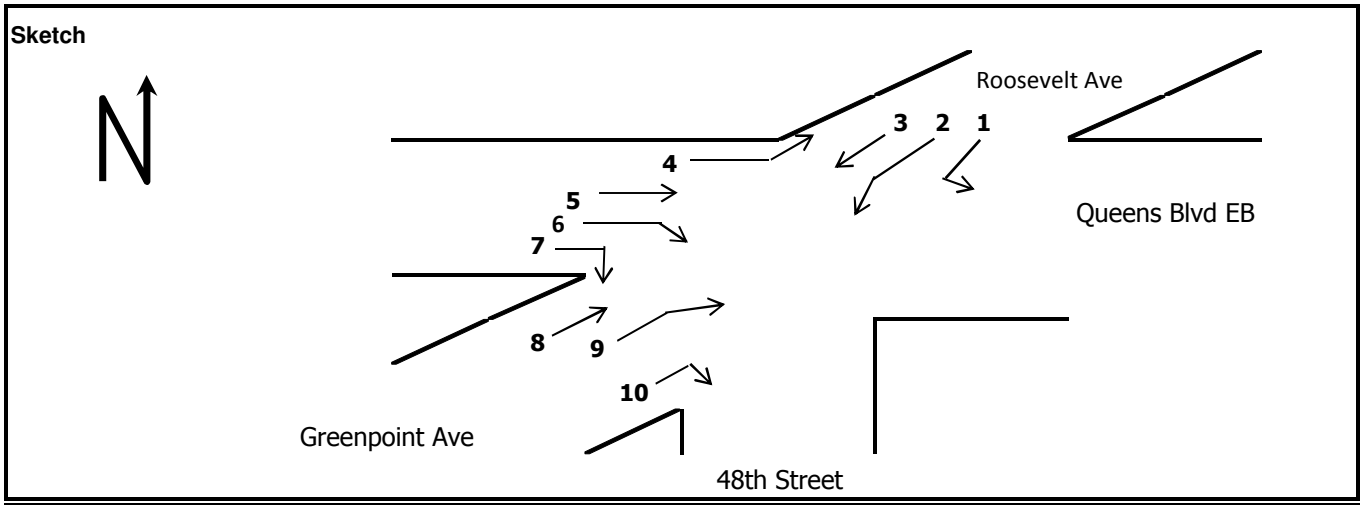
Surveyors: _____ **Weather:** 0 **Date:** 4/6/2011

Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
3:45	Auto	17	32	7	566	9	37	17					
	2Axle T/B	1	3	0	13	0	5	0					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	2	0	1	0	0	0					
4:00	Auto	9	39	11	552	10	45	7					
	2Axle T/B	2	2	0	23	0	4	1					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	0	1	0	3	0					
4:15	Auto	16	37	6	569	6	43	17					
	2Axle T/B	2	3	2	30	0	5	1					
PM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	1	0	2	0	2	0					
4:30	Auto	13	29	9	539	10	41	9					
	2Axle T/B	0	2	0	19	0	2	1					
PM	3Axle T/B	0	0	0	4	0	0	0					
	Bike	0	2	0	3	0	1	0					
4:45	Auto	13	36	11	556	6	48	16					
	2Axle T/B	1	1	0	12	0	0	0					
PM	3Axle T/B	0	0	0	18	0	0	0					
	Bike	0	0	0	4	0	0	0					
5:00	Auto	6	41	5	571	8	49	17					
	2Axle T/B	2	0	0	13	0	0	0					
PM	3Axle T/B	0	0	0	6	0	0	0					
	Bike	0	1	0	2	0	1	0					
5:15	Auto	19	40	13	575	8	44	12					
	2Axle T/B	1	1	0	13	0	1	0					
PM	3Axle T/B	0	0	0	8	0	0	0					
	Bike	0	0	0	3	0	1	0					
5:30	Auto	21	47	9	501	5	42	11					
	2Axle T/B	0	2	0	9	0	0	0					
PM	3Axle T/B	0	0	0	7	0	0	0					
	Bike	0	0	0	2	0	2	0					

Location: #1) EB Queens Blvd & 48th St/Greenpoint Ave/Rosevelt Ave

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011 **pg 1**

Sketch



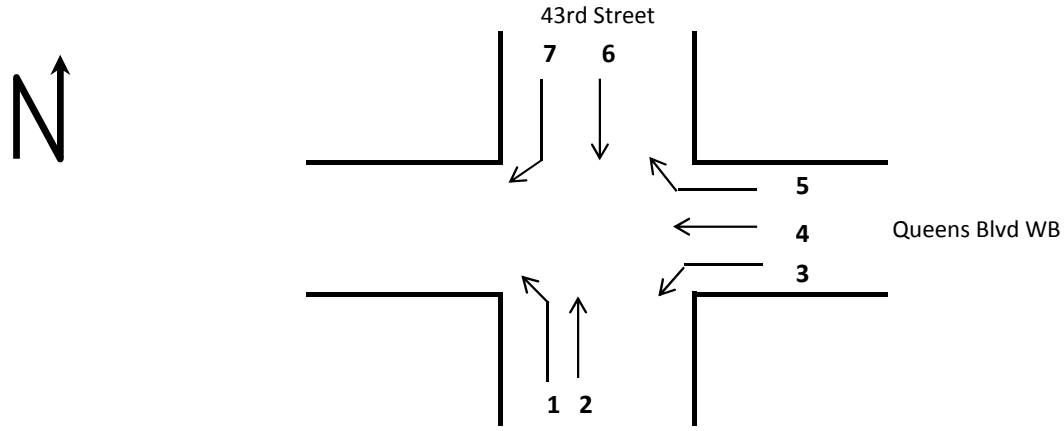
Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
7:45	Auto	1	15	52	12	69	20	1	8	9	4		
	2Axle T/B	0	2	2	0	7	2	0	3	2	2		
AM	3Axle T/B	0	1	1	0	1	0	0	0	0	0		
	Bike	0	2	0	0	1	0	0	0	0	0		
8:00	Auto	3	19	46	12	97	15	0	17	12	6		
	2Axle T/B	0	0	3	4	9	1	0	0	1	1		
AM	3Axle T/B	0	0	0	0	0	1	0	1	0	0		
	Bike	0	2	2	0	0	0	0	0	0	0		
8:15	Auto	2	14	53	17	141	14	0	23	16	6		
	2Axle T/B	0	0	3	3	5	1	1	1	0	1		
AM	3Axle T/B	0	0	0	0	0	0	0	2	0	0		
	Bike	0	0	5	0	0	0	0	3	0	0		
8:30	Auto	6	13	29	25	114	15	0	21	15	8		
	2Axle T/B	0	2	1	4	6	0	0	0	3	1		
AM	3Axle T/B	0	0	1	1	1	0	0	0	1	0		
	Bike	0	0	2	0	0	0	0	2	0	0		
8:45	Auto	2	10	49	25	108	15	0	11	16	5		
	2Axle T/B	0	1	5	2	6	1	0	2	1	0		
AM	3Axle T/B	0	0	2	0	0	0	0	0	1	0		
	Bike	0	0	2	0	0	0	0	1	0	0		
9:00	Auto	3	9	41	23	114	20	0	7	9	3		
	2Axle T/B	0	0	2	2	9	0	0	1	1	2		
AM	3Axle T/B	0	0	2	0	0	0	0	1	0	0		
	Bike	0	0	1	0	1	0	0	1	0	0		
9:15	Auto	3	10	40	17	97	18	0	14	10	5		
	2Axle T/B	0	1	3	3	8	2	0	1	1	0		
AM	3Axle T/B	0	0	1	0	0	0	0	1	0	0		
	Bike	0	0	0	0	0	0	0	0	0	0		
9:30	Auto	2	12	40	18	91	7	0	12	9	13		
	2Axle T/B	0	0	4	0	3	1	0	2	0	1		
AM	3Axle T/B	0	0	1	0	3	0	0	0	0	0		
	Bike	0	0	2	0	1	0	0	0	0	0		

2 Axle T/B - 2 Axle Trucks/ Buses, 3 Axle T/B - 3 Axle Trucks/ Buses

Location: #4) WB Queens Blvd & 43rd St

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011 **pg 1**

Sketch



Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
7:45	Auto	7	21	9	619	20	36	10					
	2Axle T/B	1	1	0	19	0	4	0					
AM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	0	0	6	0	0	0					
8:00	Auto	10	31	10	622	20	39	6					
	2Axle T/B	0	2	0	17	0	2	2					
AM	3Axle T/B	1	0	0	2	0	3	0					
	Bike	0	0	0	3	0	2	0					
8:15	Auto	5	27	7	625	35	34	22					
	2Axle T/B	0	1	1	21	0	2	0					
AM	3Axle T/B	0	0	0	0	0	1	0					
	Bike	0	1	0	4	0	0	0					
8:30	Auto	6	22	9	548	23	35	5					
	2Axle T/B	0	2	0	11	1	0	0					
AM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	1	0	6	0	0	0					
8:45	Auto	14	34	10	536	15	32	4					
	2Axle T/B	0	1	1	21	0	3	0					
AM	3Axle T/B	0	0	2	4	1	0	0					
	Bike	0	0	0	2	0	0	0					
9:00	Auto	6	21	10	511	16	33	2					
	2Axle T/B	0	1	1	32	0	0	0					
AM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	2	0	5	1	0	0					
9:15	Auto	7	23	9	420	22	27	7					
	2Axle T/B	0	1	0	15	0	3	0					
AM	3Axle T/B	0	0	1	2	0	0	0					
	Bike	0	0	0	4	0	0	0					
9:30	Auto	8	20	5	404	14	36	5					
	2Axle T/B	0	2	0	20	3	3	0					
AM	3Axle T/B	0	0	0	3	0	0	0					
	Bike	0	0	0	2	2	0	0					

2 Axle T/B - 2 Axle Trucks/ Buses, 3 Axle T/B - 3 Axle Trucks/ Buses

Location: #4) WB Queens Blvd & 43rd St

Surveyors: _____ **Weather:** 0 **Date:** 4/6/2011

Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
12:15	Auto	8	19	6	184	7	17	8					
	2Axle T/B	0	0	1	10	2	0	0					
PM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	1	0	2	0	0	0					
12:30	Auto	10	26	4	196	21	21	11					
	2Axle T/B	0	1	0	11	1	1	0					
PM	3Axle T/B	0	0	0	1	0	2	0					
	Bike	0	0	0	3	0	0	0					
12:45	Auto	11	31	7	212	32	21	2					
	2Axle T/B	1	0	0	14	0	2	0					
PM	3Axle T/B	0	0	0	5	0	0	0					
	Bike	0	0	0	3	0	0	0					
1:00	Auto	8	20	2	145	11	29	6					
	2Axle T/B	1	0	0	12	1	1	0					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	0	1	0	0	0					
1:15	Auto	12	27	14	190	14	30	8					
	2Axle T/B	1	1	0	10	3	0	0					
PM	3Axle T/B	0	0	0	1	0	1	0					
	Bike	0	0	0	2	0	0	0					
1:30	Auto	8	36	4	208	15	41	5					
	2Axle T/B	0	1	0	15	1	1	1					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	1	0	3	0	0	0					
1:45	Auto	10	26	5	164	16	21	2					
	2Axle T/B	0	0	0	10	0	1	0					
PM	3Axle T/B	0	0	0	0	1	1	0					
	Bike	0	1	0	4	0	1	0					
2:00	Auto	8	31	5	192	8	12	3					
	2Axle T/B	0	3	0	9	1	1	0					
PM	3Axle T/B	0	1	0	2	1	1	0					
	Bike	0	0	0	2	0	1	0					

Location: #4) WB Queens Blvd & 43rd St

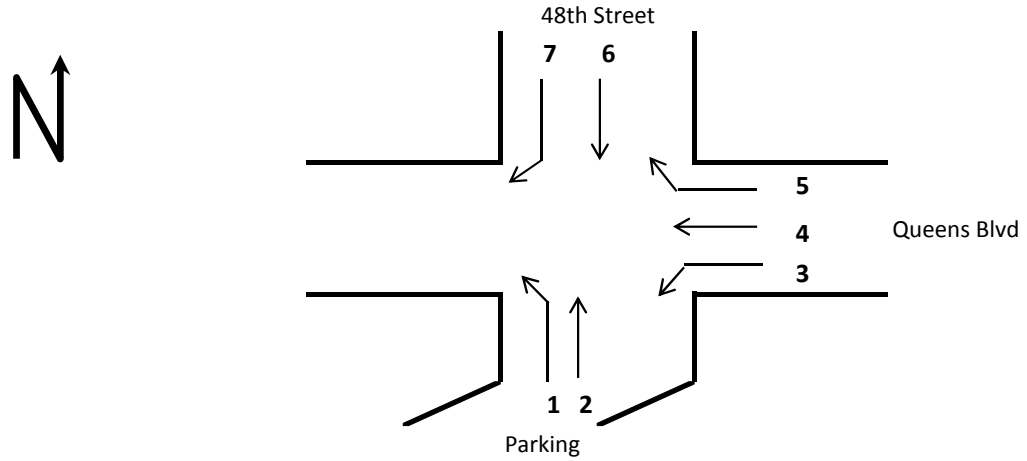
Surveyors: _____ **Weather:** 0 **Date:** 4/6/2011

Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
3:45	Auto	6	26	3	187	19	42	5					
	2Axle T/B	0	0	0	14	1	0	0					
PM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	0	0	4	0	2	0					
4:00	Auto	10	37	8	199	11	36	6					
	2Axle T/B	0	0	0	7	2	3	0					
PM	3Axle T/B	0	1	0	0	1	0	0					
	Bike	0	1	0	1	0	1	1					
4:15	Auto	9	41	6	208	9	47	3					
	2Axle T/B	0	2	0	9	3	4	0					
PM	3Axle T/B	0	0	0	3	0	0	0					
	Bike	0	0	1	3	0	1	0					
4:30	Auto	10	37	7	219	13	40	9					
	2Axle T/B	2	0	0	8	0	3	0					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	0	2	0	2	0					
4:45	Auto	6	33	4	221	9	29	2					
	2Axle T/B	0	0	0	16	0	1	0					
PM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	0	0	3	0	0	0					
5:00	Auto	8	39	5	217	11	48	5					
	2Axle T/B	0	0	0	14	0	2	0					
PM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	0	1	4	0	1	0					
5:15	Auto	18	54	5	236	10	56	8					
	2Axle T/B	0	1	0	8	0	2	0					
PM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	0	0	4	0	0	0					
5:30	Auto	10	35	11	238	18	57	8					
	2Axle T/B	0	0	1	5	0	1	1					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	1	2	0	0	1					

Location: #3) WB Queens Blvd & 48th Street

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011 **pg 1**

Sketch



Time End	Class	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:45	Auto	0	1	2	613	23	2	29					
	2Axle T/B	0	0	0	22	0	0	0					
AM	3Axle T/B	0	0	0	2	0	0	1					
	Bike	0	0	0	4	0	0	0					
8:00	Auto	1	2	2	628	14	2	16					
	2Axle T/B	0	0	0	24	0	0	2					
AM	3Axle T/B	0	0	0	1	0	0	2					
	Bike	0	0	0	3	0	0	0					
8:15	Auto	0	2	0	582	27	2	27					
	2Axle T/B	0	0	0	14	0	0	2					
AM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	0	0	5	0	0	0					
8:30	Auto	0	2	0	537	14	5	20					
	2Axle T/B	0	0	0	15	1	0	1					
AM	3Axle T/B	0	0	0	3	0	0	0					
	Bike	0	1	0	2	1	0	0					
8:45	Auto	0	3	3	539	17	1	21					
	2Axle T/B	0	0	0	19	0	0	0					
AM	3Axle T/B	0	0	0	5	0	0	0					
	Bike	0	0	0	3	0	0	0					
9:00	Auto	0	0	0	474	29	2	32					
	2Axle T/B	0	0	0	30	0	0	3					
AM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	0	0	3	0	0	0					
9:15	Auto	0	0	2	428	21	1	23					
	2Axle T/B	0	0	0	19	1	0	2					
AM	3Axle T/B	0	0	0	1	0	0	1					
	Bike	0	1	0	3	1	0	0					
9:30	Auto	0	2	1	389	15	2	27					
	2Axle T/B	0	0	0	23	1	0	4					
AM	3Axle T/B	0	0	0	3	0	0	0					
	Bike	0	0	1	4	0	0	0					

2 Axle T/B - 2 Axle Trucks/ Buses, 3 Axle T/B - 3 Axle Trucks/ Buses

Location: #3) WB Queens Blvd & 48th Street

Surveyors: _____ **Weather:** 0 **Date:** 4/6/2011

Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
12:15	Auto	2	2	0	200	27	1	26					
	2Axle T/B	0	0	0	11	0	0	3					
PM	3Axle T/B	0	0	0	0	0	0	1					
	Bike	0	0	2	1	0	0	1					
12:30	Auto	1	1	0	200	16	4	21					
	2Axle T/B	0	0	0	9	1	0	2					
PM	3Axle T/B	0	0	0	3	0	0	0					
	Bike	0	0	0	4	0	0	0					
12:45	Auto	1	1	1	211	21	2	25					
	2Axle T/B	0	0	0	15	0	0	2					
PM	3Axle T/B	0	0	0	2	0	0	1					
	Bike	0	0	1	7	0	0	1					
1:00	Auto	1	2	0	201	29	1	17					
	2Axle T/B	0	0	0	15	0	0	3					
PM	3Axle T/B	0	0	0	1	0	0	1					
	Bike	0	1	2	2	0	1	0					
1:15	Auto	0	0	1	188	13	2	22					
	2Axle T/B	0	0	0	9	2	0	0					
PM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	0	1	2	0	0	1					
1:30	Auto	2	1	2	211	22	2	27					
	2Axle T/B	0	0	0	13	1	0	2					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	0	4	1	1	0					
1:45	Auto	1	2	2	193	22	1	22					
	2Axle T/B	0	0	0	14	0	0	1					
PM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	0	1	0	2	0	0					
2:00	Auto	1	0	1	204	23	1	20					
	2Axle T/B	0	0	0	7	0	0	3					
PM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	0	0	4	0	0	0					

Location: #3) WB Queens Blvd & 48th Street

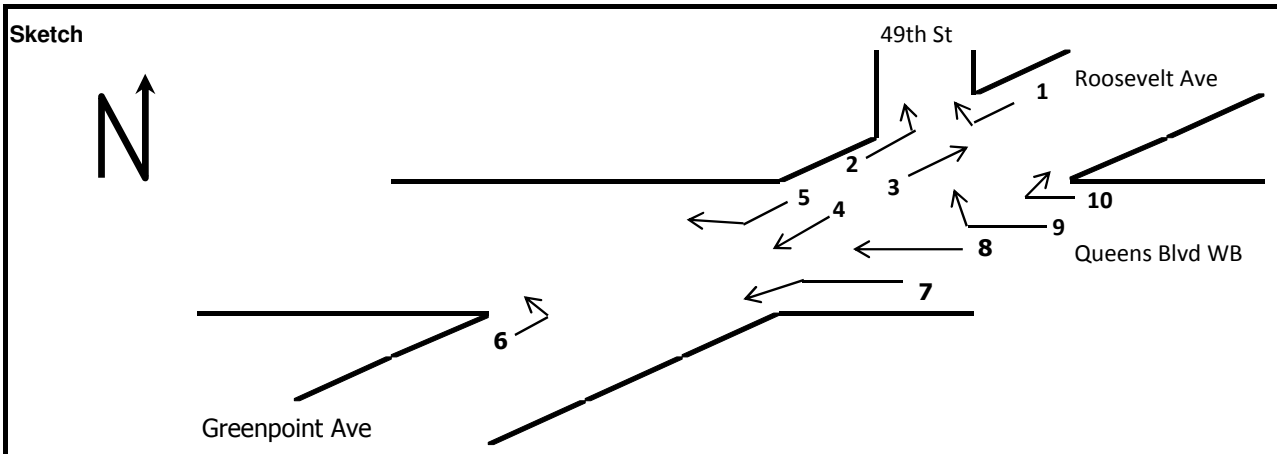
Surveyors: _____ **Weather:** 0 **Date:** 4/6/2011

Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
3:45	Auto	3	0	0	237	26	6	20					
	2Axle T/B	0	0	0	14	1	0	2					
PM	3Axle T/B	0	0	0	2	0	0	0					
	Bike	0	0	0	2	0	1	0					
4:00	Auto	1	1	1	197	15	4	26					
	2Axle T/B	0	0	0	15	0	0	1					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	0	3	1	0	4	0					
4:15	Auto	1	1	1	224	16	3	23					
	2Axle T/B	0	0	0	6	0	0	0					
PM	3Axle T/B	0	0	0	3	0	0	0					
	Bike	0	0	0	1	0	0	0					
4:30	Auto	1	1	0	215	17	3	17					
	2Axle T/B	0	0	0	15	0	0	2					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	1	0	1	0	3	1					
4:45	Auto	1	4	0	226	16	1	24					
	2Axle T/B	0	0	0	9	0	0	2					
PM	3Axle T/B	0	0	0	1	0	0	1					
	Bike	0	2	0	2	0	0	0					
5:00	Auto	0	0	2	228	28	2	21					
	2Axle T/B	0	0	0	7	0	0	1					
PM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	2	0	1	0	0	0					
5:15	Auto	1	1	3	226	12	0	28					
	2Axle T/B	0	0	0	9	0	0	2					
PM	3Axle T/B	0	0	0	0	0	0	0					
	Bike	0	2	0	4	0	3	0					
5:30	Auto	1	2	4	239	18	0	27					
	2Axle T/B	0	0	0	5	1	0	1					
PM	3Axle T/B	0	0	0	1	0	0	0					
	Bike	0	1	0	1	0	3	1					

Location: 2) WB Queens Blvd & 49th St / Greenpoint Ave / Rosevelt Ave

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011 **pg 1**

Sketch



Time		Movement Number											
End	Class	1	2	3	4	5	6	7	8	9	10	11	12
7:45	Auto	3	1	17	22	25	3	51	672	2	2		
	2Axle T/B	0	0	3	2	1	0	2	12	1	0		
AM	3Axle T/B	0	0	0	1	2	0	1	2	0	1		
	Bike	0	0	1	1	3	0	0	3	0	0		
8:00	Auto	5	3	28	23	13	0	44	668	1	3		
	2Axle T/B	0	0	4	2	1	0	1	24	0	0		
AM	3Axle T/B	0	0	1	0	0	0	0	1	0	0		
	Bike	0	0	2	2	1	0	2	3	0	0		
8:15	Auto	7	3	37	26	23	0	39	615	2	2		
	2Axle T/B	0	0	4	1	2	0	2	13	0	0		
AM	3Axle T/B	0	0	2	0	0	0	0	0	0	0		
	Bike	0	0	2	4	2	0	0	6	0	0		
8:30	Auto	3	3	41	12	25	1	41	536	1	1		
	2Axle T/B	0	0	4	2	2	0	1	13	0	0		
AM	3Axle T/B	0	0	1	0	0	0	2	2	0	0		
	Bike	0	0	3	1	0	0	0	3	0	1		
8:45	Auto	2	0	39	16	20	0	30	568	2	1		
	2Axle T/B	0	0	4	2	3	0	3	17	0	0		
AM	3Axle T/B	0	0	0	1	1	0	0	4	0	0		
	Bike	0	0	1	2	0	0	0	3	0	0		
9:00	Auto	4	0	33	19	18	1	45	508	2	3		
	2Axle T/B	0	0	4	3	4	0	0	26	0	0		
AM	3Axle T/B	0	0	1	1	1	0	2	1	0	0		
	Bike	0	0	0	0	1	0	1	2	0	0		
9:15	Auto	0	0	30	12	32	0	30	434	1	2		
	2Axle T/B	0	0	6	3	3	0	2	18	0	0		
AM	3Axle T/B	0	0	1	0	1	0	1	1	0	0		
	Bike	0	0	1	1	1	0	0	3	1	1		
9:30	Auto	9	2	26	14	10	2	41	409	3	0		
	2Axle T/B	0	1	1	1	3	0	2	18	0	0		
AM	3Axle T/B	0	0	0	1	2	0	0	1	0	0		
	Bike	0	0	0	2	0	0	0	1	3	0		

2 Axle T/B - 2 Axle Trucks/ Buses, 3 Axle T/B - 3 Axle Trucks/ Buses

PEDESTRIAN COUNTS

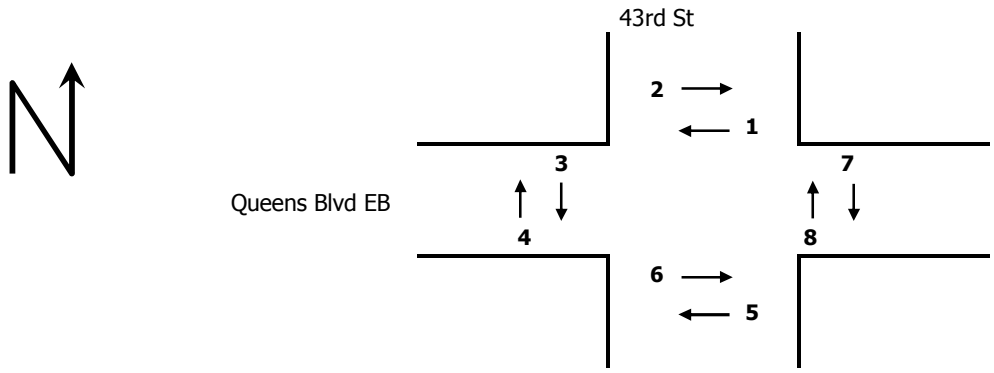
AMERICAN TRAFFIC INFORMATION, INC.

PEDESTRIAN COUNTS (BY DIRECTION)

(NYCDOT; #11117)

Location: #5) EB Queens Blvd & 43rd St

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011



Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:45	3	0	0	4	21	6	3	5				
8:00	2	0	5	5	17	16	6	10				
8:15	1	0	3	4	11	21	2	10				
8:30	2	2	4	3	21	17	1	4				
8:45	2	1	3	4	21	11	5	5				
9:00	0	0	3	1	14	8	3	0				
9:15	1	2	4	7	17	21	5	3				
9:30	1	0	1	3	16	24	3	3				
12:15	1	2	0	6	24	35	1	2				
12:30	2	1	2	7	34	43	6	11				
12:45	1	2	3	5	37	40	4	4				
1:00	2	10	3	9	30	51	9	10				
1:15	2	1	7	2	44	59	10	2				
1:30	1	0	5	4	47	53	5	14				
1:45	4	3	6	7	29	41	4	11				
2:00	2	1	3	6	28	43	6	6				
3:45	0	0	2	6	22	34	10	6				
4:00	1	3	9	7	27	32	3	5				
4:15	0	1	1	1	26	46	5	4				
4:30	1	1	3	3	17	62	4	8				
4:45	3	5	4	4	36	51	1	3				
5:00	2	2	3	2	33	44	0	2				
5:15	1	3	6	0	28	34	9	8				
5:30	2	5	4	5	20	35	8	5				

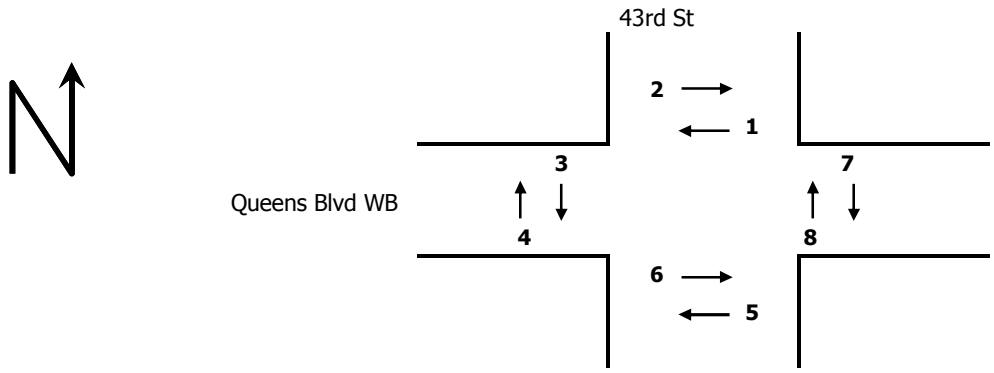
AMERICAN TRAFFIC INFORMATION, INC.

PEDESTRIAN COUNTS (BY DIRECTION)

(NYCDOT; #11117)

Location: #4) WB Queens Blvd & 43rd St

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011



Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:45	13	6	0	5	6	8	13	4				
8:00	57	9	9	13	4	4	12	5				
8:15	38	10	12	9	1	2	11	11				
8:30	34	11	11	1	0	8	12	13				
8:45	23	11	3	4	4	6	11	12				
9:00	22	24	6	5	8	5	10	9				
9:15	28	14	10	12	1	4	13	17				
9:30	11	12	10	5	3	0	17	18				
12:15	33	42	6	4	4	6	14	12				
12:30	34	32	4	1	7	4	15	9				
12:45	34	34	9	7	2	3	9	7				
1:00	28	31	8	5	0	5	12	13				
1:15	22	33	11	9	9	8	12	18				
1:30	36	38	7	5	4	1	11	8				
1:45	23	46	6	6	5	9	17	11				
2:00	39	29	7	6	7	1	9	12				
3:45	36	36	6	1	4	6	14	18				
4:00	22	32	11	13	2	9	10	9				
4:15	38	34	2	5	6	4	18	6				
4:30	30	20	2	3	8	3	12	15				
4:45	23	39	9	6	0	7	16	12				
5:00	26	31	6	4	3	1	12	11				
5:15	29	27	4	2	8	4	11	13				
5:30	17	36	2	0	6	5	13	10				

AMERICAN TRAFFIC INFORMATION, INC.

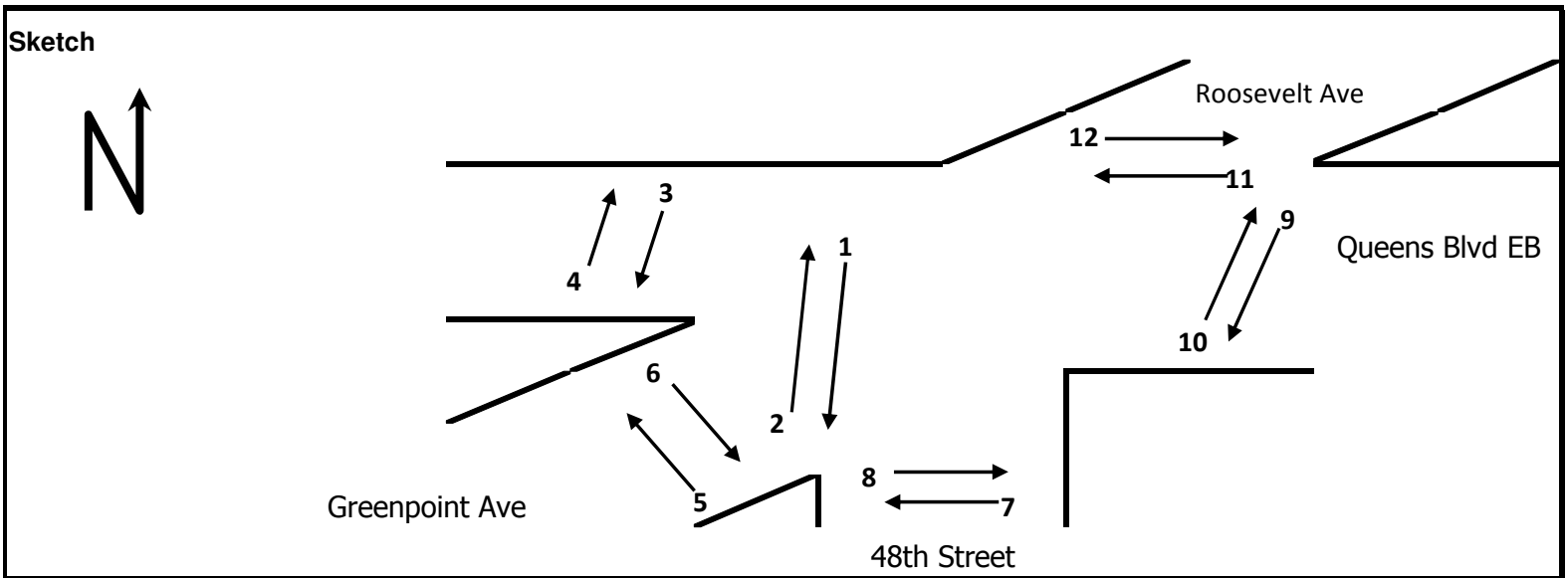
PEDESTRIAN COUNTS (BY DIRECTION)

(NYCDOT; #11117)

Location: #1) EB Queens Blvd & 48th St/Greenpoint Ave/Roosevelt Ave

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011

Sketch



Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:45	4	3	8	9	31	8	21	5	21	19	8	2
8:00	3	3	4	10	44	16	30	5	10	7	6	4
8:15	4	2	12	10	47	4	36	6	21	6	10	3
8:30	3	4	16	16	59	7	50	12	46	13	9	2
8:45	1	2	7	6	43	12	23	10	10	5	3	0
9:00	1	0	11	6	44	6	21	16	8	3	2	3
9:15	1	1	1	2	32	4	19	14	6	4	2	3
9:30	1	0	4	6	43	8	38	11	12	10	6	2

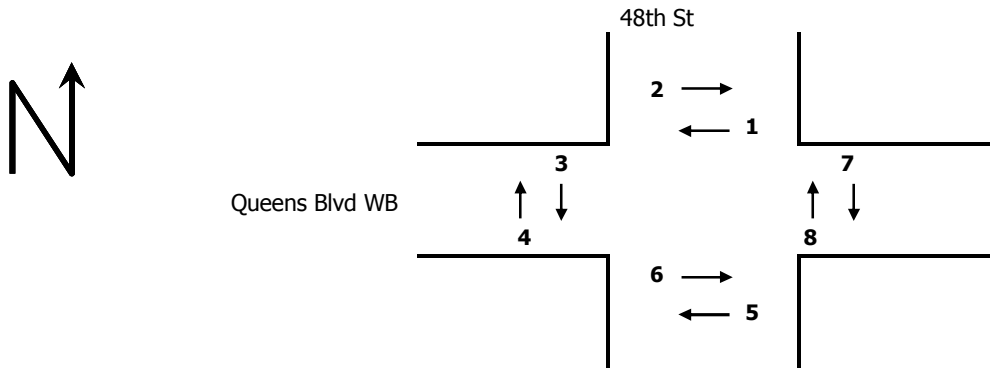
AMERICAN TRAFFIC INFORMATION, INC.

PEDESTRIAN COUNTS (BY DIRECTION)

(NYCDOT; #11117)

Location: #3) WB Queens Blvd & 48th Street

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011



Time End	Movement Number 1	2	3	4	5	6	7	8	9	10	11	12
7:45	47	16	21	2	10	0	26	16				
8:00	47	12	17	2	12	2	32	8				
8:15	73	12	17	6	9	3	27	9				
8:30	50	22	9	6	14	1	35	9				
8:45	42	19	6	3	11	1	26	5				
9:00	57	21	3	10	6	2	27	1				
9:15	32	20	13	4	4	1	7	5				
9:30	36	15	8	3	2	3	14	12				
12:15	37	41	10	3	3	3	16	10				
12:30	29	34	2	3	1	1	6	11				
12:45	45	41	18	8	5	4	20	11				
1:00	40	55	10	3	6	8	17	8				
1:15	48	45	8	11	2	1	7	17				
1:30	29	56	11	16	2	0	17	6				
1:45	54	42	14	3	1	2	21	13				
2:00	46	34	7	5	1	2	20	12				
3:45	54	49	21	6	5	1	18	14				
4:00	35	45	12	7	2	5	29	12				
4:15	56	72	31	11	3	12	20	20				
4:30	41	56	10	3	0	8	24	14				
4:45	32	55	20	7	3	6	31	28				
5:00	55	40	30	11	1	5	23	10				
5:15	58	36	22	13	0	12	14	26				
5:30	34	54	18	11	1	7	8	20				

AMERICAN TRAFFIC INFORMATION, INC.

