

# DOWNTOWN JAMAICA TRANSPORTATION STUDY

**FINAL REPORT**  
**November, 2020**





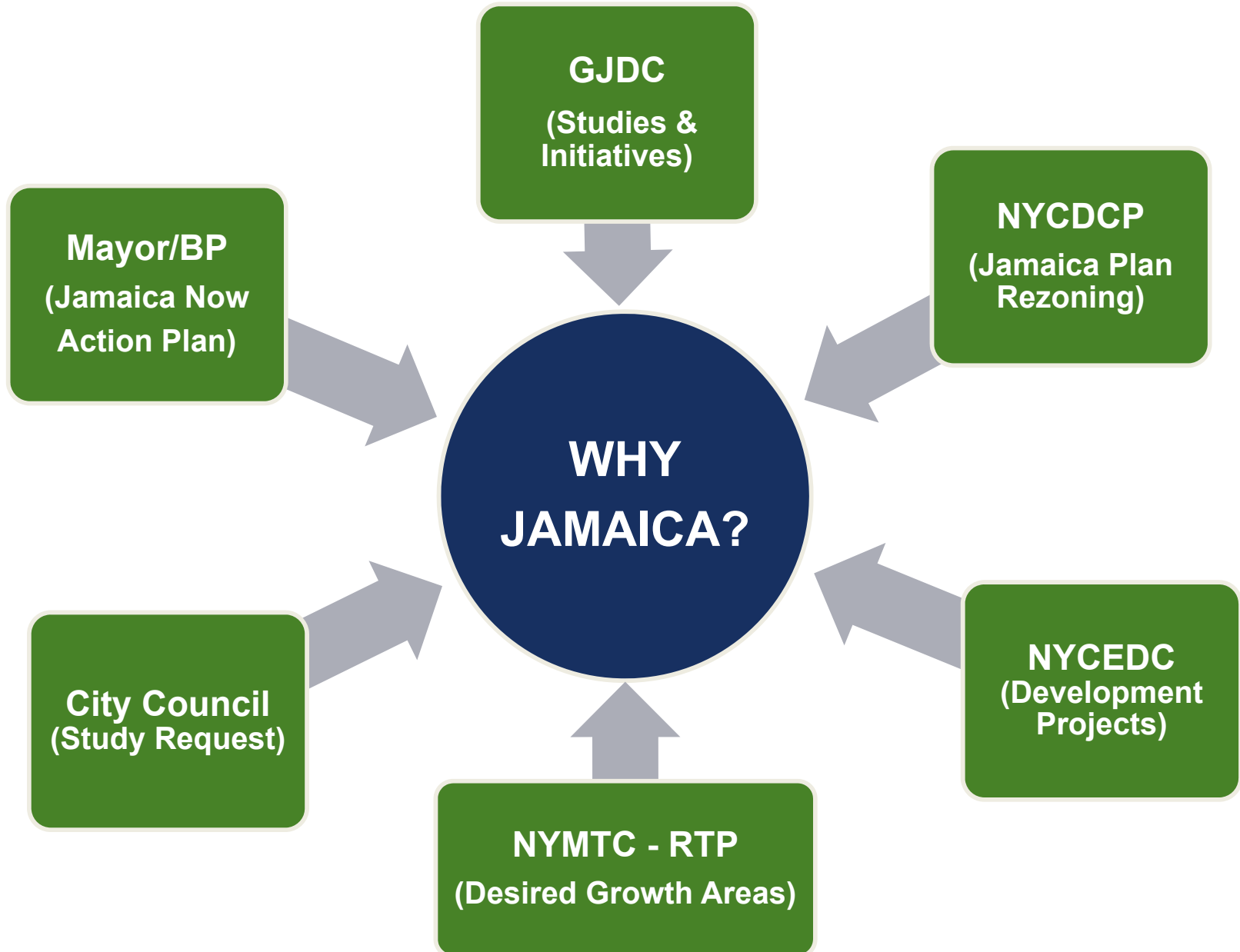


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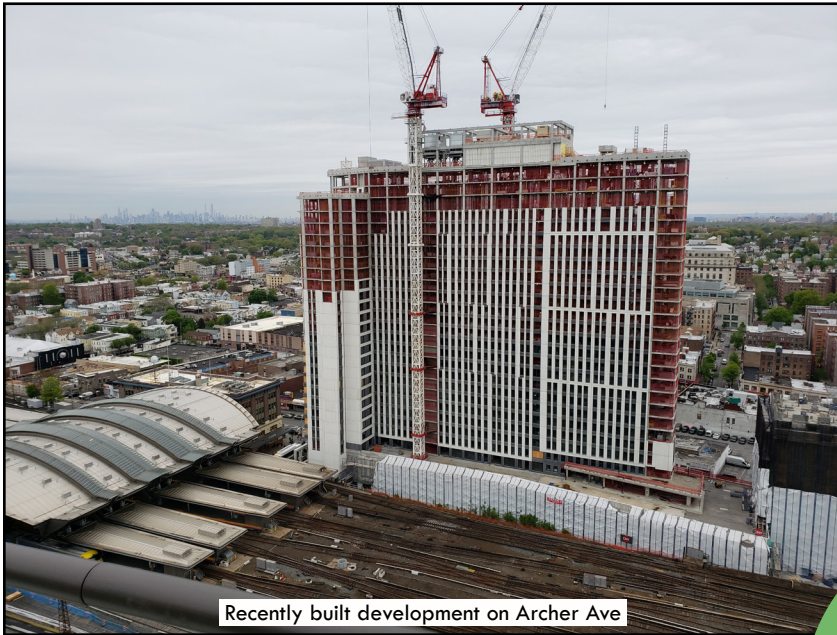
While this report and its findings pre-date Covid-19, NYCDOT is actively working to use this data, ideas and previous discussions with local stakeholders from the Jamaica Now initiative to inform our current efforts to address and be responsive to the current challenges the Downtown and Greater Jamaica area and our city face due to the pandemic. These include bus and pedestrian improvements, among others, in the Downtown Jamaica transit hub.



Downtown Jamaica has been the focus for many years, with many stakeholder working towards its revitalization. The diagram below is an illustration of the confluence of entities, initiative and plans making a revitalized Jamaica a reality NOW.







Recently built development on Archer Ave



Completed high density residential development on 94th Ave

# Jamaica Rising!



Residential development under construction



Residential development under construction



## Disclaimer

The preparation of this report has been financed through the U.S. Department of Transportation's Federal Transit Administration and Federal Highway Administration. This document is disseminated under the sponsorship of the New York Metropolitan Transportation Council in the interest of information exchange. The contents of this report reflect the views of the authors who are responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Federal Transit Administration, Federal Highway Administration or the State of New York. This report does not constitute a standard, specification or regulation.

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Michael Griffith, Project Director  
Carren Simpson, Co-Project Manager  
Hau Cho (Joe) Li, Co-Project Manager  
Harvey LaReau, City Planner  
Eva Marin, Highway Transportation Specialist



# Contents

Page

## 15..... Executive Summary

## 25..... Introduction

- Introduction
- Study Area Description
- Study Goal and Objectives
- Study Process

## 29..... Demographics

- Introduction
- Study Area Census Tracts
- Population Trends
- Socio-Economic and Demographics
- Auto Ownership
- Journey to Work Mode Choice

## 35.....Zoning and Land Use

- Introduction
- Citywide Zoning Regulations
- Zoning in the Study Area
- Land Use in the Study Area

## 41.....Traffic

- Introduction
- Congestion & Traffic Circulation
- Street Network & Roadway Characteristics
- Traffic Data Collection
- Street Capacity & Level of Service (LOS)
- VISSIM Analysis
- Vehicular Speed
- Future Traffic Condition
- Future Travel Speed

## 67.....Parking

- Introduction
- On-Street Parking
- Off-Street Parking
- Future Conditions

## 75.....Pedestrians and Bikes

- Introduction
- Pedestrian Issues
- Pedestrian Data Collection
- Pedestrian Volumes
- Level of Service Analysis & Methodology
- Future Conditions
- Bicycles Lanes & Paths

## 83.....Crash Analysis

- Introduction
- High Crash Locations
- Crash Frequency Severity
- Crashes - Truck and Buses

## 89.....Public Transit

- Introduction
- Transit Hubs
- Subway & Rail Service
- Surface Transit

## 101.....Goods Movement & Industrial Business Zone

- Introduction
- Existing Local/Through Truck Routes
- Truck Trip Generators
- Business Survey
- Truck Traffic
- Industrial Business Zone





## 109.....**Community Participation**

Introduction

Technical Advisory Meetings

Public Meetings

Web Feedback Portal

## 115.....**Urban Design/Streetscape Plan**

## 125.....**Recommendations**

Findings and Issues

Improvement Measures

## 173.....**Appendices**

A - Traffic data collection, reduction & analysis

B - Pedestrians and bikes

C - Public participation/community outreach

## **Supplementary appendices**

- Parking
- Goods Movement
- Transit

# Figure, Tables & Charts

<b>Figures</b>	<b>Page</b>
Figure E-1	Primary, Secondary, and Streetscape Study Areas..... 17
Figure E-2	Summary of Implemented and Proposed Improvement Measures..... 19
Figure 1-1	Primary & Secondary Study Area..... 27
Figure 1-2	Study Process..... 28
Figure 2-1	Study Area Population Distribution..... 31
Figure 2-2	Population Change (2015-2025)..... 32
Figure 2-3	Employment (2015)..... 32
Figure 2-4	Employment (2025)..... 33
Figure 3-1	Recent Zoning Actions..... 37
Figure 3-2	Current Zoning..... 38
Figure 3-3	Current Land Use..... 39
Figure 3-4a	On-going & Proposed Developments..... 39
Figure 3-4b	On-going & Proposed Developments Visualization..... 40
Figure 4-1	Major Arterials..... 43
Figure 4-2	Congestion on Major Arterials – AM Peak Hours..... 43
Figure 4-3	Congestion on Major Arterials – PM Peak Hours..... 43
Figure 4-4	Traffic Circulation Challenges..... 44
Figure 4-5	Narrow Two-Way Streets (30’ or less)..... 44
Figure 4-6	Traffic Data Collection Locations..... 45
Figure 4-7	2016 Existing Conditions Traffic Volume – AM Peak Hour..... 47
Figure 4-8	2016 Existing Conditions Traffic Volume – PM Peak Hour..... 48
Figure 4-9	Existing Conditions Intersection Level of Service – AM Peak Hour..... 50
Figure 4-10	Existing Conditions Intersection Level of Service – PM Peak Hour..... 51
Figure 4-11	Existing Conditions Approach Level of Service – AM Peak Hour..... 52
Figure 4-12	Existing Conditions Approach Level of Service – PM Peak Hour..... 53
Figure 4-13	Existing Network Travel Speed - AM Peak Hour..... 54
Figure 4-14	Existing Network Travel Speed - PM Peak Hour..... 54
Figure 4-15	Snapshot of VISSIM Analysis at Archer Avenue/153rd Street - Existing Conditions PM Peak Hour..... 55
Figure 4-16	Average Travel Speed - Existing Conditions AM Peak Hour..... 56
Figure 4-17	Average Travel Speed - Existing Conditions PM Peak Hour..... 56
Figure 4-18	Future Traffic Volumes - AM Peak Hour (Primary Study Area)..... 60
Figure 4-19	Future Traffic Volumes - PM Peak Hour (Primary Study Area)..... 61





Figure 4-20	Future Condition Intersection Level of Service - AM Peak Hour.....	62
Figure 4-21	Future Condition Intersection Level of Service - PM Peak Hour.....	63
Figure 4-22	Future Condition Approach Level of Service - AM Peak Hour.....	64
Figure 4-23	Future Condition Approach Level of Service - PM Peak Hour.....	65
Figure 4-24	Average Travel Speed - Future Conditions - AM Peak Hour.....	66
Figure 4-25	Average Travel Speed - Future Conditions - PM Peak Hour.....	66
Figure 5-1	Parking Analysis Study Area.....	69
Figure 5-2	On-Street Parking Regulation.....	69
Figure 5-3	On-Street Parking Occupancy - Weekday Average.....	70
Figure 5-4	On-Street Parking Occupancy - Midday Saturday.....	70
Figure 5-5	Incidence of Double and Illegal Parking.....	71
Figure 5-6	Placard User Groups.....	72
Figure 5-7	Percentage of Illegal Placards by Blockface.....	72
Figure 5-8	Off-Street Parking Facilities.....	73
Figure 5-9	Future Development Sites.....	74
Figure 6-1	Pedestrian Count Locations.....	77
Figure 6-2	Downtown Core Pedestrian Activity & Issues.....	78
Figure 6-3	2016 Pedestrian Volumes (AM Peak Hour).....	79
Figure 6-4	2016 Pedestrian Volumes (PM Peak Hour).....	79
Figure 6-5	2016 Pedestrian Volumes (Saturday Midday Peak Hour).....	79
Figure 6-6	2016 Pedestrian Volumes - Union Turnpike (AM & PM).....	79
Figure 6-7	2026 Pedestrian Volumes (AM Peak Hour).....	81
Figure 6-8	2026 Pedestrian Volumes (PM Peak Hour).....	81
Figure 6-9	2026 Pedestrian Volumes (Saturday Midday Peak Hour).....	81
Figure 6-10	2026 Pedestrian Volumes - Union Turnpike (AM & PM).....	81
Figure 6-11	Bicycle Network.....	82
Figure 6-12	Existing Bicycle Volumes - AM/PM Peak Hours.....	82
Figure 7-1	Vision Zero Priority Zone Corridors and Intersections.....	85
Figure 7-2	High Crash Locations.....	86
Figure 7-3	Killed/Severely Injured (KSI) Crashes.....	87
Figure 7-4	Bus & Truck Crash Locations.....	87
Figure 7-5	Fatalities (2014-2018).....	87
Figure 7-6	Vision Zero Plan in the Study Area.....	88
Figure 7-7	Diagrams for Left Turn Calming.....	88
Figure 8-1	Surface and Rail Transit Service Modes.....	91
Figure 8-2	Surface and Rail Transit Hubs.....	91
Figure 8-3	Bus Ridership at key stops (Morning).....	93



Figure 8-4	Bus Ridership at key stops (Evening).....	93
Figure 8-5	Hourly Bus Volumes (Morning).....	94
Figure 8-6	Bus Speed during Morning Peak Period.....	95
Figure 8-7	Average Bus Delay.....	96
Figure 8-8	Commuter Van and Taxi Pick Up Locations.....	97
Figure 8-9	Existing AM Peak Commuter Van Volume.....	98
Figure 8-10	Existing PM Peak Commuter Van Volume.....	98
Figure 8-11	Jamaica Avenue Bus Lane Parking Violation during Peak Periods.....	99
Figure 9-1	Local and Through Truck Routes.....	103
Figure 9-2	Truck Routes with Commercial/Industrial Uses.....	104
Figure 9-3	Industrial Employment and Land Use.....	104
Figure 9-4	Retail Employment and Land Use.....	104
Figure 9-5	Circulation Issues.....	105
Figure 9-6	Truck Volume (percent) - AM Peak Period.....	106
Figure 9-7	Parking Regulations and Truck Routes.....	107
Figure 9-8	Truck Parking and Loading Issues.....	107
Figure 10-1	Feedback Portal.....	112
Figure 10-2	Sample Comment on Feedback Portal.....	112
Figure 11-1	Archer Avenue Retail Market.....	117
Figure 11-2	The Mews at Sutphin Boulevard.....	117
Figure 11-3	NYCDOT Streetscape Plan Study Area.....	118
Figure 11-4	Streetscape Plan at a Glance (Draft Plan).....	118
Figure 11-5	Parsons Boulevard Visualization.....	119
Figure 11-6	153rd Street Visualization.....	119
Figure 11-7	Jamaica Avenue Corridor Plan.....	119
Figure 11-8	York College Entrance.....	120
Figure 11-9	Archer Avenue Teardrop Visualization.....	120
Figure 11-10	Archer Avenue Teardrop Plan.....	120
Figure 11-11	Streetscape Plan - Snapshot of Present Conditions.....	121
Figure 11-12	Streetscape Plan - Teardrop Area.....	122
Figure 11-13	Streetscape Plan - Pedestrian Corridor Towards Archer Avenue.....	123
Figure 11-14	Streetscape Plan - Archer Avenue & 151 Street Pedestrian Corridor.....	124
Figure 12-1	Synthesis of Issues.....	128
Figure 12-1-1	Summary of Recommendations.....	129
Figure 12-2-1a	175th Street between Jamaica Avenue and 90th Avenue - Pre-Implementation.....	131
Figure 12-2-1b	175th Street between Jamaica Avenue and 90th Avenue - Post-Implementation.....	131
Figure 12-2-2	Liberty Avenue/183rd Street and Dunkirk Street - Post-Implementation.....	132





Figure 12-2-3	Narrow Two-way Streets within the study area.....	133
Figure 12-3-1a	Sutphin Boulevard and 91st Avenue - Existing.....	134
Figure 12-3-1b	Sutphin Boulevard and 91st Avenue - Proposed.....	134
Figure 12-3-2a	Archer Avenue between 146th Street and 144th Place - Existing.....	135
Figure 12-3-2b	Archer Avenue between 146th Street and 144th Place - Proposed.....	135
Figure 12-3-3a	Sutphin Boulevard between 95th & 94th Avenues - Existing.....	136
Figure 12-3-3b	Sutphin Boulevard between 95th & 94th Avenues - Proposed.....	136
Figure 12-3-4a	Jamaica Avenue between 148th Street and Sutphin Boulevard - Existing.....	137
Figure 12-3-4b	Jamaica Avenue between 148th Street and Sutphin Boulevard - Proposed.....	137
Figure 12-3-5a	Union Hall Street between Archer Avenue and Jamaica Avenue - Existing.....	138
Figure 12-3-5b	Union Hall Street between Archer Avenue and Jamaica Avenue - Proposed.....	138
Figure 12-3-6a	Hillside Avenue between Van Wyck Expressway Service Road and 139th Street - Existing.....	139
Figure 12-3-6b	Hillside Avenue between Van Wyck Expressway Service Road and 139th Street - Proposed.....	139
Figure 12-3-7a	Proposed Truck Loading/Unloading Zones along Jamaica Avenue.....	140
Figure 12-3-7b	Proposed Truck Loading/Unloading Zones along Hillside Avenue.....	140
Figure 12-3-8a	168th Place and 169th Street between Hillside Avenue and Grand Central Parkway Service Road - Existing.....	141
Figure 12-3-8b	168th Place and 169th Street between Hillside Avenue and Grand Central Parkway Service Road - Proposed.....	141
Figure 12-3-9a	142nd Street and Van Wyck Expressway Service Road - Existing.....	142
Figure 12-3-9b	142nd Street and Van Wyck Expressway Service Road - Proposed.....	142
Figure 12-3-10a	Liberty Avenue between Allendale Street and Waltham Street- Existing.....	143
Figure 12-3-10b	Liberty Avenue between Allendale Street and Waltham Street- Proposed.....	143
Figure 12-3-16a	Grand Central Parkway Service Road N and 164th Street - Existing.....	149
Figure 12-3-16b	Grand Central Parkway Service Road N and 164th Street - Proposed.....	149
Figure 12-3-17a	Grand Central Parkway Service Road and 188th Street/McLaughlin Avenue - Existing.....	150
Figure 12-3-17b	Grand Central Parkway Service Road and 188th Street/McLaughlin Avenue - Proposed.....	150
Figure 12-3-18a	85th Drive and 139th Street - Existing.....	151
Figure 12-3-18b	85th Drive and 139th Street - Proposed.....	151
Figure 12-3-19a	160th Street and Normal Road - Existing.....	152
Figure 12-3-19b	160th Street and Normal Road - Proposed.....	152
Figure 12-3-20a	160th Street between South Road and Brinkerhoff Avenue - Existing.....	153
Figure 12-3-20b	160th Street between South Road and Brinkerhoff Avenue - Proposed.....	153
Figure 12-3-21a	Sayres Avenue between 177th and 180th Streets - Existing Street Direction.....	154
Figure 12-3-21b	Sayres Avenue between 177th and 180th Streets - Proposed Street Direction.....	154
Figure 12-3-22	Jamaica Avenue and 153rd Street - Proposed.....	155
Figure 12-3-23a	Murdock Avenue between Dunkirk Street and Farmers Boulevard - Existing.....	156
Figure 12-3-23b	Murdock Avenue between Dunkirk Street and Farmers Boulevard - Proposed.....	156
Figure 12-3-23c	Murdock Avenue between Dunkirk Street and Farmers Boulevard - Existing Street Direction.....	157



Figure 12-3-23d	Murdock Avenue between Dunkirk Street and Farmers Boulevard - Proposed Street Direction.....	157
Figure 12-4-1a	150th Street between Hillside Avenue and Jamaica Avenue - Existing Cross-section.....	158
Figure 12-4-1b	150th Street between Hillside Avenue and Jamaica Avenue - Proposed Cross-section.....	158
Figure 12-4-1c	150th Street between Hillside Avenue and Jamaica Avenue - Existing Street Operations.....	158
Figure 12-4-1d	150th Street between Hillside Avenue and Jamaica Avenue - Proposed Street Operations.....	158
Figure 12-4-1e	150th Street No Build - Average Travel Speed - AM Peak.....	159
Figure 12-4-1f	150th Street Build - Average Travel Speed - AM Peak.....	159
Figure 12-4-1g	150th Street No Build - Average Travel Speed - PM Peak.....	160
Figure 12-4-1h	150th Street Build - Average Travel Speed - PM Peak.....	160
Figure 12-4-2	Narrow Two-way Streets.....	161
Figure 12-4-3	Potential Bike Corral Locations.....	162
Figure 12-4-4a	Parking Improvement Measures.....	163
Figure 12-4-4b	Recommended Parking Regulations Change.....	164
Figure 12-4-5a	Liberty Avenue/103rd Avenue between 134th and 131st Streets - Existing.....	165
Figure 12-4-5b	Liberty Avenue/103rd Avenue between 134th and 131st Streets - Proposed.....	165
Figure 12-4-6a	Q40 Bus Circulation Improvements - Segments on Lakewood Avenue and 142nd Street Under Consideration.....	166
Figure 12-4-6b	Existing Cross-section on 142nd Street.....	166
Figure 12-4-6c	Proposed Cross-section on 142nd Street.....	166
Figure 12-4-7a	Lincoln Street Roadway Improvements - Existing.....	167
Figure 12-4-7b	Lincoln Street Roadway Improvements - Proposed.....	167
Figure 12-5-1a	Archer Avenue between Parsons Boulevard and 160th Street - Existing.....	168
Figure 12-5-1b	Archer Avenue between Parsons Boulevard and 160th Street - Proposed.....	168
Figure 12-5-2a	Archer Avenue between Guy R Brewer Boulevard and 165th Street - Existing.....	169
Figure 12-5-2b	Archer Avenue between Guy R Brewer Boulevard and 165th Street - Proposed.....	169
Figure 12-5-3a	Douglas Avenue between 168th Street and 175th Street - Existing.....	170
Figure 12-5-3b	Douglas Avenue between 168th Street and 175th Street - Proposed.....	170
Figure 12-5-4a	Tuskegee Airmen Way between 165th Street and Guy R Brewer Boulevard - Existing.....	171
Figure 12-5-4b	Tuskegee Airmen Way between 165th Street and Guy R Brewer Boulevard - Proposed.....	171
Figure A-1	2016 Existing Conditions Traffic Volumes - Saturday MD Peak Hour.....	180
Figure A-2	2016 Existing Conditions Traffic Volumes - AM Peak Hour (Secondary Study Area).....	181
Figure A-3	2016 Existing Conditions Traffic Volumes - PM Peak Hour (Secondary Study Area).....	182
Figure A-4	Future Traffic Volumes - Saturday MD Peak Hour (Primary Study Area).....	188
Figure A-5	Future Traffic Volumes - AM Peak Hour (Secondary Study Area).....	189
Figure A-6	Future Traffic Volumes - PM Peak Hour (Secondary Study Area).....	190
Figure B-1	Pedestrian Level of Service Criteria.....	199





**Tables**

	Page
Table 2-1	Total Population .....31
Table 2-2	Household Vehicle Ownership.....33
Table 4-1	Signalized Intersection Level of Service (LOS) Criteria.....49
Table 4-2	Average Travel Speed (Floating Car) along Major Corridors.....55
Table 4-3	Existing Average Travel Speed for All Vehicle.....56
Table 4-4	Intersection LOS Comparison - AM Peak Hour.....59
Table 4-5	Intersection LOS Comparison - PM Peak Hour.....59
Table 4-7	Average Travel Speed - Existing Vs Future.....66
Table 4-8	Future Conditions Travel Speed Validation.....66
Table 5-1	Parking Supply by Peak Period.....70
Table 5-2	Parking Supply/Occupancy during Peak Periods.....70
Table 5-3	Authorized Vehicle Parking Supply and Occupancy.....71
Table 5-4	Number and Percent of Placards not in Compliance.....72
Table 5-5	Off-Street Parking Average Hourly Prices.....73
Table 5-6	Off-Street Parking Supply by Subsection.....73
Table 6-1	Failing Crosswalks and Corners.....80
Table 7-1	High Crash Locations (2014-2016).....86
Table 8-1	Transfers to Subway Stations/Transit Hubs.....91
Table 8-2	Hourly Bus Frequencies at Transit Hubs.....91
Table 8-3	Subway Ridership by Station.....92
Table 8-4	LIRR Peak Period Ridership.....92
Table 8-5	Airtrain Ridership.....92
Table 8-6	Bus Routes with the Highest Total Passenger Boarding.....93
Table 8-7	Average Bus Travel Speed Comparison.....94
Table 8-8	Bus Travel Times.....95
Table 8-9	Bus Overcrowding Load Factors.....96
Table 8-10	Peak Period Pick Up & Drop Off.....98
Table 12-4-1	Average Travel Speed Comparison - With/Without 150th Street Conversion.....159
Table A-1	Existing Conditions Intersection Level of Service Analysis - Primary Study Area.....183-185
Table A-2	Existing Conditions Intersection Level of Service Analysis - Secondary Study Area.....186-187
Table A-3	Future Conditions Intersection Level of Service Analysis - Primary Study Area.....191-193
Table A-4	Future Conditions Intersection Level of Service Analysis - Secondary Study Area.....194-195
Table B-1	Existing Conditions Pedestrian Crosswalk Level of Service.....200
Table B-2	Existing Conditions Pedestrian Corner Level of Service.....201
Table B-3	Future Conditions Pedestrian Crosswalk Level of Service.....202
Table B-4	Future Conditions Pedestrian Corner Level of Service.....203



**Charts**

Chart 2-1	Primary Study Area Population Trend.....	31
Chart 2-2	Median Household Income (2000-2010).....	32
Chart 2-3	Journey to Work Mode Choice (2015).....	33
Chart 4-1a	Existing Westbound Peak Hour Traffic.....	46
Chart 4-1b	Existing Eastbound Peak Hour Traffic.....	46
Chart 4-2a	Existing Westbound Peak Hour Traffic.....	46
Chart 4-2b	Existing Eastbound Peak Hour Traffic.....	46
Chart 4-3a	Average Travel Speed for All Traffic - AM Peak.....	57
Chart 4-3b	Average Travel Speed for All Traffic - PM Peak.....	57
Chart 7-1	Study Area Crashes (2014-2016).....	86
Chart 7-2	Primary Study Area Crash Distribution (2014-2016).....	86
Chart 8-1	Average Travel Speed for Bus Only - AM Peak.....	94
Chart 8-2	Average Travel Speed for Bus Only - PM Peak.....	94





## List of Acronyms

ACS	American Community Survey
ATR	Automatic Traffic Recorder
BID	Business Improvement District
CBD	Central Business District
CEQR	City Environmental Quality Review
DCP	Department of City Planning
EDC	Economic Development Corporation
GJDC	Greater Jamaica Development Corporation
IBZ	Industrial Business Zone
JLC	Jamaica Leadership Council
LEHD	Longitudinal Employer-Household Dynamics
LPI	Leading Pedestrian Interval
NICE	Nassau Inter-County Express
NYCT	New York City Transit
NYMTC	New York Metropolitan Transportation Council
MTA	Metropolitan Transportation Authority
MTMC	Manual Turning Movement & Classification
RPA	Regional Plan Association
TAC	Technical Advisory Committee
TLC	Taxi & Limosine Commission





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# EXECUTIVE SUMMARY





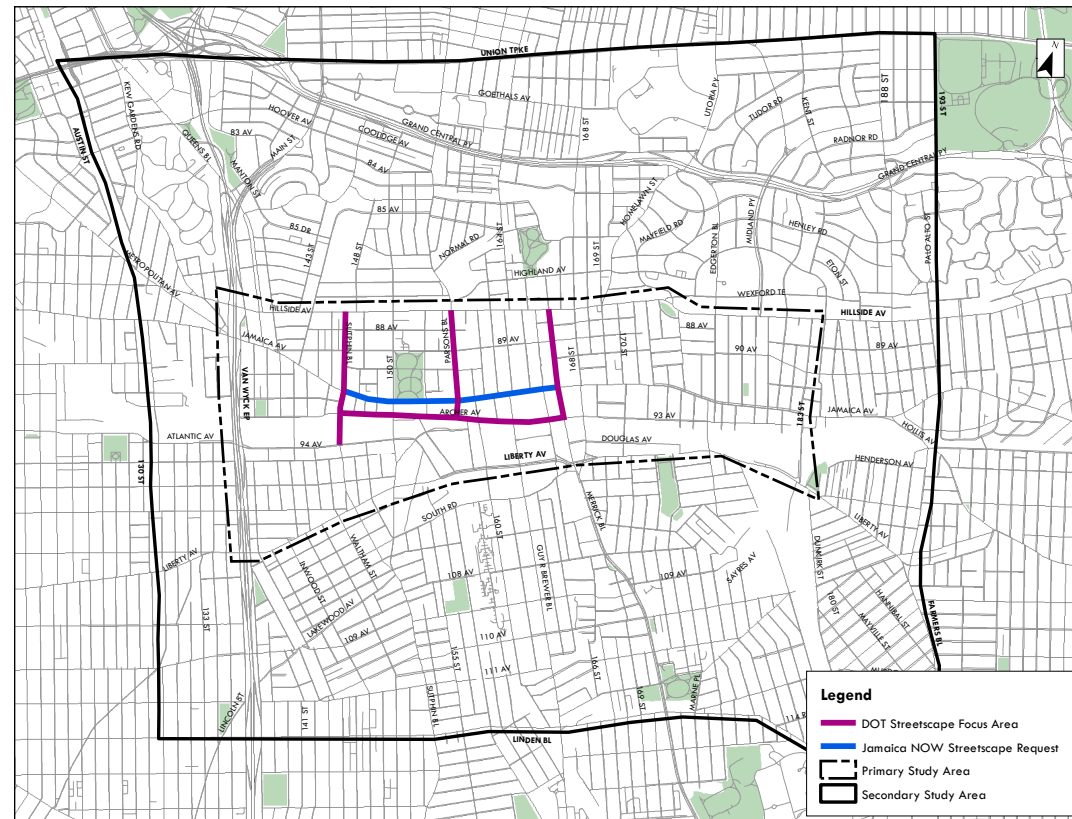


## Introduction

Downtown Jamaica is one of the largest central business districts (CBD) in Queens with significant potential for growth. With the Department of City Planning (DCP) designation of the Jamaica Gateway Urban Renewal Area (JGURA) referred to as the Jamaica Plan 2007, the rezoning of 368 blocks expanded the CBD and permitted increased development density. The traffic and transportation implication of this scale of development needs to be carefully evaluated as the Jamaica Plan Final Environmental Impact Statement identified 31 intersections will be impacted. A confluence of decisions, policies, and projects e.g. Queens Borough President, Melinda Katz, launching the Jamaica NOW Action Plan in April 2015 with the aim of focusing energy on the development and revitalization of Downtown Jamaica, made this study even more necessary.

In light of this reality, the goal of the Downtown Jamaica Transportation Study is to improve traffic and transportation (travel) conditions, enhance mobility, safety, and quality of life for residents/visitors, taking account of elected official and community concerns. The study focuses on issues relating to traffic operation, curb management, circulation, congestion relief, surface transit, pedestrian mobility, and safety for all roadway users. It identifies intersections and corridors with traffic operation, safety, and circulation challenges and recommends improvement measures to safely and efficiently move people and goods within and throughout the study area. The study also complements other initiatives and studies, such as the Jamaica Urban Design and Streetscape Plan (DOT) and the Jamaica JFK Gateway (GJDC/RPA), addressing development and transportation issues in Downtown Jamaica. The study examines traffic and transportation conditions in two areas - a primary study area bounded by Hillside Avenue (north), 183rd Street (east), Liberty Avenue (south), and the Van Wyck Expressway (west); and, a secondary study area bounded by Union Turnpike (north), 193rd Street/Farmers Boulevard (east), Linden Boulevard (south), and Austin Street/130th Street (west). See Figure E-1.

Figure E-1: Primary, Secondary, and Streetscape Study Areas



## Existing Conditions Summary

The study area is well served by regional highways (Van Wyck Expressway and Grand Central Parkway) as well as the public transportation system including Long Island Railroad, the AirTrain, four subway lines (E, F, J/Z), and over 40 NYCT, MTABus, and NICE buses from Long Island. There are four transit hubs that serve residents, workers, and commuters - Sutphin Boulevard/Archer Avenue Station (LIRR, AirTrain, E, J/Z trains, and numerous buses), Jamaica Center (E, J/Z trains, numerous buses, and commuter vans), 179th Street Station (F train), and 165th Street Bus Terminal (NICE, NYCT, and MTABus buses).

Major corridors in the primary study area include Jamaica Avenue, a commercial retail and business spine which attracts thousands of visitors daily as well as other east-west corridors Hillside Avenue and Liberty Avenue and north-south corridors Sutphin Boulevard, Parsons Boulevard, Guy R. Brewer Boulevard, and Merrick Boulevard. The major corridors in the study area



are generally congested, with travel speed under 15 miles per hour, during peak hours due to a variety of reasons such as: limited north-south routes, narrow streets with one travel lane per direction, heavy bus traffic, and illegally parked vehicles. Travel and traffic conditions are worst during the PM peak period.

Between 2004 and 2011, approximately 80% of the study area was rezoned. The majority of the study area is zoned for residential uses with institutional, commercial, and manufacturing uses interspersed throughout. As a result of the 2007 Department of City Planning's Jamaica Plan, which rezoned the downtown core (primary study area) significant land use changes has occurred. The new developments include commercial retail space, 30 large multi-story dwellings and 15 hotels; most of these developments fall in the area bounded by 89th Avenue, 168th Street, Liberty Avenue, and Sutphin Boulevard. The identified developments will provide approximately 1,697 new apartments (some affordable) and 1,582 hotel rooms, and public facilities.



Archer Ave/153rd Ave looking west

Similar to other central business districts, parking is an issue in Downtown Jamaica. On-street parking utilization is high, especially during the morning and midday peak hours. Additionally, excessive placard use is also a problem. One of the biggest violation being vehicles (with placard) parked in bus lanes during rush hours. Off-street parking (20 facilities) utilization is also generally high during the AM and midday peak hours.

Heavy pedestrian activity occurs in the vicinity of the major transit hubs (Sutphin/Archer and Parsons/Archer) and institutions (the courts, Social Security Administration, York College, etc.). High pedestrian volume also occurs along the commercial corridors (Jamaica Avenue, Hillside Avenue, and Sutphin Boulevard). Currently, cycling as a mode in the study area is very limited. Peak hour volume was low (counted and observed) throughout the study area.

A significant portion of the study area falls within a Vision Zero Priority Area

and there are 15 Priority Intersections and 14 Priority Corridors. More crashes occurred in the primary than secondary study area. Detailed crash analysis for the most recent three years (2014-2016) for which data was available showed Jamaica Avenue, Hillside Avenue, Sutphin Boulevard, Archer Avenue, Parsons Boulevard, and Merrick Boulevard as having more crashes compared to other corridors. The intersections with the highest number of crashes/injuries are: Linden Boulevard/Farmers Boulevard, 94th Avenue/Atlantic Avenue/Van Wyck Expressway, and Hillside Avenue/Parsons Boulevard.



Jamaica Ave/Parsons Blvd east crosswalk

### Summary of Findings

The assessment of the study area's existing and future conditions included many analyses such as demographics/socioeconomics, land use and zoning, traffic, goods movement, crashes, etc. This was complemented with extensive public/community input. The existing conditions analysis which includes information gathered from field observations and meetings identified many issues, such as:

- Chronic peak hours congestion on major arterials (Sutphin Boulevard, Jamaica Avenue, and Archer Avenue)
- Limited north-south travel options/access
- Preponderance of illegal parking and placard use (placard abuse) contributing to congestion and slow bus speeds
- Slow bus speeds during peak periods
- Irregular street network configuration and limited north/south through streets
- Proliferation of commuter vans and livery cabs or unregulated informal transit operators
- No curb space for drop-off/pick-up at the two major transit hubs
- Insufficient loading and unloading zones along commercial corridors
- Narrow two-way streets
- Inadequate enforcement with respect to traffic and parking violations

## Recommendations

Resulting from the comprehensive assessment of transportation issues identified by community stakeholders and the quantitative analyses many recommendations to improve safety, traffic operation, reduce congestion, and enhance quality of life, accessibility, and mobility were developed. The recommended improvement measures address the most critical issues that were identified in the study process. They fall into the following broad categories:

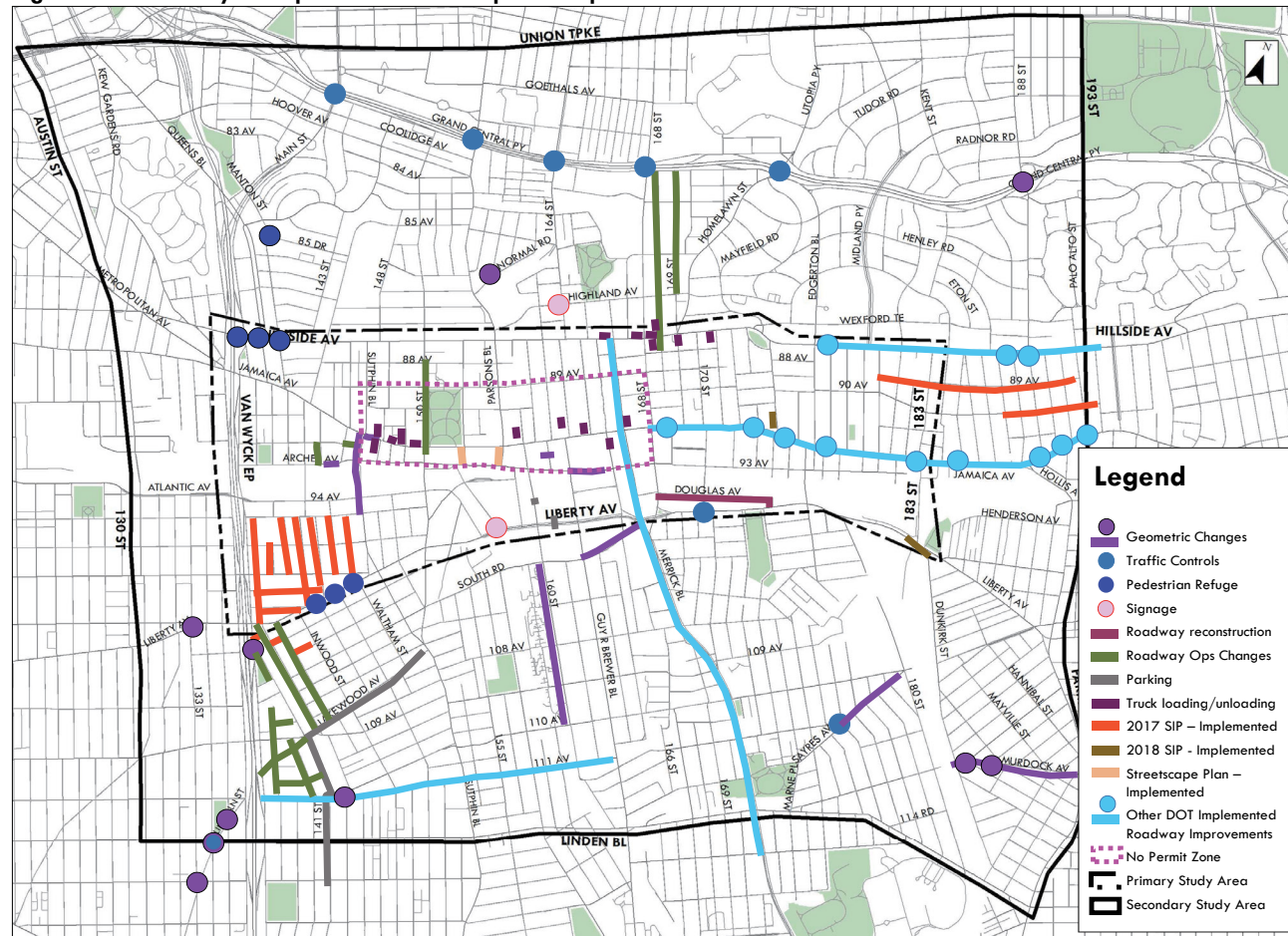
- Geometric changes/roadway improvement
- Parking regulation changes
- Traffic operation changes; and
- Traffic signal timing changes

As part of the City’s ongoing Vision Zero initiative, many intersections in the downtown core were subject to safety interventions such as the installation of pedestrian refuge islands, curb extensions, countdown signals, left-turn calming treatments, and leading pedestrian intervals (LPI). The improvement measures proposed for the downtown core focused on improving traffic operation, curb management, and bus operations. Outside the downtown core, recommendations include installing pedestrian refuge islands and curb extensions, traffic operation changes, and traffic calming measures.

Recommendations generated from the study (highlighted in Figure E-2) fall into three implementation categories: short-term (1-3 years), medium term (3-5 years), and long term improvements (5 years plus). A sample of the recommendations are highlighted below. Some recommendations will be subject to minor changes as project development goes through preliminary and final design.



Figure E-2: Summary of Implemented and Proposed Improvement Measures



### Recently Implemented Recommendations/Projects

1. Street Operation Conversions (Two-way to one-way)

In 2017, fourteen narrow (under 28’) two-way streets (listed below) were converted from two-way to one-way operation.

- Remington St – Liberty Ave to 95th Ave
- Sanders Pl – 97th Ave to 101st Ave
- Cresskill Pl – 95th Ave to 101st Ave
- Brisbin St – 95th Ave to Liberty Ave

- Allendale St – 95th Ave to 102nd Ave
- Sean Bell Way – 94th Ave to 101st Ave
- Waltham St – 95th Ave to 101st Ave
- 102nd Ave – Allendale St to Van Wyck SR E
- Lloyd Rd – Inwood St to Van Wyck SR E
- 104th Ave – Henry Grate Sr Pl to Van Wyck SR E
- 105th Ave – Inwood St to Henry Grate Sr Pl
- 106th Ave – Inwood St to Pinegrove St
- 89th Ave – 181st St to 191st St
- 90th Ave – 187th St to 192nd St

## 2. 175th Street (Jamaica Avenue to 90th Avenue)

The 175th Street segment between Jamaica and 90th Avenues is 61 feet wide (curb to curb) while it narrows to 30 feet approaching Jamaica Avenue.

- Roadway redesigned to provide standard lane configuration in each direction

## 3. Liberty Avenue/183rd Street & Dunkirk Street

Both the east and west approaches on Liberty Avenue at 183rd Street had one moving lane with a potential lane hatched out. As a result both approaches experienced heavy delay during peak hours.

- Both eastbound and westbound approaches restriped to increase lane capacity as follows:
  - Eastbound approach - one thru lane and one shared left-thru lane at 183rd Street
  - Westbound approach – one thru lane and one exclusive right turn lane
- Signal timing plan modified to include an eastbound leading left phase

## Short-Term Recommendations/Projects

### 1. Sutphin Boulevard (Archer Avenue to 91st Avenue)

This segment of Archer Avenue experience significant congestion due to livery taxi operations - standing in bus stops, U-turns, left turns, dropping/picking up passengers in a moving lane, etc. Recommendations to manage livery taxi operations and reduce congestion include:

- Install hardened centerline on Sutphin Boulevard between Archer Avenue and Jamaica Avenue to prevent illegal U-turns
- Convert 91st Avenue from westbound to eastbound operation.
- Convert 144th Street (between 91 Avenue and Archer Avenue) from southbound to northbound operation.
- Prohibit eastbound left turns from 91st Avenue at Sutphin Boulevard

### 2. Sutphin Boulevard (94th to 95th Avenues)

Several Sutphin Boulevard southbound buses make a left turn at 95th Avenue. The existing roadway geometry provides one moving lane in each direction with curbside parking. While buses wait for a gap to make the left turn (as many as 35 buses during peak hours), southbound traffic is impeded. Recommendations include:

- Remove seven parking spaces from the southbound approach to provide two moving lanes - a left turn and a through lane
- Remove three parking spaces on the southbound receiving lane to provide transition
- Provide truck loading/unloading on Sutphin Boulevard between 94th & 95th Avenues
- Provide truck loading/unloading at the northwest curb of 95th Avenue at Sutphin Boulevard

### 3. Jamaica Avenue (148th Street & Sutphin Boulevard)

During rush hours, westbound Jamaica Avenue has one general traffic lane and one bus lane. At Sutphin Boulevard, only buses are allowed to make left turns between 7 am – 7 pm. Approximately 65% of the westbound buses on Jamaica Avenue, make the left and occupy the left lane reducing capacity for through vehicles. The following is recommended to address this problem:

- Relocate curbside bus lane to left lane
- Mark the last 80' of the left lane approaching Sutphin Boulevard as a bus lane.



Jamaica Ave @ Sutphin Blvd looking east

### 4. Union Hall Street (between Jamaica Avenue & Archer Avenue)

Union Hall Street between Jamaica and Archer Avenues is approximately 22 feet wide and functions as an extension of 162nd Street for continuous southbound travel from Hillside Avenue. Due to Access-A-Ride drop-off/pick-up activities during rush hours, congestion spills back onto Jamaica Avenue. Recommendations include:

- Create Access-A-Ride curbside stop in front of drop-off/pick-up location
- Install enhanced crosswalk to ensure pedestrian safety

### 5. Truck Loading/Unloading Zones Along Commercial Corridors

Hillside Avenue, Jamaica Avenue, and Sutphin Boulevard are major commercial corridors with curbs space mainly used for transit operations. This limits space



for truck loading/unloading, resulting in double parking for deliveries. Recommendation include:

- Install additional truck loading/unloading zones along commercial corridors to facilitate business operations and reduce congestion.

#### 6. Street Direction/Operation Changes

The study area has numerous narrow (30' or less) two-way streets with parking on both sides. These roadway segments will be evaluated for conversion to one-way operation.



Brisbin St between 95th and 97th Aves.

#### 7. Liberty Avenue (Allendale Street to Waltham Street)

P.S. 50 is located on the north curb of Liberty Avenue between Allendale and Waltham Streets. The corridor functions with two moving lanes per direction with a hatched median and parking on both sides. To enhance pedestrian safety, recommendations include:

- Install pedestrian refuge islands on Liberty Avenue at Allendale Street, Liverpool Street, and Waltham Street intersections
- Install a hardened centerline at the Waltham Street (east leg) and Sutphin Boulevard (west leg).

#### 8. Informal Transit Curb Space

Informal transit vehicles (commuter vans and livery taxis) often impede traffic partly due to the lack of designated curb space for their activity. In the vicinity of the Sutphin Boulevard/Archer Avenue, livery taxis pickup/dropoff in the bus stop or moving lane. A similar situation exists in the vicinity of Jamaica Center with both livery taxis and commuter vans. Recommendations include:

- Install a 'For Hire' Taxi Stand on the north curb of 91st Avenue at Sutphin Boulevard
- Formalize (make legal) commuter van stop on Guy R. Brewer Boulevard between Jamaica Avenue and Archer Avenue



Sutphin Blvd @ 91 Ave looking south

#### 9. Grand Central Parkway Service Road Signal Coordination between Main Street and 168th Street

Vehicles exiting the Grand Central Parkway making eastbound/westbound left experience congestion due to service road signal timing plan along the corridor.

- Synchronize signals along Grand Central Parkway Service Road exits at Main Street, Parsons Boulevard, 164th Street, and 168th Street

10. 188th Street & McLaughlin Avenue/Grand Central Parkway Service Road  
Pedestrians walking along 188th Street have relatively long crosswalks with hatched areas. There is also a missing crosswalk on the north leg. Recommendations include:

- Replace the existing hatched median with concrete on the west and east legs.
- Construct a curb extension on the northeast and southeast corners of the east leg
- Install a crosswalk on the north leg
- Prohibit parking on the westbound approach during AM peak period
- Re-align all crosswalks consistent with proposed curb extensions and refuge islands.

#### 11. 160th Street (South Road & Brinkerhoff Avenue)

160th Street between South Road and 110th/Brinkerhoff Avenue) is generally over 45 feet wide with low traffic volume. It has one moving lane and parking in each direction.

- Restripe roadway to provide one 10 feet moving lane per direction and provide a 10 feet flush painted median
- Provide left turn bays where left turn is permitted.

#### 12. Linden Boulevard & 134th Street/Lincoln Street

Lincoln Street runs diagonally creating complex intersections where it merges with north-south and east-west corridors. It intersects Linden Boulevard and 134th Street within 75 feet of each other. The proximity of the two intersections creates conflicts between vehicles simultaneously turning from 134th Street and Lincoln Street. Recommendations include:

- Convert 134th Street from Lincoln Street/Linden Boulevard to Liberty Street to one-way northbound.
- Signalize 134th Street/Lincoln Avenue intersection
- Convert 134th Street from Linden Boulevard to Lincoln Street to one-way

southbound.

- Permit parking on the east curb of 134th Street (between Linden Boulevard and Lincoln Street)
- Redesign signal plan to bring the two intersections (134th St & Linden Boulevard and Lincoln Street & Linden Boulevard) under one signal control (as one intersection).

### 13. Murdock Avenue (Dunkirk Street to Farmers Boulevard)

Murdock Avenue from Dunkirk Street to Farmers Boulevard is a wide (44 - 49 feet), residential street with no stop controls. It operates two-way with one moving lane in each direction and curbside parking. There are several complex intersections along the corridor because many streets are diagonal. Recommendations include:

- Install a flush median (varying widths) along the corridor
- Install a curb extension on the Dormans Road at Murdock Avenue intersection
- To reduce conflicts at approaches to Murdock Avenue, convert the following roadway segments from two-way to one-way operation:
  - Newburg Street – 114th Road to Dunkirk Street (7 blocks) – southbound
  - 114th Road – Newburg Street to Farmers Boulevard (2 blocks) – eastbound
  - Mayville Street – Murdock Street to 113 Avenue (1 block) – westbound
  - Ovid Place – 114th Drive to Dormans Road (2 blocks) - southbound

### Medium-Term Recommendations/Projects (3-5 Years)

#### 1. 150th Street (Hillside Avenue to Jamaica Avenue)

There are limited options for continuous north-south travel between Hillside and Liberty Avenues in Downtown Jamaica. Only four corridors offer continuous north-south travel – Sutphin Boulevard (two-way); Merrick Boulevard (one-way southbound); 168th Street (one-way northbound); and 150th Street (southbound only between Hillside and Jamaica Avenues; and two-way south of Jamaica Avenue). Because Sutphin Boulevard is the only two-way north-south arterial, it is generally congested during peak hours. Recommendations include:

- Convert 150th Street between Hillside and Jamaica Avenues from one-way southbound to two-way operation.
- Restrict parking on the east curb of 150th Street at all times

#### 2. Two-way to one-way Conversions

Several streets in the study area are narrow (less than 30 feet wide) with two-way operation and parking on both sides of the street. Recommendations include:

- Systematically convert narrow two-way streets from two-way to one-way operation where feasible.

### 3. Parking Improvement Measures

There are numerous government agencies (local, state, and federal) with parking placards. There are 170 spaces issued to agencies including the Social Security Administration, Court System Vehicles.

