

Future Conditions

In order to assess the future conditions in the study area, a Build scenario must be estimated for a particular year, typically ten years from the base year. The future conditions analysis for the North Corona Transportation Study area was considered for the year 2013, ten years after the base year of 2003 for which an existing conditions analysis was performed.

Between 2003 and 2013, it is expected that the transportation demands within the study area will increase due to background traffic growth as well as potential developments in the area. To forecast the Build conditions, we analyzed the developments that are expected to be constructed and occupied by 2013. These Build developments were considered, in addition to a general annual background growth rate, and applied to the existing conditions.

Background Growth Factor

The future 2013 conditions were, in part, estimated using a general background growth factor for the borough of Queens. The recommended background growth rate for Queens is 1.0 percent per year, as stated in the *2001 CEQR Technical Manual*. Over a ten-year period, this growth factor would be compounded, resulting in a total growth rate of 10.46 percent between the years 2003 and 2013.

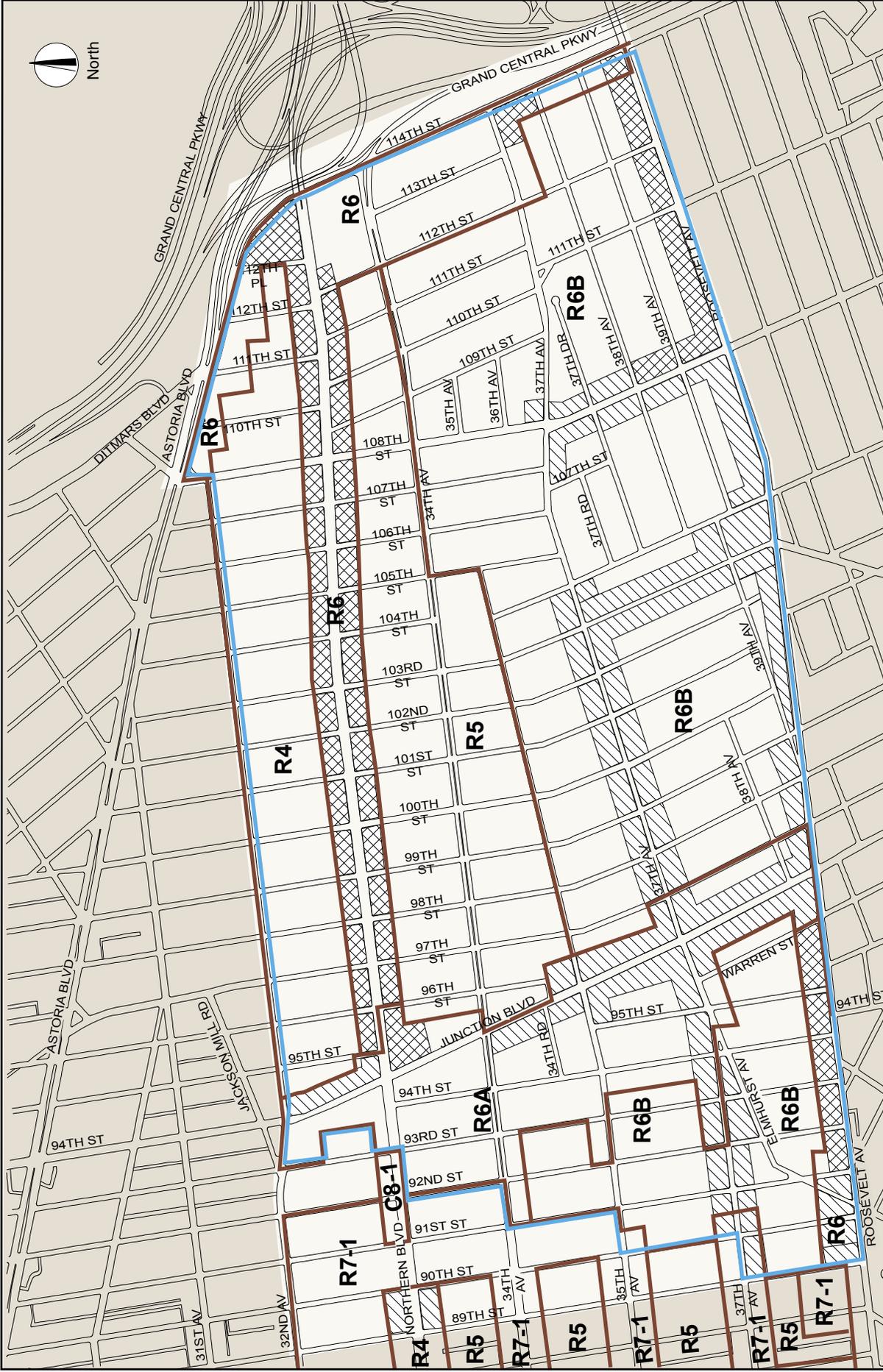
Zoning

September 2003 Zoning Map Amendment

The future Build conditions development scenario takes into consideration the land use development that is expected to occur as a result of a recent rezoning action. The incremental difference between the Build conditions and the existing conditions will serve as the basis for the transportation analysis.

On September 17, 2003, the City Council adopted a zoning map amendment which provided for the rezoning of most of the North Corona Transportation Study area. (The rezoning affected all or portions of 120 blocks in the study area.) The rezoned area's boundaries are nearly coterminous with the transportation study area's boundaries (see Figure 14). However, the rezoned area's western boundary constitutes a stepped line beginning at 89th Street and Roosevelt Avenue and ending at 93rd Street and 32nd Avenue whereas the transportation study area's western boundary is 89th Street between Roosevelt Avenue and 32nd Avenue.

Within the North Corona study area, the rezoning action replaced some or all of the existing R5, R6, and C8-1 districts with R4, R6, R6A, R6B, and R7-1 zoning districts. In the area which had been zoned R5, north of 35th Avenue, the majority of blocks were changed to R4 and R6. The R6 district south of 35th Avenue was changed to a contextual R6B district. A C8-1 district, comprised of several blockfronts on both sides of Northern Boulevard, east of Junction Boulevard, was changed to R6 and R6A. Small areas comprising the blockfronts at the intersection of 90th Street and 37th Avenue and 90th Street and 35th Avenue were changed from R6 to R7-1. The R5 and R6 districts west of Junction Boulevard were changed to contextual R6A and R6B districts. In addition, the rezoning action mapped new C1-4 and C2-4 commercial overlays to reflect the existing land use as well as to replace existing C1-2 and C2-2 commercial overlays on parts of Roosevelt Avenue, Northern Boulevard, 37th Avenue, Junction Boulevard, 103rd Street, 108th Street, and 114th Street. Also, the C1-4 and C2-4 overlays allowed for reduced parking requirements for



Zoning, Post-September 2003

Rezoned Area Boundary
(Zoning Map Amendment:
September 2003)

Zoning District Boundaries
Zoning District Designation
Commercial Overlay Districts

- R6
- C1-4
- C2-4

Figure 14

local retail and service uses. Finally, the commercial overlays, which had been mapped to a depth of 150 feet, were remapped to 100 feet.

The rezoning aimed to maintain neighborhood character and prevent out-of-scale residential development. For example, it mapped higher density residential districts on blocks along wide streets, decreased density and limited building heights on interior residential blocks, and allowed for mixed-use commercial and residential development on major shopping corridors.

Post-September 2003 Zoning Districts

The zoning map change added the R6A and R6B residential districts and the C1-4 and C2-4 commercial overlay districts within the North Corona Transportation Study area. Prior to the rezoning, the study area contained the R4, R5, R6, and R7-1 residential zoning districts, the C8-1 commercial district, and the C1-2, C2-2, and C2-3 commercial overlay districts.

The zoning districts introduced into the study area by the zoning map change are described below. (The zoning districts that existed prior to the zoning map change are described in the Existing Conditions tech memo.)

R6A District. The R6A residential district differs from the R6 residential district, primarily in allowing for greater lot coverage and modified height and setback regulations. These regulations typically produce 6-story apartment buildings designed to be compatible with the existing buildings found in older neighborhoods. In general, the permitted density would increase from a 2.43 or lower FAR to 3.00 FAR. The increase in density would encourage new mixed use residential and retail development. New development would be compatible with the existing context because the R6A regulations limit height to 70 feet. The Quality Housing Program is mandatory in the R6A district in established or new commercial overlays.

R6B District. The regulations of the R6B residential district are similar to those of the R6A district; they encourage low-rise buildings with greater lot coverage. The R6B district allows a maximum of 2.0 FAR for residential development and a maximum building height of 50 feet. By reducing allowable density and building heights, and through the required street wall set back, new residential development would more closely match the scale of the existing built development. The R6B district typically produces shorter, 4-story rowhouses or apartment buildings. The Quality Housing Program is mandatory in the R6B district.

C1-4 and C2-4 Overlay Districts. The C1 commercial overlay district allows for the retail and personal service shops required in residential neighborhoods. The C2 commercial overlay district permits a broader range of local retail and service establishments than the C1 overlay district and is intended to serve a wider neighborhood.

Residential and community facility uses are permitted in these districts. The maximum commercial FAR is 1.0 to 2.0. (Where C1-1 to C1-5 districts and C2-1 to C2-5 districts are mapped as overlays in R1 to R5 districts, the maximum commercial FAR is 1.0. Where C1-1 to C1-5 districts and C2-1 to C2-5 districts are mapped as overlays in R6 to R10 districts, the maximum commercial FAR is 2.0.) The residential FAR and community facility FAR are governed by the R district in which the C district is located.

The parking requirements are generally the same in C1 and C2 districts. The C1-4 and C2-4 districts differ from their C1-2 and C2-2 district counterparts in that their parking requirements are reduced.

Future 2013 Build Development Scenario

The future Build development scenario identified 18 anticipated development projects, located on 18 sites, with likely completion dates between 2003 and 2013. The project locations are shown in Figure 15 and described in Table 24.

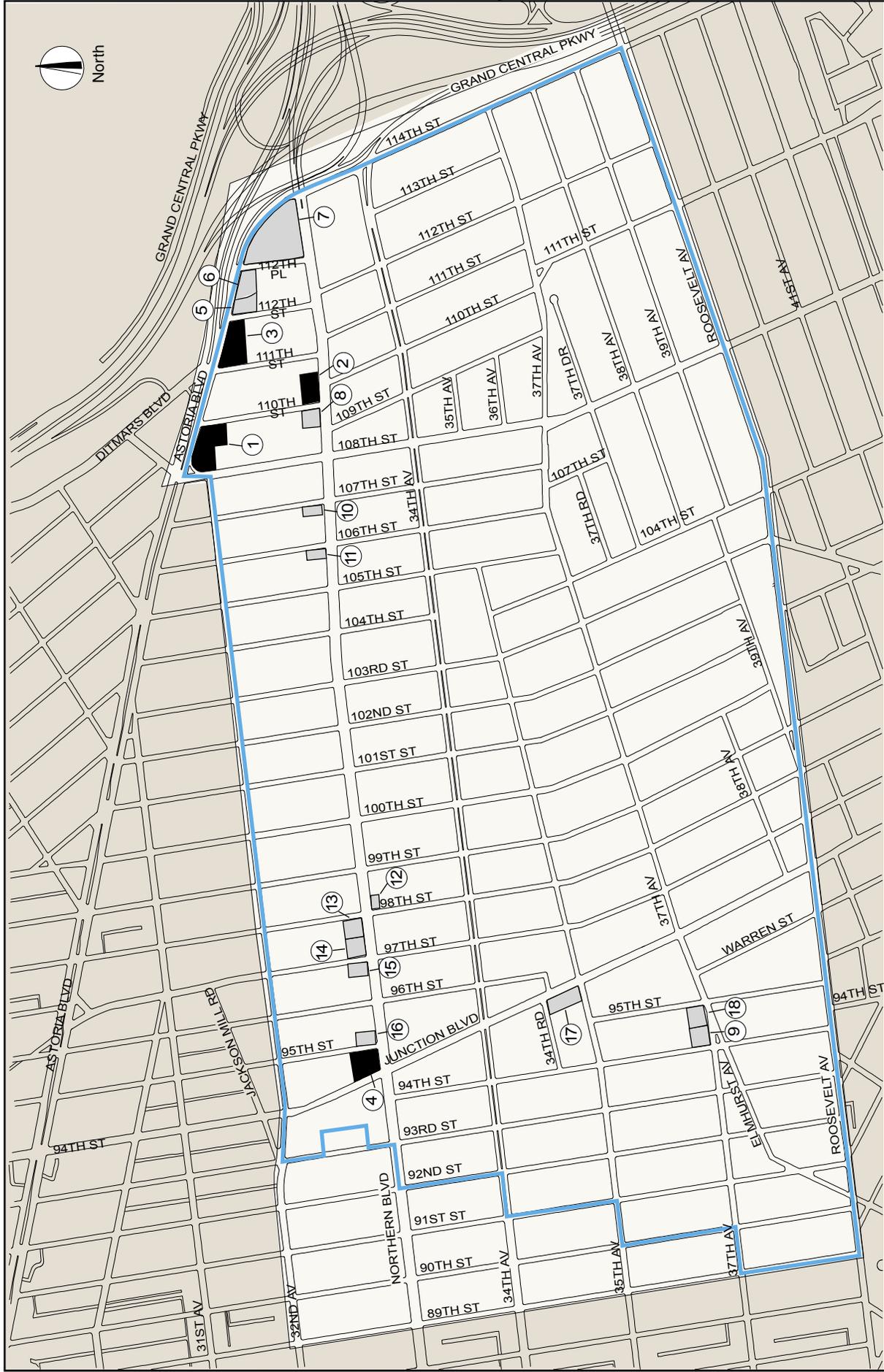
The expected development projects are also described, in terms of the type and amount of development that is expected to occur, in Table 25. The table is based upon information contained in the *North Corona Rezoning Environmental Assessment Statement (EAS)*, dated April 15, 2003, prepared by the NYC Department of City Planning. In order to produce a reasonably conservative estimate of future growth, the EAS divided the development sites into two categories - projected development sites and potential development sites. The projected development sites were considered the more likely to be developed within the 10-year analysis period (build year 2013) and the potential development sites were considered less likely to be developed within the 10-year period. The EAS designated Sites 1- 4 as projected development sites and Sites 5-18 as potential development sites.

Vehicular Traffic

This transportation study analyzes the land use components of the future development projects for their contribution to vehicular traffic, parking conditions, public transit ridership, and pedestrian conditions. Table 25 provides the basis for calculating the person and vehicle trip generation characteristics for future Build conditions. The table indicates that the Build development scenario is likely to result in a combination of residential, local retail, and community facility development located on 18 sites within the North Corona Transportation Study area.

Table 24
Future Development Site Locations

Site Number	Location
1	Along Astoria Boulevard between 108 th and 110 th streets
2	Northeast corner of Northern Boulevard and 110 th Street
3	Along Astoria Boulevard between 111 th and 112 th streets
4	Northern Boulevard between Junction Boulevard and 95 th Street
5	Southeast corner of Astoria Boulevard and 112 th Street
6	Southwest corner of Astoria Boulevard and 112 th Place
7	Entire triangular block bounded by Astoria Boulevard, Northern Boulevard, and 112 th Place
8	Northwest corner of Northern Boulevard and 110 th Street
9	Northeast corner of 37 th Avenue and 93 rd Street
10	Northwest corner of Northern Boulevard and 107 th Street
11	Northwest corner of Northern Boulevard and 106 th Street
12	Southeast corner of Northern Boulevard and 98 th Street
13	Northwest corner of Northern Boulevard and 98 th Street
14	Northeast corner of Northern Boulevard and 97 th Street
15	Northwest corner of Northern Boulevard and 97 th Street
16	Northeast corner of Northern Boulevard and 95 th Street
17	Along Junction Boulevard between 35 th Avenue and 34 th Road
18	Northwest corner of 37 th Avenue and 94 th Street



2013 Future Development Sites

Rezoned Area Boundary
Projected Development Sites

Potential Development Sites
Development Site Number

Figure 2

**Table 25
Future Development Sites Build Scenario**

Site No.	Block / Lot(s)	Lot Area	Zoning		Existing Conditions		Future Conditions				
			Pre-09/03	Post-09/03	Land Use	FAR	Residential FA	DUs	Commercial FA	Community Facilities FA	
1	1703 / 86, 87, 93, 94, 97, 98, & 99	34,965	R5	R6	Surface Parking / Auto Repair / Auto Body	0.1	83,916	84	69,930	153,846	
2	1704 / 140	15,500	R5 / C1-2	R6 / C2-4	Service Station	0.11	31,000	31	15,500	-	
3	1705 / 1, 5, 10, & 61	32,621	R5	R6	Construction Equipment Storage	0.77	78,290	78	-	65,242	
4	1424 / 33	19,000	C8-1, R5	R6A / C2-4	Fast Foods Restaurant	0.21	38,000	38	19,000	-	
5	1706 / 1	14,918	R5	R6	Adult Entertainment	0.3	35,803	36	-	29,836	
6	1706 / 5, 9, & 11	16,043	R5	R6	Auto Repair	0.8	38,503	39	-	32,086	
7	1707 / 1, 3, 6, 7, 8, 13, 15, 17, 19, 33-36, 43, & 46	73,329	R5 / C2-2	R6 / C2-4	Auto Sales / Auto Repair	0.5	146,658	147	73,329	-	
8	1703 / 44	8,970	R5 / C1-2	R6 / C2-4	Auto Parts / Tires	0.2	17,940	18	8,970	-	
9	1467 / 39	10,000	R6 / C1-2	R6A / C1-4	Retail	0.97	20,000	20	10,000	-	
10	1701 / 73	5,502	R5 / C2-2	R6 / C2-4	Retail	0.96	11,004	11	5,502	-	
11	1700 / 36	7,144	R5 / C2-2	R6 / C2-4	Auto Parts	0.12	14,288	14	7,144	-	
12	1713 / 1	5,220	C8-1	R6 / C2-4	Service Station	0.4	10,440	10	5,220	-	
13	1427 / 33	10,000	C8-1	R6 / C2-4	Service Station	0.06	20,000	20	10,000	-	
14	1427 / 38	10,000	C8-1	R6 / C2-4	Auto Parts	0.67	20,000	20	10,000	-	
15	1426 / 33	8,000	C8-1	R6 / C2-4	Auto Parts	1.0	16,000	16	8,000	-	
16	1425 / 39	12,000	C8-1	R6 / C2-4	Auto Parts	0.53	24,000	24	12,000	-	
17	1455 / 70	16,741	R5 / C1-2	R6A / C1-4	Retail	1.0	33,482	33	16,741	-	
18	1467 / 34	10,000	R6 / C1-2	R6A / C1-4	Retail	0.98	20,000	20	10,000	-	

Source: North Corona Rezoning Environmental Assessment Statement, New York City Department of City Planning, April 2003

Trip Generation

The objectives of the future Build conditions analysis are:

- To determine projected future conditions with the proposed developments in place and fully operational, and
- To determine whether traffic operational measures and/or infrastructure improvements are warranted to facilitate the traffic flow within the study area.