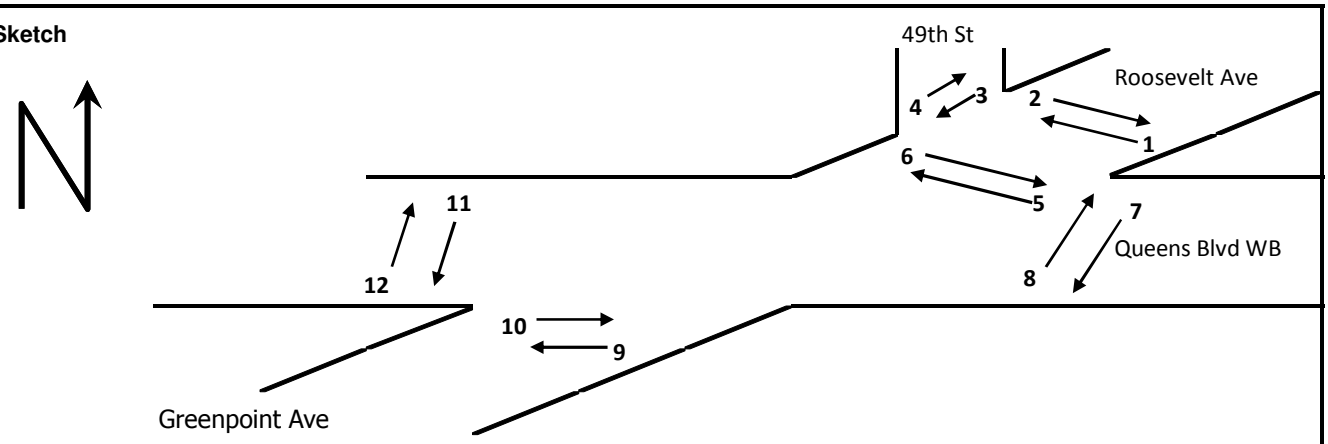
PEDESTRIAN COUNTS (BY DIRECTION)

(NYCDOT; #11117)

Location: #2) WB Queens Blvd & 49th St / Greenpoint Ave / Roosevelt Ave

Surveyors: _____ **Weather:** _____ **Date:** 4/6/2011

Sketch



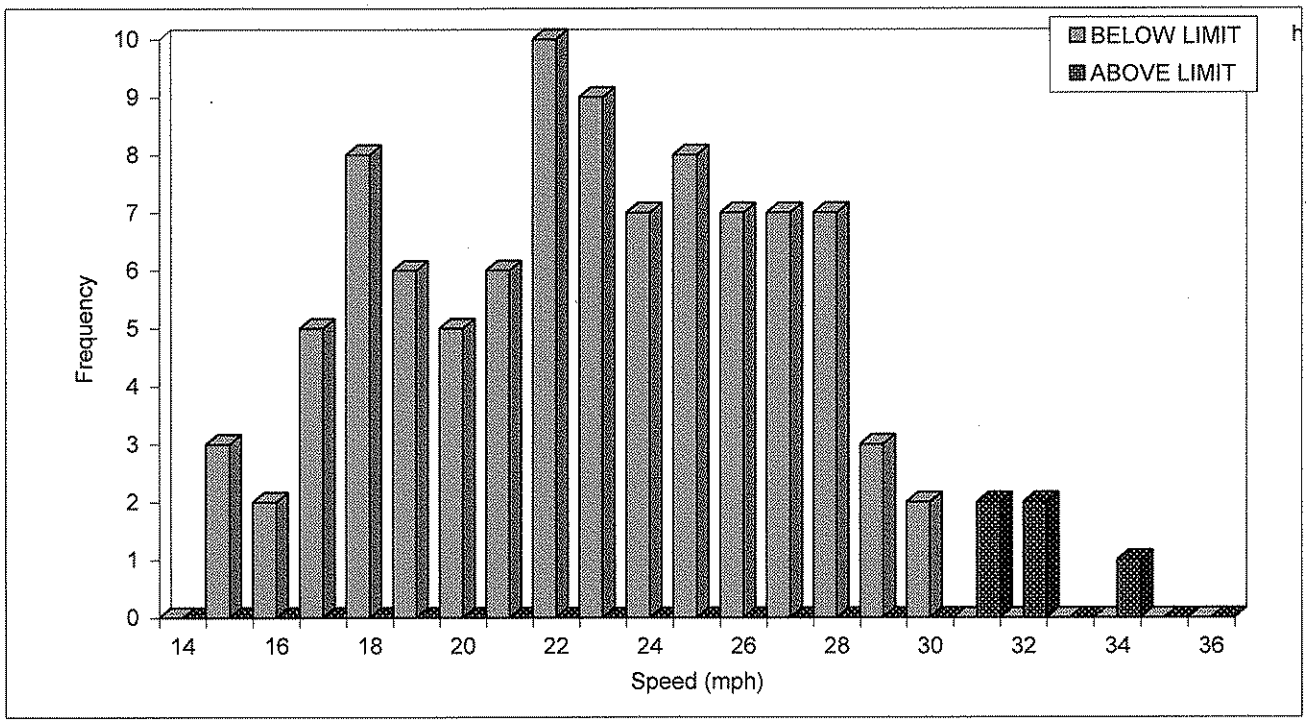
Time End	Movement Number											
	1	2	3	4	5	6	7	8	9	10	11	12
7:45	2	4	22	18	2	2	12	11	0	2	6	12
8:00	2	1	27	8	1	1	9	8	2	4	18	11
8:15	1	2	24	4	0	0	6	15	6	5	18	5
8:30	3	5	43	14	0	0	6	45	5	0	17	3
8:45	1	2	15	6	0	0	5	7	1	0	7	4
9:00	2	0	28	7	2	1	6	10	0	1	11	2
9:15	2	1	22	19	0	0	5	6	2	0	4	4
9:30	1	4	16	10	1	0	5	7	2	3	3	5

SPOT SPEED SURVEY

RADAR SPEED SURVEY

Arterial: SKILLMAN AV W/B From: 52 ST To: 51 ST

Boro:	QN	Average Speed:	22.9 mph
Date:	05/22/10		
Day:	Sat.	15th Percentile:	18.0 mph
Weather:	Clear	50th Percentile:	23.0 mph
Time:	1:50 PM - 2:19 PM	85th Percentile:	28.0 mph
Speed Limit:	30 mph	Above Speed Limit:	5.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	34.0 mph
Type of Roadway:	One-way	Pace:	18.0 - 28.0 mph
Width of Road by Direction:	44'	In Pace:	80.0 %
Number of Moving Lanes:	2	Below Pace:	10.0 %
Number of Parking Lanes:	2	Above Pace:	10.0 %
Observer:	Berliner V	Standard Deviation:	4.9 mph



RADAR SPEED SURVEY

Arterial: SKILLMAN AV
Direction: WEST
From: 52 ST
To: 51 ST
Boro: QUEENS
Date: 05.22.10
Weather: CLEAR
Time: 1:50 PM – 2:19 PM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 44'
Truck Route: Y ( ) or N (X)
# of Moving Lanes: 2
Bus Route: Y ( ) or N (X)
# of Parking Lanes: 2
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South East West ↑

Speeds:	1	2	3	4	5	6	7	8	9	10
	19	22	28	22	23	18	22	28	26	31
10	22	25	22	21	17	16	18	32	27	25
20	20	19	19	28	23	28	26	25	18	17
30	27	28	18	19	25	29	30	27	26	28
40	21	25	19	18	17	25	16	20	24	23
50	19	15	21	18	22	29	22	23	24	15
60	31	23	27	28	25	26	27	26	32	24
70	23	26	21	22	24	18	24	18	21	22
80	23	27	15	20	17	17	23	22	34	29
90	25	24	23	20	21	24	30	20	27	26

(Circle One) North South East West

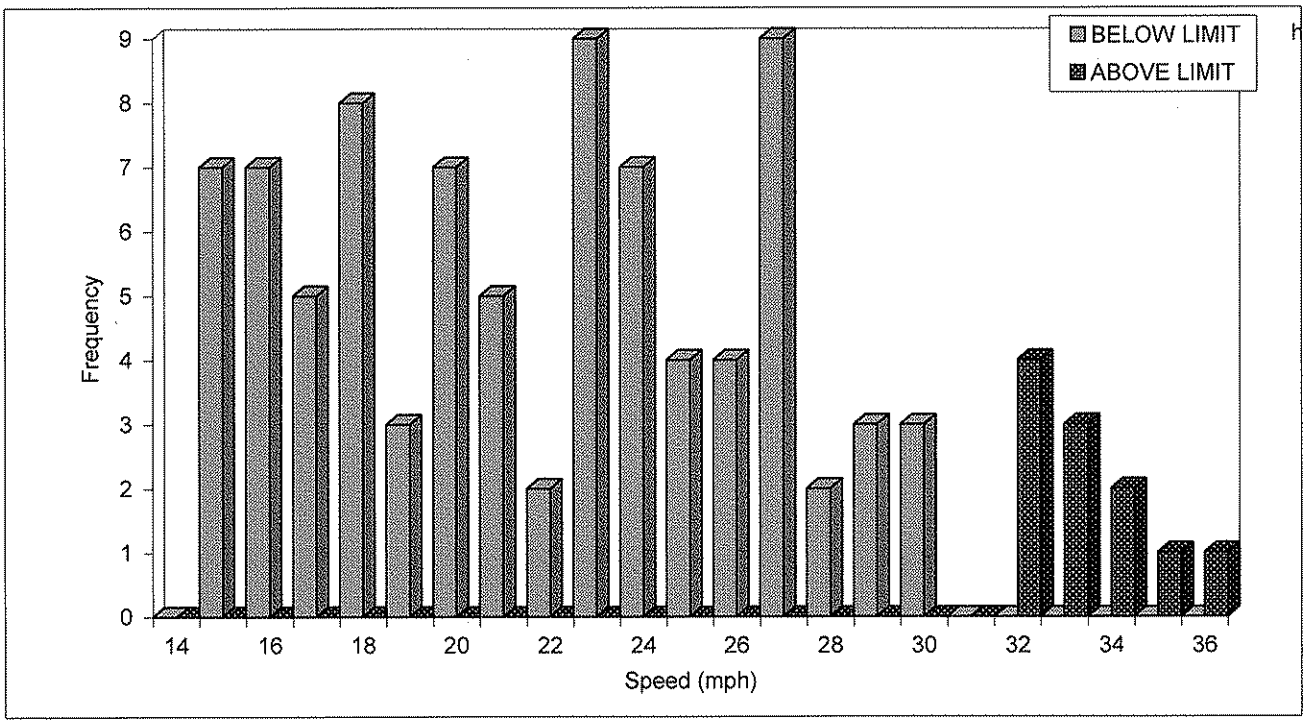
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments: _____

RADAR SPEED SURVEY

Arterial: 43 AV E/B From: 50 ST To: 51 ST

Boro:	QN	Average Speed:	23.7 mph
Date:	05/20/10		
Day:	Thu.	15th Percentile:	17.0 mph
Weather:	Clear	50th Percentile:	23.0 mph
Time:	11:25 AM - 11:54 AM	85th Percentile:	30.3 mph
Speed Limit:	30 mph	Above Speed Limit:	15.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	41.0 mph
Type of Roadway:	One-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	44'	In Pace:	64.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	36.0 %
Observer:	Berliner V	Standard Deviation:	6.4 mph



RADAR SPEED SURVEY

Arterial: 43 AV
Direction: EAST
From: 50 ST
To: 51 ST
Boro: QUEENS
Date: 05.20.10
Weather: CLEAR
Time: 11:25AM – 11:54AM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 44'
Truck Route: Y ( ) or N (X) ?
# of Moving Lanes: 2
Bus Route: Y ( ) or N (X)
# of Parking Lanes: 2
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South (East) ↑ West

Speeds:	1	2	3	4	5	6	7	8	9	10
	33	35	27	29	25	39	18	23	23	27
10	30	21	32	27	34	24	21	22	16	23
20	27	19	20	20	40	32	33	25	27	15
30	20	18	32	23	17	16	20	25	24	34
40	18	23	28	18	16	23	24	21	25	15
50	20	21	24	21	20	26	19	15	17	24
60	23	15	15	16	37	19	15	16	17	18
70	20	24	26	27	33	26	16	26	24	22
80	17	23	32	29	28	27	27	17	18	29
90	30	15	41	18	18	27	36	30	16	23

(Circle One) North South East West

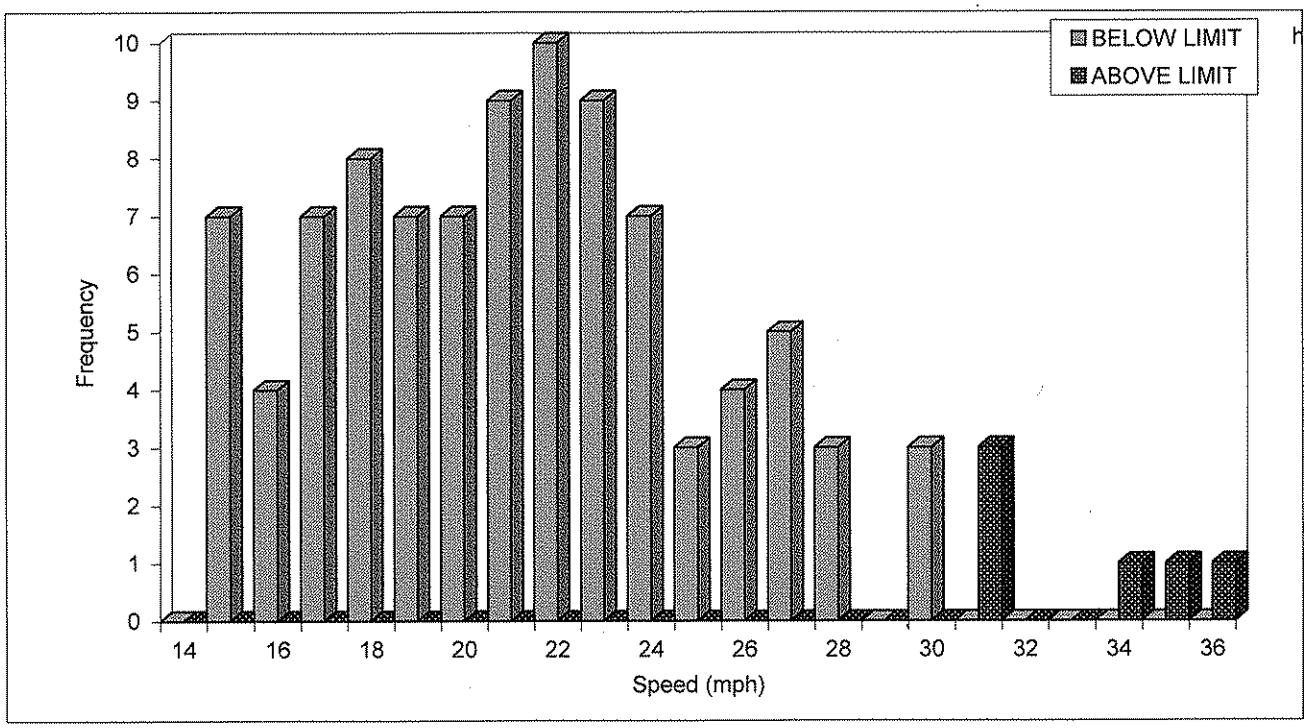
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments: _____

RADAR SPEED SURVEY

Arterial: 43 AV E/B From: 50 ST To: 51 ST

Boro:	QN	Average Speed:	22.2 mph
Date:	05/22/10		
Day:	Sat.	15th Percentile:	17.0 mph
Weather:	Clear	50th Percentile:	22.0 mph
Time:	12:50 pm - 1:16 pm	85th Percentile:	27.0 mph
Speed Limit:	30 mph	Above Speed Limit:	7.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	41.0 mph
Type of Roadway:	One-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	44'	In Pace:	78.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	22.0 %
Observer:	Berliner V	Standard Deviation:	5.1 mph



RADAR SPEED SURVEY

Arterial: 43 AVE
Direction: EAST
From: 50 ST
To: 51 ST
Boro: QUEENS
Date: 05.22.10
Weather: CLEAR
Time: 12:50PM - 1:16PM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 44'
Truck Route: Y ( ) or N (X) ?
# of Moving Lanes: 2
Bus Route: Y ( ) or N (X)
# of Parking Lanes: 2
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South (East) ↑ West

Speeds:	1	2	3	4	5	6	7	8	9	10
	17	18	23	22	21	17	28	31	23	22
10	23	34	30	21	15	30	35	21	27	20
20	22	28	15	18	26	24	16	30	41	36
30	20	24	27	26	20	24	15	22	26	19
40	17	19	21	31	21	22	18	19	23	16
50	15	16	19	18	17	25	18	22	23	19
60	20	27	21	24	23	22	23	16	15	15
70	31	27	25	17	18	21	20	23	22	22
80	19	20	21	21	15	23	26	24	28	24
90	27	20	19	18	17	25	22	24	18	17

(Circle One) North South East West

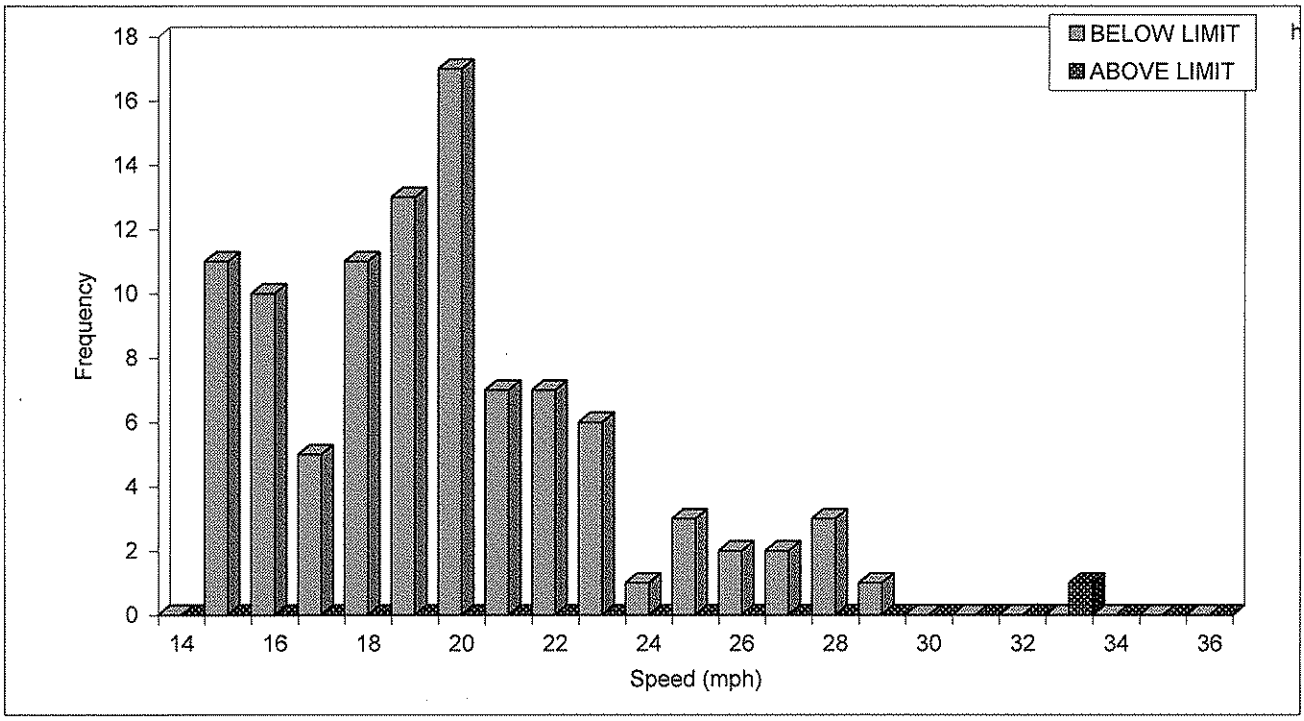
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments: _____

RADAR SPEED SURVEY

Arterial: WESTCHESTER AV E/B From: CAULDWELL AV To: TRINITY AV

Boro:	BX	Average Speed:	19.9 mph
Date:	05/22/10		
Day:	Sat.	15th Percentile:	16.0 mph
Weather:	Clear	50th Percentile:	19.5 mph
Time:	10:50 AM - 11:32 AM	85th Percentile:	23.0 mph
Speed Limit:	30 mph	Above Speed Limit:	1.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	33.0 mph
Type of Roadway:	Two-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	35'	In Pace:	91.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	1	Above Pace:	9.0 %
Observer:	Berliner V	Standard Deviation:	3.7 mph



RADAR SPEED SURVEY

Arterial: WESTCHESTER AV
Direction: EAST
From: CAULDWELL AV
To: TRINITY AV
Boro: BX
Date: 05.22.10
Weather: CLEAR
Time: 10:50 AM – 11:32 AM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 34 - 36
Truck Route: Y ( ) or N (X) ?
# of Moving Lanes: 2
Bus Route: Y (X) or N (X)
# of Parking Lanes: 1
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South East West

Speeds:	1	2	3	4	5	6	7	8	9	10
	22	15	33	21	20	19	18	19	20	18
10	23	20	17	18	17	15	19	28	21	23
20	20	19	18	19	22	20	16	15	15	16
30	18	19	20	16	25	23	18	20	18	15
40	20	21	20	16	15	18	16	20	28	20
50	25	19	22	23	17	15	16	15	20	18
60	15	19	16	26	21	19	20	19	27	28
70	20	21	17	18	15	21	20	22	16	23
80	16	19	22	20	26	20	19	19	22	25
90	16	29	15	18	27	21	22	23	24	17

(Circle One) North South East West

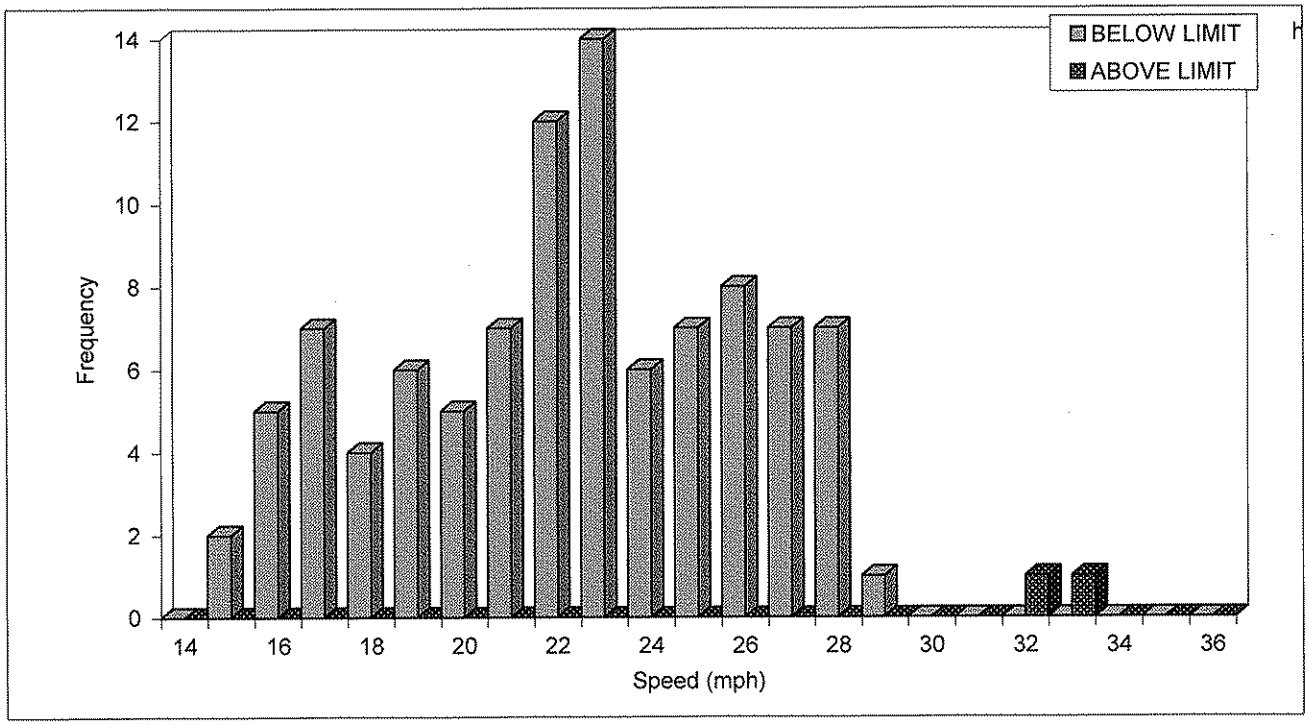
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments: INTERSECTION OF WESTCHESTER AV & TRINITY AV
WEST BOUND WESTCHESTER AV – BIG POT HOLE –
EFFECT BOTH WAYS TRAFFIC SPEED

RADAR SPEED SURVEY

Arterial: SKILLMAN AV W/B From: 52 ST To: 51 ST

Boro:	BX	Average Speed:	22.5 mph
Date:	05/20/10		
Day:	Thu.	15th Percentile:	18.0 mph
Weather:	Clear	50th Percentile:	23.0 mph
Time:	10:45 AM - 11:16 AM	85th Percentile:	27.0 mph
Speed Limit:	30 mph	Above Speed Limit:	2.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	33.0 mph
Type of Roadway:	One-way	Pace:	17.0 - 27.0 mph
Width of Road by Direction:	44'	In Pace:	83.0 %
Number of Moving Lanes:	2	Below Pace:	7.0 %
Number of Parking Lanes:	2	Above Pace:	10.0 %
Observer:	Berliner V	Standard Deviation:	3.9 mph



RADAR SPEED SURVEY

Arterial: SKILLMAN AV
Direction: WEST
From: 52 ST
To: 51 ST
Boro: QUEENS
Date: 05.20.10
Weather: CLEAR
Time: 10:45 AM - 11:16 AM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 44'
Truck Route: Y ( ) or N (X) ?
# of Moving Lanes: 2
Bus Route: Y ( ) or N (X)
# of Parking Lanes: 2
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South East (West)

Speeds:	1	2	3	4	5	6	7	8	9	10
	18	16	22	23	27	16	19	26	27	28
10	21	23	23	24	22	19	28	25	21	22
20	22	19	27	21	26	23	25	18	17	23
30	27	22	23	27	28	15	23	27	22	17
40	17	20	16	17	20	23	15	22	20	21
50	23	29	23	16	24	32	25	26	22	20
60	17	28	26	24	22	23	18	17	28	19
70	26	22	24	22	23	19	24	25	26	18
80	20	19	21	21	22	33	25	26	28	28
90	16	17	23	27	26	21	23	25	24	21

(Circle One) North South East West

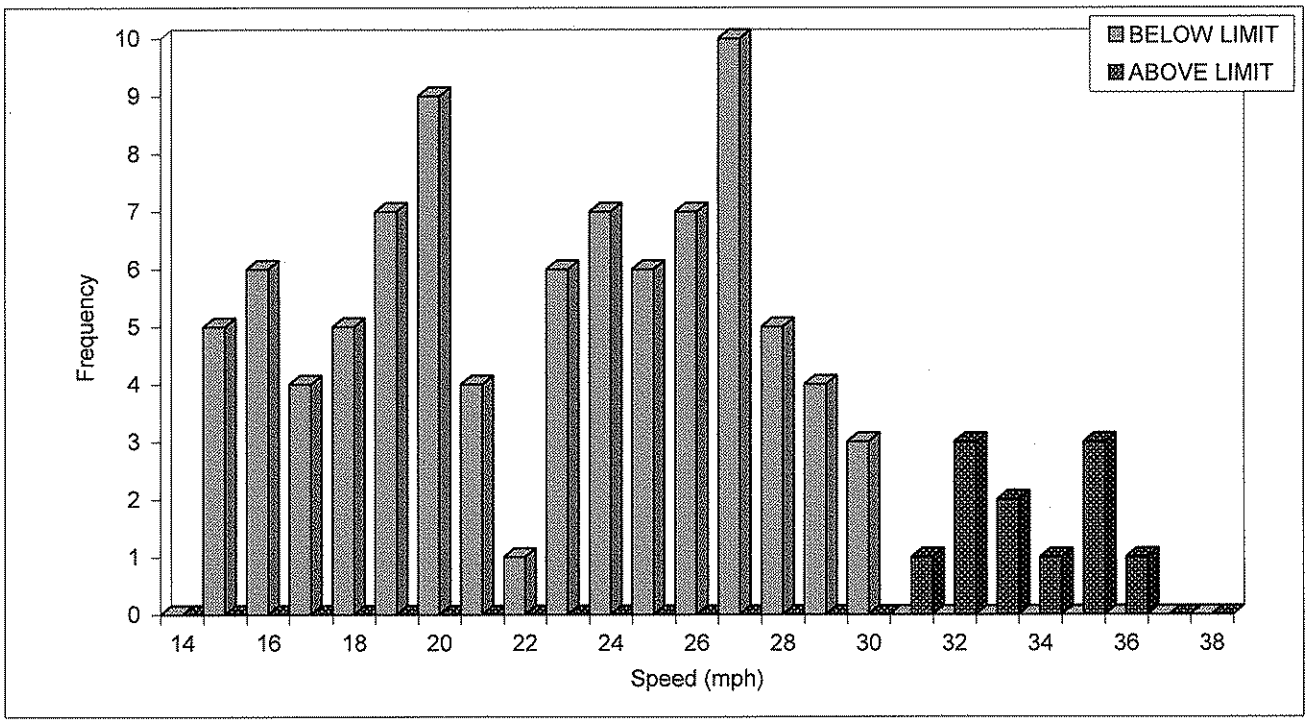
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments: _____

RADAR SPEED SURVEY

Arterial: SKILLMAN AV W/B From: 52 ST To: 51 ST

Boro:	QN	Average Speed:	23.7 mph
Date:	05/21/10		
Day:	Fri.	15th Percentile:	17.9 mph
Weather:	Clear	50th Percentile:	24.0 mph
Time:	1:20PM - 1:46PM	85th Percentile:	29.0 mph
Speed Limit:	30 mph	Above Speed Limit:	11.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	36.0 mph
Type of Roadway:	One-way	Pace:	18.0 - 28.0 mph
Width of Road by Direction:	44'	In Pace:	67.0 %
Number of Moving Lanes:	2	Below Pace:	15.0 %
Number of Parking Lanes:	2	Above Pace:	18.0 %
Observer:	Berliner V	Standard Deviation:	5.5 mph



RADAR SPEED SURVEY

Arterial: SKILLMAN AV
Direction: WEST
From: 52ST
To: 51ST
Boro: QUEENS
Date: 05.21.10
Weather: CLEAR
Time: 1:20PM – 1:46PM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 44'
Truck Route: Y ( ) or N (X)
# of Moving Lanes: 2
Bus Route: Y ( ) or N (X)
# of Parking Lanes: 2
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South East West ↑

Speeds:	1	2	3	4	5	6	7	8	9	10
	21	20	18	16	20	15	26	19	16	19
10	17	20	19	25	29	23	35	33	27	24
20	28	35	25	26	27	25	24	18	27	28
30	19	30	33	34	28	25	27	15	17	27
40	29	32	20	27	26	24	16	17	15	21
50	22	16	27	29	30	32	15	24	21	28
60	29	26	20	18	32	20	24	23	36	16
70	18	31	26	20	30	25	23	17	25	21
80	15	16	19	18	19	27	35	23	24	20
90	19	27	26	23	26	20	24	23	27	28

(Circle One) North South East West

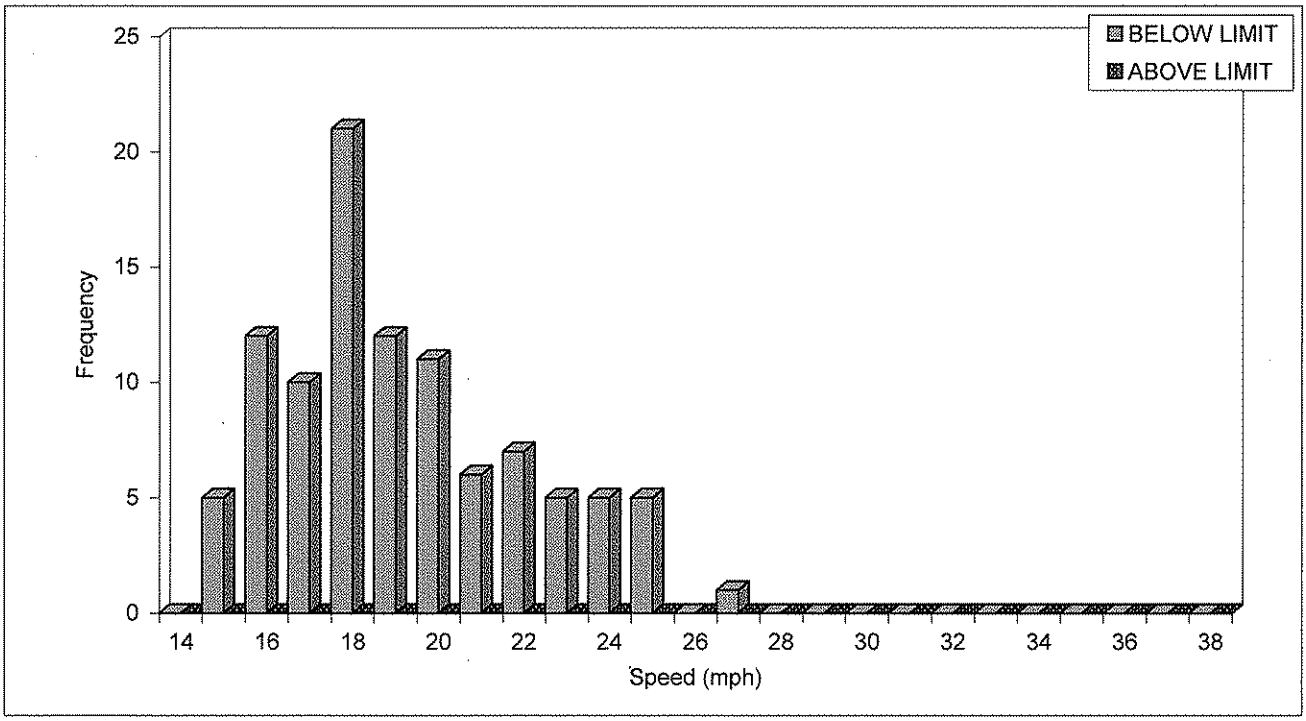
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments: _____

RADAR SPEED SURVEY

Arterial: WESTCHESTER AV W/B From: JACKSON AV To: TRINITY AV

Boro:	BX	Average Speed:	19.3 mph
Date:	05/21/10		
Day:	Fri.	15th Percentile:	16.0 mph
Weather:	Clear	50th Percentile:	19.0 mph
Time:	10:00 am - 10:38 am	85th Percentile:	23.0 mph
Speed Limit:	30 mph	Above Speed Limit:	0.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	27.0 mph
Type of Roadway:	Two-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	28'	In Pace:	99.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	1	Above Pace:	1.0 %
Observer:	Berliner V	Standard Deviation:	2.8 mph



RADAR SPEED SURVEY

Arterial: WESTCHESTER AV
Direction: WEST
From: JACKSON AV
To: TRINITY AV
Boro: BX
Date: 05.21.10
Weather: CLEAR
Time: 10:00 AM - 10:38 AM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 28'
Truck Route: Y ( ) or N (X) ?
# of Moving Lanes: 2
Bus Route: Y (X) or N ( )
# of Parking Lanes: 1
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South East West ↑

Speeds:	1	2	3	4	5	6	7	8	9	10
	17	18	17	19	24	27	24	20	18	18
10	25	19	20	20	19	22	21	17	19	16
20	16	20	19	18	16	18	22	21	17	15
30	21	20	16	18	25	24	23	18	16	22
40	23	18	16	16	24	25	16	17	25	18
50	15	22	19	18	18	19	19	18	16	17
60	18	21	25	23	21	18	21	22	17	20
70	18	22	23	19	18	15	18	16	19	15
80	22	20	19	18	20	18	19	20	18	23
90	24	20	17	16	17	18	17	16	15	20