- Establish a No Permit Area in Downtown Jamaica bounded by Archer Avenue, Sutphin Boulevard, Hillside Avenue, and 168th Street
- Install missing parking regulation signs
- Daylight intersections in the IBZ to facilitate large trucks turning
- Increase enforcement against illegal truck layovers

### 4. Q40 Bus Circulation Improvements

Two of the main corridors along which the Q40 bus operate are narrow (30 feet or less) two-way streets with parking on both sides. These operating conditions slow bus travel and contribute to congestion. Recommendations include:

- Limit parking to one side (north and west curb) from 7am to 7pm where street width is 30 feet or less.
  - Lakewood Avenue – Pinegrove Street to Sutphin Boulevard
  - 142nd Street – Lakewood Avenue to 123rd Avenue



### 5. 135th Street/Lincoln Street

The intersection of 135th Street and Lincoln Street is unusually wide with no pedestrian crosswalks. Recommendations include:

- Install a concrete triangle on the northeast leg of Lincoln Street
- Install crosswalks on the southbound approach of Lincoln Street and across 135th Street to provide safe pedestrian access to the playground.

### Long-Term Recommendations/Projects (5+ Years)

#### 1. Archer Avenue Sidewalk Widening between Guy R Brewer Boulevard and 165th Street

Narrow south sidewalk 5' wide on Archer Avenue between Guy R Brewer Boulevard and 164th Street. Currently, a bus stop serving five routes is in the middle of this block. The inadequate sidewalk space poses pedestrian safety issues. Recommendations include:

- Shift westbound travel lanes and the eastbound bus lane to the north, and extend the sidewalk from 5' to 9' wide.

#### 2. Douglas Avenue – 168th Street to 175th Street

Douglas Avenue between 168th Street and 175th Street is in the heart of the industrial business zone. The roadway is in very poor condition with potholes and no sidewalk mainly due to trucking activity. Recommendations include:

- Full reconstruction of roadway including sidewalk to be coordinated with Street and Arterial Maintenance for planned/scheduled maintenance.

#### 3. Tuskegee Airmen Way – Guy R. Brewer Boulevard to 165th Street

South Road/Tuskegee Airmen Way between Guy R. Brewer Boulevard and 165th Street is partially developed with approximately 25' paved roadway and no sidewalk. operating two-way with parking on the south curb. The mapped right of way (ROW) is approximately 50'. Pedestrians and vehicular travel conditions are poor.

- Full reconstruction of roadway to 34' - 38' wide with sidewalk and allow parking on north curb.



Tuskegee Airmen Way btw 165 St and Guy R Brewer Blvd looking west

### **Other DOT initiatives in Downtown Jamaica**

#### ***Streetscape and Urban Design Project***

In 2015 when the Jamaica NOW Initiative was launched, various city agencies were asked and committed to undertake initiatives/projects to support Downtown Jamaica's revitalization effort. DOT was asked and committed to conducting a streetscape assessment and beautification effort focusing on Jamaica Avenue. The effort was expanded to include other major corridors – Parsons Boulevard, Archer Avenue, Sutphin Boulevard, and Merrick Boulevard. This project has resulted in the creation of a pedestrian plaza on Parsons Boulevard (between Jamaica Avenue and Archer Avenue), the relocation of the commuter van stop from Parsons Boulevard to 153rd Street - east curb (between Jamaica and Archer Avenues), and proposals to add green and pedestrian amenities along Jamaica Avenue. Work is still being pursued to enhance the aesthetics and functionality of Archer Avenue bus terminal facility.

#### ***Citywide Commuter Van Study***

As a major hub for commuter vans, Downtown Jamaica was a focus area in the Citywide Commuter Van Study that aimed to better understand commuter van operations within New York City to determine commuter van impacts on the transportation network. The study sheds light on the use of commuter vans as a travel mode; it includes daily and annual ridership estimates as well as some of its issues/challenges along with recommendations to address them.





Archer Av

UNTRANSFER

PG RIZAL Cafe

INSURANCE

PIZZA ORIO

Capital One Bank

McDonald's

NAILS

FISH & DELI

ATM

ARCHER

Q25 JAMAICA LIRR STA-RT TRAIN

Q208 VIA 54 AV VIA 104th ST

SLEEPYS

GSP-8237

OPEN ROAD





# INTRODUCTION



**PARK**  
24 HRS  
↑  
ENTER 100th St

Gotham Health  
Live Your Healthiest Life.  
Members

**YORK COLLEGE**

**YORK**

**CU NY**  
The City University of New York

**Q5** JAMAICA PRSNS-ARCHR  
415  
8414

**Q64** JAMAICA PRSNS-ARCHR





## 1.1 Introduction

Downtown Jamaica is undergoing revitalization and regeneration. Throughout the downtown core new developments of various types and sizes can be seen. These developments will impact the traffic and transportation system as more pedestrian and vehicular trips are attracted to the area.

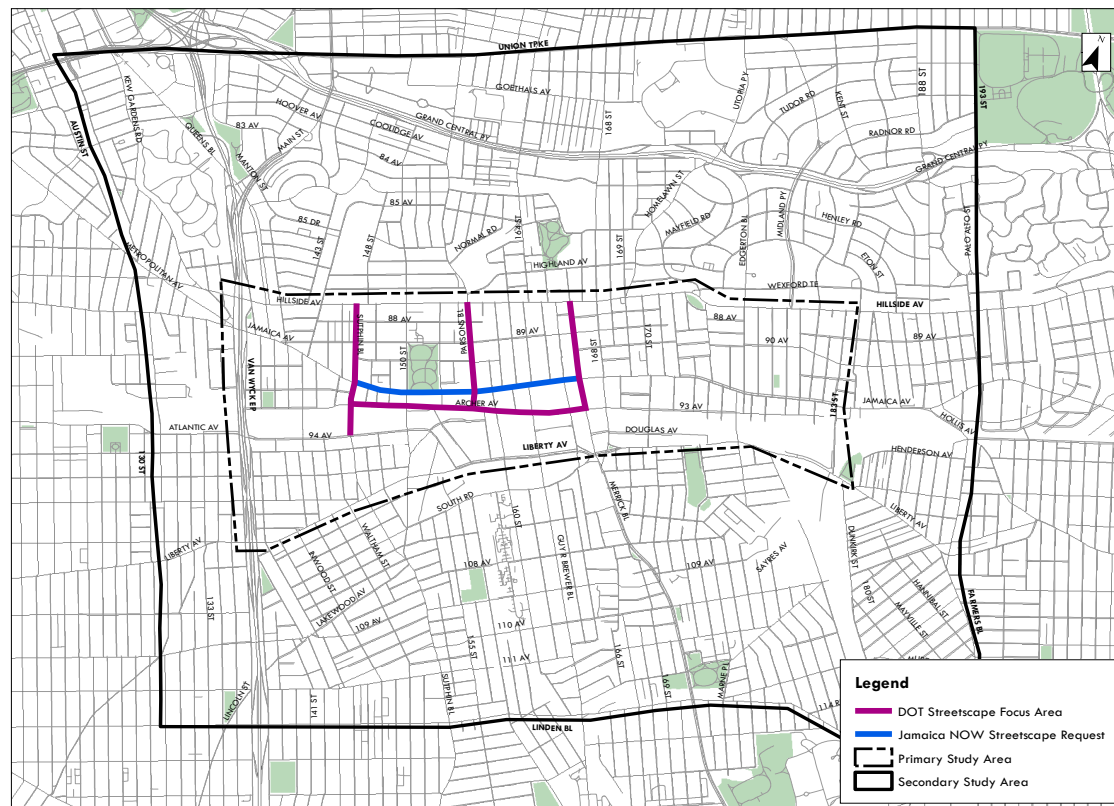
The Downtown Jamaica Transportation Study complements efforts by City Hall, the Borough President, and various City agencies to revitalize Downtown Jamaica. Early in 2015 Mayor Bill de Blasio and Queens Borough President, Melinda Katz, announced the launch of the Jamaica Now Action Plan. The 21-step plan aims to spur the revitalization of Downtown Jamaica by leveraging its proximity to John F. Kennedy International Airport and its excellent access to local and regional mass transit.

A critical factor in the revitalization effort is the traffic and transportation system's ability to process the demand. However, under existing conditions the main corridors are generally congested during the peak hours even though vehicular and pedestrian traffic volumes are low when compared to other parts of Queens, and other CBDs. The study will assess existing traffic and transportation conditions in Downtown Jamaica and develop strategies to improve existing traffic operation and accommodate future travel demand. Greater Jamaica Development Corporation (GJDC) is a key player in the development/revitalization efforts in Jamaica. Over the years it has spearheaded many projects and initiatives to facilitate Jamaica's growth and enhance its image.

## 1.2 Study Area

Downtown Jamaica is centrally located in Queens in close proximity to Nassau County and JFK Airport. The study was structured with a primary and a secondary study area. The primary study area is bounded by Hillside Avenue to the north, 183rd Street to the east, Liberty Avenue to the south, and Van Wyck Expressway to the west. The secondary study area is bounded by Union Turnpike to the north, 193rd Street/Farmers Boulevard to the east, Linden Boulevard to the south, and Austin Street/130th Street to the west. The primary

Figure 1-1: Primary and Secondary Study Area



study area lies within Queens Community District 12; while portions of the secondary study area are in Queens Community Districts 8 and 10. Figure 1-1 shows the primary and secondary study area.

## 1.3 Study Goal and Objectives

### Goal:

To improve traffic and transportation (travel) conditions, enhance mobility, safety, and quality of life for residents/visitors, taking account of elected official and community concerns

### Objectives:

- To analyze and document existing traffic and transportation conditions including travel demand, travel needs, and traffic characteristics.

- To assess future traffic conditions taking account of area demographics, land use, socioeconomic characteristics, and transportation infrastructure
- Develop recommendations to enhance network capacity, reduce congestion, and improve travel conditions and safety for all roadway users

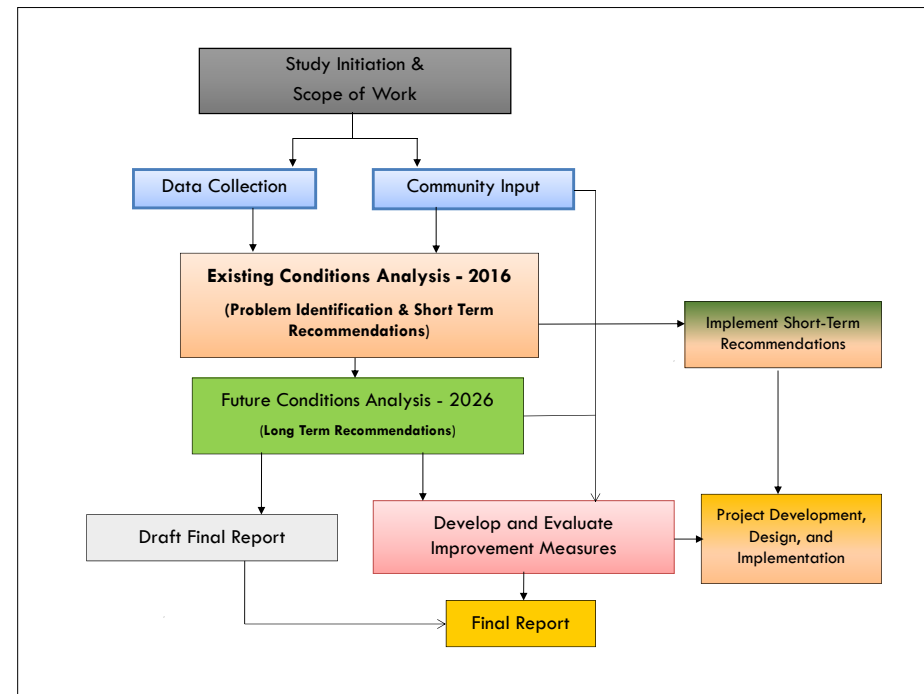
To meet the stated goal and objectives, a comprehensive analysis of existing and future conditions was conducted. A quantitative analysis based on traffic counts and a qualitative analysis through extensive community outreach was combined to provide a complete picture. The community outreach effort included Technical Advisory Committee meetings, public meetings, Street Ambassador outreach efforts, and the use of a web portal. As a result of the community outreach effort input was obtained from various stakeholders including residents, community boards, businesses, elected officials, government agencies, and assorted interest groups. Community input was critical in the identification of issues to be addressed and in the development of improvement measures.

#### 1.4 Study Process

The study process shown in Figure 1-2 reflects the following tasks:

1. Study Initiation and Scope of Work: Create a detailed work program which includes project scope, tasks, subtasks, and deliverable.
2. Community Outreach/Input: Establish Technical Advisory Committee (TAC) and host TAC and public meetings to facilitate input from stakeholders including residents, businesses, community board, elected officials, York College, GJDC, EDC, DCP, etc.
3. Data Collection and Identification of Issues: Collect data including vehicular traffic, parking, pedestrians, bikes, transit, crashes/safety and goods movement (truck activity).
4. Existing Conditions Analysis: Traffic analysis, demographic, land use, parking, etc. for 2016.
5. Future Conditions Analysis: Projected future conditions (2026) using 2016 data and other forecasts. Develop recommendations to address issues and problems identified in the existing and future conditions analysis.
6. Development and Evaluation of Improvement Measures/Alternatives and evaluate same for effectiveness, community support, costs and consistency with the study's goals and objectives.
7. Draft and Final Report: Prepare draft and final report that includes short- and long-term recommendations.

Figure 1-2: Study Process



8. Project Development and Implementation: Develop and prepare Street Improvement Projects (SIP) from recommendations for implementation.





# DEMOGRAPHICS





ABC Newsstand & Coffee Shop  
158-09

FREE EBT  
ATM  
50 Bills



Your Healthiest Life.



NOT IN SERVICE

431

8092



W9433





## 2.1 Introduction

The analysis of the study area’s demographic and socioeconomic characteristics examines population changes, median household income, employment, car ownership and journey to work by mode. Data was collected for 2000, 2010, and 2015 and projections were made for 2020 and 2025. It relied on data from the Bureau of Census, New York Metropolitan Transportation Council (NYMTC) and the Department of City Planning (DCP). The analysis includes comparisons with Queens and New York City.

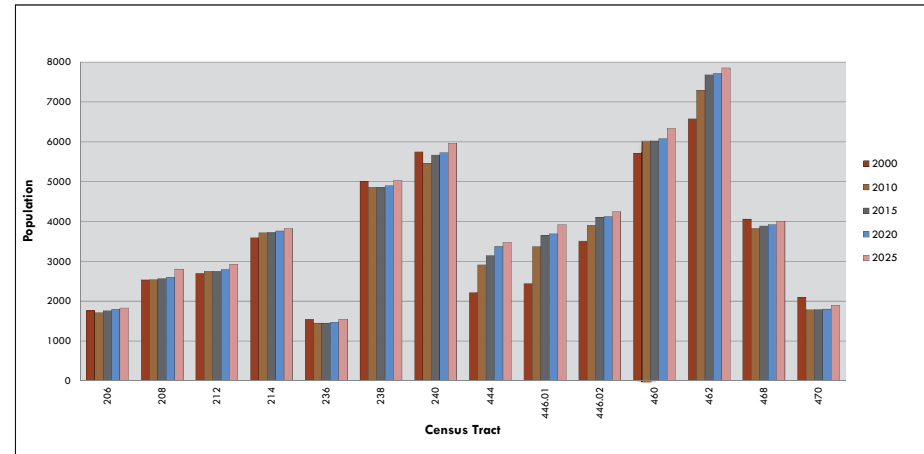
### Study Areas

The primary study area has 14 census tracts of which eight falls wholly within (206, 208, 212, 240, 446.01, 460, 462, and 468) and six that are partially within (214, 236, 238, 444, 446.02, 470) its boundaries. An additional 61 census tracts are wholly or partially contained in the secondary study area.

## 2.2 Population Trends

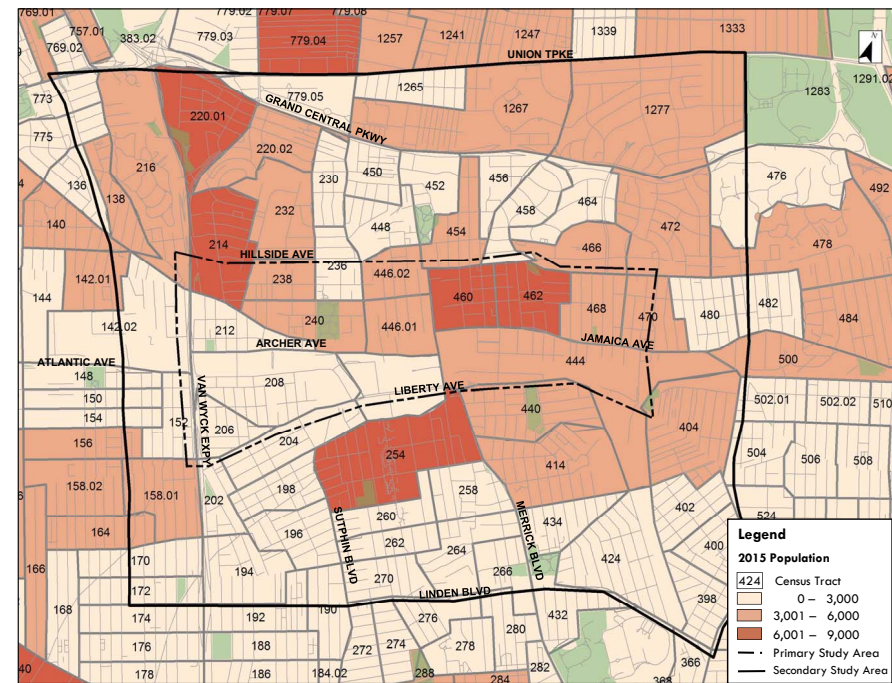
Since 2000 population in the primary study area has grown significantly (approximately 7.1%) compared to the secondary study area (1.5%), Queens (0%), and New York City (3.8%) clearly demonstrating the effect of the rezoning and the increasing person trips. Table 2-1 shows the population trend. In the primary study area, 42.9% (6 of 14) of the census tracts experienced population decline. However, most of the census tracts (8 of 14) experienced slight or significant population growth; Census Tract 462 had the highest population and growth. Chart 2-1 provides an overview of the population trend for each census tract in the primary study area and Figure 2-1 shows the population distribution in both the primary and secondary study area. Between 2015 and 2025 most of the population growth is expected to occur within, or in the vicinity of, the primary study area (Figure 2-2).

Chart 2-1: Primary Study Area Population Trend



Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050

Figure 2-1: Study Area Population Distribution



Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050

Table 2-1: Total Population

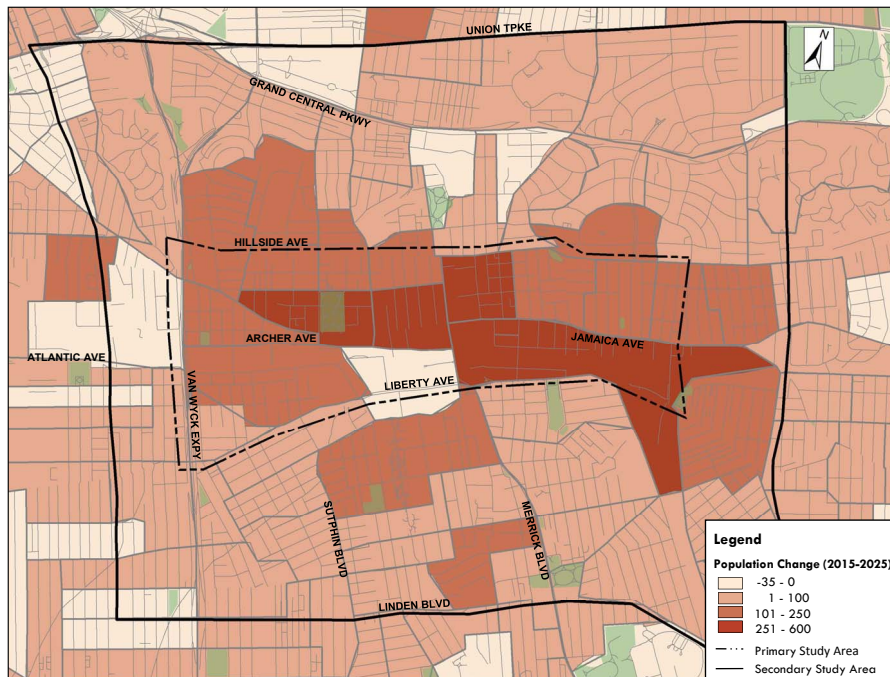
Year	Population							
	Primary Study Area		Secondary Study Area		Queens		NYC	
	Total	% Change	Total	% Change	Total	% Change	Total	% Change
2000	49,517		130,505		2,229,379		8,008,278	
2010	51,585	4.2%	130,997	0.4%	2,230,722	0.1%	8,175,133	2.1%
2015	53,076	2.9%	132,486	1.1%	2,228,000	-0.1%	8,317,000	1.7%
2020*	53,768	1.3%	133,778	1.0%	2,350,000	5.5%	8,470,000	1.8%
2025*	55,678	3.6%	134,812	0.8%	2,431,000	3.4%	8,685,000	2.5%

\*Projected

Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050



**Figure 2-2: Population Change (2015-2025)**



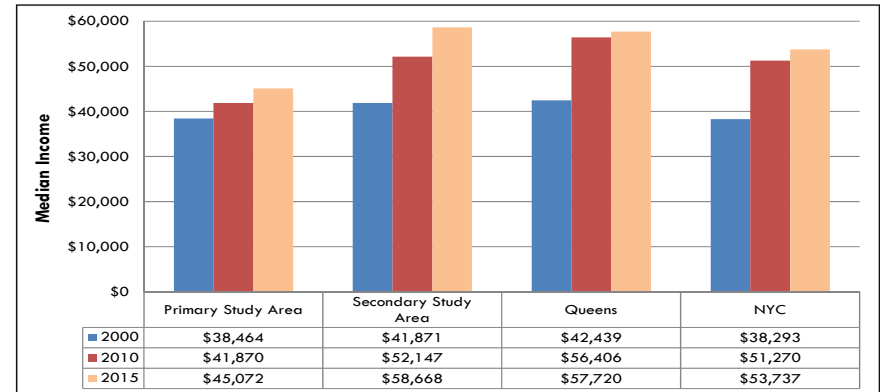
Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050

### 2.3 Socio-Economic Characteristics

Median household income was derived from Census Bureau and the American Community Survey (ACS) data. In 2010 there were approximately 15,041 households in the primary study area with a median income of \$41,870, which was lower than that of the secondary study area (\$52,147), Queens (\$56,406), and NYC (\$51,270). Between 2010 and 2015, the median household income in both the primary and secondary study area grew significantly (7.6% and 12.5%, respectively) compared to Queens and Manhattan (under 5% change). In 2015 the primary study area's median income was 30% lower than the secondary study area, whose median income was higher than both Queens and NYC. See Chart 2-2.

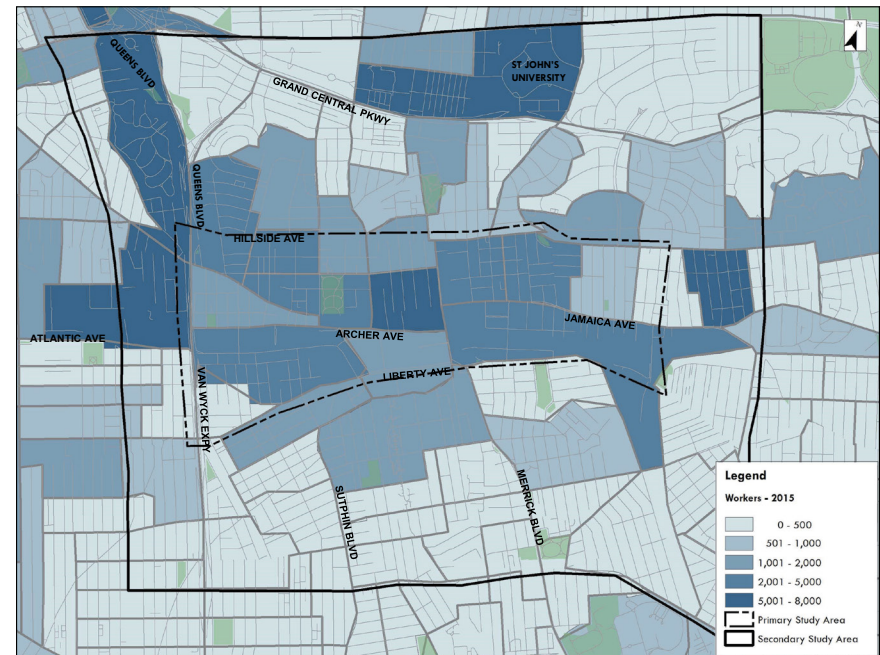
The 2015 ACS data shows that labor force activities is concentrated in the primary study area, along Queens Boulevard, and in the vicinity of St. John's University (Figure 2-3). The 2025 projected data shows that is pattern will continue and intensify in the primary study area (Figure 2-4).

**Chart 2-2: Median Household Income (2000 – 2015)**



Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050

**Figure 2-3: Employment (2015)**



Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050



**Figure 2-4: Employment (2025)**



Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050

**2.4 Vehicles Ownership**

Vehicle Ownership quantifies the number of households in the study area that have access to automobiles. Table 2-2 shows the trend of vehicle ownership. Vehicle ownership in the primary study area is similar to that of New York City-households where more than 50% of households do not own an automobile. On the other hand, in the secondary study area and Queens, 62% and 64%, respectively, owns one or more vehicles.

**2.5 Journey to Work by Mode**

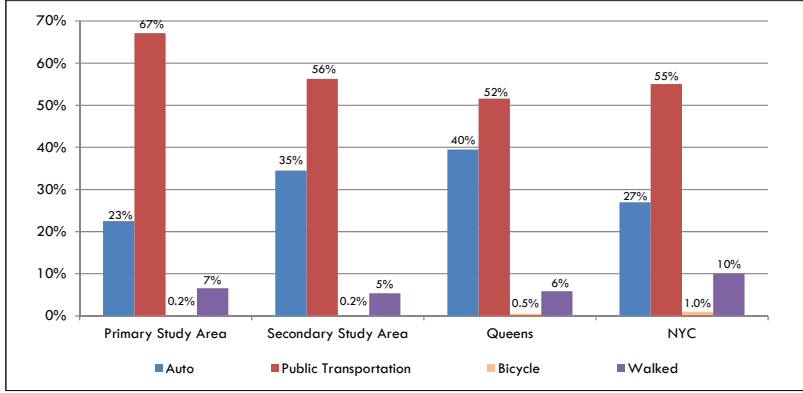
Public Transit is the predominant journey to work mode in the study area, similar to Queens and New York City. In 2015, approximately 67% and 56% of the residents in the primary and secondary study area, respectively, used public transit to complete their work trips; followed by automobile and walking (23% and 7%, respectively). Cycling for journey to work was very low, 0.2%, in both study areas. Chart 2-3 shows the journey-to-work mode share for the study area, Queens, and New York City.

**Table 2-2: Household Vehicle Ownership**

Year/No. of Vehicles	Primary Study Area	Secondary Study Area	Queens	NYC
2000	% of Total	% of Total	% of Total	% of Total
0	52.9%	41.0%	37.7%	55.7%
1	31.1%	40.0%	41.1%	31.6%
2	8.4%	15.0%	16.9%	10.1%
3+	2.5%	4.0%	4.4%	2.6%
2010	% of Total	% of Total	% of Total	% of Total
0	54.7%	37.0%	37.4%	55.5%
1	33.1%	40.0%	39.9%	31.1%
2	8.5%	18.0%	17.5%	10.5%
3+	2.3%	5.0%	5.2%	2.9%
2015	% of Total	% of Total	% of Total	% of Total
0	56.2%	40.8%	37.6%	55.4%
1	33.4%	39.0%	40.4%	31.2%
2	9.0%	15.6%	17.0%	10.6%
3+	1.5%	4.5%	5.0%	2.8%
2020*	% of Total	% of Total	% of Total	% of Total
0	56.8%	41.0%	37.8%	55.2%
1	33.6%	38.8%	40.6%	31.1%
2	8.5%	15.7%	16.8%	10.8%
3+	1.1%	4.5%	4.8%	2.9%
2025*	% of Total	% of Total	% of Total	% of Total
0	56.9%	41.3%	37.9%	55.0%
1	33.7%	38.6%	40.7%	31.0%
2	8.4%	15.7%	16.7%	11.0%
3+	1.0%	4.4%	4.7%	3.0%

\*Projected  
Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050

**Chart 2-3: Journey to Work by Mode (2015)**



Source: US Census Bureau 2000, 2010; American Community Survey 2011-2015; NYMTC Socio-Economic Data 2050



## 2.6 Demographics & Transportation Demand

The demographic analysis provides insight into the future 2025 travel demand facilitating a quantitative estimation of the work trips by mode that must be accommodated on the transportation network. Since the existing trips are captured in the existing transportation network (as traffic counts), the projected population/households growth and related socio-economic characteristics allow the computation of additional trips to be added to the future traffic network. Since the census tracts/transportation analysis zones (TAZs) with significant growth are known, they help to identify where trips should be loaded to the network, since the population growth is accommodated in new dwelling units, at higher density consistent with the zoning/rezonings. Also, other land uses/activities (commercial, offices, manufacturing, etc), consistent with the rezoning, generate trips which are estimated based on established transportation planning assumption (from surveys) and ITE trip generation rates are added to the network. The future estimated travel demand, trip distribution and assignment, all help to determine the future traffic network volume. See zoning and land use chapter. Therefore, the resultant future conditions traffic analysis relies on input from the demographics as well as zoning and land use for trip numbers. The primary study area accounts for 25% auto mode share while the secondary study area accounts for 52% auto mode share. The recommendations seek to address the increased trips on the network by designing for the increased volumes which may require installation of warranted signal and signal timing changes, as well as street direction change. Also the increased demand can be managed by facilitating mode shift through expressed policy and program, such as Select Bus Service (SBS) routes.







# ZONING AND LAND USE







### 3.1 Introduction

Downtown Jamaica is one of the largest central business district (CBD) in Queens and as such it has significant potential for growth. With the Department of City Planning (DCP) designation of the Jamaica Gateway Urban Renewal Area (JGURA) in 2007 (The Jamaica Plan), the rezoning of 368 blocks expanded the CBD and permitted increased development density. That rezoning, more than any other, has caused the landscape in Downtown Jamaica to be the object of significant transformation. Few vacant lots or underutilized plots have been spared. Throughout the downtown core, the construction of new developments is apparent. There were many other zoning actions that helped to bring this about.

### 3.2 Zoning in the Study Area

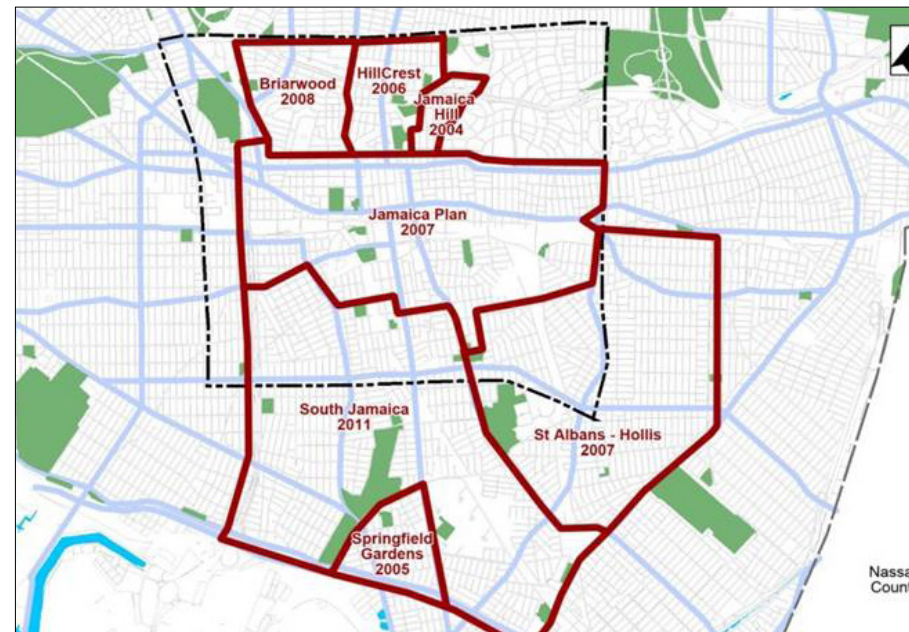
Zoning districts are generally subject to change due to development pressures, except where landmark designations are made. A significant portion of the study area has been rezoned over the past ten (10) years. There has been six zoning actions that covered the breadth of the study area; the first action was Jamaica Hill (2004), Hillcrest (2006), the Jamaica Plan and St. Albans-Hollis (2007), Briarwood (2008), and South Jamaica (2011). Details of these rezoning actions are shown in Figure 3-1.

The goal of the St. Albans-Hollis, Jamaica Hill, Hillcrest, Briarwood and the South Jamaica rezoning initiatives was to protect the lower-density character of these neighborhoods while allowing for a moderate increase in residential and commercial density along main corridors. The goal of the Jamaica Plan was to spur the redevelopment and revitalization of the downtown core. As a result of the Jamaica Plan, the Special Downtown Jamaica District was created to allow certain provisions and restriction of use, bulk and special inclusionary housing regulations. See Figure 3-2.

#### Residential Districts

Approximately 75% of the study area is made up of residential districts ranging from R2 to R7. Generally, the higher density residential districts are found in the primary study area and along major corridors.

Figure 3-1: Recent Rezoning Actions



#### Commercial Districts

The bulk of the commercial districts, that include various densities of C4 and C6 districts, are mapped within the primary study area and along Queens Boulevard in the secondary study area. These districts allow for high density commercial uses, such as department stores and offices, and typically generate more trips than traditional local retail.

Commercial overlays are mapped along major corridors - Union Turnpike, Parsons Boulevard, Hillside Avenue, Jamaica Avenue, Farmers Boulevard, Sutphin and Merrick Boulevards and Union Hall Street (in the secondary study area), and portions of Liberty Avenue and South Road. Commercial overlays permit ground floor retail within residential districts; thus they attract local auto and pedestrian trips as well as truck trips serving the businesses.

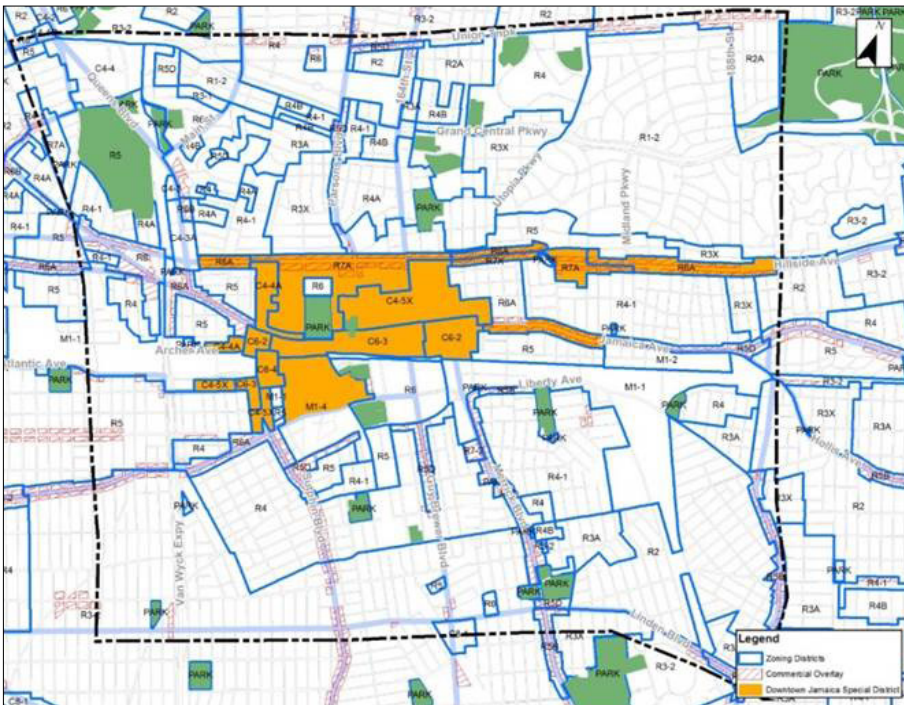
#### Footnotes:

1. Remba, Rebecca Baird. "Permits Filled: 147-30 Archer Avenue, the Crossing at Jamaica Station." New York Yimby. July 2015. < <https://newyorkyimby.com/2015/07/permits-filled-147-30-archer-avenue-the-crossing-at-jamaica-station.html> >
2. Ove Arup & Partners P.C. "Downtown Jamaica Transportation Study--Parking, Goods Movement, and Transit Analysis. Final Report. May 12, 2017.
3. Wilson, Reid. "Reveal: Eight story 57 key hotel planned at 97-01 Waltham Street" New York Yimby. October 2016. < <https://newyorkyimby.com/2016/10/reveal-for-eight-story-58-key-hotel-planned-at-97-01-waltham-street-jamaica.html> >
4. Wilson, Reid. "Developer Closes on 93-43 Sutphin Boulevard, Plans on 27-Story, 325 Key Hotel, Jamaica" New York Yimby. October 2016. < <https://newyorkyimby.com/2016/10/reveal-for-eight-story-58-key-hotel-planned-at-97-01-waltham-street-jamaica.html> >

### Manufacturing Districts

The only manufacturing designation in the study area is M1; there are four districts (three M1-1 and one M1-4). The largest M1-1 is located in the area east of 165th Street, south of Archer Avenue/93rd Avenue, and west of Dunkirk Street; another extends from Sutphin Boulevard to 130th Street with portions to Jamaica Avenue and Atlantic Avenue/94th Avenue; the other M1-1 and the M1-4 area are clustered together east of Sutphin Boulevard between Archer Avenue and South Road to 158th Street. The M1 district permits light industrial and commercial uses, but no residential uses. Figure 3-2 shows the zoning districts within the study area.

Figure 3-2: Current Zoning



### 3.3 Land Use in the Study Area

The core of Downtown Jamaica is bounded by Hillside Avenue in the north, Merrick Boulevard in the east, Archer Avenue in the south and Sutphin Boulevard in the west. Within this core (the Central Business District) is a mix of high density residential, office and commercial uses as well as several large trip generat-

ing public facilities. Notable public institutional buildings include the New York State Supreme and Queens Civil courthouses located on Sutphin Boulevard, the Queens Family Court located on Archer Avenue, and the Social Security Administration building located on Jamaica Avenue. Large commercial developments include the 15-screen multiplex cinema on Parsons Boulevard, the Coliseum Mall, and Home Depot located on Merrick Boulevard between Jamaica and Archer Avenues. There are five parking garages and numerous public parking lots.

Transit facilities in the downtown area include the LIRR right of way which dissects the primary study area, the LIRR Jamaica Station/Sutphin Boulevard-Archer Avenue/JFK AirTrain, Jamaica Center on Archer Avenue, and the 165th Street Bus Terminal on Merrick Boulevard between 89th and Jamaica Avenue.

Residential districts surround the downtown core, transitioning from high to low density. High density residential uses are located primarily in the downtown core. Within this area are buildings with more than 50 dwelling units. Low density residential uses are primarily in the secondary study area with pockets of high density buildings dispersed throughout along major corridors. See Figure 3-3.

The Downtown Jamaica Special District is comprised of residential and commercial uses, and rests along Jamaica Avenue between Sutphin Boulevard and Merrick Boulevard. Ground floor retail amongst this district is common, and extends outwards to Sutphin Boulevard, Guy R. Brewer Boulevard, Merrick Boulevard and Farmers Boulevard - all of which are mapped with commercial overlays in medium density residential districts. Medium density commercial uses with automotive sales and repair, banks, local retail and restaurants can be seen outside the core downtown area, along Hillside Avenue and Jamaica Avenue.

York College, bounded by Archer Avenue to the north, 165th Street to the east, Tuskegee Airman Way to the south and 158th Street to the west, is one of the strongest anchors of Downtown Jamaica since 1986. It consists of seven buildings, parking fields and a recreation field on 50 acres and has student enrollment of approximately 8,000. St. Johns University, Queens campus is located between Union Turnpike and Grand Central Parkway along Utopia Parkway. The 105-acre campus serves a student body of approximately 17,000.

There are two areas of concentrated industrial uses in the study area. One is located directly west of York College between Sutphin Boulevard and 158th



Street. It includes a large tow and salvage yard, warehouses and a self-storage facility as well as a large food and dairy distribution center. The second industrial area is located east of York College following the LIRR tracks north of Liberty Avenue and then along 180th Street and Dunkirk Street to Brinkerhoff Avenue. Industrial uses here include a waste and recycling center, a marble/stone supplier, concrete plant, school bus parking, warehouses, self-storage facilities, iron works, and building supply distributors. There is also a large LIRR maintenance yard is on Liberty Avenue between 177th Street and 183rd Street.

Due to the distribution and density of land uses, Downtown Jamaica will continue to attract significant vehicular, transit and pedestrian trips to its retail, office and community facilities. It is anticipated that these trips will grow as the area's revitalization takes hold.

As was stated the rezoning facilitated significant developments. They include hotels, residential-mixed use, and commercial buildings. Figure 3-4 shows many development sites that include 15 new hotels, 30 mixed-used developments and 11 potential development sites. The identified developments will provide 1,697 new apartments and 1,582 hotel rooms, in tandem with affordable units and public facilities. Some of the ongoing developments include:

- The Crossing at Jamaica
- The Archer Merrick Apartments
- Waltham Hotel
- Hilton Garden Inn

The Crossing at Jamaica a mixed used development will house two towers, one at 25 stories and the other 14. The towers will contain over 45,181 square feet of retail (24,000 square feet/55%) and community facilities (20,00 square ft/45%). It's amenities include 300 underground parking spaces, 24-hour doorman and a children's playroom. The building is LEED certified, which contains environmentally/architecturally advanced materials. Out of the 669 avail-

Figure 3-3: Current Land Use

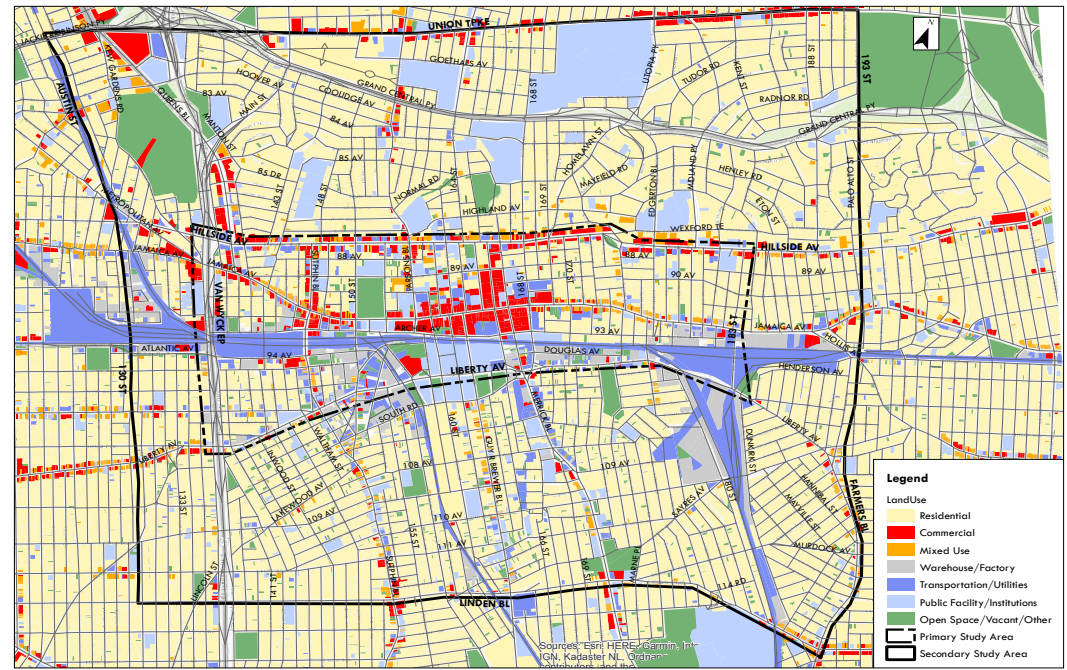
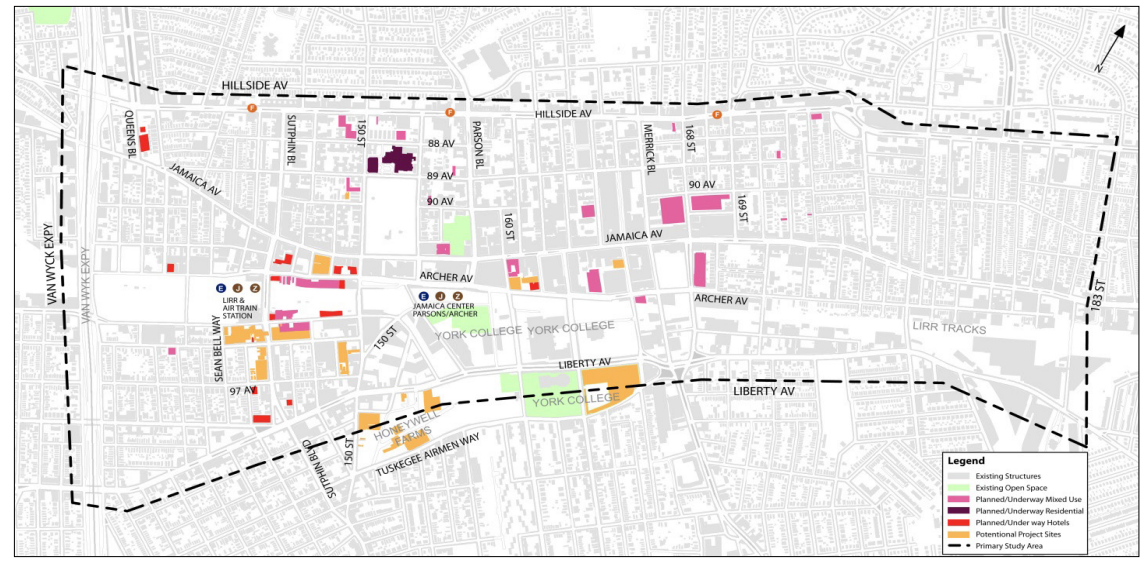


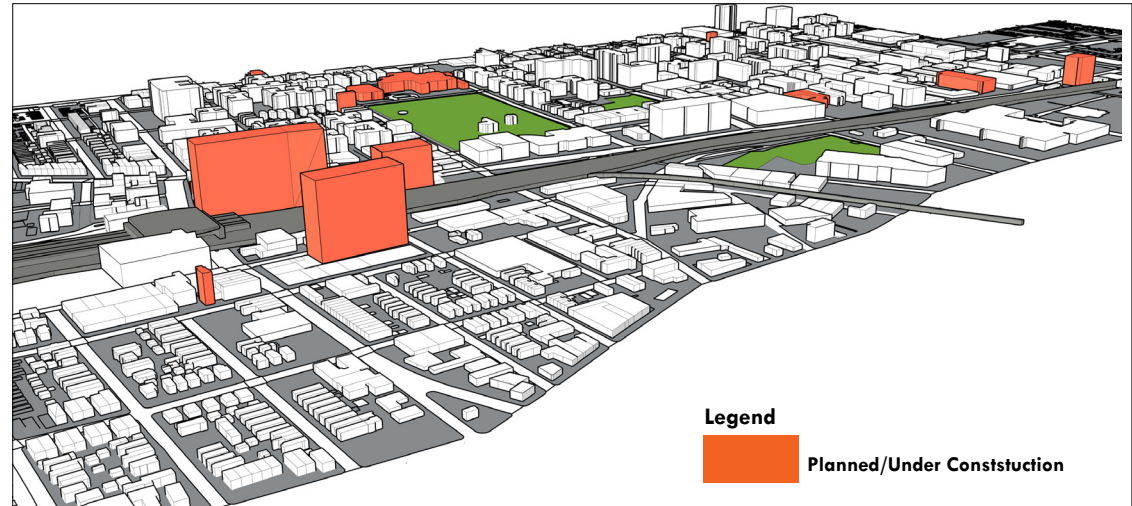
Figure 3-4a: On-going and Proposed Developments



able units, 580 (87%) will be mixed income affordable housing.<sup>1</sup>

The Archer Merrick Apartments will be a medium sized mixed-use development with 89 affordable housing units. The units will vary in size: studios to three bedroom units.<sup>2</sup> A smaller proposed mixed-use development will be the Waltham Hotel, which will contain 2,379 square feet of retail and 58 hotel rooms.<sup>3</sup> Hilton Garden Inn will be a much larger commercial development. It will be the tallest building in the neighborhood, competing with The Crossing at 27 stories high. The hotel will house 210 new rooms, and include full amenities such as a full service restaurant, gym, pool, a meeting space, rooftop bar and green roof terrace.<sup>4</sup>

Figure 3-4b: On-going and Proposed Developments Visualization



### 3.4 Land Use and Trip Generation

The zoning provides the framework for the type of land uses that exists and locations for those that will be permitted in the future. Since many planned developments are known, either under construction or soon to be constructed (i.e. size of projects, number of dwelling units, square feet of commercial/retail, square feet of office space, number of hotel rooms, etc.) this information permits one to estimate the trips (trucks, transit, auto, pedestrians, etc.) that will be generated temporally and where they start and end in the study area thus providing locations where these trips should be added to the network. With these added trips, the future condition 2026 analysis should provide a realistic representation of demand and facilitate the identification of problems - i.e. safety, poor LOS, congestion, etc and to develop solutions and Street Improvement Project (SIPs). The package of recommendations addressing the future travel demand include traffic management such as, signal timing changes and one-way conversion among others.

Footnotes:  
 1. Remba, Rebecca Baird. "Permits Filled: 147-30 Archer Avenue, the Crossing at Jamaica Station." New York Yimby. July 2015. < <https://newyorkyimby.com/2015/07/permits-filled-147-30-archer-avenue-the-crossing-at-jamaica-station.html> >  
 2. Ove Arup & Partners P.C. "Downtown Jamaica Transportation Study--Parking, Goods Movement, and Transit Analysis. Final Report. May 12, 2017.  
 3. Wilson, Reid. "Reveal: Eight story 57 key hotel planned at 97-01 Waltham Street" New York Yimby. October 2016. < <https://newyorkyimby.com/2016/10/reveal-for-eight-story-58-key-hotel-planned-at-97-01-waltham-street-jamaica.html> >  
 4. Wilson, Reid. "Developer Closes on 93-43 Sutphin Boulevard, Plans on 27-Story, 325 Key Hotel, Jamaica" New York Yimby. October 2016. < <https://newyorkyimby.com/2016/10/reveal-for-eight-story-58-key-hotel-planned-at-97-01-waltham-street-jamaica.html> >





# TRAFFIC





Q85 LIMITED

412

8422

MTA

31614



BUS LANE  
BUSES ONLY  
&  
RIGHT TURNS

VEHICLES  
OVER  
13'-5"



NO STOPPING  
OR STANDING

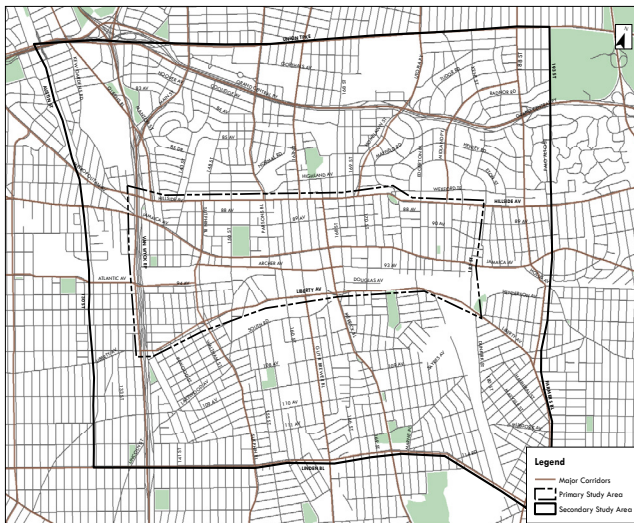


## 4.1 Introduction

As discussed under Zoning and Land-Use, the Jamaica Plan 2007 rezoned 368 blocks expanding the CBD and permitting increased development density will attract significant traffic to the area. The traffic and transportation implications of this scale of development needs to be carefully evaluated, since the FEIS identified 31 intersections would be impacted in the future. Thus the traffic analysis examines network performance and capacity constraints for 2016 existing and 2026 future conditions. The traffic analysis primarily focuses on the primary study area and selected major intersections in the secondary study area.