Based on the *North Corona Rezoning Environmental Assessment Statement* (EAS), dated April 15, 2003, prepared by the NYC Department of City Planning, the four projected development sites (site no. 1 to 4) would generate 54, 28 and 63 vehicle trips during the weekday AM, Midday and PM peak hours, respectively. Since, the potential development sites were considered less likely to be developed within the 10-year period, all kind of trips generated from the potential development sites were considered as a part of the background growth.

The future traffic analysis was performed for weekday AM, Midday (MD), and PM, and weekend Sunday midday peak hours for the year 2013.

The assessment of the 2013 future Build conditions consists of a series of steps:

- Balancing the future Build baseline traffic volume map (with the growth factor);
- Adding trips from the proposed development to get the total 2013 future volumes;
- Conducting a traffic level of service (LOS) analysis; and
- Comparing and analyzing the changes from the existing conditions to the future build conditions scenario.

Traffic volume maps (Figures 16A, 16B, 16C, and 16D) illustrate the 2013 future balanced traffic volumes during the weekday AM, MD, and PM, and weekend Sunday midday peak hours.

Intersection Analysis

The intersection analysis involves recommending planning improvements for any lane group movement that has a delay exceeding mid-LOS D, or 45 seconds per vehicle for signalized intersections and 35 seconds per vehicle for unsignalized intersections.

Tables 26 and 27 present the Existing and Future Build conditions for signalized and unsignalized intersections during the four peak periods, including the resulting V/C ratios, delay time, and LOS for the intersections that exceed 45 seconds of delay per vehicle.

As shown in Table 26, with the proposed developments and zoning changes, many approaches will continue to operate at LOS D or better for all peak hours, with a delay time of 45 seconds or less per vehicle. There would be an increase in delay time at the following intersections during different peak hours:

Signalized Intersections

Astoria Boulevard at 94th Street

AM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS D with a delay of 44.2 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will continue operating at LOS D with the delay time deteriorating to 51.3 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS D with a delay of 46.5 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 57.4 seconds per vehicle.

Astoria Boulevard at 108th Street

AM Peak Hour

Currently, the intersection's northbound left-thru approach movement operates at LOS D with a delay of 54.1 seconds per vehicle. Also, the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 50.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will operate at LOS E with the delay time deteriorating to 63.6 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 55.9 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru approach movement operates at LOS F with a delay of 81.1 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 76.1 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will continue operating at LOS F with the delay time deteriorating to 135.1 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 123.3 seconds per vehicle.

Astoria Boulevard at 111th Street

AM Peak Hour

Currently, the intersection's southbound left-turn movement operates at LOS E with a delay of 77.0 seconds per vehicle.

In the future conditions, the intersection's southbound left-turn movement will operate at LOS F with the delay time deteriorating to 109.2 seconds per vehicle.

MD Peak Hour

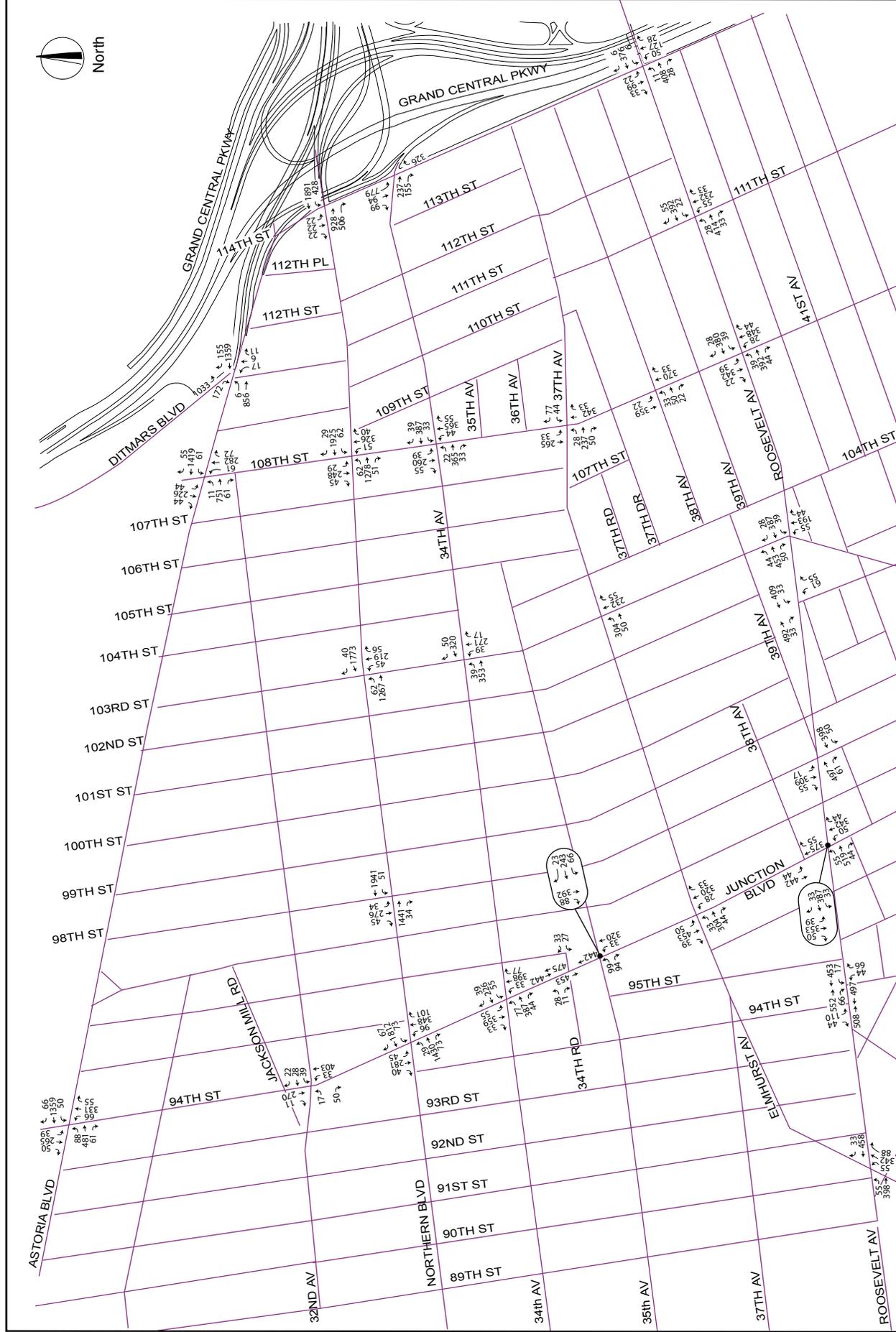
Currently, the intersection's southbound left-turn movement operates at LOS D with a delay of 53.7 seconds per vehicle.

In the future conditions, the intersection's southbound left-turn movement will operate at LOS E with the delay time deteriorating to 79.6 seconds per vehicle.

PM Peak Hour

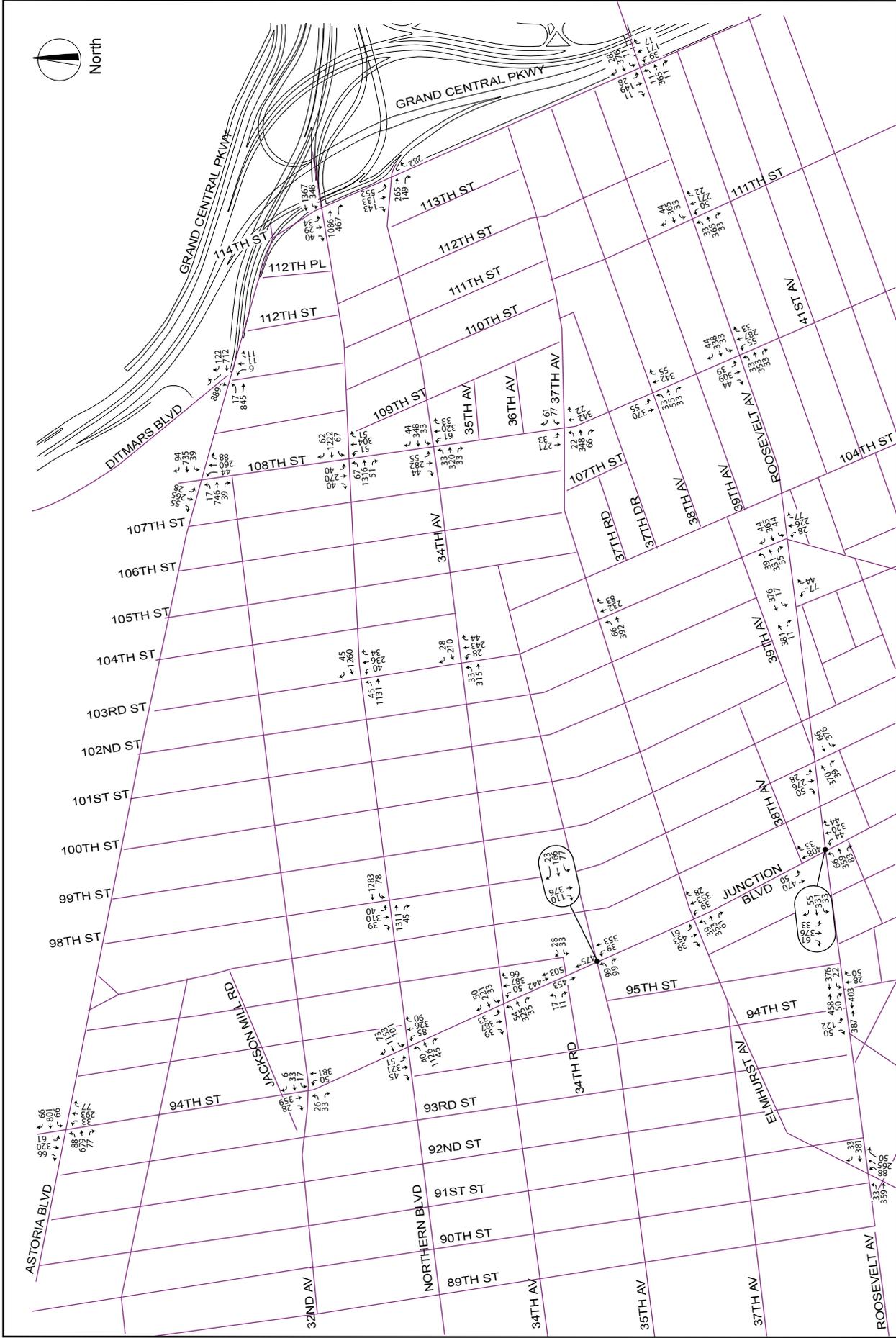
Currently, the intersection's southbound left-turn movement operates at LOS E with a delay of 59.4 seconds per vehicle.

In the future conditions, the intersection's southbound left-turn movement will operate at LOS F with the delay time deteriorating to 84.8 seconds per vehicle.



Future Traffic Volumes, AM Peak Hour
 (7:30-8:30AM for Northern Boulevard and 32nd Avenue
 8:00-9:00AM for Rest of the Area)