(Circle One) North South East West

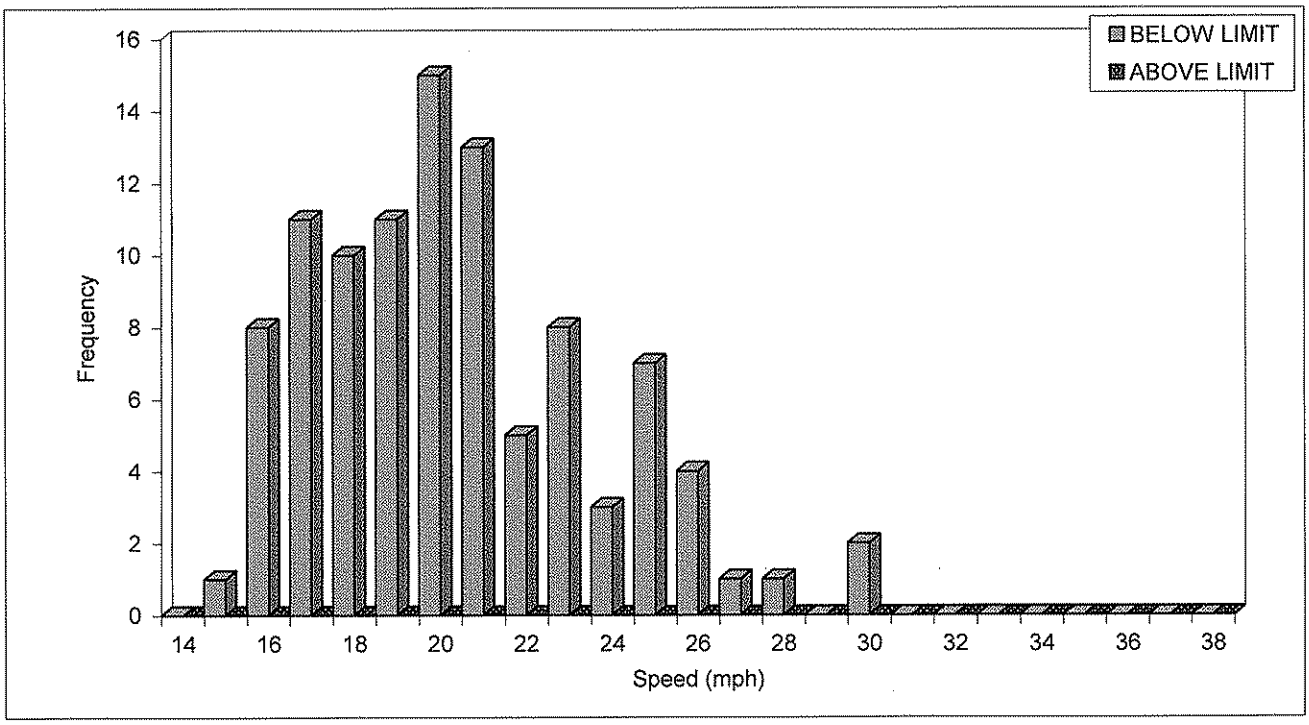
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments: _____

RADAR SPEED SURVEY

Arterial: WESTCHESTER AV E/B From: CAULDWELL AV To: TRINITY AV

Boro:	BX	Average Speed:	20.5 mph
Date:	05/21/10		
Day:	Fri.	15th Percentile:	17.0 mph
Weather:	Clear	50th Percentile:	20.0 mph
Time:	10:45 am - 11:32 am	85th Percentile:	24.2 mph
Speed Limit:	30 mph	Above Speed Limit:	0.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	30.0 mph
Type of Roadway:	Two-way	Pace:	16.0 - 26.0 mph
Width of Road by Direction:	35'	In Pace:	95.0 %
Number of Moving Lanes:	2	Below Pace:	1.0 %
Number of Parking Lanes:	1	Above Pace:	4.0 %
Observer:	Berliner V	Standard Deviation:	3.3 mph



RADAR SPEED SURVEY

Arterial: WESTCHESTER AV
Direction: EAST
From: CAULDWELL AV
To: TRINITY AV
Boro: BX
Date: 05.21.10
Weather: CLEAR
Time: 10:45 AM – 11:32 AM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 34'-36'
Truck Route: Y ( ) or N (X) ?
# of Moving Lanes: 1
Bus Route: Y (X) or N ( )
# of Parking Lanes: 1
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South East West

Speeds:	1	2	3	4	5	6	7	8	9	10
	21	19	25	20	24	17	21	20	15	17
10	27	20	19	17	22	17	16	17	16	21
20	20	24	22	23	22	21	19	26	25	18
30	17	18	23	19	23	21	20	19	17	16
40	20	19	21	30	23	21	17	16	20	25
50	17	22	23	16	18	20	25	26	30	21
60	19	18	21	23	20	21	19	23	18	16
70	21	18	20	23	26	20	21	25	26	20
80	18	21	19	28	25	16	18	17	19	17
90	20	18	20	24	25	20	16	22	18	19

(Circle One) North South East West

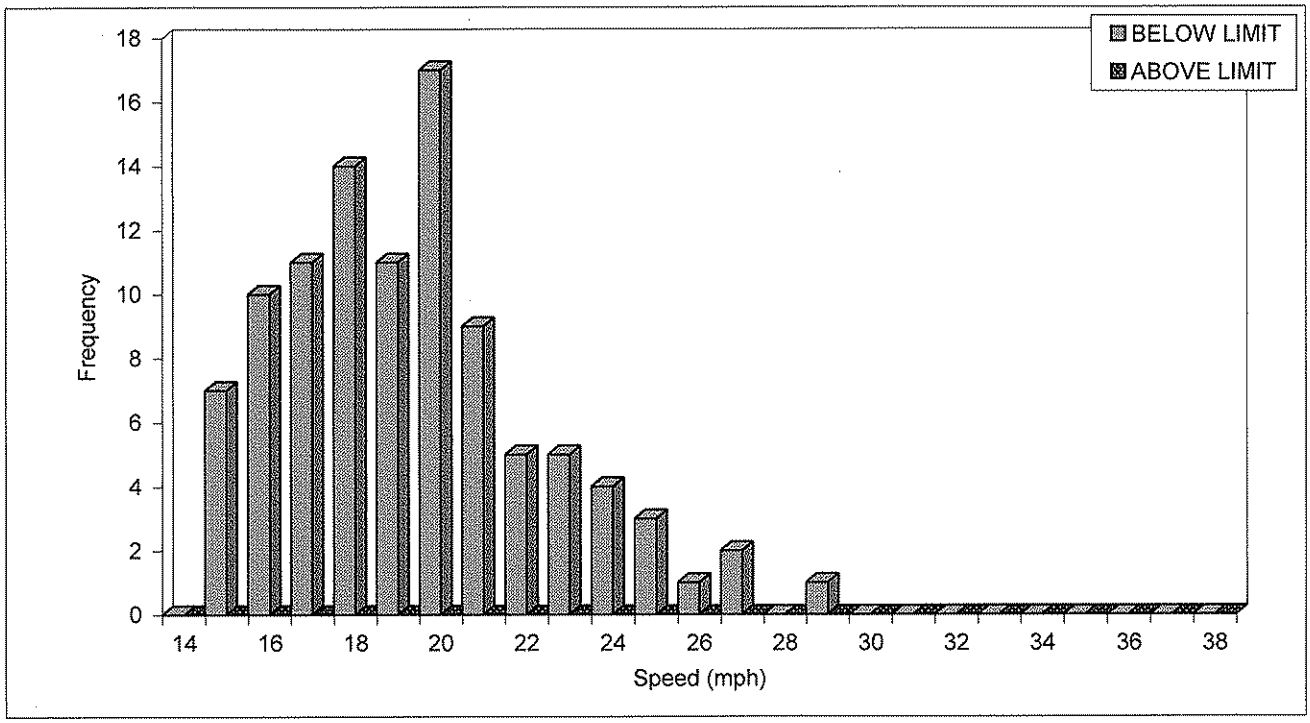
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments:

RADAR SPEED SURVEY

Arterial: WESTCHESTER AV W/B From: JACKSON AV To: TRINITY AV

Boro:	BX	Average Speed:	19.5 mph
Date:	05/22/10		
Day:	Sat.	15th Percentile:	16.0 mph
Weather:	Clear	50th Percentile:	19.0 mph
Time:	10:15 am - 10:44 am	85th Percentile:	23.0 mph
Speed Limit:	30 mph	Above Speed Limit:	0.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	29.0 mph
Type of Roadway:	Two-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	28'	In Pace:	96.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	1	Above Pace:	4.0 %
Observer:	Berliner V	Standard Deviation:	3.0 mph



RADAR SPEED SURVEY

Arterial: WESTCHESTER AV
Direction: WEST
From: JACKSON AV
To: TRINITY AV
Boro: BX
Date: 05.22.10
Weather: CLEAR
Time: 10:15AM - 10:44AM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 28'
Truck Route: Y ( ) or N (X) ?
# of Moving Lanes: 2
Bus Route: Y (X) or N ( )
# of Parking Lanes: 1
If yes, what line & no.? _____
Observer: BERLINER, V.

(Circle One) North South East (West)

Speeds:	1	2	3	4	5	6	7	8	9	10
	18	20	23	26	17	16	18	19	20	22
10	17	16	21	24	20	15	17	20	15	21
20	20	22	21	19	24	19	18	20	22	17
30	16	18	20	15	17	19	25	24	19	19
40	20	21	18	17	20	16	18	17	23	27
50	29	27	22	21	22	19	18	16	18	17
60	21	15	19	18	19	23	16	15	20	18
70	16	16	20	19	23	15	16	17	25	19
80	18	21	20	17	24	18	20	18	15	18
90	21	23	25	20	16	18	17	20	21	20

(Circle One) North South East West

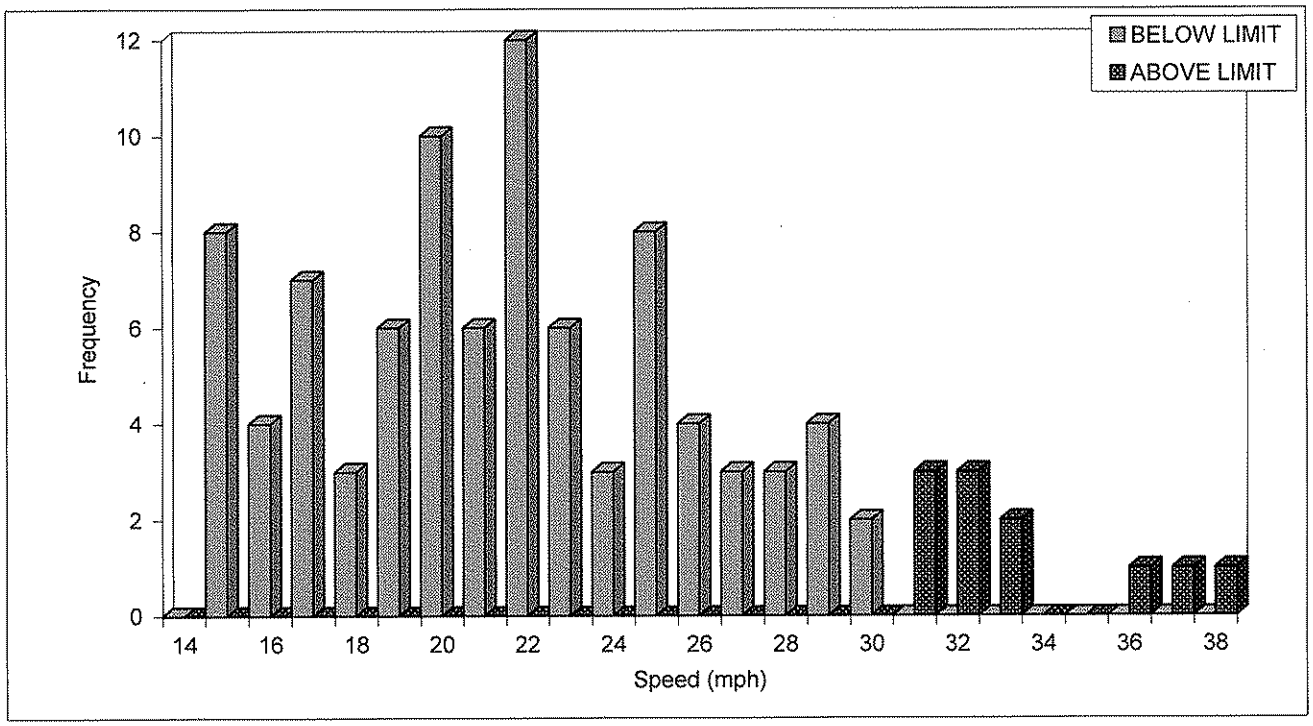
Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments: _____

RADAR SPEED SURVEY

Arterial: 43 AV E/B From: 50 ST To: 51 ST

Boro:	QN	Average Speed:	22.8 mph
Date:	05/21/10		
Day:	Fri.	15th Percentile:	17.0 mph
Weather:	Clear	50th Percentile:	22.0 mph
Time:	12:45 pm - 1:10 pm	85th Percentile:	29.0 mph
Speed Limit:	30 mph	Above Speed Limit:	11.0 %
Sample Size:	100	Minimum Speed	15.0 mph
		Maximum Speed	38.0 mph
Type of Roadway:	One-way	Pace:	15.0 - 25.0 mph
Width of Road by Direction:	44'	In Pace:	73.0 %
Number of Moving Lanes:	2	Below Pace:	0.0 %
Number of Parking Lanes:	2	Above Pace:	27.0 %
Observer:	Berliner V	Standard Deviation:	5.4 mph



RADAR SPEED SURVEY

Arterial: 43 AV
Direction: EAST
From: 50 ST
To: 51 ST
Boro: QUEENS
Date: 05.21.10
Weather:
Time: 12:45PM – 1:10PM
Speed Limit: 30 mph (or posted) 30
Width of Road by Direction: 44'
Truck Route: Y ( ) or N (X) ?
# of Moving Lanes: 2
Bus Route: Y ( ) or N (X)
# of Parking Lanes: 2
If yes, what line & no.?
Observer: BERLINER, V.

(Circle One) North South (East) ↑ West

Speeds:	1	2	3	4	5	6	7	8	9	10
	22	23	17	16	15	20	15	19	23	29
10	20	15	23	22	26	27	20	19	28	32
20	31	22	24	21	16	15	22	18	15	33
30	15	17	22	17	27	22	25	32	25	15
40	23	22	25	20	18	23	22	29	25	30
50	27	21	17	26	38	37	28	20	31	25
60	16	21	20	17	25	23	22	17	22	20
70	19	17	24	25	19	22	21	19	24	32
80	29	36	33	20	18	29	30	26	21	21
90	20	22	16	15	31	28	20	19	25	26

(Circle One) North South East West

Speeds:	1	2	3	4	5	6	7	8	9	10
10										
20										
30										
40										
50										
60										
70										
80										
90										

Comments:

SYNCHRO ANALYSIS

Lanes, Volumes, Timings
5: Queens Blvd WB & 47th St

5/31/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1119	47	67	148	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	9	10	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98		0.74					
Frt					0.994							
Flt Protected							0.950					
Satd. Flow (prot)	0	0	0	0	6950	0	1608	1756	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	6950	0	1188	1756	0	0	0	0
Right Turn on Red			No			No	No		No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		131			255			47			545	
Travel Time (s)		3.0			5.8			1.1			12.4	
Confl. Peds. (#/hr)						434	308					
Confl. Bikes (#/hr)						14						
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.82	0.82	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	1203	51	82	180	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1254	0	82	180	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.09	1.14	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors					2		1	2				
Detector Template												
Leading Detector (ft)					94		0	94				
Trailing Detector (ft)					0		0	0				
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Detector Phase					8		2	2				
Switch Phase												
Minimum Initial (s)					4.0		4.0	4.0				

Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)					83.0		60.0	60.0				
Total Split (s)	0.0	0.0	0.0	0.0	83.0	0.0	60.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	55.3%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					78.0		53.0	53.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		4.0	4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)					3.0		3.0	3.0				
Minimum Gap (s)					3.0		3.0	3.0				
Time Before Reduce (s)					0.0		0.0	0.0				
Time To Reduce (s)					0.0		0.0	0.0				
Recall Mode					Max		Max	Max				
Walk Time (s)					76.0		41.0	41.0				
Flash Dont Walk (s)					7.0		12.0	12.0				
Pedestrian Calls (#/hr)					24		24	24				
Act Effct Green (s)					78.0		53.0	53.0				
Actuated g/C Ratio					0.52		0.35	0.35				
v/c Ratio					0.35		0.20	0.29				
Control Delay					2.0		14.4	14.8				
Queue Delay					0.3		0.0	0.0				
Total Delay					2.3		14.4	14.8				
LOS					A		B	B				
Approach Delay					2.3			14.7				
Approach LOS					A			B				
90th %ile Green (s)					78.0		53.0	53.0				
90th %ile Term Code					Coord		MaxR	MaxR				
70th %ile Green (s)					78.0		53.0	53.0				
70th %ile Term Code					Coord		MaxR	MaxR				
50th %ile Green (s)					78.0		53.0	53.0				
50th %ile Term Code					Coord		MaxR	MaxR				
30th %ile Green (s)					78.0		53.0	53.0				
30th %ile Term Code					Coord		MaxR	MaxR				
10th %ile Green (s)					78.0		53.0	53.0				
10th %ile Term Code					Coord		MaxR	MaxR				
Queue Length 50th (ft)					14		17	37				
Queue Length 95th (ft)					15		26	49				
Internal Link Dist (ft)		51			175			1			465	
Turn Bay Length (ft)												
Base Capacity (vph)					3614		420	620				
Starvation Cap Reductn					1566		0	0				
Spillback Cap Reductn					0		0	0				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.61		0.20	0.29				

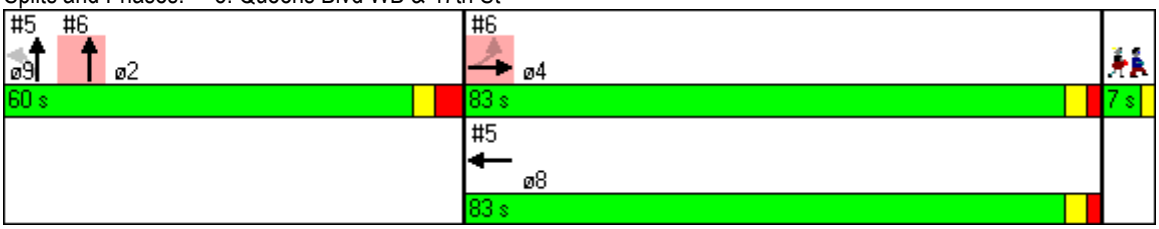
Intersection Summary	
Area Type:	Other

Lane Group	ø4	ø9
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Minimum Gap (s)	3.0	3.0
Time Before Reduce (s)	0.0	0.0
Time To Reduce (s)	0.0	0.0
Recall Mode	Max	Max
Walk Time (s)	76.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	24	24
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
90th %ile Green (s)	78.0	5.0
90th %ile Term Code	Coord	MaxR
70th %ile Green (s)	78.0	5.0
70th %ile Term Code	Coord	MaxR
50th %ile Green (s)	78.0	5.0
50th %ile Term Code	Coord	MaxR
30th %ile Green (s)	78.0	5.0
30th %ile Term Code	Coord	MaxR
10th %ile Green (s)	78.0	5.0
10th %ile Term Code	Coord	MaxR
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 106 (71%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.35	
Intersection Signal Delay: 4.5	Intersection LOS: A
Intersection Capacity Utilization 87.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: Queens Blvd WB & 47th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	591	0	0	0	0	0	175	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	15	15	15	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.99				
Frt								0.994				
Flt Protected		0.997										
Satd. Flow (prot)	0	5826	0	0	0	0	0	1811	0	0	0	0
Flt Permitted		0.997										
Satd. Flow (perm)	0	5807	0	0	0	0	0	1811	0	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		129			247			108			41	
Travel Time (s)		2.9			5.6			2.5			0.9	
Confl. Peds. (#/hr)	58								269			
Confl. Bikes (#/hr)			3						7			
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		6						2	2			
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	49	721	0	0	0	0	0	213	10	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	770	0	0	0	0	0	223	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.14	1.09	1.00	1.00	1.00	0.88	1.03	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2						2				
Detector Template	Left											
Leading Detector (ft)	20	94						94				
Trailing Detector (ft)	0	0						0				
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Detector Phase	4	4						2				
Switch Phase												
Minimum Initial (s)	4.0	4.0						4.0				

Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	83.0	83.0						60.0				
Total Split (s)	83.0	83.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	55.3%	55.3%	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	78.0	78.0						53.0				
Yellow Time (s)	3.0	3.0						3.0				
All-Red Time (s)	2.0	2.0						4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0						3.0				
Minimum Gap (s)	3.0	3.0						3.0				
Time Before Reduce (s)	0.0	0.0						0.0				
Time To Reduce (s)	0.0	0.0						0.0				
Recall Mode	Max	Max						Max				
Walk Time (s)	76.0	76.0						41.0				
Flash Dont Walk (s)	7.0	7.0						12.0				
Pedestrian Calls (#/hr)	24	24						24				
Act Effct Green (s)		78.0						53.0				
Actuated g/C Ratio		0.52						0.35				
v/c Ratio		0.25						0.35				
Control Delay		20.2						37.7				
Queue Delay		0.0						0.0				
Total Delay		20.2						37.7				
LOS		C						D				
Approach Delay		20.2						37.7				
Approach LOS		C						D				
90th %ile Green (s)	78.0	78.0						53.0				
90th %ile Term Code	Coord	Coord						MaxR				
70th %ile Green (s)	78.0	78.0						53.0				
70th %ile Term Code	Coord	Coord						MaxR				
50th %ile Green (s)	78.0	78.0						53.0				
50th %ile Term Code	Coord	Coord						MaxR				
30th %ile Green (s)	78.0	78.0						53.0				
30th %ile Term Code	Coord	Coord						MaxR				
10th %ile Green (s)	78.0	78.0						53.0				
10th %ile Term Code	Coord	Coord						MaxR				
Queue Length 50th (ft)		118						161				
Queue Length 95th (ft)		126						210				
Internal Link Dist (ft)		49			167			28			1	
Turn Bay Length (ft)												
Base Capacity (vph)		3020						640				
Starvation Cap Reductn		0						0				
Spillback Cap Reductn		552						2				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.31						0.35				

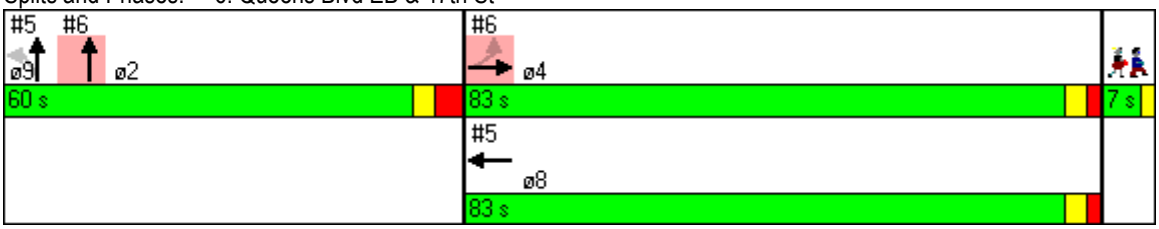
Intersection Summary	
Area Type:	Other

Lane Group	ø8	ø9
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Minimum Gap (s)	3.0	3.0
Time Before Reduce (s)	0.0	0.0
Time To Reduce (s)	0.0	0.0
Recall Mode	Max	Max
Walk Time (s)	76.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	24	24
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
90th %ile Green (s)	78.0	5.0
90th %ile Term Code	Coord	MaxR
70th %ile Green (s)	78.0	5.0
70th %ile Term Code	Coord	MaxR
50th %ile Green (s)	78.0	5.0
50th %ile Term Code	Coord	MaxR
30th %ile Green (s)	78.0	5.0
30th %ile Term Code	Coord	MaxR
10th %ile Green (s)	78.0	5.0
10th %ile Term Code	Coord	MaxR
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 106 (71%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.35	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Queens Blvd EB & 47th St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	4	2441	79	1	7	0	0	11	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		90
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99			0.99				0.91
Frt					0.995							0.850
Flt Protected								0.995				
Satd. Flow (prot)	0	0	0	0	6921	0	0	1764	0	0	1481	1207
Flt Permitted								0.991				
Satd. Flow (perm)	0	0	0	0	6921	0	0	1745	0	0	1481	1100
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			196			53			536	
Travel Time (s)		5.8			4.5			1.2			12.2	
Confl. Peds. (#/hr)	279		51	51		279	80		162	162		80
Confl. Bikes (#/hr)						14						
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.67	0.67	0.67	0.92	0.55	0.83
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	1%	0%	0%	0%	2%	2%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	16	16	0	0	0	0	0	3
Parking (#/hr)											13	13
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	4	2597	84	1	10	0	0	20	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2685	0	0	11	0	0	20	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.11	1.09	1.09	1.09	1.09	1.09	1.37	1.39
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2			2	1
Detector Template				Left			Left					
Leading Detector (ft)				20	94		20	94			94	0
Trailing Detector (ft)				0	0		0	0			0	0
Turn Type				Perm			Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8			2					6
Detector Phase				8	8		2	2			6	6
Switch Phase												
Minimum Initial (s)				4.0	4.0		4.0	4.0			4.0	4.0

Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Grade (%)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Growth Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Mid-Block Traffic (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				73.0	73.0		60.0	60.0			60.0	60.0
Total Split (s)	0.0	0.0	0.0	80.0	80.0	0.0	53.0	53.0	0.0	0.0	53.0	53.0
Total Split (%)	0.0%	0.0%	0.0%	53.3%	53.3%	0.0%	35.3%	35.3%	0.0%	0.0%	35.3%	35.3%
Maximum Green (s)				75.0	75.0		46.0	46.0			46.0	46.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0		4.0	4.0			4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	7.0	7.0	4.0	4.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	3.0
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	3.0
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	0.0
Recall Mode				Max	Max		Max	Max			Max	Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					75.0			46.0			46.0	46.0
Actuated g/C Ratio					0.50			0.31			0.31	0.31
v/c Ratio					0.78			0.02			0.04	0.36
Control Delay					10.2			36.6			37.1	44.2
Queue Delay					23.7			0.0			0.0	0.0
Total Delay					33.9			36.6			37.1	44.2
LOS					C			D			D	D
Approach Delay					33.9			36.6			43.2	
Approach LOS					C			D			D	
90th %ile Green (s)				75.0	75.0		46.0	46.0			46.0	46.0
90th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	MaxR
70th %ile Green (s)				75.0	75.0		46.0	46.0			46.0	46.0
70th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	MaxR
50th %ile Green (s)				75.0	75.0		46.0	46.0			46.0	46.0
50th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	MaxR
30th %ile Green (s)				75.0	75.0		46.0	46.0			46.0	46.0
30th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	MaxR
10th %ile Green (s)				75.0	75.0		46.0	46.0			46.0	46.0
10th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	MaxR
Queue Length 50th (ft)					72			8			14	92
Queue Length 95th (ft)					m218			17			22	140
Internal Link Dist (ft)		175			116			1			456	
Turn Bay Length (ft)												90
Base Capacity (vph)					3461			535			454	337
Starvation Cap Reductn					891			0			0	0
Spillback Cap Reductn					0			0			0	0
Storage Cap Reductn					0			0			0	0
Reduced v/c Ratio					1.04			0.02			0.04	0.36

Intersection Summary	
Area Type:	Other

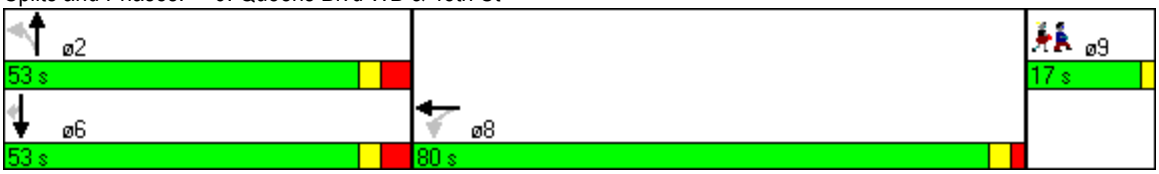
Lane Group	ø9
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	11%
Maximum Green (s)	15.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	Max
Walk Time (s)	5.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
90th %ile Green (s)	15.0
90th %ile Term Code	MaxR
70th %ile Green (s)	15.0
70th %ile Term Code	MaxR
50th %ile Green (s)	15.0
50th %ile Term Code	MaxR
30th %ile Green (s)	15.0
30th %ile Term Code	MaxR
10th %ile Green (s)	15.0
10th %ile Term Code	MaxR
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 101 (67%), Referenced to phase 8:WBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 34.4	Intersection LOS: C
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Queens Blvd WB & 48th St



Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Lane Configurations											
Volume (vph)	78	450	69	2	76	59	29	12	66	191	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	12	12	12	10	10	10	
Grade (%)		0%			0%					0%	
Storage Length (ft)	0		0			0			0		
Storage Lanes	0		0			0			1		
Taper Length (ft)	25		25			25			25		
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.93			0.72				0.86		
Frt		0.983			0.927						
Flt Protected		0.993							0.950		
Satd. Flow (prot)	0	5423	0	0	1072	0	0	0	1659	1756	
Flt Permitted		0.993							0.475		
Satd. Flow (perm)	0	5393	0	0	1072	0	0	0	711	1756	
Right Turn on Red				No			No				
Satd. Flow (RTOR)											
Link Speed (mph)		30			30					30	
Link Distance (ft)		247			159					231	
Travel Time (s)		5.6			3.6					5.3	
Confl. Peds. (#/hr)	44		165	216		169	26	143			
Confl. Bikes (#/hr)			3	3		7	7				
Peak Hour Factor	0.65	0.77	0.78	0.50	0.84	0.84	0.84	0.50	0.87	0.85	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	1%	0%	1%	0%	4%	2%	0%	0%	2%	1%	
Bus Blockages (#/hr)	0	0	0	0	4	4	4	0	0	0	
Parking (#/hr)		3	3	3	5	5	5				
Mid-Block Traffic (%)		0%			0%					0%	
Adj. Flow (vph)	120	584	88	4	90	70	35	24	76	225	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	796	0	0	195	0	0	0	100	225	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Right	Right	Left	Left	Left	
Median Width(ft)		0			0					17	
Link Offset(ft)		0			0					0	
Crosswalk Width(ft)		16			16					16	
Two way Left Turn Lane											
Headway Factor	1.09	1.13	1.09	1.09	1.21	1.00	1.00	1.09	1.09	1.09	
Turning Speed (mph)	15		9	9		9	9	15	15		
Number of Detectors	1	2			2			1	1	2	
Detector Template	Left							Left			
Leading Detector (ft)	20	94			94			20	0	94	
Trailing Detector (ft)	0	0			0			0	0	0	
Turn Type	custom							custom	D.P+P		
Protected Phases	1	4 1			2				3	2 3	4
Permitted Phases	4							3	2		
Detector Phase	1	4 1			2			3	3	2 3	
Switch Phase											
Minimum Initial (s)	4.0				4.0			4.0	4.0		4.0

Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Minimum Split (s)	25.0				37.0			29.0	29.0		59.0
Total Split (s)	23.5	84.0	0.0	0.0	37.0	0.0	0.0	29.0	29.0	66.0	60.5
Total Split (%)	15.7%	56.0%	0.0%	0.0%	24.7%	0.0%	0.0%	19.3%	19.3%	44.0%	40%
Maximum Green (s)	18.5				30.0			24.0	24.0		55.5
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				4.0			2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	7.0	4.0	4.0	5.0	5.0	7.0	
Lead/Lag	Lag				Lead			Lag	Lag		Lead
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0				3.0			3.0	3.0		3.0
Minimum Gap (s)	3.0				3.0			3.0	3.0		3.0
Time Before Reduce (s)	0.0				0.0			0.0	0.0		0.0
Time To Reduce (s)	0.0				0.0			0.0	0.0		0.0
Recall Mode	Max				Max			Max	Max		Max
Walk Time (s)	0.0				7.0			7.0	7.0		39.0
Flash Dont Walk (s)	20.0				23.0			17.0	17.0		15.0
Pedestrian Calls (#/hr)	24				24			24	24		24
Act Effct Green (s)		74.0			30.0				56.0	59.0	
Actuated g/C Ratio		0.49			0.20				0.37	0.39	
v/c Ratio		0.30			0.91				0.24	0.33	
Control Delay		14.5			100.4				16.9	18.8	
Queue Delay		0.1			0.0				0.5	4.6	
Total Delay		14.6			100.4				17.3	23.4	
LOS		B			F				B	C	
Approach Delay		14.6			100.4					21.5	
Approach LOS		B			F					C	
90th %ile Green (s)	18.5				30.0			24.0	24.0		55.5
90th %ile Term Code	Ped				MaxR			MaxR	MaxR		Coord
70th %ile Green (s)	18.5				30.0			24.0	24.0		55.5
70th %ile Term Code	Ped				MaxR			MaxR	MaxR		Coord
50th %ile Green (s)	18.5				30.0			24.0	24.0		55.5
50th %ile Term Code	Ped				MaxR			MaxR	MaxR		Coord
30th %ile Green (s)	18.5				30.0			24.0	24.0		55.5
30th %ile Term Code	Ped				MaxR			MaxR	MaxR		Coord
10th %ile Green (s)	18.5				30.0			24.0	24.0		55.5
10th %ile Term Code	Ped				MaxR			MaxR	MaxR		Coord
Queue Length 50th (ft)		65			189				50	119	
Queue Length 95th (ft)		65			#308				m60	m130	
Internal Link Dist (ft)		167			79					151	
Turn Bay Length (ft)											
Base Capacity (vph)		2664			214				417	691	
Starvation Cap Reductn		764			0				114	389	
Spillback Cap Reductn		0			0				0	0	
Storage Cap Reductn		0			0				0	0	
Reduced v/c Ratio		0.42			0.91				0.33	0.75	

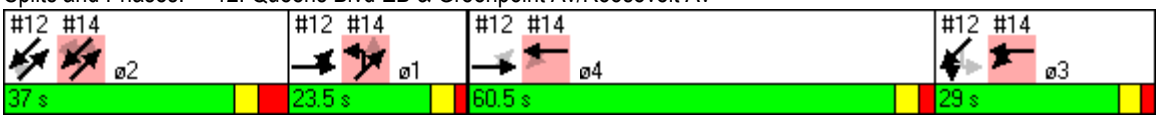
Intersection Summary	
Area Type:	Other

Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 97 (65%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 29.0	Intersection LOS: C
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Queens Blvd EB & Greenpoint Av/Roosevelt Av



Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Lane Configurations											
Volume (vph)	184	2558	7	9	4	10	142	91	94	18	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	11	9	9	9	
Grade (%)		0%					0%	0%			
Storage Length (ft)	0		0			0			0		
Storage Lanes	0		0			1			1		
Taper Length (ft)	25		25			25			25		
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		1.00				0.55			0.46		
Frt		0.999							0.850		
Flt Protected		0.997				0.950					
Satd. Flow (prot)	0	6114	0	0	0	1745	1762	1693	1431	0	
Flt Permitted		0.997				0.679					
Satd. Flow (perm)	0	6106	0	0	0	690	1762	1693	661	0	
Right Turn on Red				No						No	
Satd. Flow (RTOR)											
Link Speed (mph)		30					30	30			
Link Distance (ft)		325					231	238			
Travel Time (s)		7.4					5.3	5.4			
Confl. Peds. (#/hr)	24		6	26	90	160			90	160	
Confl. Bikes (#/hr)			14	14					2	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.33	0.83	0.77	0.84	0.84	0.64	
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Heavy Vehicles (%)	2%	0%	0%	11%	0%	0%	3%	1%	2%	0%	
Bus Blockages (#/hr)	0	0	0	3	0	0	3	0	0	0	
Parking (#/hr)		1	1	1							
Mid-Block Traffic (%)		0%					0%	0%			
Adj. Flow (vph)	200	2780	8	10	12	12	184	108	112	28	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	2998	0	0	0	24	184	108	140	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0					17	0			
Link Offset(ft)		0					0	0			
Crosswalk Width(ft)		16					16	16			
Two way Left Turn Lane											
Headway Factor	1.04	1.08	1.04	1.04	1.04	1.04	1.06	1.14	1.14	1.14	
Turning Speed (mph)	15		9	9	15	15			9	9	
Number of Detectors	1	2			1	1	2	2	1		
Detector Template	Left										
Leading Detector (ft)	20	94			0	0	94	94	0		
Trailing Detector (ft)	0	0			0	0	0	0	0		
Turn Type	custom				D.P+P	Perm			Perm		
Protected Phases	3	4 3			1		2 1	2			4
Permitted Phases	4				2	2 1			2		
Detector Phase	3	4 3			1	2 1	2 1	2	2		
Switch Phase											
Minimum Initial (s)	4.0				4.0			4.0	4.0		4.0

Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Minimum Split (s)	29.0				25.0			37.0	37.0		59.0
Total Split (s)	29.0	89.5	0.0	0.0	23.5	60.5	60.5	37.0	37.0	0.0	60.5
Total Split (%)	19.3%	59.7%	0.0%	0.0%	15.7%	40.3%	40.3%	24.7%	24.7%	0.0%	40%
Maximum Green (s)	24.0				18.5			30.0	30.0		55.5
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				2.0			4.0	4.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	7.0	7.0	7.0	6.9	4.0	
Lead/Lag	Lag				Lag			Lead	Lead		Lead
Lead-Lag Optimize?											
Vehicle Extension (s)	3.0				3.0			3.0	3.0		3.0
Minimum Gap (s)	3.0				3.0			3.0	3.0		3.0
Time Before Reduce (s)	0.0				0.0			0.0	0.0		0.0
Time To Reduce (s)	0.0				0.0			0.0	0.0		0.0
Recall Mode	Max				Max			Max	Max		Max
Walk Time (s)	7.0				0.0			7.0	7.0		39.0
Flash Dont Walk (s)	17.0				20.0			23.0	23.0		15.0
Pedestrian Calls (#/hr)	24				24			24	24		24
Act Effct Green (s)		79.5				53.5	53.5	30.0	30.1		
Actuated g/C Ratio		0.53				0.36	0.36	0.20	0.20		
v/c Ratio		0.93				0.10	0.29	0.32	1.05		
Control Delay		35.0				25.4	26.6	54.3	148.8		
Queue Delay		7.8				0.0	5.9	0.0	0.0		
Total Delay		42.8				25.4	32.5	54.3	148.8		
LOS		D				C	C	D	F		
Approach Delay		42.8					31.7	107.7			
Approach LOS		D					C	F			
90th %ile Green (s)	24.0				18.5			30.0	30.0		55.5
90th %ile Term Code	MaxR				Ped			MaxR	MaxR		Coord
70th %ile Green (s)	24.0				18.5			30.0	30.0		55.5
70th %ile Term Code	MaxR				Ped			MaxR	MaxR		Coord
50th %ile Green (s)	24.0				18.5			30.0	30.0		55.5
50th %ile Term Code	MaxR				Ped			MaxR	MaxR		Coord
30th %ile Green (s)	24.0				18.5			30.0	30.0		55.5
30th %ile Term Code	MaxR				Ped			MaxR	MaxR		Coord
10th %ile Green (s)	24.0				18.5			30.0	30.0		55.5
10th %ile Term Code	MaxR				Ped			MaxR	MaxR		Coord
Queue Length 50th (ft)		707				10	79	91	~149		
Queue Length 95th (ft)		753				m17	m92	141	#265		
Internal Link Dist (ft)		245					151	158			
Turn Bay Length (ft)											
Base Capacity (vph)		3237				246	628	339	133		
Starvation Cap Reductn		0				0	383	0	0		
Spillback Cap Reductn		248				0	0	0	0		
Storage Cap Reductn		0				0	0	0	0		
Reduced v/c Ratio		1.00				0.10	0.75	0.32	1.05		

Intersection Summary	
Area Type:	Other

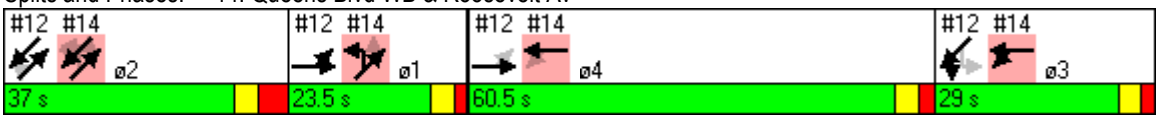
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 97 (65%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 46.8	Intersection LOS: D
Intersection Capacity Utilization 89.1%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Queens Blvd WB & Roosevelt Av



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	513	8	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		0	0
Taper Length (ft)		25	25		25	25
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.998					
Flt Protected						
Satd. Flow (prot)	5862	0	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	5862	0	0	0	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	256			60	335	
Travel Time (s)	5.8			1.4	7.6	
Confl. Peds. (#/hr)		97				
Confl. Bikes (#/hr)		3				
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)	2	2				
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	675	11	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	686	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	215	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	15	15	15	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1739	0	0	1739	0	0	2069	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1739	0	0	1739	0	0	2069	0	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		121			256			41			47	
Travel Time (s)		2.8			5.8			0.9			1.1	
Confl. Peds. (#/hr)							308		269			
Confl. Bikes (#/hr)									7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.82	0.82	0.82	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	0	0	0	0	262	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	262	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	0.88	0.88	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.7%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	36	2488	99	30	107	0	0	156	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	11	11	14	14	14
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99			0.99			0.98	
Frt					0.992						0.955	
Flt Protected					0.999			0.988				
Satd. Flow (prot)	0	0	0	0	7050	0	0	1801	0	0	1560	0
Flt Permitted					0.999			0.833				
Satd. Flow (perm)	0	0	0	0	7047	0	0	1506	0	0	1560	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		263			261			57			596	
Travel Time (s)		6.0			5.9			1.3			13.5	
Confl. Peds. (#/hr)				33		178	60		81	81		60
Confl. Bikes (#/hr)						19						2
Peak Hour Factor	0.92	0.92	0.92	0.90	0.96	0.71	0.68	0.81	0.92	0.92	0.89	0.51
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	3%	0%	2%	2%	3%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											12	12
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	0	0	40	2592	139	44	132	0	0	175	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2771	0	0	176	0	0	263	0
Enter Blocked Intersection	No	No	No	2 veh	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.09	1.04	1.04	1.04	0.92	1.15	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1	2		1	2			2	
Detector Template				Left								
Leading Detector (ft)				20	94		0	94			94	
Trailing Detector (ft)				0	0		0	0			0	
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Detector Phase				8	8		2	2			6	
Switch Phase												
Minimum Initial (s)				1.0	1.0		1.0	1.0			1.0	

Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)				6.0	6.0		8.0	8.0			8.0	
Total Split (s)	0.0	0.0	0.0	83.0	83.0	0.0	60.0	60.0	0.0	0.0	60.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	55.3%	55.3%	0.0%	40.0%	40.0%	0.0%	0.0%	40.0%	0.0%
Maximum Green (s)				78.0	78.0		53.0	53.0			53.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		4.0	4.0			4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	7.0	7.0	4.0	4.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Minimum Gap (s)				3.0	3.0		3.0	3.0			3.0	
Time Before Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Time To Reduce (s)				0.0	0.0		0.0	0.0			0.0	
Recall Mode				Max	Max		Max	Max			Max	
Walk Time (s)				72.0	72.0		41.0	41.0			41.0	
Flash Dont Walk (s)				11.0	11.0		12.0	12.0			12.0	
Pedestrian Calls (#/hr)				24	24		24	24			24	
Act Effct Green (s)					78.0			53.0			53.0	
Actuated g/C Ratio					0.52			0.35			0.35	
v/c Ratio					0.76			0.33			0.48	
Control Delay					30.2			14.9			41.3	
Queue Delay					0.6			0.0			0.0	
Total Delay					30.8			14.9			41.3	
LOS					C			B			D	
Approach Delay					30.8			14.9			41.3	
Approach LOS					C			B			D	
90th %ile Green (s)				78.0	78.0		53.0	53.0			53.0	
90th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	
70th %ile Green (s)				78.0	78.0		53.0	53.0			53.0	
70th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	
50th %ile Green (s)				78.0	78.0		53.0	53.0			53.0	
50th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	
30th %ile Green (s)				78.0	78.0		53.0	53.0			53.0	
30th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	
10th %ile Green (s)				78.0	78.0		53.0	53.0			53.0	
10th %ile Term Code				Coord	Coord		MaxR	MaxR			MaxR	
Queue Length 50th (ft)					516			34			200	
Queue Length 95th (ft)					550			45			286	
Internal Link Dist (ft)		183			181			1			516	
Turn Bay Length (ft)												
Base Capacity (vph)					3664			532			551	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					473			0			9	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.87			0.33			0.49	

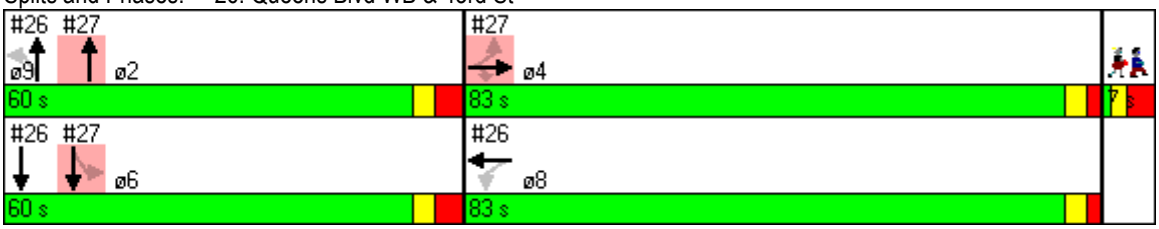
Intersection Summary	
Area Type:	Other

Lane Group	ø4	ø9
Minimum Split (s)	6.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Minimum Gap (s)	3.0	3.0
Time Before Reduce (s)	0.0	0.0
Time To Reduce (s)	0.0	0.0
Recall Mode	Max	Max
Walk Time (s)	72.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	24	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
90th %ile Green (s)	78.0	1.0
90th %ile Term Code	Coord	MaxR
70th %ile Green (s)	78.0	1.0
70th %ile Term Code	Coord	MaxR
50th %ile Green (s)	78.0	1.0
50th %ile Term Code	Coord	MaxR
30th %ile Green (s)	78.0	1.0
30th %ile Term Code	Coord	MaxR
10th %ile Green (s)	78.0	1.0
10th %ile Term Code	Coord	MaxR
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 125 (83%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 30.8	Intersection LOS: C
Intersection Capacity Utilization 123.3%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 26: Queens Blvd WB & 43rd St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	623	25	0	0	0	0	133	25	28	163	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	14	14	14	11	11	11
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.86					0.99			1.00	
Frt			0.850					0.978				
Flt Protected		0.998									0.992	
Satd. Flow (prot)	0	6020	1449	0	0	0	0	1563	0	0	1810	0
Flt Permitted		0.998									0.919	
Satd. Flow (perm)	0	6017	1251	0	0	0	0	1563	0	0	1670	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			259			672			57	
Travel Time (s)		5.6			5.9			15.3			1.3	
Confl. Peds. (#/hr)	10		130				28		41	41		28
Confl. Bikes (#/hr)			3						7			
Peak Hour Factor	0.64	0.80	0.78	0.92	0.92	0.92	0.92	0.81	0.78	0.78	0.87	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	4%	1%	4%	2%	2%	2%	2%	0%	0%	4%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)								21	21			
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	36	779	32	0	0	0	0	164	32	36	187	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	815	32	0	0	0	0	196	0	0	223	0
Enter Blocked Intersection	2 veh	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	0.92	1.23	0.92	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1					2		1	2	
Detector Template	Left											
Leading Detector (ft)	20	94	0					94		0	94	
Trailing Detector (ft)	0	0	0					0		0	0	
Turn Type	Perm		Perm							Perm		
Protected Phases		4						2			6	
Permitted Phases	4		4							6		
Detector Phase	4	4	4					2		6	6	
Switch Phase												
Minimum Initial (s)	1.0	1.0	1.0					1.0		1.0	1.0	

Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Grade (%)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Growth Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Parking (#/hr)		
Mid-Block Traffic (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Number of Detectors		
Detector Template		
Leading Detector (ft)		
Trailing Detector (ft)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Detector Phase		
Switch Phase		
Minimum Initial (s)	1.0	1.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	6.0	6.0	6.0					8.0		8.0	8.0	
Total Split (s)	83.0	83.0	83.0	0.0	0.0	0.0	0.0	60.0	0.0	60.0	60.0	0.0
Total Split (%)	55.3%	55.3%	55.3%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	40.0%	40.0%	0.0%
Maximum Green (s)	78.0	78.0	78.0					53.0		53.0	53.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	4.0	4.0	4.0	7.0	4.0	7.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0	3.0					3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0	0.0					0.0		0.0	0.0	
Recall Mode	Max	Max	Max					Max		Max	Max	
Walk Time (s)	72.0	72.0	72.0					41.0		41.0	41.0	
Flash Dont Walk (s)	11.0	11.0	11.0					12.0		12.0	12.0	
Pedestrian Calls (#/hr)	24	24	24					24		24	24	
Act Effct Green (s)		78.0	78.0					53.0			53.0	
Actuated g/C Ratio		0.52	0.52					0.35			0.35	
v/c Ratio		0.26	0.05					0.36			0.38	
Control Delay		20.3	18.1					38.2			14.5	
Queue Delay		0.0	0.0					0.0			0.0	
Total Delay		20.3	18.1					38.2			14.5	
LOS		C	B					D			B	
Approach Delay		20.2						38.2			14.5	
Approach LOS		C						D			B	
90th %ile Green (s)	78.0	78.0	78.0					53.0		53.0	53.0	
90th %ile Term Code	Coord	Coord	Coord					MaxR		MaxR	MaxR	
70th %ile Green (s)	78.0	78.0	78.0					53.0		53.0	53.0	
70th %ile Term Code	Coord	Coord	Coord					MaxR		MaxR	MaxR	
50th %ile Green (s)	78.0	78.0	78.0					53.0		53.0	53.0	
50th %ile Term Code	Coord	Coord	Coord					MaxR		MaxR	MaxR	
30th %ile Green (s)	78.0	78.0	78.0					53.0		53.0	53.0	
30th %ile Term Code	Coord	Coord	Coord					MaxR		MaxR	MaxR	
10th %ile Green (s)	78.0	78.0	78.0					53.0		53.0	53.0	
10th %ile Term Code	Coord	Coord	Coord					MaxR		MaxR	MaxR	
Queue Length 50th (ft)		125	15					142			49	
Queue Length 95th (ft)		129	29					188			m65	
Internal Link Dist (ft)		165			179			592			1	
Turn Bay Length (ft)												
Base Capacity (vph)		3129	651					552			590	
Starvation Cap Reductn		0	0					0			0	
Spillback Cap Reductn		504	0					11			0	
Storage Cap Reductn		0	0					0			0	
Reduced v/c Ratio		0.31	0.05					0.36			0.38	

Intersection Summary	
Area Type:	Other

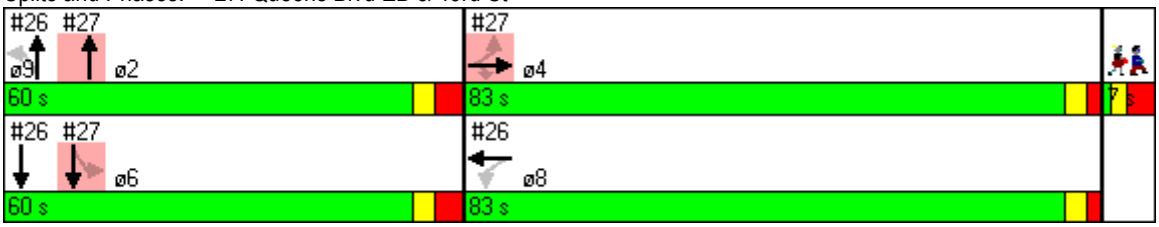
Lane Group	ø8	ø9
Minimum Split (s)	6.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	3.0
Minimum Gap (s)	3.0	3.0
Time Before Reduce (s)	0.0	0.0
Time To Reduce (s)	0.0	0.0
Recall Mode	Max	Max
Walk Time (s)	72.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	24	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
90th %ile Green (s)	78.0	1.0
90th %ile Term Code	Coord	MaxR
70th %ile Green (s)	78.0	1.0
70th %ile Term Code	Coord	MaxR
50th %ile Green (s)	78.0	1.0
50th %ile Term Code	Coord	MaxR
30th %ile Green (s)	78.0	1.0
30th %ile Term Code	Coord	MaxR
10th %ile Green (s)	78.0	1.0
10th %ile Term Code	Coord	MaxR
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 125 (83%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 22.0	Intersection LOS: C
Intersection Capacity Utilization 123.3%	ICU Level of Service H
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: Queens Blvd EB & 43rd St



Lanes, Volumes, Timings
5: Queens Blvd WB & 47th St

5/31/2011

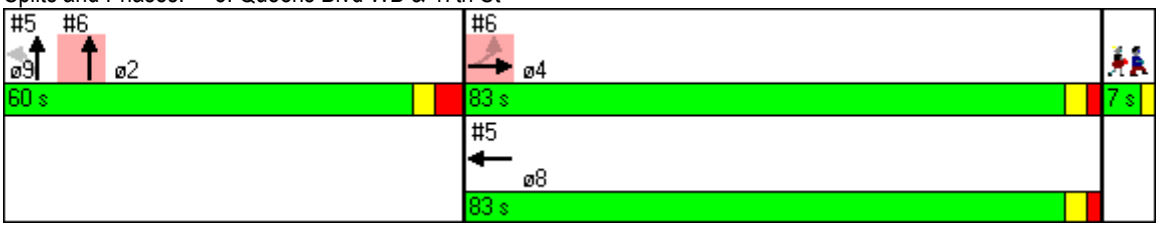
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1119	47	67	148	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	9	10	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98		0.74					
Frt					0.994							
Flt Protected							0.950					
Satd. Flow (prot)	0	0	0	0	6950	0	1608	1756	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	6950	0	1188	1756	0	0	0	0
Right Turn on Red			No			No	No		No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		131			255			47			545	
Travel Time (s)		3.0			5.8			1.1			12.4	
Confl. Peds. (#/hr)						434	308					
Confl. Bikes (#/hr)						14						
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.82	0.82	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	0	0	0	0	1203	51	82	180	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1254	0	82	180	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.09	1.14	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Minimum Split (s)					83.0		60.0	60.0				
Total Split (s)	0.0	0.0	0.0	0.0	83.0	0.0	60.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	55.3%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					78.0		53.0	53.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		4.0	4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					76.0		41.0	41.0				
Flash Dont Walk (s)					7.0		12.0	12.0				
Pedestrian Calls (#/hr)					24		24	24				
Act Effct Green (s)					78.0		53.0	53.0				
Actuated g/C Ratio					0.52		0.35	0.35				

Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	76.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	24	24
Act Effct Green (s)		
Actuated g/C Ratio		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio					0.35		0.20	0.29				
Control Delay					5.9		14.4	14.8				
Queue Delay					0.3		0.0	0.0				
Total Delay					6.2		14.4	14.8				
LOS					A		B	B				
Approach Delay					6.2			14.7				
Approach LOS					A			B				

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 106 (71%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.35	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 87.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: Queens Blvd WB & 47th St



Lane Group	ø4	ø9
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

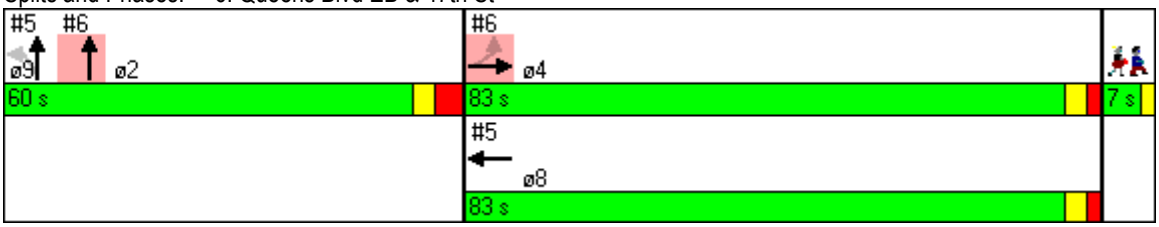
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	591	0	0	0	0	0	175	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	15	15	15	12	12	12
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.99				
Frt								0.994				
Flt Protected		0.997										
Satd. Flow (prot)	0	5826	0	0	0	0	0	1811	0	0	0	0
Flt Permitted		0.997										
Satd. Flow (perm)	0	5807	0	0	0	0	0	1811	0	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		129			247			108			41	
Travel Time (s)		2.9			5.6			2.5			0.9	
Confl. Peds. (#/hr)	58								269			
Confl. Bikes (#/hr)			3						7			
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Parking (#/hr)		6						2	2			
Adj. Flow (vph)	49	721	0	0	0	0	0	213	10	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	770	0	0	0	0	0	223	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.14	1.09	1.00	1.00	1.00	0.88	1.03	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	83.0	83.0						60.0				
Total Split (s)	83.0	83.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	55.3%	55.3%	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	78.0	78.0						53.0				
Yellow Time (s)	3.0	3.0						3.0				
All-Red Time (s)	2.0	2.0						4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	76.0	76.0						41.0				
Flash Dont Walk (s)	7.0	7.0						12.0				
Pedestrian Calls (#/hr)	24	24						24				
Act Effct Green (s)		78.0						53.0				

Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	76.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	24	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.52						0.35				
v/c Ratio		0.25						0.35				
Control Delay		20.2						37.7				
Queue Delay		0.0						0.0				
Total Delay		20.2						37.7				
LOS		C						D				
Approach Delay		20.2						37.7				
Approach LOS		C						D				

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 106 (71%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.35	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 63.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Queens Blvd EB & 47th St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

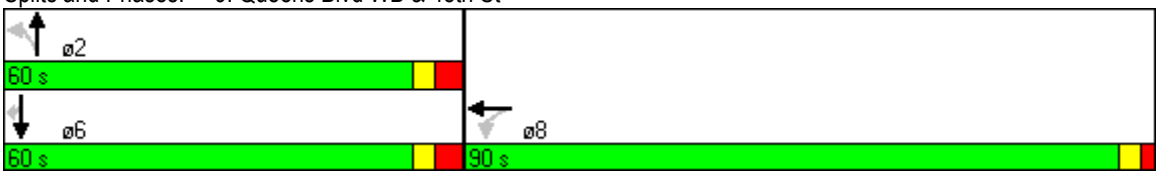
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	4	2441	79	1	7	0	0	11	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Storage Length (ft)	0		0	0		0	0		0	0		90
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99			0.99				0.92
Frt					0.995							0.850
Flt Protected								0.995				
Satd. Flow (prot)	0	0	0	0	6928	0	0	1764	0	0	1481	1207
Flt Permitted								0.991				
Satd. Flow (perm)	0	0	0	0	6928	0	0	1747	0	0	1481	1112
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			196			53			536	
Travel Time (s)		5.8			4.5			1.2			12.2	
Confl. Peds. (#/hr)	279		51	51		279	80		162	162		80
Confl. Bikes (#/hr)						14						
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.67	0.67	0.67	0.92	0.55	0.83
Heavy Vehicles (%)	2%	2%	2%	0%	1%	0%	0%	0%	2%	2%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	16	16	0	0	0	0	0	3
Parking (#/hr)											13	13
Adj. Flow (vph)	0	0	0	4	2597	84	1	10	0	0	20	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2685	0	0	11	0	0	20	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.11	1.09	1.09	1.09	1.09	1.09	1.37	1.39
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8			2					6
Minimum Split (s)				90.0	90.0		60.0	60.0			60.0	60.0
Total Split (s)	0.0	0.0	0.0	90.0	90.0	0.0	60.0	60.0	0.0	0.0	60.0	60.0
Total Split (%)	0.0%	0.0%	0.0%	60.0%	60.0%	0.0%	40.0%	40.0%	0.0%	0.0%	40.0%	40.0%
Maximum Green (s)				85.0	85.0		53.0	53.0			53.0	53.0
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0		4.0	4.0			4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	7.0	7.0	4.0	4.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)				73.0	73.0		43.0	43.0			43.0	43.0
Flash Dont Walk (s)				12.0	12.0		10.0	10.0			10.0	10.0
Pedestrian Calls (#/hr)				24	24		24	24			24	24
Act Effct Green (s)					85.0			53.0			53.0	53.0
Actuated g/C Ratio					0.57			0.35			0.35	0.35
v/c Ratio					0.68			0.02			0.04	0.31
Control Delay					2.6			31.9			32.3	37.9
Queue Delay					2.8			0.0			0.0	0.0
Total Delay					5.3			31.9			32.3	37.9
LOS					A			C			C	D
Approach Delay					5.3			31.9			37.1	
Approach LOS					A			C			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 102 (68%), Referenced to phase 8:WBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 175.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 9: Queens Blvd WB & 48th St

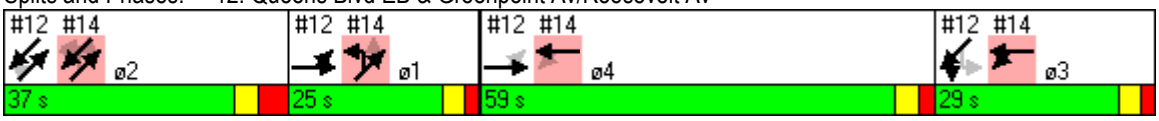


Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Lane Configurations											
Volume (vph)	78	450	69	2	76	59	29	12	66	191	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	12	12	12	10	10	10	
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.93			0.72				0.86		
Frt		0.983			0.927						
Flt Protected		0.993							0.950		
Satd. Flow (prot)	0	5423	0	0	1072	0	0	0	1659	1756	
Flt Permitted		0.993							0.475		
Satd. Flow (perm)	0	5393	0	0	1072	0	0	0	711	1756	
Right Turn on Red				No			No				
Satd. Flow (RTOR)											
Link Speed (mph)		30			30					30	
Link Distance (ft)		247			159					231	
Travel Time (s)		5.6			3.6					5.3	
Confl. Peds. (#/hr)	44		165	216		169	26	143			
Confl. Bikes (#/hr)			3	3		7	7				
Peak Hour Factor	0.65	0.77	0.78	0.50	0.84	0.84	0.84	0.50	0.87	0.85	
Heavy Vehicles (%)	1%	0%	1%	0%	4%	2%	0%	0%	2%	1%	
Bus Blockages (#/hr)	0	0	0	0	4	4	4	0	0	0	
Parking (#/hr)		3	3	3	5	5	5				
Adj. Flow (vph)	120	584	88	4	90	70	35	24	76	225	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	796	0	0	195	0	0	0	100	225	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Right	Right	Left	Left	Left	
Median Width(ft)		0			0					17	
Link Offset(ft)		0			0					0	
Crosswalk Width(ft)		16			16					16	
Two way Left Turn Lane											
Headway Factor	1.09	1.13	1.09	1.09	1.21	1.00	1.00	1.09	1.09	1.09	
Turning Speed (mph)	15		9	9		9	9	15	15		
Turn Type	custom							custom	D.P+P		
Protected Phases	1	4 1			2				3	2 3	4
Permitted Phases	4							3	2		
Minimum Split (s)	25.0				37.0			29.0	29.0		59.0
Total Split (s)	25.0	84.0	0.0	0.0	37.0	0.0	0.0	29.0	29.0	66.0	59.0
Total Split (%)	16.7%	56.0%	0.0%	0.0%	24.7%	0.0%	0.0%	19.3%	19.3%	44.0%	39%
Maximum Green (s)	20.0				30.0			24.0	24.0		54.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				4.0			2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	7.0	4.0	4.0	5.0	5.0	7.0	
Lead/Lag	Lag				Lead			Lag	Lag		Lead
Lead-Lag Optimize?											
Walk Time (s)	0.0				7.0			7.0	7.0		39.0
Flash Dont Walk (s)	20.0				23.0			17.0	17.0		15.0
Pedestrian Calls (#/hr)	24				24			24	24		24

Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Act Effct Green (s)		74.0			30.0				56.0	59.0	
Actuated g/C Ratio		0.49			0.20				0.37	0.39	
v/c Ratio		0.30			0.91				0.24	0.33	
Control Delay		14.8			100.4				16.2	18.0	
Queue Delay		0.1			0.0				0.5	4.6	
Total Delay		15.0			100.4				16.7	22.7	
LOS		B			F				B	C	
Approach Delay		15.0			100.4					20.8	
Approach LOS		B			F					C	

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 97 (65%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 29.1	Intersection LOS: C
Intersection Capacity Utilization 88.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Queens Blvd EB & Greenpoint Av/Roosevelt Av

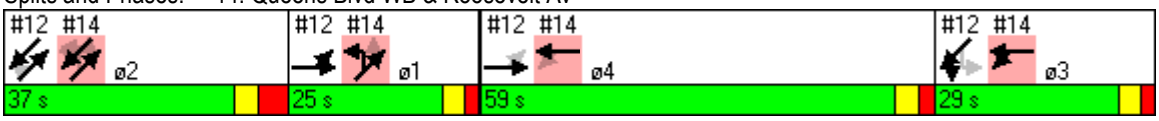


Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Lane Configurations											
Volume (vph)	184	2558	7	9	4	10	142	91	94	18	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	11	9	9	9	
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		1.00				0.55			0.46		
Frt		0.999							0.850		
Flt Protected		0.997				0.950					
Satd. Flow (prot)	0	6114	0	0	0	1745	1762	1693	1431	0	
Flt Permitted		0.997				0.679					
Satd. Flow (perm)	0	6106	0	0	0	690	1762	1693	661	0	
Right Turn on Red				No						No	
Satd. Flow (RTOR)											
Link Speed (mph)		30					30	30			
Link Distance (ft)		325					231	238			
Travel Time (s)		7.4					5.3	5.4			
Confl. Peds. (#/hr)	24		6	26	90	160			90	160	
Confl. Bikes (#/hr)			14	14					2	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.33	0.83	0.77	0.84	0.84	0.64	
Heavy Vehicles (%)	2%	0%	0%	11%	0%	0%	3%	1%	2%	0%	
Bus Blockages (#/hr)	0	0	0	3	0	0	3	0	0	0	
Parking (#/hr)		1	1	1							
Adj. Flow (vph)	200	2780	8	10	12	12	184	108	112	28	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	2998	0	0	0	24	184	108	140	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0					17	0			
Link Offset(ft)		0					0	0			
Crosswalk Width(ft)		16					16	16			
Two way Left Turn Lane											
Headway Factor	1.04	1.08	1.04	1.04	1.04	1.04	1.06	1.14	1.14	1.14	
Turning Speed (mph)	15		9	9	15	15			9	9	
Turn Type	custom				D.P+P	Perm			Perm		
Protected Phases	3	4 3			1		2 1	2			4
Permitted Phases	4				2	2 1			2		
Minimum Split (s)	29.0				25.0			37.0	37.0		59.0
Total Split (s)	29.0	88.0	0.0	0.0	25.0	62.0	62.0	37.0	37.0	0.0	59.0
Total Split (%)	19.3%	58.7%	0.0%	0.0%	16.7%	41.3%	41.3%	24.7%	24.7%	0.0%	39%
Maximum Green (s)	24.0				20.0			30.0	30.0		54.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				2.0			4.0	4.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	7.0	7.0	7.0	6.9	4.0	
Lead/Lag	Lag				Lag			Lead	Lead		Lead
Lead-Lag Optimize?											
Walk Time (s)	7.0				0.0			7.0	7.0		39.0
Flash Dont Walk (s)	17.0				20.0			23.0	23.0		15.0
Pedestrian Calls (#/hr)	24				24			24	24		24

Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Act Effct Green (s)		78.0				55.0	55.0	30.0	30.1		
Actuated g/C Ratio		0.52				0.37	0.37	0.20	0.20		
v/c Ratio		0.94				0.09	0.28	0.32	1.05		
Control Delay		37.9				24.5	25.7	54.3	148.8		
Queue Delay		0.5				0.0	5.4	0.0	0.0		
Total Delay		38.4				24.5	31.1	54.3	148.8		
LOS		D				C	C	D	F		
Approach Delay		38.4					30.4	107.7			
Approach LOS		D					C	F			

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 97 (65%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 89.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Queens Blvd WB & Roosevelt Av



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	513	8	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.998					
Flt Protected						
Satd. Flow (prot)	5862	0	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	5862	0	0	0	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	256			60	335	
Travel Time (s)	5.8			1.4	7.6	
Confl. Peds. (#/hr)		97				
Confl. Bikes (#/hr)		3				
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)	2	2				
Adj. Flow (vph)	675	11	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	686	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.4%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	215	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	15	15	15	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1739	0	0	1739	0	0	2069	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1739	0	0	1739	0	0	2069	0	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		121			256			41			47	
Travel Time (s)		2.8			5.8			0.9			1.1	
Confl. Peds. (#/hr)							308		269			
Confl. Bikes (#/hr)									7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.82	0.82	0.82	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	0	0	0	0	0	0	0	262	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	262	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	0.88	0.88	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 16.7%	ICU Level of Service A
Analysis Period (min) 15	

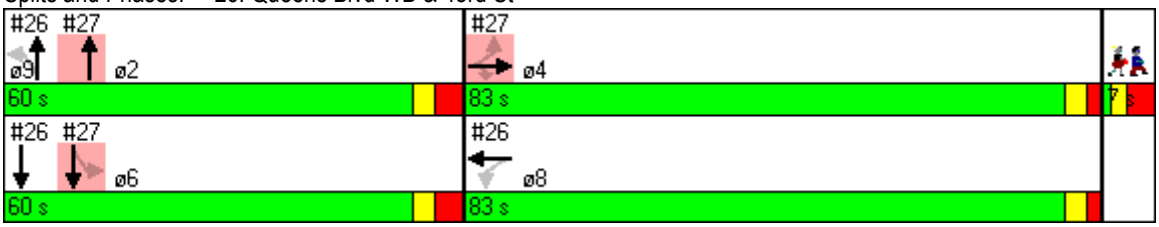
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	36	2488	99	30	107	0	0	156	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	11	11	14	14	14
Lane Util. Factor	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99		0.97				0.98	
Frt					0.992						0.955	
Flt Protected					0.999		0.950					
Satd. Flow (prot)	0	0	0	0	7050	0	1694	1837	0	0	1560	0
Flt Permitted					0.999		0.489					
Satd. Flow (perm)	0	0	0	0	7048	0	844	1837	0	0	1560	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		263			261			57			596	
Travel Time (s)		6.0			5.9			1.3			13.5	
Confl. Peds. (#/hr)				33		178	60		81	81		60
Confl. Bikes (#/hr)						19						2
Peak Hour Factor	0.92	0.92	0.92	0.90	0.96	0.71	0.68	0.81	0.92	0.92	0.89	0.51
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	3%	0%	2%	2%	3%	0%
Parking (#/hr)											12	12
Adj. Flow (vph)	0	0	0	40	2592	139	44	132	0	0	175	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2771	0	44	132	0	0	263	0
Enter Blocked Intersection	No	No	No	2 veh	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.09	1.09	1.04	1.04	1.04	0.92	1.15	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Minimum Split (s)				83.0	83.0		60.0	60.0			60.0	
Total Split (s)	0.0	0.0	0.0	83.0	83.0	0.0	60.0	60.0	0.0	0.0	60.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	55.3%	55.3%	0.0%	40.0%	40.0%	0.0%	0.0%	40.0%	0.0%
Maximum Green (s)				78.0	78.0		53.0	53.0			53.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		4.0	4.0			4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	7.0	7.0	4.0	4.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				72.0	72.0		41.0	41.0			41.0	
Flash Dont Walk (s)				11.0	11.0		12.0	12.0			12.0	
Pedestrian Calls (#/hr)				24	24		24	24			24	
Act Effct Green (s)					78.0		53.0	53.0			53.0	

Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	72.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	24	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.52		0.35	0.35			0.35	
v/c Ratio					0.76		0.15	0.20			0.48	
Control Delay					30.2		13.7	13.4			41.3	
Queue Delay					0.5		0.0	0.0			0.0	
Total Delay					30.7		13.7	13.4			41.3	
LOS					C		B	B			D	
Approach Delay					30.7			13.5			41.3	
Approach LOS					C			B			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 125 (83%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 30.6	Intersection LOS: C
Intersection Capacity Utilization 244.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 26: Queens Blvd WB & 43rd St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

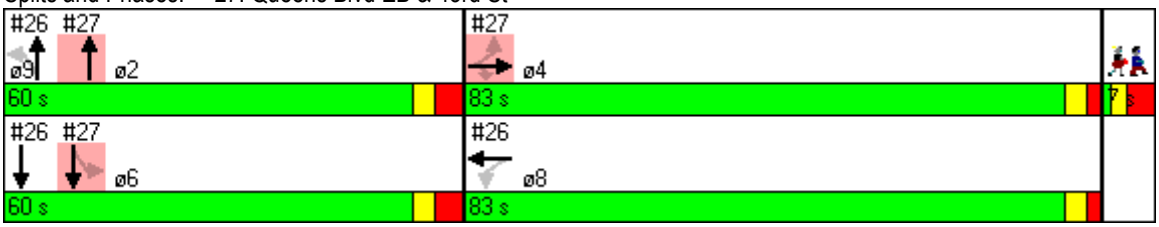
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	623	25	0	0	0	0	133	25	28	163	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	14	14	14	11	11	11
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.86					0.99		0.97		
Frt			0.850					0.978				
Flt Protected		0.998								0.950		
Satd. Flow (prot)	0	6020	1449	0	0	0	0	1563	0	1678	1837	0
Flt Permitted		0.998								0.576		
Satd. Flow (perm)	0	6018	1251	0	0	0	0	1563	0	991	1837	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			259			672			57	
Travel Time (s)		5.6			5.9			15.3			1.3	
Confl. Peds. (#/hr)	10		130				28		41	41		28
Confl. Bikes (#/hr)			3						7			
Peak Hour Factor	0.64	0.80	0.78	0.92	0.92	0.92	0.92	0.81	0.78	0.78	0.87	0.92
Heavy Vehicles (%)	4%	1%	4%	2%	2%	2%	2%	0%	0%	4%	0%	2%
Parking (#/hr)								21	21			
Adj. Flow (vph)	36	779	32	0	0	0	0	164	32	36	187	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	815	32	0	0	0	0	196	0	36	187	0
Enter Blocked Intersection	2 veh	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	0.92	1.23	0.92	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm		Perm							Perm		
Protected Phases		4						2			6	
Permitted Phases	4		4							6		
Minimum Split (s)	83.0	83.0	83.0					60.0		60.0	60.0	
Total Split (s)	83.0	83.0	83.0	0.0	0.0	0.0	0.0	60.0	0.0	60.0	60.0	0.0
Total Split (%)	55.3%	55.3%	55.3%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	40.0%	40.0%	0.0%
Maximum Green (s)	78.0	78.0	78.0					53.0		53.0	53.0	
Yellow Time (s)	3.0	3.0	3.0					3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0					4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	4.0	4.0	4.0	7.0	4.0	7.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	72.0	72.0	72.0					41.0		41.0	41.0	
Flash Dont Walk (s)	11.0	11.0	11.0					12.0		12.0	12.0	
Pedestrian Calls (#/hr)	24	24	24					24		24	24	
Act Effct Green (s)		78.0	78.0					53.0		53.0	53.0	

Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	72.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	24	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.52	0.52					0.35		0.35	0.35	
v/c Ratio		0.26	0.05					0.36		0.10	0.29	
Control Delay		20.3	18.1					38.2		12.6	13.4	
Queue Delay		0.0	0.0					0.0		0.0	0.0	
Total Delay		20.3	18.1					38.2		12.6	13.4	
LOS		C	B					D		B	B	
Approach Delay		20.2						38.2			13.3	
Approach LOS		C						D			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 125 (83%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 21.8	Intersection LOS: C
Intersection Capacity Utilization 244.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 27: Queens Blvd EB & 43rd St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

Lanes, Volumes, Timings
5: Queens Blvd WB & 47th St

5/31/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	950	25	32	58	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	9	10	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99		0.76					
Frt					0.996							
Flt Protected							0.950					
Satd. Flow (prot)	0	0	0	0	5751	0	1608	1756	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	5751	0	1229	1756	0	0	0	0
Right Turn on Red			No			No	No		No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		131			255			47			545	
Travel Time (s)		3.0			5.8			1.1			12.4	
Confl. Peds. (#/hr)						434	308					
Confl. Bikes (#/hr)						14						
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Parking (#/hr)					6	6						
Adj. Flow (vph)	0	0	0	0	1011	27	34	62	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1038	0	34	62	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.14	1.09	1.14	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Minimum Split (s)					9.0		11.0	11.0				
Total Split (s)	0.0	0.0	0.0	0.0	59.0	0.0	54.0	54.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	49.2%	0.0%	45.0%	45.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					54.0		47.0	47.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		4.0	4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					52.0		35.0	35.0				
Flash Dont Walk (s)					7.0		12.0	12.0				
Pedestrian Calls (#/hr)					36		36	36				
Act Effct Green (s)					54.0		47.0	47.0				

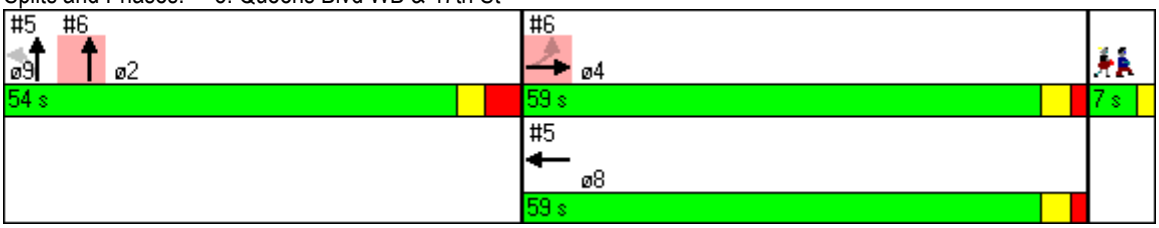
Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	9.0	7.0
Total Split (s)	59.0	7.0
Total Split (%)	49%	6%
Maximum Green (s)	54.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	52.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	36	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.45		0.39	0.39				
v/c Ratio					0.40		0.07	0.09				
Control Delay					8.2		11.0	11.2				
Queue Delay					0.1		0.0	0.0				
Total Delay					8.4		11.0	11.2				
LOS					A		B	B				
Approach Delay					8.4			11.1				
Approach LOS					A			B				
Queue Length 50th (ft)					48		6	12				
Queue Length 95th (ft)					55		15	23				
Internal Link Dist (ft)		51			175			1			465	
Turn Bay Length (ft)												
Base Capacity (vph)					2588		481	688				
Starvation Cap Reductn					542		0	0				
Spillback Cap Reductn					0		0	0				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.51		0.07	0.09				

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 4:EBTL and 8:, Start of Green
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 8.6 Intersection LOS: A
Intersection Capacity Utilization 62.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 5: Queens Blvd WB & 47th St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	1033	0	0	0	0	0	70	14	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	15	15	15	12	12	12
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.96				
Frt								0.977				
Flt Protected		0.999										
Satd. Flow (prot)	0	5838	0	0	0	0	0	1734	0	0	0	0
Flt Permitted		0.999										
Satd. Flow (perm)	0	5832	0	0	0	0	0	1734	0	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		129			247			108			41	
Travel Time (s)		2.9			5.6			2.5			0.9	
Confl. Peds. (#/hr)	58								269			
Confl. Bikes (#/hr)			8						5			
Peak Hour Factor	0.94	0.94	0.94	0.82	0.82	0.82	0.94	0.94	0.94	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Parking (#/hr)		6						2	2			
Adj. Flow (vph)	18	1099	0	0	0	0	0	74	15	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1117	0	0	0	0	0	89	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.14	1.09	1.00	1.00	1.00	0.88	1.03	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	9.0	9.0						11.0				
Total Split (s)	59.0	59.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	0.0	0.0	0.0
Total Split (%)	49.2%	49.2%	0.0%	0.0%	0.0%	0.0%	0.0%	45.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	54.0	54.0						47.0				
Yellow Time (s)	3.0	3.0						3.0				
All-Red Time (s)	2.0	2.0						4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	52.0	52.0						35.0				
Flash Dont Walk (s)	7.0	7.0						12.0				
Pedestrian Calls (#/hr)	36	36						36				
Act Effct Green (s)		54.0						47.0				

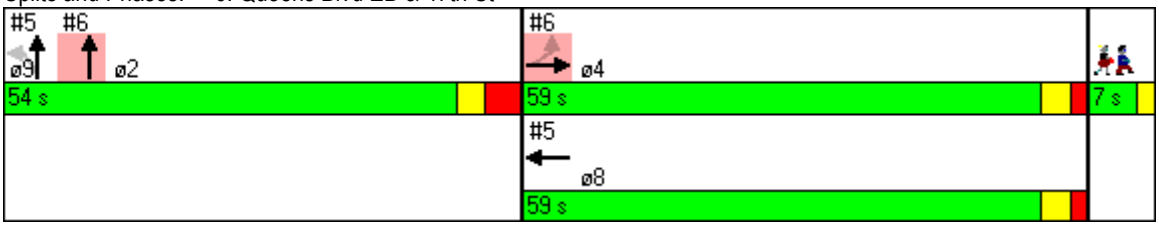
Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	9.0	7.0
Total Split (s)	59.0	7.0
Total Split (%)	49%	6%
Maximum Green (s)	54.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	52.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	36	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.45						0.39				
v/c Ratio		0.43						0.13				
Control Delay		23.1						24.1				
Queue Delay		0.0						0.0				
Total Delay		23.1						24.1				
LOS		C						C				
Approach Delay		23.1						24.1				
Approach LOS		C						C				
Queue Length 50th (ft)		167						44				
Queue Length 95th (ft)		197						80				
Internal Link Dist (ft)		49			167			28			1	
Turn Bay Length (ft)												
Base Capacity (vph)		2624						679				
Starvation Cap Reductn		0						0				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.43						0.13				

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 35 (29%), Referenced to phase 4:EBTL and 8:, Start of Green
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 23.2 Intersection LOS: C
Intersection Capacity Utilization 64.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: Queens Blvd EB & 47th St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1	868	94	5	6	0	0	8	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Storage Length (ft)	0		0	0		0	0		0	0		90
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00	0.63		0.97				0.93
Frt						0.850						0.850
Flt Protected								0.976				
Satd. Flow (prot)	0	0	0	0	6021	1429	0	1731	0	0	1481	1212
Flt Permitted								0.916				
Satd. Flow (perm)	0	0	0	0	6020	898	0	1579	0	0	1481	1127
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			196			53			536	
Travel Time (s)		5.8			4.5			1.2			12.2	
Confl. Peds. (#/hr)	322		31	31		322	57		99	99		57
Confl. Bikes (#/hr)						14						3
Peak Hour Factor	0.92	0.92	0.92	0.25	0.95	0.81	0.63	0.75	0.67	0.92	0.50	0.85
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	0%	2%	2%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	13	13	0	0	0	0	0	2
Parking (#/hr)											13	13
Adj. Flow (vph)	0	0	0	4	914	116	8	8	0	0	16	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	918	116	0	16	0	0	16	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.11	1.17	1.09	1.09	1.09	1.09	1.37	1.38
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm		Perm	Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Minimum Split (s)				60.0	60.0	60.0	60.0	60.0			60.0	60.0
Total Split (s)	0.0	0.0	0.0	60.0	60.0	60.0	43.0	43.0	0.0	0.0	43.0	43.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	50.0%	35.8%	35.8%	0.0%	0.0%	35.8%	35.8%
Maximum Green (s)				55.0	55.0	55.0	36.0	36.0			36.0	36.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	4.0	4.0			4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	7.0	7.0	4.0	4.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												

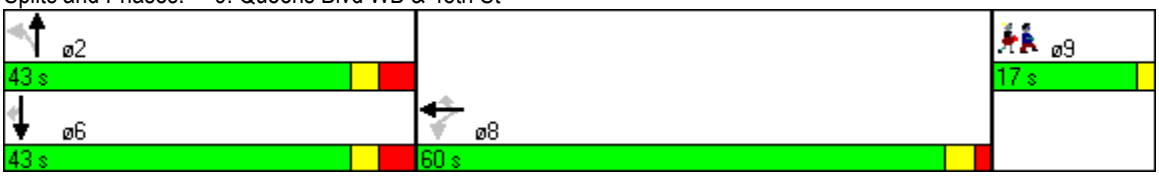
Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	14%
Maximum Green (s)	15.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					55.0	55.0		36.0			36.0	36.0
Actuated g/C Ratio					0.46	0.46		0.30			0.30	0.30
v/c Ratio					0.33	0.28		0.03			0.04	0.36
Control Delay					9.0	10.2		30.2			30.2	36.6
Queue Delay					0.2	1.0		0.0			0.0	0.0
Total Delay					9.2	11.2		30.2			30.2	36.6
LOS					A	B		C			C	D
Approach Delay					9.5			30.2			35.9	
Approach LOS					A			C			D	
Queue Length 50th (ft)					40	18		9			9	73
Queue Length 95th (ft)					m47	m26		22			14	121
Internal Link Dist (ft)		175			116			1			456	
Turn Bay Length (ft)												90
Base Capacity (vph)					2759	412		474			444	338
Starvation Cap Reductn					1001	140		0			0	0
Spillback Cap Reductn					0	0		0			0	0
Storage Cap Reductn					0	0		0			0	0
Reduced v/c Ratio					0.52	0.43		0.03			0.04	0.36

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 41 (34%), Referenced to phase 8:WBTL, Start of Green
Natural Cycle: 140
Control Type: Pretimed
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 55.8% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Queens Blvd WB & 48th St



Lane Group	ø9
Walk Time (s)	5.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	36
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

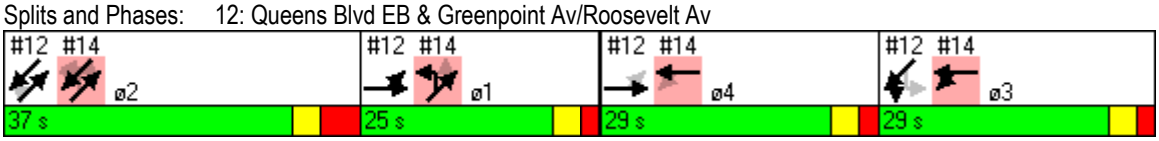
Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Lane Configurations											
Volume (vph)	121	850	41	35	72	48	21	14	50	102	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	12	12	12	10	10	10	
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.95			0.80				0.86		
Frt		0.989			0.934						
Flt Protected		0.994							0.950		
Satd. Flow (prot)	0	5513	0	0	1220	0	0	0	1668	1756	
Flt Permitted		0.994							0.636		
Satd. Flow (perm)	0	5471	0	0	1220	0	0	0	964	1756	
Right Turn on Red				No			No				
Satd. Flow (RTOR)											
Link Speed (mph)		30			30					30	
Link Distance (ft)		247			159					231	
Travel Time (s)		5.6			3.6					5.3	
Confl. Peds. (#/hr)	44		165	216		169	26	143			
Confl. Bikes (#/hr)			8	8		5	5				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Bus Blockages (#/hr)	0	0	0	0	2	2	2	0	0	0	
Parking (#/hr)		3	3	3	5	5	5				
Adj. Flow (vph)	129	904	44	37	77	51	22	15	53	109	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1114	0	0	150	0	0	0	68	109	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Right	Right	Left	Left	Left	
Median Width(ft)		0			0					17	
Link Offset(ft)		0			0					0	
Crosswalk Width(ft)		16			16					16	
Two way Left Turn Lane											
Headway Factor	1.09	1.13	1.09	1.09	1.20	1.00	1.00	1.09	1.09	1.09	
Turning Speed (mph)	15		9	9		9	9	15	15		
Turn Type	custom							custom	D.P+P		
Protected Phases	1	4 1			2				3	2 3	4
Permitted Phases	4							3	2		
Minimum Split (s)	25.0				37.0			29.0	29.0		29.0
Total Split (s)	25.0	54.0	0.0	0.0	37.0	0.0	0.0	29.0	29.0	66.0	29.0
Total Split (%)	20.8%	45.0%	0.0%	0.0%	30.8%	0.0%	0.0%	24.2%	24.2%	55.0%	24%
Maximum Green (s)	20.0				30.0			24.0	24.0		24.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				4.0			2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	7.0	4.0	4.0	5.0	5.0	7.0	
Lead/Lag	Lag				Lead			Lag	Lag		Lead
Lead-Lag Optimize?											
Walk Time (s)	0.0				7.0			7.0	7.0		9.0
Flash Dont Walk (s)	20.0				23.0			17.0	17.0		15.0
Pedestrian Calls (#/hr)	36				36			36	36		24

Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Act Effct Green (s)		44.0			30.0				56.0	59.0	
Actuated g/C Ratio		0.37			0.25				0.47	0.49	
v/c Ratio		0.55			0.49				0.12	0.13	
Control Delay		16.4			45.0				8.3	8.9	
Queue Delay		0.2			0.0				0.0	0.9	
Total Delay		16.6			45.0				8.3	9.8	
LOS		B			D				A	A	
Approach Delay		16.6			45.0					9.3	
Approach LOS		B			D					A	
Queue Length 50th (ft)		70			100				24	40	
Queue Length 95th (ft)		81			169				46	69	
Internal Link Dist (ft)		167			79					151	
Turn Bay Length (ft)											
Base Capacity (vph)		2013			305				591	863	
Starvation Cap Reductn		235			0				0	558	
Spillback Cap Reductn		0			0				0	0	
Storage Cap Reductn		0			0				0	0	
Reduced v/c Ratio		0.63			0.49				0.12	0.36	

Intersection Summary

Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 40 (33%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 62.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: Queens Blvd EB & Greenpoint Av/Roosevelt Av



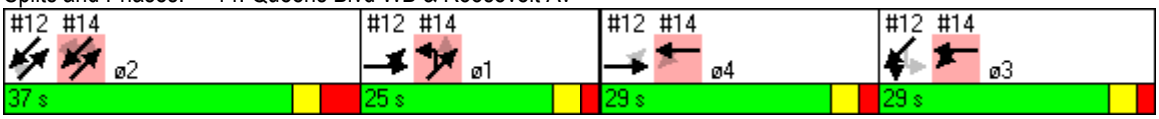
Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Lane Configurations											
Volume (vph)	95	799	24	7	22	21	150	71	142	7	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	11	9	9	9	
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.99				0.55			0.49		
Frt		0.995							0.850		
Flt Protected		0.995				0.950					
Satd. Flow (prot)	0	6006	0	0	0	1728	1782	1693	1439	0	
Flt Permitted		0.995				0.708					
Satd. Flow (perm)	0	5984	0	0	0	708	1782	1693	699	0	
Right Turn on Red				No						No	
Satd. Flow (RTOR)											
Link Speed (mph)		30					30	30			
Link Distance (ft)		325					231	238			
Travel Time (s)		7.4					5.3	5.4			
Confl. Peds. (#/hr)	24		6	26	90	160			90	160	
Confl. Bikes (#/hr)			14	14					3	3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Bus Blockages (#/hr)	0	0	0	5	0	0	5	0	0	0	
Parking (#/hr)		1	1	1							
Adj. Flow (vph)	101	850	26	7	23	22	160	76	151	7	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	984	0	0	0	45	160	76	158	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0					17	0			
Link Offset(ft)		0					0	0			
Crosswalk Width(ft)		16					16	16			
Two way Left Turn Lane											
Headway Factor	1.04	1.08	1.04	1.04	1.04	1.04	1.07	1.14	1.14	1.14	
Turning Speed (mph)	15		9	9	15	15			9	9	
Turn Type	custom				D.P+P	Perm			Perm		
Protected Phases	3	4 3			1		2 1	2			4
Permitted Phases	4				2	2 1			2		
Minimum Split (s)	29.0				25.0			37.0	37.0		29.0
Total Split (s)	29.0	58.0	0.0	0.0	25.0	62.0	62.0	37.0	37.0	0.0	29.0
Total Split (%)	24.2%	48.3%	0.0%	0.0%	20.8%	51.7%	51.7%	30.8%	30.8%	0.0%	24%
Maximum Green (s)	24.0				20.0			30.0	30.0		24.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				2.0			4.0	4.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	7.0	7.0	7.0	7.0	4.0	
Lead/Lag	Lag				Lag			Lead	Lead		Lead
Lead-Lag Optimize?											
Walk Time (s)	7.0				0.0			7.0	7.0		9.0
Flash Dont Walk (s)	17.0				20.0			23.0	23.0		15.0
Pedestrian Calls (#/hr)	36				36			36	36		24

Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Act Effct Green (s)		48.0				55.0	55.0	30.0	30.0		
Actuated g/C Ratio		0.40				0.46	0.46	0.25	0.25		
v/c Ratio		0.41				0.14	0.20	0.18	0.90		
Control Delay		23.1				21.5	21.4	36.8	91.5		
Queue Delay		0.0				0.0	1.4	0.0	0.0		
Total Delay		23.1				21.5	22.8	36.8	91.5		
LOS		C				C	C	D	F		
Approach Delay		23.1					22.5	73.7			
Approach LOS		C					C	E			
Queue Length 50th (ft)		145				17	62	46	119		
Queue Length 95th (ft)		173				m33	95	89	#253		
Internal Link Dist (ft)		245					151	158			
Turn Bay Length (ft)											
Base Capacity (vph)		2398				325	817	423	175		
Starvation Cap Reductn		0				0	487	0	0		
Spillback Cap Reductn		0				0	0	0	0		
Storage Cap Reductn		0				0	0	0	0		
Reduced v/c Ratio		0.41				0.14	0.48	0.18	0.90		

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 40 (33%), Referenced to phase 4:EBTL, Start of Green
Natural Cycle: 120
Control Type: Pretimed
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 31.4 Intersection LOS: C
Intersection Capacity Utilization 64.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Queens Blvd WB & Roosevelt Av



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	881	31	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995					
Flt Protected						
Satd. Flow (prot)	5844	0	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	5844	0	0	0	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	256			60	335	
Travel Time (s)	5.8			1.4	7.6	
Confl. Peds. (#/hr)		97				
Confl. Bikes (#/hr)		8				
Peak Hour Factor	0.94	0.94	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)	2	2				
Adj. Flow (vph)	937	33	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	970	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	16.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	90	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	15	15	15	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1756	0	0	1756	0	0	2069	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1756	0	0	1756	0	0	2069	0	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		121			256			41			47	
Travel Time (s)		2.8			5.8			0.9			1.1	
Confl. Peds. (#/hr)							308		269			
Confl. Bikes (#/hr)									5			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	0	0	0	0	0	0	0	96	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	96	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	0.88	0.88	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 16.7%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	28	802	60	39	126	0	0	110	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	11	11	14	14	14
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98			0.99			0.99	
Frt					0.990						0.979	
Flt Protected					0.997			0.987				
Satd. Flow (prot)	0	0	0	0	5665	0	0	1799	0	0	1611	0
Flt Permitted					0.997			0.869				
Satd. Flow (perm)	0	0	0	0	5651	0	0	1571	0	0	1611	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		263			261			57			596	
Travel Time (s)		6.0			5.9			1.3			13.5	
Confl. Peds. (#/hr)				44		266	57		98	98		57
Confl. Bikes (#/hr)						11						2
Peak Hour Factor	0.92	0.92	0.92	0.50	0.90	0.88	0.75	0.85	0.92	0.92	0.65	0.59
Heavy Vehicles (%)	2%	2%	2%	0%	1%	3%	0%	1%	2%	2%	3%	0%
Parking (#/hr)					4	4					12	12
Adj. Flow (vph)	0	0	0	56	891	68	52	148	0	0	169	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1015	0	0	200	0	0	201	0
Enter Blocked Intersection	No	No	No	2 veh	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.14	1.09	1.04	1.04	1.04	0.92	1.15	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Minimum Split (s)				6.0	6.0		8.0	8.0			8.0	
Total Split (s)	0.0	0.0	0.0	58.0	58.0	0.0	54.0	54.0	0.0	0.0	54.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	48.3%	48.3%	0.0%	45.0%	45.0%	0.0%	0.0%	45.0%	0.0%
Maximum Green (s)				53.0	53.0		47.0	47.0			47.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		4.0	4.0			4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	7.0	7.0	4.0	4.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				48.0	48.0		35.0	35.0			35.0	
Flash Dont Walk (s)				11.0	11.0		12.0	12.0			12.0	
Pedestrian Calls (#/hr)				36	36		36	36			36	
Act Effct Green (s)					53.0			47.0			47.0	

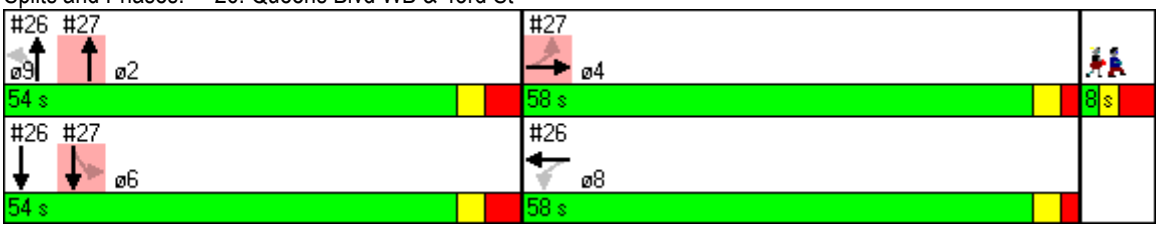
Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	6.0	7.0
Total Split (s)	58.0	8.0
Total Split (%)	48%	7%
Maximum Green (s)	53.0	2.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	48.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	36	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.44			0.39			0.39	
v/c Ratio					0.41			0.33			0.32	
Control Delay					23.4			14.5			27.2	
Queue Delay					0.1			0.0			0.0	
Total Delay					23.5			14.5			27.2	
LOS					C			B			C	
Approach Delay					23.5			14.5			27.2	
Approach LOS					C			B			C	
Queue Length 50th (ft)					152			41			107	
Queue Length 95th (ft)					181			58			115	
Internal Link Dist (ft)		183			181			1			516	
Turn Bay Length (ft)												
Base Capacity (vph)					2496			615			631	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					481			0			13	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.50			0.33			0.33	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 65 (54%), Referenced to phase 4:EBTL and 8:, Start of Green
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 22.8 Intersection LOS: C
Intersection Capacity Utilization 99.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 26: Queens Blvd WB & 43rd St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1083	0	0	0	0	0	143	56	36	123	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	14	14	14	11	11	11
Lane Util. Factor	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.99			0.99	
Frt								0.961				
Flt Protected		0.998									0.988	
Satd. Flow (prot)	0	7100	0	0	0	0	0	1517	0	0	1801	0
Flt Permitted		0.998									0.866	
Satd. Flow (perm)	0	7097	0	0	0	0	0	1517	0	0	1571	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			259			672			57	
Travel Time (s)		5.6			5.9			15.3			1.3	
Confl. Peds. (#/hr)	10		130				28		41	41		28
Confl. Bikes (#/hr)			8						5			
Peak Hour Factor	0.57	0.90	0.78	0.92	0.92	0.92	0.92	0.81	0.78	0.78	0.87	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	0%	3%	0%	2%
Parking (#/hr)								21	21			
Adj. Flow (vph)	56	1203	0	0	0	0	0	177	72	46	141	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1259	0	0	0	0	0	249	0	0	187	0
Enter Blocked Intersection	2 veh	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	0.92	1.23	0.92	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Minimum Split (s)	6.0	6.0						8.0		8.0	8.0	
Total Split (s)	58.0	58.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	54.0	54.0	0.0
Total Split (%)	48.3%	48.3%	0.0%	0.0%	0.0%	0.0%	0.0%	45.0%	0.0%	45.0%	45.0%	0.0%
Maximum Green (s)	53.0	53.0						47.0		47.0	47.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	4.0	7.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	48.0	48.0						35.0		35.0	35.0	
Flash Dont Walk (s)	11.0	11.0						12.0		12.0	12.0	
Pedestrian Calls (#/hr)	36	36						36		36	36	
Act Effct Green (s)		53.0						47.0			47.0	

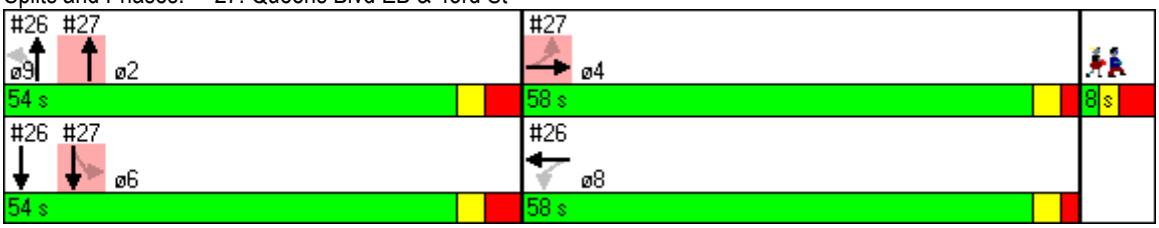
Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	6.0	7.0
Total Split (s)	58.0	8.0
Total Split (%)	48%	7%
Maximum Green (s)	53.0	2.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	48.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	36	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.44						0.39			0.39	
v/c Ratio		0.40						0.42			0.30	
Control Delay		23.2						29.3			15.1	
Queue Delay		0.1						0.0			0.0	
Total Delay		23.3						29.3			15.1	
LOS		C						C			B	
Approach Delay		23.3						29.3			15.1	
Approach LOS		C						C			B	
Queue Length 50th (ft)		160						139			40	
Queue Length 95th (ft)		185						186			58	
Internal Link Dist (ft)		165			179			592			1	
Turn Bay Length (ft)												
Base Capacity (vph)		3135						594			615	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		489						13			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.48						0.43			0.30	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 65 (54%), Referenced to phase 4:EBTL and 8:, Start of Green
Natural Cycle: 40
Control Type: Pretimed
Maximum v/c Ratio: 0.42
Intersection Signal Delay: 23.3 Intersection LOS: C
Intersection Capacity Utilization 98.3% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 27: Queens Blvd EB & 43rd St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lanes, Volumes, Timings
5: Queens Blvd WB & 47th St

5/31/2011

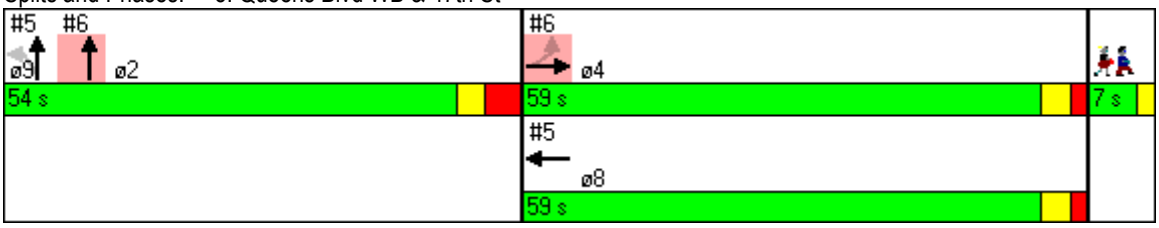
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	950	25	32	58	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	9	10	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99		0.76					
Frt					0.996							
Flt Protected							0.950					
Satd. Flow (prot)	0	0	0	0	5751	0	1608	1756	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	5751	0	1229	1756	0	0	0	0
Right Turn on Red			No			No	No		No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		131			255			47			545	
Travel Time (s)		3.0			5.8			1.1			12.4	
Confl. Peds. (#/hr)						434	308					
Confl. Bikes (#/hr)						14						
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Parking (#/hr)					6	6						
Adj. Flow (vph)	0	0	0	0	1011	27	34	62	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1038	0	34	62	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.14	1.09	1.14	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Minimum Split (s)					59.0		54.0	54.0				
Total Split (s)	0.0	0.0	0.0	0.0	59.0	0.0	54.0	54.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	49.2%	0.0%	45.0%	45.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					54.0		47.0	47.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		4.0	4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					52.0		35.0	35.0				
Flash Dont Walk (s)					7.0		12.0	12.0				
Pedestrian Calls (#/hr)					36		36	36				
Act Effct Green (s)					54.0		47.0	47.0				

Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	59.0	7.0
Total Split (s)	59.0	7.0
Total Split (%)	49%	6%
Maximum Green (s)	54.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	52.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	36	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.45		0.39	0.39				
v/c Ratio					0.40		0.07	0.09				
Control Delay					7.2		11.0	11.2				
Queue Delay					0.1		0.0	0.0				
Total Delay					7.3		11.0	11.2				
LOS					A		B	B				
Approach Delay					7.3			11.1				
Approach LOS					A			B				

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 35 (29%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 7.6	Intersection LOS: A
Intersection Capacity Utilization 62.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Queens Blvd WB & 47th St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

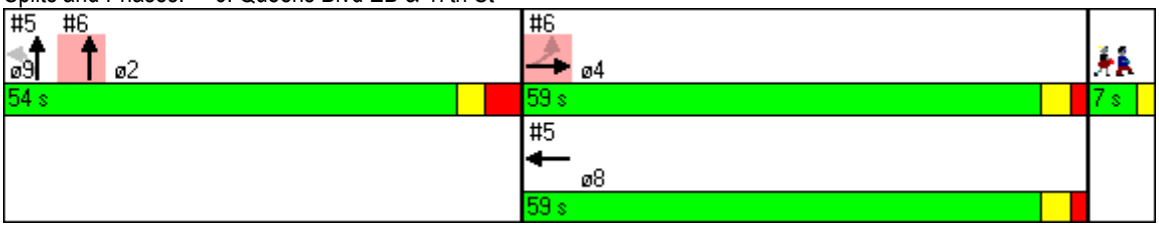
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	17	1033	0	0	0	0	0	70	14	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	15	15	15	12	12	12
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.96				
Frt								0.977				
Flt Protected		0.999										
Satd. Flow (prot)	0	5838	0	0	0	0	0	1734	0	0	0	0
Flt Permitted		0.999										
Satd. Flow (perm)	0	5832	0	0	0	0	0	1734	0	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		129			247			108			41	
Travel Time (s)		2.9			5.6			2.5			0.9	
Confl. Peds. (#/hr)	58								269			
Confl. Bikes (#/hr)			8						5			
Peak Hour Factor	0.94	0.94	0.94	0.82	0.82	0.82	0.94	0.94	0.94	0.82	0.82	0.82
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Parking (#/hr)		6						2	2			
Adj. Flow (vph)	18	1099	0	0	0	0	0	74	15	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1117	0	0	0	0	0	89	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.14	1.09	1.00	1.00	1.00	0.88	1.03	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm											
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	59.0	59.0						54.0				
Total Split (s)	59.0	59.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	0.0	0.0	0.0
Total Split (%)	49.2%	49.2%	0.0%	0.0%	0.0%	0.0%	0.0%	45.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	54.0	54.0						47.0				
Yellow Time (s)	3.0	3.0						3.0				
All-Red Time (s)	2.0	2.0						4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	52.0	52.0						35.0				
Flash Dont Walk (s)	7.0	7.0						12.0				
Pedestrian Calls (#/hr)	36	36						36				
Act Effct Green (s)		54.0						47.0				

Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	59.0	7.0
Total Split (s)	59.0	7.0
Total Split (%)	49%	6%
Maximum Green (s)	54.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	52.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	36	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.45						0.39				
v/c Ratio		0.43						0.13				
Control Delay		23.1						24.1				
Queue Delay		0.0						0.0				
Total Delay		23.1						24.1				
LOS		C						C				
Approach Delay		23.1						24.1				
Approach LOS		C						C				

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 35 (29%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 23.2	Intersection LOS: C
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Queens Blvd EB & 47th St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