From the reconnaissance and expressed community concerns, the main traffic problem in the study area is the chronic congestion on major corridors (Figure 4-1) in the downtown core during the AM and PM peak hours. Congestion is generally worst during the weekday PM peak when vehicular demand exceeds capacity. Figures 4-2 and 4-3 show congestion on the street network during the AM and PM peak hours. In addition to addressing congestion issues, the traffic analysis also focused on circulation challenges and safety.

**Figure 4-1: Major Arterials**



The street network in the study areas does not follow the typical grid-like pattern. Many streets, especially north-south ones, are truncated and discontinuous.

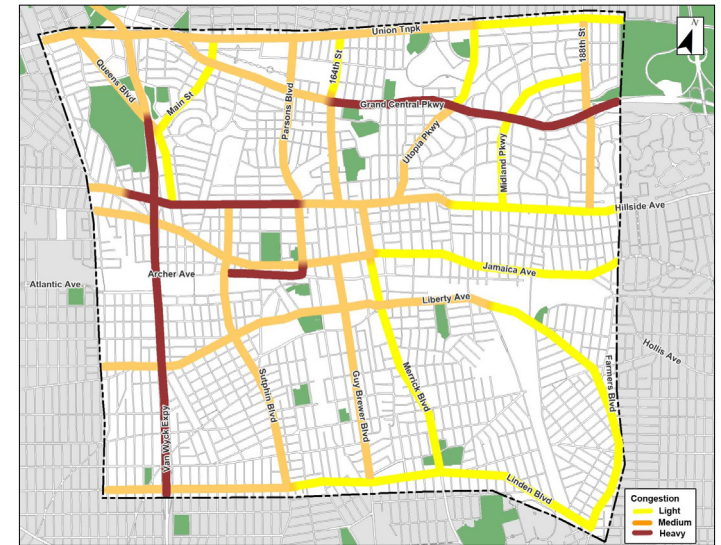
## 4.2 Traffic Circulation Issues in Downtown Jamaica

Many main corridors in Downtown Jamaica experience congestion during peak hours. Several contributory factors to congestion in the downtown core were identified:

1. Physical geometric constraints , limited north-south access (created by the LIRR embankment), narrow two-way streets (less than 30' wide), offset streets (most north-south streets), and irregular street network (see Figure 4-4);
2. High number of buses in the traffic stream – approximately 30% of total traffic;
3. Trucking activity along some major corridors; and
4. High pedestrian volume at major intersections

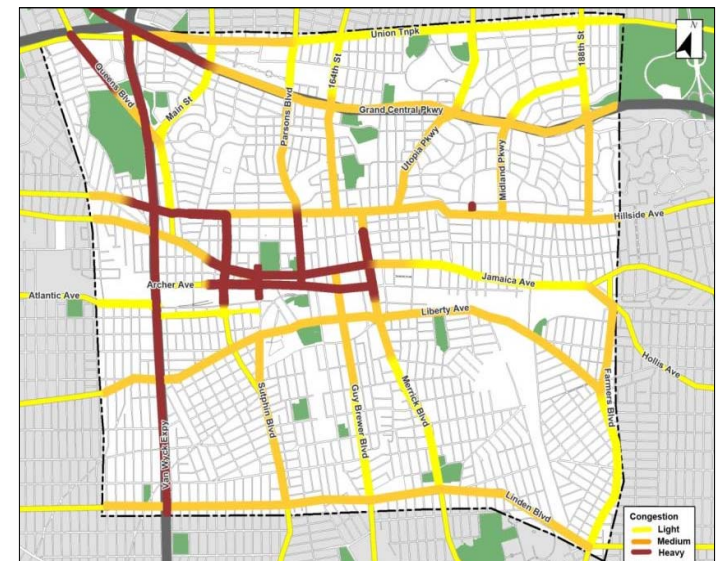
While 150th Street could also provide direct, continuous north/south travel within the primary study area, some segments operate one-way while others as two-way. Another issue affecting traffic circulation is parking on both sides of narrow streets. See Figure 4-5.

**Figure 4-2: Congestion on Major Arterials – AM Peak Hour**



Source: NYCDOT - Jamaica Growth Center Transportation Study; NYMTC BPM Data

**Figure 4-3: Congestion on Major Arterials – PM Peak Hour**



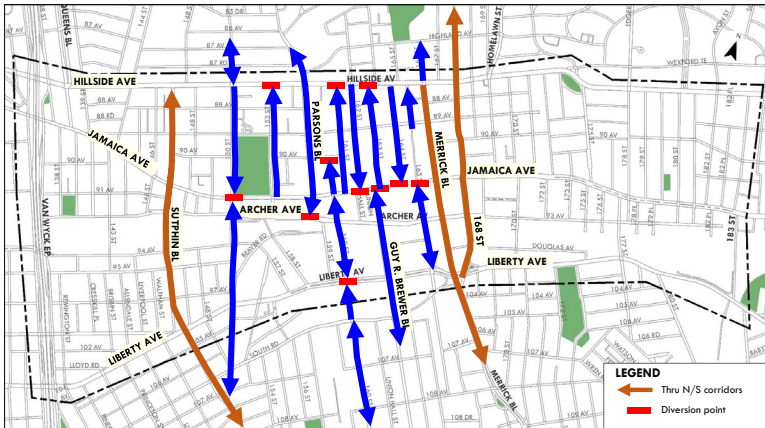
Source: NYCDOT - Jamaica Growth Center Transportation Study; NYMTC BPM Data





Bus Queue on Archer Avenue (at Union Hall Street) looking east

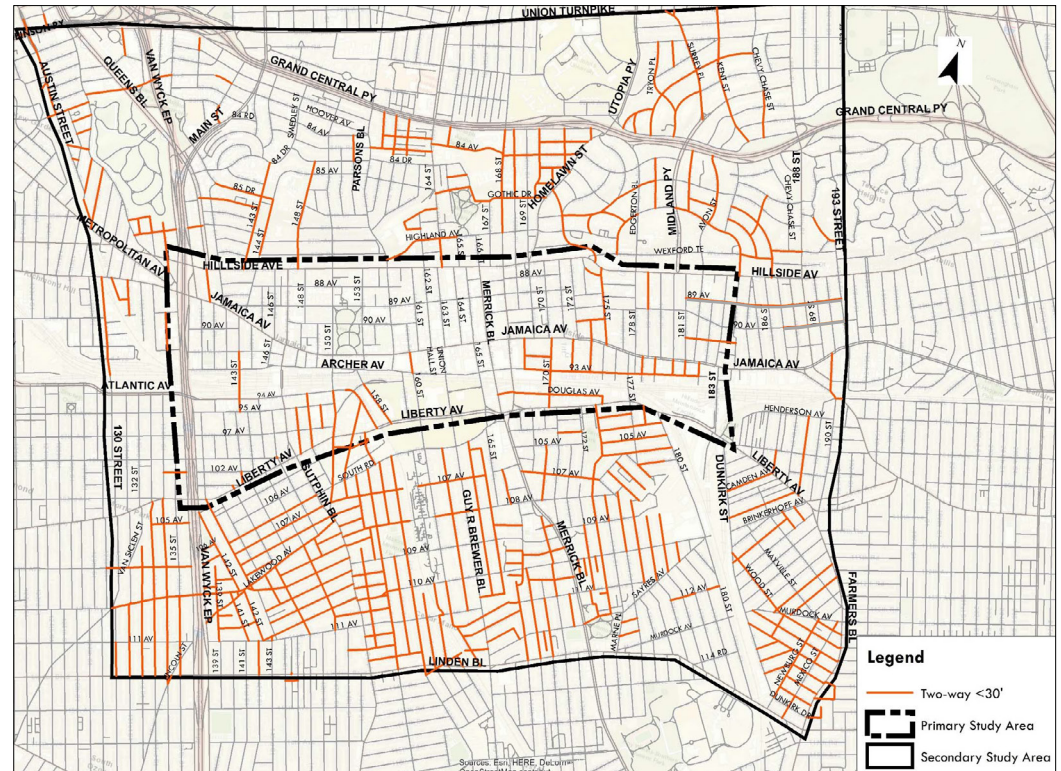
Figure 4-4: Traffic Circulation Challenges



### 4.3 Street Network and Roadway Characteristics

The street network approximates to a disjointed grid-like pattern with many north-south streets terminating after two or three blocks. Additionally, the Long Island Railroad embankment limits continuous north-south travel on most streets in the study area. Many streets less than 30' operate two-way with parking on both sides. Two major regional facilities in the study area are the Van Wyck Expressway, a north-south through truck route that provides access to JFK Airport and Grand Central Parkway, an east-west arterial in the northern section of the secondary study area for non-commercial vehicles.

Figure 4-5: Narrow Two-Way Streets (30' or less)



Within the primary study area, the main east/west corridors are Hillside, Jamaica, Archer, and Liberty Avenues; in the secondary study area, they are Union Turnpike (to the north) and Linden Boulevard (to the south). The main north/south corridors in the primary study area are Sutphin, Parsons, Guy R. Brewer, and Merrick Boulevards, as well as 168th Street; in the secondary study area, they are Queens Boulevard, Main Street, Parsons Boulevard, 164th Street, Homelawn Street/Utopia Parkway, Midland Parkway, and 188th Street (to the north); to the south, they are Sutphin, Guy R. Brewer, Merrick, and Farmers Boulevards as well as Dunkirk Street. The major regional facilities and arterials in the study areas are listed below.

#### Major regional facilities:

- Grand Central Parkway
- Van Wyck Expressway



**East – West Arterials**

- Jamaica Avenue
- Archer Avenue
- Liberty Avenue
- Hillside Avenue
- Atlantic Avenue
- Linden Boulevard
- Union Turnpike

**North-South Arterials**

- Sutphin Boulevard
- Guy R. Brewer Boulevard
- Queens Boulevard
- Parsons Boulevard
- Utopia Parkway
- 188th Street
- Merrick Boulevard
- 168th Street

**4.4 Traffic Data Collection**

A comprehensive traffic data collection plan was executed March, 2016; it included 40 Automatic Traffic Recorder counts (ATRs) locations, 82 intersections for manual turning movement and classification counts (MTMC), 27 intersections for pedestrian counts, travel speed runs on 11 major corridors, and time lapse cameras at 17 locations. See Figure 4-6. A complete list of locations/intersections analyzed are in Appendix A. The classification counts recorded auto, truck, bicycle, and bus; however, due to a high number of commuter vans,

they were classified separately at selected intersections. The MTMC and pedestrian counts were conducted during the AM (7:00 – 9:00), PM (4:00 – 6:00), and Saturday Midday (12:00- 2:00) peak periods. The ATRs were placed for seven consecutive days. Travel speed runs were conducted along eleven corridors during the same peak periods.

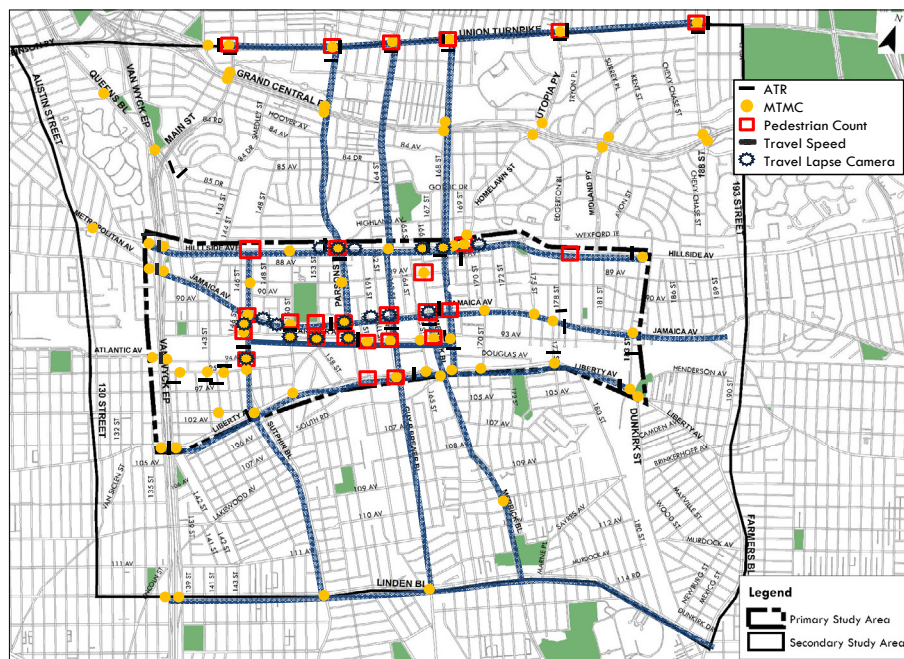
**4.5 Network Traffic Volumes**

The ATR peak hours were:

- Weekday AM peak: 7:30 a.m. to 8:30 a.m.
- Weekday PM peak: 4:45 p.m. to 5:45 p.m.
- Saturday midday peak: 1:00 p.m. to 2:00 p.m.

The data show westbound volumes on the major corridors are the highest during weekday AM peak hour, while eastbound volumes are the highest during the weekday PM peak hour. Hillside Avenue processed the highest traffic volume in the primary study area during all peak hours, while Union Turnpike processed the highest traffic volume in the secondary study area. See Charts 4-1a, 4-1b, 4-2a, and 4-2b for comparison of peak hour traffic volumes on major corridor in the study area.

**Figure 4-6: Traffic Data Collection Locations**



The average AM peak hour eastbound volume ranges from approximately 600 vehicles on Archer Avenue to 1,000 vehicles on Hillside Avenue. The average westbound volume ranges from 600 vehicles on Archer Avenue to 1,300 vehicles on Hillside Avenue (within the primary study area) and 1,400 vehicles on Union Turnpike. Average volumes on the north-south corridors were generally lower. Hillside Avenue and Liberty Avenue had the highest peak hour volume in the primary study area.

The 2016 balanced traffic network volumes can be seen in Figures 4-7 and 4-8. Additional figures for existing Saturday MD peak hour, and the secondary study area AM, PM traffic volumes are shown in Appendix A.

# Main Corridor Traffic Volume

Chart 4-1a: Existing Eastbound Peak Hour Corridor Volume

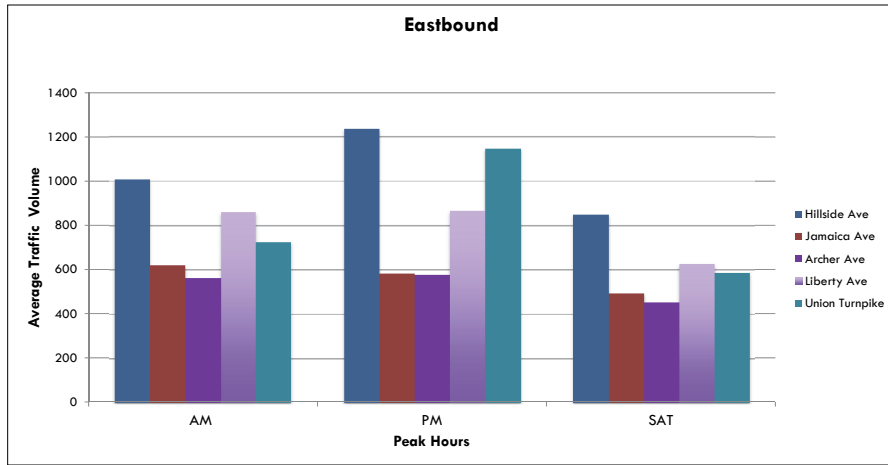


Chart 4-2a: Existing Northbound Peak Hour Traffic

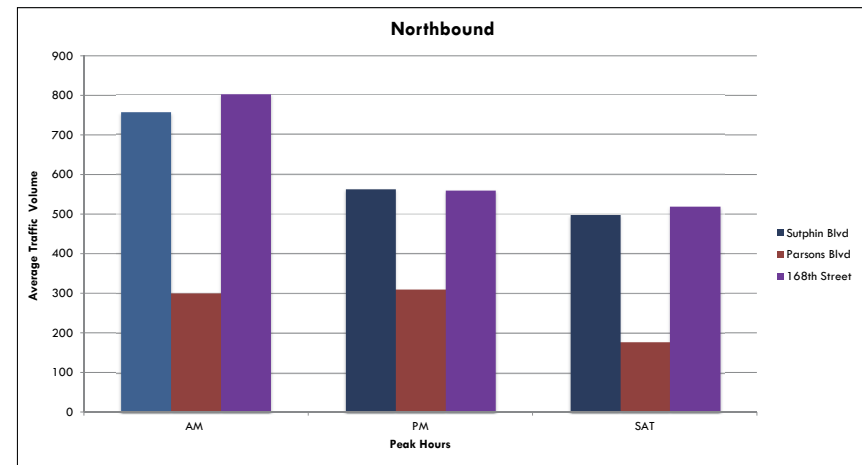


Chart 4-1b: Existing Westbound Peak Hour Corridor Volume

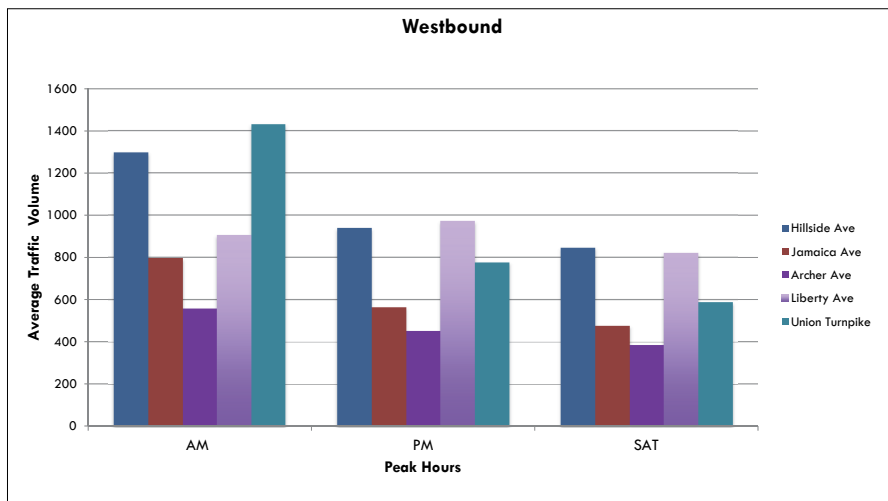


Chart 4-2b: Existing Southbound Peak Hour Traffic

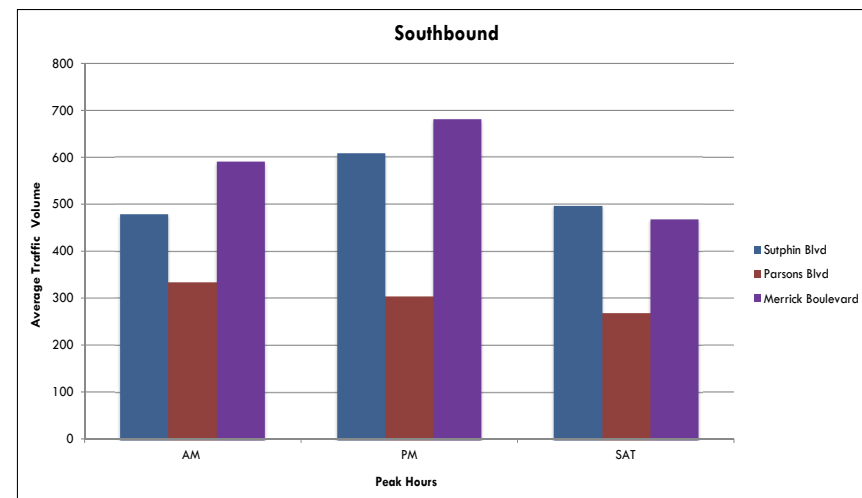
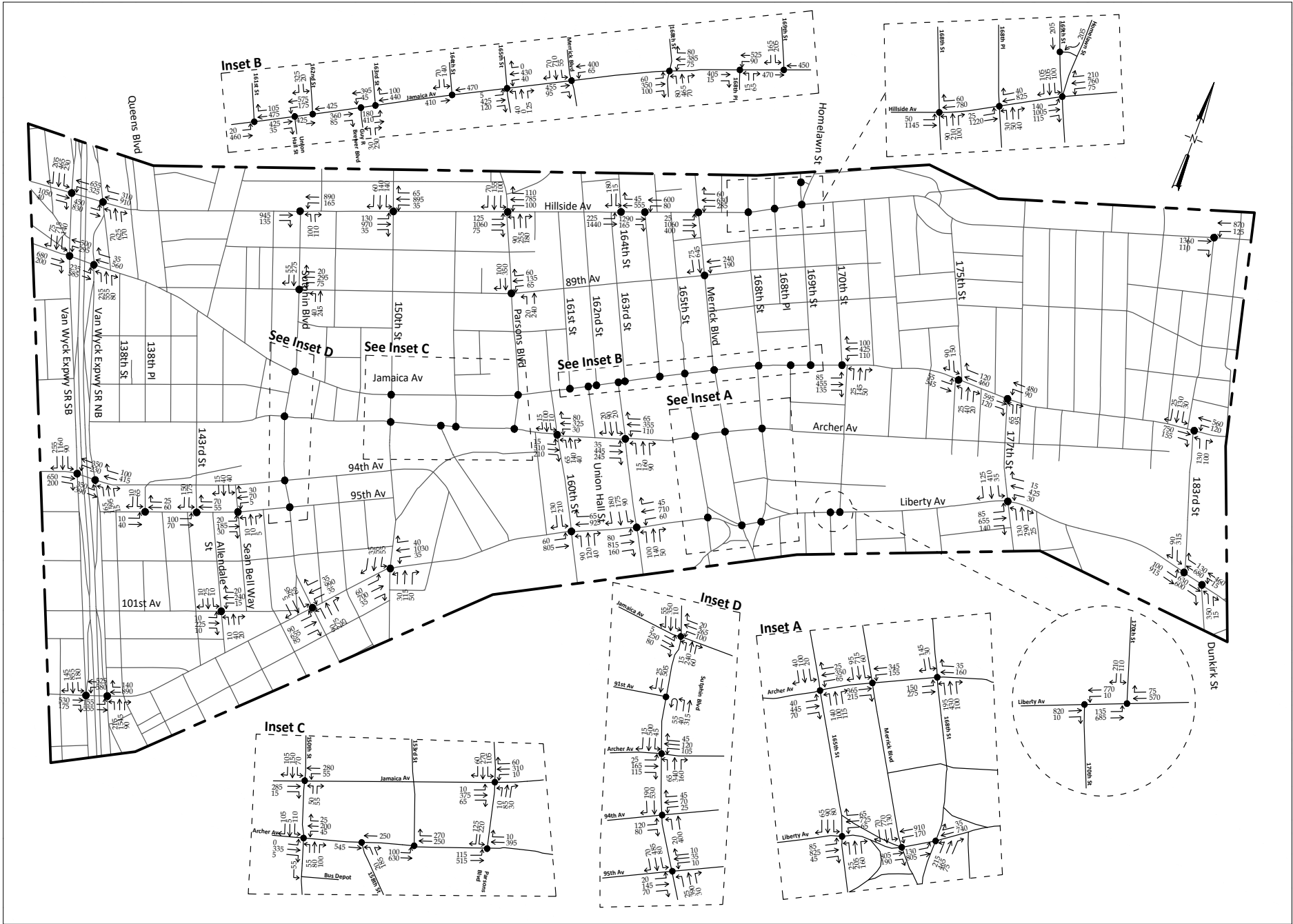




Figure 4-7: 2016 Existing Traffic Volumes - AM Peak Hour



Figure 4-8: 2016 Existing Traffic Volumes - PM Peak Hour





### 4.6 Street Capacity and Level of Service (LOS)

The capacity of a roadway is the maximum rate of flow which can pass through a section of roadway under prevailing traffic, roadway and signalization conditions. Capacity is determined by analyzing the interaction of several factors, including turning movements, signal timing, geometric design of the intersection, pedestrian movements, and parking conditions amongst others. The HCS+/2000 Highway Capacity Manual (HCM) methodology and Synchro analysis were used to determine street capacity within the study area. The methodology requires the use of official signal timings, street geometry, and other relevant information for performing capacity and level of service (LOS) analyses. Several field visits were conducted to observe prevailing conditions.

Traffic flow characteristics are measured in terms of volume-to-capacity (v/c) ratios and delays. The quality of flow is expressed in terms of level of service (LOS), which is based on an average delay experienced per vehicle. When the v/c ratio exceeds 1.0, a facility or intersection is operating at or over capacity. In this situation, traffic congestion occurs with stop-and-start conditions with extensive queuing and delays. Volume-to-capacity ratios of less than 0.85 reflect acceptable traffic conditions, with average delays per vehicle of 45 seconds or less. Table 4-1 shows the level of service criteria for signalized intersections as specified in the 2000 HCM Methodology. All the analyzed intersections were signalized.

Level of service analysis for the 2016 existing conditions were conducted using HCS and Synchro 9.0 software. Operating conditions at 85 intersections were analyzed for the AM and PM peak hours, and 8 intersections for the Saturday midday peak hour. Detailed results of the 2016 Existing Conditions analysis, with v/c ratios, delays, and level of service are shown in Appendix A. Figures 4-9 and 4-10 show the AM and PM peak hours overall intersection, respectively, while Figures 4-11 and 4-12 show the approach LOS.

During the AM peak hour the following intersections operated at LOS E or worse:

1. Liberty Avenue and Van Wyck Expressway Service Road East
2. Liberty Avenue and Dunkirk Street
3. Sutphin Boulevard and 95th Avenue
4. Sutphin Boulevard and 94th Avenue
5. Jamaica Avenue and 150th Street
6. Jamaica Avenue and 183rd Street

7. Archer Avenue and 160th Street
8. Archer Avenue and 165th Street

While only eight intersections operated at LOS E or worse, 25 intersections had one or more approaches that operated at LOS F.

During the PM peak hour the following intersections operated at LOS E or worse:

1. Sutphin Boulevard and 94th Avenue
2. Sutphin Boulevard and Archer Avenue
3. Hillside Avenue and Parsons Boulevard
4. Merrick Boulevard and Liberty Avenue
5. Jamaica Avenue and 183rd Street

Similar to the AM peak hour, there were 23 intersections in the PM peak that had one or more approach operating at LOS F.

While most intersections in the primary study area have acceptable operating conditions (LOS D or better), the approach LOS results are less than desired. There were 39 and 33 intersections during the AM and PM peak hour, respectively, with approach LOS E or F. See Appendix A for existing and future conditions LOS tables.

**Table 4-1: Signalized Intersection Level of Service (LOS) Criteria**

Level of Service	Control Delay per Vehicle	Description of Traffic Condition
A	≤ 10.0	LOS A describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all.
B	> 10 to 20	LOS B describes operations with control delay greater than 10 and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	> 20 to 35	LOS C describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	>35 to 55	LOS D describes operations with control delay greater than 35 and up to 55 sec/veh. The influence of congestion becomes more noticeable at this level. Longer delays may result from a combination of unfavorable progression, long cycle lengths, and/or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	>55 to 80	LOS E describes operations with control delay greater than 55 and up to 80 sec/veh. These higher delay values generally indicate poor progression, long cycle length, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	> 80	LOS F describes operations with delay in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.
Sources: Highway Capacity Manual, Transportation Research Board, National Research Council, Washington D.C., 2000;		
Note: Control delay is measured in terms of seconds per vehicle (sec/veh).		









Figure 4-11: Existing Approach Level of Service - AM Peak Hour





Figure 4-12: Existing Approach Level of Service - PM Peak Hour



### 4.7 Vehicular Speeds

Major corridors in the study area experience congestion during peak hours as the HCS analysis LOS show. Typical factors that contribute to congestion are: high vehicular volumes, vehicle/pedestrian conflicts, illegal curbside use (double parking and standing), and poor signal coordination, etc. However, in Downtown Jamaica, a major contributor to congestion is the high number of buses in the traffic stream.

The “floating car” method (a technique whereby a field vehicle travels at speeds under prevailing traffic conditions) was used to measure travel time/speeds on major corridors. Three travel time runs were performed along the following corridors during the weekday AM (7:00-9:00) and PM (4:00-6:00) peak period.

#### East-West Corridors

- Union Turnpike
- Hillside Avenue
- Jamaica Avenue
- Archer Avenue
- Liberty Avenue
- Linden Boulevard

#### North-South Corridors

- Parsons Boulevard
- 164th Street
- 168th Street
- Sutphin Boulevard
- Guy R. Brewer Boulevard
- Merrick Boulevard

Travel speeds along these corridors ranged from 6 -19 mph and 9 -14 mph during the AM and PM peak periods, respectively. Figures 4-13 and 4-14 show the average recorded travel speeds. In the primary study area, the north-south corridors (168th Street, Parsons Boulevard, Merrick Boulevard, Sutphin Boulevard, and Guy R. Brewer Boulevard) average travel speeds range from 3 to 9 mph. The slowest recorded corridor travel speed was 6.9 mph northbound on 168th Street during the AM peak hour and 7.0 mph westbound on Hillside Avenue during the PM peak hour. See Table 4-2 for corridor limits and a summary of travel speed.

### 4.8 VISSIM Analysis

While HCS and/or Synchro are typical intersection analysis tools, due to the high percentage of buses in the traffic stream, it was necessary to use VISSIM, a more sophisticated analysis tool, to simulate the existing conditions and evaluate proposed “what if” future scenario changes to the network. The

Figure 4-13: Existing Network Travel Speed - AM Peak Hour

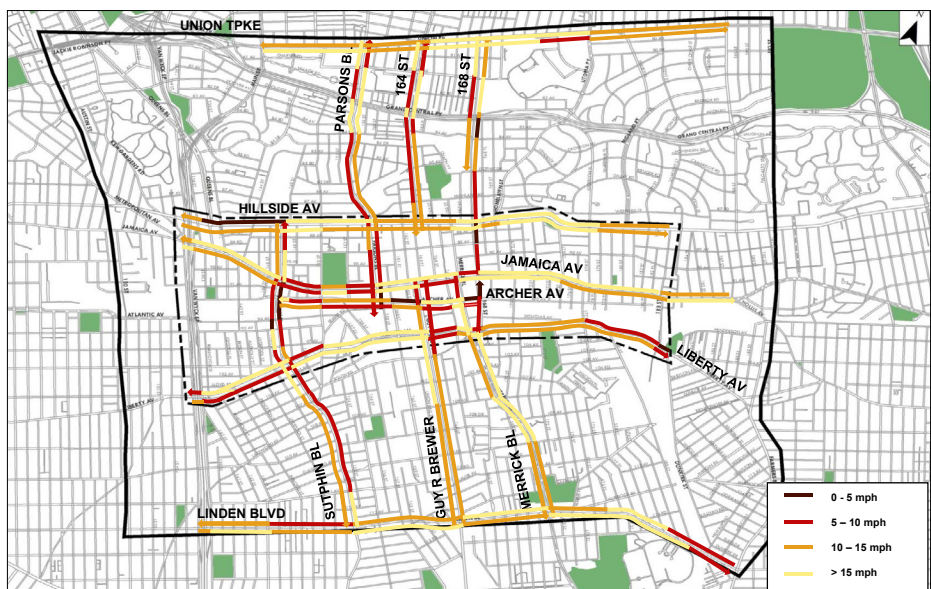
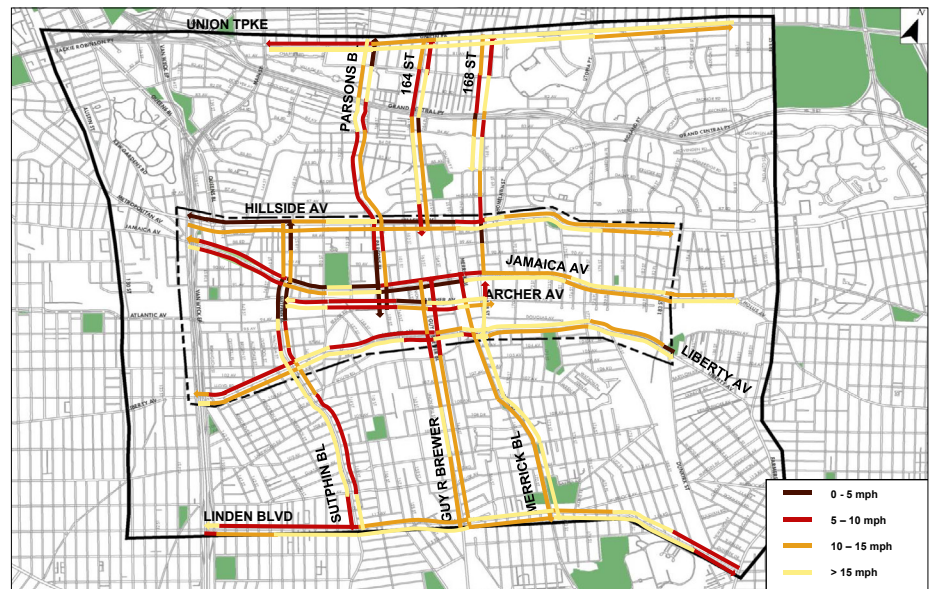


Figure 4-14: Existing Network Travel Speed - PM Peak Hour





**Table 4-2: Average Travel Speed (Floating Car) along Major Corridors**

Corridor	Limits	AM Peak	PM Peak
		Average Travel Speed (mph)	Average Travel Speed (mph)
Hillside Ave EB	Van Wyck Expy and 183rd St	13.5	13.0
Hillside Ave WB	Van Wyck Expy and 183rd St	12.1	14.8
Jamaica Ave EB	Van Wyck Expy and 183rd St	11.9	8.8
Jamaica Ave WB	Van Wyck Expy and 183rd St	13.1	8.2
Archer Ave EB	Van Wyck Expy and 183rd St	8.9	12.6
Archer Ave WB	Van Wyck Expy and 183rd St	7.9	13.3
Liberty Ave EB	Van Wyck Expy and 183rd St	11.4	12.3
Liberty Ave WB	Van Wyck Expy and 183rd St	11.0	10.5
Sutphin Blvd NB	Linden Blvd and Hillside Ave	7.1	10.1
Sutphin Blvd SB	Linden Blvd and Hillside Ave	9.7	8.3
Parsons Blvd NB	Archer Ave and Union Tpke	7.5	7.6
Parsons Blvd SB	Archer Ave and Union Tpke	8.7	8.4
Guy R Brewer Blvd NB	Linden Blvd and Jamaica Ave	10.5	8.5
Guy R Brewer Blvd SB	Linden Blvd and Jamaica Ave	12.9	10.6
Merrick Blvd NB	Linden Blvd and Jamaica Ave	13.0	12.2
Merrick Blvd SB	Linden Blvd and Jamaica Ave	13.2	14.5
168th St NB	Jamaica Ave and Union Tpke	6.9	8.0

PTV VISSIM model was used for the Downtown Jamaica simulation due to its ability to analyze public transit in a network. The VISSIM network boundaries are Hillside Avenue to the north, South road to the south, 170th St to the east, and Van Wyck Expressway Service Road to the west; it includes 121 signalized and 160 unsignalized intersections, and 56 bus routes coded in the network.

**Simulations:**

VISSIM is capable of two types of simulation - Static Routing and Dynamic Assignment. Static Routing is used to model transportation network based on fixed origin-destination (O-D) path, and relies mainly on input such as turning movement counts, and the corresponding signal timing. It is useful for small networks. It is also limited to evaluating existing conditions and should not be applied to future conditions and/or other scenarios. The Dynamic Assignment Simulation is generally used to model the route choice behavior of drivers, with O-D matrix as flow input instead of fixed O-D paths. This was used due to its ability to evaluate different scenarios (proposed recommendations) and the network size.

With the calibrated existing network was done, the volume in the O-D matrix was projected for the future conditions (10 years) based on the City Environ-

**Figure 4-15: Snapshot of VISSIM Analysis at Archer Avenue/153rd Street - Existing Conditions PM Peak Hour**



mental Quality Review (CEQR) manual. That is an annual background growth rate of 0.5% for the first five years and 0.25% for the years after. In addition, estimated trips for known future developments and population change by census tracts were added to the network. After the simulation coding and calibration were done, several 3D video clip were recorded to illustrate the traffic operations on selected corridors. Figure 4-15 shows a snap shot of the simulation.

**Results:**

The main objective of using VISSIM to simulate traffic in Downtown Jamaica is to realistically analyze existing and future conditions. VISSIM has various evaluation parameters or measures of effectiveness such as travel time, density, delay and queue length to determine link or network performance. Figures 4-16 and 4-17 show the existing conditions average travel speed for all vehicle types during the AM and PM peak hour respectively.

**Figure 4-16: Average Travel Speed - Existing Conditions AM Peak Hour**



**Figure 4-17: Average Travel Speed - Existing Conditions PM Peak Hour**



To calibrate the VISSIM model to better reflect observed conditions, the floating car methodology was used. Table 4-3, Chart 4-3a, and Chart 4-3b compares VISSIM results and the field run measured speed.

**Table 4-3: Existing Average Travel Speed for All Vehicle**

Corridor	AM		PM	
	VISSIM Existing	VISSIM Future	VISSIM Existing	VISSIM Future
168th St NB	7.42	3.98	10.54	9.28
Archer Ave EB	10.42	9.76	8.95	7.91
Archer Ave WB	8.01	6.77	7.85	6.44
Hillside Ave EB	11.65	11.37	10.46	9.21
Hillside Ave WB	11.68	11.10	9.73	9.10
Jamaica Ave EB	12.15	10.74	8.68	8.39
Jamaica Ave WB	13.07	12.52	9.37	9.10
Liberty Ave EB	12.02	10.78	11.80	11.66
Liberty Ave WB	13.94	12.76	12.95	11.97
Merrick Blvd NB	13.90	13.63	11.72	11.41
Merrick Blvd SB	13.80	12.56	10.86	9.69
Parsons Blvd NB	5.65	4.99	8.08	4.04
Parsons Blvd SB	6.04	5.26	8.15	4.94
Sutphin Blvd NB	8.91	7.32	8.54	7.60
Sutphin Blvd SB	10.70	7.87	5.82	4.95

The VISSIM simulation model was also used to evaluate proposed changes for the future, such as converting 150th Street between Hillside Avenue and Jamaica Avenue from one-way southbound to two-way operation. See details of analysis and results in the recommendations chapter.



Chart 4-3a: Average Travel Speed For All Traffic - AM Peak

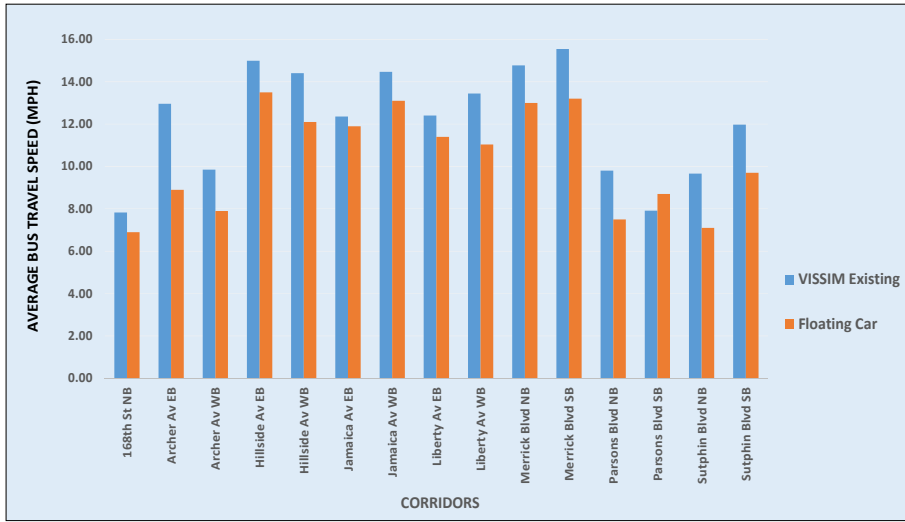
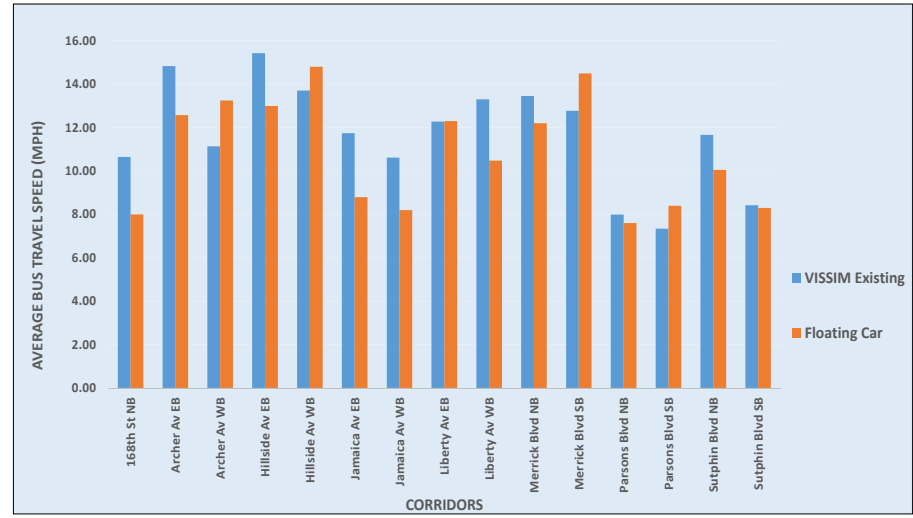


Chart 4-3b: Average Travel Speed For All Traffic - PM Peak



#### 4.9 Future (2026) Traffic Conditions

The future 2026 traffic volume was derived from the existing volume (2016) projected out 10 years using the City Environmental Quality Review (CEQR) manual guidelines. An annual background growth rate of 0.5% for the first five years and 0.25% for the last five years was applied to existing volumes. Also, estimated trips from population change by census tracts and known future developments were added. Figures 4-18 and 4-19 show the 2026 AM and PM peak hour traffic volumes in the primary study area. Saturday MD peak hour and the secondary study area AM, PM traffic volumes are shown in Appendix A.

The Highway Capacity Manual Methodology level of service (LOS) analysis showed operating conditions in the study area will deteriorate significantly. Under existing conditions, there were 15 and 10 intersections during the AM and PM peak hours operating at LOS E or F, respectively. Under the future conditions, 30 and 33 intersections will operate at LOS E/F during the AM and PM peak hour, respectively. The future conditions intersection LOS in the primary study area are shown in Figures 4-20 and 4-21, while Figure 4-22 and 4-23 show the approach LOS. The future conditions LOS tables are shown in Appendix A.

During the AM peak hour the following intersections are projected to operate at LOS E or worse in the primary study area:

1. Hillside Avenue and 138th Street
2. Hillside Avenue and Parsons Boulevard
3. Jamaica Avenue and 150th Street
4. Jamaica Avenue and 168th Street
5. Jamaica Avenue and 183rd Street
6. Archer Avenue and Sutphin Boulevard
7. Archer Avenue and 160th Street
8. Archer Avenue and 165th Street
9. Liberty Avenue and Van Wyck Expressway Service Road East
10. Liberty Avenue and Van Wyck Expressway Service Road West
11. Liberty Avenue and 170th Street
12. Liberty Avenue and 177th Street
13. Liberty Avenue and 183rd Street
14. Liberty Avenue and Dunkirk Street
15. Sutphin Boulevard and 94th Avenue
16. Sutphin Boulevard and 95th Avenue

During the PM peak hour the following intersections are projected to operate at LOS E or worse in the primary study area:

1. Hillside Avenue and 138th Street
2. Hillside Avenue and 150th Street
3. Hillside Avenue and Parsons Boulevard
4. Jamaica Avenue and 150th Street
5. Jamaica Avenue and 162nd Street
6. Jamaica Avenue and 183rd Street
7. Archer Avenue and Sutphin Boulevard
8. Archer Avenue and 160th Street
9. Archer Avenue and 165th Street
10. Archer Avenue and 168th Street
11. Liberty Avenue and Van Wyck Expressway Service Road East
12. Liberty Avenue and Van Wyck Expressway Service Road West
13. Liberty Avenue and Merrick Boulevard
14. Liberty Avenue and 177th Street
15. Liberty Avenue and 183rd Street
16. Liberty Avenue and Dunkirk Street
17. Atlantic Avenue and Van Wyck Expressway Service Road West
18. Atlantic Avenue and Van Wyck Expressway Service Road East
19. Sutphin Boulevard and 94th Avenue
20. Sutphin Boulevard and 95th Avenue

Tables 4-6 and 4-7 provide a comparison of existing and future LOS during the AM and PM peak hours. They show the 9 and 8 intersections, respectively, will deteriorate to LOS F or failing. In addition to the future conditions LOS and delays, the future travel speeds also identify congestion.



**Table 4-4: Intersection LOS Comparison - AM Peak Hour**

Intersection	Intersection LOS	
	Existing	Future
Hillside Av & 138th St	E	F
Hillside Av & Sutphin Blvd	C	D
Hillside Av & Parsons Blvd	D	E
Jamaica Av & 168th St	D	F
Jamaica Av & 170th St	C	D
Jamaica Av & 177th St	C	D
Jamaica Av & 183rd St	E	F
Archer Av & Sutphin Blvd	D	E
Archer Av & 158th St	C	D
Archer Av & 160th St	D	F
Archer Av & 168th St	C	D
Liberty Av & Van Wyck Expwy SR NB	D	E
Liberty Av & Sutphin Blvd	D	E
Liberty Av & Guy R Brewer Blvd	C	D
Liberty Av & 165th St	B	C
Liberty Av & 170th St	D	E
Liberty Av & 177th St	E	F
Liberty Av & 183rd St	E	F
Atlantic Av & Van Wyck Expwy SR NB	C	D
Sutphin Blvd & 95th Av	E	F
Parsons Blvd & 89th Av	C	D
Union Tpke & Parsons Blvd	D	E
Union Tpke & 164th St	D	E
Union Tpke & 168th St	B	C
GCP SR WB & Main St	D	E
GCP SR EB & Parsons Blvd	D	E
GCP SR EB & 168th St	C	D
GCP SR WB & Utopia Pkwy	D	E
GCP SR EB & Utopia Pkwy	D	E
GCP SR WB & 188th St	E	F
GCP SR EB & 188th St/McLaughlin Av	E	F
Linden Blvd & Van Wyck Expwy SR SB	C	D
Linden Blvd & Van Wyck Expwy SR NB	D	E
Linden Blvd & Sutphin Blvd	C	D
Linden Blvd & Farmers Blvd	D	E
Merrick Blvd & 110th Av	C	D

**Table 4-5: Intersection LOS Comparison - PM Peak Hour**

Intersection	Intersection LOS	
	Existing	Future
Hillside Av & 138th St	D	E
Hillside Av & Sutphin Blvd	C	D
Hillside Av & Parsons Blvd	D	E
Jamaica Av & 165th St	C	D
Jamaica Av & 183rd St	E	F
Archer Av & Sutphin Blvd	D	E
Archer Av & 160th St	D	E
Archer Av & 165th St	E	F
Archer Av & 168th St	C	E
Liberty Av & Van Wyck Expwy SR SB	D	E
Liberty Av & Van Wyck Expwy SR NB	D	E
Liberty Av & Merrick Blvd	E	F
Liberty Av & 168th St	C	D
Liberty Av & 177th St	D	F
Liberty Av & 183rd St	D	E
Liberty Av & Dunkirk St	E	F
Atlantic Av & Van Wyck Expwy SR SB	D	E
Atlantic Av & Van Wyck Expwy SR NB	D	E
Sutphin Blvd & 95th Av	E	F
Union Tpke & Parsons Blvd	D	F
Union Tpke & 164th St	D	E
Union Tpke & 168th St	D	E
GCP SR EB & Utopia Pkwy	D	E
GCP SR EB & 188th St/McLaughlin Av	E	F
Linden Blvd & Van Wyck Expwy SR NB	D	E
Linden Blvd & Merrick Blvd	D	E
Linden Blvd & Sutphin Blvd	D	E
Linden Blvd & Farmers Blvd	D	E
Hillside Av & Metropolitan Av	C	E
Merrick Blvd & 110th Av	C	D



Figure 4-18: Future Traffic Volumes - AM Peak Hour (Primary Study Area)





Figure 4-19: Future Traffic Volumes - PM Peak Hour (Primary Study Area)









Figure 4-22: Future Condition Approach Level of Service - AM Peak Hour





Figure 4-23: Future Condition Approach Level of Service - PM Peak Hour



## 4.10 Future Travel Speed

To evaluate the additional trips impact on future operating conditions, the future travel speeds were computed based on the existing speeds (floating car) and future delays from the HCS analysis. Speeds were also modelled using VISSIM. Average speed along most corridors is shown to decrease by 1-2 mph under future conditions. See Table 4-6.

**Table 4-6: Average Travel Speed - Existing vs Future**

Corridor	AM			PM		
	Existing	Future	Change (mph)	Existing	Future	Change (mph)
168th St NB	7.82	5.44	2.38	10.65	9.55	1.10
Archer Ave EB	12.96	11.99	0.97	14.84	9.79	5.05
Archer Ave WB	9.85	8.40	1.44	11.14	10.66	0.47
Hillside Ave EB	14.99	14.15	0.84	15.43	14.46	0.97
Hillside Ave WB	14.40	13.40	1.01	13.71	12.65	1.06
Jamaica Ave EB	12.36	9.00	3.36	11.74	9.17	2.57
Jamaica Ave WB	14.46	12.58	1.88	10.62	10.35	0.27
Liberty Ave EB	12.41	10.92	1.49	12.27	11.82	0.45
Liberty Ave WB	13.44	12.80	0.65	13.31	12.29	1.02
Merrick Blvd NB	14.77	14.65	0.12	13.46	13.11	0.35
Merrick Blvd SB	15.55	13.79	1.76	12.77	9.83	2.94
Parsons Blvd NB	9.81	8.29	1.52	7.99	4.96	3.03
Parsons Blvd SB	7.92	7.77	0.15	7.35	5.51	1.84
Sutphin Blvd NB	9.66	9.15	0.51	11.67	10.59	1.08
Sutphin Blvd SB	11.98	10.08	1.90	8.42	8.28	0.14

Similar to the existing conditions analysis, the future computed travel speeds (floating car) were used to validate the future VISSIM travel speeds. See Table 4-7 for the comparison. Figures 4-24 and 4-25 show the VISSIM future travel speed for AM and PM peak hours. Congestion will persist and get worse.

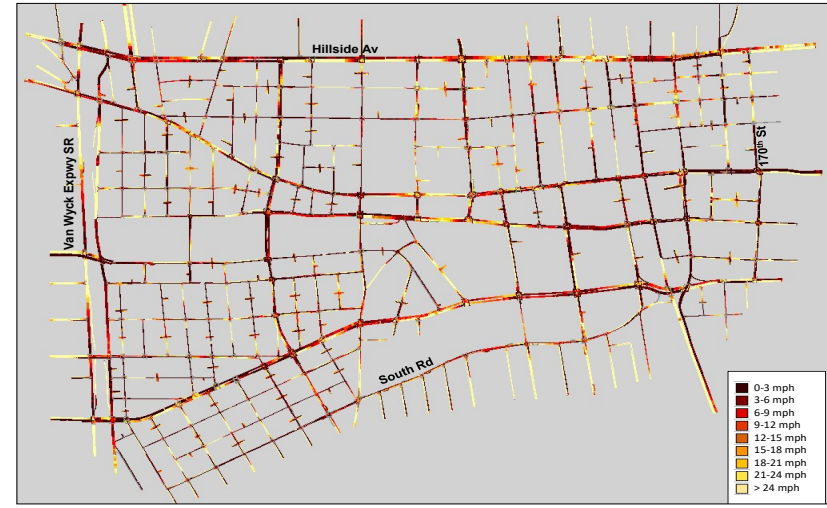
In conclusion, the traffic analysis reveals 7 of the 8 corridors analyzed travel speeds will deteriorate from existing to future conditions by approximately 5 mph. Under existing conditions 16 intersections operate at LOS E or F while under future conditions 41 intersections will operate

**Table 4-7: Future Travel Speed Validation**

Corridor	AM		PM	
	VISSIM Future	Future (Floating Car)	VISSIM Future	Future (Floating Car)
168th St NB	5.44	4.07	9.55	8.24
Archer Ave EB	11.99	8.65	9.79	8.97
Archer Ave WB	8.40	7.20	10.66	9.05
Hillside Ave EB	14.15	16.20	14.46	13.20
Hillside Ave WB	13.40	15.87	12.65	11.01
Jamaica Ave EB	9.00	9.30	9.17	5.86
Jamaica Ave WB	12.58	10.51	10.35	9.32
Liberty Ave EB	10.92	9.76	11.82	10.40
Liberty Ave WB	12.80	11.40	12.29	10.48
Merrick Blvd NB	14.65	12.79	13.11	11.10
Merrick Blvd SB	13.79	12.98	9.83	8.40
Parsons Blvd NB	8.29	7.20	4.96	6.53
Parsons Blvd SB	7.77	8.29	5.51	7.34
Sutphin Blvd NB	9.15	6.88	10.59	10.05
Sutphin Blvd SB	10.08	8.42	8.28	8.03

at LOS E or F. Average delay increased as much as 66% on key corridors such as 168th Street and Jamaica Avenue. The pedestrian analysis shows LOS A or B for most intersections; however, the pedestrian density makes walking difficult in the downtown core area which will worsen in the future due to the higher development density.