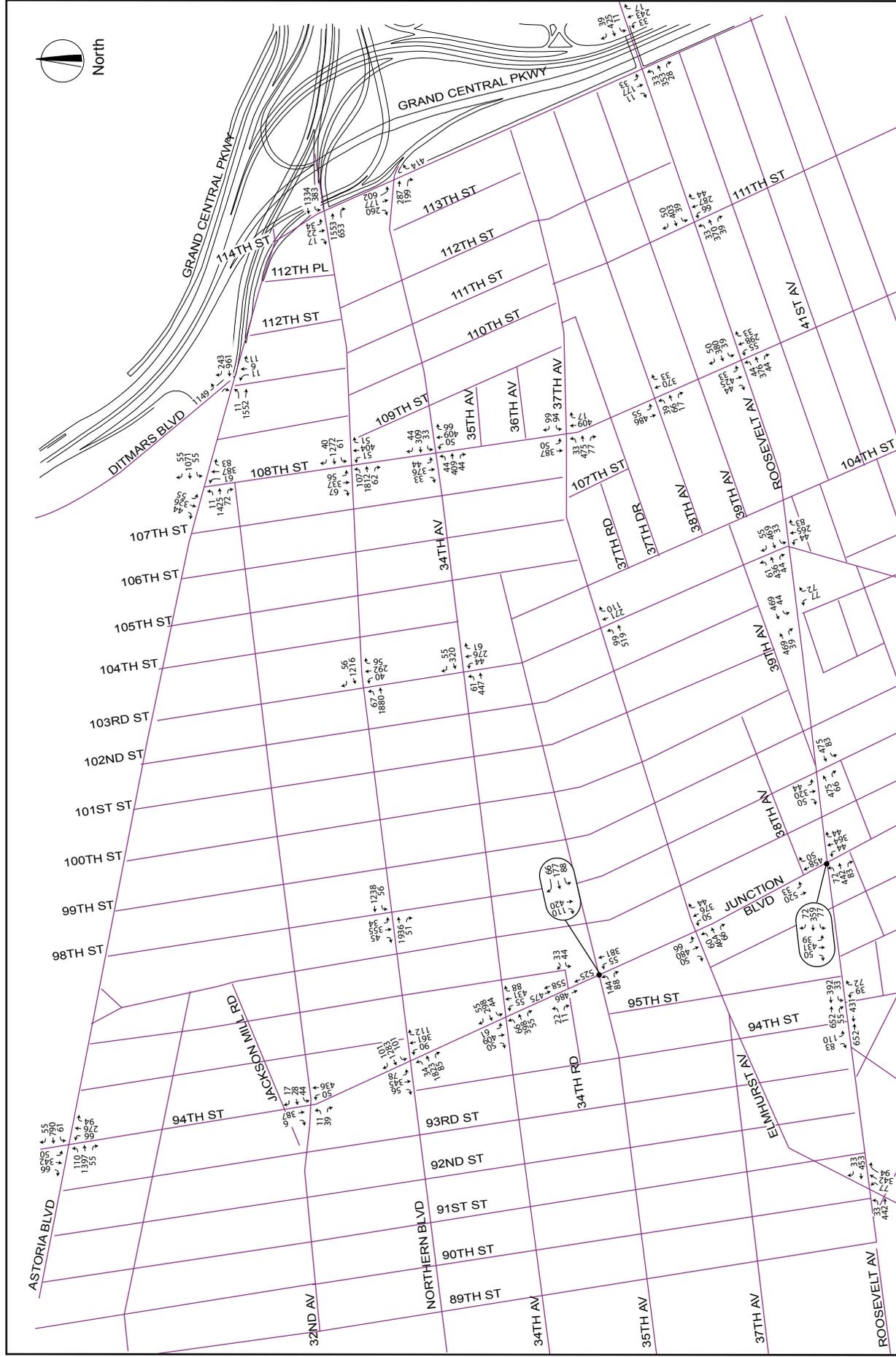
Figure 16A



Future Traffic Volumes, MD Peak Hour

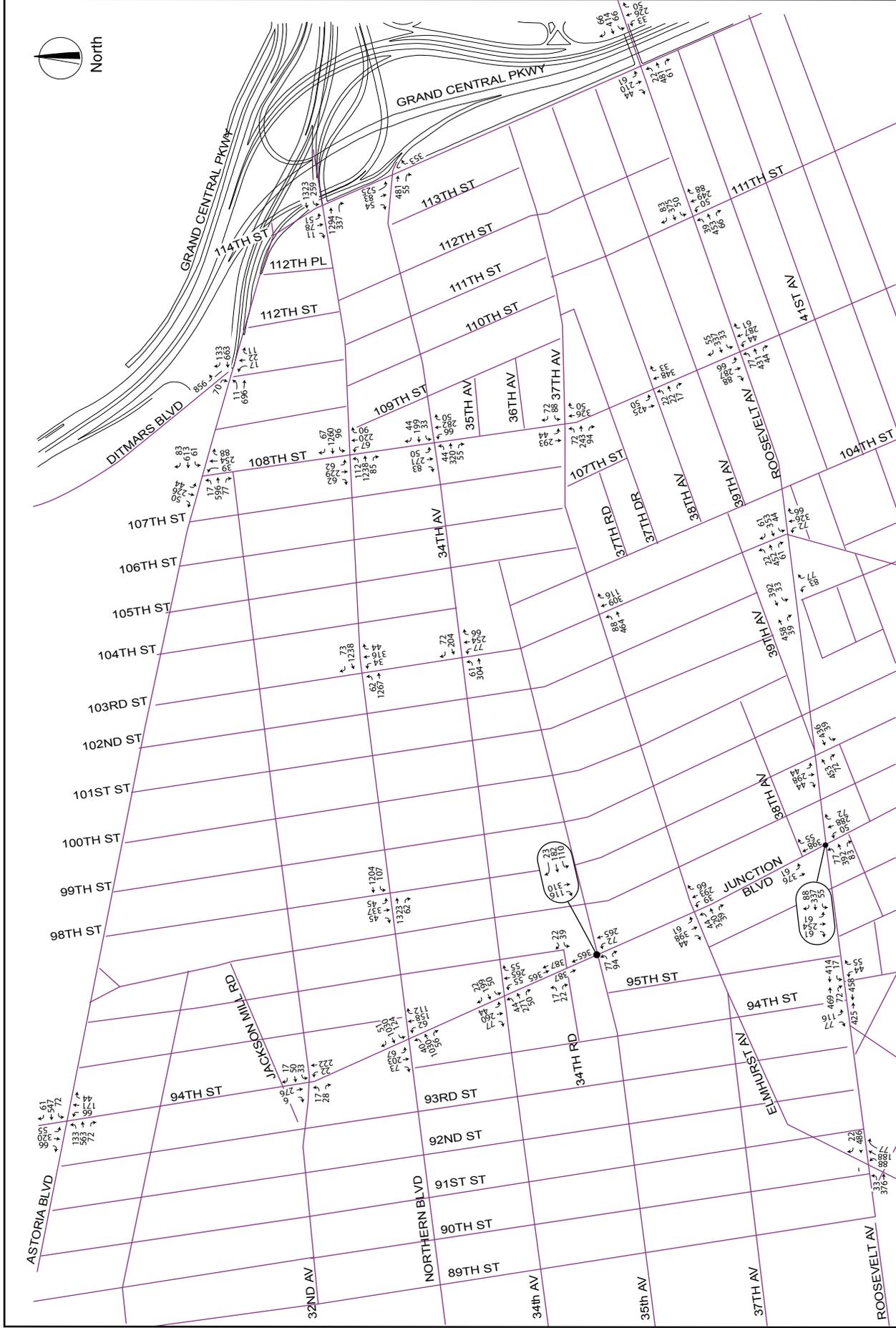
(1:00PM-2:00PM)

Figure 16B



Future Traffic Volumes, PM Peak Hour
(5:00-6:00PM)

Figure 16C



Future Traffic Volumes, Sunday, MD Peak Hour
(2:00-3:00PM)

Figure 16D

Sunday MD Peak Hour

Currently, the intersection's southbound left-turn movement operates at LOS D with a delay of 37.4 seconds per vehicle.

In the future conditions, the intersection's southbound left-turn movement will operate at LOS E with the delay time deteriorating to 60.0 seconds per vehicle.

Northern Boulevard at Junction Boulevard***AM Peak Hour***

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 85.9 seconds per vehicle. Also, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 64.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 124.1 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 106.1 seconds per vehicle.

MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 84.3 seconds per vehicle. Also, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 72.3 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 119.8 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will continue operating at LOS F with the delay time deteriorating to 132.4 seconds per vehicle

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 83.9 seconds per vehicle. Also, the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 82.9 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 120.5 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will continue operating at LOS F with the delay time deteriorating to 117.5 seconds per vehicle

Sunday MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 58.4 seconds per vehicle. Also, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 56.1 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 67.5 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will continue operating at LOS E with the delay time deteriorating to 67.7 seconds per vehicle.

Northern Boulevard at 98th Street***AM Peak Hour***

Currently, the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 84.2 seconds per vehicle.

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing AM			Future AM			Existing MD			Future MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Astoria Blvd & 94th Street	Eastbound	0.24	21.4	C	0.28	25.9	C	0.17	9.8	A	0.2	10.8	B
	L	0.28	20.6	C	0.31	21.0	C	0.39	16.8	B	0.4	17.3	B
	Westbound	0.08	11.3	B	0.10	11.9	B	0.13	9.7	A	0.2	10.5	B
	L	0.51	23.6	C	0.56	24.5	C	0.34	16.1	B	0.4	16.5	B
	Northbound	0.73	44.2	D	0.83	51.3	D	0.68	35.0	D	0.8	38.9	D
	L/TR	0.46	35.4	D	0.53	37.0	D	0.64	32.9	C	0.7	36.9	D
	Southbound	Intersection Delay = 27.6 LOS = C											
	L/TR	Intersection Delay = 29.6 LOS = C											
	Intersection Delay = 21.9 LOS = C												
	Intersection Delay = 23.5 LOS = C												
Astoria Blvd & 108th Street	Eastbound	0.29	17.3	B	0.32	17.6	B	0.28	13.3	B	0.3	13.6	B
	L/TR	0.10	5.6	A	0.12	5.8	A	0.07	5.6	A	0.1	5.7	A
	Westbound	0.48	7.9	A	0.52	8.4	A	0.3	6.5	A	0.3	6.7	A
	L	0.72	54.1	D	0.84	63.6	E	0.53	34.3	C	0.6	36.7	D
	Northbound	0.64	50.4	D	0.75	55.9	E	0.56	34.8	C	0.6	36.3	D
	L/TR	Intersection Delay = 20.4 LOS = C											
	Intersection Delay = 22.5 LOS = C												
	Intersection Delay = 17.0 LOS = B												
	Intersection Delay = 17.7 LOS = B												
	Intersection Delay = 17.7 LOS = B												
Astoria Blvd & 111th Street	Eastbound	0.29	8.6	A	0.33	8.8	A	0.35	12	B	0.4	12.4	B
	L	0.46	10.1	B	0.51	10.6	B	0.31	11.5	B	0.3	11.8	B
	Westbound	0.11	35.4	D	0.12	35.7	D	0.07	20.1	C	0.1	20.2	C
	L/TR	0.99	77.0	E	1.10	109.2	F	0.96	53.7	D	1.1	79.6	E
	Southbound	Intersection Delay = 29.3 LOS = C											
	L	Intersection Delay = 38.9 LOS = D											
	Intersection Delay = 26.1 LOS = C												
	Intersection Delay = 35.1 LOS = D												
	Intersection Delay = 35.1 LOS = D												
	Intersection Delay = 35.1 LOS = D												
32nd Ave & Junction Blvd	Eastbound	0.11	10.6	B	0.12	10.7	B	0.10	10.5	B	0.11	10.6	B
	L/R	0.07	10.2	B	0.08	10.2	B	0.04	10.0+	B	0.05	10.0+	B
	Westbound	0.71	20.6	C	0.78	24.3	C	0.72	21.5	C	0.84	28.7	C
	L/TR	0.41	13.7	B	0.46	14.3	B	0.58	16.6	B	0.64	18.1	B
	Northbound	Intersection Delay = 16.6 LOS = B											
	L	Intersection Delay = 18.6 LOS = B											
	Southbound	Intersection Delay = 18.1 LOS = B											
	L	Intersection Delay = 22.0 LOS = C											
	Intersection Delay = 22.0 LOS = C												
	Intersection Delay = 22.0 LOS = C												

Abbreviation:

L-Left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A <= 10, B > 10-20, C > 20-35, D > 35-55, E > 55-80, F > 80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing AM			Future AM			Existing MD			Future MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Northern Blvd & Junction Blvd	Eastbound												
	L	0.09	15.6	B	0.11	20.4	C	0.09	9.2	A	0.1	10.8	B
	TR	0.85	25.7	C	0.95	36.7	D	0.65	18.3	B	0.7	20.7	C
	Westbound												
	L	0.21	22.2	C	0.27	31.3	C	0.23	15.6	B	0.3	20.1	C
	TR	0.68	18.3	B	0.77	20.6	C	0.45	14.3	B	0.5	15.1	B
Northern Blvd & 98th Street	Northbound												
	LTR	0.99	85.9	F	1.12	124.1	F	0.98	84.3	F	1.1	119.8	F
	Southbound												
LTR	0.84	64.4	E	1.04	106.1	F	0.91	72.3	E	1.1	132.4	F	
		Intersection Delay = 33.2 LOS = C											
		Intersection Delay = 46.5 LOS = D											
		Intersection Delay = 33.0 LOS = C											
		Intersection Delay = 46.7 LOS = D											
Northern Blvd & 98th Street	Eastbound												
	TR	0.69	12.1	B	0.78	14.6	B	0.67	14.0	B	0.76	16.4	B
	Westbound												
	L	0.25	9.2	A	0.37	13.8	B	0.37	14.2	B	0.53	22.6	C
	T	0.59	9.6	A	0.66	10.7	B	0.65	13.6	B	0.73	15.7	B
	Southbound												
LTR	0.96	84.2	F	1.08	118.4	F	0.94	75.6	E	1.06	105.2	F	
		Intersection Delay = 17.8 LOS = B											
		Intersection Delay = 22.8 LOS = C											
		Intersection Delay = 21.9 LOS = C											
		Intersection Delay = 27.9 LOS = C											
Northern Blvd & 103rd Street	Eastbound												
	L	0.48	20.6	C	0.80	66.9	E	0.20	9.8	A	0.28	12.2	B
	T	0.59	9.6	A	0.66	10.9	B	0.56	11.8	B	0.63	13.1	B
	Westbound												
	TR	0.84	16.7	B	0.95	26.3	C	0.66	13.9	B	0.75	16.1	B
	Northbound												
LTR	0.57	47.5	D	0.64	49.5	D	0.45	40.2	D	0.51	41.3	D	
		Intersection Delay = 17.2 LOS = B											
		Intersection Delay = 23.7 LOS = C											
		Intersection Delay = 16.1 LOS = B											
		Intersection Delay = 17.8 LOS = B											
Northern Blvd & 108th Street	Eastbound												
	L	0.21	22.1	C	0.25	30.7	C	0.17	16.7	B	0.2	21.5	C
	TR	0.78	22.2	C	0.87	27.6	C	0.76	21.7	C	0.9	26.4	C
	Westbound												
	L	0.16	17.4	B	0.21	22.5	C	0.18	18.7	B	0.2	24.7	C
	TR	0.71	18.9	B	0.8	21.6	C	0.7	19.5	B	0.8	22.5	C
Northbound													
LTR	0.89	67.4	E	1.06	108.8	F	0.95	79.9	E	1.2	139.4	F	
Southbound													
LTR	0.56	46.7	D	0.69	51	D	0.66	49.8	D	0.8	57.5	E	
		Intersection Delay = 27.3 LOS = C											
		Intersection Delay = 35.2 LOS = D											
		Intersection Delay = 30.6 LOS = C											
		Intersection Delay = 41.6 LOS = D											

Abbreviation:

L-left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle, LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing AM			Future AM			Existing MD			Future MD			
		v/c	Delay	LOS										
Northern Blvd & 114th Street	Eastbound													
	T	0.71	32.5	C	0.80	36.2	D	0.59	17.8	B	0.66	19.5	B	
	R	0.72	35.6	D	0.81	40.8	D	0.48	16.8	B	0.54	18.0	B	
	Westbound													
	L	0.55	25.3	C	0.64	31.1	C	0.63	31.4	C	0.76	43.2	D	
	T	0.77	10.9	B	0.87	14.9	B	0.54	6.8	A	0.60	7.6	A	
	Northbound													
	Southbound													
	LTR	0.13	42.3	D	0.14	42.5	D	0.17	40.4	D	0.19	40.7	D	
		Intersection Delay = 21.6 LOS = C			Intersection Delay = 25.8 LOS = C			Intersection Delay = 15.3 LOS = B			Intersection Delay = 17.6 LOS = B			
34th Ave & Junction Blvd	Eastbound													
	LTR	0.69	18.5	B	0.77	22.1	C	0.58	15.0	B	0.64	16.6	B	
	Westbound													
	LTR	0.43	12.5	B	0.48	13.3	B	0.38	11.8	B	0.43	12.4	B	
	Northbound													
	LTR	0.60	29.5	C	0.68	31.4	C	0.65	30.9	C	0.73	33.9	C	
	Southbound													
	LTR	0.96	63.5	E	1.06	89.3	F	0.94	59.3	E	1.05	84.0	F	
		Intersection Delay = 31.9 LOS = C			Intersection Delay = 40.1 LOS = D			Intersection Delay = 31.0 LOS = C			Intersection Delay = 39.0 LOS = D			
	34th Ave & 103rd Street	Eastbound												
LT		0.51	13.8	B	0.57	15.0	B	0.42	12.2	B	0.47	13.0	B	
Westbound														
TR		0.45	12.6	B	0.50	13.4	B	0.29	10.5	B	0.32	10.8	B	
Northbound														
LTR		0.43	26.4	C	0.47	27.1	C	0.44	26.7	C	0.49	27.5	C	
Southbound														
		Intersection Delay = 17.2 LOS = B			Intersection Delay = 18.1 LOS = B			Intersection Delay = 16.8 LOS = B			Intersection Delay = 17.5 LOS = B			
34th Ave & 108th Street		Eastbound												
		LTR	0.54	14.2	B	0.60	15.6	B	0.48	13.2	B	0.54	14.2	B
	Westbound													
	LTR	0.57	14.8	B	0.63	16.3	B	0.54	14.2	B	0.60	15.6	B	
	Northbound													
	LTR	0.63	30.6	C	0.70	33.0	C	0.60	30.3	C	0.68	32.7	C	
	Southbound													
	LTR	0.83	45.7	D	0.98	73.0	E	0.97	70.1	E	1.16	128.6	F	
		Intersection Delay = 25.2 LOS = C			Intersection Delay = 32.2 LOS = C			Intersection Delay = 31.0 LOS = C			Intersection Delay = 45.8 LOS = D			

Abbreviation:

L-left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing AM			Future AM			Existing MD			Future MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
34th Ave & 114th Street	Eastbound TR	0.30	14.9	B	0.33	15.2	B	0.38	20.7	C	0.42	21.3	C
	Westbound Northbound R	0.18	0.2	A	0.20	0.2	A	0.16	0.2	A	0.17	0.2	A
	Southbound L	0.93	43.3	D	1.03	65.0	E	0.64	20.1	C	0.71	22.2	C
	T	0.12	16.7	B	0.13	16.8	B	0.14	12.4	B	0.16	12.5	B
	Intersection Delay = 25.9 LOS = C												
	Intersection Delay = 36.6 LOS = D												
35th Ave & Junction Blvd	Eastbound LR	0.42	19.5	B	0.49	21.2	C	0.41	19.2	B	0.47	20.5	C
	Westbound LTR	0.48	19.8	B	0.53	20.8	C	0.39	18.1	B	0.43	18.9	B
	Northbound LT	0.59	22.8	C	0.68	25.8	C	0.71	27.4	C	0.83	36.2	D
	Southbound TR	0.79	30.8	C	0.87	37.7	D	0.78	30.3	C	0.86	36.7	D
	Intersection Delay = 24.4 LOS = C												
	Intersection Delay = 28.2 LOS = C												
37th Ave & Junction Blvd	Eastbound LTR	0.54	21.5	C	0.60	22.9	C	0.65	24.3	C	0.71	26.6	C
	Westbound Northbound LTR	0.33	17.3	B	0.37	17.8	B	0.36	17.6	B	0.40	18.1	B
	Southbound LTR	0.91	43.5	D	1.01	65.5	E	0.96	52.1	D	1.07	82.1	F
	Intersection Delay = 29.4 LOS = C												
	Intersection Delay = 39.1 LOS = D												
	Intersection Delay = 45.7 LOS = D												
37th Ave & 103rd Street	Eastbound LT	0.20	8.8	A	0.22	9.0	A	0.26	9.3	A	0.28	9.5	A
	Westbound Northbound TR	0.38	25.7	C	0.42	26.3	C	0.43	26.6	C	0.48	27.4	C
	Intersection Delay = 16.4 LOS = B												
	Intersection Delay = 16.7 LOS = B												
	Intersection Delay = 16.3 LOS = B												
	Intersection Delay = 16.8 LOS = B												

Abbreviation:

L-left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections - Level of Service