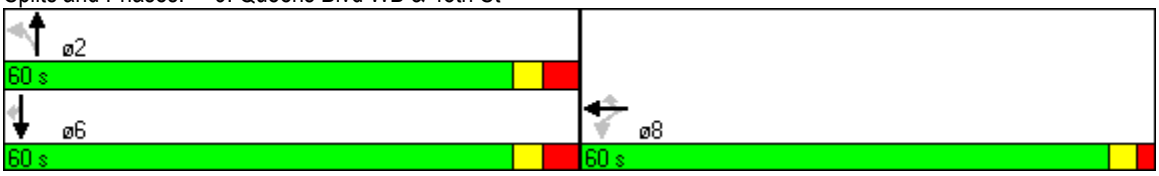
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	1	868	94	5	6	0	0	8	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Storage Length (ft)	0		0	0		0	0		0	0		90
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00	0.63		0.98				0.95
Frt						0.850						0.850
Flt Protected								0.976				
Satd. Flow (prot)	0	0	0	0	6021	1429	0	1731	0	0	1481	1212
Flt Permitted								0.926				
Satd. Flow (perm)	0	0	0	0	6020	898	0	1611	0	0	1481	1150
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			196			53			536	
Travel Time (s)		5.8			4.5			1.2			12.2	
Confl. Peds. (#/hr)	322		31	31		322	57		99	99		57
Confl. Bikes (#/hr)						14						3
Peak Hour Factor	0.92	0.92	0.92	0.25	0.95	0.81	0.63	0.75	0.67	0.92	0.50	0.85
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	0%	2%	2%	0%	3%
Bus Blockages (#/hr)	0	0	0	0	13	13	0	0	0	0	0	2
Parking (#/hr)											13	13
Adj. Flow (vph)	0	0	0	4	914	116	8	8	0	0	16	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	918	116	0	16	0	0	16	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.11	1.17	1.09	1.09	1.09	1.09	1.37	1.38
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm		Perm	Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Minimum Split (s)				60.0	60.0	60.0	60.0	60.0			60.0	60.0
Total Split (s)	0.0	0.0	0.0	60.0	60.0	60.0	60.0	60.0	0.0	0.0	60.0	60.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	50.0%	50.0%	50.0%	0.0%	0.0%	50.0%	50.0%
Maximum Green (s)				55.0	55.0	55.0	53.0	53.0			53.0	53.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	4.0	4.0			4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	7.0	7.0	4.0	4.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)				43.0	43.0	43.0	43.0	43.0			43.0	43.0
Flash Dont Walk (s)				12.0	12.0	12.0	10.0	10.0			10.0	10.0
Pedestrian Calls (#/hr)				24	24	24	36	36			36	36
Act Effct Green (s)					55.0	55.0		53.0			53.0	53.0
Actuated g/C Ratio					0.46	0.46		0.44			0.44	0.44
v/c Ratio					0.33	0.28		0.02			0.02	0.24
Control Delay					11.9	13.0		19.1			19.1	22.5
Queue Delay					0.4	1.0		0.0			0.0	0.0
Total Delay					12.2	14.0		19.1			19.1	22.5
LOS					B	B		B			B	C
Approach Delay					12.4			19.1			22.1	
Approach LOS					B			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 30 (25%), Referenced to phase 8:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 150.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 9: Queens Blvd WB & 48th St

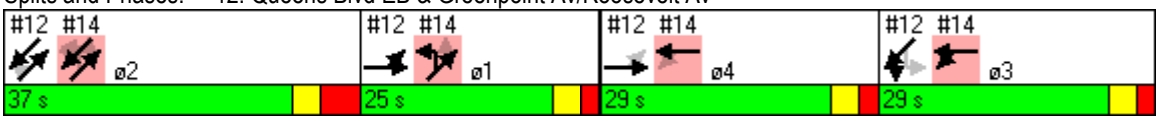


Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Lane Configurations											
Volume (vph)	121	850	41	35	72	48	21	14	50	102	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	12	12	12	10	10	10	
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.95			0.80				0.86		
Frt		0.989			0.934						
Flt Protected		0.994							0.950		
Satd. Flow (prot)	0	5513	0	0	1220	0	0	0	1668	1756	
Flt Permitted		0.994							0.636		
Satd. Flow (perm)	0	5471	0	0	1220	0	0	0	964	1756	
Right Turn on Red				No			No				
Satd. Flow (RTOR)											
Link Speed (mph)		30			30					30	
Link Distance (ft)		247			159					231	
Travel Time (s)		5.6			3.6					5.3	
Confl. Peds. (#/hr)	44		165	216		169	26	143			
Confl. Bikes (#/hr)			8	8		5	5				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Bus Blockages (#/hr)	0	0	0	0	2	2	2	0	0	0	
Parking (#/hr)		3	3	3	5	5	5				
Adj. Flow (vph)	129	904	44	37	77	51	22	15	53	109	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1114	0	0	150	0	0	0	68	109	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Right	Right	Left	Left	Left	
Median Width(ft)		0			0					17	
Link Offset(ft)		0			0					0	
Crosswalk Width(ft)		16			16					16	
Two way Left Turn Lane											
Headway Factor	1.09	1.13	1.09	1.09	1.20	1.00	1.00	1.09	1.09	1.09	
Turning Speed (mph)	15		9	9		9	9	15	15		
Turn Type	custom							custom	D.P+P		
Protected Phases	1	4 1			2				3	2 3	4
Permitted Phases	4							3	2		
Minimum Split (s)	25.0				37.0			29.0	29.0		29.0
Total Split (s)	25.0	54.0	0.0	0.0	37.0	0.0	0.0	29.0	29.0	66.0	29.0
Total Split (%)	20.8%	45.0%	0.0%	0.0%	30.8%	0.0%	0.0%	24.2%	24.2%	55.0%	24%
Maximum Green (s)	20.0				30.0			24.0	24.0		24.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				4.0			2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	7.0	4.0	4.0	5.0	5.0	7.0	
Lead/Lag	Lag				Lead			Lag	Lag		Lead
Lead-Lag Optimize?											
Walk Time (s)	0.0				7.0			7.0	7.0		9.0
Flash Dont Walk (s)	20.0				23.0			17.0	17.0		15.0
Pedestrian Calls (#/hr)	36				36			36	36		24

Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Act Effct Green (s)		44.0			30.0				56.0	59.0	
Actuated g/C Ratio		0.37			0.25				0.47	0.49	
v/c Ratio		0.55			0.49				0.12	0.13	
Control Delay		16.4			45.0				8.3	8.9	
Queue Delay		0.2			0.0				0.0	0.9	
Total Delay		16.6			45.0				8.3	9.8	
LOS		B			D				A	A	
Approach Delay		16.6			45.0					9.3	
Approach LOS		B			D					A	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 40 (33%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 62.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 12: Queens Blvd EB & Greenpoint Av/Roosevelt Av

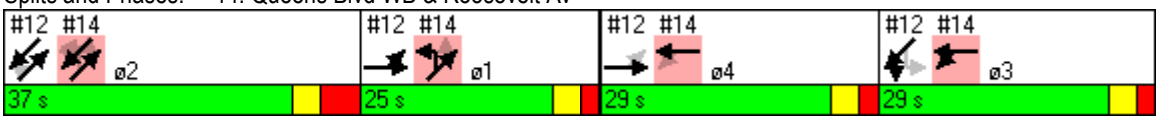


Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Lane Configurations											
Volume (vph)	95	799	24	7	22	21	150	71	142	7	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	11	9	9	9	
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.99				0.55			0.49		
Frt		0.995							0.850		
Flt Protected		0.995				0.950					
Satd. Flow (prot)	0	6006	0	0	0	1728	1782	1693	1439	0	
Flt Permitted		0.995				0.708					
Satd. Flow (perm)	0	5984	0	0	0	708	1782	1693	699	0	
Right Turn on Red				No						No	
Satd. Flow (RTOR)											
Link Speed (mph)		30					30	30			
Link Distance (ft)		325					231	238			
Travel Time (s)		7.4					5.3	5.4			
Confl. Peds. (#/hr)	24		6	26	90	160			90	160	
Confl. Bikes (#/hr)			14	14					3	3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Bus Blockages (#/hr)	0	0	0	5	0	0	5	0	0	0	
Parking (#/hr)		1	1	1							
Adj. Flow (vph)	101	850	26	7	23	22	160	76	151	7	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	984	0	0	0	45	160	76	158	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0					17	0			
Link Offset(ft)		0					0	0			
Crosswalk Width(ft)		16					16	16			
Two way Left Turn Lane											
Headway Factor	1.04	1.08	1.04	1.04	1.04	1.04	1.07	1.14	1.14	1.14	
Turning Speed (mph)	15		9	9	15	15			9	9	
Turn Type	custom				D.P+P	Perm			Perm		
Protected Phases	3	4 3			1		2 1	2			4
Permitted Phases	4				2	2 1			2		
Minimum Split (s)	29.0				25.0			37.0	37.0		29.0
Total Split (s)	29.0	58.0	0.0	0.0	25.0	62.0	62.0	37.0	37.0	0.0	29.0
Total Split (%)	24.2%	48.3%	0.0%	0.0%	20.8%	51.7%	51.7%	30.8%	30.8%	0.0%	24%
Maximum Green (s)	24.0				20.0			30.0	30.0		24.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				2.0			4.0	4.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	7.0	7.0	7.0	7.0	4.0	
Lead/Lag	Lag				Lag			Lead	Lead		Lead
Lead-Lag Optimize?											
Walk Time (s)	7.0				0.0			7.0	7.0		9.0
Flash Dont Walk (s)	17.0				20.0			23.0	23.0		15.0
Pedestrian Calls (#/hr)	36				36			36	36		24

Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Act Effct Green (s)		48.0				55.0	55.0	30.0	30.0		
Actuated g/C Ratio		0.40				0.46	0.46	0.25	0.25		
v/c Ratio		0.41				0.14	0.20	0.18	0.90		
Control Delay		23.1				21.5	21.4	36.8	91.5		
Queue Delay		0.0				0.0	1.4	0.0	0.0		
Total Delay		23.1				21.5	22.8	36.8	91.5		
LOS		C				C	C	D	F		
Approach Delay		23.1					22.5	73.7			
Approach LOS		C					C	E			

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 40 (33%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 64.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 14: Queens Blvd WB & Roosevelt Av



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	881	31	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Lane Util. Factor	0.86	0.86	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.995					
Flt Protected						
Satd. Flow (prot)	5844	0	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	5844	0	0	0	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	256			60	335	
Travel Time (s)	5.8			1.4	7.6	
Confl. Peds. (#/hr)		97				
Confl. Bikes (#/hr)		8				
Peak Hour Factor	0.94	0.94	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)	2	2				
Adj. Flow (vph)	937	33	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	970	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.13	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 16.8%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	90	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	15	15	15	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1756	0	0	1756	0	0	2069	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1756	0	0	1756	0	0	2069	0	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		121			256			41			47	
Travel Time (s)		2.8			5.8			0.9			1.1	
Confl. Peds. (#/hr)							308		269			
Confl. Bikes (#/hr)									5			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Adj. Flow (vph)	0	0	0	0	0	0	0	96	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	96	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	0.88	0.88	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 16.7%	ICU Level of Service A
Analysis Period (min) 15	

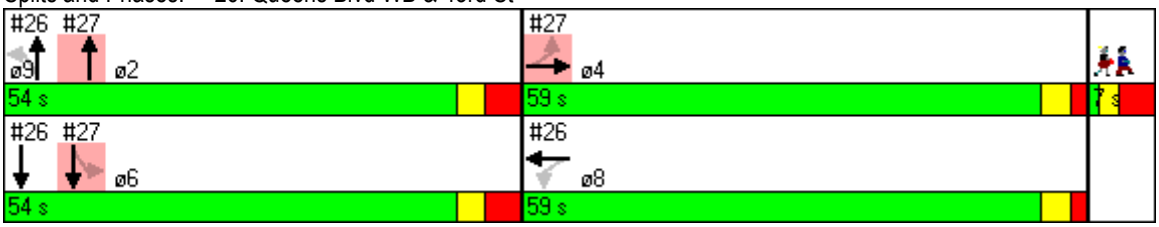
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	28	802	60	39	126	0	0	110	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	11	11	14	14	14
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98		0.97				0.99	
Frt					0.990						0.979	
Flt Protected					0.997		0.950					
Satd. Flow (prot)	0	0	0	0	5665	0	1745	1818	0	0	1611	0
Flt Permitted					0.997		0.602					
Satd. Flow (perm)	0	0	0	0	5657	0	1070	1818	0	0	1611	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		263			261			57			596	
Travel Time (s)		6.0			5.9			1.3			13.5	
Confl. Peds. (#/hr)				44		266	57		98	98		57
Confl. Bikes (#/hr)						11						2
Peak Hour Factor	0.92	0.92	0.92	0.50	0.90	0.88	0.75	0.85	0.92	0.92	0.65	0.59
Heavy Vehicles (%)	2%	2%	2%	0%	1%	3%	0%	1%	2%	2%	3%	0%
Parking (#/hr)					4	4					12	12
Adj. Flow (vph)	0	0	0	56	891	68	52	148	0	0	169	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1015	0	52	148	0	0	201	0
Enter Blocked Intersection	No	No	No	2 veh	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.14	1.09	1.04	1.04	1.04	0.92	1.15	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Minimum Split (s)				59.0	59.0		54.0	54.0			54.0	
Total Split (s)	0.0	0.0	0.0	59.0	59.0	0.0	54.0	54.0	0.0	0.0	54.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	49.2%	49.2%	0.0%	45.0%	45.0%	0.0%	0.0%	45.0%	0.0%
Maximum Green (s)				54.0	54.0		47.0	47.0			47.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		4.0	4.0			4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	7.0	7.0	4.0	4.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				48.0	48.0		35.0	35.0			35.0	
Flash Dont Walk (s)				11.0	11.0		12.0	12.0			12.0	
Pedestrian Calls (#/hr)				36	36		36	36			36	
Act Effct Green (s)					54.0		47.0	47.0			47.0	

Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	59.0	7.0
Total Split (s)	59.0	7.0
Total Split (%)	49%	6%
Maximum Green (s)	54.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	48.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	36	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.45		0.39	0.39			0.39	
v/c Ratio					0.40		0.12	0.21			0.32	
Control Delay					22.7		13.1	13.3			27.2	
Queue Delay					0.1		0.0	0.0			0.0	
Total Delay					22.8		13.1	13.3			27.2	
LOS					C		B	B			C	
Approach Delay					22.8			13.2			27.2	
Approach LOS					C			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 65 (54%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 22.0	Intersection LOS: C
Intersection Capacity Utilization 194.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 26: Queens Blvd WB & 43rd St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

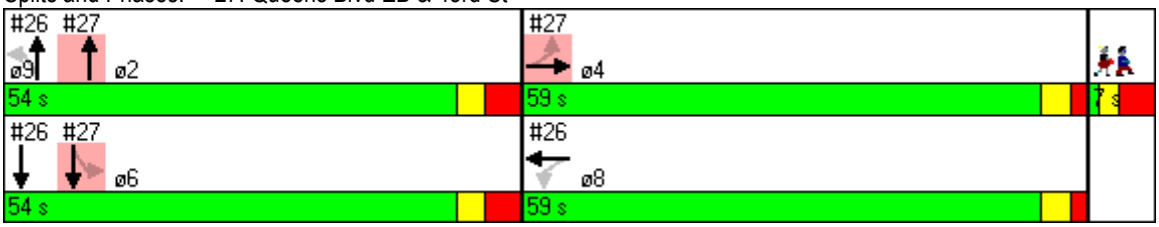
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	32	1083	0	0	0	0	0	143	56	36	123	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	14	14	14	11	11	11
Lane Util. Factor	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.99		0.98		
Frt								0.961				
Flt Protected		0.998								0.950		
Satd. Flow (prot)	0	7100	0	0	0	0	0	1517	0	1694	1837	0
Flt Permitted		0.998								0.544		
Satd. Flow (perm)	0	7098	0	0	0	0	0	1517	0	950	1837	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			259			672			57	
Travel Time (s)		5.6			5.9			15.3			1.3	
Confl. Peds. (#/hr)	10		130				28		41	41		28
Confl. Bikes (#/hr)			8						5			
Peak Hour Factor	0.57	0.90	0.78	0.92	0.92	0.92	0.92	0.81	0.78	0.78	0.87	0.92
Heavy Vehicles (%)	0%	1%	0%	2%	2%	2%	2%	1%	0%	3%	0%	2%
Parking (#/hr)								21	21			
Adj. Flow (vph)	56	1203	0	0	0	0	0	177	72	46	141	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1259	0	0	0	0	0	249	0	46	141	0
Enter Blocked Intersection	2 veh	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	0.92	1.23	0.92	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Minimum Split (s)	59.0	59.0						54.0		54.0	54.0	
Total Split (s)	59.0	59.0	0.0	0.0	0.0	0.0	0.0	54.0	0.0	54.0	54.0	0.0
Total Split (%)	49.2%	49.2%	0.0%	0.0%	0.0%	0.0%	0.0%	45.0%	0.0%	45.0%	45.0%	0.0%
Maximum Green (s)	54.0	54.0						47.0		47.0	47.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	4.0	7.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	48.0	48.0						35.0		35.0	35.0	
Flash Dont Walk (s)	11.0	11.0						12.0		12.0	12.0	
Pedestrian Calls (#/hr)	36	36						36		36	36	
Act Effct Green (s)		54.0						47.0		47.0	47.0	

Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	59.0	7.0
Total Split (s)	59.0	7.0
Total Split (%)	49%	6%
Maximum Green (s)	54.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	48.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	36	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.45						0.39		0.39	0.39	
v/c Ratio		0.39						0.42		0.12	0.20	
Control Delay		22.5						29.3		13.5	13.7	
Queue Delay		0.0						0.0		0.0	0.0	
Total Delay		22.6						29.3		13.5	13.7	
LOS		C						C		B	B	
Approach Delay		22.6						29.3			13.6	
Approach LOS		C						C			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 65 (54%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 120	
Control Type: Pretimed	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 22.6	Intersection LOS: C
Intersection Capacity Utilization 194.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 27: Queens Blvd EB & 43rd St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

Lanes, Volumes, Timings
5: Queens Blvd WB & 47th St

5/31/2011

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1018	43	57	157	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	9	10	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98		0.74					
Frt					0.994							
Flt Protected							0.950					
Satd. Flow (prot)	0	0	0	0	5769	0	1624	1773	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	5769	0	1200	1773	0	0	0	0
Right Turn on Red			No			No	No		No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		131			255			47			545	
Travel Time (s)		3.0			5.8			1.1			12.4	
Confl. Peds. (#/hr)						434	308					
Confl. Bikes (#/hr)						8						
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.95	0.95	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)					6	6						
Adj. Flow (vph)	0	0	0	0	1060	45	60	165	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1105	0	60	165	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.14	1.09	1.14	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Minimum Split (s)					83.0		60.0	60.0				
Total Split (s)	0.0	0.0	0.0	0.0	83.0	0.0	60.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	55.3%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					78.0		53.0	53.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		4.0	4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					76.0		41.0	41.0				
Flash Dont Walk (s)					7.0		12.0	12.0				
Pedestrian Calls (#/hr)					24		24	24				
Act Effct Green (s)					78.0		53.0	53.0				

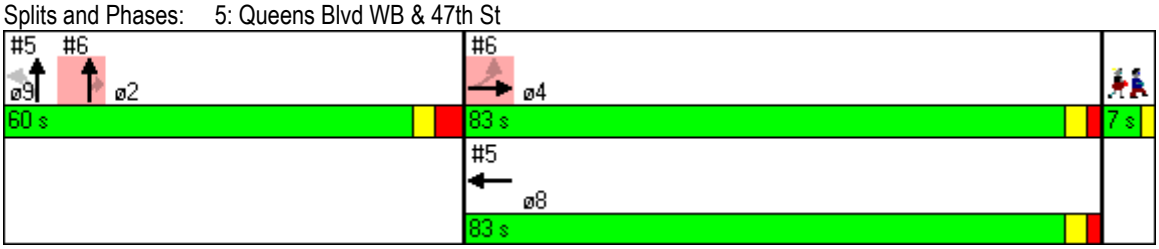
Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	76.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	24	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.52		0.35	0.35				
v/c Ratio					0.37		0.14	0.26				
Control Delay					7.9		11.8	12.4				
Queue Delay					0.1		0.0	0.0				
Total Delay					8.0		11.8	12.4				
LOS					A		B	B				
Approach Delay					8.0			12.2				
Approach LOS					A			B				
Queue Length 50th (ft)					56		12	33				
Queue Length 95th (ft)					63		m20	m47				
Internal Link Dist (ft)		51			175			1			465	
Turn Bay Length (ft)												
Base Capacity (vph)					3000		424	626				
Starvation Cap Reductn					758		0	0				
Spillback Cap Reductn					0		0	0				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.49		0.14	0.26				

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 140 (93%), Referenced to phase 4:EBTL and 8:, Start of Green
Natural Cycle: 150
Control Type: Pretimed
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 8.7 Intersection LOS: A
Intersection Capacity Utilization 87.4% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Queens Blvd WB & 47th St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	2648	0	0	0	0	0	176	29	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Lane Util. Factor	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00							0.76			
Frt									0.850			
Flt Protected		0.999										
Satd. Flow (prot)	0	7094	0	0	0	0	0	1900	1615	0	0	0
Flt Permitted		0.999										
Satd. Flow (perm)	0	7089	0	0	0	0	0	1900	1232	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		129			247			108			41	
Travel Time (s)		2.9			5.6			2.5			0.9	
Confl. Peds. (#/hr)	58								269			
Confl. Bikes (#/hr)									4			
Peak Hour Factor	0.95	0.95	0.95	0.82	0.82	0.82	0.95	0.95	0.95	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Bus Blockages (#/hr)	0	14	0	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	40	2787	0	0	0	0	0	185	31	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2827	0	0	0	0	0	185	31	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.11	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm								Perm			
Protected Phases		4						2				
Permitted Phases	4								2			
Minimum Split (s)	83.0	83.0						60.0	60.0			
Total Split (s)	83.0	83.0	0.0	0.0	0.0	0.0	0.0	60.0	60.0	0.0	0.0	0.0
Total Split (%)	55.3%	55.3%	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%
Maximum Green (s)	78.0	78.0						53.0	53.0			
Yellow Time (s)	3.0	3.0						3.0	3.0			
All-Red Time (s)	2.0	2.0						4.0	4.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	7.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	76.0	76.0						41.0	41.0			
Flash Dont Walk (s)	7.0	7.0						12.0	12.0			
Pedestrian Calls (#/hr)	24	24						24	24			
Act Effct Green (s)		78.0						53.0	53.0			

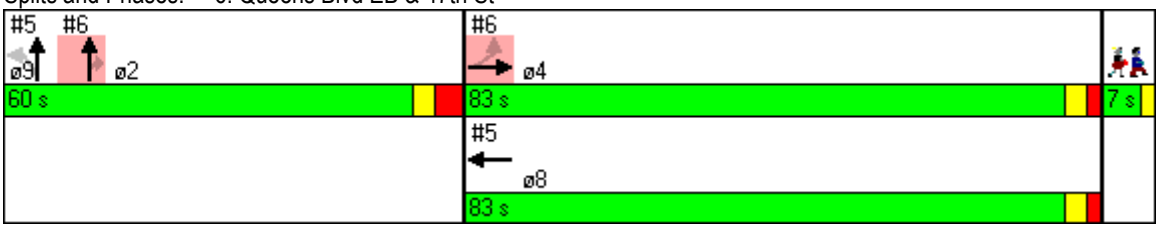
Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	76.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	24	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.52						0.35	0.35			
v/c Ratio		0.77						0.28	0.07			
Control Delay		30.5						36.2	32.9			
Queue Delay		0.4						0.0	0.0			
Total Delay		30.9						36.2	32.9			
LOS		C						D	C			
Approach Delay		30.9						35.7				
Approach LOS		C						D				
Queue Length 50th (ft)		532						130	20			
Queue Length 95th (ft)		565						195	46			
Internal Link Dist (ft)		49			167			28			1	
Turn Bay Length (ft)												
Base Capacity (vph)		3686						671	435			
Starvation Cap Reductn		0						0	0			
Spillback Cap Reductn		351						0	0			
Storage Cap Reductn		0						0	0			
Reduced v/c Ratio		0.85						0.28	0.07			

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 140 (93%), Referenced to phase 4:EBTL and 8:, Start of Green
Natural Cycle: 150
Control Type: Pretimed
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 85.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Queens Blvd EB & 47th St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	9	951	75	3	7	0	0	3	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Storage Length (ft)	0		0	0		0	0		0	0		90
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00	0.59		0.96				0.87
Frt						0.850						0.850
Flt Protected					0.998			0.982				
Satd. Flow (prot)	0	0	0	0	6003	1423	0	1741	0	0	1481	1236
Flt Permitted					0.998			0.950				
Satd. Flow (perm)	0	0	0	0	5995	845	0	1615	0	0	1481	1076
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			196			53			536	
Travel Time (s)		5.8			4.5			1.2			12.2	
Confl. Peds. (#/hr)	364		35	35		364	132		160	160		132
Confl. Bikes (#/hr)						8						7
Peak Hour Factor	0.92	0.92	0.92	0.25	0.95	0.81	0.63	0.75	0.67	0.92	0.50	0.85
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	0%	2%	2%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	14	14	0	0	0	0	0	2
Parking (#/hr)											13	13
Adj. Flow (vph)	0	0	0	36	1001	93	5	9	0	0	6	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1037	93	0	14	0	0	6	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.11	1.18	1.09	1.09	1.09	1.09	1.37	1.38
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm		Perm	Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Minimum Split (s)				90.0	90.0	90.0	60.0	60.0			60.0	60.0
Total Split (s)	0.0	0.0	0.0	75.0	75.0	75.0	58.0	58.0	0.0	0.0	58.0	58.0
Total Split (%)	0.0%	0.0%	0.0%	50.0%	50.0%	50.0%	38.7%	38.7%	0.0%	0.0%	38.7%	38.7%
Maximum Green (s)				70.0	70.0	70.0	51.0	51.0			51.0	51.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	4.0	4.0			4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	7.0	7.0	4.0	4.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												

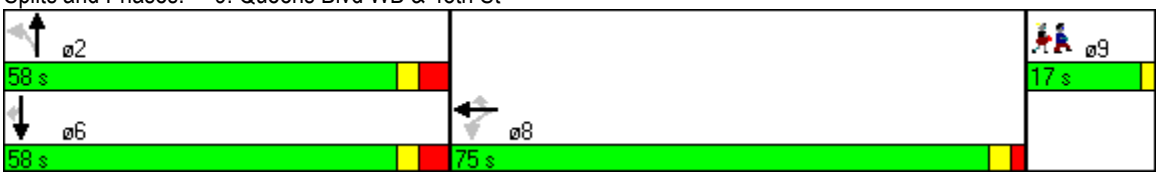
Lane Group	ø9
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	11%
Maximum Green (s)	15.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)					70.0	70.0		51.0			51.0	51.0
Actuated g/C Ratio					0.47	0.47		0.34			0.34	0.34
v/c Ratio					0.37	0.24		0.03			0.01	0.34
Control Delay					16.2	16.8		33.3			33.0	40.4
Queue Delay					0.5	1.8		0.0			0.0	0.0
Total Delay					16.7	18.6		33.3			33.0	40.4
LOS					B	B		C			C	D
Approach Delay					16.9			33.3			40.0	
Approach LOS					B			C			D	
Queue Length 50th (ft)					90	28		9			4	92
Queue Length 95th (ft)					m100	m40		22			9	143
Internal Link Dist (ft)		175			116			1			456	
Turn Bay Length (ft)												90
Base Capacity (vph)					2798	394		549			504	366
Starvation Cap Reductn					1193	191		0			0	0
Spillback Cap Reductn					0	0		0			0	0
Storage Cap Reductn					0	0		0			0	0
Reduced v/c Ratio					0.65	0.46		0.03			0.01	0.34

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 6 (4%), Referenced to phase 8:WBTL, Start of Green
Natural Cycle: 170
Control Type: Pretimed
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 19.5 Intersection LOS: B
Intersection Capacity Utilization 56.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Queens Blvd WB & 48th St



Lane Group	ø9
Walk Time (s)	5.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	24
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

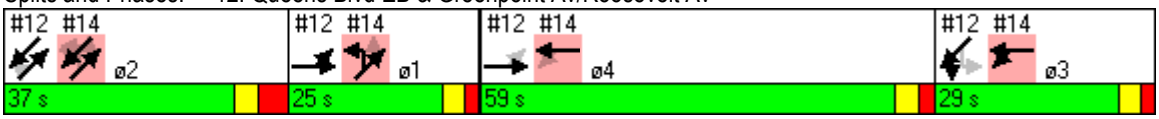
Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Lane Configurations											
Volume (vph)	206	2366	62	43	57	71	19	14	52	146	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	12	12	12	10	10	10	
Lane Util. Factor	0.81	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.98			0.69				0.84		
Frt		0.994			0.917						
Flt Protected		0.996							0.950		
Satd. Flow (prot)	0	6965	0	0	1044	0	0	0	1685	1773	
Flt Permitted		0.996							0.564		
Satd. Flow (perm)	0	6945	0	0	1044	0	0	0	840	1773	
Right Turn on Red				No			No				
Satd. Flow (RTOR)											
Link Speed (mph)		30			30					30	
Link Distance (ft)		247			159					231	
Travel Time (s)		5.6			3.6					5.3	
Confl. Peds. (#/hr)	44		165	216		169	26	143			
Confl. Bikes (#/hr)			11	11		4	4				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	2	2	2	0	0	0	
Parking (#/hr)					5	5	5				
Adj. Flow (vph)	217	2491	65	45	60	75	20	15	55	154	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	2818	0	0	155	0	0	0	70	154	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Right	Right	Left	Left	Left	
Median Width(ft)		0			0					17	
Link Offset(ft)		0			0					0	
Crosswalk Width(ft)		16			16					16	
Two way Left Turn Lane											
Headway Factor	1.09	1.09	1.09	1.09	1.20	1.00	1.00	1.09	1.09	1.09	
Turning Speed (mph)	15		9	9		9	9	15	15		
Turn Type	custom							custom	D.P+P		
Protected Phases	1	4 1			2				3	2 3	4
Permitted Phases	4							3	2		
Minimum Split (s)	25.0				37.0			29.0	29.0		59.0
Total Split (s)	25.0	84.0	0.0	0.0	37.0	0.0	0.0	29.0	29.0	66.0	59.0
Total Split (%)	16.7%	56.0%	0.0%	0.0%	24.7%	0.0%	0.0%	19.3%	19.3%	44.0%	39%
Maximum Green (s)	20.0				30.0			24.0	24.0		54.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				4.0			2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	7.0	4.0	4.0	5.0	5.0	7.0	
Lead/Lag	Lag				Lead			Lag	Lag		Lead
Lead-Lag Optimize?											
Walk Time (s)	0.0				7.0			7.0	7.0		39.0
Flash Dont Walk (s)	20.0				23.0			17.0	17.0		15.0
Pedestrian Calls (#/hr)	24				24			24	24		24

Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Act Effct Green (s)		74.0			30.0				56.0	59.0	
Actuated g/C Ratio		0.49			0.20				0.37	0.39	
v/c Ratio		0.82			0.74				0.16	0.22	
Control Delay		9.2			78.1				19.1	20.5	
Queue Delay		0.3			5.5				0.3	1.7	
Total Delay		9.5			83.6				19.4	22.2	
LOS		A			F				B	C	
Approach Delay		9.5			83.6					21.3	
Approach LOS		A			F					C	
Queue Length 50th (ft)		48			144				32	74	
Queue Length 95th (ft)		50			#255				58	110	
Internal Link Dist (ft)		167			79					151	
Turn Bay Length (ft)											
Base Capacity (vph)		3429			209				449	697	
Starvation Cap Reductn		0			0				134	401	
Spillback Cap Reductn		170			23				0	0	
Storage Cap Reductn		0			0				0	0	
Reduced v/c Ratio		0.86			0.83				0.22	0.52	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 11 (7%), Referenced to phase 4:EBTL, Start of Green
Natural Cycle: 150
Control Type: Pretimed
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 13.9 Intersection LOS: B
Intersection Capacity Utilization 87.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 12: Queens Blvd EB & Greenpoint Av/Roosevelt Av



Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Lane Configurations											
Volume (vph)	118	878	16	4	20	13	230	95	137	5	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	11	9	9	9	
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		1.00				0.54			0.45		
Frt		0.997							0.850		
Flt Protected		0.994				0.950					
Satd. Flow (prot)	0	6092	0	0	0	1745	1793	1710	1454	0	
Flt Permitted		0.994				0.692					
Satd. Flow (perm)	0	6078	0	0	0	691	1793	1710	660	0	
Right Turn on Red				No						No	
Satd. Flow (RTOR)											
Link Speed (mph)		30					30	30			
Link Distance (ft)		325					231	238			
Travel Time (s)		7.4					5.3	5.4			
Confl. Peds. (#/hr)	24		6	26	90	160			90	160	
Confl. Bikes (#/hr)			8	8					7	7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	6	0	0	6	0	0	0	
Parking (#/hr)		1	1	1							
Adj. Flow (vph)	124	924	17	4	21	14	242	100	144	5	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1069	0	0	0	35	242	100	149	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0					17	0			
Link Offset(ft)		0					0	0			
Crosswalk Width(ft)		16					16	16			
Two way Left Turn Lane											
Headway Factor	1.04	1.08	1.04	1.04	1.04	1.04	1.08	1.14	1.14	1.14	
Turning Speed (mph)	15		9	9	15	15			9	9	
Turn Type	custom				D.P+P	Perm			Perm		
Protected Phases	3	4 3			1		2 1	2			4
Permitted Phases	4				2	2 1			2		
Minimum Split (s)	29.0				25.0			37.0	37.0		59.0
Total Split (s)	29.0	88.0	0.0	0.0	25.0	62.0	62.0	37.0	37.0	0.0	59.0
Total Split (%)	19.3%	58.7%	0.0%	0.0%	16.7%	41.3%	41.3%	24.7%	24.7%	0.0%	39%
Maximum Green (s)	24.0				20.0			30.0	30.0		54.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				2.0			4.0	4.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.2	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	7.0	7.0	7.0	4.8	4.0	
Lead/Lag	Lag				Lag			Lead	Lead		Lead
Lead-Lag Optimize?											
Walk Time (s)	7.0				0.0			7.0	7.0		39.0
Flash Dont Walk (s)	17.0				20.0			23.0	23.0		15.0
Pedestrian Calls (#/hr)	24				24			24	24		24

Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Act Effct Green (s)		78.0				55.0	55.0	30.0	32.2		
Actuated g/C Ratio		0.52				0.37	0.37	0.20	0.21		
v/c Ratio		0.34				0.14	0.37	0.29	1.05		
Control Delay		18.6				46.6	50.2	53.7	144.5		
Queue Delay		0.0				0.0	33.4	0.0	0.0		
Total Delay		18.6				46.6	83.6	53.7	144.5		
LOS		B				D	F	D	F		
Approach Delay		18.6					78.9	108.1			
Approach LOS		B					E	F			
Queue Length 50th (ft)		159				25	183	84	~159		
Queue Length 95th (ft)		183				m31	m236	143	#307		
Internal Link Dist (ft)		245					151	158			
Turn Bay Length (ft)											
Base Capacity (vph)		3163				253	657	342	142		
Starvation Cap Reductn		0				0	417	0	0		
Spillback Cap Reductn		0				0	0	0	0		
Storage Cap Reductn		0				0	0	0	0		
Reduced v/c Ratio		0.34				0.14	1.01	0.29	1.05		

Intersection Summary

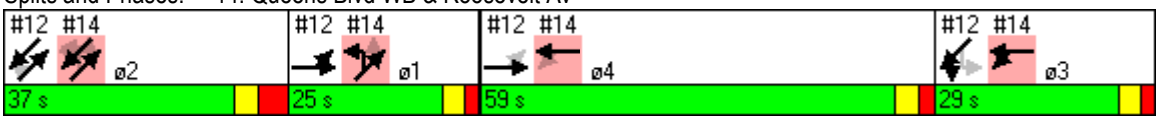
Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 11 (7%), Referenced to phase 4:EBTL, Start of Green
Natural Cycle: 150
Control Type: Pretimed
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 43.1 Intersection LOS: D
Intersection Capacity Utilization 87.3% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Queens Blvd WB & Roosevelt Av