**Figure 4-24: Average Travel Speed - Future AM Peak Hour (VISSIM)**



**Figure 4-25: Average Travel Speed - Future PM Peak Hour (VISSIM)**







# PARKING





JOBS - JOBS - JOBS

LAW OFFICE

LONG ISLAND EXPRESS DELI & GROCERY CO.  
CANDY - BAGELS - BREAD - BEER - MEAT/PAVES - SOY - HONEYDEW - PINEAPPLE - LITTO CORNED BEEF

SEVEN DAYS  
CROWN FRIED CHICKEN  
CROWN PIZZA

Sutphin Blvd  
Q43  
NISSAN QUEENS  
8492

THE CROSSING @ JAMAICA STATION

Just point

ALTIMA

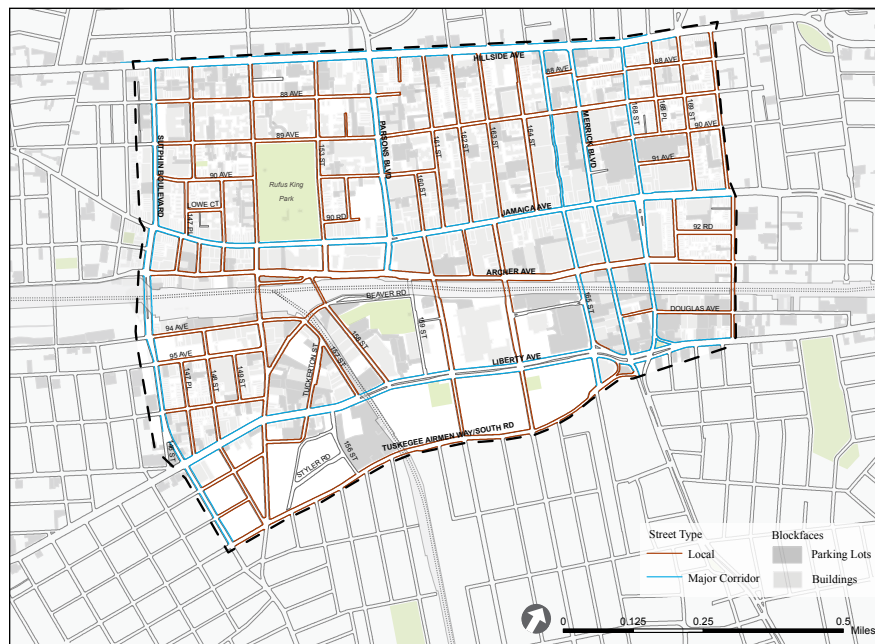


## 5.1 Introduction

Like congestion, parking is a “hot” issue in Downtown Jamaica, thus necessitating a comprehensive analysis of parking needs, supply and demand. The parking analysis was conducted by ARUP and its sub-consultant BFJ. An abbreviated version of the analysis follows; for complete analysis, see Chapter 2 Supplementary Appendix.

The parking analysis area is bounded by Hillside Avenue (north), 170th Street (east), Tuskegee Airmen Way (south), and Sutphin Boulevard (west); see Figure 5-1. Four peak periods were analyzed: AM: 9-11am, Midday: 12-2pm, PM: 3-5pm, and Saturday Midday: 12-2 p.m.

Figure 5-1: Parking Analysis Area

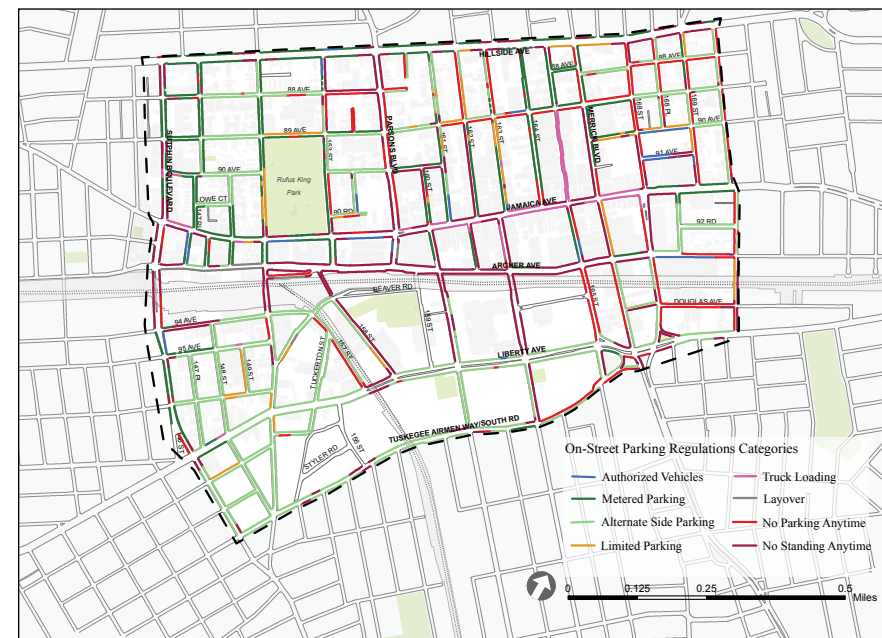


## 5.2 On-Street Parking

Most on-street parking is parallel curbside. There are over 250 unique parking regulation signage codes stipulating where and when vehicles can stop, stand, or park. They are summarized into nine categories below and shown in Figure 5-2:

- **Alternate Side Parking:** Parking is allowed at all times, except when street

Figure 5-2: On-Street Parking Regulation



cleaning regulations are in effect.

- **Metered Parking:** Users pay for parking during the times and days stated on posted sign; average price \$0.25/15 minute
- **Limited Parking:** No parking or standing is allowed during the hours specified on the regulation signage. Parking is typically allowed during nights and weekends.
- **No Standing Anytime:** Waiting and loading/unloading is prohibited.
- **No Parking Anytime:** Waiting is prohibited but loading/unloading and drop-off/pickup activities are permitted.
- **Truck Loading and Unloading:** Parking is prohibited except for trucks loading and unloading; truck loading/unloading is also permitted in “No Parking” zones
- **Authorized Vehicles:** Only users with valid placards are permitted to park at the specified location and times.
- **Taxi or Bus Layover:** The segment is reserved for taxis and bus layover between trips.
- **No Parking Temporary:** Temporary regulations prohibit parking near construction sites.

## 5.2.1 Parking Supply

To facilitate the analysis, on-street parking spaces were broken into four categories: metered, unmetered, authorized, and truck loading. Nearly two-thirds of the on-street parking supply is unmetered and a third is metered. The largest concentration of unmetered parking is in the southwest corner of the Study Area while the metered parking is concentrated north of the LIRR right-of-way. Space allocated to truck loading and unloading is limited.

The parking supply does not change significantly between the peak periods. Table 5-1 shows the number and percentage of on-street parking by category.

**Table 5-1: Parking Supply by Peak Period**

Parking Categories	AM		Midday		PM		Saturday	
	#	%	#	%	#	%	#	%
Unmetered	2,253	58%	2,281	57%	2,275	61%	2,462	60%
Metered	1,373	35%	1,373	34%	1,261	34%	1,378	34%
Authorized	170	4%	170	4%	170	5%	98	2%
Truck Loading	98	3%	160	4%	27	1%	160	4%
<b>Total</b>	<b>3,894</b>	<b>100%</b>	<b>3,984</b>	<b>100%</b>	<b>3,733</b>	<b>100%</b>	<b>4,098</b>	<b>100%</b>

## 5.2.2 On-Street Parking Utilization

Occupancy counts were conducted during the four peak parking periods. Parking occupancy is determined by the number of vehicles parked divided by capacity. The number of parked vehicles were broken down into the following categories:

- Parked cars
- Parked trucks
- Parked, other (buses and commuter vans)
- Double-parked vehicles
- Illegally parked vehicles

A roadway segment's parking occupancy is expressed as a percentage reflecting the number of vehicles parked divided by the capacity. The number of vehicles parked includes double-parked and illegally parked vehicles to reflect total demand. The occupancy rate is classified into the following categories:

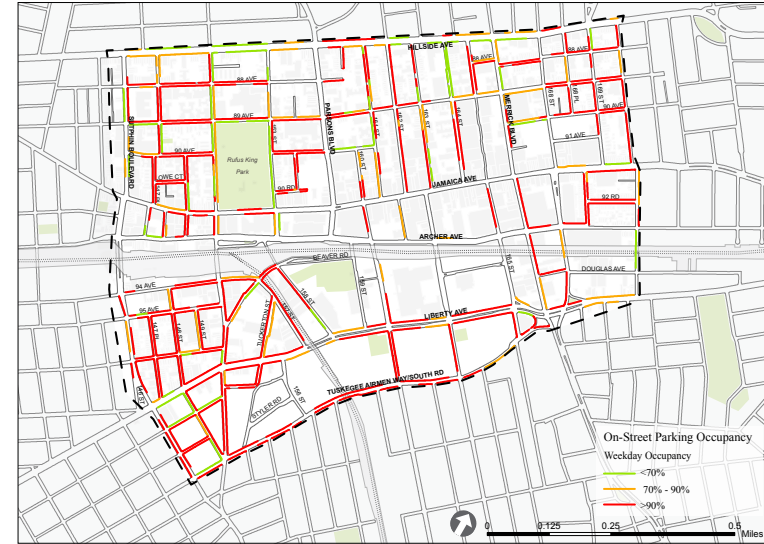
- Underutilized – less than 70% occupancy
- Well-utilized – between 70%-90% occupancy
- At or over capacity – greater than 90% occupancy

Table 5-2 shows parking supply and average occupancy during the peak hours. Figure 5-3 and 5-4 show the average weekday and Saturday Midday occupancy, respectively. Parking occupancy peaks during the Morning and Midday peak periods and decreases during the Evening. Unmetered spaces have the highest consistent occupancy while me-

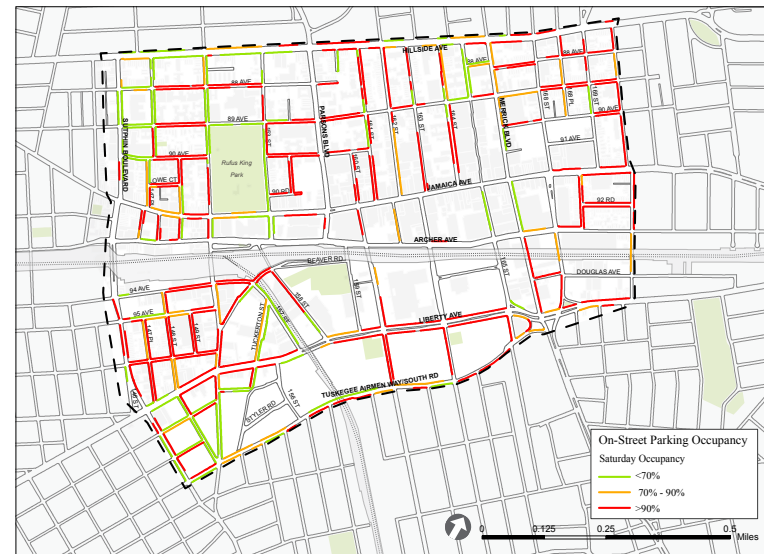
**Table 5-2: Parking Supply/Occupancy during Peak Periods**

	Morning		Midday		Evening		Saturday	
	No. of available Parking Space	% Occupied	No. of available Parking Space	% Occupied	No. of available Parking Space	% Occupied	No. of available Parking Space	% Occupied
Unmetered	2,253	99%	2,281	96%	2,275	87%	2,462	90%
Metered	1,373	81%	1,373	84%	1,261	77%	1,378	68%
Authorized	170	88%	170	109%	170	88%	98	90%
Truck Loading	98	57%	160	21%	27	40%	160	23%

**Figure 5-3: On-Street Parking Occupancy - Weekday Average**



**Figure 5-4: On-Street Parking Occupancy - Midday Saturday**





tered spaces are consistently well-utilized during the week and are in less demand during the weekend. Truck loading zones experience peak occupancy during the Morning peak period; and were found to be generally underutilized. Authorized vehicle parking is well utilized during all peak periods with the highest demand during the Midday peak.

The difference in utilization during the weekday and Saturday midday peak periods reflects the Study Area’s civic and institutional parking needs/demand. Demand for unmetered and authorized parking remain high during the Saturday Midday Peak; but, metered parking was underutilized. Figure 5-5 shows incidences of double and illegal parking associated with government facilities, commercial corridors and industrial land uses.

### 5.2.3 Authorized Vehicle and Placard Parking

The City has allocated approximately 170 parking spaces on 23 blockfaces for authorized vehicles for over a dozen local, state and federal agencies. The majority of these spaces are located in the northern half of the Study Area adjacent to government buildings, as shown in Figure 5-2. Authorized vehicle

Figure 5-5: Incidence of Double and Illegal Parking



regulations are typically in effect between 7 a.m. and 7 p.m. on weekdays and Saturdays.

Table 5-3 shows the supply and occupancy of authorized vehicle spaces. Peak occupancy occurs during the Midday peak hour, when many blockfaces with authorized parking were over capacity. Vehicles were parked on sidewalks and at fire hydrants.

Placard counts and occupancy counts were conducted to assess the extent of legal and illegal placard use. The counts were limited to the northern half of the Study Area, where placard use is most prevalent and parking regulations prohibit long-term on-street parking.

Table 5-3: Authorized Vehicle Parking Supply and Occupancy

	Morning		Midday		Evening		Saturday	
	No. of available Parking Space	% Occupied	No. of available Parking Space	% Occupied	No. of available Parking Space	% Occupied	No. of available Parking Space	% Occupied
Authorized	170	88%	170	109%	170	88%	98	90%

The placard counts during the established four peak periods assessed the number of legal and illegal permits. The data were broken down into the following categories:

- Legal placard: Placard issued by the City of New York or an NYPD Restricted Parking Plate.
- Disabled placard: People with Disabilities Placard (3PD) issued by the City of New York
- Illegal permit: Placards not shown in the New York City Placard Parking Enforcement Guide and personal effects, including Transit/NYPD vests, NYPD ticket books, badges, typed and handwritten notes, apparel with agency logos, and Police Benevolent Association (PBA) cards.

Table 5-4 shows the number of placards counted by parking regulation category and the percentage of illegal, or non-compliant with the city permit regulations. The “Total” row represents the number and percentage of placards that were found non-compliant. The survey showed that the number of placard users far exceeds the number of spaces allocated to authorized parking. The majority of placard users park in metered and no parking spaces, as permitted by City regulations. This is expected because unmetered and unrestricted parking supply is well utilized during the peak periods. However over a third of the vehicles claiming authorized status during weekdays do not have a le-

gal placard. On Saturday, the placard survey found that most users are not in compliance.

**Table 5-4: Number and Percent of Placards not in Compliance**

Regulation Category	Morning		Midday		Evening		Saturday	
	No.	%	No.	%	No.	%	No.	%
Authorized	112	10%	121	16%	130	15%	43	86%
Metered	373	36%	328	33%	258	35%	62	15%
Truck Loading	12	8%	14	0%	14	0%	1	0%
No Parking	336	44%	354	37%	323	38%	108	61%
Total	833	36%	817	33%	725	32%	214	56%

The most common placard abusers are employees of the NYPD, the judicial system, Department of Corrections, and MTA/LIRR. Figure 5-6 shows where legal and illegal placards from these agencies were found. The City issues disabled placards as well as placards from the FDNY, and other city agencies were few in comparison.

**Figure 5-6: Placard User Groups**

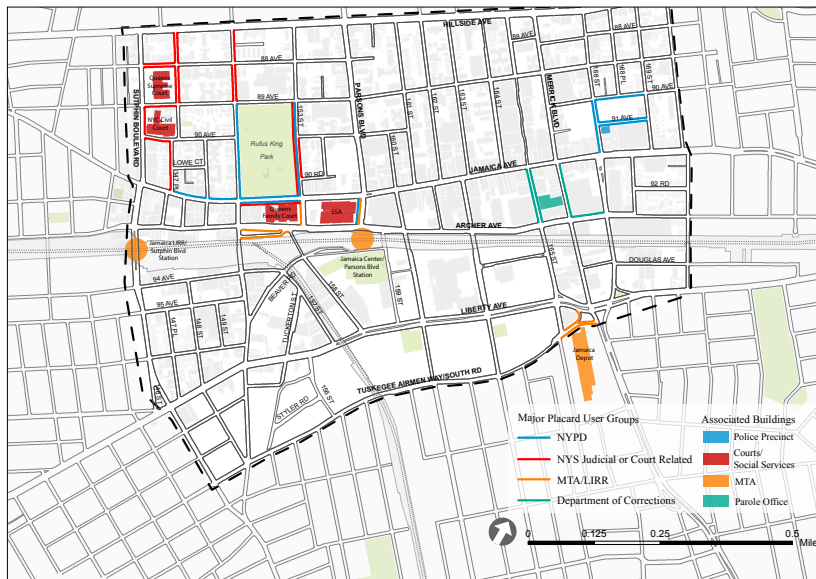
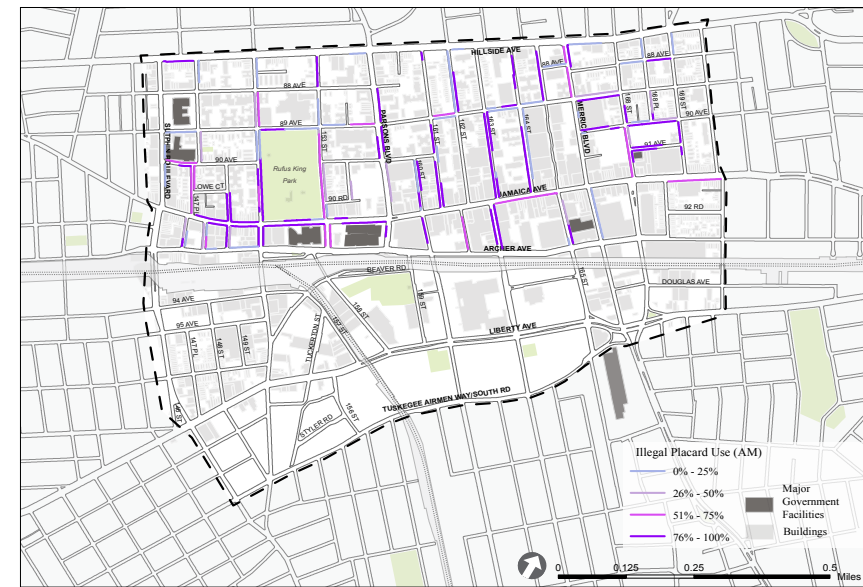


Figure 5-7 shows the percentage of illegal placard use by blockface during the weekday peak period, when the highest number of placard users were counted. Placard abuse is highest near the 103rd Police Precinct on 91st Avenue and the Court and Social Security Administration buildings along Jamaica Avenue and Sutphin Boulevard.

**Figure 5-7: Percentage of Illegal Placards by Blockface**



### 5.3 Off-Street Parking

The Study Area contains 20 public off-street parking facilities in subterranean garages, parking structures and surface lots.

- Fourteen facilities are privately owned and operated
- Five are managed by the Greater Jamaica Development Corporation (GJDC) non-profit
- One municipally owned garage next to the Queens Family Court

Figure 5-8 shows the location of the garages and surface lots. Of the 20 off-street public parking facilities in the Study Area:

- Eleven are garages and structures, six without, and five with an attendant
- Nine are surface lots, three are self-park, and six are with an attendant.

To facilitate the off-street parking analysis, the Study Area was divided into four subsections shown in Figure 5-8 and described as follows:

- The northwest section includes Sutphin Boulevard to 153rd Street, and Archer Avenue to Hillside Avenue.
- The southwest section includes 95th Avenue to Liberty Avenue, and Sutphin Boulevard to 147th Place.
- The central section includes Parsons Boulevard to 163rd Street, and Archer Avenue to Hillside Avenue.



- The northeast section includes Archer Avenue to Hillside Avenue, and 164th Street to 169th Street

The cost of off-street parking varied throughout the Study Area. All facilities offered an hourly rate, most also offered a daily rate, and four offered monthly parking at an average rate of \$182.57 per month. The price variation was influenced by geographic location. Table 5-5 shows the average and range of hourly parking prices in the four subsections.

Figure 5-8: Off-Street Parking Facilities

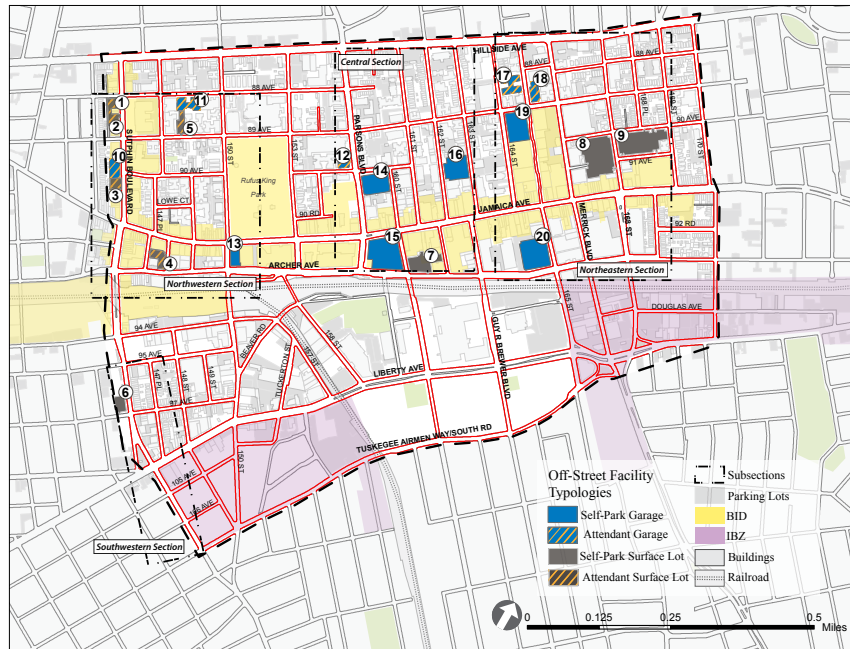


Table 5-6 provides a breakdown of the off-street parking supply by subsection. Forty-two percent of the parking spaces are located in the central section, 40% in the northeast section, 16% in the southwest section, and just 2% in the southwest section, which only has one parking lot.

### 5.3.1 Off-Street Parking Utilization

The off-street parking occupancy/utilization illustrates the parking demand during the various peak periods.

Off-street parking utilization is also defined as follows:

- Underutilized – less than 70% occupancy

- Well-utilized – between 70%-90% occupancy
- At or over capacity – greater than 90% occupancy

Table 5-5: Average Hourly Prices

Subsection	Average Hourly Rate	Hourly Range	Number of Spaces
Northwest	\$14.12	\$3.50-\$19.00	678
Central	\$6.30	\$3.49-\$8.00	1,801
Southwest	\$10.00	\$10.00	75
Northeast	\$5.00	\$3.00-\$7.00	1,713

Table 5-6: Off-Street Parking Supply by Subsection

Subsection	Daytime		Overnight		Saturday	
	#	%	#	%	#	%
<b>Northwestern Corner</b>						
Private	471	69%	0	0%	198	49%
GJDC/Jamaica First	0	0%	0	0%	0	0%
Municipal	207	31%	0	0%	207	51%
<b>Total</b>	<b>678</b>	<b>100%</b>	<b>0</b>	<b>0%</b>	<b>405</b>	<b>100%</b>
<b>Central Region</b>						
Private	897	50%	897	64%	847	50%
GJDC/Jamaica First	904	50%	499	36%	904	53%
Municipal	0	0%	0	0%	0	0%
<b>Total</b>	<b>1801</b>	<b>100%</b>	<b>1396</b>	<b>100%</b>	<b>1751</b>	<b>100%</b>
<b>Northeastern Corner</b>						
Private	568	33%	79	24%	568	33%
GJDC/Jamaica First	1145	67%	253	76%	1145	67%
Municipal	0	0%	0	0%	0	0%
<b>Total</b>	<b>1713</b>	<b>100%</b>	<b>332</b>	<b>100%</b>	<b>1713</b>	<b>100%</b>
<b>Southwestern Corner</b>						
Private	75	100%	0	0%	75	100%
GJDC/Jamaica First	0	0%	0	0%	0	0%
Municipal	0	0%	0	0%	0	0%
<b>Total</b>	<b>75</b>	<b>100%</b>	<b>0</b>	<b>0%</b>	<b>75</b>	<b>100%</b>
<b>All Sections</b>						
Northwestern	678	16%	0	0%	405	10%
Central	1801	42%	1396	81%	1701	44%
Northeastern	1713	40%	332	19%	1713	44%
Southwestern	75	2%	0	0%	75	2%
<b>Total</b>	<b>4267</b>		<b>1728</b>		<b>3894</b>	

The occupancy amongst garages by location and/or ownership can vary significantly. However, generally, parking occupancy at the garages and surface lots is at half or near capacity during the week day. On Saturdays, occupancy is much lower and is clearly location sensitive.

**Northwestern Section.** The eight facilities in this section have higher occupancy

during weekday Morning and Midday peak periods.

**Central Section.** Garages and surface lots in this section had the highest occupancy during the week, at or above 70% occupancy.

**Northeastern Section.** More than half of the six facilities in this section are underutilized during all weekday and Saturday peak hours.

**Southwestern Section.** The one surface lot in this section is generally underutilized during the weekday and Saturday peak hours.

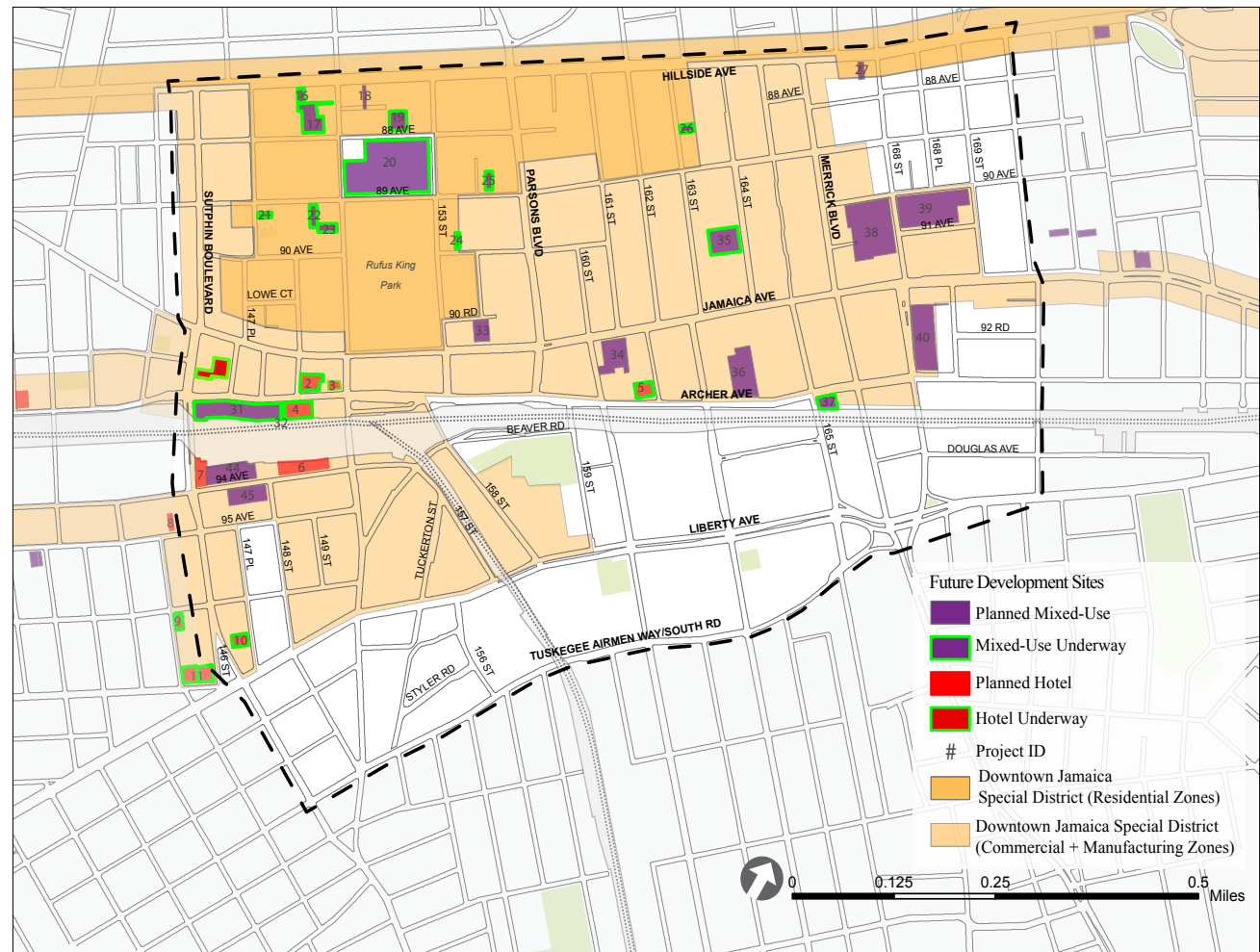
### 5.4 Future Conditions

Future (2026) parking supply and demand in the Study Area will be influenced by the new developments. Based on known developments (Figure 5-9), the following is anticipated.

None of the developments already underway will reduce the current off-street parking supply; but known developments will add from eight to 237 spaces. Developments that are expected to supply a large number of spaces include Site 20 (former Mary Immaculate Hospital) 237 spaces; Site 11, expected to be a hotel - 213 spaces; Site 40 (mixed-use building on top of the NYPD parking lot); and Sites 38 and 39 (mixed-use development on top of the GJDC/Jamaica First parking lots). Sites 38 and 39 currently supplies 544 parking spaces. However, it should be noted that these spaces are to satisfy the developments own estimated demand.

In summary, on-street parking demand far exceeds capacity in the downtown core while

**Figure 5-9: Future Development Sites**



off-street parking facilities generally has spare capacity to satisfy current and future demand. On-street parking shortfall has directly limited lane capacity on some roadway segments and has impacted traffic circulation and bus travel time. Addressing this problem through policy, pricing, and/or enforcement is key to improving traffic operation in Downtown Jamaica.





# PEDESTRIANS AND BICYCLISTS





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OUTFRONT



### 6.1 Introduction

Pedestrian activity in Downtown Jamaica is very high due to the large transit hub and significant regional/local retail, concentrated along six corridors (Jamaica Avenue, Hillside Avenue, Sutphin Boulevard, Guy R. Brewer Boulevard, Parsons Boulevard, and Archer Avenue). Along Hillside and Jamaica Avenues pedestrian traffic is retail oriented; along Archer Avenue it is transit related; along Sutphin Boulevard its transit, retail, and institutional (courts), etc. Merrick Boulevard also attract some pedestrian activity which is generally related to the 165th Street Bus Terminal, the Coliseum Mall, and the Queens Central Library.

Jamaica Avenue is the primary commercial spine of the downtown core. It's a popular retail shopping destination for residents and visitors. Hillside Avenue, the second bus pedestrian thoroughfare, has many ethnic shops and restaurants. Sutphin and Parsons Boulevards connect directly to the primary transit hub – Parsons Boulevard to Jamaica Center and Sutphin Boulevard to Jamaica Station.

### 6.2 Pedestrian Issues

Field observations and community input/outreach revealed some of the following issues/locations:

- Heavy bus traffic at Sutphin Boulevard/Jamaica Avenue and Parsons Boulevard/Archer Avenue intersections pose safety risks to pedestrians.
- Poor/narrow sidewalk conditions along Archer Avenue
- Long blocks with limited crossing opportunities on Hillside Avenue encourage jaywalking.
- Merrick Boulevard/89th Avenue feels unsafe due to high number of buses.
- Poor street lighting on Jamaica Avenue discourage walking at night

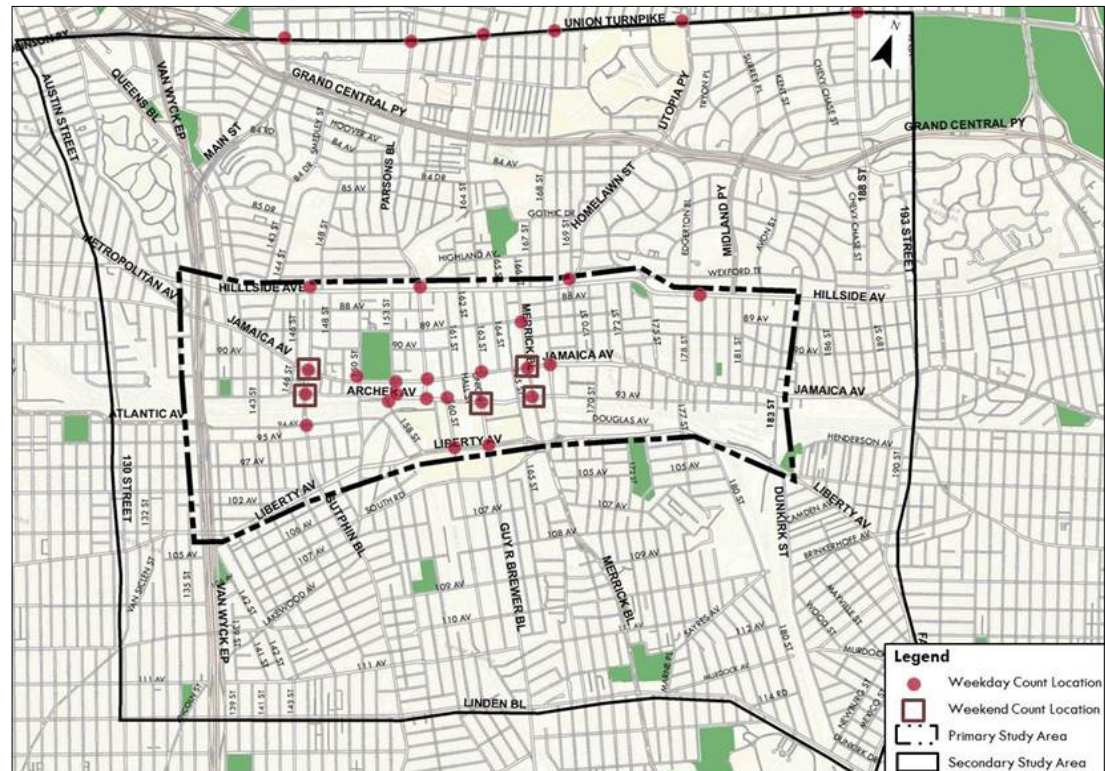
### 6.3 Pedestrian Data Collection

The 2016 existing and 2026 projected future conditions analyses focused on pedestrian activity along major corridors adjacent to institutional buildings, transportation hubs, and commercial/retail areas. Pedestrian counts were conducted at 28 intersections (see Figure 6-1) during the weekday AM (7:30-

8:30) and PM (4:45-5:45) peak hours; and five intersections for Saturday mid-day (12:00-2:00 pm) peak hour analysis as listed below.

1. Archer Avenue & Sutphin Boulevard
2. Archer Avenue & 153rd Street
3. Archer Avenue & 158th Street
4. Archer Avenue & Parsons Boulevard
5. Archer Avenue & 160th Street
6. Archer Avenue & Guy R. Brewer Boulevard
7. Archer Avenue & Merrick Boulevard
8. Hillside Avenue & Sutphin Boulevard
9. Hillside Avenue & Parsons Boulevard
10. Hillside Avenue & 169th Street
11. Hillside Avenue & 179th Street
12. Jamaica Avenue & Sutphin Boulevard
13. Jamaica Avenue & 150th Street
14. Jamaica Avenue & 153rd Street

**Figure 6-1: Pedestrian Count Locations**



15. Jamaica Avenue & Parsons Boulevard
16. Jamaica Avenue & Guy R. Brewer Boulevard
17. Jamaica Avenue & Merrick Boulevard
18. Jamaica Avenue & 168th Street
19. Liberty Avenue and 160th Street
20. Liberty Avenue and Guy R. Brewer Boulevard
21. 89th Avenue and Merrick Boulevard
22. 94th Avenue and Sutphin Boulevard
23. Main Street and Union Turnpike
24. Parsons Boulevard and Union Turnpike
25. 164 Street and Union Turnpike
26. 168th Street and Union Turnpike
27. Utopia Parkway and Union Turnpike
28. 188th Street and Union Turnpike

Saturday counts were conducted at the following intersections:

1. Archer Avenue and Merrick Boulevard
2. Jamaica Avenue and Merrick Boulevard
3. Archer Avenue and Sutphin Boulevard
4. Archer Avenue and Parsons Boulevard
5. Jamaica Avenue and Sutphin Boulevard

#### 6.4 Pedestrian Volumes

The highest pedestrian counts were observed in close proximity to subway stations and intersections along commercial corridors (see Figure 6-2).

Existing pedestrian volumes are shown in Figures 6-3, 6-4, 6-5, and 6-6.

Figure 6-2: Downtown Core Pedestrian Activity & Issues

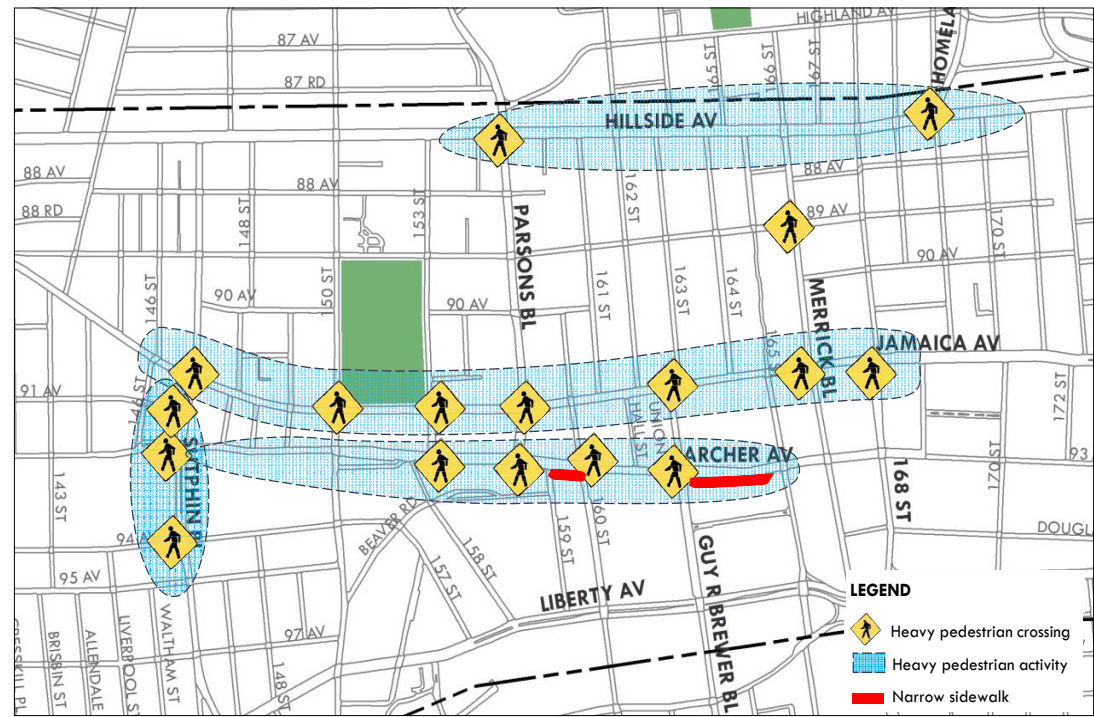




Figure 6-3: 2016 Pedestrian Volumes (AM Peak Hour)

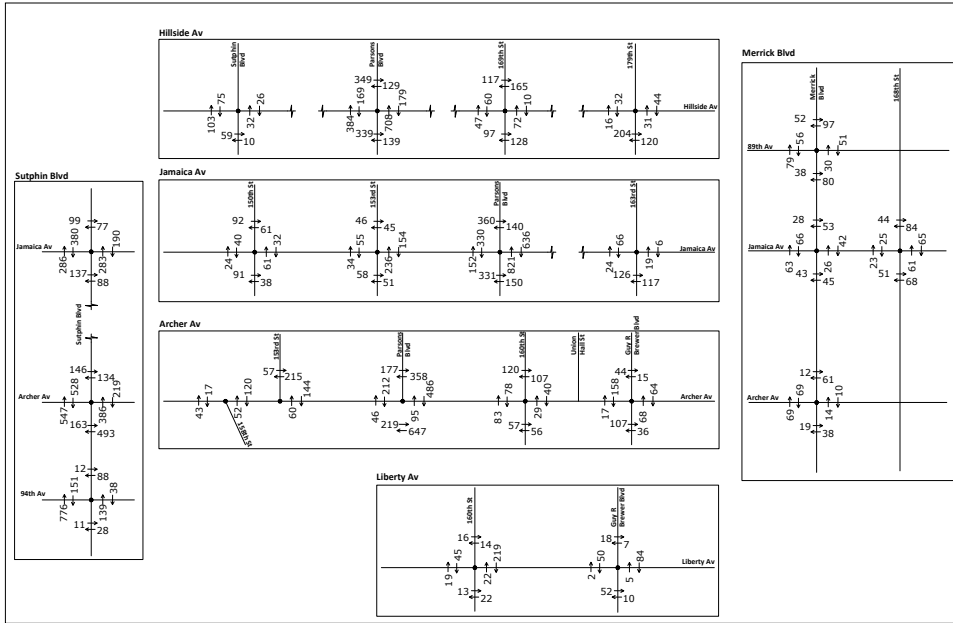


Figure 6-5: 2016 Pedestrian Volumes (Saturday Midday Peak Hour)

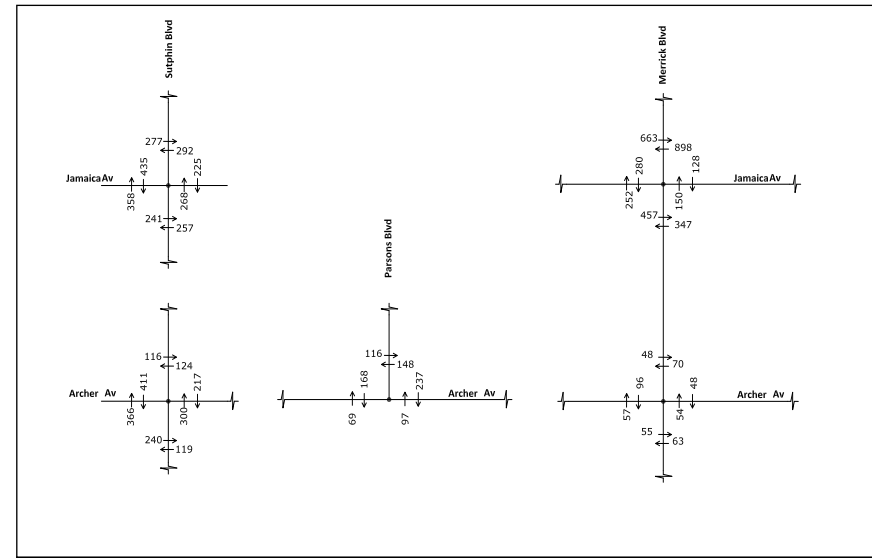


Figure 6-4: 2016 Pedestrian Volumes (PM Peak Hour)

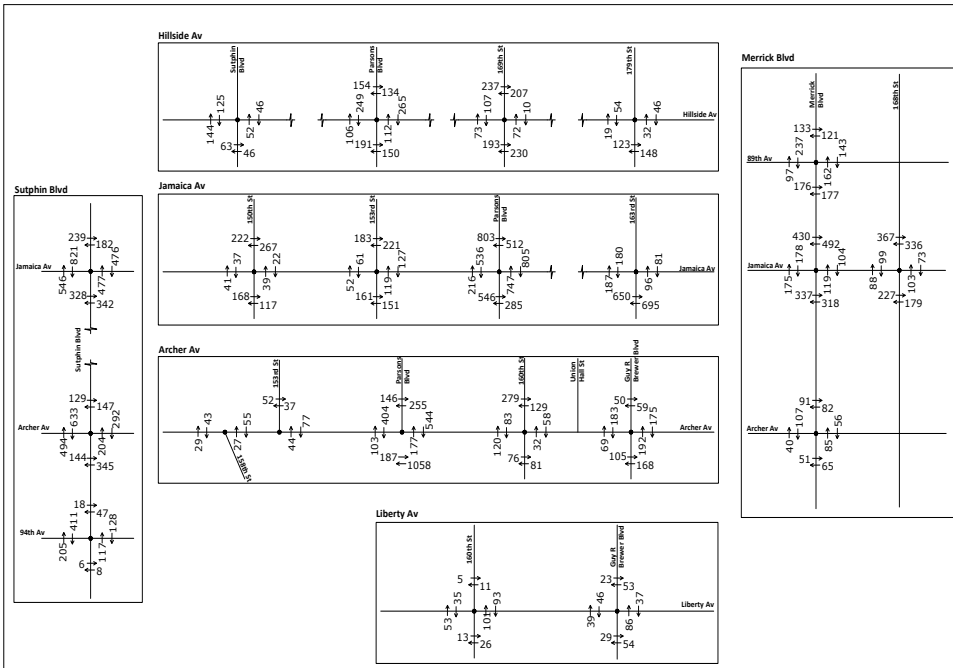
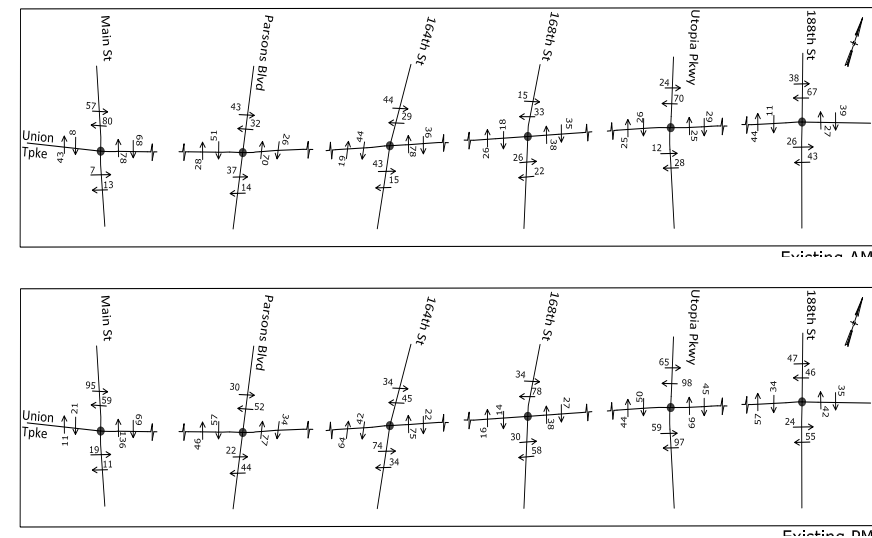


Figure 6-6: 2016 Pedestrian Volumes – Union Turnpike (AM & PM)



#### 6.4 Level of Service Analysis

The Highway Capacity Manual methodology was used to determine pedestrian level of service (LOS) for the crosswalks and corners at the intersections analyzed. The majority of intersection crosswalks and corners experienced LOS A or B during the peak hour except those in Table 6-1. The results of the crosswalk and corner LOS analysis are shown in Appendix B.

#### 6.5 Future Conditions Pedestrian Analysis

Pedestrian volumes in Downtown Jamaica are expected to increase due to the ongoing and planned developments. Increased pedestrian traffic is expected to be concentrated on Archer Avenue and in the vicinity of the transit hubs. As per the CEQR Technical Manual, the 2026 future pedestrian volumes were projected using 0.5% per year for the first five years and 0.25% per year for the next five years. In addition to the natural growth, additional trips were added to take account of the known new developments. The 2026 future pedestrian volumes are shown in Figures 6-7 through 6-10.

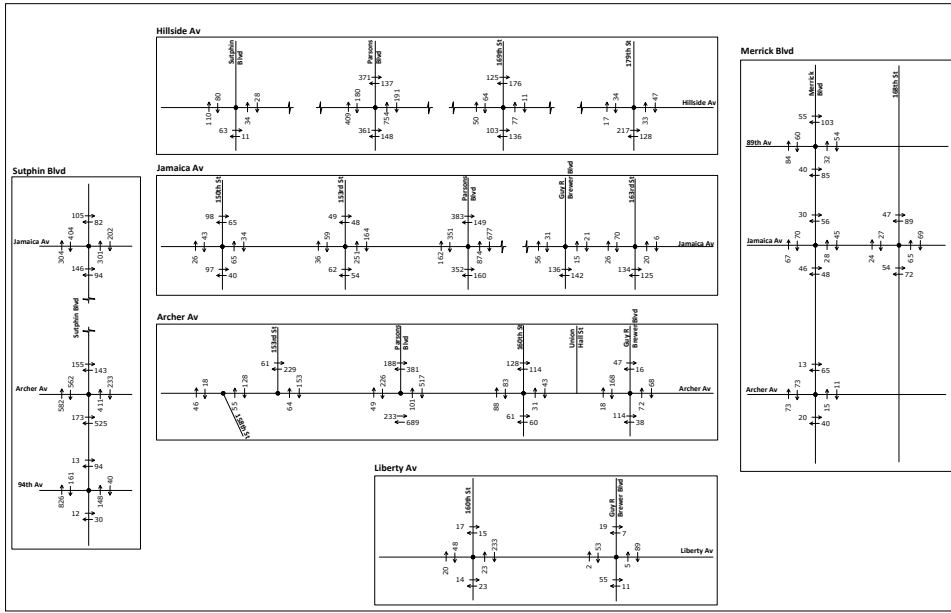
Table 6-1: Failing Crosswalks & Corners

Intersection	Crosswalk/ Corner	Peak Hour LOS	
		AM	PM
Parsons Boulevard/Hillside Avenue	East Crosswalk	E	
Sutphin Boulevard and 94th Avenue	West Crosswalk	E	
160th Street/Liberty Avenue	Southeast Corner	F	F
Parsons Boulevard/Hillside Avenue	Southwest Corner	E	
Sutphin Boulevard/Jamaica Avenue	Southwest Corner		F

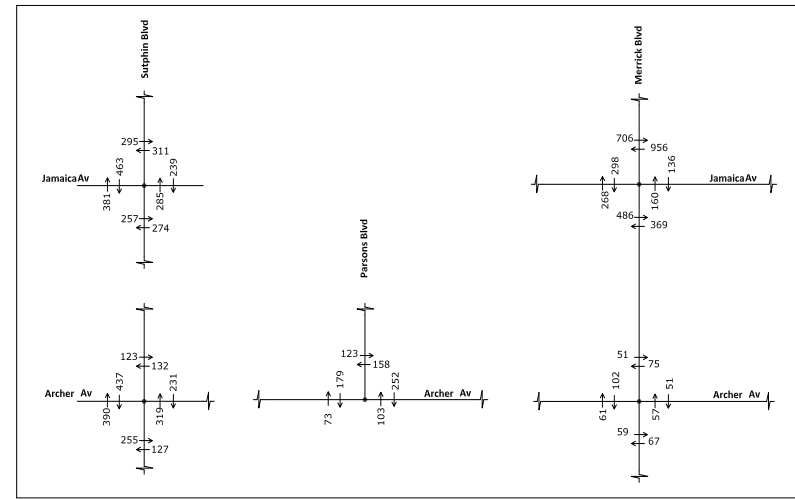




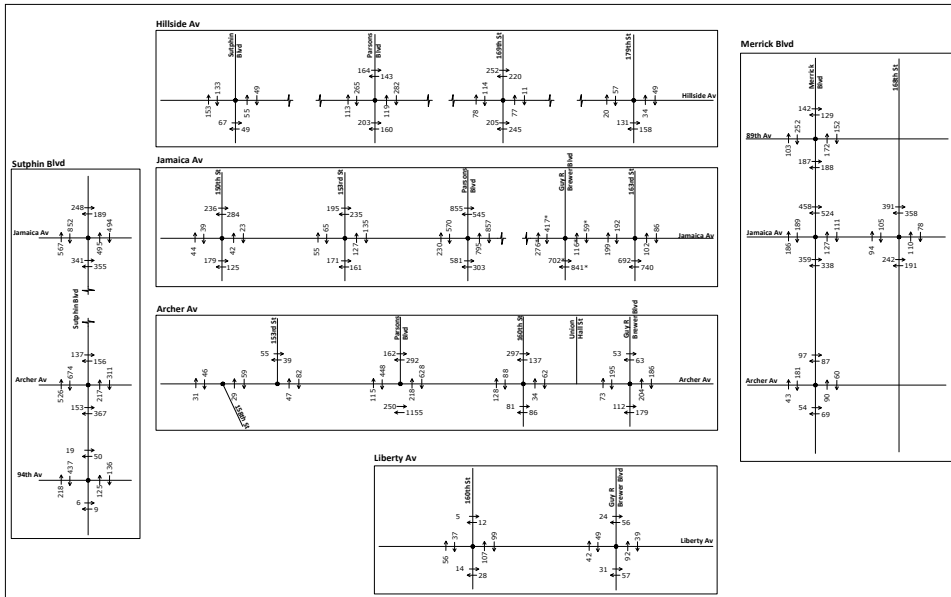
**Figure 6-7: 2026 Pedestrian Volumes (AM Peak Hour)**



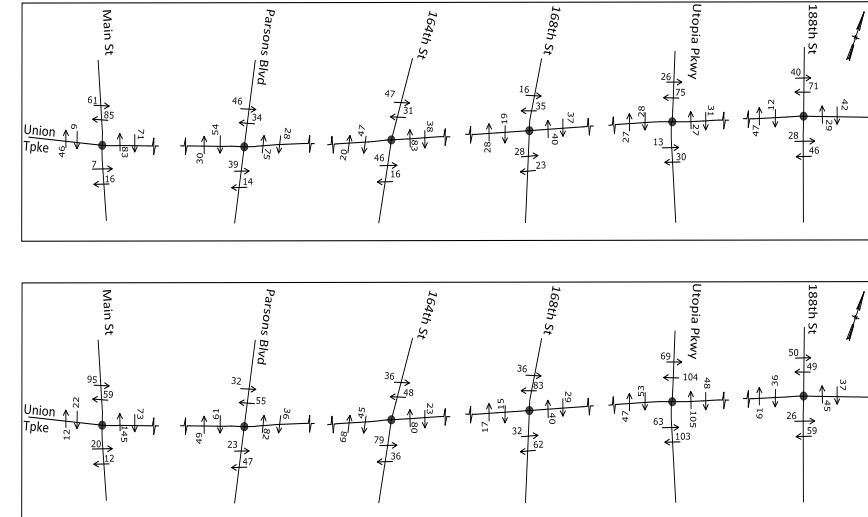
**Figure 6-9: 2026 Pedestrian Volumes (Saturday Midday Peak Hour)**



**Figure 6-8: 2026 Pedestrian Volumes (PM Peak Hour)**



**Figure 6-10: 2026 Pedestrian Volumes – Union Turnpike (AM & PM)**



## 6.6 Bicycle Facilities

The NYCDOT 2017 Bike Map identifies several bike lanes and potential bicycle routes in the study area. These are listed below and shown in Figure 6-11.