Intersection	Approach	Existing AM			Future AM			Existing MD			Future MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
37th Ave & 108th Street	Eastbound	0.37	10.3	B	0.41	10.8	B	0.37	10.3	B	0.41	10.8	B
	L.T	0.04	0.0	A	0.04	0.1	A	0.05	0.1	A	0.05	0.1	A
	Westbound	0.19	8.8	A	0.22	9.1	A	0.25	9.5	A	0.28	9.9	A
	Northbound	0.45	27.3	C	0.50	28.1	C	0.45	27.4	C	0.50	28.2	C
	TR	0.34	25.7	C	0.38	26.2	C	0.35	25.7	C	0.39	26.3	C
	Southbound	Intersection Delay = 18.6 LOS = B											
Intersection Delay = 19.1 LOS = B													
Intersection Delay = 18.2 LOS = B													
Intersection Delay = 18.8 LOS = B													
38th Ave & 108th Street	Eastbound	0.27	26.3	C	0.30	26.8	C	0.32	27.1	C	0.35	27.8	C
	L.T.R	0.40	11.0	B	0.44	11.6	B	0.39	11.0	B	0.43	11.5	B
	Westbound	0.37	10.8	B	0.41	11.3	B	0.45	11.9	B	0.50	12.6	B
	Northbound	Intersection Delay = 12.8 LOS = B											
	TR	Intersection Delay = 13.3 LOS = B											
	Southbound	Intersection Delay = 13.5 LOS = B											
Intersection Delay = 14.2 LOS = B													
Roosevelt Ave & Elmhurst Ave	Eastbound	0.26	8.5	A	0.30	8.8	A	0.21	8.0	A	0.23	8.2	A
	L.T	0.25	8.3	A	0.27	8.5	A	0.23	8.2	A	0.25	8.3	A
	Westbound	0.64	44.3	D	0.71	46.4	D	0.53	41.5	D	0.58	42.7	D
	Northbound	Intersection Delay = 20.8 LOS = C											
	L.T.R	Intersection Delay = 21.7 LOS = C											
	Southbound	Intersection Delay = 19.5 LOS = B											
Intersection Delay = 20.0 LOS = C													
Roosevelt Ave & 94th St South	Eastbound	0.72	30.6	C	0.80	35.0-	C	0.54	24.1	C	0.60	25.7	C
	T	0.74	31.6	C	0.81	36.5	D	0.57	25.1	C	0.63	26.9	C
	Westbound	0.52	50.0	D	0.58	52.0	D	0.58	52.1	D	0.65	55.2	E
	Northbound	Intersection Delay = 33.7 LOS = C											
	TR	Intersection Delay = 37.9 LOS = D											
	Southbound	Intersection Delay = 29.6 LOS = C											
Intersection Delay = 31.6 LOS = C													

Abbreviation:

L-Left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing AM			Future AM			Existing MD			Future MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Roosevelt Ave & 94th St North	Eastbound												
	TR	0.42	20.4	C	0.46	21.2	C	0.34	19.2	B	0.37	19.7	B
	Westbound												
	LT	0.71	30.5	C	0.79	35.1	D	0.59	25.7	C	0.65	27.8	C
	Northbound												
	LR	0.35	44.9	D	0.38	45.6	D	0.24	42.8	D	0.27	43.3	D
	Southbound												
		Intersection Delay = 26.7 LOS = C			Intersection Delay = 28.9 LOS = C			Intersection Delay = 23.7 LOS = C			Intersection Delay = 24.9 LOS = C		
Roosevelt Ave & Junction Blvd	Eastbound												
	LTR	0.81	30.4	C	0.90	39.3	D	0.68	23.9	C	0.75	27.4	C
	Westbound												
	LTR	0.61	21.5	C	0.68	23.9	C	0.54	19.6	B	0.60	21.2	C
	Northbound												
	LTR	0.54	33.1	C	0.62	35.4	D	0.50	32.4	C	0.58	34.2	C
	Southbound												
LTR	0.48	31.5	C	0.53	32.7	C	0.50	31.9	C	0.56	33.3	C	
		Intersection Delay = 29.3 LOS = C			Intersection Delay = 33.4 LOS = C			Intersection Delay = 27.0 LOS = C			Intersection Delay = 29.1 LOS = C		
Roosevelt Ave & 98th Street	Eastbound												
	TR	0.57	13.3	B	0.63	14.8	B	0.41	10.5	B	0.46	11.1	B
	Westbound												
	LT	0.52	12.6	B	0.59	14.0	B	0.51	12.2	B	0.56	13.4	B
	Northbound												
	Southbound												
LTR	0.98	86.0	F	1.08	114.2	F	0.98	88.1	F	1.09	119.2	F	
		Intersection Delay = 33.5 LOS = C			Intersection Delay = 42.4 LOS = D			Intersection Delay = 34.4 LOS = C			Intersection Delay = 44.4 LOS = D		
Roosevelt Ave & 102nd Street	Eastbound												
	TR	0.54	12.7	B	0.60	14.0	B	0.40	10.4	B	0.44	11.0	B
	Westbound												
	LT	0.48	11.6	B	0.54	12.7	B	0.41	10.6	B	0.46	11.2	B
	Northbound												
	LR	0.35	39.8	D	0.38	40.6	D	0.35	39.8	D	0.39	40.7	D
	Southbound												
		Intersection Delay = 15.3 LOS = B			Intersection Delay = 16.4 LOS = B			Intersection Delay = 14.5 LOS = B			Intersection Delay = 15.2 LOS = B		

Abbreviation:

L-Left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A <= 10, B > 10-20, C > 20-35, D > 35-55, E > 55-80, F > 80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing PM			Future PM			Existing Sun MD			Future Sun MD			
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	
Astoria Blvd & 94th Street	Eastbound	0.22	14.5	B	0.26	16.0	B	0.23	7.2	A	0.26	7.7	A	
	L	0.54	24.2	C	0.60	25.3	C	0.37	12.7	B	0.41	13.1	B	
	Westbound	0.17	19.1	B	0.20	22.4	C	0.12	6.2	A	0.14	6.7	A	
	L	0.3	20.7	C	0.33	21.1	C	0.26	11.8	B	0.29	12.0	B	
	Northbound	0.76	46.5	D	0.88	57.4	E	0.59	25.1	C	0.69	28.8	C	
	LTR	0.61	39.1	D	0.71	42.7	D	0.63	24.4	C	0.71	26.4	C	
	Southbound	Intersection Delay = 28.0 LOS = C						Intersection Delay = 16.0 LOS = B						
	LTR	Intersection Delay = 30.6 LOS = C						Intersection Delay = 17.1 LOS = B						
	Astoria Blvd & 108th Street	Eastbound	0.52	20.4	C	0.57	21.3	C	0.33	13.5	B	0.36	13.7	B
		LTR	0.13	7.0	A	0.15	7.7	A	0.16	8.4	A	0.19	8.7	A
Westbound		0.36	6.9	A	0.40	7.2	A	0.33	8.9	A	0.36	9.1	A	
L		0.96	81.1	F	1.14	135.1	F	0.35	16.9	B	0.39	17.3	B	
Northbound		0.94	76.1	E	1.11	123.3	F	0.37	17.1	B	0.41	17.6	B	
LTR		Intersection Delay = 30.8 LOS = C						Intersection Delay = 12.9 LOS = B						
Intersection Delay = 44.2 LOS = D						Intersection Delay = 13.2 LOS = B								
Astoria Blvd & 111th Street		Eastbound	0.46	16.2	B	0.51	16.9	B	0.27	10.6	B	0.30	10.8	B
		L	0.44	16.1	B	0.49	16.8	B	0.37	11.4	B	0.41	11.7	B
		Westbound	0.06	25.6	C	0.07	25.7	C	0.10	12.3	B	0.12	12.4	B
	TR	0.96	59.4	E	1.06	84.8	F	0.93	37.4	D	1.04	60.0	E	
	Northbound	Intersection Delay = 28.8 LOS = C						Intersection Delay = 20.4 LOS = C						
	LTR	Intersection Delay = 36.6 LOS = D						Intersection Delay = 28.5 LOS = C						
	Southbound	Intersection Delay = 28.8 LOS = C						Intersection Delay = 28.5 LOS = C						
	L	Intersection Delay = 20.5 LOS = C						Intersection Delay = 12.4 LOS = B						
	32nd Ave & Junction Blvd	Eastbound	0.09	10.5	B	0.10	10.6	B	0.08	10.4	B	0.09	10.5	B
		LR	0.07	10.2	B	0.08	10.2	B	0.08	10.2	B	0.09	10.3	B
Westbound		0.81	26.3	C	0.94	41.8	D	0.22	11.6	B	0.44	14.2	B	
LTR		0.60	17.1	B	0.66	18.8	B	0.42	13.8	B	0.47	14.5	B	
Northbound		Intersection Delay = 20.5 LOS = C						Intersection Delay = 12.4 LOS = B						
L		Intersection Delay = 28.6 LOS = D						Intersection Delay = 13.5 LOS = B						
Southbound		Intersection Delay = 20.5 LOS = C						Intersection Delay = 12.4 LOS = B						
TR		Intersection Delay = 28.6 LOS = D						Intersection Delay = 13.5 LOS = B						

Abbreviation:

L-Left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Existing PM			Future PM			Existing Sun MD			Future Sun MD				
	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS		
Northern Blvd & Junction Blvd	Eastbound													
	L	10.3	B	0.10	12.3	B	0.08	8.2	A	0.10	9.3	A		
	TR	18.5	B	0.78	21.0	C	0.62	17.7	B	0.70	19.7	B		
	Westbound													
	L	27.4	C	0.39	38.8	D	0.26	14.9	B	0.33	19.3	B		
	TR	15	B	0.57	16.0	B	0.39	13.4	B	0.44	14.0	B		
	Northbound													
LTR	83.9	F	1.11	120.5	F	0.77	58.4	E	0.87	67.5	E			
Southbound														
LTR	82.9	F	1.09	117.5	F	0.75	56.1	E	0.87	67.7	E			
			Intersection Delay = 32.9 LOS = C			Intersection Delay = 43.0 LOS = D			Intersection Delay = 25.0 LOS = C			Intersection Delay = 28.5 LOS = C		
Northern Blvd & 98th Street	Eastbound													
	TR	9.8	A	0.68	11.0	B	0.71	14.9	B	0.79	17.8	B		
	Westbound													
	L	21.3	C	0.73	54.4	D	0.53	20.3	C	0.77	45.0	D		
	T	9.9	A	0.66	11.2	B	0.60	12.5	B	0.67	14.0	B		
Northbound														
Southbound														
LTR	86.7	F	1.11	125.2	F	0.97	80.9	F	1.09	115.4	F			
			Intersection Delay = 19.4 LOS = B			Intersection Delay = 25.7 LOS = C			Intersection Delay = 23.6 LOS = C			Intersection Delay = 31.2 LOS = C		
Northern Blvd & 103rd Street	Eastbound													
	L	8.2	A	0.34	10.9	B	0.27	11.4	B	0.39	15.7	B		
	T	18.5	B	0.98	32.9	C	0.64	13.4	B	0.73	15.4	B		
	Westbound													
	TR	9.7	A	0.67	11.0	B	0.65	13.5	B	0.73	15.6	B		
	Northbound													
LTR	51.2	D	0.77	55.1	E	0.55	42.2	D	0.62	44.1	D			
Southbound														
			Intersection Delay = 18.9 LOS = B			Intersection Delay = 27.3 LOS = C			Intersection Delay = 17.3 LOS = B			Intersection Delay = 19.4 LOS = B		
Northern Blvd & 108th Street	Eastbound													
	L	20.2	C	0.35	27.8	C	0.3	21.2	C	0.37	29.4	C		
	TR	18.2	B	0.77	20.5	C	0.76	21.6	C	0.86	26.2	C		
	Westbound													
	L	20.2	C	0.25	28.7	C	0.25	19.6	B	0.32	26.6	C		
	TR	20.8	C	0.83	24.8	C	0.76	21.7	C	0.86	26.4	C		
	Northbound													
LTR	81.6	F	1.10	117.3	F	0.86	65.5	E	0.97	82.5	F			
Southbound														
LTR	80.4	F	1.18	148.1	F	0.74	54.7	D	0.89	69.6	E			
			Intersection Delay = 33.7 LOS = C			Intersection Delay = 48.1 LOS = D			Intersection Delay = 29.8 LOS = C			Intersection Delay = 37.0 LOS = D		

Abbreviation:

L-left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle, LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing PM			Future PM			Existing Sun MD			Future Sun MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Northern Blvd & 114th Street	Eastbound												
	T	0.86	27.6	C	0.97	40.4	D	0.71	20.7	C	0.79	23.8	C
	R	0.68	21.8	C	0.76	25.3	C	0.35	14.6	B	0.39	15.2	B
	Westbound												
	L	0.88	64.4	E	1.06	108.5	F	0.52	32.4	C	0.64	42.4	D
	T	0.54	6.9	A	0.61	7.7	A	0.55	6.9	A	0.62	7.8	A
	Northbound												
	Southbound												
	LTR	0.12	39.8	D	0.14	39.9	D	0.22	41.0	D	0.25	41.4	D
		Intersection Delay = 23.5 LOS = C											
		Intersection Delay = 33.6 LOS = C											
		Intersection Delay = 16.5 LOS = B											
		Intersection Delay = 18.9 LOS = B											
34th Ave & Junction Blvd	Eastbound												
	LTR	0.70	19.1	B	0.78	22.8	C	0.48	13.3	B	0.54	14.3	B
	Westbound												
	LTR	0.50	13.6	B	0.56	14.8	B	0.37	11.6	B	0.41	12.3	B
	Northbound												
	LTR	0.72	32.9	C	0.80	37.0	D	0.46	26.7	C	0.51	27.6	C
	Southbound												
	LTR	0.97	63.6	E	1.08	92.7	F	0.95	63.8	E	1.12	113.7	F
		Intersection Delay = 33.5 LOS = C											
		Intersection Delay = 43.5 LOS = D											
		Intersection Delay = 30.4 LOS = C											
		Intersection Delay = 44.4 LOS = D											
34th Ave & 103rd Street	Eastbound												
	LT	0.65	17.1	B	0.73	19.8	B	0.49	13.5	B	0.55	14.7	B
	Westbound												
	TR	0.44	12.4	B	0.49	13.1	B	0.35	11.3	B	0.39	11.7	B
	Northbound												
	LTR	0.5	27.7	C	0.56	28.8	C	0.54	28.4	C	0.59	29.6	C
	Southbound												
		Intersection Delay = 18.9 LOS = B											
		Intersection Delay = 20.5 LOS = C											
		Intersection Delay = 18.6 LOS = B											
		Intersection Delay = 19.6 LOS = B											
34th Ave & 108th Street	Eastbound												
	LTR	0.65	17.1	B	0.72	19.7	B	0.55	14.6	B	0.61	16.1	B
	Westbound												
	LTR	0.48	13.2	B	0.54	14.3	B	0.37	11.6	B	0.41	12.2	B
	Northbound												
	LTR	0.70	33.0	C	0.79	37.4	D	0.57	29.6	C	0.65	31.7	C
	Southbound												
	LTR	0.95	62.5	E	1.06	89.0	F	0.97	69.2	E	1.17	131.5	F
		Intersection Delay = 31.5 LOS = C											
		Intersection Delay = 39.9 LOS = D											
		Intersection Delay = 32.4 LOS = C											
		Intersection Delay = 50.1 LOS = D											

Abbreviation:

L-left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing PM			Future PM			Existing Sun MD			Future Sun MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
34th Ave & 114th Street	Eastbound												
	TR	0.45	21.7	C	0.50	22.5	C	0.41	18.0	B	0.45	18.5	B
	Westbound												
	Northbound												
	R	0.23	0.3	A	0.25	0.3	A	0.20	0.2	A	0.22	0.3	A
	Southbound												
	L	0.70	21.9	C	0.77	24.8	C	0.68	24.8	C	0.76	27.7	C
	T	0.21	13.1	B	0.23	13.3	B	0.10	14.7	B	0.11	14.8	B
		Intersection Delay = 15.6 LOS = B Intersection Delay = 16.9 LOS = B Intersection Delay = 16.0 LOS = B Intersection Delay = 17.2 LOS = B											
35th Ave & Junction Blvd	Eastbound												
	LR	0.56	23.7	C	0.66	27.7	C	0.35	18.1	B	0.40	19.0	B
	Westbound												
	LTR	0.49	20.1	C	0.54	21.2	C	0.48	19.8	B	0.51	20.5	C
	Northbound												
	LT	0.87	40.0	D	1.03	74.1	E	0.73	29.2	C	0.82	36.9	D
	TR	0.87	37.7	D	0.96	51.5	D	0.71	26.7	C	0.78	30.5	C
		Intersection Delay = 32.5 LOS = C Intersection Delay = 47.9 LOS = D Intersection Delay = 24.5 LOS = C Intersection Delay = 28.2 LOS = C											
37th Ave & Junction Blvd	Eastbound												
	LTR	0.84	34	C	0.93	43.8	D	0.57	22.2	C	0.63	23.8	C
	Westbound												
	Northbound												
	LTR	0.41	18.3	B	0.46	19.1	B	0.33	17.3	B	0.37	17.7	B
	Southbound												
	LTR	0.99	58.8	E	1.14	108.8	F	0.83	34.7	C	0.93	46.9	D
		Intersection Delay = 38.5 LOS = C Intersection Delay = 60.2 LOS = E Intersection Delay = 25.5 LOS = C Intersection Delay = 30.8 LOS = C											
37th Ave & 103rd Street	Eastbound												
	LT	0.35	10.1	B	0.39	10.5	B	0.31	9.7	A	0.35	10.0+	B
	Westbound												
	Northbound												
	TR	0.5	27.8	C	0.56	28.8	C	0.61	30.4	C	0.68	32.3	C
	Southbound												
		Intersection Delay = 16.8 LOS = B Intersection Delay = 17.5 LOS = B Intersection Delay = 18.7 LOS = B Intersection Delay = 19.7 LOS = B											