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2417	34	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Lane Util. Factor	0.81	0.81	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.998					
Flt Protected						
Satd. Flow (prot)	6941	0	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	6941	0	0	0	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	256			60	335	
Travel Time (s)	5.8			1.4	7.6	
Confl. Peds. (#/hr)		97				
Confl. Bikes (#/hr)		11				
Peak Hour Factor	0.95	0.95	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)	2	2				
Adj. Flow (vph)	2544	36	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2580	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	214	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	15	15	15	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1773	0	0	1773	0	0	2090	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1773	0	0	1773	0	0	2090	0	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		121			256			41			47	
Travel Time (s)		2.8			5.8			0.9			1.1	
Confl. Peds. (#/hr)							308		269			
Confl. Bikes (#/hr)									4			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	2%
Adj. Flow (vph)	0	0	0	0	0	0	0	225	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	225	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	0.88	0.88	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 16.7%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	26	956	48	42	162	0	0	196	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	11	11	14	14	14
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98			1.00			0.99	
Frt					0.990						0.982	
Flt Protected					0.998			0.988				
Satd. Flow (prot)	0	0	0	0	5758	0	0	1815	0	0	1663	0
Flt Permitted					0.998			0.721				
Satd. Flow (perm)	0	0	0	0	5751	0	0	1319	0	0	1663	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		263			261			57			596	
Travel Time (s)		6.0			5.9			1.3			13.5	
Confl. Peds. (#/hr)				34		228	33		98	98		33
Confl. Bikes (#/hr)						13						2
Peak Hour Factor	0.92	0.92	0.92	0.54	0.98	0.67	0.58	0.74	0.92	0.92	0.84	0.67
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	0%	2%	2%	0%	0%
Parking (#/hr)					4	4					12	12
Adj. Flow (vph)	0	0	0	48	976	72	72	219	0	0	233	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1096	0	0	291	0	0	269	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.14	1.09	1.04	1.04	1.04	0.92	1.15	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Minimum Split (s)				6.0	6.0		8.0	8.0			8.0	
Total Split (s)	0.0	0.0	0.0	83.0	83.0	0.0	60.0	60.0	0.0	0.0	60.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	55.3%	55.3%	0.0%	40.0%	40.0%	0.0%	0.0%	40.0%	0.0%
Maximum Green (s)				78.0	78.0		53.0	53.0			53.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		4.0	4.0			4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	7.0	7.0	4.0	4.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				72.0	72.0		41.0	41.0			41.0	
Flash Dont Walk (s)				11.0	11.0		12.0	12.0			12.0	
Pedestrian Calls (#/hr)				24	24		24	24			24	
Act Effct Green (s)					78.0			53.0			53.0	

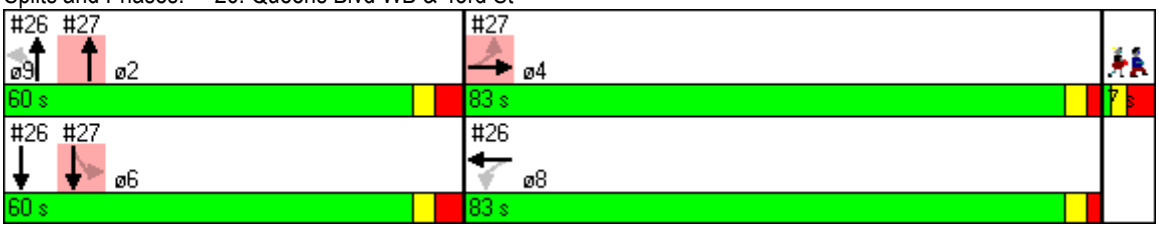
Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	6.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	72.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	24	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.52			0.35			0.35	
v/c Ratio					0.37			0.62			0.46	
Control Delay					21.8			27.2			40.5	
Queue Delay					0.1			0.0			0.1	
Total Delay					21.9			27.2			40.6	
LOS					C			C			D	
Approach Delay					21.9			27.2			40.6	
Approach LOS					C			C			D	
Queue Length 50th (ft)					180			247			203	
Queue Length 95th (ft)					207			160			267	
Internal Link Dist (ft)		183			181			1			516	
Turn Bay Length (ft)												
Base Capacity (vph)					2991			466			588	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					628			0			18	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.46			0.62			0.47	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 120 (80%), Referenced to phase 4:EBTL and 8:, Start of Green
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 124.0% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 26: Queens Blvd WB & 43rd St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	2289	0	0	0	0	0	184	56	63	168	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	14	14	14	11	11	11
Lane Util. Factor	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.99			0.99	
Frt								0.965				
Flt Protected		0.999									0.985	
Satd. Flow (prot)	0	7037	0	0	0	0	0	1537	0	0	1809	0
Flt Permitted		0.999									0.675	
Satd. Flow (perm)	0	7034	0	0	0	0	0	1537	0	0	1233	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			259			672			57	
Travel Time (s)		5.6			5.9			15.3			1.3	
Confl. Peds. (#/hr)	23		281				28		36	36		28
Confl. Bikes (#/hr)			11						4			
Peak Hour Factor	0.73	0.96	0.25	0.92	0.92	0.92	0.92	0.94	0.82	0.75	0.86	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Parking (#/hr)								21	21			
Adj. Flow (vph)	52	2384	0	0	0	0	0	196	68	84	195	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2436	0	0	0	0	0	264	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	0.92	1.23	0.92	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Minimum Split (s)	6.0	6.0						8.0		8.0	8.0	
Total Split (s)	83.0	83.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	60.0	60.0	0.0
Total Split (%)	55.3%	55.3%	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	40.0%	40.0%	0.0%
Maximum Green (s)	78.0	78.0						53.0		53.0	53.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	4.0	7.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	72.0	72.0						41.0		41.0	41.0	
Flash Dont Walk (s)	11.0	11.0						12.0		12.0	12.0	
Pedestrian Calls (#/hr)	24	24						24		24	24	
Act Effct Green (s)		78.0						53.0			53.0	

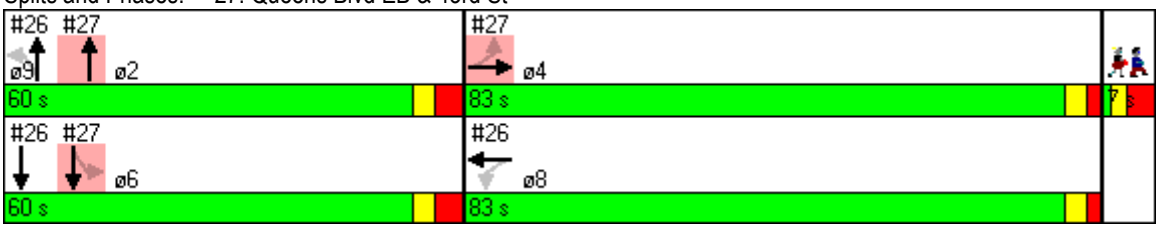
Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	6.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	72.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	24	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.52						0.35			0.35	
v/c Ratio		0.67						0.49			0.64	
Control Delay		27.6						41.6			23.4	
Queue Delay		0.4						0.1			0.0	
Total Delay		27.9						41.7			23.4	
LOS		C						D			C	
Approach Delay		27.9						41.7			23.4	
Approach LOS		C						D			C	
Queue Length 50th (ft)		421						202			241	
Queue Length 95th (ft)		452						293			328	
Internal Link Dist (ft)		165			179			592			1	
Turn Bay Length (ft)												
Base Capacity (vph)		3658						543			436	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		598						14			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.80						0.50			0.64	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 120 (80%), Referenced to phase 4:EBTL and 8:, Start of Green
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 28.7 Intersection LOS: C
Intersection Capacity Utilization 143.3% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 27: Queens Blvd EB & 43rd St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		

Intersection Summary

Lanes, Volumes, Timings
5: Queens Blvd WB & 47th St

5/31/2011

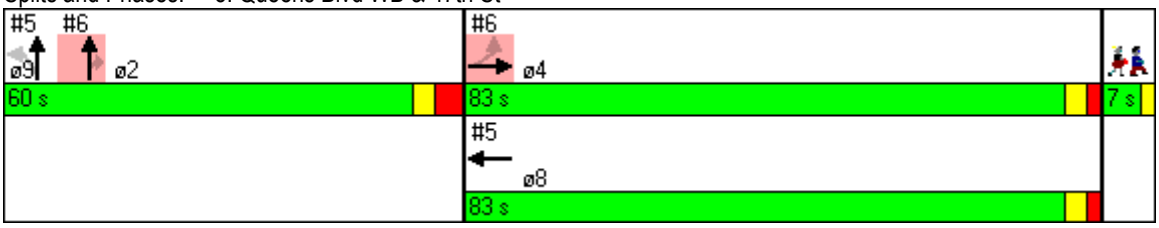
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	1018	43	57	157	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	9	10	12	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98		0.74					
Frt					0.994							
Flt Protected							0.950					
Satd. Flow (prot)	0	0	0	0	5769	0	1624	1773	0	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	0	0	0	5769	0	1200	1773	0	0	0	0
Right Turn on Red			No			No	No		No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		131			255			47			545	
Travel Time (s)		3.0			5.8			1.1			12.4	
Confl. Peds. (#/hr)						434	308					
Confl. Bikes (#/hr)						8						
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.95	0.95	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)					6	6						
Adj. Flow (vph)	0	0	0	0	1060	45	60	165	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1105	0	60	165	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			9			9	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.14	1.09	1.14	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type							Perm					
Protected Phases					8			2				
Permitted Phases							2					
Minimum Split (s)					83.0		60.0	60.0				
Total Split (s)	0.0	0.0	0.0	0.0	83.0	0.0	60.0	60.0	0.0	0.0	0.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	0.0%	55.3%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)					78.0		53.0	53.0				
Yellow Time (s)					3.0		3.0	3.0				
All-Red Time (s)					2.0		4.0	4.0				
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	5.0	4.0	7.0	7.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)					76.0		41.0	41.0				
Flash Dont Walk (s)					7.0		12.0	12.0				
Pedestrian Calls (#/hr)					24		24	24				
Act Effct Green (s)					78.0		53.0	53.0				

Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	76.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	24	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.52		0.35	0.35				
v/c Ratio					0.37		0.14	0.26				
Control Delay					11.6		11.8	12.4				
Queue Delay					0.2		0.0	0.0				
Total Delay					11.8		11.8	12.4				
LOS					B		B	B				
Approach Delay					11.8			12.2				
Approach LOS					B			B				

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 140 (93%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 87.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 5: Queens Blvd WB & 47th St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

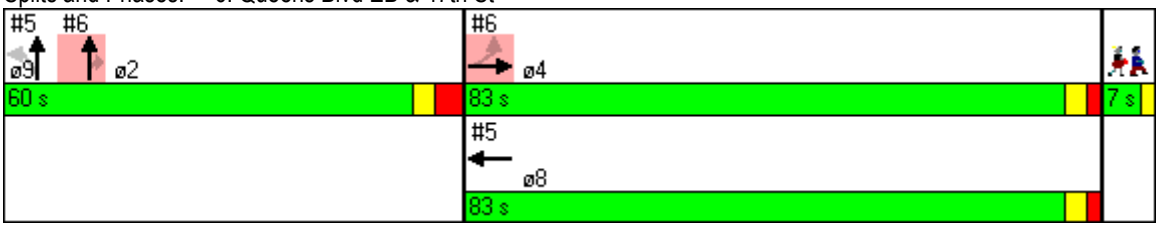
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	2648	0	0	0	0	0	176	29	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Lane Util. Factor	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00							0.76			
Frt									0.850			
Flt Protected		0.999										
Satd. Flow (prot)	0	7094	0	0	0	0	0	1900	1615	0	0	0
Flt Permitted		0.999										
Satd. Flow (perm)	0	7089	0	0	0	0	0	1900	1232	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		129			247			108			41	
Travel Time (s)		2.9			5.6			2.5			0.9	
Confl. Peds. (#/hr)	58								269			
Confl. Bikes (#/hr)									4			
Peak Hour Factor	0.95	0.95	0.95	0.82	0.82	0.82	0.95	0.95	0.95	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Bus Blockages (#/hr)	0	14	0	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	40	2787	0	0	0	0	0	185	31	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2827	0	0	0	0	0	185	31	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.11	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm								Perm			
Protected Phases		4						2				
Permitted Phases	4								2			
Minimum Split (s)	83.0	83.0						60.0	60.0			
Total Split (s)	83.0	83.0	0.0	0.0	0.0	0.0	0.0	60.0	60.0	0.0	0.0	0.0
Total Split (%)	55.3%	55.3%	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%
Maximum Green (s)	78.0	78.0						53.0	53.0			
Yellow Time (s)	3.0	3.0						3.0	3.0			
All-Red Time (s)	2.0	2.0						4.0	4.0			
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	7.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	76.0	76.0						41.0	41.0			
Flash Dont Walk (s)	7.0	7.0						12.0	12.0			
Pedestrian Calls (#/hr)	24	24						24	24			
Act Effct Green (s)		78.0						53.0	53.0			

Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Bus Blockages (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	5.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	76.0	0.0
Flash Dont Walk (s)	7.0	5.0
Pedestrian Calls (#/hr)	24	24
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.52						0.35	0.35			
v/c Ratio		0.77						0.28	0.07			
Control Delay		30.5						36.2	32.9			
Queue Delay		0.4						0.0	0.0			
Total Delay		30.9						36.2	32.9			
LOS		C						D	C			
Approach Delay		30.9						35.7				
Approach LOS		C						D				

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 140 (93%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 31.3	Intersection LOS: C
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Queens Blvd EB & 47th St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

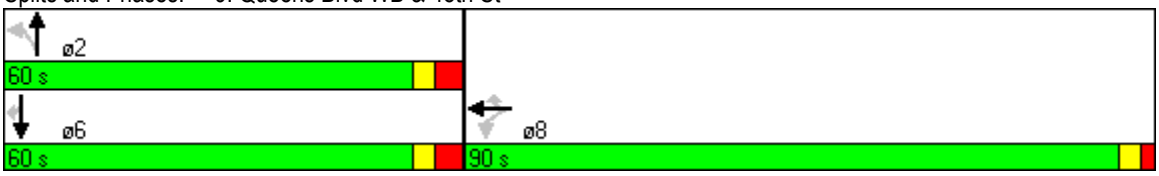
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	9	951	75	3	7	0	0	3	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Storage Length (ft)	0		0	0		0	0		0	0		90
Storage Lanes	0		0	0		1	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00	0.66		0.96				0.87
Frt						0.850						0.850
Flt Protected					0.998			0.982				
Satd. Flow (prot)	0	0	0	0	6003	1423	0	1741	0	0	1481	1236
Flt Permitted					0.998			0.951				
Satd. Flow (perm)	0	0	0	0	5996	942	0	1619	0	0	1481	1081
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		255			196			53			536	
Travel Time (s)		5.8			4.5			1.2			12.2	
Confl. Peds. (#/hr)	364		35	35		364	132		160	160		132
Confl. Bikes (#/hr)						8						7
Peak Hour Factor	0.92	0.92	0.92	0.25	0.95	0.81	0.63	0.75	0.67	0.92	0.50	0.85
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	0%	2%	2%	0%	1%
Bus Blockages (#/hr)	0	0	0	0	14	14	0	0	0	0	0	2
Parking (#/hr)											13	13
Adj. Flow (vph)	0	0	0	36	1001	93	5	9	0	0	6	126
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1037	93	0	14	0	0	6	126
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.11	1.18	1.09	1.09	1.09	1.09	1.37	1.38
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm		Perm	Perm					Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Minimum Split (s)				90.0	90.0	90.0	60.0	60.0			60.0	60.0
Total Split (s)	0.0	0.0	0.0	90.0	90.0	90.0	60.0	60.0	0.0	0.0	60.0	60.0
Total Split (%)	0.0%	0.0%	0.0%	60.0%	60.0%	60.0%	40.0%	40.0%	0.0%	0.0%	40.0%	40.0%
Maximum Green (s)				85.0	85.0	85.0	53.0	53.0			53.0	53.0
Yellow Time (s)				3.0	3.0	3.0	3.0	3.0			3.0	3.0
All-Red Time (s)				2.0	2.0	2.0	4.0	4.0			4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	5.0	7.0	7.0	4.0	4.0	7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)				73.0	73.0	73.0	43.0	43.0			43.0	43.0
Flash Dont Walk (s)				12.0	12.0	12.0	10.0	10.0			10.0	10.0
Pedestrian Calls (#/hr)				24	24	24	24	24			24	24
Act Effct Green (s)					85.0	85.0		53.0			53.0	53.0
Actuated g/C Ratio					0.57	0.57		0.35			0.35	0.35
v/c Ratio					0.31	0.17		0.02			0.01	0.33
Control Delay					10.3	10.4		32.0			31.7	38.6
Queue Delay					0.3	1.2		0.0			0.0	0.0
Total Delay					10.6	11.6		32.0			31.7	38.6
LOS					B	B		C			C	D
Approach Delay					10.7			32.0			38.2	
Approach LOS					B			C			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 1 (1%), Referenced to phase 8:WBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 13.7	Intersection LOS: B
Intersection Capacity Utilization 175.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 9: Queens Blvd WB & 48th St

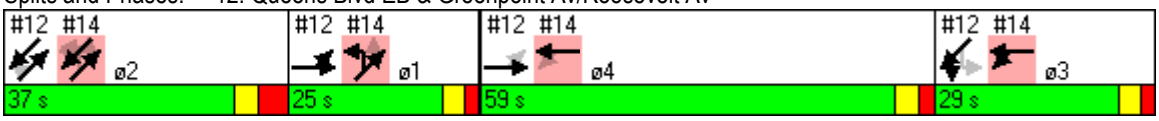


Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Lane Configurations											
Volume (vph)	206	2366	62	43	57	71	19	14	52	146	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	10	10	10	12	12	12	10	10	10	
Lane Util. Factor	0.81	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		0.98			0.69				0.84		
Frt		0.994			0.917						
Flt Protected		0.996							0.950		
Satd. Flow (prot)	0	6965	0	0	1044	0	0	0	1685	1773	
Flt Permitted		0.996							0.564		
Satd. Flow (perm)	0	6945	0	0	1044	0	0	0	840	1773	
Right Turn on Red				No			No				
Satd. Flow (RTOR)											
Link Speed (mph)		30			30					30	
Link Distance (ft)		247			159					231	
Travel Time (s)		5.6			3.6					5.3	
Confl. Peds. (#/hr)	44		165	216		169	26	143			
Confl. Bikes (#/hr)			11	11		4	4				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	0	2	2	2	0	0	0	
Parking (#/hr)					5	5	5				
Adj. Flow (vph)	217	2491	65	45	60	75	20	15	55	154	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	2818	0	0	155	0	0	0	70	154	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Right	Right	Left	Left	Left	
Median Width(ft)		0			0					17	
Link Offset(ft)		0			0					0	
Crosswalk Width(ft)		16			16					16	
Two way Left Turn Lane											
Headway Factor	1.09	1.09	1.09	1.09	1.20	1.00	1.00	1.09	1.09	1.09	
Turning Speed (mph)	15		9	9		9	9	15	15		
Turn Type	custom							custom	D.P+P		
Protected Phases	1	4 1			2				3	2 3	4
Permitted Phases	4							3	2		
Minimum Split (s)	25.0				37.0			29.0	29.0		59.0
Total Split (s)	25.0	84.0	0.0	0.0	37.0	0.0	0.0	29.0	29.0	66.0	59.0
Total Split (%)	16.7%	56.0%	0.0%	0.0%	24.7%	0.0%	0.0%	19.3%	19.3%	44.0%	39%
Maximum Green (s)	20.0				30.0			24.0	24.0		54.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				4.0			2.0	2.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	7.0	4.0	4.0	5.0	5.0	7.0	
Lead/Lag	Lag				Lead			Lag	Lag		Lead
Lead-Lag Optimize?											
Walk Time (s)	0.0				7.0			7.0	7.0		39.0
Flash Dont Walk (s)	20.0				23.0			17.0	17.0		15.0
Pedestrian Calls (#/hr)	24				24			24	24		24

Lane Group	EBL	EBT	EBR	EBR2	NET	NER	NER2	SWL2	SWL	SWT	ø4
Act Effct Green (s)		74.0			30.0				56.0	59.0	
Actuated g/C Ratio		0.49			0.20				0.37	0.39	
v/c Ratio		0.82			0.74				0.16	0.22	
Control Delay		9.2			78.1				19.1	20.5	
Queue Delay		0.3			5.5				0.3	1.7	
Total Delay		9.5			83.6				19.4	22.2	
LOS		A			F				B	C	
Approach Delay		9.5			83.6					21.3	
Approach LOS		A			F					C	

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 11 (7%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 12: Queens Blvd EB & Greenpoint Av/Roosevelt Av

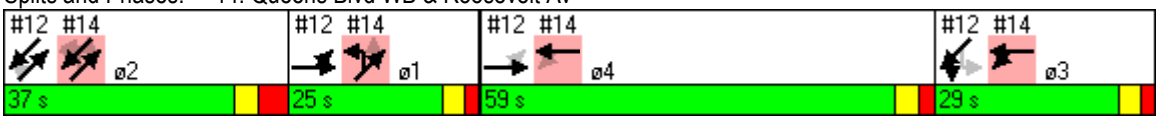


Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Lane Configurations											
Volume (vph)	118	878	16	4	20	13	230	95	137	5	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	11	11	11	11	9	9	9	
Lane Util. Factor	0.86	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		1.00				0.54			0.45		
Frt		0.997							0.850		
Flt Protected		0.994				0.950					
Satd. Flow (prot)	0	6092	0	0	0	1745	1793	1710	1454	0	
Flt Permitted		0.994				0.692					
Satd. Flow (perm)	0	6078	0	0	0	691	1793	1710	660	0	
Right Turn on Red				No						No	
Satd. Flow (RTOR)											
Link Speed (mph)		30					30	30			
Link Distance (ft)		325					231	238			
Travel Time (s)		7.4					5.3	5.4			
Confl. Peds. (#/hr)	24		6	26	90	160			90	160	
Confl. Bikes (#/hr)			8	8					7	7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Bus Blockages (#/hr)	0	0	0	6	0	0	6	0	0	0	
Parking (#/hr)		1	1	1							
Adj. Flow (vph)	124	924	17	4	21	14	242	100	144	5	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1069	0	0	0	35	242	100	149	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Right	Left	Left	Left	Left	Right	Right	
Median Width(ft)		0					17	0			
Link Offset(ft)		0					0	0			
Crosswalk Width(ft)		16					16	16			
Two way Left Turn Lane											
Headway Factor	1.04	1.08	1.04	1.04	1.04	1.04	1.08	1.14	1.14	1.14	
Turning Speed (mph)	15		9	9	15	15			9	9	
Turn Type	custom				D.P+P	Perm			Perm		
Protected Phases	3	4 3			1		2 1	2			4
Permitted Phases	4				2	2 1			2		
Minimum Split (s)	29.0				25.0			37.0	37.0		59.0
Total Split (s)	29.0	88.0	0.0	0.0	25.0	62.0	62.0	37.0	37.0	0.0	59.0
Total Split (%)	19.3%	58.7%	0.0%	0.0%	16.7%	41.3%	41.3%	24.7%	24.7%	0.0%	39%
Maximum Green (s)	24.0				20.0			30.0	30.0		54.0
Yellow Time (s)	3.0				3.0			3.0	3.0		3.0
All-Red Time (s)	2.0				2.0			4.0	4.0		2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.2	0.0	
Total Lost Time (s)	5.0	5.0	4.0	4.0	5.0	7.0	7.0	7.0	4.8	4.0	
Lead/Lag	Lag				Lag			Lead	Lead		Lead
Lead-Lag Optimize?											
Walk Time (s)	7.0				0.0			7.0	7.0		39.0
Flash Dont Walk (s)	17.0				20.0			23.0	23.0		15.0
Pedestrian Calls (#/hr)	24				24			24	24		24

Lane Group	WBL	WBT	WBR	WBR2	NEL2	NEL	NET	SWT	SWR	SWR2	ø4
Act Effct Green (s)		78.0				55.0	55.0	30.0	32.2		
Actuated g/C Ratio		0.52				0.37	0.37	0.20	0.21		
v/c Ratio		0.34				0.14	0.37	0.29	1.05		
Control Delay		18.6				46.6	50.2	53.7	144.5		
Queue Delay		0.0				0.0	33.4	0.0	0.0		
Total Delay		18.6				46.6	83.6	53.7	144.5		
LOS		B				D	F	D	F		
Approach Delay		18.6					78.9	108.1			
Approach LOS		B					E	F			

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 11 (7%), Referenced to phase 4:EBTL, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 43.1	Intersection LOS: D
Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 14: Queens Blvd WB & Roosevelt Av



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	2417	34	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	12	12	12	12
Lane Util. Factor	0.81	0.81	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.998					
Flt Protected						
Satd. Flow (prot)	6941	0	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	6941	0	0	0	0	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	256			60	335	
Travel Time (s)	5.8			1.4	7.6	
Confl. Peds. (#/hr)		97				
Confl. Bikes (#/hr)		11				
Peak Hour Factor	0.95	0.95	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Parking (#/hr)	2	2				
Adj. Flow (vph)	2544	36	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2580	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.12	1.09	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.9%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	0	0	0	0	214	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	15	15	15	12	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1773	0	0	1773	0	0	2090	0	0	0	0
Flt Permitted												
Satd. Flow (perm)	0	1773	0	0	1773	0	0	2090	0	0	0	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		121			256			41			47	
Travel Time (s)		2.8			5.8			0.9			1.1	
Confl. Peds. (#/hr)							308		269			
Confl. Bikes (#/hr)									4			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%	2%
Adj. Flow (vph)	0	0	0	0	0	0	0	225	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	0	0	0	225	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.09	1.09	1.09	0.88	0.88	0.88	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 16.7%	ICU Level of Service A
Analysis Period (min) 15	

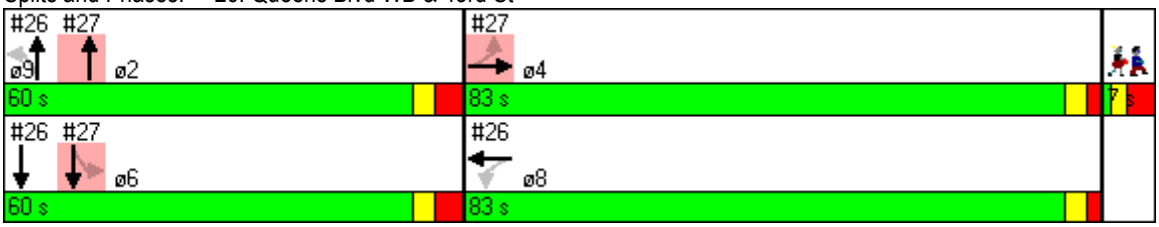
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	26	956	48	42	162	0	0	196	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	11	11	11	14	14	14
Lane Util. Factor	1.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.98		0.98				0.99	
Frt					0.990						0.982	
Flt Protected					0.998		0.950					
Satd. Flow (prot)	0	0	0	0	5758	0	1745	1837	0	0	1663	0
Flt Permitted					0.998		0.481					
Satd. Flow (perm)	0	0	0	0	5754	0	868	1837	0	0	1663	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		263			261			57			596	
Travel Time (s)		6.0			5.9			1.3			13.5	
Confl. Peds. (#/hr)				34		228	33		98	98		33
Confl. Bikes (#/hr)						13						2
Peak Hour Factor	0.92	0.92	0.92	0.54	0.98	0.67	0.58	0.74	0.92	0.92	0.84	0.67
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	0%	0%	2%	2%	0%	0%
Parking (#/hr)					4	4					12	12
Adj. Flow (vph)	0	0	0	48	976	72	72	219	0	0	233	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1096	0	72	219	0	0	269	0
Enter Blocked Intersection	No	No	No	2 veh	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.09	1.14	1.09	1.04	1.04	1.04	0.92	1.15	0.92
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type				Perm			Perm					
Protected Phases					8			2			6	
Permitted Phases				8			2					
Minimum Split (s)				83.0	83.0		60.0	60.0			60.0	
Total Split (s)	0.0	0.0	0.0	83.0	83.0	0.0	60.0	60.0	0.0	0.0	60.0	0.0
Total Split (%)	0.0%	0.0%	0.0%	55.3%	55.3%	0.0%	40.0%	40.0%	0.0%	0.0%	40.0%	0.0%
Maximum Green (s)				78.0	78.0		53.0	53.0			53.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		4.0	4.0			4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	7.0	7.0	4.0	4.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				72.0	72.0		41.0	41.0			41.0	
Flash Dont Walk (s)				11.0	11.0		12.0	12.0			12.0	
Pedestrian Calls (#/hr)				24	24		24	24			24	
Act Effct Green (s)					78.0		53.0	53.0			53.0	

Lane Group	ø4	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	4	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	72.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	24	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio					0.52		0.35	0.35			0.35	
v/c Ratio					0.37		0.23	0.34			0.46	
Control Delay					21.8		18.1	18.2			40.5	
Queue Delay					0.1		0.0	0.0			0.0	
Total Delay					21.8		18.1	18.2			40.6	
LOS					C		B	B			D	
Approach Delay					21.8			18.2			40.6	
Approach LOS					C			B			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 120 (80%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 24.2	Intersection LOS: C
Intersection Capacity Utilization 244.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 26: Queens Blvd WB & 43rd St



Lane Group	ø4	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

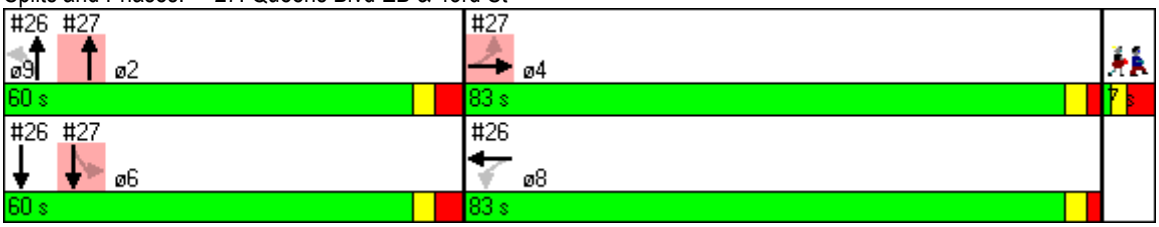
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	2289	0	0	0	0	0	184	56	63	168	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	14	14	14	11	11	11
Lane Util. Factor	0.81	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.99		0.98		
Frt								0.965				
Flt Protected		0.999								0.950		
Satd. Flow (prot)	0	7037	0	0	0	0	0	1537	0	1745	1837	0
Flt Permitted		0.999								0.488		
Satd. Flow (perm)	0	7035	0	0	0	0	0	1537	0	879	1837	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			259			672			57	
Travel Time (s)		5.6			5.9			15.3			1.3	
Confl. Peds. (#/hr)	23		281				28		36	36		28
Confl. Bikes (#/hr)			11						4			
Peak Hour Factor	0.73	0.96	0.25	0.92	0.92	0.92	0.92	0.94	0.82	0.75	0.86	0.92
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Parking (#/hr)								21	21			
Adj. Flow (vph)	52	2384	0	0	0	0	0	196	68	84	195	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2436	0	0	0	0	0	264	0	84	195	0
Enter Blocked Intersection	2 veh	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.09	1.09	1.00	1.00	1.00	0.92	1.23	0.92	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm									Perm		
Protected Phases		4						2			6	
Permitted Phases	4									6		
Minimum Split (s)	83.0	83.0						60.0		60.0	60.0	
Total Split (s)	83.0	83.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	60.0	60.0	0.0
Total Split (%)	55.3%	55.3%	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	40.0%	40.0%	0.0%
Maximum Green (s)	78.0	78.0						53.0		53.0	53.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						4.0		4.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	4.0	7.0	4.0	7.0	7.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	72.0	72.0						41.0		41.0	41.0	
Flash Dont Walk (s)	11.0	11.0						12.0		12.0	12.0	
Pedestrian Calls (#/hr)	24	24						24		24	24	
Act Effct Green (s)		78.0						53.0		53.0	53.0	

Lane Group	ø8	ø9
Lane Configurations		
Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Confl. Bikes (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	8	9
Permitted Phases		
Minimum Split (s)	83.0	7.0
Total Split (s)	83.0	7.0
Total Split (%)	55%	5%
Maximum Green (s)	78.0	1.0
Yellow Time (s)	3.0	2.0
All-Red Time (s)	2.0	4.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag		
Lead-Lag Optimize?		
Walk Time (s)	72.0	
Flash Dont Walk (s)	11.0	
Pedestrian Calls (#/hr)	24	
Act Effct Green (s)		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.52						0.35		0.35	0.35	
v/c Ratio		0.67						0.49		0.27	0.30	
Control Delay		27.6						41.6		13.9	13.1	
Queue Delay		0.3						0.0		0.0	0.0	
Total Delay		27.9						41.7		13.9	13.1	
LOS		C						D		B	B	
Approach Delay		27.9						41.7			13.4	
Approach LOS		C						D			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 120 (80%), Referenced to phase 4:EBTL and 8:, Start of Green	
Natural Cycle: 150	
Control Type: Pretimed	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 27.7	Intersection LOS: C
Intersection Capacity Utilization 244.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 27: Queens Blvd EB & 43rd St



Lane Group	ø8	ø9
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		

Intersection Summary

HCS ANALYSIS

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*RJM*
Agency/Co.	*RBA Group*
Date Performed	*2010/06/22*
Analysis Time Period	*AM Peak*

Site Information

Intersection	*43rd Av @ 51st ST*
Jurisdiction	
Analysis Year	*2010 Proposed*

Project Description

East/West Street: *43rd Avenue* | North/South Street: *51st Street*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*75*	*299*	*5*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.63*	*0.86*	*0.31*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*120*	*348*	*16*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*7*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*		*TR*			
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*47*	*15*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*0.84*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*56*	*20*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*9*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
Volume, v (vph)	*120*				*76*			
Capacity, c_m (vph)	*1179*				*234*			
v/c ratio	*0.10*				*0.32*			
Queue length (95%)	*0.34*				*1.35*			
Control Delay (s/veh)	*8.4*				*27.6*			
LOS	*A*				*D*			
Approach delay (s/veh)	--	--	*27.6*					
Approach LOS	--	--	*D*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*RJM*
Agency/Co.	*RBA Group*
Date Performed	*2010/06/22*
Analysis Time Period	*AM Peak*

Site Information

Intersection	*43rd Av @ 51st ST*
Jurisdiction	
Analysis Year	*2010 Existing*

Project Description

East/West Street: *43rd Avenue* | North/South Street: *51st Street NW*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*64*	*315*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.62*	*0.87*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*104*	*364*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*3*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*	*T*				
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
Volume, v (vph)	*104*						*0*	
Capacity, c_m (vph)	*1244*							
v/c ratio	*0.08*							
Queue length (95%)	*0.27*							
Control Delay (s/veh)	*8.2*							
LOS	*A*							
Approach delay (s/veh)	--	--						
Approach LOS	--	--						

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*RJM*
Agency/Co.	*RBA Group*
Date Performed	*2010/06/22*
Analysis Time Period	*AM Peak*

Site Information

Intersection	*43rd Av @ 51st ST*
Jurisdiction	
Analysis Year	*2010 Existing*

Project Description

East/West Street: *43rd Avenue* | North/South Street: *51st Street*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*11*	*299*	*5*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.46*	*0.86*	*0.31*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*24*	*348*	*16*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*27*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*		*TR*			
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*47*	*15*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*0.84*	*0.75*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*56*	*20*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*9*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
Volume, v (vph)	*24*				*76*			
Capacity, c_m (vph)	*1087*				*308*			
v/c ratio	*0.02*				*0.25*			
Queue length (95%)	*0.07*				*0.95*			
Control Delay (s/veh)	*8.4*				*20.5*			
LOS	*A*				*C*			
Approach delay (s/veh)	--	--	*20.5*					
Approach LOS	--	--	*C*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*RJM*
Agency/Co.	*RBA Group*
Date Performed	*2010/06/22*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*43rd Av @ 51st ST*
Jurisdiction	
Analysis Year	*2010 Proposed*