Existing on-street bike lanes:

- 88th Avenue between Parsons and Sutphin Boulevard
- 89th Avenue between Parsons and Sutphin Boulevard
- 164th Street between 84th Road and Union Turnpike

Shared bike lanes:

- Linden Boulevard - 157th Street to Farmers Boulevard
- Parsons Boulevard - Jamaica Avenue to 84th Road
- 84th Road - Parsons Boulevard to 164th Street
- 83rd Avenue/Hoover Avenue - Kew Gardens Road to Main Street
- Coolidge Avenue - Main Street to 135th Street
- Main Street - Hoover Avenue to Union Turnpike

Many streets have been identified as potential future bicycle routes including 94th Avenue, 150th Street, 157th Street, 93rd Avenue, Dunkirk Street, and 104th Avenue.

Figure 6-12 shows bicycle counts during the AM and PM peak hours. At the public meetings and on the web portal the community made the following comments:

- CitiBike should be made available in Downtown Jamaica
- Provide bicycle racks, especially close to subway stations
- Bicycle routes should be used to connect York College to the subway

Figure 6-11: Bicycle Network

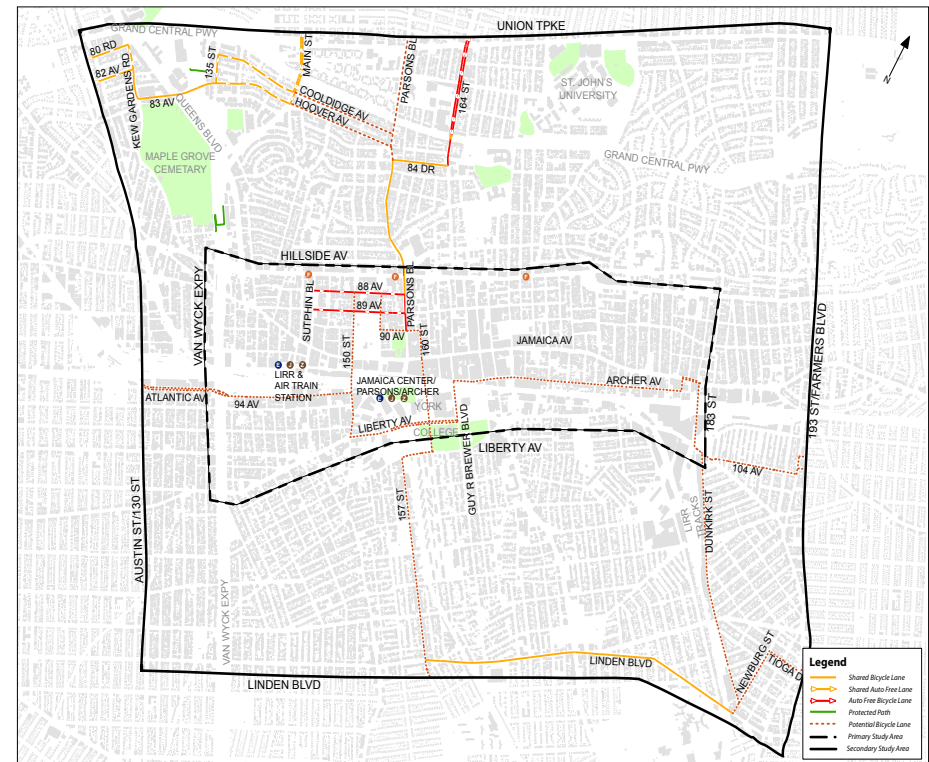


Figure 6-12: Existing Bicycle Volumes - AM/PM Peak Hours







# CRASHES





SCHOOL



## 7.1 Introduction

Crash data for the most recent three years for which data was available (2014 to 2016) was analyzed for trends to determine locations that may need additional attention. Records were collected from New York City Department of Transportation (NYCDOT) crash database, which includes data from the New York State Department of Motor Vehicle (NYS DMV) and New York City Police Department (NYPD). The data provides information on location, severity, collision type, time of crash, and other pertinent factors such as weather conditions.

The New York City Vision Zero Action Plan was launched in 2014 with the aim to eliminate fatalities caused by traffic crashes regardless of whether on foot, bicycle, or in a motor vehicle. Today it has 178 initiatives (63 initially), of which 68 involve DOT, to reduce crashes and enhance safety.

Queens Vision Zero Pedestrian Safety Action Plan states that, on average, one pedestrian is killed or severely injured in Queens every weekend. Sixty-one percent (61%) of pedestrian fatalities occur on a Vision Zero Priority Corridor, at a Priority Intersection, or in Priority Areas. Queens has 47 Priority Corridors, 14 of which fall wholly or partially in the study area; it also has 72 Priority Intersections, 15 of which fall in the study area. Figure 7-1 shows the Priority Area, Corridors, and Intersections.

Almost the entire primary and a significant part of the secondary study area falls within a Vision Zero Priority Area. Most of the major corridors within the study areas are Vision Zero Priority Corridors. Listed below are 15 Priority Intersections in the study area:

### Primary Study Area

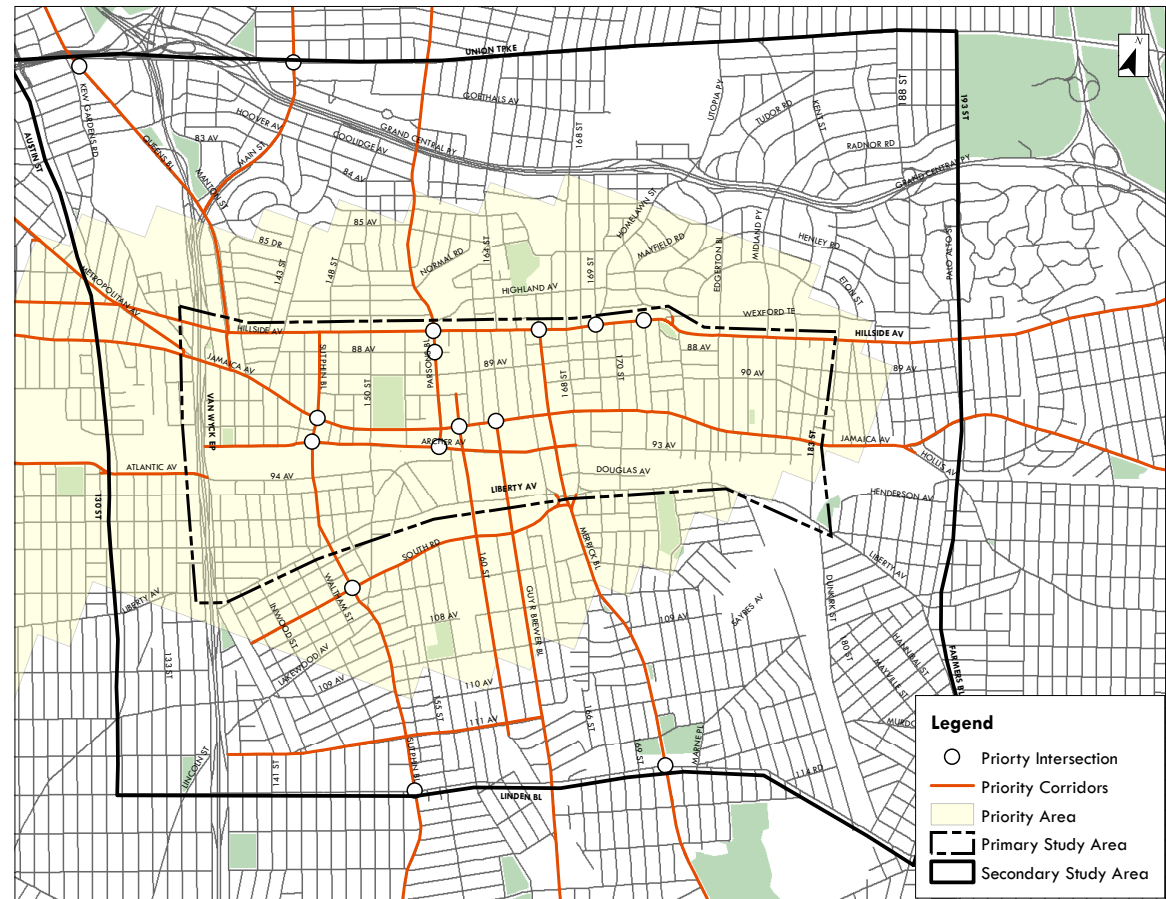
1. Sutphin Boulevard and Archer Avenue
2. Sutphin Boulevard and Jamaica Avenue
3. Archer Avenue and Parsons Boulevard
4. Jamaica Avenue and 160th Street

5. Jamaica Avenue and Guy R. Brewer Boulevard
6. Parsons Boulevard and 89th Avenue
7. Parsons Boulevard and Hillside Avenue
8. Hillside Avenue and Merrick Boulevard
9. Hillside Avenue and 169th Street
10. Hillside Avenue and 179th Street

### Secondary Study Area

1. Queens Boulevard and Union Turnpike
2. Main Street and Union Turnpike
3. Sutphin Boulevard and South Road

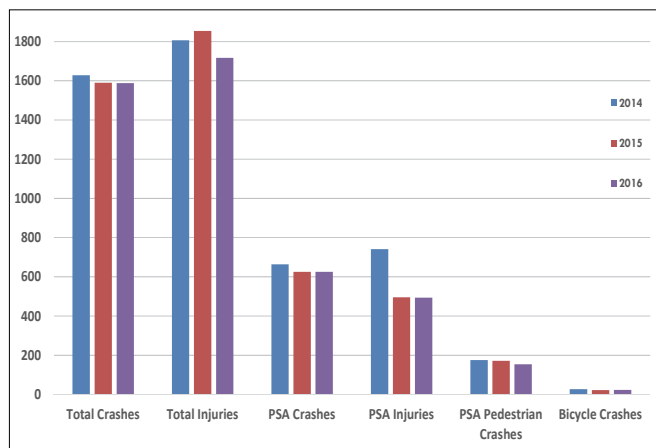
Figure 7-1: Vision Zero Priority Zone Corridors and Intersections



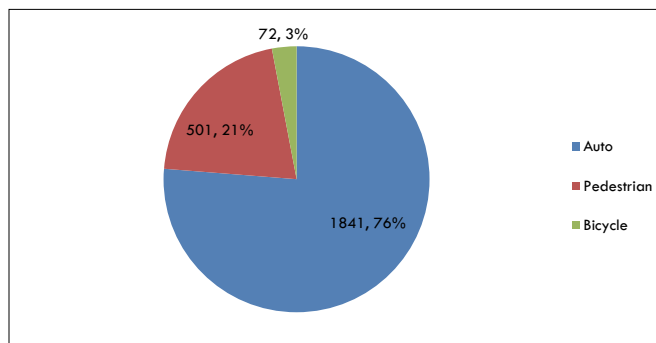
- 4. Sutphin Boulevard and Linden Boulevard
- 5. Merrick Boulevard and Linden Boulevard

Between 2014 and 2016 there were 4,806 crashes recorded in the study area. Approximately 40% occurring in the primary study area. There was a slight decrease in crashes over the years. Total injuries increased then decreased overall but in the primary study area injuries declined as well as the number of crashes involving pedestrians and cyclists. Chart 7-1 provides a breakdown of the crashes in the study area, and Chart 7-2 shows the percentage distribution among auto, pedestrians, and bikes in the primary study area.

**Chart 7-1: Study Area Crashes (2014-2016)**



**Chart 7-2: Primary Study Area Crash Distribution (2014-2016)**



## 7.2 High Crash Locations

There were 13 high crash locations in the study area. A high crash location has 23 or more crashes in a given year, or five or more crashes involving a pedestrian or cyclist. All 13 high crash locations were due to pedestrian crashes. The top five intersections with the highest pedestrian crashes were: Sutphin Boulevard/Jamaica Avenue (15), Parsons Boulevard/Hillside Avenue (14), Jamaica Avenue/Parsons Boulevard (13), Hillside Avenue/170 Street (13), and Jamaica Avenue/164 Street (12). Table 7-1 details the crash history of the high crash locations in the study areas. The locations can be seen on Figure 7-2.

**Table 7-1: High Crash Locations (2014-2016)**

Intersection	Total Accident				Injuries				Pedestrian Crashes				Bicycle Crashes			
	2014	2015	2016	Total	2014	2015	2016	Total	2014	2015	2016	Total	2014	2015	2016	Total
Hillside Ave & Parsons Blvd	12	9	14	35	14	9	11	34	6	4	4	14	2	0	0	2
Hillside Ave & 169th St/Homelawn St	9	8	14	31	8	4	17	29	4	1	5	10	0	1	2	3
Jamaica Ave & Parsons Blvd	8	6	5	19	9	6	6	21	4	4	5	13	0	0	0	0
Union Tpke & 188th St	11	5	6	22	13	2	2	17	6	0	1	7	1	0	1	2
Jamaica Ave & Sutphin Blvd	11	10	3	24	22	9	2	33	7	6	2	15	1	1	0	2
94 Ave & Sutphin Blvd	4	6	4	14	3	6	4	13	2	5	3	10	0	1	0	1
Waltham St & Liberty Ave	1	7	7	15	1	6	7	14	0	4	6	10	0	0	0	0
160 St & Liberty Ave	3	6	12	21	3	6	12	21	1	6	4	11	0	6	0	6
Jamaica Ave & 164 St	4	4	7	15	4	4	7	15	4	3	5	12	0	0	0	0
Jamaica Ave & 173rd St	3	4	7	14	6	3	5	14	0	1	5	6	0	0	0	0
Union Tpke & 164th St	6	8	3	17	5	7	3	15	3	5	0	8	0	0	0	0
Jamaica Ave & 160 St	7	7	3	17	6	10	2	18	5	2	0	7	1	0	0	1
Hillside Ave & 170 St	7	10	5	22	6	10	5	21	6	4	3	13	0	0	0	0

**Figure 7-2: High Crash Locations**





### 7.3 Crash Frequency/Severity (KSI)

The Killed/Severely Injured (KSI) crash analysis methodology showed most intersections have a low KSI of 1 or 2. Figure 7-3 shows the 2016 KSI for study area intersections. Hillside Avenue, Jamaica Avenue, and Liberty Avenue being corridors with the most KSI incidents.

Figure 7-3: Killed/Severely Injured (KSI) Crashes



### 7.4 Crashes Involving Buses and Trucks

Crashes involving buses and trucks accounted for approximately eight percent of total crashes between 2014-2016. Figure 7-4 shows where they occurred with most occurring in the primary study area and along Hillside Avenue, Jamaica Avenue, Merrick Boulevard, and Liberty Avenue.

### 7.5 Fatalities

Between 2014-2018, there were 23 fatalities at 21 locations in the study area. Six of the locations are in the primary study area, and fifteen in the secondary area, see Figure 7-5. Most fatalities were pedestrian-related while there were no bike-related fatality in this period. Note: Fatality data are always more current.

Figure 7-4: Bus & Truck Crash Locations



Figure 7-5: Fatalities (2014-2018)



## 7.6 DOT Safety Initiatives in the Study Area

To reduce the incidence and severity of crashes in the study area, several safety initiatives have been taken. Three initiatives are shown in Figure 7-6; they include installing leading pedestrian intervals (LPI) at key intersections along priority corridors and other major intersections; installing left turn traffic calming treatments at critical locations; and retiming the priority corridors to a speed of 25 miles per hour.

Leading pedestrian intervals (LPI) enable pedestrians to cross streets much more safely and efficiently by giving them a head start on crossing streets, typically with a seven-second start before the vehicular traffic. LPI's significantly reduce the incidence of pedestrian-vehicle collisions.

Left Turn Traffic Calming is a citywide program which enforces safe turning behavior and reduces speeds during such turns. There are multiple ways in which this could be implemented, as seen on Figure 7-7. The figure shows a hardened centerline that forms a physical barrier between lanes. The location of the barrier requires vehicles to slow down to turn. Currently, there are over 200 locations in New York City which utilize this method. Average left turn speeds have decreased by 24%.

Another safety initiative is reducing the City's speed limit to 25 miles per hour as slower speeds have been shown to reduce crash severity. This initiative was initiated in 2014; and, it was followed by automated speed camera enforcement in 140 school zones citywide.

Figure 7-6: Vision Zero Safety Initiatives in the Study Area

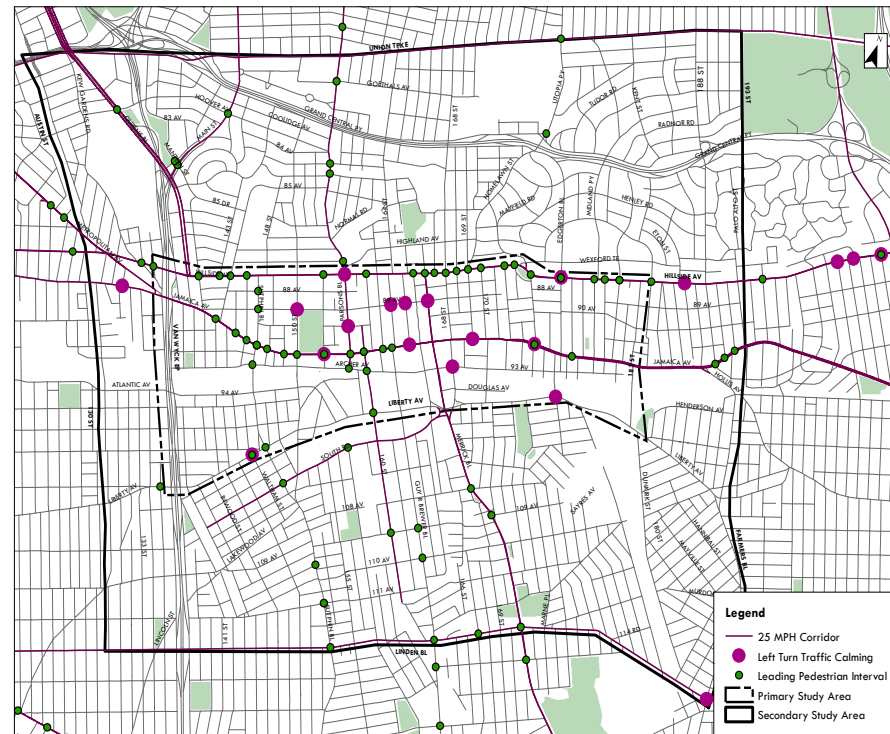
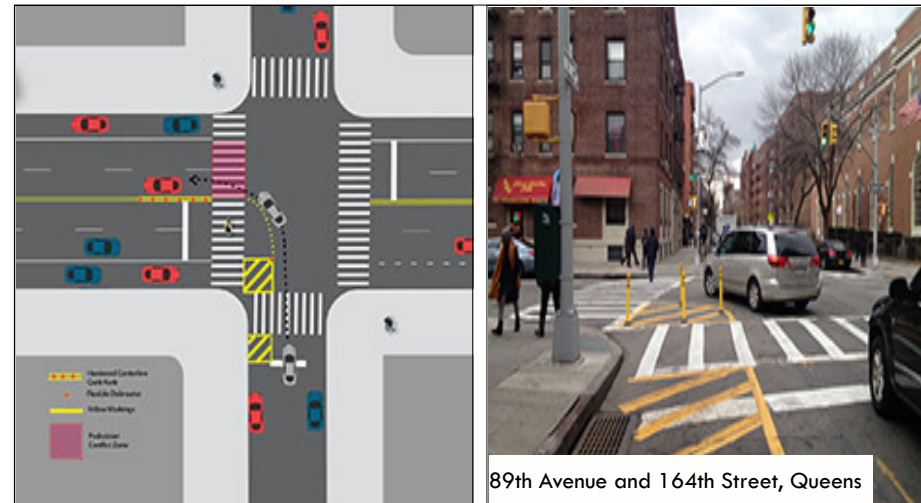


Figure 7-7: Diagrams for Left Turn Calming







# PUBLIC TRANSIT





Q65 ROOSEVELT AV

NOT IN SERVICE

THE SHOPS AT STATION PLAZA



Q25  
Q26  
Q34  
Q65

POLICE

167287C



## 8.1 Introduction

Downtown Jamaica is well served by transit. It is a key intermodal transportation hub with access to commuter rail, subway, the AirTrain, buses (over 40 routes), commuter vans, and taxis. These modes facilitate travel to/from Southeast Queens, parts of Long Island, JFK Airport, Brooklyn, Bronx, and Midtown. In addition to serving as a gateway to the rest of New York City, it also plays a significant role as a regional hub facilitating transfers. It serves travelers heading west to New York City and east to Long Island. It is the easternmost connection to the city's subway system. Figure 8-1 shows the intensity and extent of transit service in the Study Area. The analysis that follows is largely an abbreviated version of work completed by the consultant ARUP.

Figure 8-1: Area Transit Service Modes



### Transit Hubs

There are four transit hubs (Figure 8-2) in Downtown Jamaica three facilitate mode transfers and one serves buses only.

1. Jamaica Center (Parsons Boulevard/Archer Avenue) is the terminus for the J/Z and E trains, many NICE/MTA buses, commuter vans, and livery taxis. Commuter van trips generally start/end at this

hub.

2. Jamaica Station (Sutphin Boulevard/Archer Avenue/JFK Airport) provides access to three subway lines (J/Z/E), the AirTrain, LIRR, 18 bus routes, formal and informal taxi services, and shuttle buses to Queens College, St. John's University, and Resorts World Casino.
3. 179th Street (Hillside Avenue/179th Street) is the terminus for the F Train; here transit riders may transfer to 15 NICE and MTA bus routes. It is a 15-20 minute walk from/to the downtown core.
4. 165th Street Bus Terminal (Merrick Boulevard/89th Avenue) is served by 16 NICE and MTA bus routes. It is a seven to ten minute walk from the nearest subway station and the downtown core.

Transfers between buses and subway are highest at Parsons/Archer and Sutphin/Archer hubs; see Table 8-1. Table 8-2 shows the hourly bus frequencies at the transit hubs. Jamaica Center has the highest bus frequency during weekday peak periods.

## 8.2 Subway & Rail Service

### Subway

Ridership at subway stations varies widely across the Study Area, with terminal stations having the highest demand; also, the E, J, Z stations have a much higher ridership than the F train (Table 8-3). Ridership at the easternmost stations, connecting commuters from Queens and Nassau County is higher than those

Figure 8-2: Surface and Rail Transit Hubs

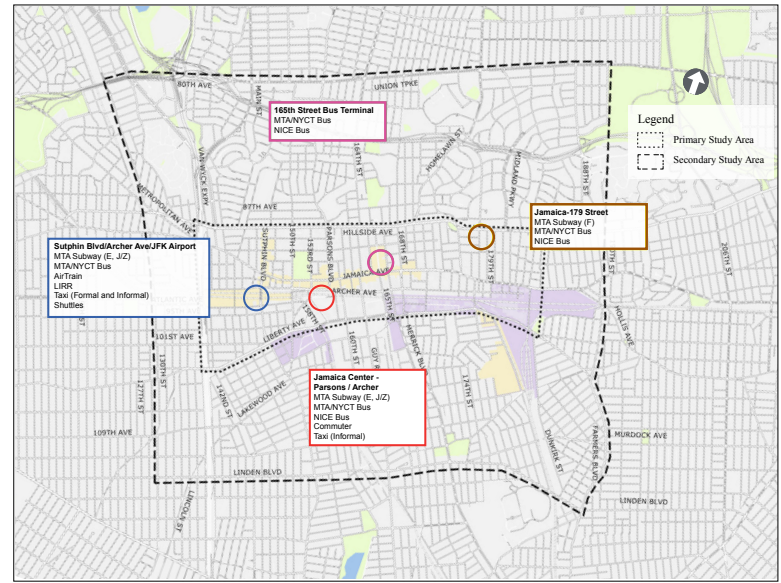


Table 8-1: Transfers to Subway Stations/ Transit Hubs

Major Interchanges	Total Transfers from Buses	Bus Routes Serving Interchange
Jamaica Center-Parsons-Archer (E,J,Z)	6,756	Q4, Q5, Q20A, Q20B, Q24, Q25, Q30, Q31, Q34, Q42, Q65, Q83, Q84, Q85, Q83, Q84, N4, N4X, Q44 SBS
Sutphin Blvd-Archer Av-JFK Airport (E,J,Z)	5,425	Q6, Q8, Q9, Q20A, Q20B, Q24, Q25, Q30, Q31, Q34, Q40, Q41, Q43, Q54, Q56, Q60, Q65, Q44 SBS
Parsons Blvd (F)	1,516	Q25, Q34, Q43, Q65, Q83, Q110, Q111, Q113, Q114, X68
Jamaica-179 St (F)	359	Q1, Q2, Q3, Q17, Q36, Q43, Q76, Q77, X68, N1, N6, N22, N22A, N24, N26
Sutphin Blvd (F)	280	Q20A, Q20B, Q40, Q43, Q44 SBS, X68

Table 8-2: Hourly Bus Frequencies at Transit Hubs

Transit Hubs:	AM	Midday	PM
Jamaica Center	280	167	259
Sutphin/Archer	233	160	217
Hillside/179	155	90	137
165th St Bus Terminal	149	88	136

stations further west. This can be seen by the comparatively higher boarding for the Jamaica-179 Street F station compared to other F train stations within the primary study area. A similar pattern exists on the E train.

**Table 8-3: Subway Ridership by Station**

Station	Lines	Avg Weekday	Annual (2016)
Jamaica Center-Parsons-Archer*	EJZ	41,603	12,470,914
Kew Gardens-Union Turnpike	EF	27,085	8,109,611
Sutphin Blvd-Archer Av-JFK Airport*	EJZ	24,796	7,904,869
Jamaica-179 St*	F	23,121	6,783,119
169 St *	F	9,016	2,787,763
Parsons Blvd *	F	6,644	2,063,042
Jamaica-Van Wyck*	E	5,022	1,536,716
Sutphin Blvd	F	4,652	1,414,334
Briarwood-Van Wyck Blvd	EF	5,057	1,515,926

Long Island Railroad

The third most common destination for westbound LIRR passengers (beside Penn Station and Atlantic Terminal) is Jamaica Station. Ten of the eleven Long Island Railroad (LIRR) branches stops at Jamaica Station which is one of the LIRR’s most important transfer points. Ridership at Jamaica Station is generally high during peak periods (Table 8-4).

**Table 8-4: LIRR Peak-Period Ridership**

Morning Peak (6–10am)				Evening Peak (4–8pm)			
Westbound		Eastbound		Westbound		Eastbound	
Ons	Offs	Ons	Offs	Ons	Offs	Ons	Offs
12,689	15,426	3,870	2,212	2,877	4,745	13,631	11,229

JFK AirTrain

The JFK AirTrain service at Jamaica Station provides a limited route service. The one-way fare costs \$5.00. For those traveling to and from the airport (for work or travel) there are approximately five to eight trains per hour during peak

periods. Most transfers from the Airtrain are to the subway. AirTrain ridership patterns are largely dictated by flight schedules and airport work shifts. In general, ridership is higher during the evening peak hour (between 4:45 p.m.–5:45 p.m.) than during the morning peak hour (7:30 a.m.–8:30 a.m.), with roughly twice as many boarding in the evening peak. More passengers board than alight at Jamaica during both peak hours (Table 8-5).

**Table 8-5: Airtrain Ridership**

AirTrain Ridership	Morning (7:30-8:30am)	Evening (4:45-5:45pm)
Boardings	439	1,047
Alightings	378	709

**8.3 Surface Transit**

Jamaica Avenue, Archer Avenue, Sutphin Boulevard, and portions of Hillside Avenue have bus lanes. While these lanes are designed to increase transit capacity during the AM and PM peak hours and reduce conflicts with other vehicles, their effectiveness is greatly reduced primarily due to vehicles parked or standing in the lanes. On Jamaica Avenue, two factors reduce capacity of the bus lanes – placard parked cars and livery taxis stopping in the bus lane; on Sutphin Boulevard, it is livery taxis; and on Archer Avenue, it is commuter vans. But the number of buses themselves seem to be a problem as per community complaint. See Traffic section for bus travel speed.

Buses

Buses are the main surface transit mode in Downtown Jamaica, connecting commuters to regional and local destinations in proximity to Downtown Jamaica. The main surface transit providers are New York City Transit (NYCT), MTA Bus, and Nassau Inter County Express (NICE). NYCT and MTA Bus buses travel within New York City limits, while NICE buses travel to and from Nassau County. Bus routes to Downtown Jamaica are:

- **NYCT**  
Q1, Q2, Q3, Q4, Q5, Q17, Q20A, Q20B, Q24, Q30, Q31, Q36, Q42, Q43, Q44, Q54, Q76, Q77, Q83, Q84
- **MTA Bus**  
Q6, Q8, Q9, Q25, Q34, Q40, Q41, Q60, Q65, Q110, Q111, Q112, Q113, Q114
- **NICE**  
N1, N4X, N4, N6, N26, N22, N22A, N22X, N24

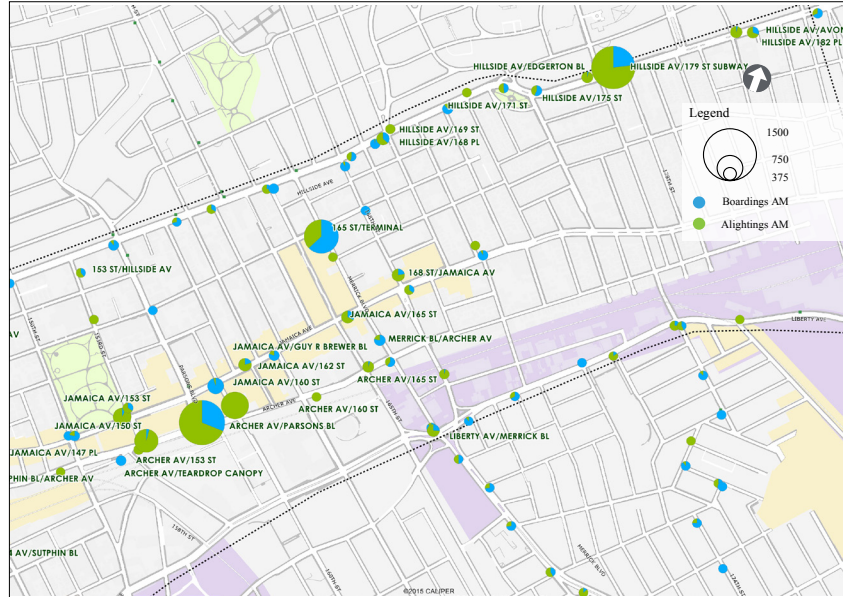
These buses travel mainly along the major corridors to Downtown Jamaica. Figures 8-3 and 8-4 show ridership (boarding and alightings) at stops in the Study



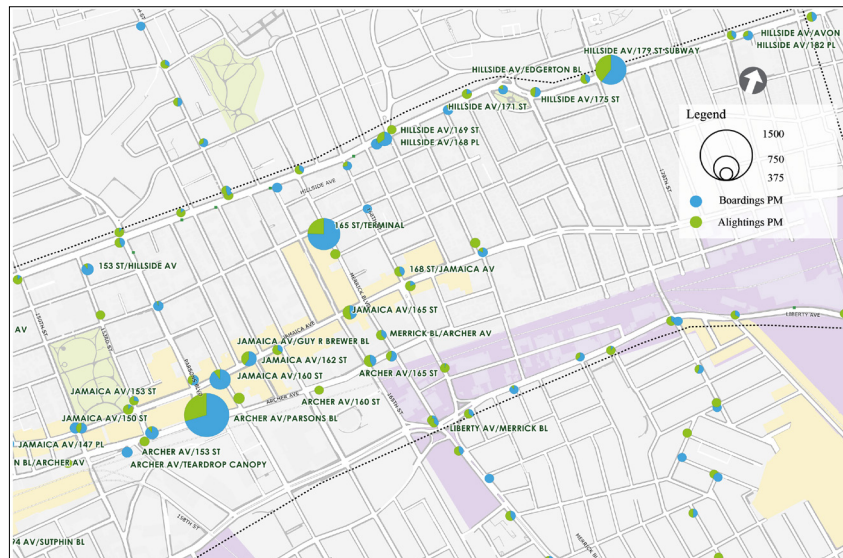


Area. During the morning peak, more passengers alight than board at the hubs, except at the 165th Street Bus Terminal where most NICE buses terminate.

**Figure 8-3: Bus Ridership at key stops (Morning)**



**Figure 8-4: Bus Ridership at key stops (Evening)**



In the evening peak hour, the pattern is reversed. The busiest stops are located at the subway stations i.e. Sutphin-Archer and Jamaica Center. The bus stops on the south side of Archer Avenue between 153rd Street and Parsons Boulevard are busiest during both peak periods, while Sutphin Boulevard/Archer Avenue sees significantly more activity in the Morning peak than the Evening.

The NICE buses have high ridership during both Morning and Evening peaks reflecting significant travel between Nassau County and Downtown Jamaica. Table 8-6 shows bus routes with the highest passenger boarding in the study area.

**Table 8-6: Bus Routes with the Highest Total Passenger Boarding**

Ranking	Passenger Boarding – AM Peak			Passenger Boarding – PM Peak		
	Route & Direction	Inbound/Outbound	# of Boardings	Route & Direction	Inbound/Outbound	# of Boardings
1	Q60 – WB	OB	818	N6 – EB	OB	867
2	N6 – WB	IB	795	Q60 – EB	IB	708
3	Q6 – NB	IB	786	N4 – EB	OB	660
4	Q3 – NB	IB	753	N6 – WB	IB	599
5	N4 – EB	OB	740	N4 – WB	IB	556
6	Q17 – NB	OB	685	Q54 – EB	IB	556
7	N4 – WB	IB	685	Q6 – SB	OB	537
8	Q77 – NB	IB	652	Q60 – WB	OB	521
9	Q17 – SB	IB	645	Q3 – SB	OB	470
10	N6 – EB	OB	633	Q17 – SB	IB	458

### Bus Traffic

The highest bus volumes were observed on Archer Avenue near the Jamaica Center subway station, followed by Hillside Avenue, Merrick Boulevard, and Jamaica Avenue (See Figure 8-5).

### Bus Travel Speeds

Bus speeds in Downtown Jamaica are very low, as observed on Archer Avenue, Hillside Avenue, Jamaica Avenue, and Merrick Boulevard. Relatively slow speeds were also observed along the eastern end of Liberty Avenue and Queens Boulevard (north of Hillside Avenue). Figure 8-6 shows the average bus speed during the morning peak period.

Table 8-7, Charts 8-1, and 8-2 show the comparative bus travel speeds.

### Bus Travel Times

Bus travel times from origins outside Jamaica to Downtown Jamaica was analyzed to determine routes travel times. The analysis (Table 8-8) relied on scheduled travel times as well as actual travel times. It shows NICE bus routes are the longest trips (time and distance) into the downtown hubs; however, nu-

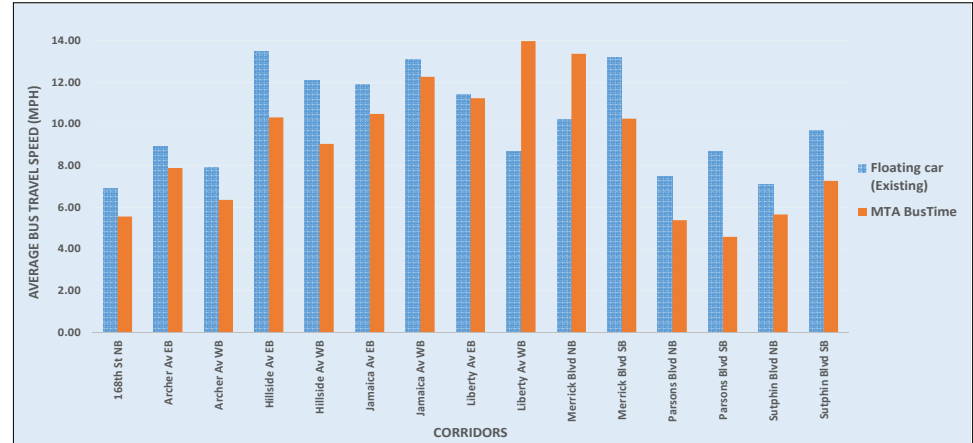
**Figure 8-5: Hourly Bus Traffic (Morning)**



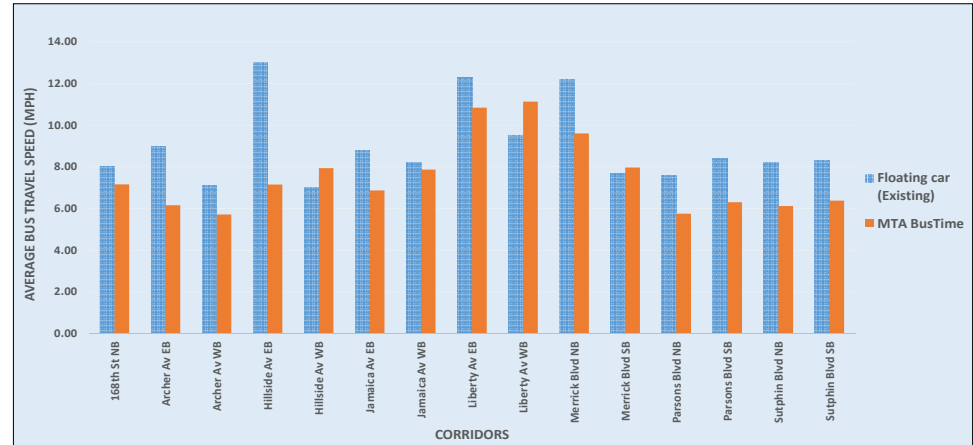
**Table 8-7: Average Buses Travel Speed Comparison (mph)**

Corridor	AM		PM	
	Floating car (Existing)	MTA BusTime	Floating car (Existing)	MTA BusTime
168th St NB	6.90	5.56	8.00	7.16
Archer Av EB	8.90	7.89	9.00	6.16
Archer Av WB	7.90	6.36	7.10	5.71
Hillside Av EB	13.50	10.32	13.00	7.15
Hillside Av WB	12.10	9.05	7.00	7.94
Jamaica Av EB	11.90	10.49	8.80	6.87
Jamaica Av WB	13.10	12.27	8.20	7.87
Liberty Av EB	11.40	11.24	12.30	10.84
Liberty Av WB	8.70	13.98	9.50	11.13
Merrick Blvd NB	10.20	13.37	12.20	9.60
Merrick Blvd SB	13.20	10.26	7.70	7.97
Parsons Blvd NB	7.50	5.39	7.60	5.75
Parsons Blvd SB	8.70	4.59	8.40	6.30
Sutphin Blvd NB	7.10	5.66	8.20	6.12
Sutphin Blvd SB	9.70	7.27	8.30	6.38

**Chart 8-1: Average Travel Speed For Bus Only - AM Peak**



**Chart 8-2: Average Travel Speed For Bus Only - PM Peak**



merous MTA/NYCT routes within Queens can compete for the longest travel times. Six out of the 36 (16%) routes (Q8, Q20, Q30, Q36, Q41, Q54, and Q76) take an hour or longer from their origin to destination within the Study Area. Some of the long travel times are attributable to indirect routes that serves a broader segment of the borough providing wider transit coverage.

**Bus Operations**

A number of conditions impact bus operations, passenger safety and convenience. These issues have been confirmed by data analysis and site observation in the Morning, Midday, Evening and Saturday afternoons peak periods at some observed locations.



**Figure 8-6: Bus Speed during Morning Peak Period**



Congestion impedes the efficient and smooth operation of buses in the study area. A number of issues are highlighted below:

- Inefficient use of bus stops – Consolidation of multiple high-volume bus routes at single bus stops results in inadequate space to accommodate waiting passengers, over capacity on sidewalks and a queue of buses waiting to serve the stop. This is a regular problem at bus stops around Sutphin Boulevard/Archer Avenue and along Parsons Boulevard and Jamaica Avenue, as well as around Jamaica Center station.
- Delays at bus stops – High traffic volumes and congestion often slow buses re-entering moving lanes pick up and drop off at bus stops. This was observed on Jamaica Avenue around 175th Street and northbound on Sutphin Boulevard approaching Hillside Avenue.
- Buses operating above capacity – Passenger demand sometimes exceeds capacity on buses in Jamaica; as a result this forces passengers on the curb to wait for more than one bus to arrive before boarding. Many times this is due to low frequency, but can also be attributed to the sheer demand on routes that already have high frequency, like the Q5 and Q17.
- Long and indirect routes – A number of routes are circuitous from areas of Queens less well-served by transit, providing these areas with indirect bus

**Table 8-8: Bus Travel Times**

Route	Maximum Travel Time Along Route to Study Area interchange (minutes)			
	Parsons/Archer	Sutphin/Archer	165 <sup>th</sup> Street Terminal	Hillside/179 <sup>th</sup>
Q1	-	-	31	23
Q2	-	-	30	23
Q3	-	-	39	33
Q4	38	-	-	-
Q5	45	-	-	-
Q6	-	32	42	-
Q8	-	55	64	-
Q9	-	14	26	-
Q17	-	-	48	43
Q20A	53	49	-	-
Q20B	60	58	-	-
Q24	51	49	-	-
Q25	59	-	-	-
Q30	38	65	-	-
Q31	51	53	-	-
Q34	28	-	-	-
Q36	-	-	62	56
Q40	-	17	-	-
Q41	-	50	60	-
Q42	44	-	-	-
Q43	-	47	-	33
Q44+	39	38	-	-
Q54	77	75	-	-
Q56	54	52	-	-
Q60	-	52	-	-
Q65	44	-	-	-
Q76	-	-	66	59
Q77	-	-	47	41
Q83	29	-	-	-
Q84	26	-	-	-
Q85	37	-	-	-
Q110	-	-	-	23
Q111	21	-	-	-
Q112	32	-	-	-
Q113	56	-	-	-
Q114	70	-	-	-
N1	-	-	66	59
N4	64	-	-	-
N6	-	-	52	46
N22	-	-	88	83
N24	-	-	90	85
N26	-	-	59	53

service that are not particularly fast options. This reality appears to be driving people to use commuter vans or livery taxis to satisfy their travel needs, thus abandoning lower cost for a much shorter and more reliable trip.

The Q5, Q83, and Q85 are some routes operating above capacity. The evening peak sees considerably less routes operating above capacity, although it is generally confined to the same routes that do so during the morning peak. The Q76 and Q54 are examples of long and indirect routes that take over an hour from end to end. Figure 8-7 shows bus delay hotspots along major corridors such as Hillside Avenue, Jamaica Avenue, and Archer Avenue.

### Bus Passenger Comfort Level

In order to understand which bus routes in the Study Area were operating above capacity, a 'load factor' analysis was completed for each route. This analysis compares the number of people on a bus for each segment of the route with the actual capacity of the bus to develop a load factor that shows how crowded buses are along different route segments. The Q5, Q17, and Q56 were the routes with the highest level of passenger discomfort in a peak period. Table 8-9 shows the passenger comfort levels for routes entering the Study Area in the Morning and leaving in the Evening.

The Transit Capacity and Quality of Service Manual (TCQSM) describes the quality of service at various load factors as follows:

- Up to 0.8: Passengers have some freedom in where they sit
- Up to 1.0: All passengers can sit
- Up to 1.25: Standees may need to shift position within the vehicle at each stop as other passengers board or alight
- Up to 1.5: difficult for alighting passengers to get to doors, boarding passengers must get others to move
- Over 1.5: crush loading conditions; passengers can be delayed by not being able to board vehicles or vehicles not stopping

At 1.25 load factor and over, passengers begin to feel uncomfortable and perceive in-vehicle time to be much longer than it actually is, particularly for standees who, according to researchers, may perceive in-vehicle time in these conditions at over twice the actual elapsed time.

In the Morning peak, the most above capacity routes entering the primary Study Area are the Q5 (Limited and local), Q17, and Q56. The Q5 is one of the most frequent bus routes with a bus arriving effectively once every 3.5 minutes. As it travels north on Merrick Boulevard, it starts to reach capacity south of the primary Study Area, at the intersection with Baisley Boulevard. The case is similar with the Q17, with even greater frequencies (buses arriving every 2.5

Figure 8-7: Average Bus Delay



minutes in the peak). Unlike the Q5 and Q17, the Q56 has one of the lowest frequencies with buses only once every 15 minutes in the peak. It is above capacity as it approaches the primary Study Area; it then unloads most of its passengers in the northeast corner (Hillside Avenue/179th Street) before traveling under capacity to its Jamaica Avenue terminus just east of Merrick Boulevard.

The incidence of bus routes operating above capacity is much less in the evening peak, although it is generally confined to the same routes as the Morning. This may be attributed to more linked trips on the reverse commute as compared to the Morning.

Table 8-9: Above Capacity Bus Load Factors

Load Factor	AM Peak	PM Peak
<b>Extremely Above Capacity Routes (LF = 1.25-1.50 or greater)</b>	Q5, Q17, Q56	-
<b>Slightly Above Capacity Routes (LF = 1.00-1.25)</b>	Q2, Q3, Q6, Q9, Q40, Q85	Q2, Q5, Q6, Q83
<b>Routes at Capacity (LF = 0.8-1.0)</b>	Q83, Q110	Q4, Q9, Q40, Q56



### Commuter Vans

Commuter vans are a form of publicly regulated, privately owned micro-transit in New York City, which fabricated a robust network for areas that have unreliable or infrequent public transit. They generally provide service along bus routes. Jamaica Center is the largest commuter van hub in the city. They serve some of the longest routes originating mainly from the Rockaways and locations along the Nassau County line. Due to their convenience and speed, commuter vans provide a competitive service for the Southeast Queens transportation market. The commuter vans serving Downtown Jamaica shadow the Q4, Q5, Q83, Q84, Q85, Q111 and Q113. There are three designated commuter van stops in Downtown Jamaica – two in the vicinity of Jamaica Center (153rd Street between Jamaica and Archer Avenues (recently relocated from Parsons Boulevard) and inside the 158th Street tunnel under the LIRR viaduct; and another in the vicinity of the Sutphin-Archer Station (91st Avenue between Sutphin Boulevard and 146th Street). There is also an established undesignated stop on Guy R. Brewer Boulevard (between Jamaica and Archer Avenues). Figure 8-8 shows the official and unofficial commuter van stops.

Beside the stops highlighted above, many vans pickup passengers in bus stops along the south side of Archer Avenue between 153rd and 160th Streets though mainly between 153rd and Parsons Boulevard. Commuter van pick-up activity in bus stops is an on-going problem impacting bus operations.

Precise ridership data is unavailable for commuter van service to/from Downtown Jamaica; however, the recently completed Citywide Commuter Van Study sheds some light on this issue. An estimate of peak hour drop-off/pickup was made from commuter van counts using 90% occupancy establishing approximately 1,600 alightings on 158th Street south of Archer Avenue and about 300 on Archer Avenue east of Parsons Boulevard during the AM peak hour. The PM peak reveals about 100 commuter vans (1,200 boarding passengers) approaching Parsons Boulevard on Archer Avenue. See Table 8-10 and Figures 8-9, 8-10.

**Table 8-10: Peak Period Pick Up & Drop Off**

Location	Peak Period	Vans	People
Parsons/Archer	Morning Drop-off	25	300
158th/Archer	Morning Drop-off	132	1,584
Parsons/Archer	Evening Pick-up	103	1,236



### Taxi

A mixture of informal and formal taxi service exist in Downtown Jamaica. On Sutphin Boulevard, just south of Archer Avenue, TLC green taxis can be found standing, dropping, and picking up passengers at Jamaica Station. In addition to the green taxis, an informal taxi industry exists that competes with official taxis and buses. They operate primarily along Sutphin Boulevard (shadowing the Q6 bus route) and along Jamaica Avenue (east of 153rd Street). Like some commuter vans, livery taxis often impede bus operation by dropping-off or picking up passengers in bus stops or bus lanes. These various informal forms of transportation though providing what appear to be necessary service contribute significantly to congestion.