Abbreviation:

L-left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing PM		Future PM		Existing Sun MD		Future Sun MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
37th Ave & 108th Street	Eastbound									
	LT	0.52	12.4	B	0.57	13.4	B	0.32	9.8	A
	R	0.06	0.1	A	0.06	0.1	A	0.07	0.1	A
	Westbound									
	LR	0.37	11.3	B	0.44	12.7	B	0.28	9.9	A
	Northbound									
TR	0.50	28.2	C	0.56	29.3	C	0.47	27.8	C	
Southbound										
LT	0.51	28.4	C	0.58	29.9	C	0.39	26.4	C	
		Intersection Delay = 19.8 LOS = B		Intersection Delay = 21.0 LOS = C		Intersection Delay = 18.5 LOS = B		Intersection Delay = 19.1 LOS = B		
38th Ave & 108th Street	Eastbound									
	LTR	0.31	27.0	C	0.34	27.6	C	0.16	24.7	C
	Westbound									
	Northbound									
	TR	0.40	11.0	B	0.44	11.6	B	0.38	10.8	B
	Southbound									
LT	0.56	13.6	B	0.62	15.0	B	0.49	12.4	B	
		Intersection Delay = 14.2 LOS = B		Intersection Delay = 15.2 LOS = B		Intersection Delay = 12.5 LOS = B		Intersection Delay = 13.3 LOS = B		
Roosevelt Ave & Elmhurst Ave	Eastbound									
	LT	0.26	8.4	A	0.29	8.7	A	0.24	8.2	A
	Westbound									
	TR	0.28	8.6	A	0.31	8.8	A	0.27	8.5	A
	Northbound									
	LTR	0.66	44.7	D	0.73	47.1	D	0.47	40.3	D
Southbound										
		Intersection Delay = 21.4 LOS = C		Intersection Delay = 22.4 LOS = C		Intersection Delay = 17.5 LOS = B		Intersection Delay = 17.9 LOS = B		
Roosevelt Ave & 94th St South	Eastbound									
	T	0.93	49.0	D	1.02	71.4	E	0.64	27.3	C
	Westbound									
	T	0.64	27.3	C	0.71	30.0	C	0.63	26.9	C
	Northbound									
	Southbound									
LR	0.66	56.0	E	0.73	60.4	E	0.56	50.2	D	
		Intersection Delay = 42.8 LOS = D		Intersection Delay = 55.8 LOS = E		Intersection Delay = 31.3 LOS = C		Intersection Delay = 33.8 LOS = C		

Abbreviation:

L-Left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Approach	Existing PM		Future PM		Existing Sun MD		Future Sun MD																																
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS																														
Roosevelt Ave & 94th St North	Eastbound TR	0.48	21.4	C	0.53	22.3	C	0.39	20.0	B	0.43	20.6	C																											
	Westbound LT	0.69	29.7	C	0.77	34.1	C	0.61	26.2	C	0.68	28.6	C																											
	Northbound LR	0.34	44.8	D	0.38	45.6	D	0.33	44.8	D	0.36	45.5	D																											
	Southbound	Intersection Delay = 26.4 LOS = C										Intersection Delay = 24.8 LOS = C																												
	Intersection Delay = 26.2 LOS = C																																							
Roosevelt Ave & Junction Blvd	Eastbound L/TR	0.81	31.0	C	0.91	41.4	D	0.79	29.9	C	0.89	39.4	D																											
	Westbound L/TR	0.75	27.7	C	0.85	36.1	D	0.64	22.6	C	0.71	25.3	C																											
	Northbound L/TR	0.56	33.6	C	0.65	36.3	D	0.48	31.7	C	0.53	32.9	C																											
	Southbound L/TR	0.55	33.1	C	0.62	34.8	C	0.42	30.6	C	0.49	32.0	C																											
	Intersection Delay = 31.3 LOS = C												Intersection Delay = 28.6 LOS = C																											
Intersection Delay = 32.7 LOS = C																																								
Roosevelt Ave & 98th Street	Eastbound TR	0.56	13.0	B	0.62	14.3	B	0.57	13.3	B	0.63	14.7	B																											
	Westbound LT	0.68	17.0	B	0.78	21.4	C	0.50	12.0	B	0.56	13.1	B																											
	Northbound Southbound L/TR	0.97	81.1	F	1.07	109.9	F	0.90	68.3	E	1.00	88.5	F																											
	Intersection Delay = 33.5 LOS = C												Intersection Delay = 28.5 LOS = C																											
	Intersection Delay = 43.6 LOS = D																																							
Roosevelt Ave & 102nd Street	Eastbound TR	0.52	12.2	B	0.57	13.3	B	0.51	12.0	B	0.56	12.9	B																											
	Westbound LT	0.55	12.8	B	0.61	14.3	B	0.45	11.0	B	0.50	11.9	B																											
	Northbound LR	0.45	42.2	D	0.49	43.6	D	0.45	42.0	D	0.49	43.3	D	Southbound	Intersection Delay = 16.4 LOS = B										Intersection Delay = 16.2 LOS = B		Intersection Delay = 17.7 LOS = B												Intersection Delay = 17.1 LOS = B	
	Southbound	Intersection Delay = 16.4 LOS = B										Intersection Delay = 16.2 LOS = B																												
	Intersection Delay = 17.7 LOS = B												Intersection Delay = 17.1 LOS = B																											

Abbreviation:

L-Left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A <=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

Table 26: 2003 Existing Conditions and 2013 Future Conditions - Signalized Intersections Level of Service

Intersection	Existing PM		Future PM		Existing Sun MD		Future Sun MD		
	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	
Roosevelt Ave & 103rd Street	Eastbound	0.64	15.5	B	0.72	18.3	B	0.56	13.1
	LTR								
	Westbound	0.62	14.6	B	0.69	16.7	B	0.50	12.0
	LTR								
	Northbound	0.62	44.3	D	0.68	46.4	D	0.65	44.9
Southbound									
Intersection Delay = 22.7 LOS = C									Intersection Delay = 23.1 LOS = C
Intersection Delay = 25.1 LOS = C									Intersection Delay = 24.7 LOS = C
Roosevelt Ave & 108th Street	Eastbound	0.25	8.3	A	0.28	8.6	A	0.31	8.8
	LTR								
	Westbound	0.25	8.3	A	0.28	8.5	A	0.22	8.1
	LTR								
	Northbound	0.79	54.4	D	0.92	71.1	E	0.73	50.2
Southbound									
LTR	0.80	53.0	D	0.92	65.8	E	0.88	63.5	
Intersection Delay = 30.2 LOS = C									Intersection Delay = 30.8 LOS = C
Intersection Delay = 37.3 LOS = D									Intersection Delay = 40.1 LOS = D
Roosevelt Ave & 111th Street	Eastbound	0.22	8.0	A	0.24	8.2	A	0.29	8.6
	LTR								
	Westbound	0.58	13.9	B	0.65	15.7	B	0.63	15.3
	LTR								
	Northbound	0.97	82.8	F	1.07	110.3	F	0.96	79.7
Southbound									
Intersection Delay = 33.0 LOS = C									Intersection Delay = 30.2 LOS = C
Intersection Delay = 42.0 LOS = D									Intersection Delay = 38.7 LOS = D
Roosevelt Ave & 114th Street	Eastbound	0.23	8.2	A	0.25	8.4	A	0.31	8.9
	LTR								
	Westbound	0.25	8.3	A	0.27	8.5	A	0.35	9.3
	LTR								
	Northbound	0.99	94.6	F	1.12	132.7	F	0.96	85.9
Southbound									
LTR	0.34	38.2	D	0.38	39.0	D	0.50	41.4	
Intersection Delay = 31.4 LOS = C									Intersection Delay = 29.0 LOS = C
Intersection Delay = 39.8 LOS = D									Intersection Delay = 40.4 LOS = D

Abbreviation:

L-left, T-Through, R-Right, V/C Ratio-Volume to Capacity Ratio, Delay-Seconds per Vehicle
 LOS-Level of Service, A<=10, B>10-20, C>20-35, D>35-55, E>55-80, F>80

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 118.4 seconds per vehicle.

MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 75.6 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 105.2 seconds per vehicle.

PM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 86.7 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 125.2 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 80.9 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 115.4 seconds per vehicle.

Northern Boulevard at 103rd Street

AM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS D with a delay of 47.5 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS D with the delay time deteriorating to 49.5 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS D with a delay of 51.2 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 55.1 seconds per vehicle.

Northern Boulevard at 108th Street

AM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 67.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 108.8 seconds per vehicle.

MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 79.9 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 49.8 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 139.4 seconds per vehicle, and the

intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 57.5 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 81.6 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 80.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 117.3 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 148.1 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 65.5 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 54.7 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 82.5 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 69.6 seconds per vehicle.

Northern Boulevard at 114th Street

PM Peak Hour

Currently, the intersection's westbound left-turn movement operates at LOS E with a delay of 64.4 seconds per vehicle.

In the future conditions, the intersection's westbound left-turn movement will operate at LOS F with the delay time deteriorating to 108.5 seconds per vehicle.

34th Avenue at Junction Boulevard

AM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 63.5 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 89.3 seconds per vehicle.

MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 59.3 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 84.0 seconds per vehicle.

PM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 63.6 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 92.7 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 63.8 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 113.7 seconds per vehicle.

34th Avenue at 108th Street***AM Peak Hour***

Currently, the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 45.7 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 73.0 seconds per vehicle.

MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 70.1 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 128.6 seconds per vehicle.

PM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 62.5 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 89.0 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 69.2 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 131.5 seconds per vehicle.

34th Avenue at 114th Street***AM Peak Hour***

Currently, the intersection's southbound left-turn movement operates at LOS D with a delay of 43.3 seconds per vehicle.

In the future conditions, the intersection's southbound left-turn movement will operate at LOS E with the delay time deteriorating to 65.0 seconds per vehicle.

35th Avenue at Junction Boulevard***PM Peak Hour***

Currently, the intersection's northbound left-thru approach movement operates at LOS D with a delay of 40.0 seconds per vehicle, and the intersection's southbound thru-right approach movement operates at LOS D with a delay of 37.7 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will operate at LOS E with the delay time deteriorating to 74.1 seconds per vehicle, and the intersection's southbound thru-right approach movement will operate at LOS D with the delay time deteriorating to 51.5 seconds per vehicle.

37th Avenue at Junction Boulevard***AM Peak Hour***

Currently, the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 43.5 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 65.5 seconds per vehicle.

MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 52.1 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 82.1 seconds per vehicle.

PM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 58.8 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 108.8 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS C with a delay of 34.7 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS D with the delay time deteriorating to 46.9 seconds per vehicle.

Roosevelt Avenue at 94th Street South***MD Peak Hour***

Currently, the intersection's southbound left-right approach movement operates at LOS D with a delay of 52.1 seconds per vehicle.

In the future conditions, the intersection's southbound left-right approach movement will operate at LOS E with the delay time deteriorating to 55.2 seconds per vehicle.

PM Peak Hour

Currently, the intersection's eastbound thru approach movement operates at LOS D with a delay of 49.0 seconds per vehicle, and the intersection's southbound left-right approach movement operates at LOS E with a delay of 56.0 seconds per vehicle.

In the future conditions, the intersection's eastbound thru approach movement will operate at LOS E with the delay time deteriorating to 71.4 seconds per vehicle, and the intersection's southbound left-right approach movement will operate at LOS E with the delay time deteriorating to 60.4 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-right approach movement operates at LOS D with a delay of 50.2 seconds per vehicle.

In the future conditions, the intersection's southbound left-right approach movement will operate at LOS D with the delay time deteriorating to 52.3 seconds per vehicle.

Roosevelt Avenue at 94th Street North***AM Peak Hour***

Currently, the intersection's northbound left-right approach movement operates at LOS D with a delay of 44.8 seconds per vehicle.

In the future conditions, the intersection's northbound left-right approach movement will operate at LOS D with the delay time deteriorating to 45.6 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's northbound left-right approach movement operates at LOS D with a delay of 44.8 seconds per vehicle.

In the future conditions, the intersection's northbound left-right approach movement will operate at LOS D with the delay time deteriorating to 45.5 seconds per vehicle.

Roosevelt Avenue at 98th Street***AM Peak Hour***

Currently, the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 86.0 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 114.2 seconds per vehicle.

MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 88.1 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 119.2 seconds per vehicle.

PM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 81.1 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 109.9 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 68.3 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 88.5 seconds per vehicle.

Roosevelt Avenue at 108th Street***AM Peak Hour***

Currently, the intersection's northbound left-thru approach movement operates at LOS D with a delay of 48.0 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 47.7 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will operate at LOS D with the delay time deteriorating to 52.9 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS D with the delay time deteriorating to 54.3 seconds per vehicle.

MD Peak Hour

Currently, the intersection's northbound left-thru approach movement operates at LOS D with a delay of 49.9 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 46.1 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will operate at LOS E with the delay time deteriorating to 58.2 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS D with the delay time deteriorating to 51.0 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru approach movement operates at LOS D with a delay of 54.4 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 53.0 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will operate at LOS E with the delay time deteriorating to 71.1 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 65.8 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS D with a delay of 50.2 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 60.3 seconds per vehicle.

Roosevelt Avenue at 111th Street***AM Peak Hour***

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 64.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 79.0 seconds per vehicle.

MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 72.0 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 93.3 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 82.8 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 110.3 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 79.7 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 106.9 seconds per vehicle.

Roosevelt Avenue at 114th Street***AM Peak Hour***

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 55.2 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 65.9 seconds per vehicle.

MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 64.2 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 37.3 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 78.8 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS D with the delay time deteriorating to 37.8 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 94.6 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 132.7 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 85.9 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 145.6 seconds per vehicle.

Unsignalized Intersections

As shown in Table 27, with the proposed developments and zoning changes, the LOS analysis for three unsignalized intersections indicated that all the approaches would continue to operate acceptably, at LOS C or better, for all peak hours.

Table 27: 2003 Existing Conditions and 2013 Future Conditions - Unsignalized Intersections Level of Service

Intersection	Approach	Existing AM			Future AM			Existing MD			Future MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Junction Blvd & 34th Road West	Northbound	0.11	16.4	C	0.14	18.3	C	0.07	15.5	C	0.09	17.1	C
	Southbound Westbound Eastbound LR	EB Appr.Delay=16.4 LOS=C EB Appr.Delay=18.3 LOS=C EB Appr.Delay=15.5 LOS=C EB Appr.Delay=17.1 LOS=C											
Junction Blvd & 96th Street/34th Road East	Northbound												
	Southbound Westbound LR Eastbound	0.14	14.8	B	0.17	16.3	C	0.16	16.1	C	0.19	17.9	C
		WB Appr.Delay=14.8 LOS=B WB Appr.Delay=16.3 LOS=C WB Appr.Delay=16.1 LOS=C WB Appr.Delay=17.9 LOS=C											
Junction Blvd & 38th Ave	Northbound												
	Southbound LT Westbound Eastbound	0.04	8.3	A	0.04	8.4	A	0.04	8.3	A	0.05	8.5	A

Table 4: 2003 Existing Conditions and 2013 Future Conditions - Unsignalized Intersections Level of Service

Intersection	Approach	Existing PM			Future PM			SUN MD			Future SUN MD		
		v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS	v/c	Delay	LOS
Junction Blvd & 34th Road West	Northbound												
	Southbound Westbound Eastbound LR	0.10	17.6	C	0.13	19.9	C	0.07	12.6	B	0.09	13.5	B
		EB Appr.Delay=17.6 LOS=C EB Appr.Delay=19.9 LOS=C EB Appr.Delay=12.6 LOS=B EB Appr.Delay=13.5 LOS=B											
Junction Blvd & 96th Street/34th Road East	Northbound												
	Southbound Westbound LR Eastbound	0.23	18.6	C	0.28	21.5	C	0.13	14.1	B	0.16	15.5	C
		WB Appr.Delay=18.6 LOS=C WB Appr.Delay=21.5 LOS=C WB Appr.Delay=14.1 LOS=B WB Appr.Delay=15.5 LOS=C											
Junction Blvd & 38th Ave	Northbound												
	Southbound LT Westbound Eastbound	0.03	8.5	A	0.04	8.7	A	0.05	8.4	A	0.06	8.6	A

Abbreviations:

L-Left, T-Through, R-Right, V/C-Volume to Capacity Ratio, Delay-Seconds per Vehicle, LOS-Level of Service, A<=10, B>10-15, C>15-25, D>25-35, E>35-50, F>50

Parking***Off-Street Parking***

There are no proposed off-street public parking facilities within the study area.

On-Street Parking

In the future condition, no changes to on-street parking conditions are expected to occur.

Public Transit***Subway Service***

Subway ridership demand within the study area will increase as a result of the proposed rezoning and proposed developments. The subway person trips were estimated using the area's general background growth factor (1.0 percent per year for Queens), resulting in a total of 10.46 percent compound background growth. Based on the *North Corona Rezoning Environmental Assessment Statement* (EAS), dated April 15, 2003, prepared by the NYC Department of City Planning, the four projected development sites (site no. 1 to 4) would generate 45, 24 and 55 subway person trips during the weekday AM, midday and PM peak hours, respectively. Since, the potential development sites were considered less likely to be developed within the 10-year period, all kind of trips generated from the potential development sites were considered as a part of the background growth.