Project Description

East/West Street: *43rd Avenue* | North/South Street: *51st Street*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*73*	*517*	*9*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.96*	*0.96*	*0.45*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*76*	*536*	*20*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*1*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*		*TR*			
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*97*	*26*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*0.78*	*0.81*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*124*	*32*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*2*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
Volume, v (vph)	*76*				*156*			
Capacity, c_m (vph)	*1296*				*240*			
v/c ratio	*0.06*				*0.65*			
Queue length (95%)	*0.19*				*4.03*			
Control Delay (s/veh)	*8.0*				*44.2*			
LOS	*A*				*E*			
Approach delay (s/veh)	--	--	*44.2*					
Approach LOS	--	--	*E*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*RJM*
Agency/Co.	*RBA Group*
Date Performed	*2010/06/22*
Analysis Time Period	*PM Peak*

Site Information

Intersection	*43rd Av @ 51st ST*
Jurisdiction	
Analysis Year	*2010 Existing*

Project Description

East/West Street: *43rd Avenue* | North/South Street: *51st Street NW*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*62*	*537*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.86*	*0.96*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*72*	*560*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*2*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*	*T*				
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
Volume, v (vph)	*72*						*0*	
Capacity, c_m (vph)	*1359*							
v/c ratio	*0.05*							
Queue length (95%)	*0.17*							
Control Delay (s/veh)	*7.8*							
LOS	*A*							
Approach delay (s/veh)	--	--						
Approach LOS	--	--						

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*RJM*	Intersection	*43rd Av @ 51st ST*
Agency/Co.	*RBA Group*	Jurisdiction	
Date Performed	*2010/06/22*	Analysis Year	*2010 Existing*
Analysis Time Period	*PM Peak*		

Project Description

East/West Street: *43rd Avenue*	North/South Street: *51st Street*
Intersection Orientation: *East-West*	Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*11*	*517*	*9*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.55*	*0.96*	*0.45*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*19*	*536*	*20*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*		*TR*			
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*97*	*26*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*0.78*	*0.81*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*124*	*32*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*2*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
Volume, v (vph)	*19*				*156*			
Capacity, c_m (vph)	*1302*				*284*			
v/c ratio	*0.01*				*0.55*			
Queue length (95%)	*0.04*				*3.07*			
Control Delay (s/veh)	*7.8*				*32.1*			
LOS	*A*				*D*			
Approach delay (s/veh)	--	--	*32.1*					
Approach LOS	--	--	*D*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*RJM*
Agency/Co.	*RBA Group*
Date Performed	*2010/06/22*
Analysis Time Period	*Saturday Peak*

Site Information

Intersection	*43rd Av @ 51st ST*
Jurisdiction	
Analysis Year	*2010 Proposed*

Project Description

East/West Street: *43rd Avenue* | North/South Street: *51st Street*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*75*	*354*	*8*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.85*	*0.81*	*0.66*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*88*	*437*	*12*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*		*TR*			
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*85*	*23*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*0.76*	*0.72*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*111*	*31*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*2*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
Volume, v (vph)	*88*				*142*			
Capacity, c_m (vph)	*1360*				*262*			
v/c ratio	*0.06*				*0.54*			
Queue length (95%)	*0.21*				*2.96*			
Control Delay (s/veh)	*7.8*				*33.9*			
LOS	*A*				*D*			
Approach delay (s/veh)	--	--	*33.9*					
Approach LOS	--	--	*D*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*RJM*
Agency/Co.	*RBA Group*
Date Performed	*2010/06/22*
Analysis Time Period	*Sat Peak*

Site Information

Intersection	*43rd Av @ 51st ST*
Jurisdiction	
Analysis Year	*2010 Existing*

Project Description

East/West Street: *43rd Avenue* | North/South Street: *51st Street NW*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*59*	*378*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.86*	*0.96*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*68*	*394*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*2*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*	*T*				
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*0*	*0*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*0*	*0*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*0*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*						*LR*	
Volume, v (vph)	*68*						*0*	
Capacity, c_m (vph)	*1386*							
v/c ratio	*0.05*							
Queue length (95%)	*0.15*							
Control Delay (s/veh)	*7.7*							
LOS	*A*							
Approach delay (s/veh)	--	--						
Approach LOS	--	--						

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*RJM*
Agency/Co.	*RBA Group*
Date Performed	*2010/06/22*
Analysis Time Period	*Saturday Peak*

Site Information

Intersection	*43rd Av @ 51st ST*
Jurisdiction	
Analysis Year	*2010 Existing*

Project Description

East/West Street: *43rd Avenue* | North/South Street: *51st Street*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	*16*	*354*	*8*	*0*	*0*	*0*
Peak-hour factor, PHF	*0.67*	*0.81*	*0.66*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*24*	*437*	*12*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	--	--	*0*	--	--
Median type	*Undivided*					
RT Channelized?			*0*			*0*
Lanes	*0*	*2*	*0*	*0*	*0*	*0*
Configuration	*LT*		*TR*			
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	*0*	*85*	*23*	*0*	*0*	*0*
Peak-hour factor, PHF	*1.00*	*0.76*	*0.72*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate (veh/h)	*0*	*111*	*31*	*0*	*0*	*0*
Proportion of heavy vehicles, P_{HV}	*0*	*2*	*0*	*0*	*0*	*0*
Percent grade (%)		*0*			*0*	
Flared approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized?			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*0*	*0*
Configuration			*TR*			

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	*LT*				*TR*			
Volume, v (vph)	*24*				*142*			
Capacity, c_m (vph)	*1360*				*316*			
v/c ratio	*0.02*				*0.45*			
Queue length (95%)	*0.05*				*2.22*			
Control Delay (s/veh)	*7.7*				*25.4*			
LOS	*A*				*D*			
Approach delay (s/veh)	--	--	*25.4*					
Approach LOS	--	--	*D*					

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NYCDOT QUEENS BLVD SAFETY STUDY PHASE II

New York City
Department of Transportation

FUTURE CONDITIONS AND MITIGATION REPORT

QUEENS BOULEVARD SAFETY STUDY

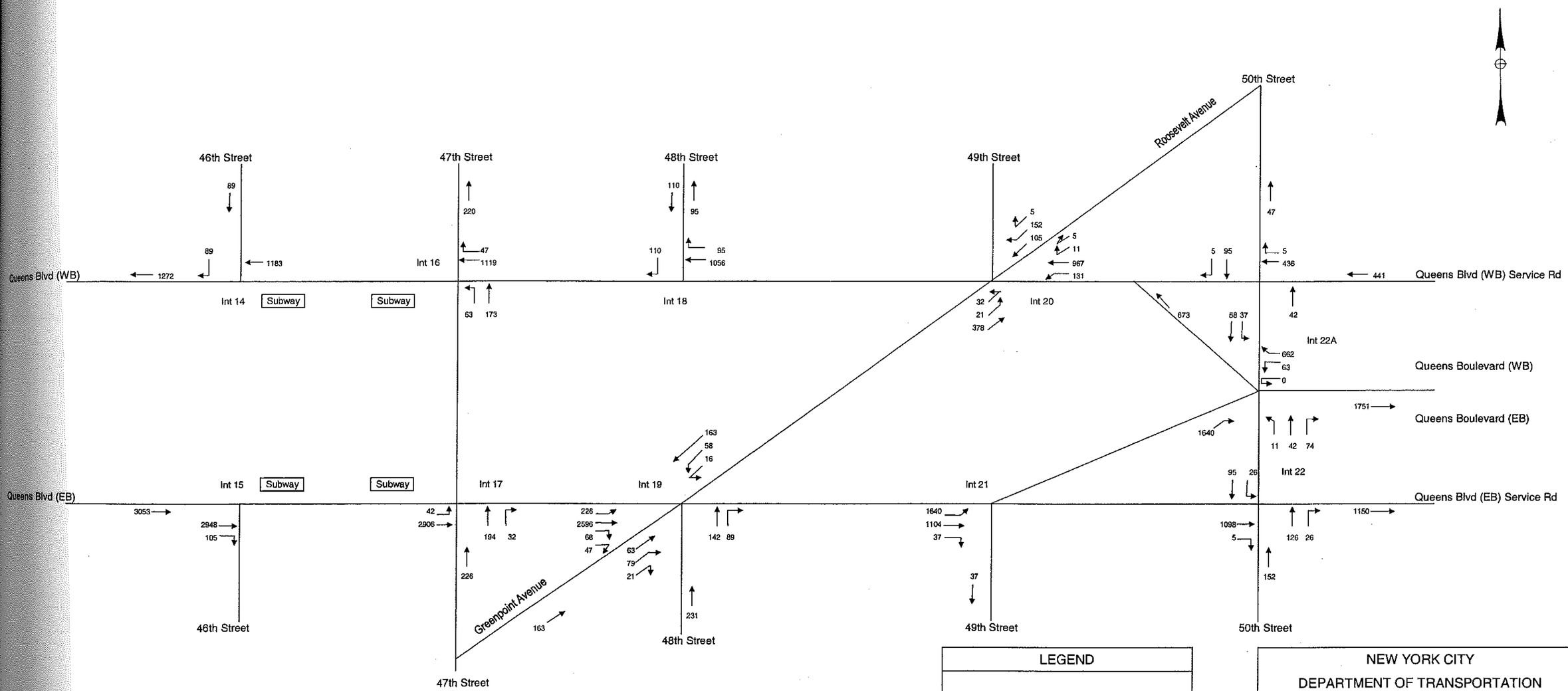
PHASE II

Van Dam Street to the Long Island Expressway
Union Turnpike to Hillside Avenue
PIN: 84199MBBR592

FIGURES AND TABLES

July 2004

URS



LEGEND	
←	Flow (vph)
Subway	Subway Access

NEW YORK CITY
DEPARTMENT OF TRANSPORTATION

QUEENS BOULEVARD SAFETY STUDY

COMPLEX 3 - ROOSEVELT AVE/GREENPOINT AVE

2012 NO BUILD VOLUMES

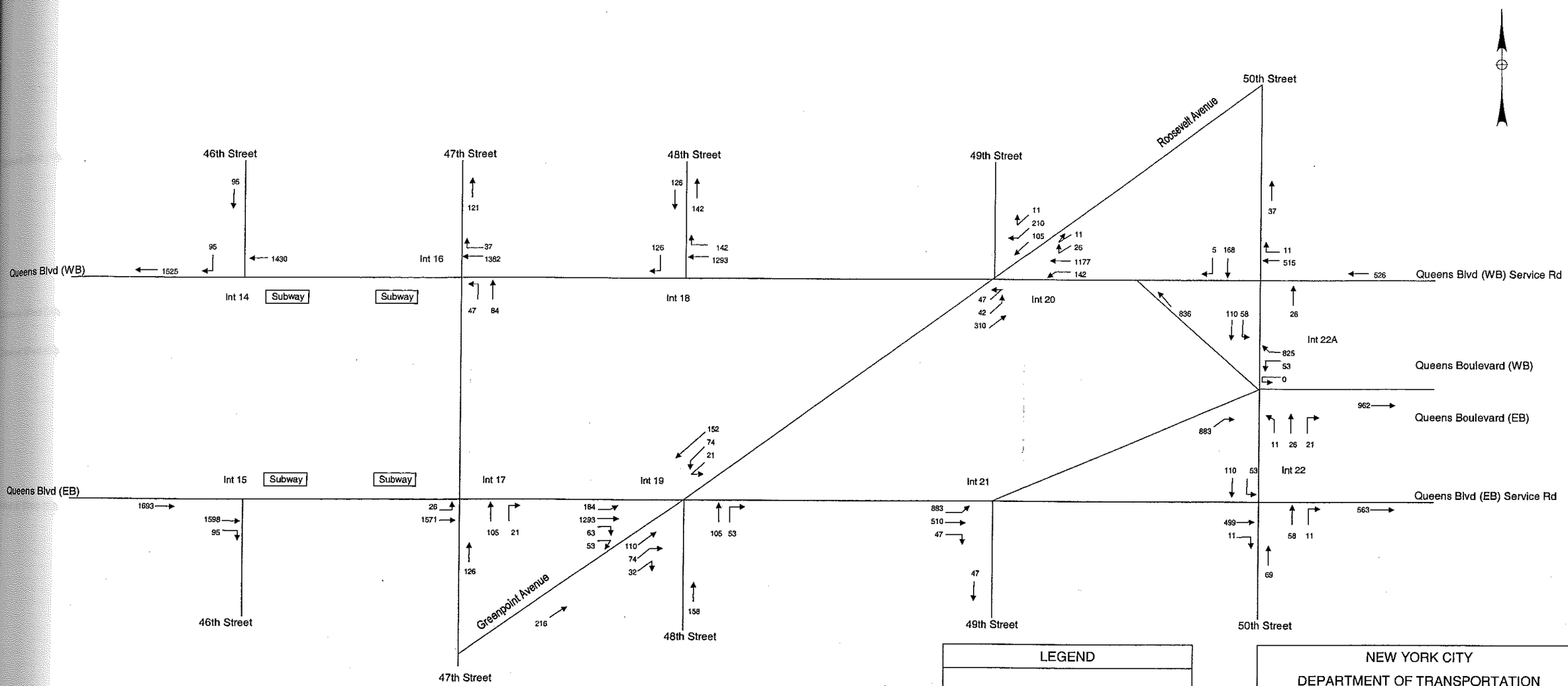
PM PEAK HOUR

4:30PM - 5:30PM

URS | NOT TO SCALE | FIGURE 2-5

Designed By: SMS
Checked By: JSS
Approved By:

h:\29268.31\traffic\data collection\complex03\tmc\031208 C03 TMC PM No Build Volumes.xls>2012 No Build Volumes



LEGEND	
←	Flow (vph)
Subway	Subway Access

NEW YORK CITY
DEPARTMENT OF TRANSPORTATION

QUEENS BOULEVARD SAFETY STUDY

COMPLEX 3 - ROOSEVELT AVE/GREENPOINT AVE

2012 NO BUILD VOLUMES

SAT PEAK HOUR

2:00PM - 3:00PM

URS | NOT TO SCALE | FIGURE 2-6

Designed By: SMS
Checked By: JSS
Approved By:

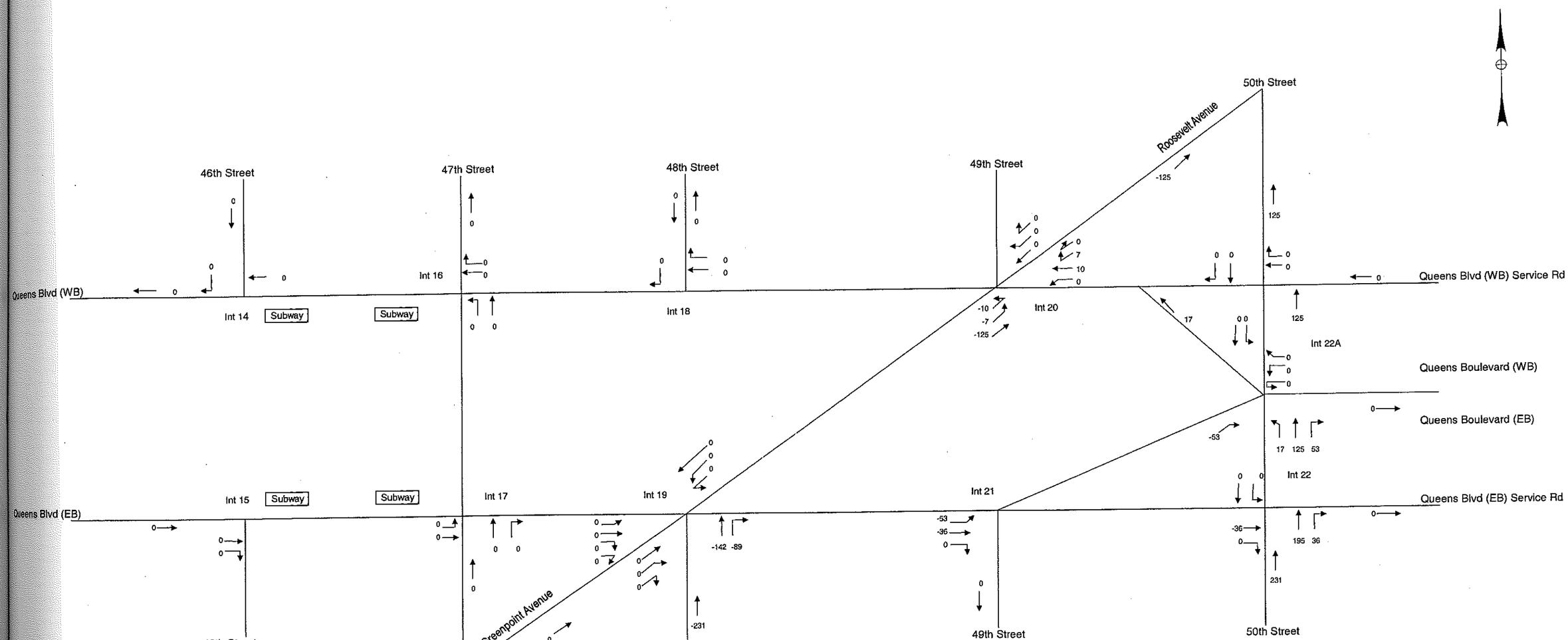
h:\26288.311\traffic\data collection\complex03\tmc\031208 C03 TMC SAT No Build Volumes.xls>2012 No Build Volumes

SCALE 1"=80'

0 80 160

ORIGINAL SIZE IN INCHES

NEW YORK CITY DEPARTMENT OF TRANSPORTATION		
QUEENS BOULEVARD SAFETY STUDY		
CONCEPT S1C03A 48TH STREET ONE-WAY SOUTHBOUND WITH ONE-SIDED ANGLED PARKING		
URS	NOT TO SCALE	FIGURE 6-3



LEGEND	
←	Flow (vph)
Subway	Subway Access

NEW YORK CITY
DEPARTMENT OF TRANSPORTATION

QUEENS BOULEVARD SAFETY STUDY

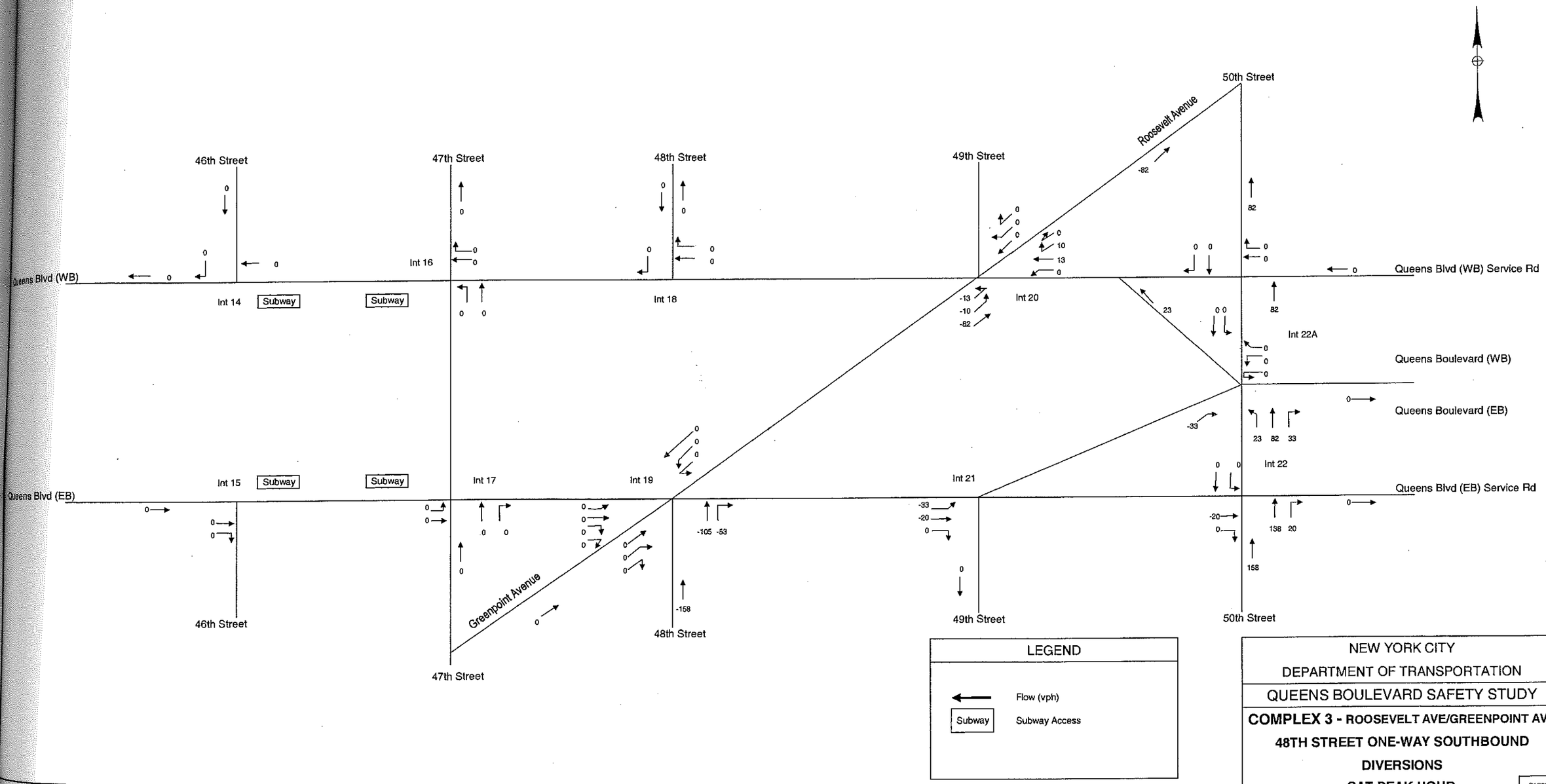
COMPLEX 3 - ROOSEVELT AVE/GREENPOINT AVE
48TH STREET ONE-WAY SOUTHBOUND
DIVERSIONS
PM PEAK HOUR

S1C03A

URS | NOT TO SCALE | FIGURE 6-4

Checked By: SMS
Reviewed By: JSS
Approved By:

I:\29288.31\traffic\data collection\complex03\tmc\040316 S1C03A TMC PM 2012 Build Volumes.xls>2012 Diverted Volumes



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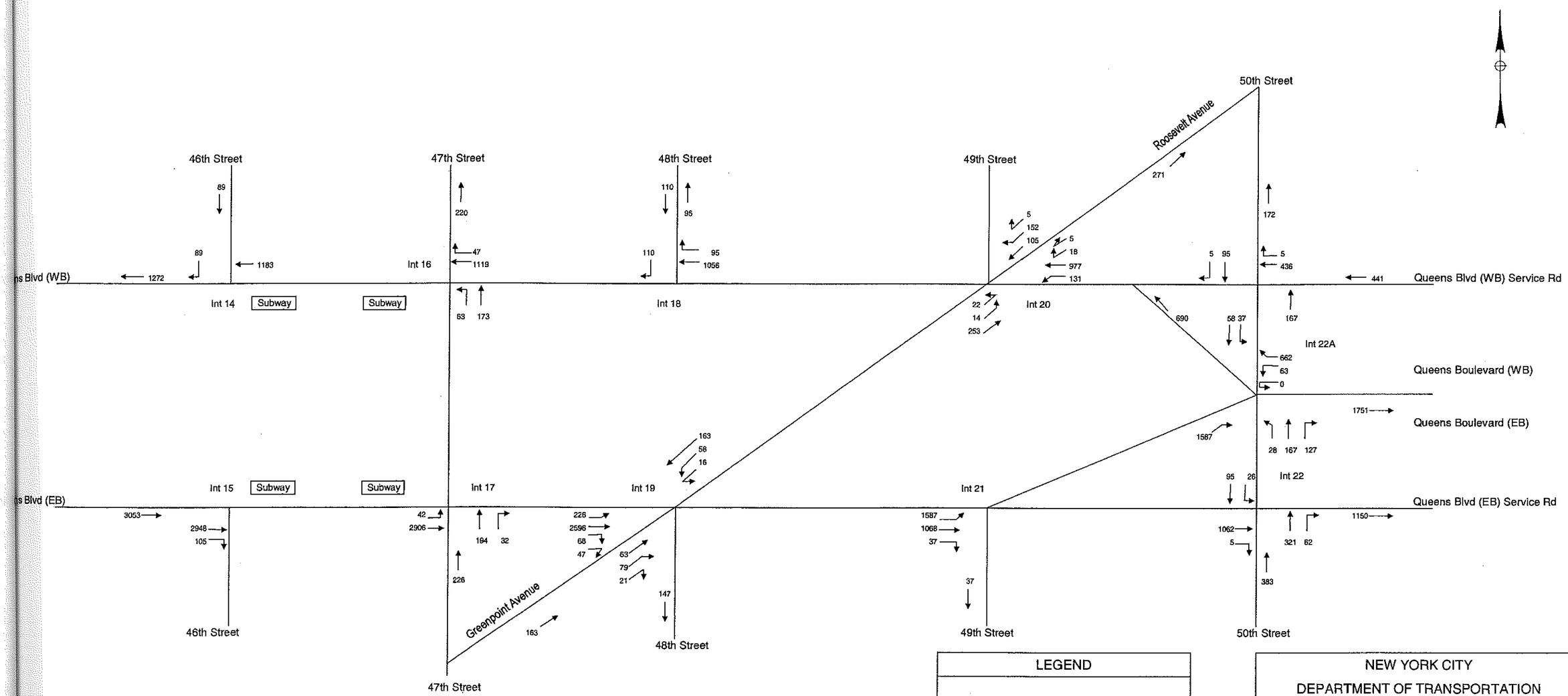
QUEENS BOULEVARD SAFETY STUDY
COMPLEX 3 - ROOSEVELT AVE/GREENPOINT AVE
48TH STREET ONE-WAY SOUTHBOUND DIVERSIONS
SAT PEAK HOUR
S1C03A

URS | NOT TO SCALE | FIGURE 6-5

Drawn By: SMS
Checked By: JSS
Approved By:

h:\29288.31\trafficdata collection\complex03\tmc\040316 S1C03A TMC SAT 2012 Build Volumes.xls>2012 Diverted Volumes



LEGEND	
←	Flow (vph)
Subway	Subway Access

NEW YORK CITY
DEPARTMENT OF TRANSPORTATION

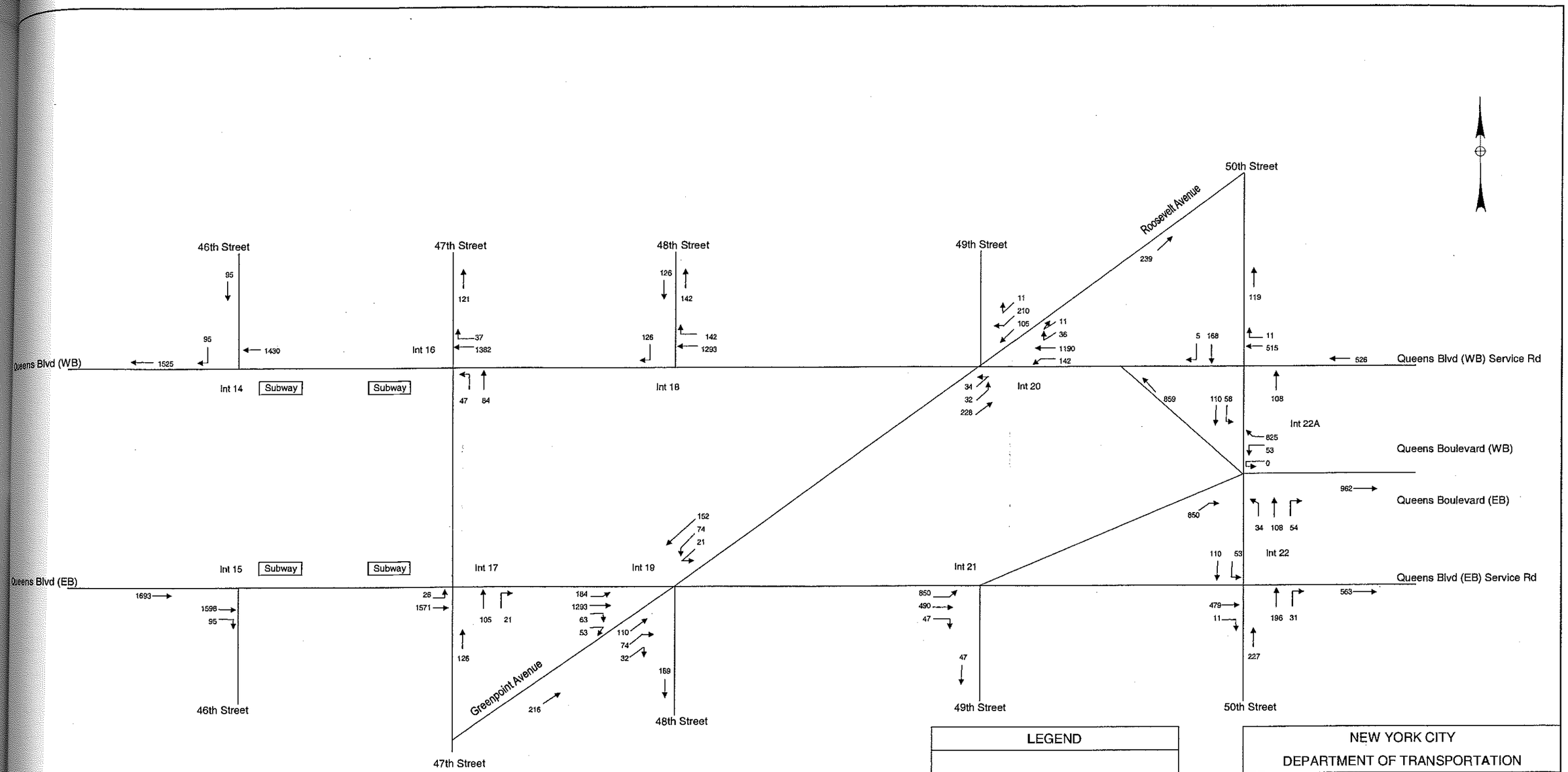
QUEENS BOULEVARD SAFETY STUDY

COMPLEX 3 - ROOSEVELT AVE/GREENPOINT AVE
48TH STREET ONE-WAY SOUTHBOUND
2012 BUILD VOLUMES
PM PEAK HOUR

S1C03A

URS | NOT TO SCALE | FIGURE 6-6

h:\29288.31\traffic\data collection\complex03\tmc\040316 S1C03A TMC PM 2012 Build Volumes.xls>2012 Build Volumes



LEGEND

←	Flow (vph)
Subway	Subway Access

NEW YORK CITY
DEPARTMENT OF TRANSPORTATION

QUEENS BOULEVARD SAFETY STUDY

COMPLEX 3 - ROOSEVELT AVE/GREENPOINT AVE
48TH STREET ONE-WAY SOUTHBOUND
2012 BUILD VOLUMES
SAT PEAK HOUR

S1C03A

URS | NOT TO SCALE | FIGURE 6-7

Drawn By SMS
Checked By JSS
Approved By

h:\29288.31\traffic\data collection\complex03\tmc\040316 S1C03A TMC SAT 2012 Build Volumes.xls>2012 Build Volumes

Table 6 - 3 : 2012 No Build Conditions vs. 2012 Build Conditions - 2000 HCM

Concept S1C03A
48th Street One-Way Southbound

				2012 No Build Conditions						2012 Build Conditions					
				PM Peak Hour			Sat Peak Hour			PM Peak Hour			Sat Peak Hour		
Complex	Intersection	Approach		v/c ratio	Delay (sec/veh)	LOS	v/c ratio	Delay (sec/veh)	LOS	v/c ratio	Delay (sec/veh)	LOS	v/c ratio	Delay (sec/veh)	LOS
3	Queens Boulevard Westbound	WB	Thru/Right	0.32	3.6	A	0.54	5.0	A	0.32	4.4	A	0.54	14.8	B
	48th Street	SB	Right	0.36	39.4	D	0.25	23.3	C	0.36	39.4	D	0.25	23.3	C
			OVERALL	**0.33**	**6.8**	**A**	**0.41**	**6.4**	**A**	**0.33**	**7.5**	**A**	**0.41**	**15.5**	**B**
	Queens Boulevard Eastbound	EB	Left/Thru/Right1/Right2	0.99	23.1	C	0.62	6.6	A	0.79	3.0	A	0.50	2.6	A
	48th Street	NB	Thru/Right	0.88	77.8	E	0.52	46.5	D	Oneway	Oneway	Oneway	Oneway	Oneway	Oneway
	Greenpoint Avenue	NE	Thru	0.23	45.3	D	0.36	45.3	D	0.16	35.9	D	0.21	30.3	C
		NE	Right/Right2	1.08	165.4	F	1.13	178.7	F	0.56	50.9	D	0.56	44.1	D
		SW	Left1/Left2	0.13	24.5	C	0.14	24.2	C	0.35	27.1	C	0.29	19.8	B
		SW	Thru	0.23	25.5	C	0.19	24.9	C	0.36	25.0	C	0.26	18.6	C
			OVERALL	**0.99**	**31.2**	**C**	**0.70**	**21.6**	**C**	**0.73**	**6.7**	**A**	**0.52**	**8.2**	**A**
	Queens Boulevard Westbound	WB	Left/Thru/Right1/Right2	0.32	2.5	A	0.40	29.4	C	0.39	1.2	A	0.56	3.5	A
	Roosevelt Avenue	NE	Thru/Left2/Left1	0.54	28.7	C	0.53	28.9	C	0.26	29.2	C	0.24	22.8	C
		SW	Thru	0.62	66.2	E	0.62	66.5	E	0.27	37.8	D	0.21	30.2	C
		SW	Right1/Right2	1.99	388.1	F	2.77	888.9	F	0.63	51.0	D	0.65	43.3	D
			OVERALL	**0.55**	**58.9**	**E**	**0.70**	**122.1**	**F**	**0.43**	**12.9**	**B**	**0.53**	**12.1**	**B**
	Queens Boulevard Westbound Service Road	WB	Thru/Right	0.44	16.9	B	0.77	40.3	D	0.55	26.7	C	0.77	40.3	D
	50th Street	NB	Thru	0.09	1.9	A	0.03	1.2	A	0.27	3.8	A	0.14	1.6	A
		SB	Thru/Right	0.29	37.6	D	0.29	23.2	C	0.22	29.9	C	0.31	25.3	C
			OVERALL	**0.39**	**19.4**	**B**	**0.51**	**34.8**	**C**	**0.43**	**21.7**	**C**	**0.53**	**31.9**	**C**
	Queens Boulevard Mainline	EB	Thru	0.66	11.7	B	0.51	14.7	B	0.79	14.3	B	0.49	6.1	A
		WB	Left	0.52	66.7	E	0.43	62.4	E	0.37	54.7	D	0.33	54.7	D
		WB	Thru	0.37	15.3	B	0.67	33.3	C	0.45	23.8	C	0.67	33.3	C
	50th Street	NB	Left/Thru/Right	0.30	3.1	A	0.08	1.2	A	0.57	4.0	A	0.28	2.1	A
		SB	Left/Thru	0.23	2.7	A	0.23	1.9	A	0.20	2.3	A	0.26	2.1	A
			OVERALL	**0.54**	**13.2**	**B**	**0.44**	**22.2**	**C**	**0.65**	**15.9**	**B**	**0.45**	**17.4**	**B**
	Queens Boulevard Eastbound Service Road	EB	Thru/Right	0.73	12.8	B	0.48	14.8	B	0.87	19.3	B	0.46	6.3	A
	50th Street	NB	Thru/Right	0.44	41.0	D	0.12	20.7	C	0.85	54.6	D	0.40	27.2	C
		SB	Left/Thru	0.20	1.4	A	0.18	1.1	A	0.16	1.0	A	0.19	1.1	A
			OVERALL	**0.60**	**14.9**	**B**	**0.31**	**12.3**	**B**	**0.77**	**26.5**	**C**	**0.40**	**10.8**	**B**

Notes:

Shaded areas indicate LOS E or F

dl = defacto left

dr = defacto right