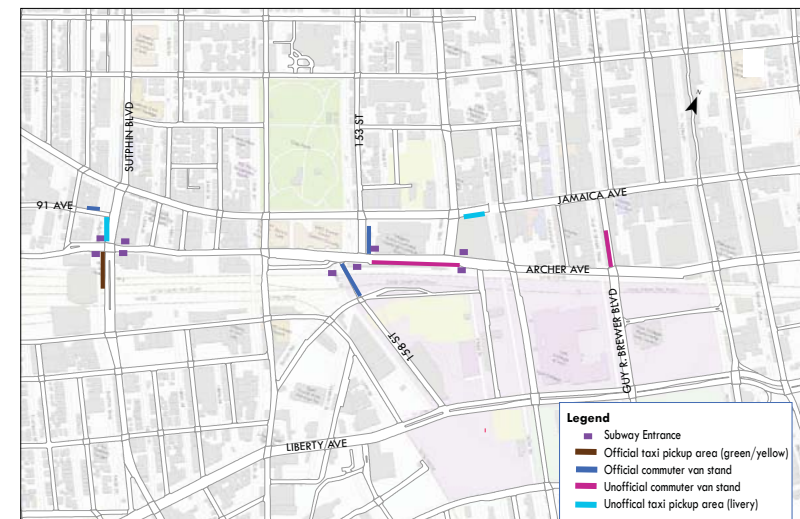


**Commuter Van Pick Up at Archer Ave & Parsons Blvd**

### 8.4 Traffic Violations and Transit Operations

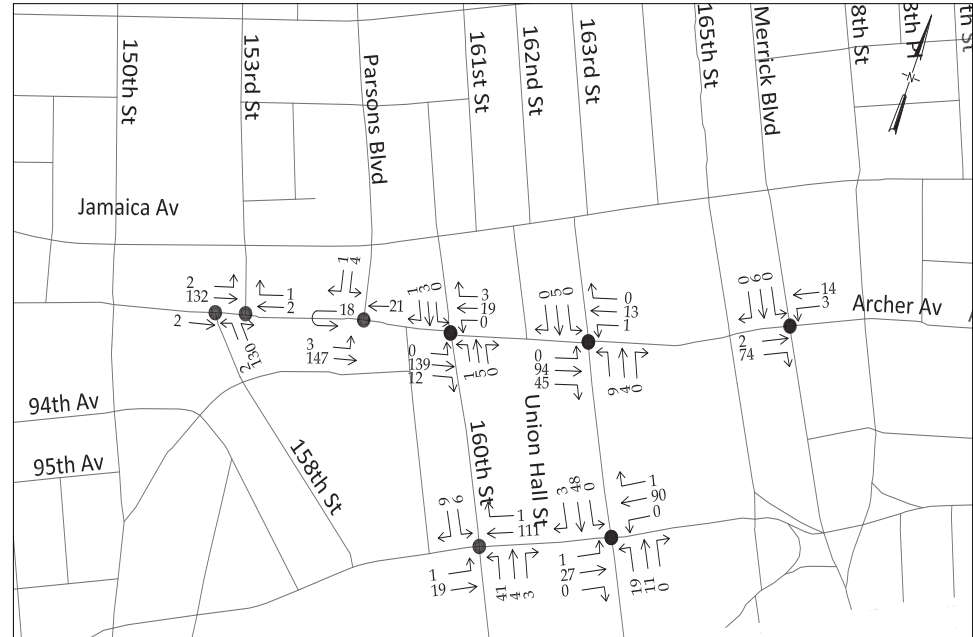
In addition to being known for Jamaica Avenue’s retail attractions, Downtown Jamaica is also defined by its transit orientation and service. Buses provide

**Figure 8-8: Commuter Van and Taxi Pick Up Locations**

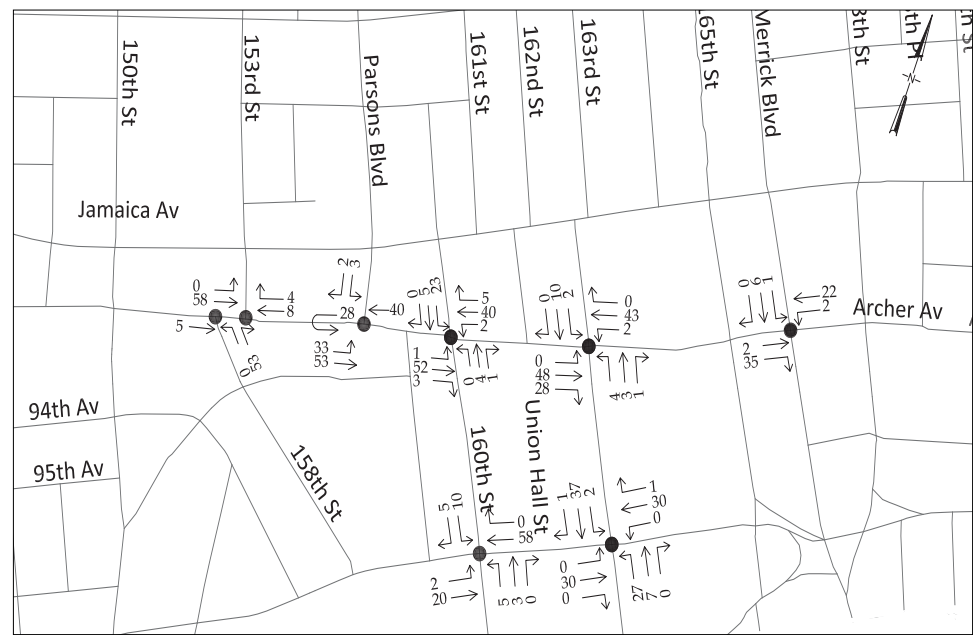


a significant amount of the transit service is Downtown Jamaica, but the quality of service is often compromised by vehicles parking or stopping in bus stops and lanes. These violations negate efforts to increase bus travel speeds and reduce travel times. One example is the bus lane on Jamaica Avenue between 153rd Street and Sutphin Boulevard (Figure 8-11). A parking utilization survey for this roadway segment during bus lane operating hours revealed the prevalence of illegally parked vehicles that rendered the bus lane ineffective and forced all vehicles into one moving lane.

**Figure 8-9: Existing AM Peak Commuter Van Counts**

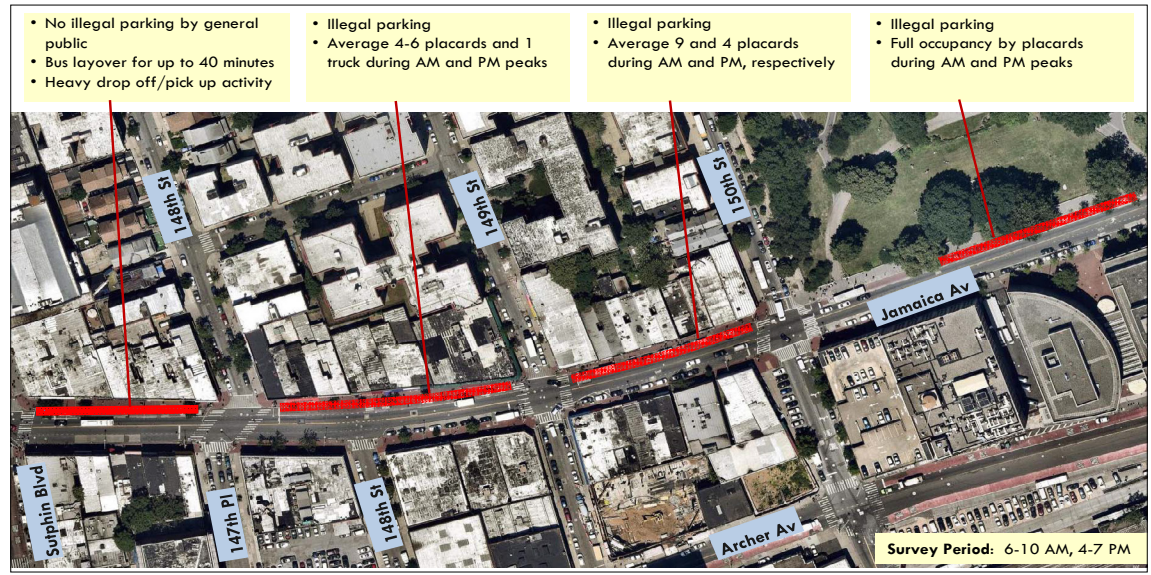


**Figure 8-10: Existing PM Peak Commuter Van Counts**





**Figure 8-11: Jamaica Avenue Bus Lane Peak Period Parking Study Results**







Q65 JAMAICA LIRR STA-AIRTRAIN 542

KING MAN MUSEUM

COOKIES

150

91

SERVICE

150





# TRUCKS/GOODS MOVEMENT





Met  
FOODMARKETS

8  
MITSUBISHI  
COMMERCIAL TRUCKS  
1234567890  
1234567890  
1234567890

Doritos  
Viva

1234567890  
1234567890  
1234567890



## 9.1 Introduction

Downtown Jamaica has many land uses that depend on trucks for the delivery of goods and services. Large buildings such as the Social Security Administration Building and Gertz Mall provide loading docks. Other businesses on Liberty Avenue and in the IBZ (e.g. Royal Waste Transfer facility and cement batch mixing plants, etc.) also rely heavily on trucks. The industrial uses are concentrated in two distinct IBZs: one south of Liberty Avenue between Sutphin Boulevard and 157th Street and another south of the LIRR embankment between 165th Street and Dunkirk Street.

The truck traffic generated by the land uses cannot be denied. significant presence of trucks in the traffic stream cannot be denied. Consequently, the needs of industries and trucks have to be considered in terms of access, circulation, bridge strikes and loading and unloading. Quality of life issues created by truck traffic (noise, air pollution, and safety) also must be addressed. To examine and address the complexity of truck traffic in Downtown Jamaica, a focus area bounded by Hillside Avenue (north), 183rd Street (east), Liberty Avenue (south), and the Van Wyck Expressway (west) was identified. The analysis that follows is largely an abbreviated version of the work completed by ARUP and its sub-consultant BFJ.

## 9.2 Existing Local and Through Truck Routes

There are a number of truck routes in Downtown Jamaica providing connections to local and regional facilities such as the Van Wyck Expressway. See Figure 9-1.

### Through Truck Routes

Through Truck Routes are mainly major urban arterials and highways to be used by trucks with neither an origin nor destination within the borough. The Through Truck Routes in the study area are the Van Wyck Expressway/I-678, Queens Boulevard, and Hillside Avenue.

### Local Truck Routes

Local Truck Routes are designated for trucks with an origin and destination within a borough, i.e. making a delivery, or for loading or servicing. The local truck routes are: 94th Avenue (Van Wyck Expressway to Sutphin Boulevard), Sutphin Boulevard (94th Avenue to Liberty Avenue), Merrick Boulevard and 168th Street (Hillside Avenue to Liberty Avenue, and Liberty Avenue (Van Wyck

Expressway to 183rd Street).

There are 11 identified gateways for freight vehicles to access and egress the Study Area via Through and Local Truck Routes. As shown in Figure 9-1, they are:

1. Queens Boulevard at Hillside Avenue
2. Van Wyck Expressway/I-678 at Hillside Avenue
3. Van Wyck Expressway/I-678 at 94th Avenue
4. Van Wyck Expressway/I-678 at Liberty Avenue
5. Hillside Avenue at Merrick Boulevard
6. Hillside Avenue at 168th Street
7. Guy R Brewer Boulevard at Liberty Avenue
8. Merrick Boulevard at Liberty Avenue
9. Hillside Avenue at 183rd Street
10. Jamaica Avenue at 183rd Street
11. Liberty Avenue at 183rd Street

Figure 9-1: Local and Through Truck Routes

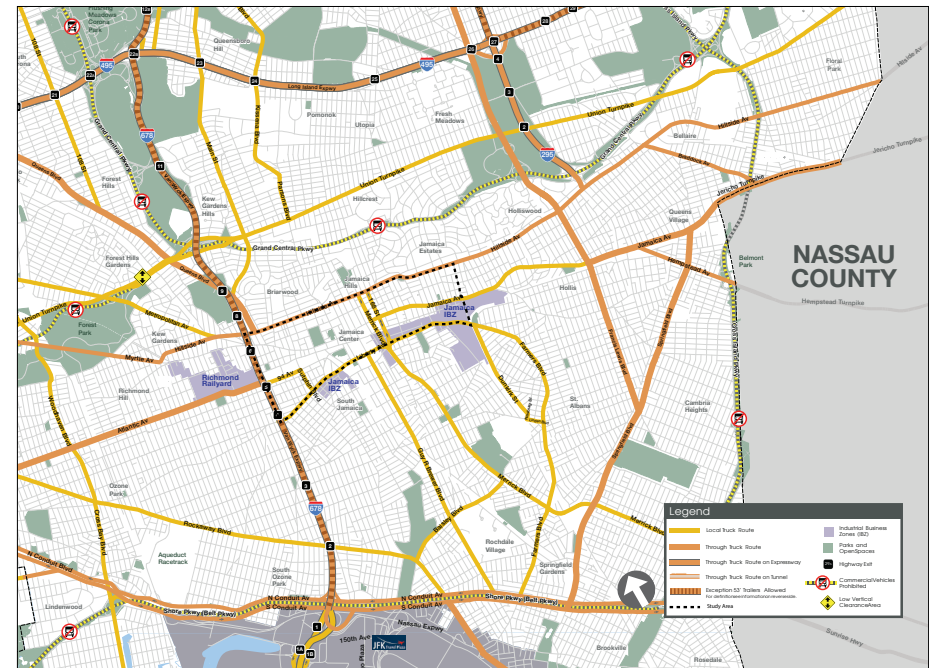
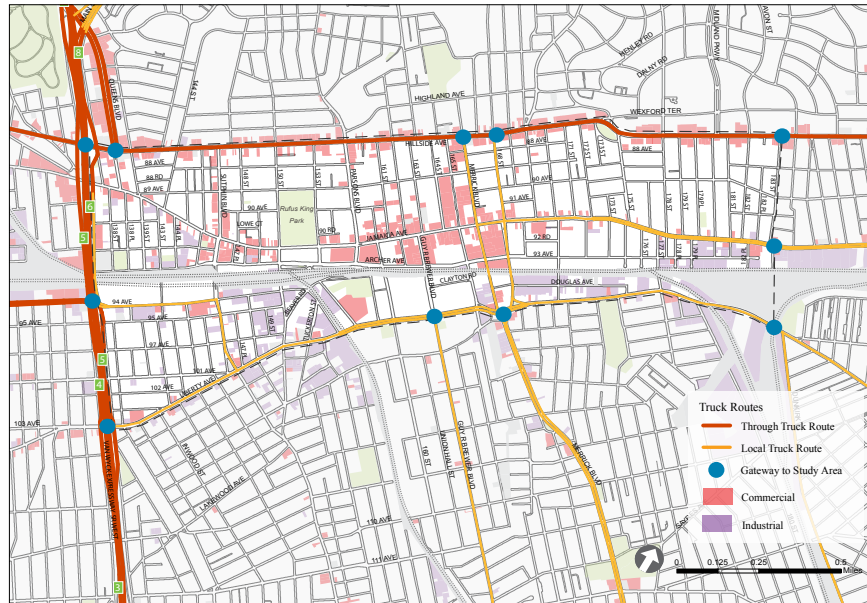


Figure 9-2 shows the land uses that generate significant truck trips. The eastern IBZ located south of the LIRR right-of-way, necessitates consideration of clearance heights for trucks. The New York State maximum height for commercial trucks is 13 feet, 6 inches. The LIRR overpass at 168th Street is 11 feet, 6 inches; at Merrick Boulevard it is 12 feet, 1 inch; at 170th Street it is 12 feet, 11 inches; and at 177th Street is 12 feet, 6 inches.

**Figure 9-2: Truck Routes with Commercial/Industrial Uses**



### 9.3 Truck Trip Generators

Areas with high truck trip generators were identified using employment data from the North American Industry Classification System (NAICS), land-use data from the Department of City Planning PLUTO database, and industrial and commercial jobs concentration data from the US Census Longitudinal Employer-Household Dynamics (LEHD) database. A field survey was conducted for confirmation. Also, an in-person questionnaire survey of local businesses was conducted to further understand truck activity in the Study Area. Figures 9-3 and 9-4 show the location of industrial and commercial employment, respectively.

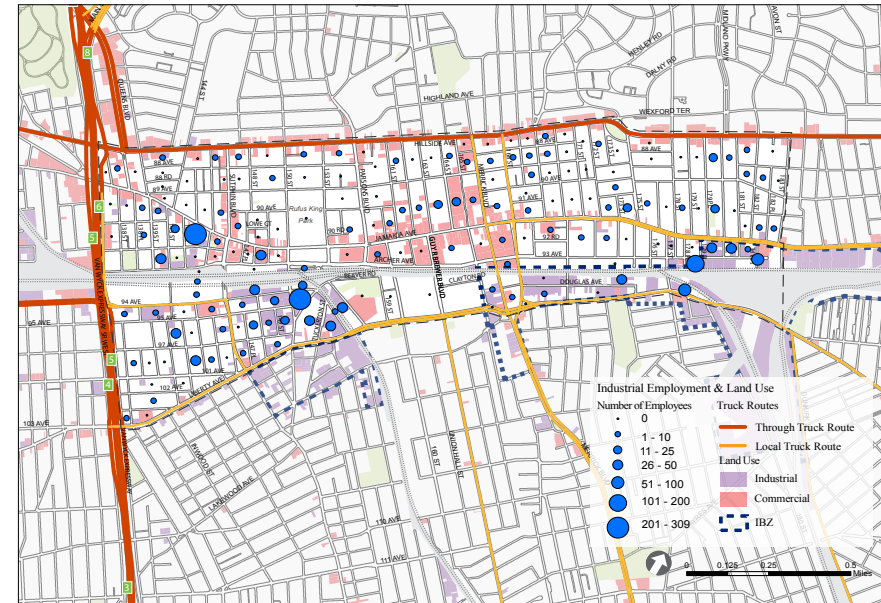
#### Industrial employment:

- The Downtown Jamaica IBZ in the eastern section of the Study Area has a

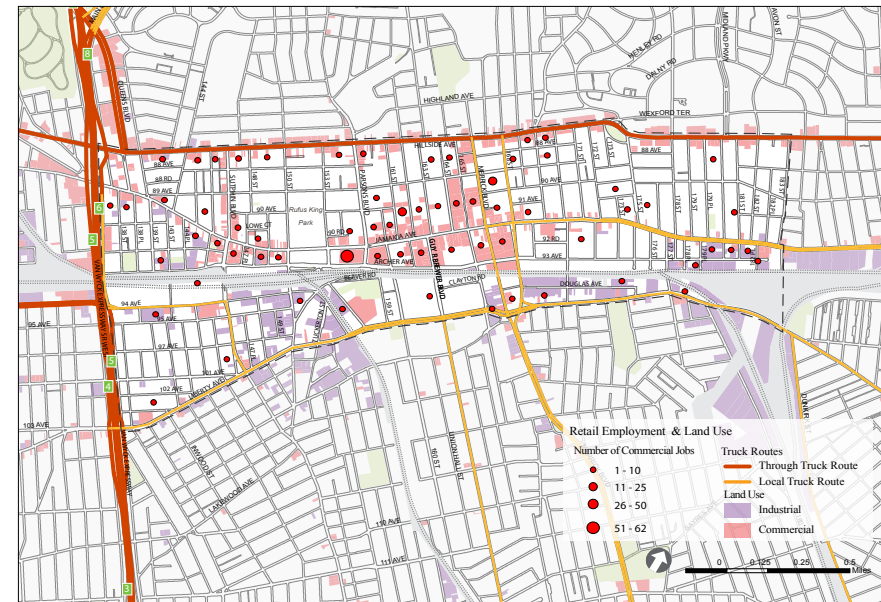
somewhat high concentration of industrial employment.

- The western section of the Study Area also shows moderate clusters of industrial employment

**Figure 9-3: Industrial Employment and Land Use**



**Figure 9-4: Retail Employment and Land Use**





- There is a high concentration of industrial employment at 144th Place and Jamaica Avenue.
- Beaver Road (between 150th and 158th Streets, directly south of the LIRR right-of-way) has a high cluster of industrial business employment
- The area north of Liberty Avenue (between 177th Street and 183rd Street, south of the LIRR right-of-way) also has a high concentration of industrial employment.

#### Commercial employment:

- The LEHD data shows commercial employment distributed along Jamaica Avenue, primarily west of Merrick Boulevard.
- Hillside Avenue shows a fairly consistent distribution of commercial employment.
- The LEHD data map shows a large number of commercial employment at Parsons Boulevard and Jamaica Avenue.
- Sutphin Boulevard and the 165th Street Mall are known commercial corridors; but their employment numbers were not significant compared to others.

### 9.4 Business Survey

An industrial business questionnaire was created to target locations with potentially high freight trip attraction (FTA) or freight trip production (FTP). Businesses were also selected for outreach based on high employment numbers, which could equate to larger industrial manufacturing operations. The surveys aimed to gain both quantitative data regarding the average number of truck trips, for example, as well as anecdotal comments on issues within the Study Area. Outreach was conducted over several weeks via phone, e-mail and door-to-door. Fifteen businesses responded to the survey.

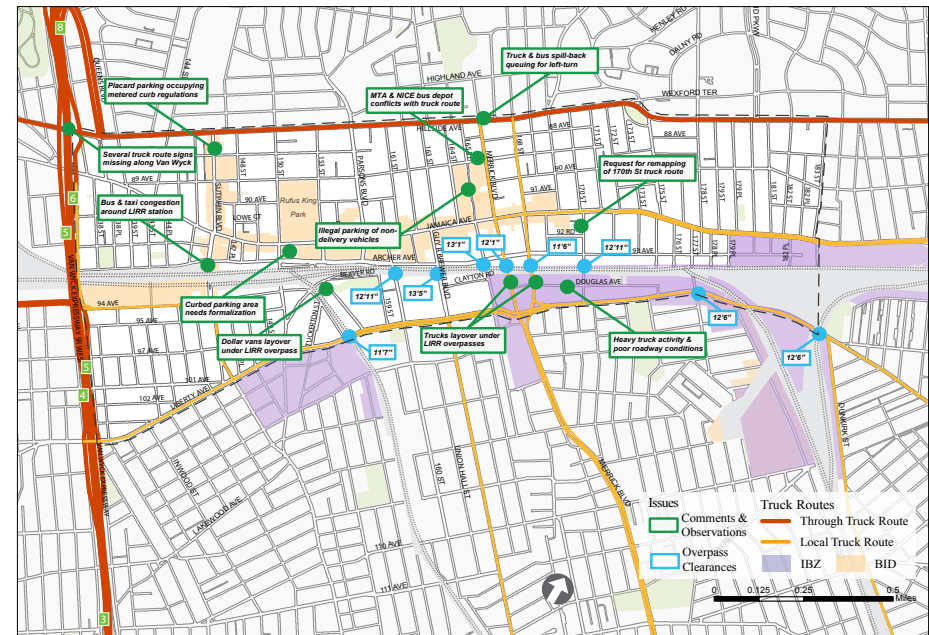
Outreach was also conducted with each of the local Business Improvement Districts (BIDs), including the Sutphin Boulevard BID, Jamaica Center BID, 180th Street BID, the 165th Street Mall BID, as well as the Greater Jamaica Development Corporation (GJDC).

The survey identified some major issues affecting businesses/trucks operating in the Study Area. Some respondents were generally aware of truck traffic issues in proximity to their businesses; others addressed specific issues faced by their businesses, while others addressed conditions within the Study Area. The main

issues were related to traffic congestion, truck routes, parking enforcement, truck route signage, and roadway conditions. Figure 9-5 provides a summary of the issues.

**Traffic Congestion.** Traffic congestion was one of the most frequently cited issues for businesses relying on routes such as I-678, Hillside Avenue, Merrick Boulevard, 168th Street, and Jamaica Avenue.

Figure 9-5: Circulation Issues



**Truck Routes.** Limited north/south truck route options connecting the northern and southern portions, aside from Merrick Boulevard southbound, 168th Street northbound, and the Van Wyck Expressway. Truck turning maneuvers on some designated truck routes in the eastern IBZ are difficult due to on-street parking. Intersections identified with issues are:

- 180th Street and Liberty Avenue
- 168th Street and Jamaica Avenue
- Merrick Boulevard and Jamaica Avenue
- Sutphin Boulevard and 94th Avenue

Survey respondents suggested adding 170th Street between Jamaica and Liberty Avenues to the truck route network. This was also a request from an elected official.

**Parking Enforcement.** Illegal parking (or idling) of trucks is common, particularly in the more industrial areas. Many businesses cannot accommodate all their vehicles onsite and are forced to park on-street or line up trucks to make deliveries.

**Truck Route Signage.** Lack of consistent truck route signage in the Study Area was identified. Drivers sometimes find themselves off route on narrow residential street posing difficult turning maneuvers. Signage indicating where large freight vehicles are unable to make turns at certain intersections would improve wayfinding and adherence to truck routes.

**Road Condition.** Some respondents identified lack of road maintenance causes crashes, congestion and high repair costs for businesses. Examples they identified are:

- Merrick Boulevard and Jamaica Avenue
- Liberty Avenue and Merrick Boulevard

Other locations with poor roadway conditions are:

- Douglas Avenue between 168th Street and 175th Street
- Beaver Road between Liberty Avenue and 159th Street
- Tuckerton Street between Liberty Avenue and 157th Street

## 9.5 Truck Traffic

Truck traffic in the Study Area was recorded for the peak periods (7 am - 9am and 4pm - 6pm) from manual turning movement counts collected in March 2016. Figure 9-6 shows the percentage of truck traffic during the AM peak period.

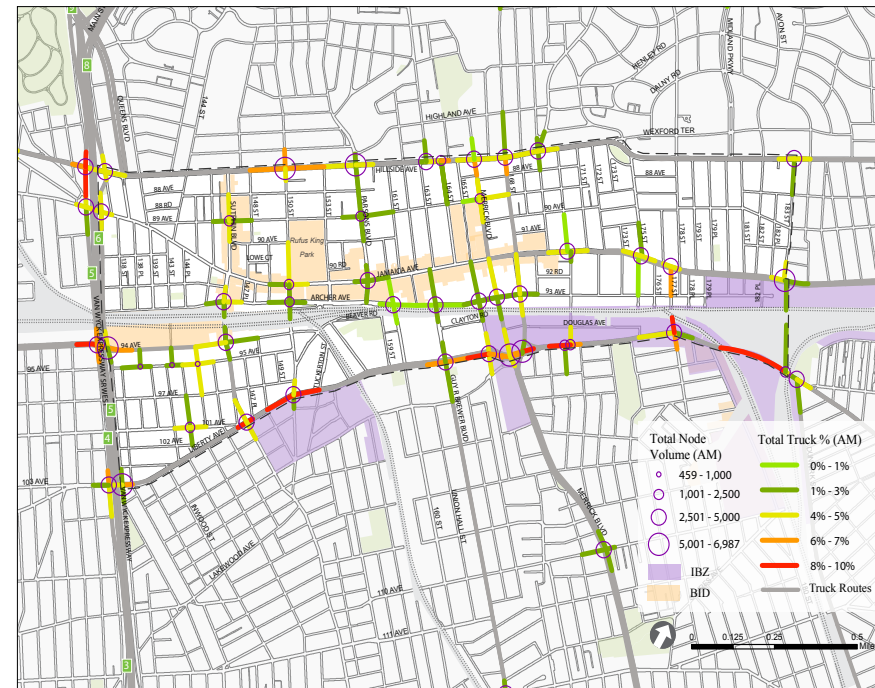
### Corridors with Heavy Truck Activity

Liberty Avenue, Hillside Avenue, and Jamaica Avenue are heavy truck traffic corridors.

#### Liberty Avenue

Liberty Avenue an east-west local truck route has a high concentration of truck activity, especially in the Jamaica IBZ. It also connects directly to the Van Wyck

**Figure 9-6: Truck Volume (percent) – AM Peak Period**



Expressway. It carries the highest truck volume with approximately seven percent of the total traffic. Cross streets, such as 170th Street and 177th Street, also have heavy truck traffic.

#### Hillside Avenue

Hillside Avenue a through truck route that connects to the Van Wyck Expressway has the second highest truck volume, i.e., five percent of the AM peak traffic.

#### Jamaica Avenue

Jamaica Avenue is also a through truck route and the main corridor of Jamaica BID. Truck traffic along this corridor is less with 150-200 trucks or two to three percent of the AM peak traffic.

#### Truck Loading/Unloading and Parking Needs

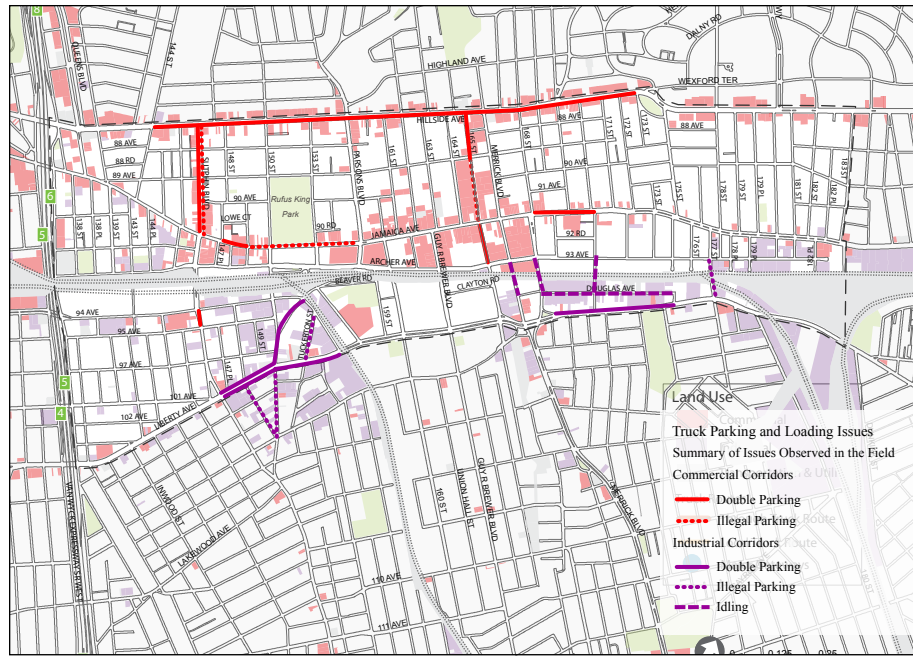
The Study Area has very limited truck parking or loading zones which contributes to the incidence of illegal parking, double-parking and traffic congestion. Figure 9-7 shows the truck loading/unloading zones associated with the exist-



ing truck routes in the study area, while Figure 9-8 shows where illegal parking and double-parking were observed adjacent to commercial and industrial uses.

## Commercial Corridors

Figure 9-7: Parking Regulations and Truck Routes

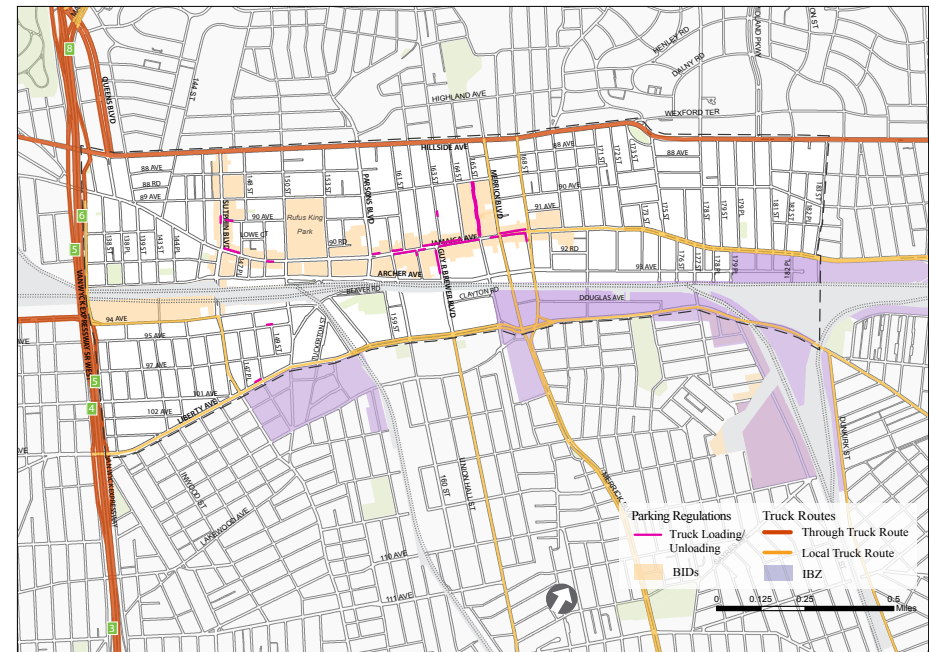


Double parked trucks were observed along Sutphin Boulevard, Jamaica Avenue, the 165th Street Mall, Liberty Avenue, and Hillside Avenue. These corridors have a mix of landuses and differing delivery needs. Illegal parking are more pronounced along these corridors. Field observations found a concentration of double-parked trucks along commercial corridors.

### 9.6 Future Conditions

It is anticipated that the amount of truck trips generated by the new office, retail and community facilities will exceed the truck trips eliminated due to disappearing manufacturing uses. This analysis is based on the truck trip generation factors (as per CEQR technical Manual). However, this analysis does not take into consideration the fact that the truck trips generated by manufacturing uses are generally special purpose trips that, in most cases, travel directly between Jamaica and their destination, often outside of the city. Truck trips generated

Figure 9-8: Truck Parking and Loading Issues



by retail, office, and residential uses are generally linked trips by trucks that are already in the Study Area making multiple stops.

The other element that affects truck circulation in the Study Area (and to a lesser degree parking), is the provision of loading docks. It appears that the large new commercial developments will be required to provide on-site loading docks. However areas with smaller commercial developments that fall under the threshold for the provision of loading docks may see a need for increased on-street loading zones.

The Study Area continues to see growth in construction-related truck activity, which create congestion around project sites. These construction projects usually have a Maintenance and Protection of Traffic (MPT) plan to mitigate construction impact.



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# COMMUNITY OUTREACH





DOWNTOWN JAMAICA  
TRANSPORTATION STUDY  
Public Meeting #1  
March 28, 2017



## 10.1 Introduction

NYCDOT held a series of meetings (Technical Advisory Committee and Public) to provide the community and stakeholders the opportunity to raise their concerns. The public outreach effort sought to obtain input from elected officials, residents, business owners, civic associations, and community representatives. This served to assist in identifying traffic and transportation problems in the study area and the development of improvement measures. In addition to the TAC and public meetings, street ambassadors were deployed and a web portal was created. Also, a series of presentations to report study progress were made to Community Boards (CB) and the Jamaica Leadership Council (JLC). The meetings and dates are listed below. Detailed meeting notes (Technical Advisory Committee and Public) are in Appendix C.

1. TAC Kickoff Meeting - November 6, 2015
2. Public Meeting #1 (Part 1) - December 2, 2015
3. Public Meeting #1 (Part 2) - December 16, 2015
4. TAC Meeting #2 - March 8, 2017
5. CB Meeting - May 9, 2017
6. Project Update to JLC - February 15, 2018
7. Public Meeting #2 - March 20, 2018
8. TAC Meeting #3 - March 21, 2018
9. Public Meeting #3 - March 28, 2018
10. CB 8 Meeting - April 26, 2018
11. CB 12 Meeting - May 16, 2018

## 10.2 Technical Advisory Committee Meetings

Three Technical Advisory Committee meetings were held throughout the course of our study. The first, held on November 6, 2015, introduced the study to stakeholders and outlined the study goal, objectives, and methodology. The meeting was attended by elected officials (Honorable State Senator Leroy Comrie), elected officials representatives, and representatives from Greater Jamaica Development Corporation, York College, the

LIRR, NYCT, and NYCDOT. Some of the key points/issues raised:

- 170th Street for potential truck route designation
- ADA issues should be considered
- Parking issues such as placard should be examine
- Will other SBS routes be considered for Downtown Jamaica

The second meeting, held on March 8, 2017, presented the existing conditions analysis and preliminary recommendations. The third meeting held on March 21, 2018 presented the future conditions analysis and recommendations. A key point/comment was:

- Side streets east of Parsons Boulevard should be studied for truck loading/unloading zones as trucks parked in bus lanes/bus stops negatively impacts bus operation

## 10.3 Public Meetings

All three public meetings opened up a dialogue for transportation issues. Residents, community board 12 representatives, elected officials, NYPD and staff from the NYCDOT attended all three meetings. Attendees expressed frustration regarding concurrent transportation issues related to surface transit and general traffic. Six discussion topics dominated the course of these meetings:

1. Mobility, Pedestrians, Bicycles and Safety
2. Traffic and Congestion
3. Quality of Life, Streetscape & Environmental Factors
4. Transit
5. Parking
6. Trucks

Residents and stakeholders provided a breadth of information about traffic, transportation, and other issues. Issues raised include:

- too much congestion; need TEA to direct traffic
- too many buses - better manage buses circulating in the downtown area
- need to manage commuter van operation



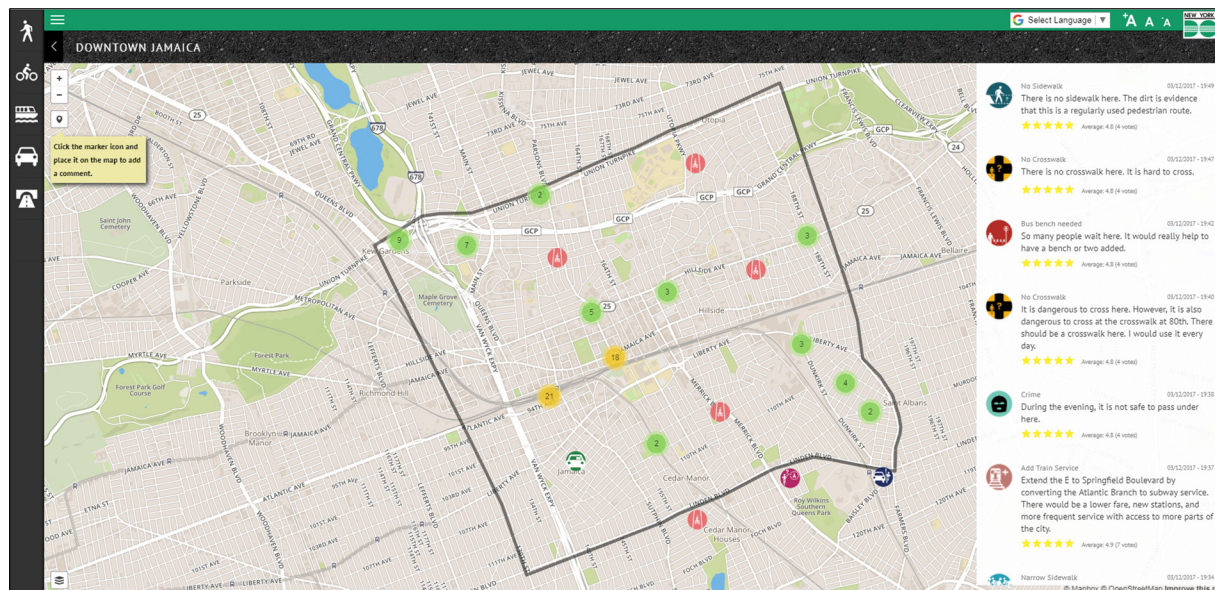
Public Meeting #1 (December 2, 2015), Harvest Room, Jamaica

- insufficient parking
- provide better lighting to make the place more inviting and safe
- use art to beautify LIRR wall

The second public meeting, held March 20, 2017, presented findings of existing conditions analysis. It also provided another opportunity for stakeholders to identify pertinent issues or locations for analysis. Attendees had many comments about transit service in the study area. They also expressed the need for increased enforcement to address parking, traffic, and other violations. The Honorable Council member I. Daneek Miller spoke to some of the traffic and transportation issues that should be addressed.

The third meeting, held March 28, 2018, presented findings of the future conditions analysis and a summary of recommendations. Attendees again expressed frustration about transit service. They also asked about the process for implementing the recommendations as well as the timeline for implementation. They expressed concern about recommendations involving

Figure 10-1: Feedback Portal



parking removal in residential areas.

### 10.4 Feedback Portal

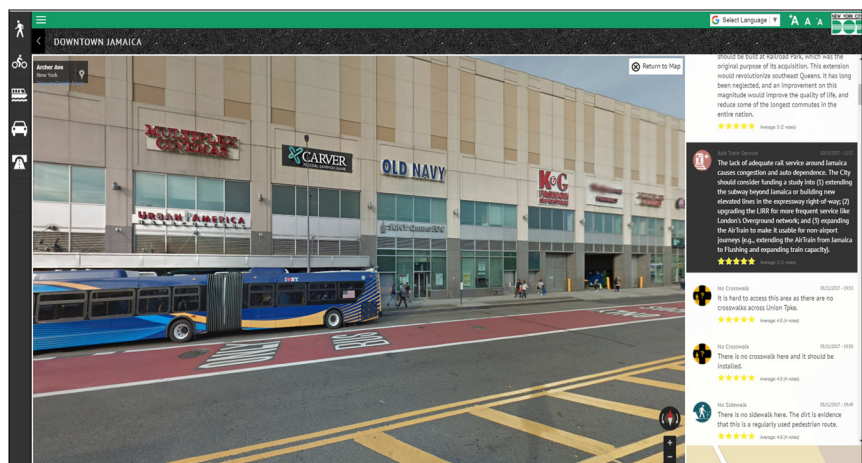
An on-line feedback portal was established to receive community comments. The web portal has an interactive map that enables users (anyone from the public) to identify areas of concern. Over 100 comments were submitted that spanned a variety of issues/concerns such as transit, parking, congestion, sidewalks, etc. Comments concerned locations in both the primary and secondary study areas on a variety of topics. Figure 10-1 represents the comment page showing locations where residents/stakeholders thought attention should be given.

Figure 10-2 provides a sample location identified in a comment. Sample comments are listed below.

Figure 10-2: Add Train Service

"The lack of adequate rail service around Jamaica causes congestion and auto dependence. The City should consider funding a study into (1) extending the subway beyond Jamaica or building new elevated lines in the expressway right-of-way; (2) upgrading the LIRR for more frequent service like London's

Figure 10-2: Sample Comment on Feedback Portal





Overground network; and (3) expanding the AirTrain to make it usable for non-airport journeys (e.g., extending the AirTrain from Jamaica to Flushing and expanding train capacity).”

#### *Bus Congestion*

“During rush hours the buses are lined up [on Jamaica Avenue] from Parsons Boulevard to Sutphin Boulevard, you have the Q53, Q56, Q30, Q31, Q25, Q34, Q65, Q8, Q41, Q6, and Q9. One Sunday afternoon I saw a solid line of buses from Parsons Boulevard to 150th Street most of the buses less than 1/2 full. The Q25, Q34, Q65 used to make the left at Archer Ave instead of on Jamaica Ave, that might reduce some of the congestion.”

#### *Bus Lane Usage*

“Buses have been given a “bus only” lane, then they pull out into the only commuter [traffic] lane & block traffic there, so both lanes are effectively unavailable for commuters (regular motorists). It really slows the traffic when the buses use both lanes”

#### *Other*

153rd Street/90TH Ave [next to Rufus King Park]

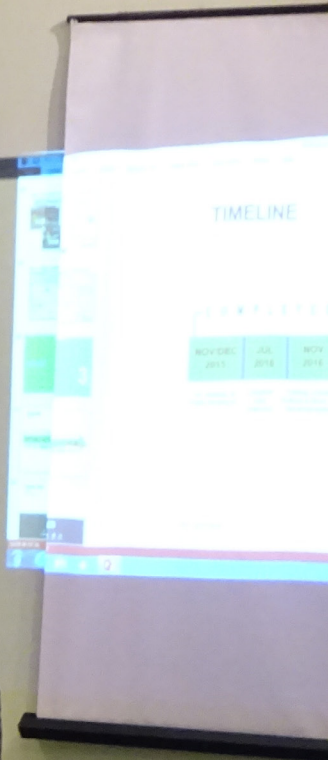
Members of the public park in “no parking” zone on south side of street to pick up adult day care participants. The day care bus then double parks in the middle of the street to pick up adult day care participants & leaves the vehicle in the middle of the street to escort the riders to the vehicle & do business with the adult day care providers inside, leaving the street blocked to the traffic that cannot get out because these are one way streets. If the members of the public did not park there, the bus would be able to pick up it’s riders without blocking all the traffic coming down this street.

### **10.5 Industrial Business Zone Survey**

A survey of businesses in the Industrial Business Zone was conducted to discern their issues and concerns. Respondents represented a variety of businesses in the IBZ, such as manufacturing, distribution, auto-related, wholesale, storage, hotel, food-related, and importing/exporting. Manufacturing and auto-related businesses were the most common respondent. About 42% (eight) of the respondents belonged to mid-sized companies which employed 16 to 30 employees. Respondents noted a variety of traffic concerns such as: need for stricter traffic enforcement, heavy traffic/congestion, missing parking signs, poor roadway condition, truck routes, and waste management truck operations.











# URBAN DESIGN & STREETScape



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WILSON CENTER





## 11.1 Introduction

One of the goals in the revitalization of Downtown Jamaica has always been improving the streetscape and general aesthetics. Over the years, there have been various studies presenting visions for Downtown Jamaica. An early example can be seen in the Greater Jamaica Development Corporation 2000, “Vision for Jamaica Center: A Planning Framework”. This study included specific traffic, transit, and streetscape improvements to complement and support future development. Key projects aimed at traffic management and streetscape enhancements were:

1. The Sutphin Oval
2. Archer Crescent
3. Atlantic Avenue Gateway Park/Atlantic Avenue Extension
4. The Mews at Sutphin Boulevard (Station Plaza)
5. The Boulevard at Atlantic Avenue

To shape the streetscape enhancements, building design and area-wide streetscape guidelines were proposed. Many of these efforts have advanced, some with necessary modifications. Figures 11-1 and 11-2 show visions for a retail market on Archer Avenue and the Mews at Sutphin Boulevard.

Since then, many things have changed both in terms of opportunities and constraints as redevelopment proceeds. Jamaica NOW with renewed efforts including the DRI, among others, has brought refined and advanced visions for implementation.

The final urban design plan to be implemented will naturally be subject to change due to many factors such as costs, multiple agency expectations, etc. as well as engineering and construction constraints/possibilities.

Figure 11-1: Archer Avenue Retail Market



Source: Visions for Jamaica Center: A Planning Framework, GJDC, 2000

Figure 11-2: The Mews at Sutphin Boulevard



Source: Visions for Jamaica Center: A Planning Framework, GJDC, 2000



### 11.2 NYCDOT Efforts: Jamaica NOW Urban Design & Streetscape Plan

Integral to the Downtown Jamaica Transportation Study is the Jamaica Now Action Plan and the Jamaica Now Leadership Council (JNLC) request for the preparation of a streetscape plan for Jamaica Avenue. This culminated in the launch of the NYCDOT Downtown Jamaica Urban Design and Streetscape Plan that explores design treatments focusing on Jamaica Avenue as well as other major corridors such as Archer Avenue and Parsons Boulevard shown in Figure 11-3.

The Urban Design & Streetscape Plan developed numerous concept proposals summarized in Figure 11-4: Streetscape Plan at a Glance. The proposals seek to address many conflicting uses for the available curb/roadway space as well. Some of the issues, listed below, are exactly those identified in the broader transportation study:

1. Commuter van activity and needs
2. High pedestrian volume and inadequate sidewalks
3. The general need to enhance the visual environment

Major elements in the Streetscape Plan includes the creation of the Parsons Boulevard Plaza (Figure 11-5), the relocation of the commuter van stop to 153rd Street (Figure 11-6), the greening of Jamaica Avenue (Figure 11-7),

and the beautification of the York College entrance on Archer Avenue (Figure 11-8) and the Teardrop (Figures 11-9 and 11-10).