Table 28 show the results of the analysis of the future conditions of station elements for the weekday AM and PM peak hours, and Sunday midday peak hour at the four selected stations. As indicated in the table, all elements will continue to operate at LOS A or B.

Local Bus Service

Bus service demand within the study area will increase as a result of the proposed rezoning and proposed developments. The bus person trips were estimated using the area's general background growth factor (1.0 percent per year for Queens), resulting in a total of 10.46 percent compound background growth. Based on the *North Corona Rezoning Environmental Assessment Statement* (EAS), dated April 15, 2003, prepared by the NYC Department of City Planning, the four projected development sites (site no. 1 to 4) would generate 34, 16 and 38 bus person trips during the weekday AM, midday and PM peak hours, respectively. Since, the potential development sites were considered less likely to be developed within the 10-year period, all kind of trips generated from the potential development sites were considered as a part of the background growth.

As shown in Table 29, three bus lines will continue to operate with available capacity during the weekday AM and PM peak hours, and the Sunday midday peak hour. Two bus lines will operate over capacity in the peak direction during the weekday AM and PM peak hours.

Table 28
2013 Future Conditions - Subway Stations Level of Service

Subway Station and Elements			15-Minute Pedestrian Volume			V/SVCD Ratio			Level of Service		
			AM	PM	SUN	AM	PM	SUN	AM	PM	SUN
90th Street/Elmhurst Avenue Fare Control Area R527 Turnstile Turnstile (To West Bound Train) Turnstile (To East Bound Train) Service Gate Stairs NW (S3 & M3) NE (S2 & M2) S (M1) S (S1)	Numbers	One- or Two-Way	In/Out	In/Out	In/Out						
	5	2	447	441	299	0.17	0.16	0.11	A	A	A
	2	2	144	39	99	0.13	0.04	0.09	A	A	A
	2	2	128	89	83	0.12	0.08	0.08	A	A	A
	1	2	10	25	5	0.01	0.04	0.01	A	A	A
	Width (ft)	Effective Width (ft)	Down/Up	Down/Up	Down/Up						
	4.7	3.7	188	249	127	0.38	0.50	0.25	A	B	A
	4.7	3.7	199	148	132	0.40	0.30	0.26	A	A	A
	7.8	6.8	343	200	228	0.37	0.22	0.25	A	A	A
	4.9	3.9	343	200	228	0.65	0.38	0.43	B	A	A
Junction Boulevard Fare Control Area R528 Turnstile Turnstile Service Gate Stairs NW (S4&M4) NE (S2&M2) SW (S3&M3) SE (S1&M1)	Numbers	One- or Two-Way	In/Out	In/Out	In/Out						
	5	2	723	817	497	0.27	0.30	0.18	A	A	A
	4	2	364	364	221	0.17	0.17	0.10	A	A	A
	1	2	17	23	11	0.03	0.03	0.02	A	A	A
	Width (ft)	Effective Width (ft)	Down/Up	Down/Up	Down/Up						
	5.8	4.8	310	220	132	0.48	0.34	0.20	B	A	A
	5.8	4.8	276	276	166	0.43	0.43	0.26	A	A	A
	5.8	4.8	342	343	210	0.53	0.53	0.32	B	B	A
	5.8	4.8	176	365	221	0.27	0.56	0.34	A	B	A
	103rd Street/Corona Plaza Fare Control Area R529 Turnstile Service Gate High Exit Turnstile Stairs NW (S4&M4) NE (S2&M2) SW (S3&M3) SE (S1&M1)	Numbers	One- or Two-Way	In/Out	In/Out	In/Out					
5		2	729	729	469	0.27	0.27	0.17	A	A	A
1		2	11	17	11	0.02	0.03	0.02	A	A	A
2		1	17	77	50	0.02	0.10	0.06	A	A	A
Width (ft)		Effective Width (ft)	Down/Up	Down/Up	Down/Up						
4.7		3.7	182	193	122	0.36	0.39	0.24	A	A	A
4.7		3.7	215	226	133	0.43	0.45	0.27	A	B	A
4.6		3.6	100	210	143	0.21	0.43	0.29	A	A	A
4.8		3.8	260	194	135	0.51	0.38	0.26	B	A	A
111th Street Fare Control Area R530 Turnstile Service Gate Stairs NW (S1&M1) SW (S2&M2) SE (S3&M3,4,5)		Numbers	One- or Two-Way	In/Out	In/Out	In/Out					
	5	2	746	580	480	0.28	0.21	0.18	A	A	A
	1	2	17	34	6	0.03	0.05	0.01	A	A	A
	Width (ft)	Effective Width (ft)	Down/Up	Down/Up	Down/Up						
	5.7	4.7	298	172	187	0.47	0.27	0.29	B	A	A
	5.7	4.7	166	177	111	0.26	0.28	0.17	A	A	A
	4.7	3.7	299	265	188	0.60	0.53	0.38	B	B	A
Notes:	The Capacity for Stairs = 10 persons per minute per foot The Capacity for Turnstiles = 40 persons per minute The Capacity for Service Gates = 50 persons per minute The Capacity for High Entrance Turnstiles = 20 persons per minute The Capacity for High Revolving Exit Gates = 30 persons per minute										
Source:	New York City Transit, Stations Operations Planning Division City Environmental Quality Review Technical Manual Environmental Assessment and Review Division; NYC Department of City Planning, October 2001										

Table 29
2013 Future Local Bus Condition

Weekday AM Peak Hour					
Bus Line	Direction	Buses per Hour	Hourly Capacity	Hourly Volume	Available Capacity
Q19B (Triboro Coach)	WB	11	770	608	162
	EB	4	280	88	192
Q23 (Triboro Coach)	NB	9	630	298	332
	SB	8	560	486	74
Q48 (NYCT)	WB	4	280	66	214
	EB	5	350	144	206
Q66 (Queens Surface)	WB	10	700	718	-18
	EB	14	980	619	361
Q72 (Triboro Coach)	NB	7	490	254	236
	SB	7	490	503	-13
Weekday PM Peak Hour					
Bus Line	Direction	Buses per Hour	Hourly Capacity	Hourly Volume	Available Capacity
Q19B (Triboro Coach)	WB	4	280	177	103
	EB	10	700	552	148
Q23 (Triboro Coach)	NB	11	770	425	345
	SB	11	770	729	41
Q48 (NYCT)	WB	4	280	133	147
	EB	4	280	73	207
Q66 (Queens Surface)	WB	8	560	442	118
	EB	8	560	574	-14
Q72 (Triboro Coach)	NB	5	350	359	-9
	SB	5	350	199	151
Sunday MD Peak Hour					
Bus Line	Direction	Buses per Hour	Hourly Capacity	Hourly Volume	Available Capacity
Q19B (Triboro Coach)	WB	3	210	83	127
	EB	3	210	66	144
Q23 (Triboro Coach)	NB	4	280	110	170
	SB	4	280	88	192
Q48 (NYCT)	WB	3	210	40	170
	EB	3	210	68	142
Q66 (Queens Surface)	WB	4	280	199	81
	EB	4	280	199	81
Q72 (Triboro Coach)	NB	2	140	66	74
	SB	2	140	99	41

Source: MTA-NYCT Operation Planning

Note: New York City Transit calculates capacity at 70 passengers per bus.

Pedestrians

The pedestrian volumes within the study area will increase as a result of the proposed developments. Based on the *North Corona Rezoning Environmental Assessment Statement (EAS)*, dated April 15, 2003, prepared by the NYC Department of City Planning, the four projected development sites (site no. 1 to 4) would generate a total of 170, 88 and 200 person trips during the weekday AM, midday and PM peak hours, respectively. Since, the potential development sites were considered less likely to be developed within the 10-year period, all kind of trips generated from the potential development sites were considered as a part of the background growth. Level of service analyses of the future conditions were performed at eight locations that were analyzed for existing conditions in order to determine the projected future pedestrian conditions within the study area and whether or not they would significantly affect any locations requiring improvements.

Level of Service Analysis and Methodology

Future pedestrian conditions were analyzed for the year 2013. The pedestrian volumes were estimated using the area's general background growth factor (1.0 percent per year for Queens), resulting in a total of 10.46 percent compound background growth. The pedestrian trips generated by the projected developments were then added to the compound background growth.

The future pedestrian LOS conditions were analyzed for four peak periods for sidewalks, corners, and crosswalks, and are summarized in Tables 30 through 32.

Sidewalk Analysis

The analysis of the future conditions indicates that pedestrian traffic at the midblocks of sidewalks (or walkways) at the selected intersections would operate at LOS A during all four peak periods. Table 7 presents a summary of the LOS results.

Table 30
2013 Future Conditions - Sidewalk Level of Service (p/m/f= Pedestrian/Minute/Foot)
(p/m/f= Pedestrian/Minute/Foot)

Intersection	Walkway	AM		MD		PM		SUN MD	
		p/m/f	LOS	p/m/f	LOS	p/m/f	LOS	p/m/f	LOS
Northern Boulevard @ Junction Boulevard	1	0.7	A	0.6	A	0.5	A	0.1	A
	2	1.1	A	0.6	A	0.7	A	0.3	A
	3	0.5	A	0.4	A	0.2	A	0.1	A
	4	0.7	A	0.5	A	0.7	A	0.3	A
	5	0.5	A	0.4	A	0.4	A	0.2	A
	6	0.8	A	0.4	A	0.7	A	0.4	A
	7	1.0	A	1.1	A	1.3	A	0.7	A
	8	1.2	A	1.2	A	0.9	A	0.6	A
Northern Boulevard @108th Street	1	0.3	A	0.2	A	0.4	A	0.0	A
	2	0.2	A	0.3	A	0.4	A	0.1	A
	3	0.3	A	0.3	A	0.2	A	0.1	A
	4	0.2	A	0.4	A	0.4	A	0.2	A
	5	0.1	A	0.1	A	0.3	A	0.1	A
	6	0.1	A	0.3	A	0.5	A	0.2	A
	7	0.3	A	0.2	A	0.4	A	0.1	A
	8	0.2	A	0.2	A	0.2	A	0.1	A

Abbreviation: LOS-Level of Service, A<=5, B>5-7, C> 7-10, D>10-15, E>15-23, and F>23

Table 30 (Continued)
2013 Future Conditions - Sidewalk Level of Service (p/m/f= Pedestrian/Minute/Foot)

Northern Boulevard @ 114th Street	1	0.3	A	0.1	A	0.2	A	0.0	A
	2	0.3	A	0.1	A	0.2	A	0.1	A
	3	0.2	A	0.1	A	0.2	A	0.1	A
	4	0.4	A	0.3	A	0.3	A	0.1	A
Roosevelt Ave @ Elmhurst Avenue	1	1.2	A	2.1	A	1.9	A	2.4	A
	2	1.1	A	1.0	A	2.4	A	1.6	A
	3	2.1	A	2.5	A	2.2	A	2.1	A
	4	1.0	A	1.5	A	1.4	A	1.4	A
	5	2.0	A	2.7	A	2.7	A	2.2	A
	6	1.5	A	1.5	A	2.2	A	2.1	A
	7		N/A		N/A		N/A		N/A
	8		N/A		N/A		N/A		N/A
Roosevelt Avenue @ Junction Boulevard	1	1.2	A	0.8	A	1.5	A	1.1	A
	2	1.6	A	0.4	A	1.7	A	0.5	A
	3	1.0	A	0.9	A	1.1	A	1.5	A
	4	1.6	A	1.0	A	1.7	A	1.1	A
	5	0.9	A	0.7	A	1.0	A	0.8	A
	6	1.7	A	0.5	A	2.5	A	1.0	A
	7	1.4	A	0.9	A	2.1	A	0.7	A
	8	1.4	A	0.5	A	2.3	A	0.6	A
Roosevelt Avenue @ 103rd Street	1	3.7	A	0.7	A	3.2	A	1.1	A
	2	0.5	A	0.3	A	0.7	A	0.5	A
	3	4.3	A	1.0	A	4.0	A	2.1	A
	4	1.4	A	0.3	A	2.1	A	0.5	A
	5	2.6	A	2.5	A	2.9	A	2.5	A
	6	3.4	A	2.3	A	4.6	A	1.9	A
	7	2.0	A	1.0	A	2.4	A	2.1	A
	8	0.6	A	0.4	A	2.0	A	0.5	A
Roosevelt Avenue @ 111th Street	1	1.8	A	0.8	A	1.6	A	1.0	A
	2	1.9	A	0.6	A	2.3	A	0.6	A
	3	0.5	A	0.4	A	1.9	A	0.4	A
	4	0.9	A	0.5	A	0.9	A	0.3	A
	5	1.0	A	1.2	A	0.7	A	0.8	A
	6	1.5	A	0.6	A	1.0	A	0.4	A
	7	0.5	A	0.6	A	1.0	A	0.4	A
	8	1.2	A	0.4	A	1.2	A	0.4	A
Roosevelt Avenue @ 114th Street	1	0.1	A	0.2	A	0.3	A	0.2	A
	2	0.2	A	0.2	A	0.2	A	0.1	A
	3	0.1	A	0.0	A	0.0	A	0.0	A
	4	0.6	A	0.2	A	0.1	A	0.3	A
	5	0.0	A	0.1	A	0.0	A	0.0	A
	6	0.5	A	0.2	A	0.5	A	0.2	A
	7	0.2	A	0.1	A	0.4	A	0.1	A
	8	0.2	A	0.2	A	0.3	A	0.1	A

Abbreviation: LOS=Level of Service, A<=5, B>5-7, C> 7-10, D>10-15, E>15-23, and F>23

Corner Analysis

Table 31 presents the result of the corner analysis of the 2013 future conditions during the four peak periods. The analysis indicates that four corners that are operating at LOS D currently would continue to operate at LOS D, located at three intersections on Roosevelt Avenue, in the future. The southwest corner at the intersection of Northern Boulevard and Junction Boulevard would deteriorate and operate at LOS D during PM peak hour in the future.

Table 31
2013 Future Conditions - Corner Level of Service
(SF/P = Square Foot per Pedestrian)

Intersection	Corner	AM		MD		PM		SUN MD	
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
Northern Boulevard @ Junction Boulevard	Northeast	69.28	A	106.48	A	153.74	A	358.71	A
	Southeast	102.55	A	117.31	A	135.41	A	490.96	A
	Southwest	30.57	C	44.51	B	22.48	D	77.87	A
	Northwest	89.90	A	135.60	A	121.25	A	264.97	A
Northern Boulevard @ 108th St	Northeast	222.15	A	249.88	A	209.09	A	549.50	A
	Southeast	327.41	A	252.89	A	312.69	A	901.70	A
	Southwest	368.62	A	262.35	A	296.27	A	1015.35	A
	Northwest	243.12	A	244.25	A	188.03	A	578.59	A
Northern Boulevard @ 114th St	Northwest	851.24	A	840.96	A	559.70	A	1611.71	A
	Southwest	613.24	A	621.71	A	620.67	A	1297.38	A
Roosevelt Avenue @ Elmhurst Avenue	Northeast	33.64	C	78.61	A	41.98	B	52.89	B
	Southeast	49.50	B	85.16	A	53.45	B	72.35	A
	Southwest	16.03	D	28.68	C	15.43	D	23.50	D
	Northwest	32.75	C	77.46	A	48.88	B	52.75	B
Roosevelt Avenue @ Junction Boulevard	Northeast	79.48	A	93.53	A	92.57	A	70.95	A
	Southeast	82.87	A	103.64	A	87.53	A	90.29	A
	Southwest	60.49	A	85.66	A	65.04	A	69.55	A
	Northwest	58.73	B	77.82	A	65.35	A	52.72	B
Roosevelt Avenue @ 103rd Street	Northeast	16.91	D	61.59	A	17.72	D	55.88	B
	Southeast	24.54	C	54.77	B	24.81	C	70.22	A
	Southwest	47.82	B	82.16	A	63.20	A	72.16	A
	Northwest	17.93	D	66.58	A	28.07	C	43.71	B
Roosevelt Avenue @ 111th Street	Northeast	40.57	B	142.72	A	70.54	A	130.65	A
	Southeast	23.59	D	65.62	A	21.98	D	75.59	A
	Southwest	96.20	A	258.07	A	100.31	A	288.01	A
	Northwest	20.68	D	91.58	A	36.16	C	67.77	A
Roosevelt Avenue @ 114th Street	Northeast	46.72	B	30.08	C	29.62	C	96.58	A
	Southeast	31.59	C	34.56	C	27.91	C	162.06	A
	Southwest	254.68	A	479.81	A	288.96	A	1163.50	A
	Northwest	544.87	A	575.94	A	471.86	A	1220.33	A

Abbreviation: LOS-Level of Service, A>60, B>40-60, C> 24-40, D>15-24, E>8-15, and F<8

Crosswalk Analysis

Table 32 presents the result of the crosswalk analysis for the 2013 future conditions during the four peak periods. The analysis indicates that the north crosswalk, at the intersection of Roosevelt Avenue and 103rd Street, which is operating at LOS D currently, would continue to operate at LOS D in the future. However, the west crosswalk at the same intersection would deteriorate and operate at LOS E in the future. In addition, the north crosswalk at the intersection of Roosevelt Avenue and Elmhurst Avenue would deteriorate to LOS D in the future.