Figure 11-3: NYCDOT Streetscape Plan Study Area

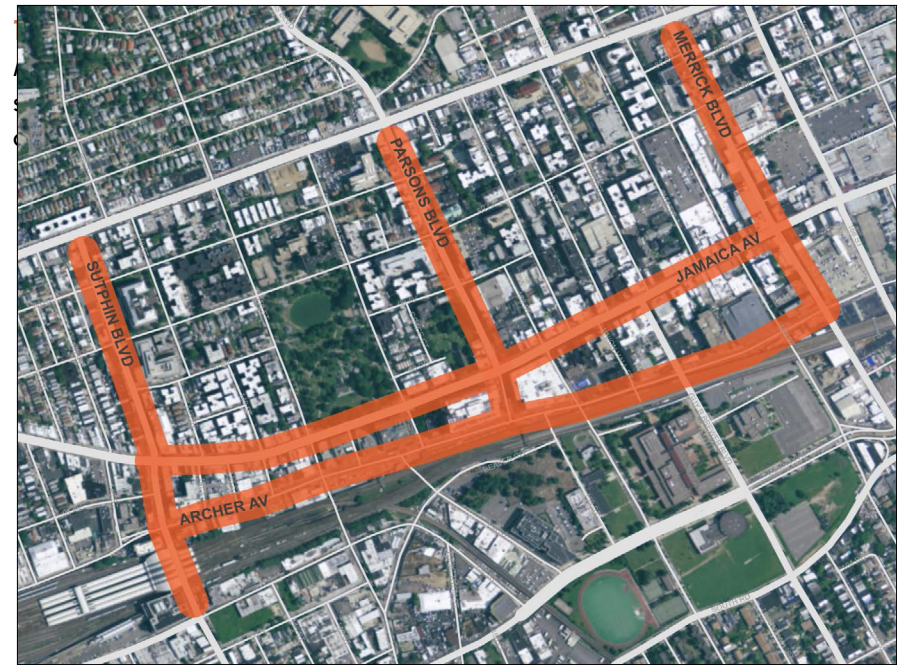


Figure 11-4: Streetscape Plan at a Glance (Draft Plan)





Figure 11-5: Parsons Boulevard Visualization



Figure 11-6: 153rd Street Visualization



Figure 11-7: Jamaica Avenue Corridor Plan





Figure 11-8: York College Entrance



Figure 11-9: Archer Avenue Teardrop Visualization



Figure 11-10: Archer Avenue Teardrop Plan

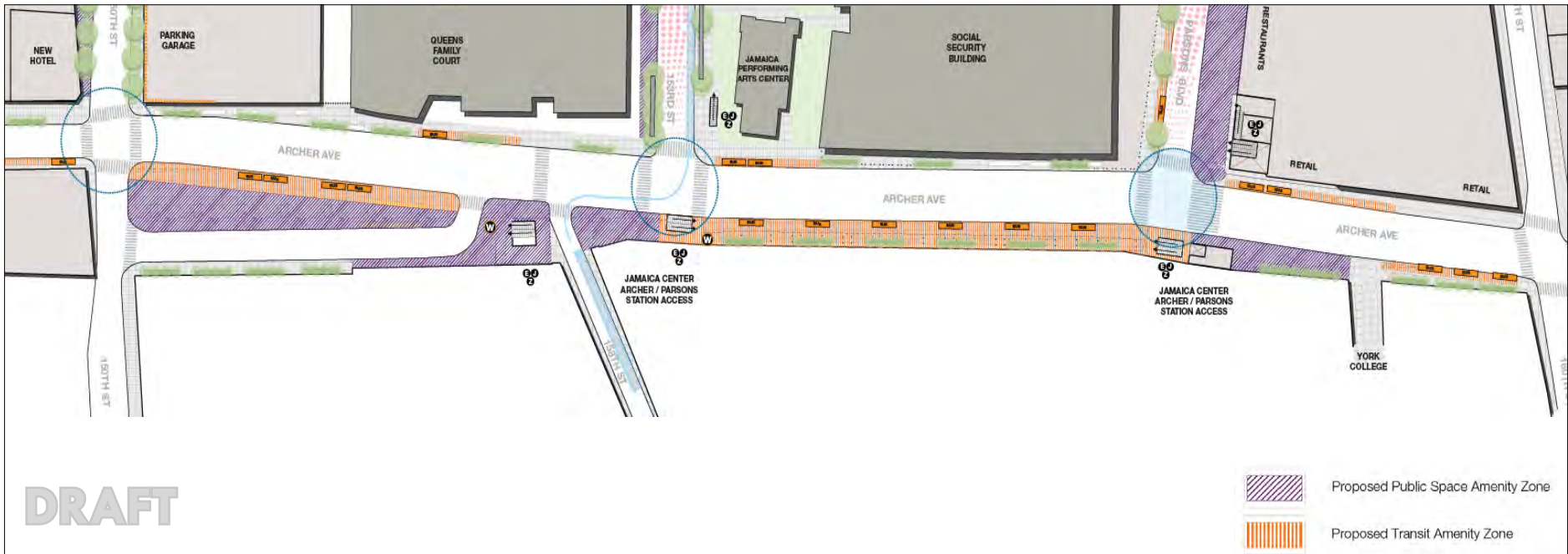
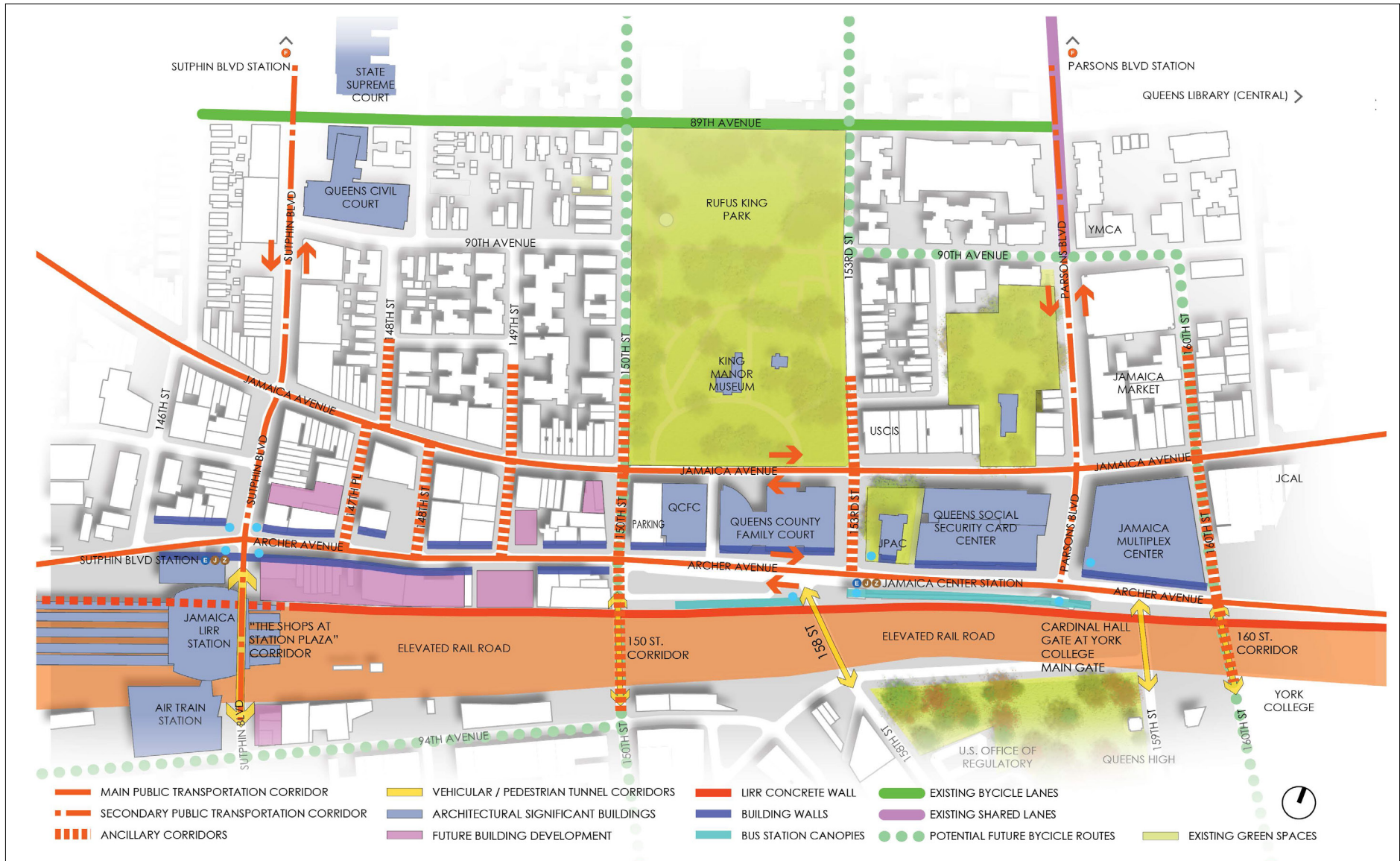




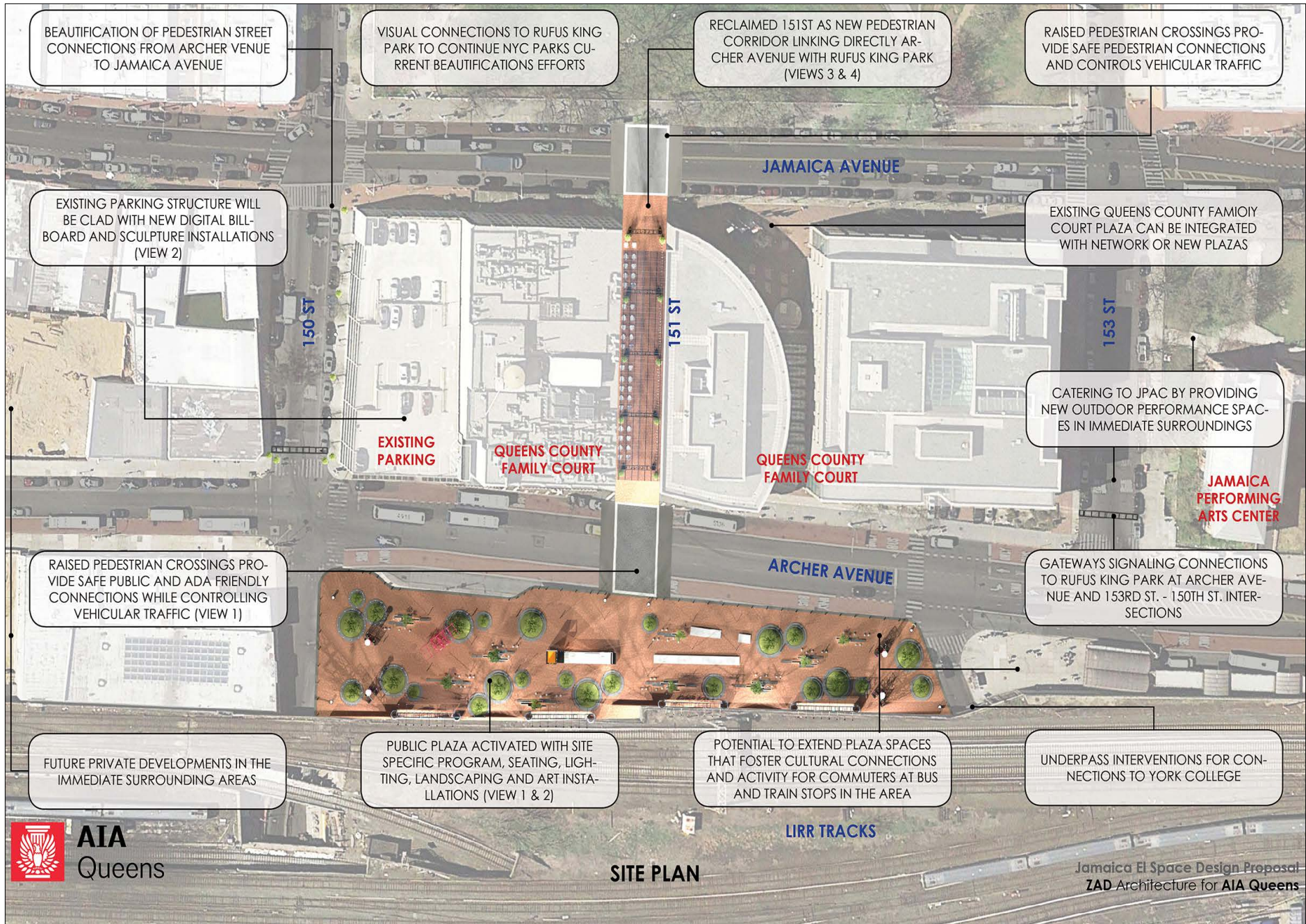
Figure 11-11: Streetscape Plan - Snapshot of Present Conditions



Source: Jamaica El-Space Design Initiative, ZAD Architecture/AIA Queens, 2018



**Figure 11-12: Streetscape Plan - Teardrop Area**



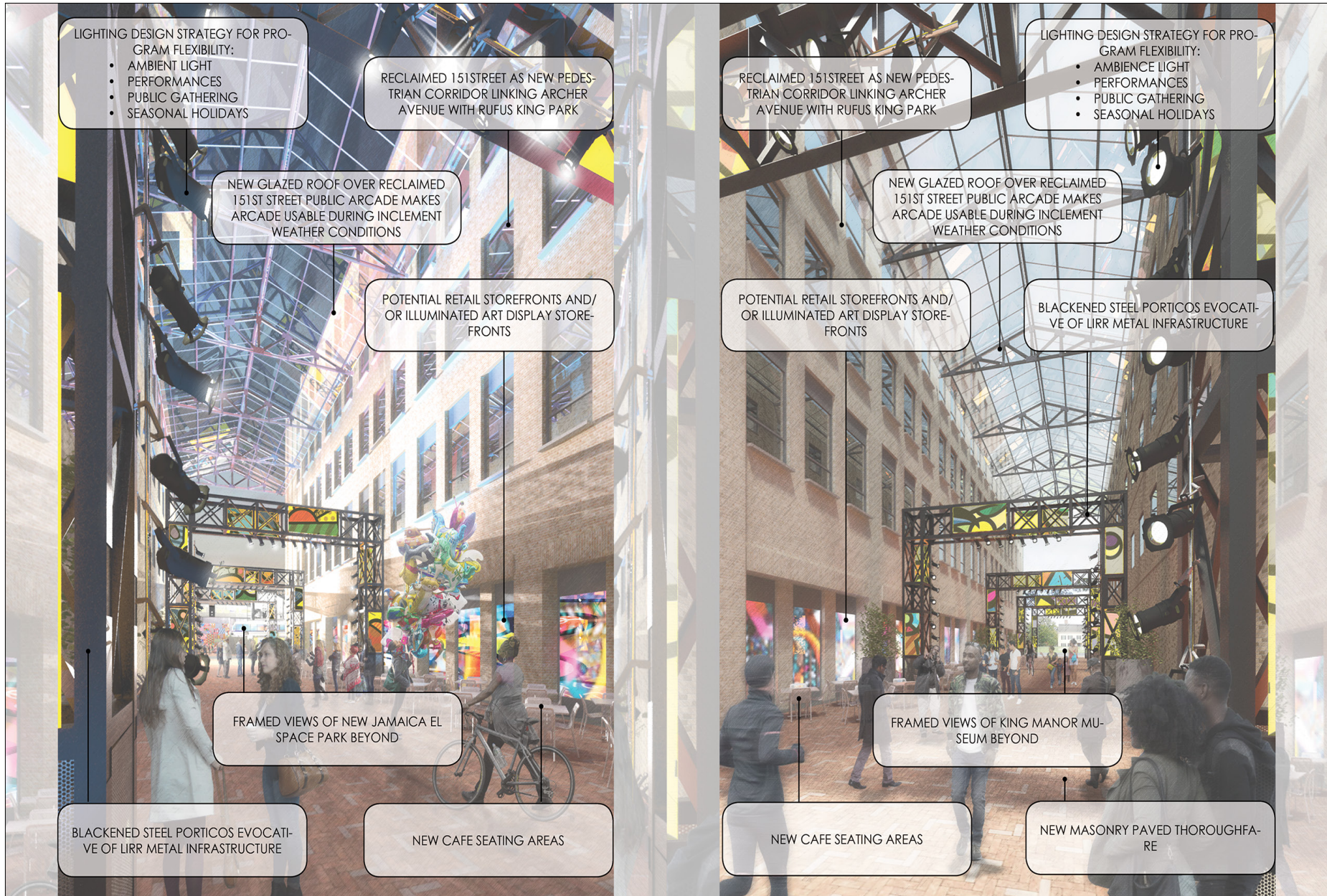
Source: Jamaica El-Space Design Initiative, ZAD Architecture/AIA Queens, 2018





ZAD Architecture/AIA Queens created conceptual design for Downtown Jamaica that was presented to the Jamaica NOW Leadership Council; parts of their presentation of their vision are shown below:

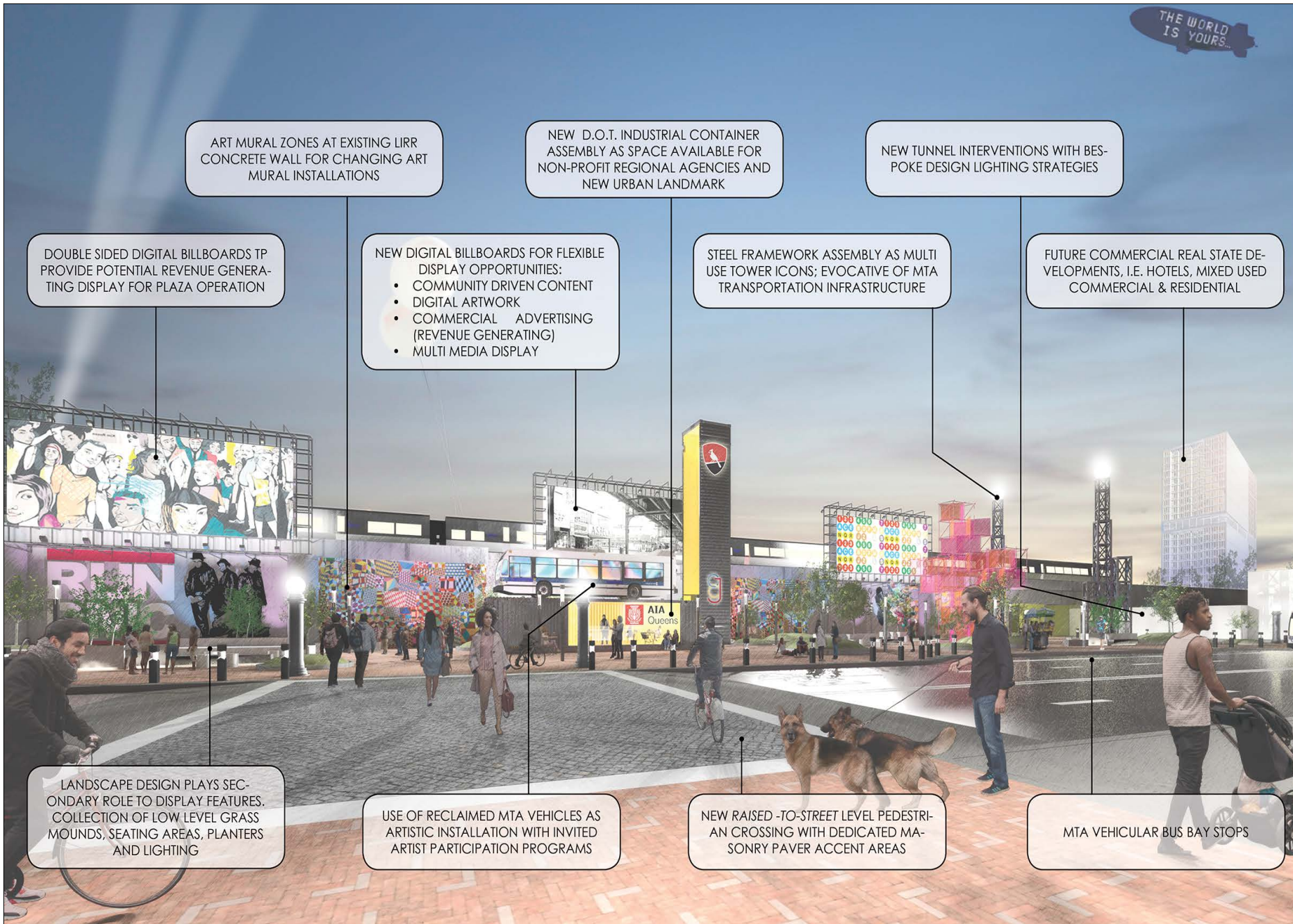
**Figure 11-13: Streetscape Plan - Pedestrian Corridor Towards Archer Avenue**



Source: Jamaica El-Space Design Initiative, ZAD Architecture/AIA Queens, 2018



Figure 11-14: Streetscape Plan - Archer Avenue & 151 Street Pedestrian Corridor



Source: Jamaica El-Space Design Initiative, ZAD Architecture/AIA Queens, 2018





# RECOMMENDATIONS





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95 Av

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## 12.1 Analysis Findings and Issues

Many site visits, community/stakeholders (York College, GJDC, JLC, CBs, EDC, elected officials and government agencies) input and a series of technical analyses resulted in many issues and problems being identified. The following is a summary of the issues and Figure 12-1 presents a synthesis spatially.

1. Significant traffic congestion and poor LOS at many intersections during peak hours
2. Significant number of buses and commuter vans in the downtown traffic stream
3. Low travel speeds impacting bus travel
4. High pedestrian demand on narrow sidewalks
5. Illegal parking and placard abuse
6. Narrow two-way streets - less than 30' wide
7. Poor roadway conditions
8. Inadequate traffic enforcement
9. Limited curb space for loading/unloading, and drop off/pickup for travelers

ellers

10. Need for streetscape/urban design enhancements

A major conclusion is that curb space in Downtown Jamaica is inadequate to satisfy the demand generated by land uses, especially near the transit hubs (Parsons Boulevard/Archer Avenue and Sutphin Boulevard/Archer Avenue).

The traffic capacity analysis showed a majority of intersections in the primary study area operating at LOS E or F on one or more approaches during one or more peak hours. Ten of 58 intersections operate at LOS E or F; this will increase to 22 under future conditions. Poor LOS/congestion were generally found along Hillside Avenue, Sutphin Boulevard, Jamaica Avenue, Archer Avenue, and Merrick Boulevard. Pictures below provide a snapshot of the many issues identified.

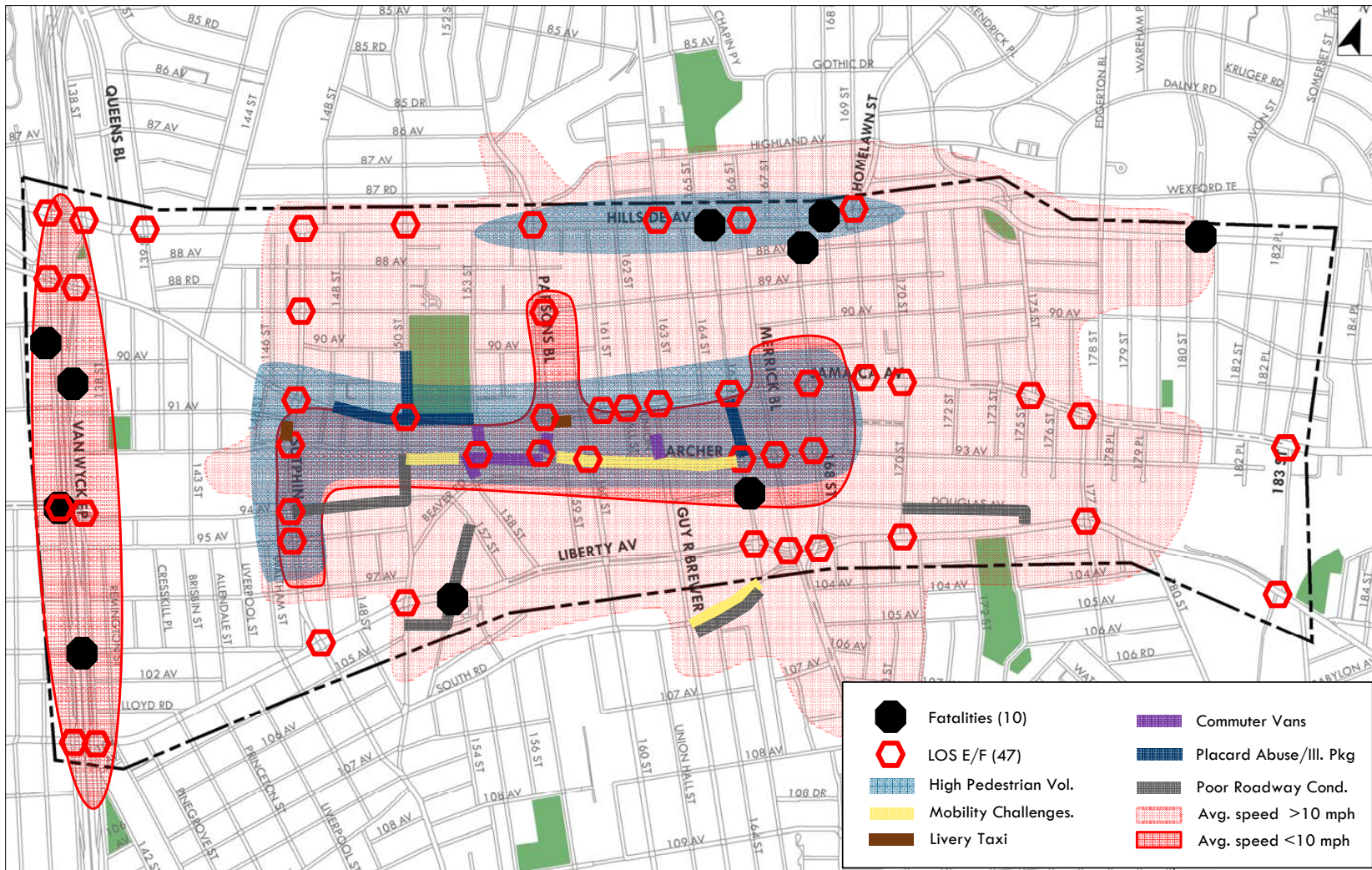
Pedestrian LOS were generally acceptable for corners and crosswalks. However, four intersections had crosswalks with LOS E or F. Beyond intersection crosswalks/corners issues with respect to safety, mobility, and accessibility; Archer





Avenue is the most deficient in meeting mobility and accessibility needs with inadequate sidewalks and irregular geometry.

Figure 12-1: Synthesis Of Issues

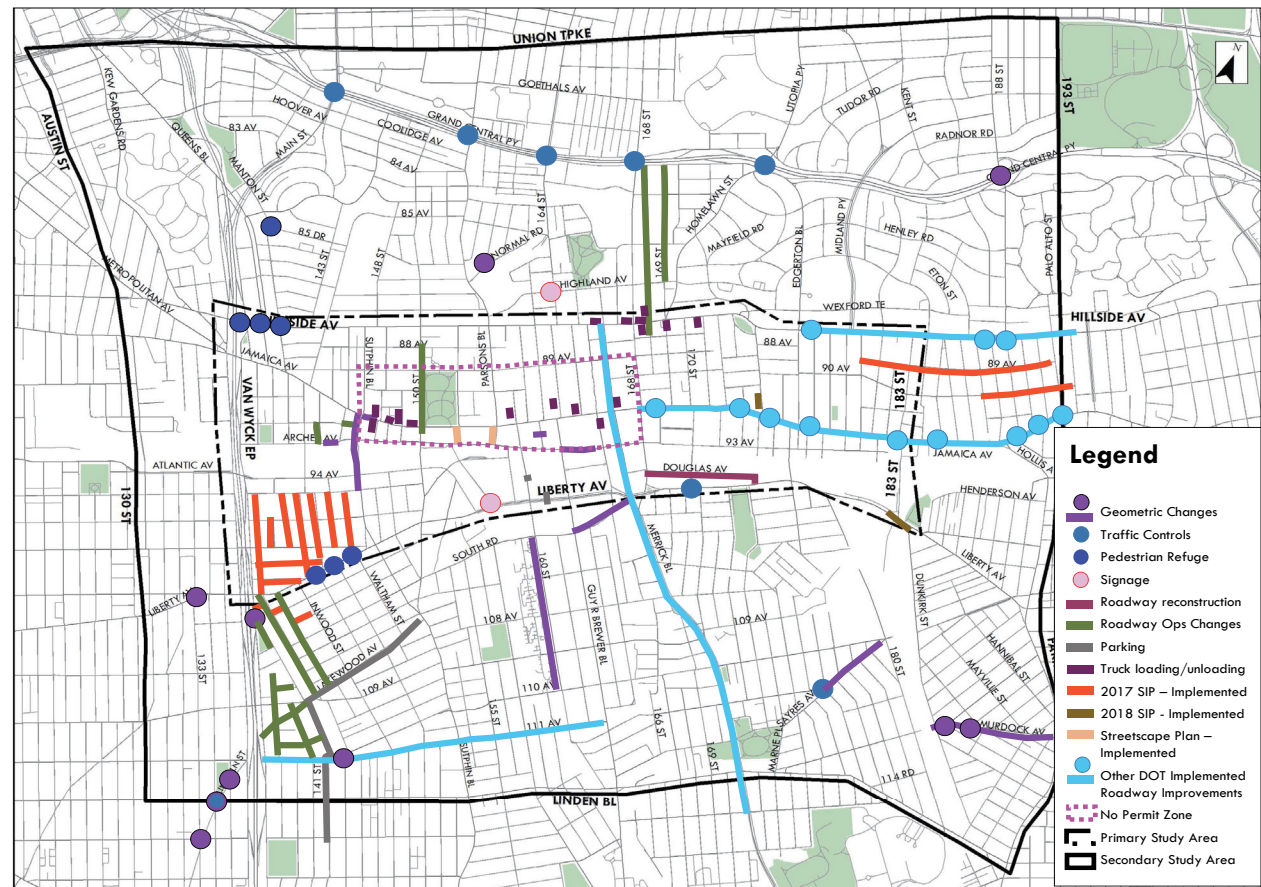




To address the myriad of issues, the following improvement options can be pursued:

1. Increase north/south travel routes/capacity in the primary study area
2. Monitor/manage placard parking to address abuse
3. Prioritize surface transit operation
4. Programmatically convert narrow two-way streets (30 feet or less) to one-way
5. Improve roadway/intersection configuration (redesign/restriping)
6. Improve pedestrian amenities - install neckdowns and pedestrian refuges, widen sidewalks, and refurbish crosswalk markings
7. Modify signal timing to improve traffic operation and enhance safety for all road users
8. Allocate curb space for informal transit (commuter vans/livery taxi) pick up/drop off and layover
9. Improve bicycle amenities – install bike corrals at critical destinations
10. Incentivize the use of off-street parking
11. Stepped-up enforcement to ensure compliance with parking regulations

**Figure 12-1-1: Summary of Recommendations and Improvement Measures**



Below is a list of proposed project locations, while Figure 12-1-1 shows the summary of recommendations. They are grouped according to those: (a) already implemented, (b) short-term, (c) medium term, and (d) long term,

## 12.2 Implemented Projects

- 12.2.1 175th Street between Jamaica Avenue and 90th Avenue
- 12.2.2 Liberty Avenue between 183rd Street and Dunkirk Street
- 12.2.3 Two-way to one-way conversions

## 12.3 Short Term Recommendations (1-3 years)

- 12.3.1 Sutphin Boulevard and 91st Avenue
- 12.3.2 Archer Avenue between 146th Street and 144th Place
- 12.3.3 Sutphin Boulevard between 94th and 95th Avenues
- 12.3.4 Jamaica Avenue between 148th Street and Sutphin Boulevard
- 12.3.5 Union Hall Street between Jamaica Avenue and Archer Avenue
- 12.3.6 Hillside Avenue between Van Wyck Expressway Service Road West and 139th Street
- 12.3.7 Truck Loading/Unloading Zone along commercial corridors
- 12.3.8 Street direction changes - 168th Place/169th Street between Hillside Avenue and Grand Central Parkway Service Road

- 12.3.9 142nd Street and Van Wyck Expressway Service Road
- 12.3.10 Liberty Avenue between Allendale Street and Waltham Street
- 12.3.11 Liberty Avenue and 158th Street
- 12.3.12 Liberty Avenue daylighting crosswalks to York College Entrance
- 12.3.13 Liberty Avenue and 170th Street
- 12.3.14 Informal transit curb space
- 12.3.15 Grand Central Parkway Service Road signal synchronization
- 12.3.16 Grand Central Parkway Service Road and 164th Street
- 12.3.17 Grand Central Parkway Service Road and 188th Street/McLaughlin Avenue
- 12.3.18 85th Drive and 139th Street
- 12.3.19 160th Street and Normal Road
- 12.3.20 160th Street between South Road and Brinkerhoff Avenue
- 12.3.21 Sayres Avenue between 177th and 180th Streets
- 12.3.22 Jamaica Avenue and 153rd Street
- 12.3.23 Murdock Avenue between Dunkirk Street and Farmers Boulevard

#### **12.4 Short/Medium Term Recommendations (3 - 5 years)**

- 12.4.1 150th Street between Hillside Avenue and Jamaica Avenue
- 12.4.2 Two-way to one-way conversions
- 12.4.3 Bicycle parking amenities
- 12.4.4 Parking improvement measures
- 12.4.5 Liberty Avenue/103rd Avenue between 131st and 134th Streets
- 12.4.6 Q40 bus circulation improvements
- 12.4.7 Lincoln Street Reconstruction

#### **12.5 Long Term Recommendations (5+ years)**

- 12.5.1 Archer Avenue Sidewalk Widening between Parsons Boulevard and 160th Street
- 12.5.2 Archer Avenue Sidewalk Widening between Guy R Brewer Boulevard and 165th Street
- 12.5.3 Douglas Avenue between 168th Street and 175th Street
- 12.5.4 Tuskegee Airmen Way between Guy R Brewer Boulevard and 165th Street





## 12.2 Implemented Projects

### 12.2.1 175th Street (Jamaica Avenue to 90th Avenue)

#### Issues:

The 175th Street between Jamaica and 90th Avenues is 61 feet wide curb to curb but narrows to 30 feet approaching Jamaica Avenue.

#### Improvements:

Redesign roadway to provide standard lane in each direction

Figure 12-2-1a: Pre-Implementation

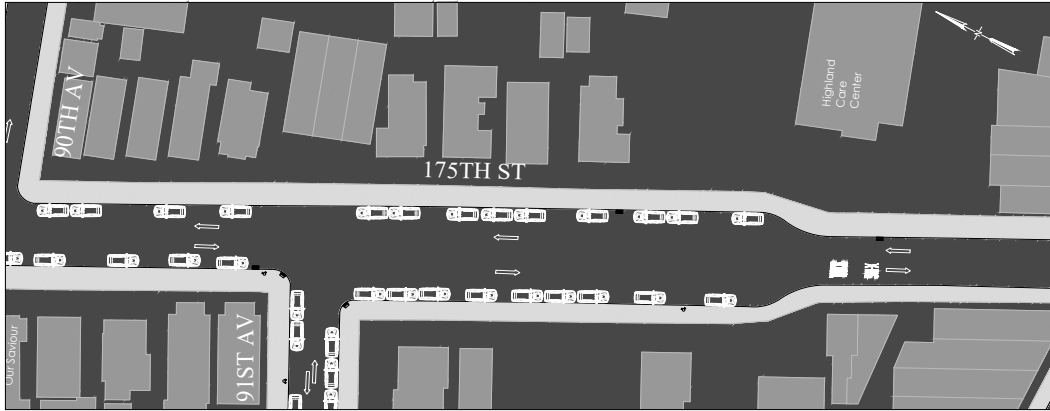
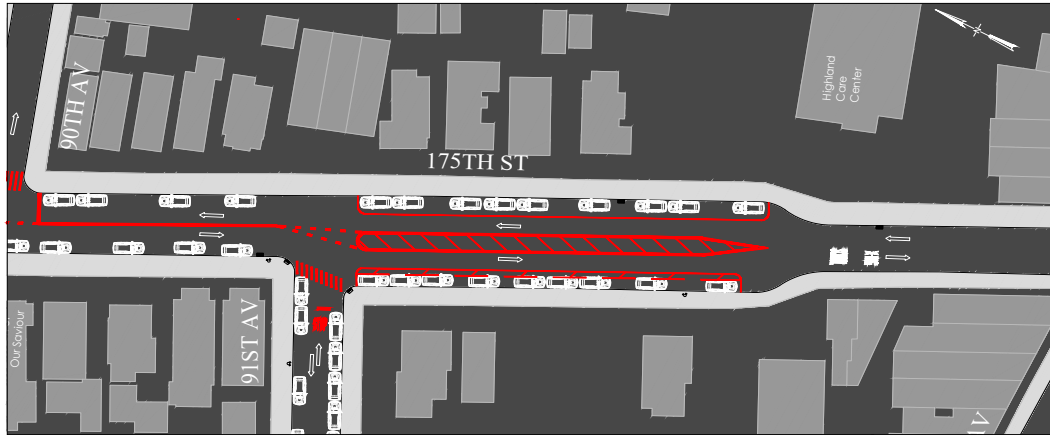


Figure 12-2-1b: Post-Implementation



175th Street looking north towards 91st Avenue - Pre-Implementation



175th Street looking north towards 91st Avenue - Post-Implementation

## 12.2.2 Liberty Avenue/183rd Street & Dunkirk Street

### Issues:

Liberty Avenue approaching 183rd Street has one moving lane in each direction with a potential lane hatched out. During peak hours both approaches experience heavy delay.

### Improvements:

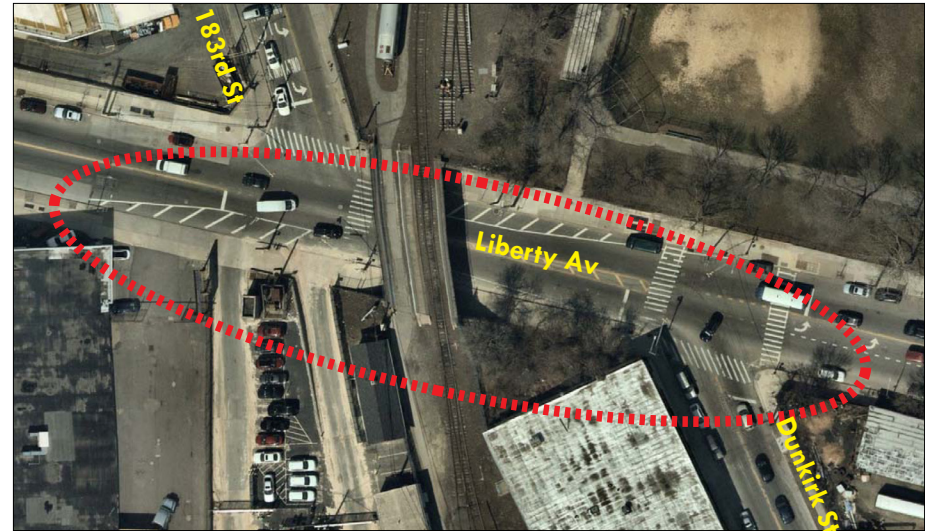
- Restripe eastbound and westbound approaches to increase lane capacity as follows:
  - Eastbound approach - one thru lane and one shared left-thru lane at 183rd Street
  - Westbound approach – one thru lane and one exclusive right turn lane
- Modify signaling timing plan to provide an eastbound leading phase



Liberty Avenue/183rd Street looking east - Pre-Implementation

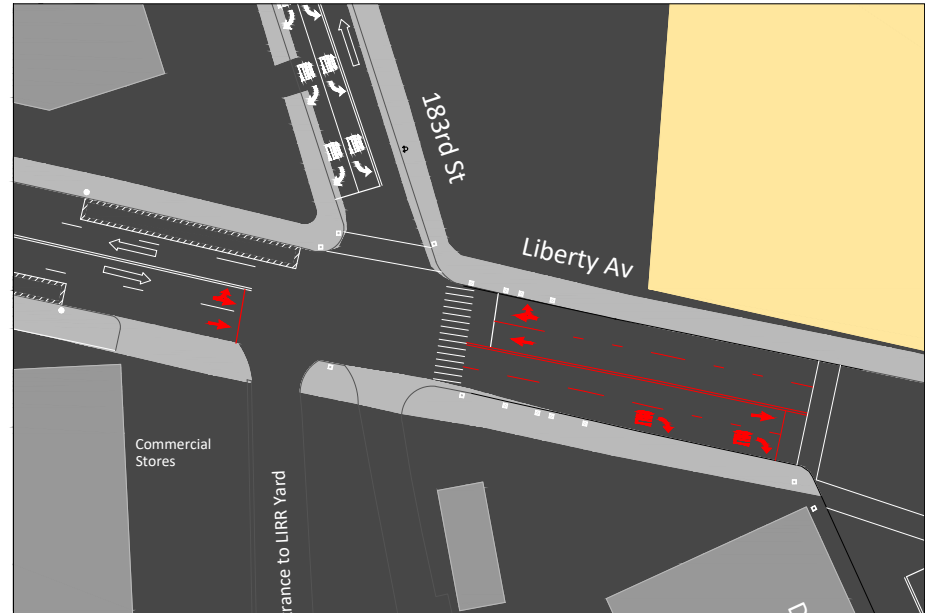


Liberty Avenue/183rd Street looking east - Post-Implementation



Aerial view of Liberty Avenue between 183rd Street and Dunkirk Street

Figure 12-2-2: Post-Implementation





## 12.2.3 Two-way to One-way Conversions

### Issues:

Several study area two-way streets are narrow (less than 30 feet wide) with parking on both sides.

### Improvements:

The streets segments listed below, and shown in Figure 12-2-3, were recommended and converted from two-way to one-way operation facilitating safer traffic operation:

1. Remington St – Liberty Ave to 95th Ave
2. Sanders Pl – 97th Ave to 101st Ave
3. Cresskill Pl – 95th Ave to 101st Ave
4. Brisbin St – 95th Ave to Liberty Ave
5. Allendale St – 95th Ave to 102nd Ave
6. Sean Bell Way – 94th Ave to 101st Ave
7. Waltham St – 95th Ave to 101st Ave
8. 102nd Ave – Allendale St to Van Wyck SR E
9. Lloyd Rd – Inwood St to Van Wyck SR E
10. 104th Ave – Henry Grate Sr Pl to Van Wyck SR E
11. 105th Ave – Inwood St to Henry Grate Sr Pl
12. 106th Ave – Inwood St to Pinegrove St
13. 89th Ave – 181st St to 191st St
14. 90th Ave – 187th St to 192nd St

Figure 12-2-3: Narrow Streets Converted to One-way Operation



Brisbin Street between 97th & 95th Avenues looking south



Brisbin Street between 97th & 95th Avenues looking south

## 12.3 Short Term Recommendations (1 - 3 years)

### 12.3.1 Sutphin Boulevard & 91st Avenue

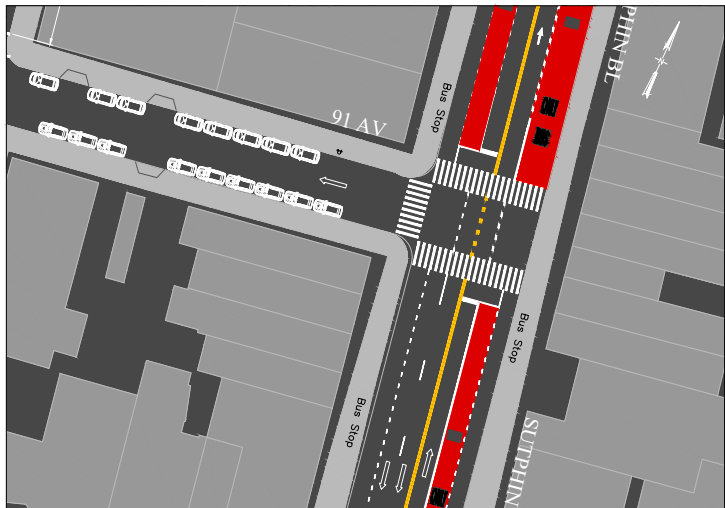
#### Issues:

Northbound traffic congestion on Sutphin Boulevard approaching 91st Avenue due to roadway geometry constraints, left turns onto 91st Avenue, and illegal U-turns by livery taxis.

#### Proposal:

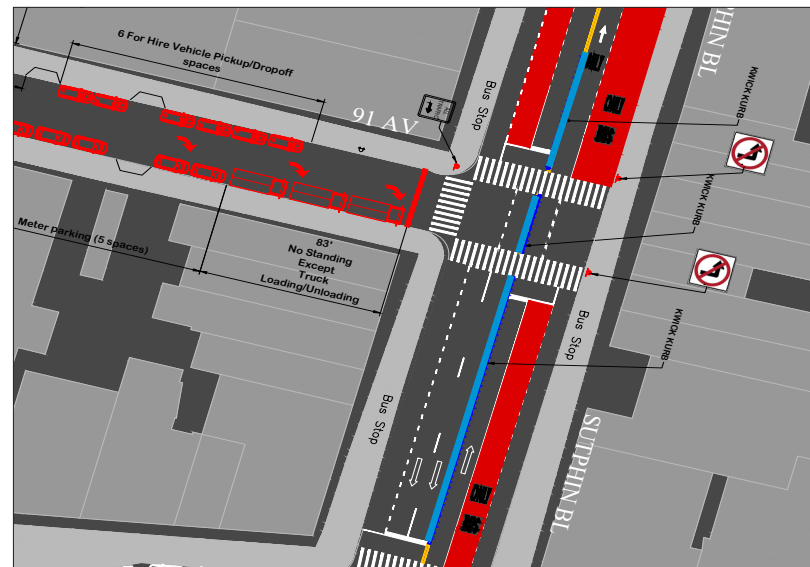
- Install hardened centerline on Sutphin Boulevard between Archer Avenue and Jamaica Avenue to eliminate disruptive U-turns
- Convert 91st Avenue from westbound to eastbound operation.
- Convert 144th Street (between 91 Avenue and Archer Avenue) from southbound to northbound operation.
- Prohibit eastbound left turns from 91st Avenue at Sutphin Boulevard

Figure 12-3-1a: Existing



Aerial view Sutphin Boulevard between Archer Avenue and 91st Avenue

Figure 12-3-1b: Proposed





### 12.3.2 Archer Avenue – 146th Street to 144th Place

**Issues:**

Archer Avenue width varies between 146th and 144th Street with parking permitted on the south curb. The eastbound and westbound lane are unequal favoring westbound travel.

**Proposal:**

Shift the centerline on Archer Avenue between 146th Street and 144th Place 3 feet to the north to widen the eastbound travel lane.



Archer Avenue/146th Street looking east

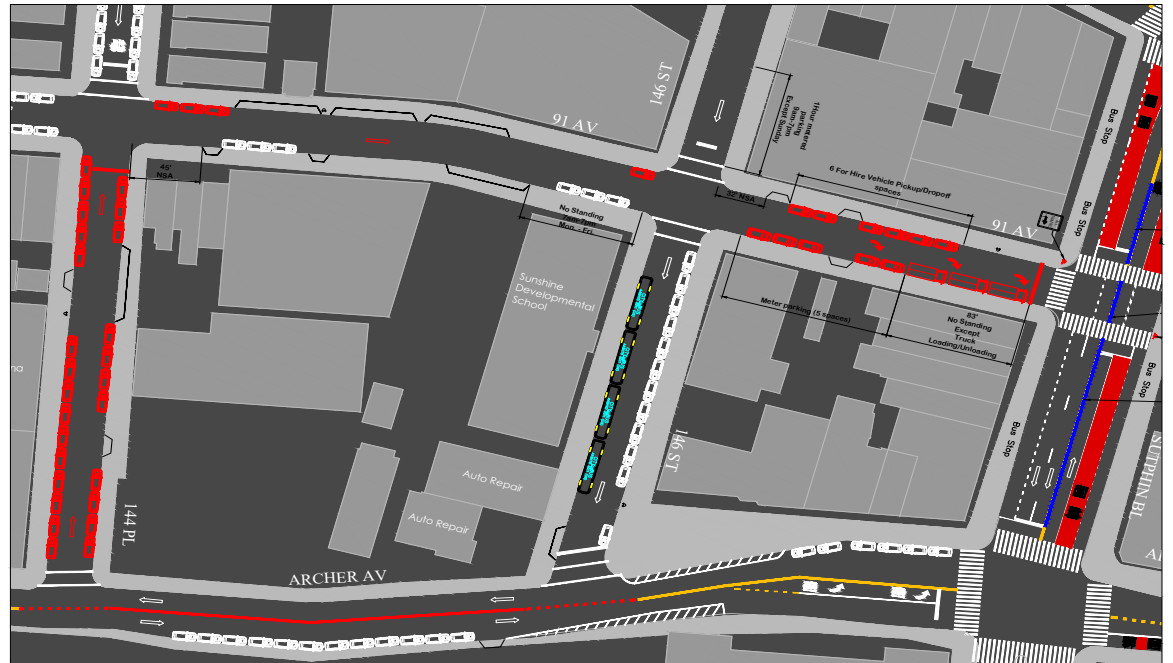


Archer Avenue/146th Street looking west

Figure 12-3-2a: Existing



Figure 12-3-2b: Proposed



### 12.3.3 Sutphin Boulevard between 94th & 95th Avenues

**Issues:**

Several southbound buses on Sutphin Boulevard turn left at 95th Avenue. The existing geometry provides one lane in each direction with curbside parking. While buses wait for a gap to turn left, a queue forms creating congestion.

**Proposal:**

- Remove seven parking spaces from the west curb to provide two moving lanes - a left turn only lane and a thru lane
- Remove three parking spaces on the southbound receiving lane for transition
- Provide truck loading/unloading at the northwest corner of Sutphin Boulevard and 95th Avenue



Sutphin Boulevard/95th Avenue looking north



Truck Loading/Unloading on Sutphin Boulevard between 94th & 95th Avenues

Figure 12-3-3a: Existing

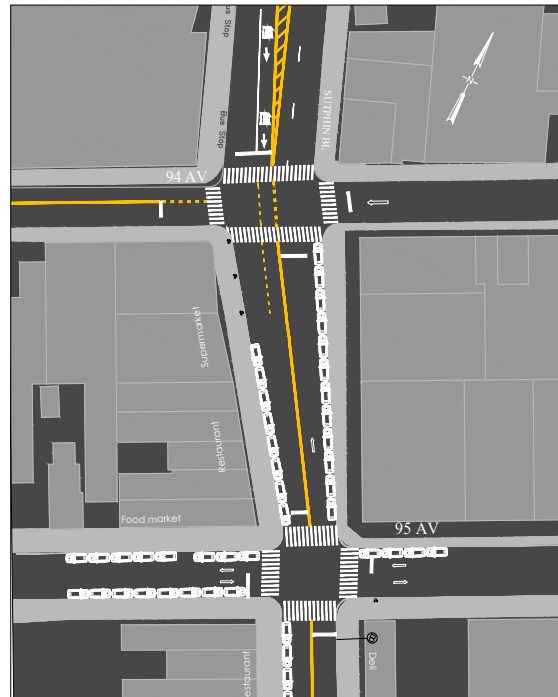
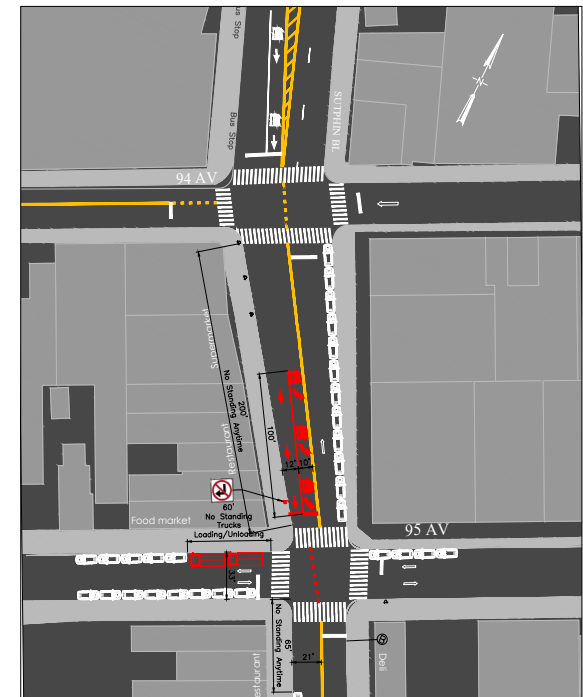


Figure 12-3-3b: Proposed





### 12.3.4 Jamaica Avenue (148th Street to Sutphin Boulevard)

**Issues:**

During rush hours westbound Jamaica Avenue has one general traffic lane and one curb side bus lane. At Sutphin Boulevard, where only buses are allowed to turn left (7 am – 7 pm), approximately 65% of the buses that occupy the general traffic lane blocking through vehicles. As a result, traffic spills back for one or more blocks while the bus lane is under utilized.

**Proposal:**

- Remove the curbside bus lane and designate the lane for general traffic
- Mark the first 80 feet of the left lane as left turn only bus lane, and leave the rest of the block for general traffic



Jamaica Avenue/Sutphin Boulevard looking east



Jamaica Avenue westbound approaching Sutphin Boulevard

Figure 12-3-4a: Existing

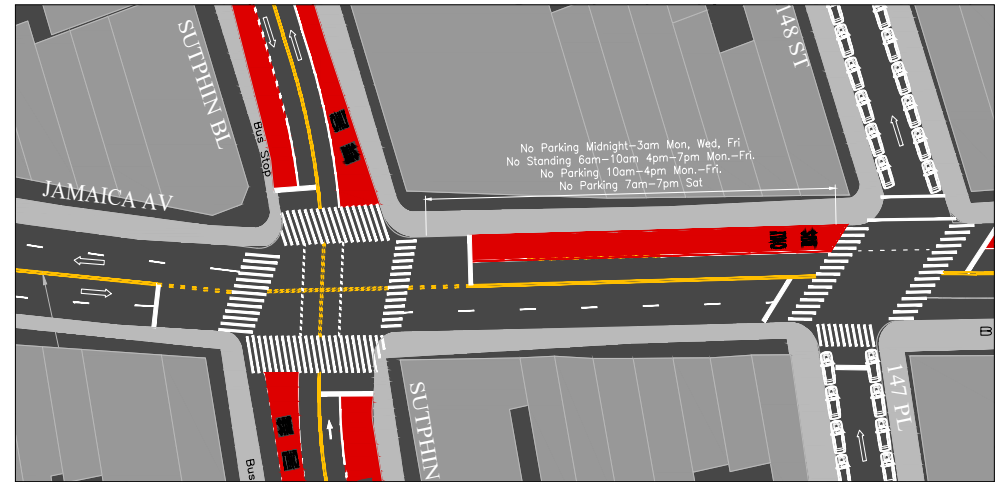
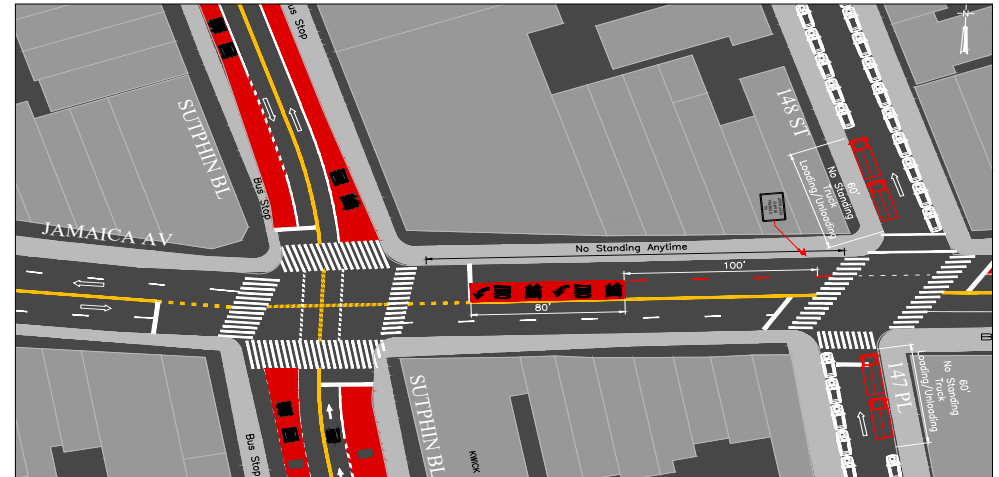


Figure 12-3-4b: Proposed



### 12.3.5 Union Hall Street between Jamaica & Archer Avenues

**Issues:**

Union Hall Street, approximately 22 feet wide between Jamaica and Archer Avenues, functions as an extension of 162nd Street for continuous southbound travel from Hillside Avenue. Particularly during the peak hours it is congested with traffic spilling back onto Jamaica Avenue due to Access-A-Ride drop-off/pick-up activities on the block.