Table 32
2013 Future Conditions - Crosswalk Level of Service
(SF/P = Square Foot per Pedestrian)

Intersection	Crosswalk	AM		MD		PM		SUN MD	
		SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
Northern Boulevard @ Junction Boulevard	North	31.7	C	32.7	C	61.5	A	152.7	A
	West	87.5	A	217.8	A	203.3	A	441.6	A
	South	69.4	A	71.1	A	51.3	B	107.2	A
	East	261.2	A	370.6	A	155.9	A	795.1	A
Northern Boulevard @ 108th Street	North	128.2	A	119.1	A	155.5	A	271.7	A
	West	276.2	A	368.0	A	222.9	A	731.3	A
	South	162.8	A	114.9	A	111.3	A	323.1	A
	East	527.3	A	344.7	A	488.6	A	1726.7	A
Northern Boulevard @ 114th Street	North								
	West	1038.1	A	1291.8	A	1068.4	A	4944.3	A
	South	681.0	A	263.2	A	243.7	A	352.1	A
	East	2173.3	A	3956.9	A	1158.2	A	3976.2	A
Roosevelt Avenue @ Elmhurst Avenue	North	22.9	D	41.9	B	27.4	C	42.0	B
	West	30.8	C	110.6	A	44.9	B	46.7	B
	South	25.5	C	46.5	B	34.7	C	46.4	B
	East	117.4	A	172.8	A	111.8	A	140.9	A
Roosevelt Avenue @ Junction Boulevard	North	50.3	B	61.5	A	74.5	A	59.0	B
	West	90.3	A	114.3	A	78.5	A	57.8	B
	South	51.4	B	67.3	A	65.1	A	56.6	B
	East	94.6	A	114.7	A	76.1	A	104.3	A
Roosevelt Avenue @ 103rd Street	North	24.0	C	43.8	B	16.3	D	66.7	A
	West	15.0	E	111.5	A	25.1	C	66.8	A
	South	31.2	C	44.2	B	34.4	C	36.2	C
	East	47.1	B	98.5	A	77.6	A	100.9	A
Roosevelt Avenue @ 111th Street	North	35.6	C	68.8	A	40.0	B	89.1	A
	West	37.2	C	197.2	A	76.7	A	126.6	A
	South	31.9	C	86.0	A	37.8	C	98.1	A
	East	84.5	A	273.0	A	78.9	A	348.7	A
Roosevelt Avenue @ 114th Street	North	212.5	A	164.1	A	140.2	A	1413.7	A
	West	759.4	A	479.1	A	785.6	A	637.5	A
	South	216.5	A	360.3	A	191.2	A	1216.1	A
	East	406.7	A	746.8	A	607.5	A	2275.9	A

Abbreviation: LOS-Level of Service, A>60, B>40-60, C> 24-40, D>15-24, E>8-15, and F<8

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Identified Problems and Recommended Improvements

The following problems identified in the North Corona Study area, and the proposed improvements are recommended.

Vehicular Traffic

Northern Boulevard and 114th Street

Currently, traffic approaching this intersection has a safety issue in terms of accidents. At this intersection, the exit ramp from the Grand Central Parkway westbound meets with westbound Northern Boulevard. The traffic coming from the ramp seeks to merge on to the westbound through approach and traffic coming from westbound Northern Boulevard seeks to merge into the left lane to get on to Grand Central Parkway east or to 114th Street. This illegal two-merge traffic creates a double weaving problem and dangerous vehicular accident situation. See photo 1. Accident data for the years 1998 to 2000 shows that this intersection has the second highest number of accidents in the study area. In addition, this intersection already has a signage-pointing straight for Grand Central Parkway east to indicate an alternate route.

Photo 1 (Looking east on Northern Boulevard for Westbound Traffic)



At the next intersection of northern Boulevard and 112th Place, there is a signage for Grand Central Parkway east (see photo 2). 112th place at the other end meets to Astoria Boulevard, which becomes 114th Street. At this point, there is a signage for Grand Central Parkway east (see photo 3).

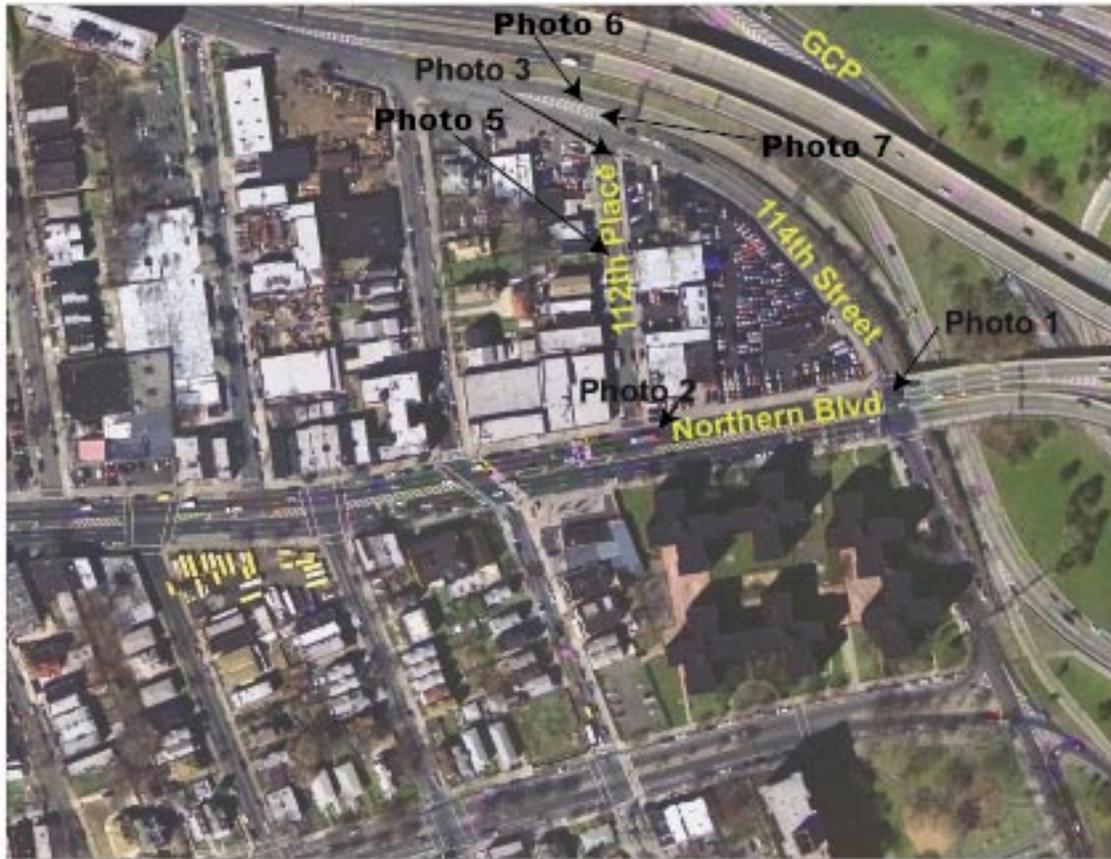
Photo 2 (Looking west on Northern Boulevard at 112th Place)



Photo 3 (Looking northeast on 112th Place at Astoria Boulevard)



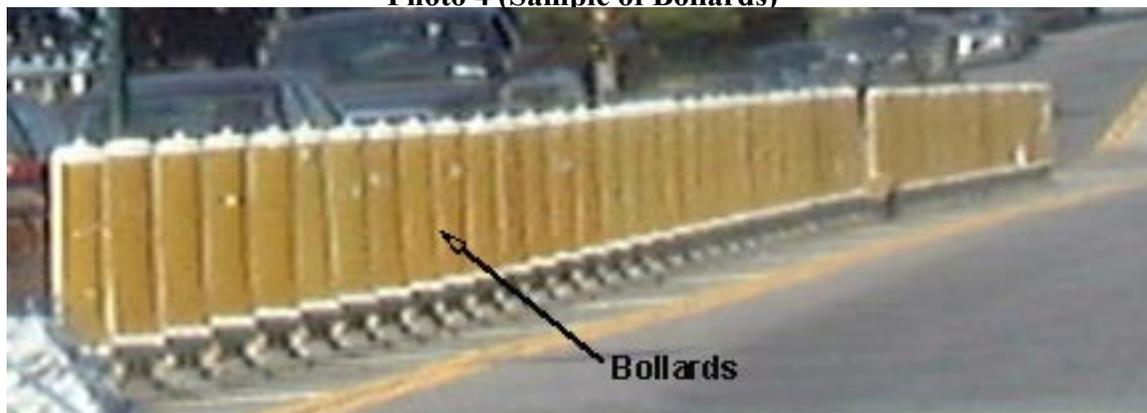
The following Aerial photo shows the locations of photos 1 to 3 and 5 to 7 at different intersections.



Proposed Improvements

To address the weaving problem and to improve safety, we propose to install bollards (photo 4) between the exit lane from the Grand Central Parkway west and Northern Boulevard westbound through traffic, and force the traffic that wants to go to 114th Street and/or Grand Central Parkway east to take 112th Place to 114th Street. 112th Place between Northern Boulevard and Astoria Boulevard has lots of illegal and/or double- parking (see photo 5). Strict enforcement is needed to stop the illegal and/or double parking, and a parking restriction on the east side of the street is recommended to have a smooth traffic movement on 112th Place. In addition, there is an entrance ramp for Grand Central Parkway east from Astoria Boulevard (photo 6). To avoid an illegal entry at this entrance ramp and to force the traffic to go to 114th Street (photo 7), other type of barriers instead of sand filled drums are proposed.

Photo 4 (Sample of Bollards)



NYC Department of City Planning, Transportation Division

Photo 5 (Looking south on 112th Place)



Photo 6 (Entrance to GCP/LIE east from Astoria Boulevard)



Photo 7 (Looking 114th Street at 112th Place)***37th Avenue and 114th Street***

114th Street is two-way, and the traffic going north can only go to Grand Central Parkway east. There is signage on the left side to direct the traffic flow (see photo 8). The signage says that the through traffic has to make left and the traffic that wants to go to Grand Central Parkway has to continue straight. This signage is at a location that does not give enough warning to the unfamiliar driver in the area and leads to the highway and/or forces them to make an illegal u-turn at the intersection of 34th Avenue and 114th Street. This creates a dangerous situation. 114th Street between 34th Avenue and Astoria Boulevard is one-way southbound. The following photo shows this intersection.

Photo 8 (Looking north on 114th Street at 37th Avenue)

Proposed Improvements

A smaller message sign at the electric light pole (see photo 9) is proposed. This signage would help to inform/warn the unfamiliar driver before approaching the intersection and make a decision at the intersection.

Photo 9 (Looking north on 114th Street near 37th Avenue)



Intersection Operation Improvements

There are 16 out of 28 analyzed intersections that are congested currently and 19 out of 28 intersections will deteriorate more in the future in the study area. However, only the following intersections functionality would be improved by approach daylighting and lane re-striping. Daylighting is defined as the removal of on street parking and/or standing for about 100 feet (4 to 5 cars) from an intersection to provide for an additional moving lane. Existing on-street parking regulations at each approach for the recommended improvements for the following 7 intersections are shown in Figure 11A and 11B (Existing Condition Section).

1). Astoria Boulevard at 94th Street

AM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS D with a delay of 44.2 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will continue operating at LOS D with the delay time deteriorating to 51.3 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS D with a delay of 46.5 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will

operate at LOS E with the delay time deteriorating to 57.4 seconds per vehicle.

Proposed Improvements:

A daylighting measure such as no standing for northbound approach from 7 AM to 10 AM and 4 PM to 7 PM with restriping is recommended. The following table summarizes the v/c, delay and LOS for the future conditions as is and with recommended measures for each approach. As shown in the tables, the proposed measure would improve the poorly operating approaches and overall intersection performances.

Direction	Appr.	AM						PM					
		2013 Future			2013 Recommended			2013 Future			2013 Recommended		
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS
Eastbound	L	0.28	25.9	C	0.28	25.9	C	0.26	16.0	B	0.26	16	B
	TR	0.31	21.0	C	0.31	21.0	C	0.60	25.3	C	0.6	25.3	C
Westbound	L	0.10	11.9	B	0.10	11.9	B	0.20	22.4	C	0.2	22.4	C
	TR	0.56	24.5	C	0.56	24.5	C	0.33	21.1	C	0.33	21.1	C
Northbound	LTR	0.83	51.3	D	0.68	41.3	D	0.88	57.4	E	0.72	43.4	D
Southbound	LTR	0.53	37.0	D	0.53	37.0	D	0.71	42.7	D	0.71	42.7	D
Intersection Delay		29.6 C			28.0 C			30.6 C			28.8 C		

2). Northern Boulevard at Junction Boulevard

AM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 85.9 seconds per vehicle. In addition, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 64.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 124.1 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 106.1 seconds per vehicle.

MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 84.3 seconds per vehicle. In addition, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 72.3 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 119.8 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will continue operating at LOS F with the delay time deteriorating to 132.4 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 83.9 seconds per vehicle. In addition, the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 82.9 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 120.5 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will continue operating at LOS F with the delay time deteriorating to 117.5 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 58.4 seconds per vehicle. In addition, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 56.1 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 67.5 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will continue operating at LOS E with the delay time deteriorating to 67.7 seconds per vehicle.

Proposed Improvements:

A daylighting measure such as no standing anytime for northbound approach with restriping is recommended. The following table summarizes the v/c, delay and LOS for the future conditions as is and with recommended measures for each approach. As shown in the tables, the proposed measure would improve the poorly operating approaches and overall intersection performances.

Direction	Appr.	AM						MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	L	0.11	20.4	C	0.11	20.4	C	0.1	10.8	B	0.11	10.8	B				
	TR	0.95	36.7	D	0.95	36.7	D	0.7	20.7	C	0.74	20.7	C				
Westbound	L	0.27	31.3	C	0.27	31.3	C	0.3	20.1	C	0.28	20.1	C				
	TR	0.77	20.6	C	0.77	20.6	C	0.5	15.1	B	0.51	15.1	B				
Northbound	LTR	1.12	124.1	F	1	85.7	F	1.1	119.8	F	0.99	83.9	F				
Southbound	LTR	1.04	106.1	F	1.04	106.1	F	1.1	132.4	F	1.13	132.4	F				
Intersection Delay		46.5			D	41.6			D	46.7			D	41.5			D

Direction	Appr.	PM						Sun MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	L	0.10	12.3	B	0.10	12.3	B	0.10	9.3	A	0.10	9.3	A				
	TR	0.78	21.0	C	0.78	21.0	C	0.70	19.7	B	0.70	19.7	B				
Westbound	L	0.39	38.8	D	0.39	38.8	D	0.33	19.3	B	0.33	19.3	B				
	TR	0.57	16.0	B	0.57	16.0	B	0.44	14.0	B	0.44	14.0	B				
Northbound	LTR	1.11	120.5	F	1.00	83.3	F	0.87	67.5	E	0.72	53.4	D				
Southbound	LTR	1.09	117.5	F	1.09	117.5	F	0.87	67.7	E	0.87	67.7	E				
Intersection Delay		43.0			D	38.2			D	28.5			C	26.9			C

3). Northern Boulevard at 108th Street**AM Peak Hour**

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 67.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 108.8 seconds per vehicle.

MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 79.9 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 49.8 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 139.4 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 57.5 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS F with a delay of 81.6 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS F with a delay of 80.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 117.3 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 148.1 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's northbound left-thru-right approach movement operates at LOS E with a delay of 65.5 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 54.7 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 82.5 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 69.6 seconds per vehicle.

Proposed Improvements:

A daylighting measure such as no standing anytime for northbound approach with restriping is recommended. The following table summarizes the v/c, delay and LOS for the future conditions as is and with recommended measures for each approach. As shown in the tables, the proposed measure would improve the poorly operating approaches and overall intersection performances.

Direction	Appr.	AM						MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	L	0.25	30.7	C	0.25	30.7	C	0.2	21.5	C	0.22	21.5	C				
	TR	0.87	27.6	C	0.87	27.6	C	0.9	26.4	C	0.86	26.4	C				
Westbound	L	0.21	22.5	C	0.21	22.5	C	0.2	24.7	C	0.23	24.7	C				
	TR	0.80	21.6	C	0.80	21.6	C	0.8	22.5	C	0.79	22.5	C				
Northbound	LTR	1.06	108.8	F	0.87	63.2	E	1.2	139.4	F	0.94	74.4	E				
Southbound	LTR	0.69	51.0	D	0.69	51.0	D	0.8	57.5	E	0.79	57.5	E				
Intersection Delay		35.2			D	30.4			C	41.6			D	33.8			C

Direction	Appr.	PM						Sun MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	L	0.35	27.8	C	0.35	27.8	C	0.37	29.4	C	0.37	29.4	C				
	TR	0.77	20.5	C	0.77	20.5	C	0.86	26.2	C	0.86	26.2	C				
Westbound	L	0.25	28.7	C	0.25	28.7	C	0.32	26.6	C	0.32	26.6	C				
	TR	0.83	24.8	C	0.83	24.8	C	0.86	26.4	C	0.86	26.4	C				
Northbound	LTR	1.10	117.3	F	0.97	77.6	E	0.97	82.5	F	0.79	56.2	E				
Southbound	LTR	1.18	148.1	F	1.18	148.1	F	0.89	69.6	E	0.89	69.6	E				
Intersection Delay		48.1			D	43.2			D	37.0			D	34.1			C

4). 34th Avenue at Junction Boulevard

AM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 63.5 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 89.3 seconds per vehicle.

MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 59.3 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 84.0 seconds per vehicle.

PM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 63.6 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 92.7 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 63.8 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 113.7 seconds per vehicle.

Proposed Improvements:

A daylighting measure such as no standing anytime for southbound approach with restriping is recommended. The following table summarizes the v/c, delay and LOS for the future conditions as is and with recommended measures for each approach. As shown in the tables, the proposed measure would improve the poorly operating approaches and overall intersection performances.

Direction	Appr.	AM						MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	LTR	0.77	22.1	C	0.77	22	C	0.64	16.6	B	0.63	16.5	B				
Westbound	LTR	0.48	13.3	B	0.48	13.3	B	0.43	12.4	B	0.43	12.4	B				
Northbound	LTR	0.68	31.4	C	0.69	32	C	0.73	33.9	C	0.77	35.9	D				
Southbound	LTR	1.06	89.3	F	0.6	29.4	C	1.05	84.0	F	0.58	28.8	C				
Intersection Delay		40.1			D	25.2			C	39.0			D	24.8			C

Direction	Appr.	PM						Sun MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	LTR	0.78	22.8	C	0.78	22.6	C	0.54	14.3	B	0.53	14.3	B				
Westbound	LTR	0.56	14.8	B	0.56	14.8	B	0.41	12.3	B	0.41	12.3	B				
Northbound	LTR	0.80	37.0	D	0.88	44.4	D	0.51	27.6	C	0.53	28.2	C				
Southbound	LTR	1.08	92.7	F	0.6	28.9	C	1.12	113.7	F	0.59	29.7	C				
Intersection Delay		43.5			D	29.0			C	44.4			D	21.9			C

5). 34th Avenue at 108th Street

AM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 45.7 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 73.0 seconds per vehicle.

MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 70.1 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 128.6 seconds per vehicle.

PM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 62.5 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 89.0 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 69.2 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 131.5 seconds per vehicle.

Proposed Improvements:

A daylighting measure such as no standing anytime for southbound approach and restriping for both northbound and southbound approach is recommended. The following table summarizes the v/c, delay and LOS for the future conditions as is and with recommended measures for each approach. As shown in the tables, the proposed measure would improve the poorly operating approaches and overall intersection performances.

Direction	Appr.	AM						MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	LTR	0.60	15.6	B	0.59	15.5	B	0.54	14.2	B	0.54	14.2	B				
Westbound	LTR	0.63	16.3	B	0.63	16.3	B	0.60	15.6	B	0.60	15.6	B				
Northbound	LTR	0.70	33.0	C	0.6	29.5	C	0.68	32.7	C	0.60	29.8	C				
Southbound	LTR	0.98	73.0	E	0.47	27	C	1.16	128.6	F	0.53	28.2	C				
Intersection Delay		32.2			C	21.8			C	45.8			D	21.8			C

Direction	Appr.	PM						Sun MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	LTR	0.72	19.7	B	0.72	19.6	B	0.61	16.1	B	0.61	16	B				
Westbound	LTR	0.54	14.3	B	0.54	14.3	B	0.41	12.2	B	0.41	12.2	B				
Northbound	LTR	0.79	37.4	D	0.69	31.9	C	0.65	31.7	C	0.58	29.4	C				
Southbound	LTR	1.06	89.0	F	0.53	27.8	C	1.17	131.5	F	0.55	28.6	C				
Intersection Delay		39.9			D	23.9			C	50.1			D	22.1			C

6). 35th Avenue at Junction Boulevard***PM Peak Hour***

Currently, the intersection's northbound left-thru approach movement operates at LOS D with a delay of 40.0 seconds per vehicle, and the intersection's southbound thru-right approach movement operates at LOS D with a delay of 37.7 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will operate at LOS E with the delay time deteriorating to 74.1 seconds per vehicle, and the intersection's southbound thru-right approach movement will operate at LOS D with the delay time deteriorating to 51.5 seconds per vehicle.

Proposed Improvements:

A daylighting measure such as no standing from 4 PM to 7 PM for northbound and southbound approach with restriping is recommended. The following table summarizes the v/c, delay and LOS for the future conditions as is and with recommended measures for each approach. As shown in the tables, the proposed measure would improve the poorly operating approaches and overall intersection performances.

Direction	Appr.	PM						
		2013 Future			2013 Recommended			
		V/C	Delay	LOS	V/C	Delay	LOS	
Eastbound	LR	0.66	27.7	C	0.65	27.1	C	
Westbound	LTR	0.54	21.2	C	0.54	21	C	
Northbound	LT	1.03	74.1	E	0.47	18.9	B	
Southbound	TR	0.96	51.5	D	0.49	18.9	B	
Intersection Delay		47.9			D	20.6		C

7). 37th Avenue at Junction Boulevard

AM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 43.5 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 65.5 seconds per vehicle.

MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 52.1 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 82.1 seconds per vehicle.

PM Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 58.8 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 108.8 seconds per vehicle.

Sunday MD Peak Hour

Currently, the intersection's southbound left-thru-right approach movement operates at LOS C with a delay of 34.7 seconds per vehicle.

In the future conditions, the intersection's southbound left-thru-right approach movement will operate at LOS D with the delay time deteriorating to 46.9 seconds per vehicle.

Proposed Improvements:

Restriping for both southbound and northbound is recommended. The following table summarizes the v/c, delay and LOS for the future conditions as is and with recommended measures for each approach. As shown in the tables, the proposed measure would improve the poorly operating approaches and overall intersection performances.

Direction	Appr.	AM						MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	LTR	0.60	22.9	C	0.60	22.9	C	0.71	26.6	C	0.71	26.5	C				
Northbound	LTR	0.37	17.8	B	0.39	18.1	B	0.40	18.1	B	0.43	18.6	B				
Southbound	LTR	1.01	65.5	E	0.52	20.0	B	1.07	82.1	F	0.55	20.6	C				
Intersection Delay		39.1			D	20.3			C	45.7			D	21.9			C

Direction	Appr.	PM						Sun MD									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	LTR	0.93	43.8	D	0.93	43.6	D	0.63	23.8	C	0.63	23.8	C				
Northbound	LTR	0.46	19.1	B	0.5	19.8	B	0.37	17.7	B	0.39	18.1	B				
Southbound	LTR	1.14	108.8	F	0.65	23.1	C	0.93	46.9	D	0.48	19.3	B				
Intersection Delay		60.2			E	29.5			C	30.8			C	20.3			C

With the implementation of above proposed No Standing anytime approximately 8 to 10 meter parking spaces and 28 to 35 on-street parking space will be lost in the study area.

The following intersection can be improved by signal timing change.

8). Astoria Boulevard at 108th Street

AM Peak Hour

Currently, the intersection's northbound left-thru approach movement operates at LOS D with a delay of 54.1 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS D with a delay of 50.4 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will operate at LOS E with the delay time deteriorating to 63.6 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS E with the delay time deteriorating to 55.9 seconds per vehicle.

PM Peak Hour

Currently, the intersection's northbound left-thru approach movement operates at LOS F with a delay of 81.1 seconds per vehicle, and the intersection's southbound left-thru-right approach movement operates at LOS E with a delay of 76.1 seconds per vehicle.

In the future conditions, the intersection's northbound left-thru approach movement will continue operating at LOS F with the delay time deteriorating to 135.1 seconds per vehicle, and the intersection's southbound left-thru-right approach movement will operate at LOS F with the delay time deteriorating to 123.3 seconds per vehicle.

Proposed Improvements:

A signal timing modification is recommended to improve the projected future conditions. The following table summarizes the existing and proposed signal timings for AM and PM peak hours.

Phase	Approach	Existing G/Y/R Time	Proposed G/Y/R Time
1	WB	20/3/2	15/3/2
2	EB/WB	61/3/2	61/3/2
3	NB/SB	24/3/2	29/3/2

The following table summarizes the v/c, delay and LOS for the future conditions as is and with recommended measures for each approach. As shown in the tables, the proposed measure would improve the poorly operating approaches and overall intersection performances.

Direction	Appr.	AM						PM									
		2013 Future			2013 Recommended			2013 Future			2013 Recommended						
		V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS				
Eastbound	LTR	0.32	17.6	B	0.32	17.6	B	0.57	21.3	C	0.57	21.3	C				
Westbound	L	0.12	5.8	A	0.12	7.4	A	0.15	7.7	A	0.18	9.7	A				
	TR	0.52	8.4	A	0.56	11	B	0.40	7.2	A	0.43	9.4	A				
Northbound	LT	0.84	63.6	E	0.66	46.9	D	1.14	135.1	F	0.87	60.6	E				
Southbound	LTR	0.75	55.9	E	0.58	44.3	D	1.11	123.3	F	0.84	57.5	E				
Intersection Delay		22.5			C	20.6			C	44.2			D	27.0			C

A preliminary analysis was performed for the intersections along Roosevelt Avenue. The congested/impacted intersections along Roosevelt Avenue cannot improve without removing on-street parking to provide an additional lane to increase vehicular capacity; by providing more signal timing to cross streets and breaking progression along Roosevelt Avenue. Therefore, a detail investigation needed as to keep the progression along Roosevelt Avenue and to avoid losing/eliminating of on-street parking spaces on cross streets. In addition, more enforcement is recommended to eliminate the double and/or illegal parking along Roosevelt Avenue.

Parking

Off-Street Parking

Since there is no off-street public parking facilities within the study area, and there is a shortage of parking, looking into the creation of parking facilities such as lots or garages, to relieve the parking shortage, is recommended.

On-Street Parking

A daylighting for above seven intersections is proposed to improve the intersection's functionality. In addition, various on-street parking changes at the following locations are proposed to improve the vehicular traffic condition and to have better parking turnover in the study area. All of the below Streets/Avenues allow parking with street cleaning schedules on different day of the week during different morning hours.

- 1). 95th Street at south of 37th Avenue both east and west side – 1 hour parking meters from 9 AM to 7 PM are proposed.
- 2). 95th Street at north of 37th Avenue west side - 2 hour parking meters from 9 AM to 7 PM are proposed.
- 3). Warren Street at south of 37th Avenue west side – 2 hour parking meters from 9 AM to 7 PM are proposed.
- 4). 97th Street both side between Roosevelt Avenue and 38th Avenue - 2 hour parking meters from 9 AM to 7 PM are proposed.
- 5). 97th Street at south/north of 37th Avenue both side - 2 hour parking meters from 9 AM to 7 PM

are proposed.

6). 37th Avenue between Junction Boulevard and 97th Street - Creating a truck loading/unloading zone is proposed.

7). 35th Avenue between Junction Boulevard and 97th Street - Creating a truck loading/unloading zone is proposed.

8). 96th Street at south of 34th Avenue west side - No standing 8AM to 6PM Mon thru Fri except authorized vehicles for Department of Health are proposed.

Field observations at various times of the day showed that the proposed changes for the on-street parking would relieve some parking shortage for shoppers by allowing higher parking turnover during the day while permitting residents to park overnight. Additionally, field observation revealed that large truck trailers were observed on junction Boulevard between 37th and 34th Avenue and on Roosevelt Avenue during the vehicular traffic peak hours. We proposed that business owners should negotiate with truck trailer operators to setup the delivery time during non-peak hours.

With the implementation of the above proposed on-street parking changes, 43 to 51 new meter parking spaces would be added, and 16 to 20 on-street parking spaces would be lost due to the creation of a truck loading/unloading zone in the study area. This would help to reduce double and/or illegal truck parking for loading/unloading and help traffic move without interruptions.

All above proposed changes should be discussed with NYCDOT, the Community Boards and the business owners before implementation.

Public Transit

Local Bus Service

In the future, two bus lines, Q66 and Q 72, will operate over the capacity in the peak direction during the weekday AM and PM peak hours.

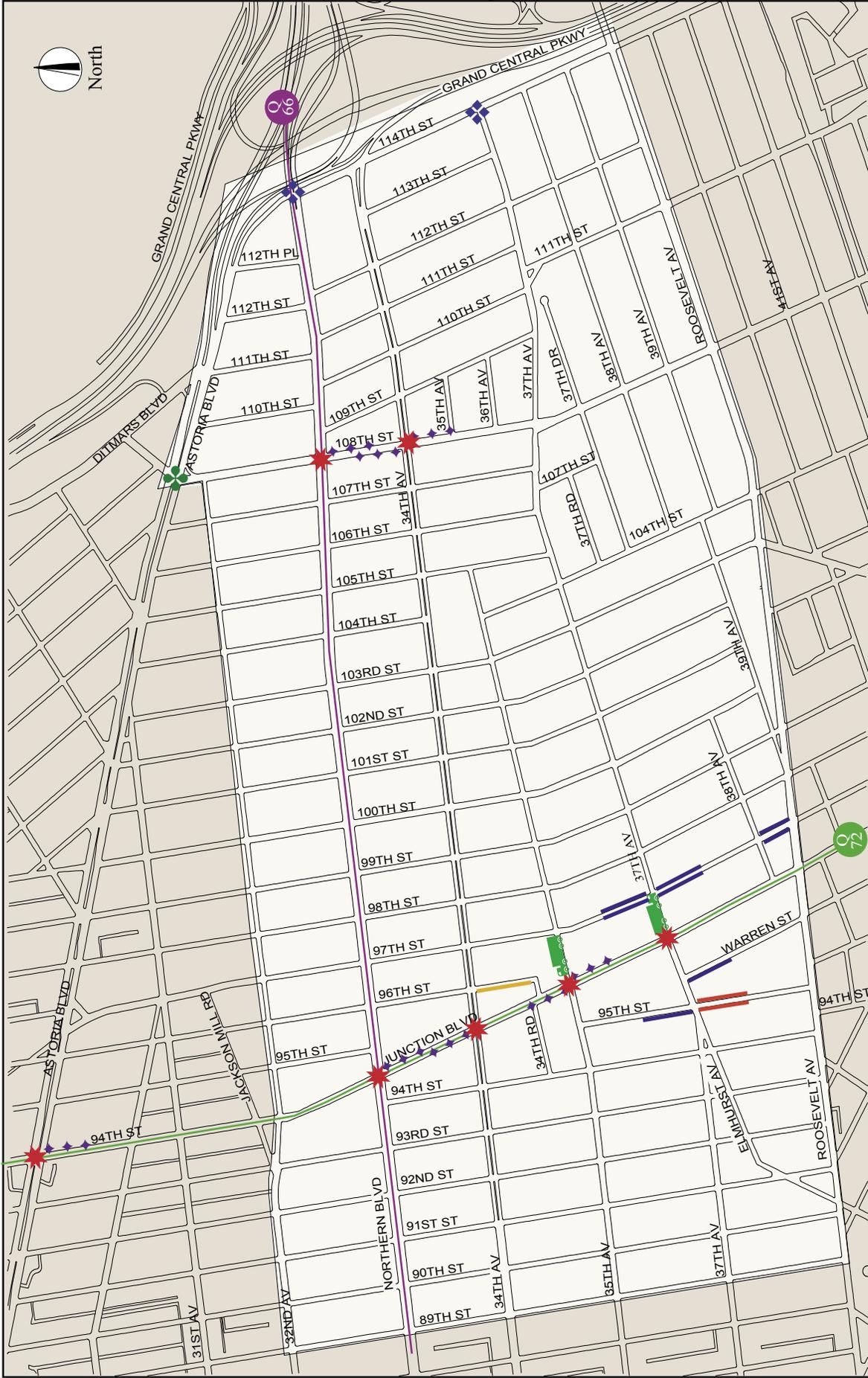
During the AM peak hour, the WB Q66 and SB Q 72 lines would exceed the capacity by 18 and 13 passengers respectively. These both route would require one additional bus to accommodate the demand in the future.

During the PM peak hour, the EB Q66 and NB Q 72 lines would exceed the capacity by 14 and 9 passengers respectively. These both route would require one additional bus to accommodate the demand in the future.

Roadway Improvements

Pavement condition on Junction Boulevard between 35th and 37th Avenue is poor. Since it is a local truck route in the study area, it is recommended that it should be resurfaced.

All the above proposed vehicular traffic, on-street parking and transit related improvements are shown in the Figure RI.



Recommended Improvements

-  Bus Route and Number requires increase in frequency during peak hours
-  Intersection's Physical/Signage Improvements
-  Intersection's Operation Improvements with parking regulation changes and restriping pavements
-  Intersection's Operation Improvements with Signal timing changes
-  Proposed No Standing
-  On-Street Parking changes 1 hour parking meters
-  On-Street Parking changes 2 hour parking meters
-  On-Street Parking changes NS 8AM-6PM except DOH
-  On-Street Parking removal for truck loading/unloading zone

Figure RI

Conclusion

The North Corona Transportation Study is a first step forward addressing community's concerns dealing with vehicular traffic, parking, transit and pedestrian issues. This study analyzed and evaluated the existing conditions within the study area, including level of service (LOS), parking demand, transit utilization and service, and pedestrian circulation. In regard to the future conditions, this report provided a comprehensive analysis of the proposed and potential developments, their trip generation characteristics and their impact on future vehicular traffic, parking, transit and pedestrian components. Problems were identified, and improvements were recommended to improve vehicular traffic, parking and pedestrian conditions in the North Corona area.

In order to implement the recommendations of this study, the participation of different agencies and organizations will be required. Among them are: New York City Department of Transportation, Queens Borough President's Office, Community Boards 3 and 4 and local elected officials. The New York City Department of City Planning will continue to work with the community and relevant agencies to implement the recommendations of this study.

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