**Proposal:**

- Create Access-A-Ride curbside stop in front of drop-off/pick-up location
- Install enhanced crosswalk to ensure pedestrian safety



Union Hall Street Access-a-Ride Dropoff/Pickup

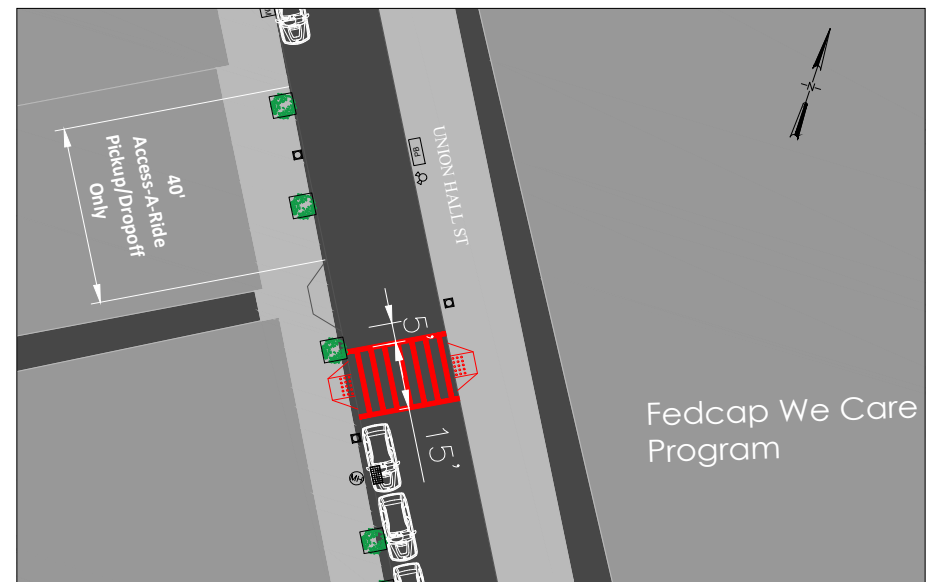


Union Hall Street congestion looking south

Figure 12-3-5a: Existing



Figure 12-3-5b: Proposed





### 12.3.6 Hillside Avenue - Queens Boulevard and 139th Street

#### Issues:

Hillside Avenue is wide with heavy traffic during the peak hours. The north leg of the Queens Boulevard intersection has a median that does not extend into the crosswalk. The east leg of the 139th Street intersection has a hatched median that provides an opportunity to create a concrete pedestrian refuge island.

#### Proposal:

- Build out the current hatched medians on Hillside Avenue with concrete to provide pedestrian refuge.
- Extend the concrete median on Queens Boulevard at Hillside Avenue to provide pedestrian refuge island.



Hillside Avenue/139th Street looking east

Figure 12-3-6a: Existing

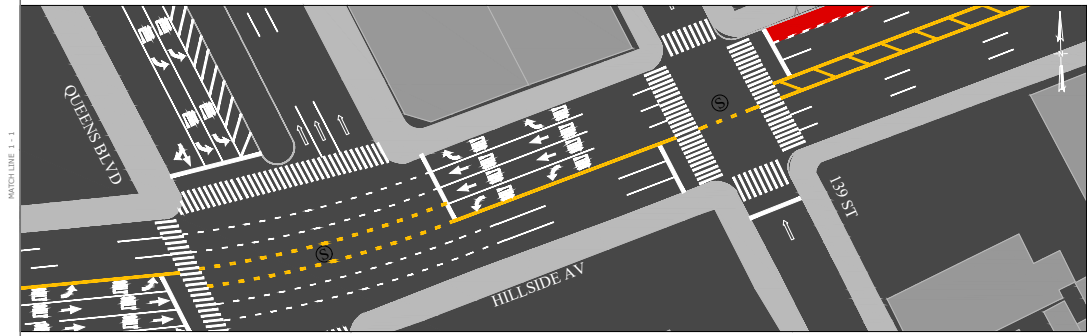
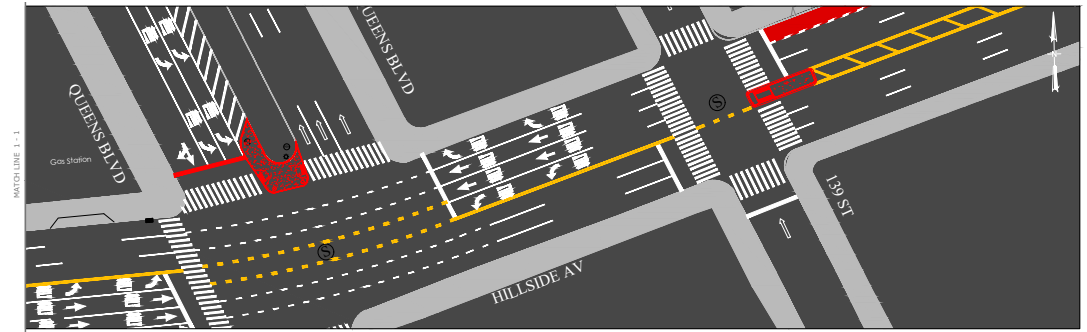


Figure 12-3-6b: Proposed



### 12.3.7 Provide truck loading/unloading zones along commercial corridors

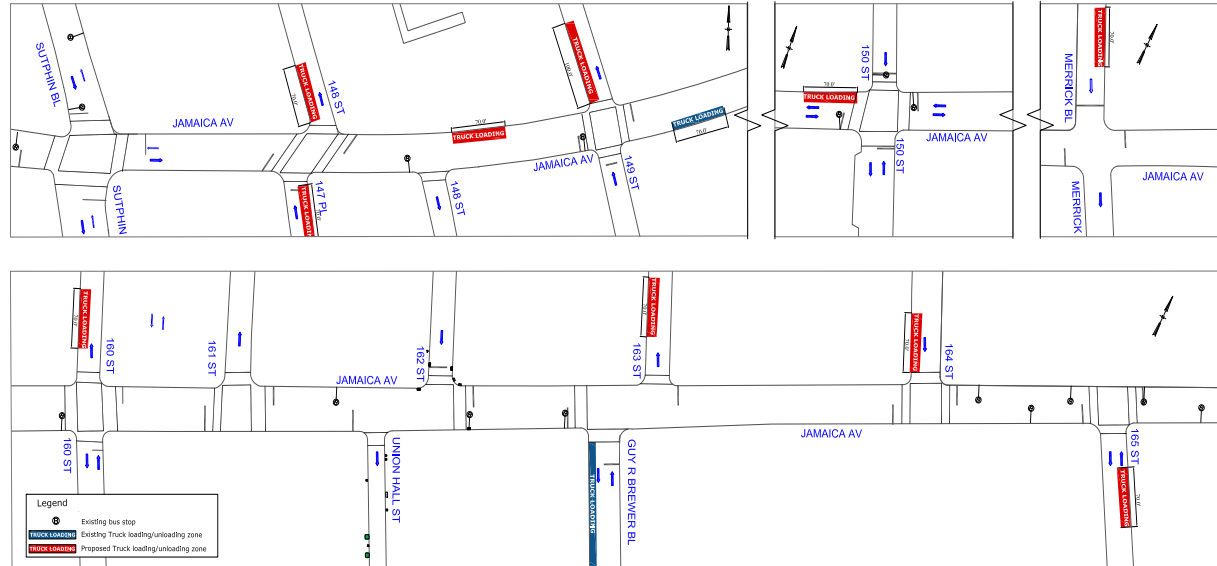
**Issues:**

Hillside Avenue, Jamaica Avenue, and Sutphin Boulevard are major commercial corridors where curbspace mainly used for transit operations (bus stop/lane). This limits space for truck loading/unloading, resulting in double parking for deliveries.

**Proposal:**

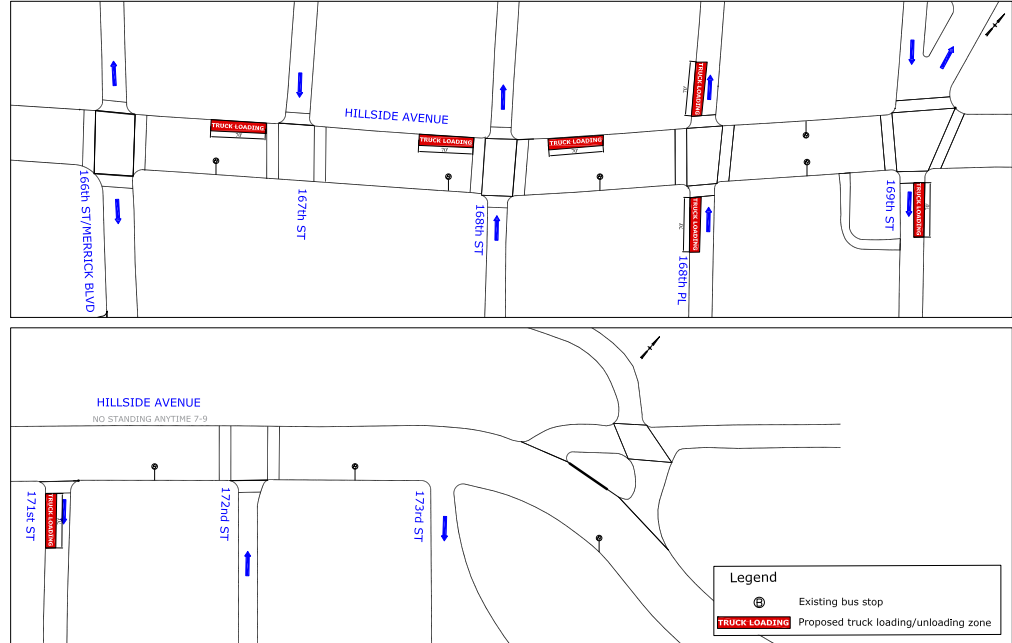
Install truck loading/unloading zones to facilitate business operation

**Figure 12-3-7a: Proposed Truck Loading/Unloading Zones along Jamaica Avenue**



**Sutphin Boulevard (between 94th & 95th Avenues) looking north**

**Figure 12-3-7b: Proposed Truck Loading/Unloading Zones along Hillside Avenue**





### 12.3.8 Street Direction Changes

#### 168th Place and 169th Street (between Hillside Avenue and Grand Central Parkway Service Road)

**Issues:**

Both 168th Street and 168th Place operate northbound. Consequently, motorists north of Hillside Avenue are forced to use 169th Street for southbound which merges with Homelawn Street. During peak hours southbound vehicles experience extensive delays.

**Proposal:**

- Convert 168th Place to one-way southbound from Grand Central Parkway to 90th Avenue
- Convert 169th Street to one-way northbound from Highland Avenue to Grand Central Parkway.



168th Street southbound towards Hillside Avenue

Figure 12-3-8a: Existing

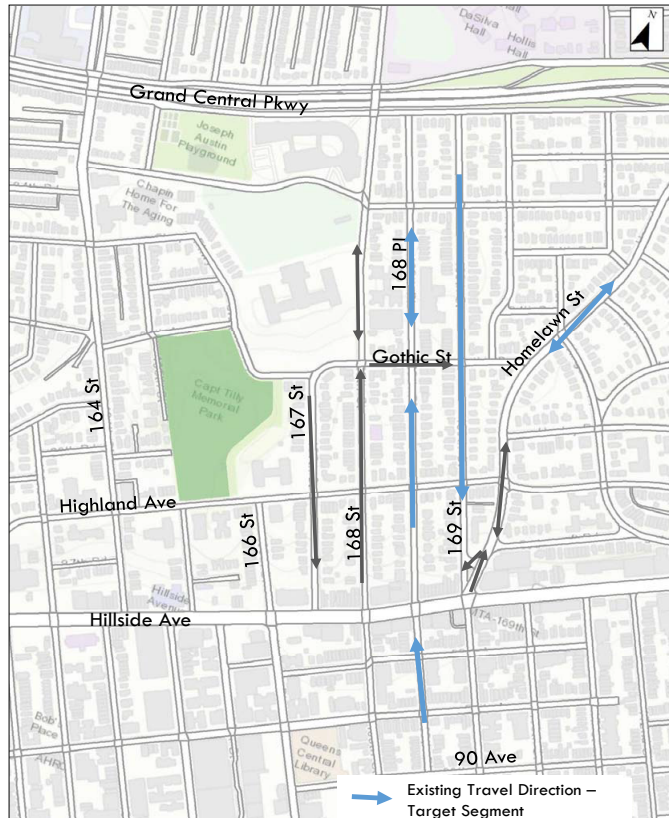
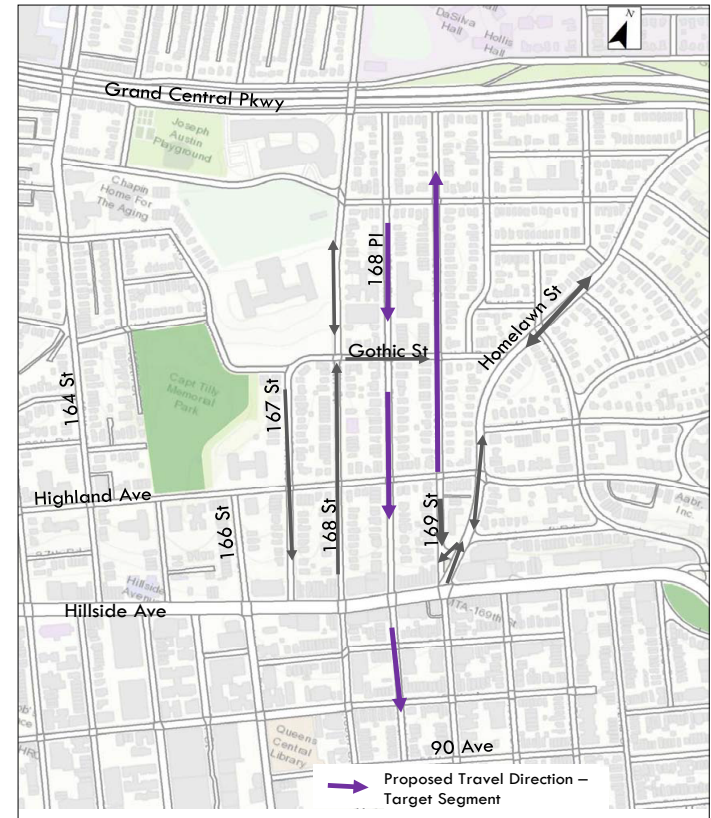


Figure 12-3-8b: Proposed



### 12.3.9 142nd Street & Van Wyck Expressway Service Road

#### Issues:

- An wide irregular intersection, adjacent to a parkland/residential area
- 142nd Street 30' wide with parking on both side process 300 vph westbound during AM peak period

#### Proposal:

- Close the slip from the Van Wyck Expressway Service Road to 142nd Street at 105th Avenue
- Extend island
- Convert 142nd Street between 105th and 106th Avenues to one-way northbound



142nd Street approaching Van Wyck Expressway SR East

Figure 12-3-9a: Existing

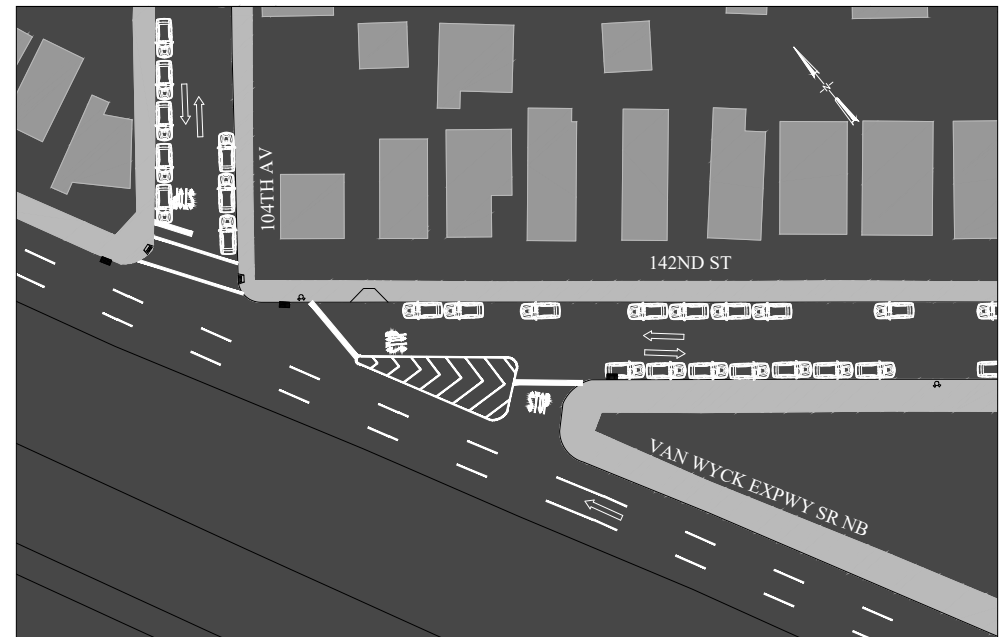
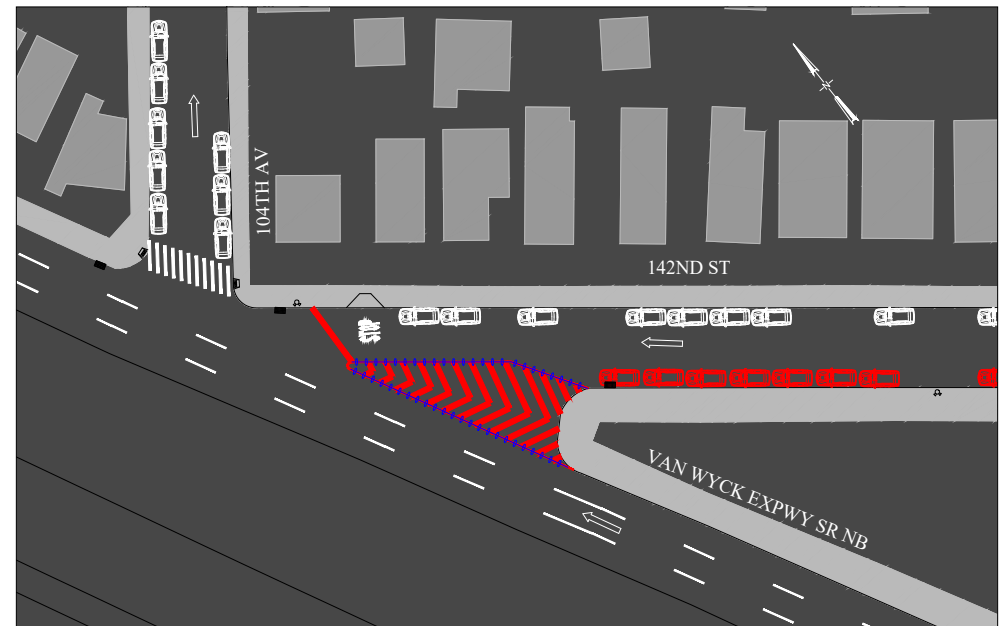


Figure 12-3-9b: Proposed





### 12.3.10 Liberty Avenue (Allendale Street to Waltham Street)

#### Issues:

Liberty Avenue, a main corridor with two moving lanes per direction has a hatched median and parking on both sides. P.S. 50 is located on the north curb between Allendale and Waltham Streets.

#### Proposal:

- Install pedestrian refuge islands on Liberty Avenue at Allendale Street, Liverpool Street, and Waltham Street intersections
- Install a hard centerline at Waltham Street (east leg) and Sutphin Boulevard (west leg).



Aerial view of Liberty Avenue from Allendale Street to Waltham Street



Liberty Avenue/Liverpool Street looking east

Figure 12-3-10a: Existing

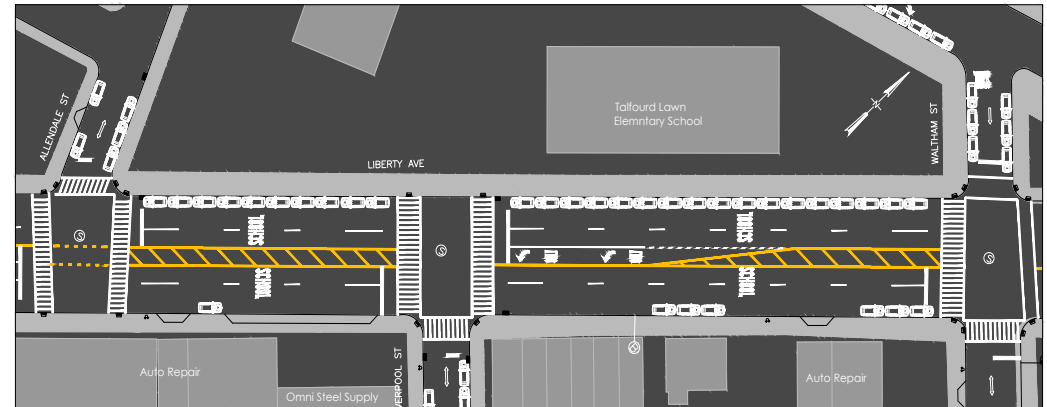
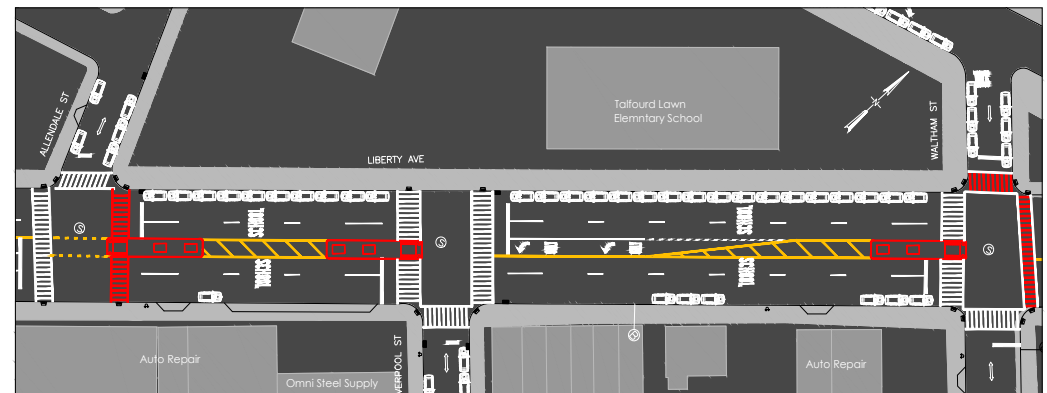


Figure 12-3-10b: Proposed



### 12.3.11 Liberty Avenue & 158th Street

#### Issues:

A majority of commuter vans access Jamaica Center station via Liberty Avenue and 158th Street. Liberty Avenue/158th Street is a T-intersection where pedestrian traffic is extremely low to non-existent.

#### Proposal:

Permit and install Right Turn on Red sign for Liberty Avenue westbound traffic; this would reduce congestion and delay without compromising safety.



Proposed Liberty Avenue/158th Street - looking west



Liberty Avenue/158th Street looking east



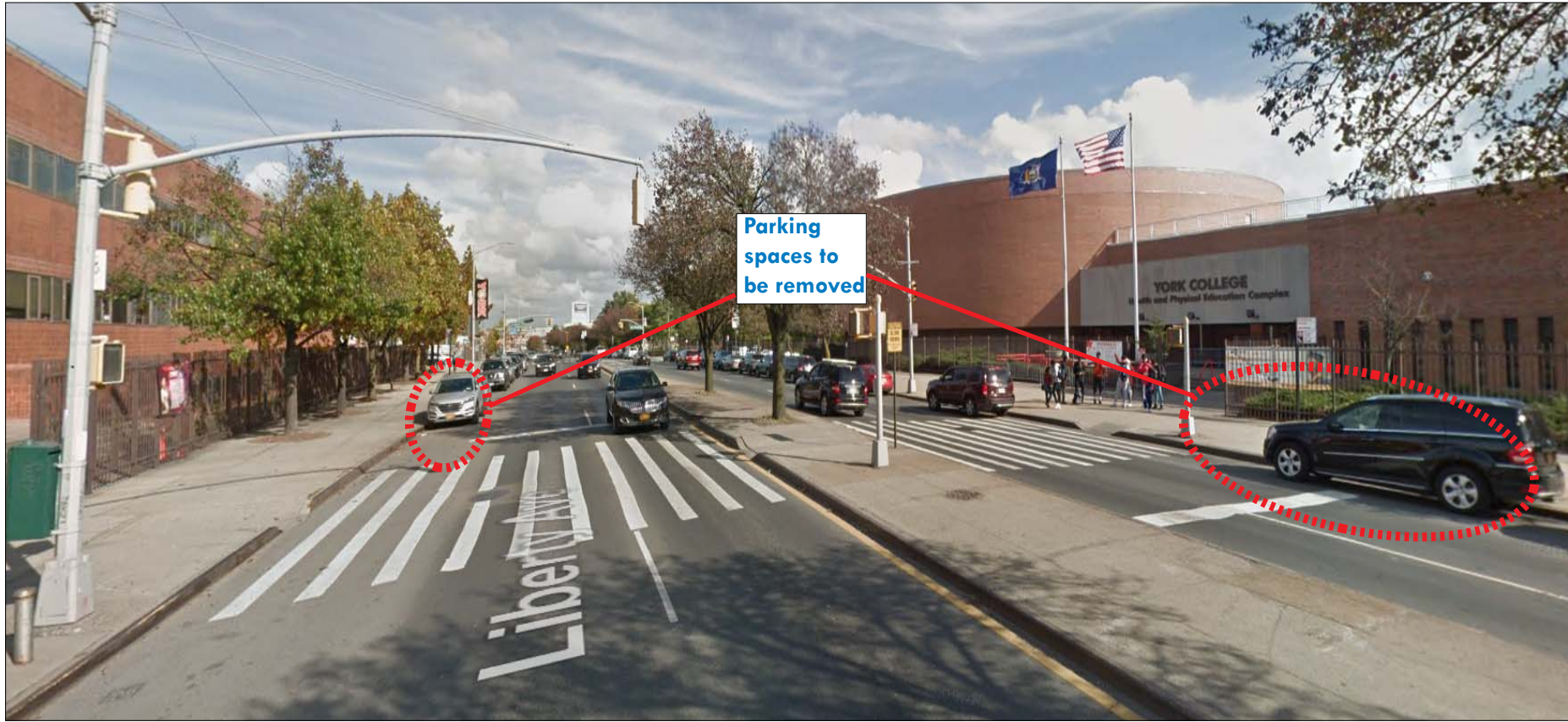
### 12.3.12 Liberty Avenue – Guy R. Brewer Boulevard & 160th Street & 160th Street – Liberty Avenue & Archer Avenue

#### Issues:

Like Guy R. Boulevard (between Liberty and Archer Avenues), Liberty Avenue (between Guy R. Brewer Boulevard and 160th Street) and 160th Street (between Liberty and Archer Avenues) have mid-block crosswalks connecting York College campus buildings. However, on both Liberty Avenue and 160th Street, parking is permitted on the approaches to the crosswalks which reduce motorist's visibility of pedestrians approaching the crosswalk.

#### Proposal:

Remove one parking space on each approach to the crosswalk.





### 12.3.13 Liberty Avenue & 170th Street (AM & PM)

**Issues:**

Vehicle delay on Liberty Avenue eastbound approach due to left turns demand.

**Proposal:**

Modify signal timing plan to provide an eastbound leading phase.



Liberty Avenue/170th Street looking west



Aerial view of Liberty Avenue between 169th Street and 171st Street



### 12.3.14 Informal Transit Curb Space

#### Issues:

Informal transit vehicles (commuter vans (CVs) and livery taxis) in Downtown Jamaica often impede traffic operations partly due to the lack of designated curb space for their activity. In the vicinity of the Sutphin Boulevard/Archer Avenue, livery taxis pickup/dropoff passengers in the bus or moving lane. They also make U-turns obstructing traffic. At Jamaica Center where most commuter vans operate, the same exists with CVs blatantly loading in bus stops..

#### Proposal:

1. Install a 'For Hire' Taxi Stand on 91st Avenue at Sutphin Boulevard
2. Formalize (make legal) commuter van stop on Guy R. Brewer Boulevard between Jamaica Avenue and Archer Avenue
3. Enforce parking regulations on 153rd Street where CVs have a designated space.



Sutphin Boulevard/Archer Avenue looking north (livery taxi in bus stop)



Sutphin Boulevard/Archer Avenue looking south (livery taxi dropoff)



Guy R Brewer Boulevard/Archer Avenue looking north (undesignated commuter van stop)



### 12.3.15 Grand Central Parkway (GCP) SR Exits Signal Synchronization

#### Issues:

Vehicles on the Grand Central Parkway SRs turning left at Main Street, Parsons Boulevard, 164th Street, and 168th Street experience congestion because the left turn demand is higher than the storage capacity on the link between the service roads.

#### Proposal:

Revise signal plan for the eastbound and westbound left to be given green time to clear the link.



164th St between Grand Central Parkway SR EB & WB



Parsons Blvd between Grand Central Parkway SR EB & WB





### 12.3.16 Grand Central Parkway (GCP) Service Road N & 164th Street

#### Issues:

164th Street north of GCP Service Road N is a wide corridor (two moving lanes per direction with parking on both sides). Queens Hospital Rehabilitation Medical Center is located on the west side between 82nd Road and GCP Service Road N where many pedestrians cross.

#### Proposal:

Install pedestrian refuge island on the north leg.



164th Street/Grand Central Pkwy SR N looking north



164th Street/Grand Central Pkwy SR N looking south

Figure 12-3-16a: Existing

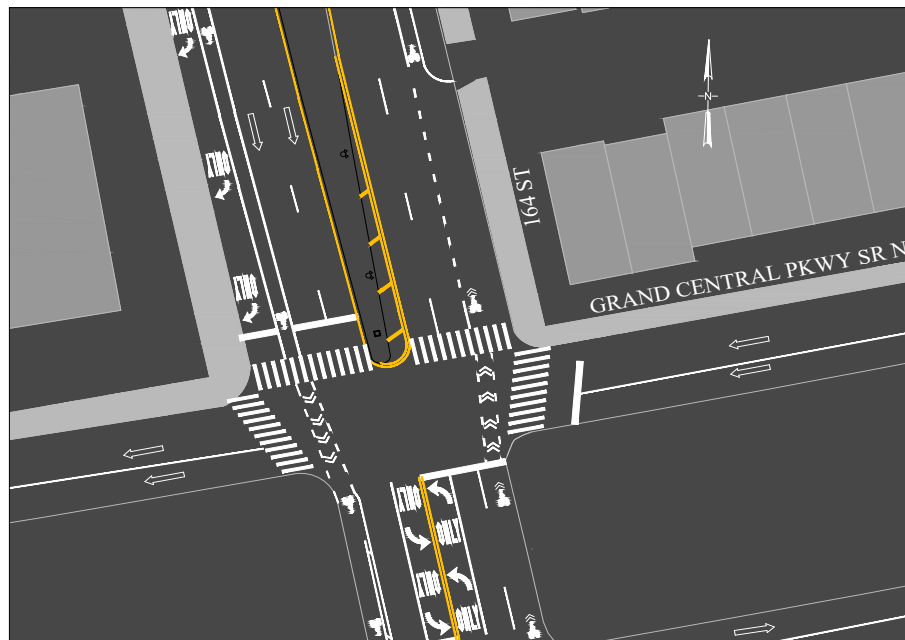
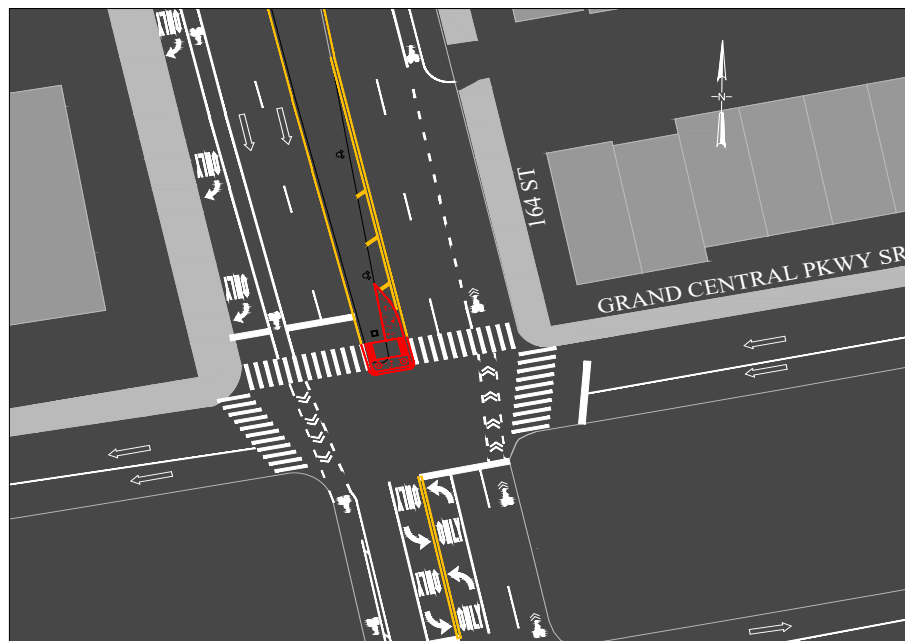


Figure 12-3-16b: Proposed



### 12.3.17 188th Street/McLaughlin Avenue (Grand Central Parkway)

**Issues:**

Pedestrians walking along 188th Street have relatively long crosswalks with hatched areas. Additionally, the north leg does not have a crosswalk.

**Proposal:**

- On the west leg, install a concrete triangle over the existing hatched median.
- On the east leg, install a pedestrian refuge island (in the hatched median) and construct a curb extension.
- Prohibit parking on the north curb during AM peak period.
- On the southeast corner, construct a curb extension to shorten crossing distance
- Re-align all crosswalks to curb extension and refuge island.



Aerial view 188th Street and McLaughlin Avenue



188th Street and McLaughlin Avenue looking west

Figure 12-3-17a: Existing

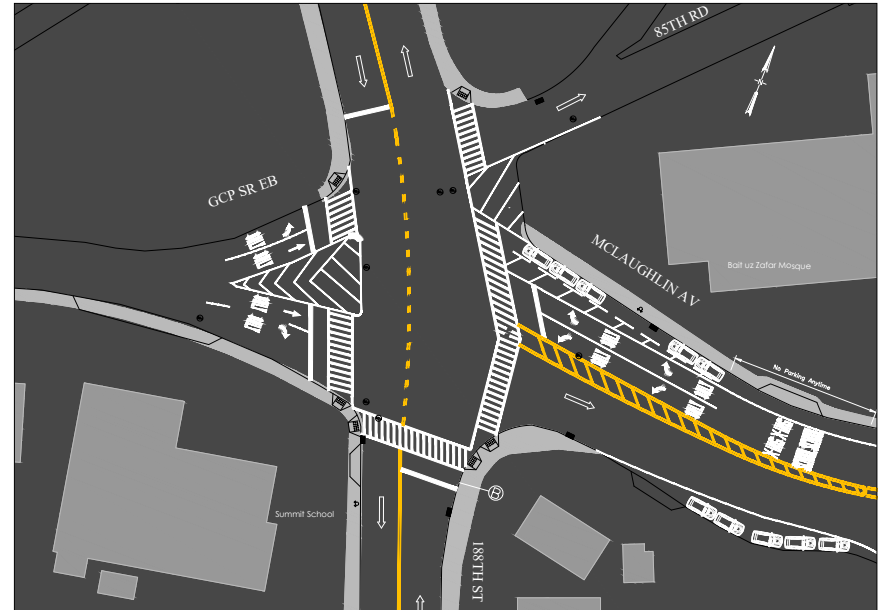
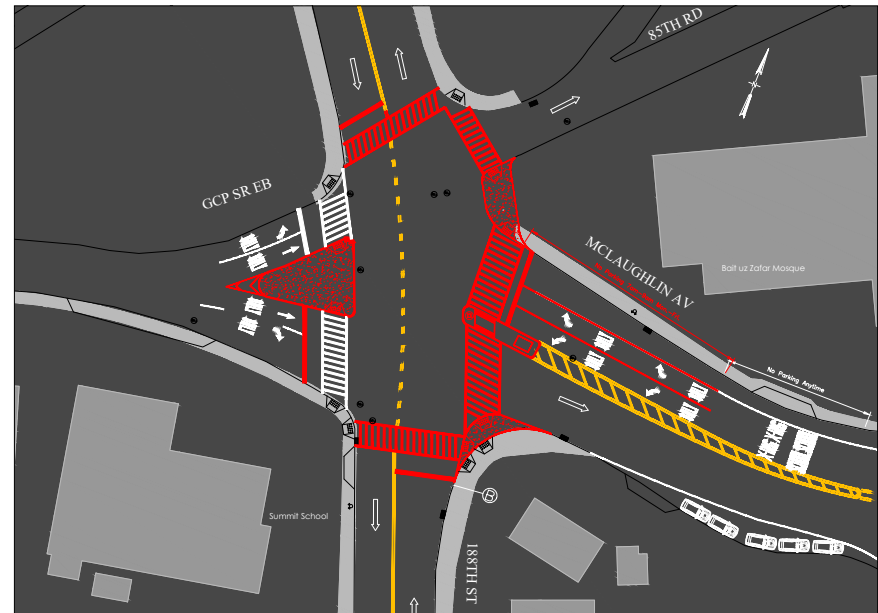


Figure 12-3-17b: Proposed





### 12.3.18 85th Drive & 139th Street

**Issues:**

The 139th Street approach to Manton Street/85th Drive is wide (flared) without a defined pedestrian path/crosswalk. A hatched median separates northbound left and right turns.

**Proposal:**

Construct concrete curb extension on the west and painted curb extension on the east of 139th Street, and install pedestrian crosswalk.



139th Street and 85th Drive looking east

Figure 12-3-18a: Existing

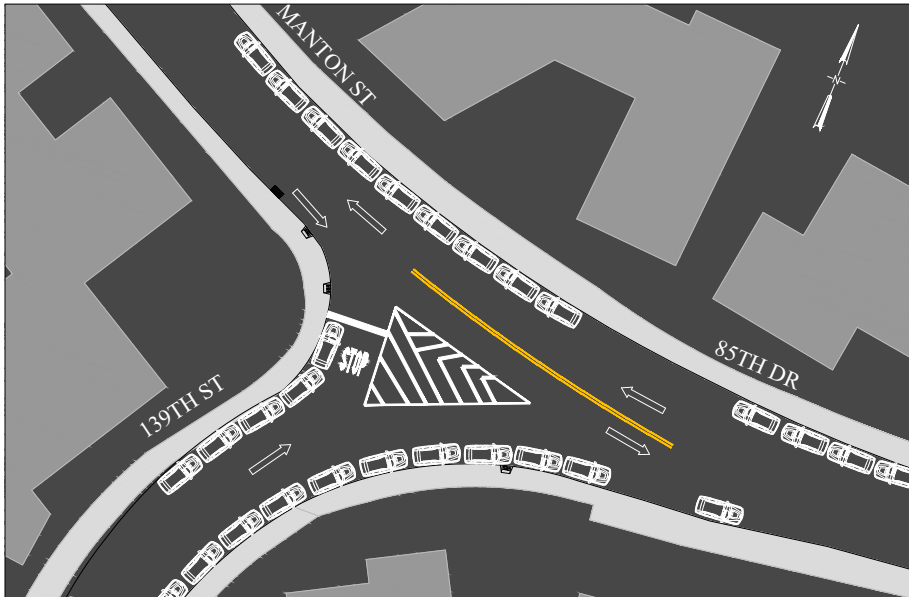
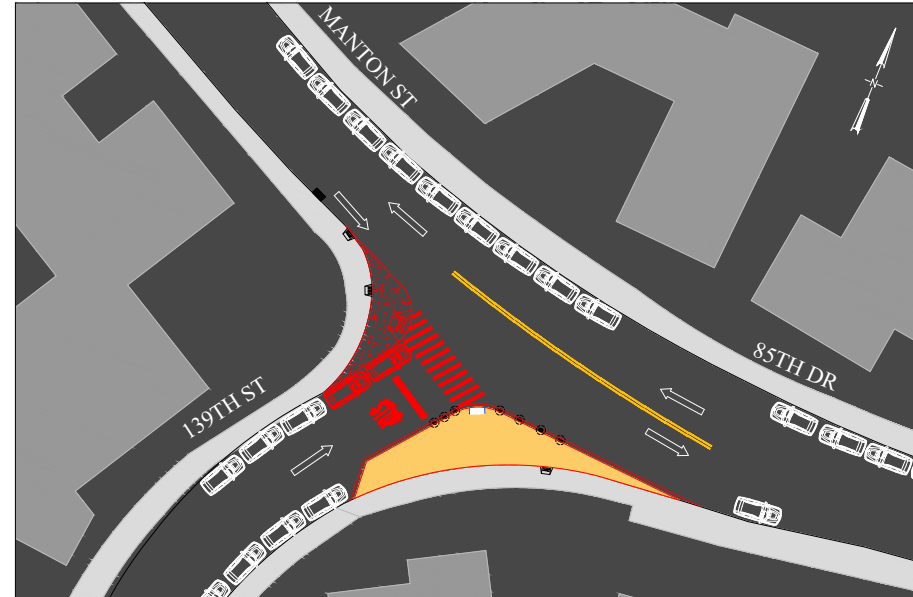


Figure 12-3-18b: Proposed



### 12.3.19 160th Street & Normal Road

**Issues:**

Immediately east of Parsons Boulevard, 160th Street and Normal Road meet as a Y intersection, creating a wide undefined area that's potentially unsafe.

**Proposal:**

Create a hatched curb extension and install roadway markings to streamline traffic.



160th Street/Normal Road looking north

Figure 12-3-19a: Existing



Figure 12-3-19b: Proposed





### 12.3.20 160th Street (South Road to Brinkerhoff Avenue)

#### Issues:

160th Street between South Road and 90th Avenue is generally over 45 feet wide with low traffic volume. It has one moving lane and parking per direction which encourages speeding.

#### Proposal:

1. Restripe roadway to provide one 10 feet moving lane per direction and provide a 10 feet flush painted median
2. Provide left turn bays where left turn is permitted.

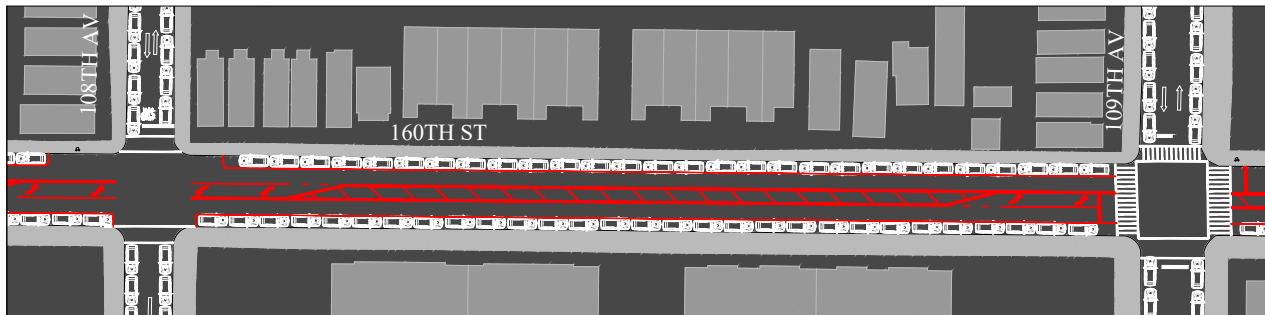


160th Street/Brinkerhoff Avenue looking north

Figure 12-3-20a: Existing



Figure 11-3-20b: Proposed



Aerial view of 160th Street between South Road and Brinkerhoff Avenue

### 12.3.21 Sayres Avenue (177th to 180th Streets)

**Issues:**

Sayres Avenue between 177th and 180th Streets is generally over 48 feet wide with low traffic volume. Additionally, Sayres Avenue/177th Street/111th Avenue is a five-legged unsignalized intersection with two-way operation on four legs and no control on the westbound approach.

**Proposal:**

1. To calm traffic and improve safety, install STOP controls on both approaches to Sayres Avenue
2. Install flush median and turning bays on Sayres Avenue to improve operations and calm traffic.

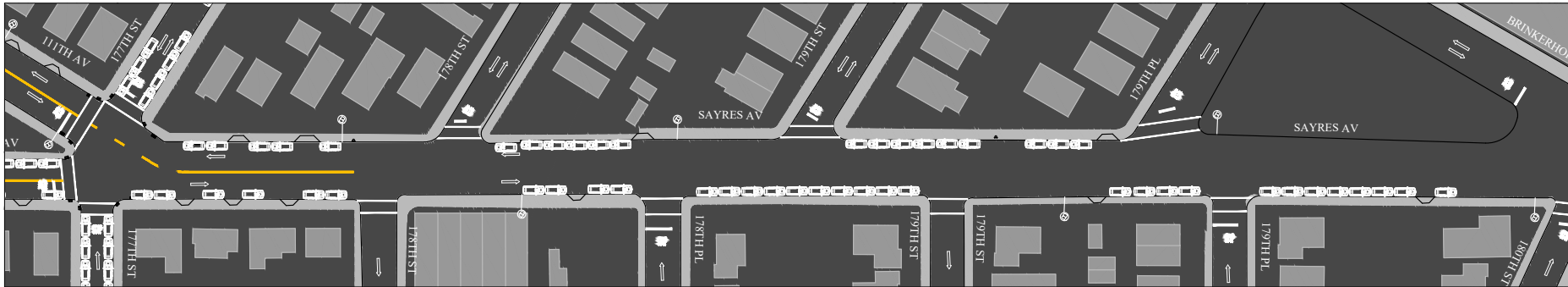


Sayres Avenue/179th Place looking east

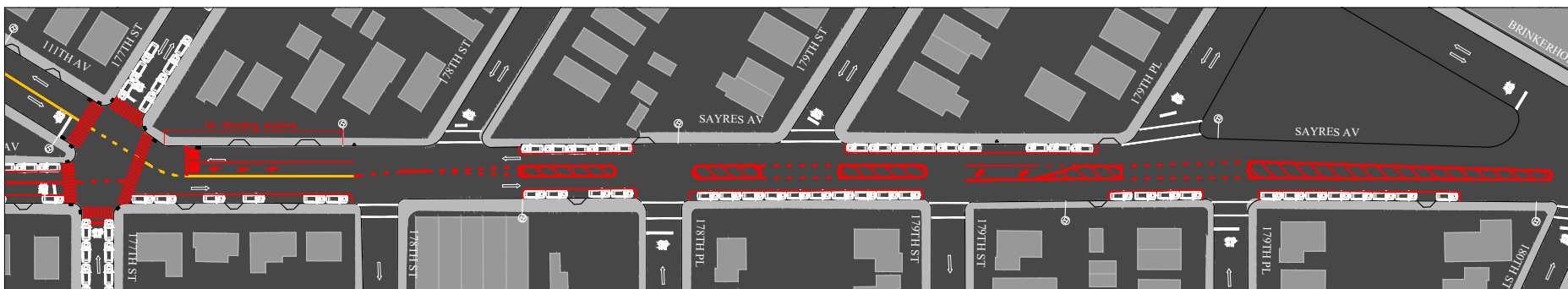


Sayres Avenue/111 Ave and 177th Street looking west

**Figure 12-3-21a: Existing**



**Figure 12-3-21b: Proposed**





### 12.3.22 Jamaica Avenue & 153rd Street

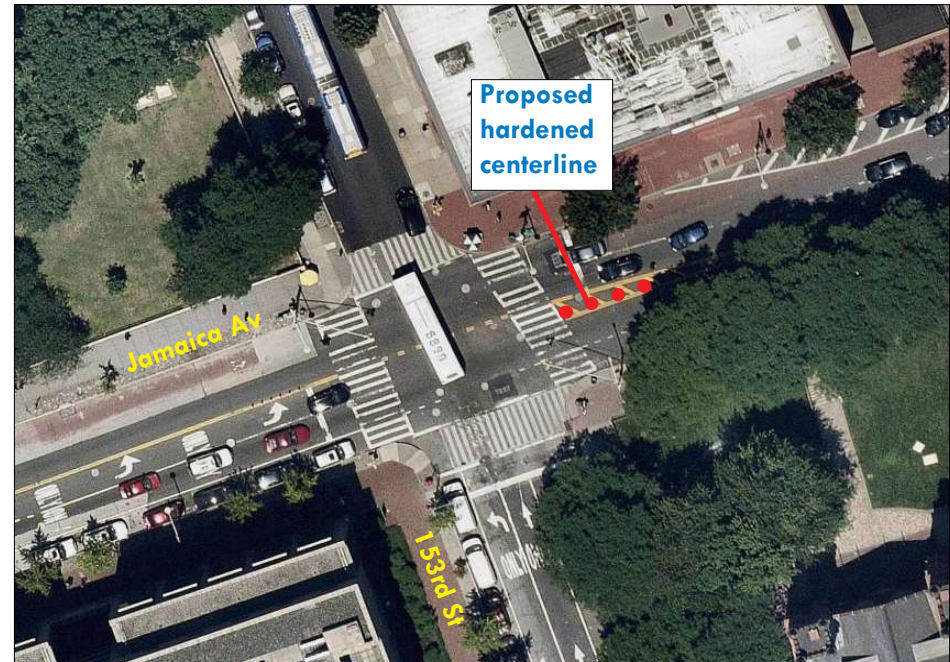
#### Issues:

Westbound traffic on Jamaica Avenue experience congestion approaching 153rd Street. This creates pedestrian safety concern due to significant U-turns.

#### Proposal:

- Install hardened centerline on Jamaica Avenue approaching 153rd Street to eliminate disruptive U-turns
- Increase enforcement

Figure 12-3-22: Proposed



Jamaica Avenue looking east at 153rd Street

### 12.3.23 Murdock Avenue (Dunkirk Street to Farmers Boulevard)

#### Issues:

- Murdock Avenue (Dunkirk Street to Farmers Boulevard) is a wide (44 - 49 feet), residential street with no stop controls. It operates as two-way with one moving lane in each direction and curbside parking. There are several complex intersections along the corridor because many streets are diagonal.

#### Proposal:

- Install a flush median (varying widths) along the corridor
- To reduce conflicts on approaches to Murdock Avenue, convert the following roadway segments from two-way to one-way operation:
  - Newburg Street – 114th Road to Dunkirk Street/Dunkirk Drive (7 blocks) – southbound



Ovid Place/114th Street looking west

Figure 12-3-23a: Existing

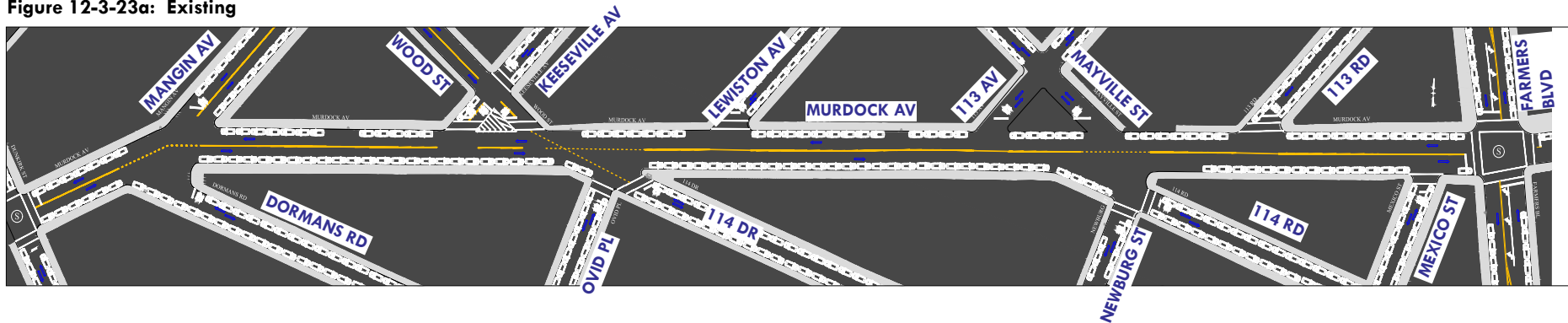
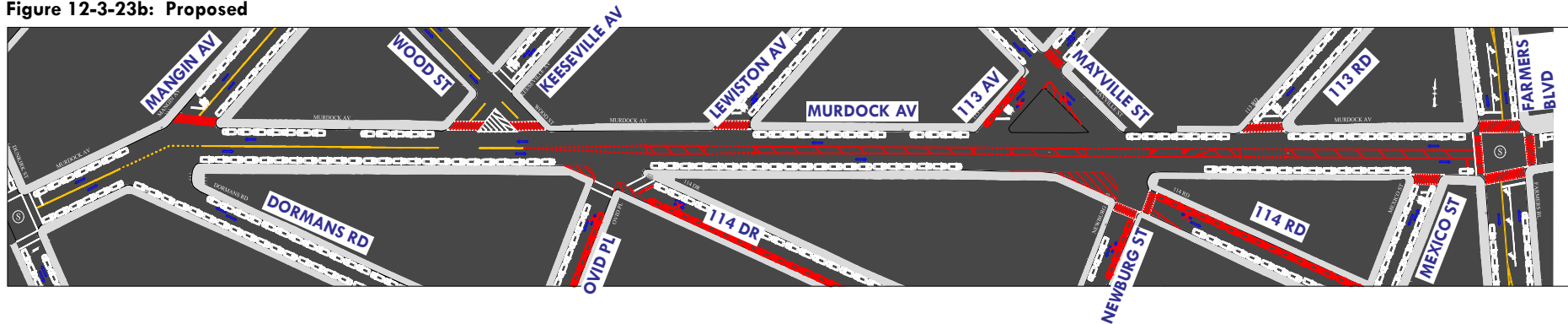


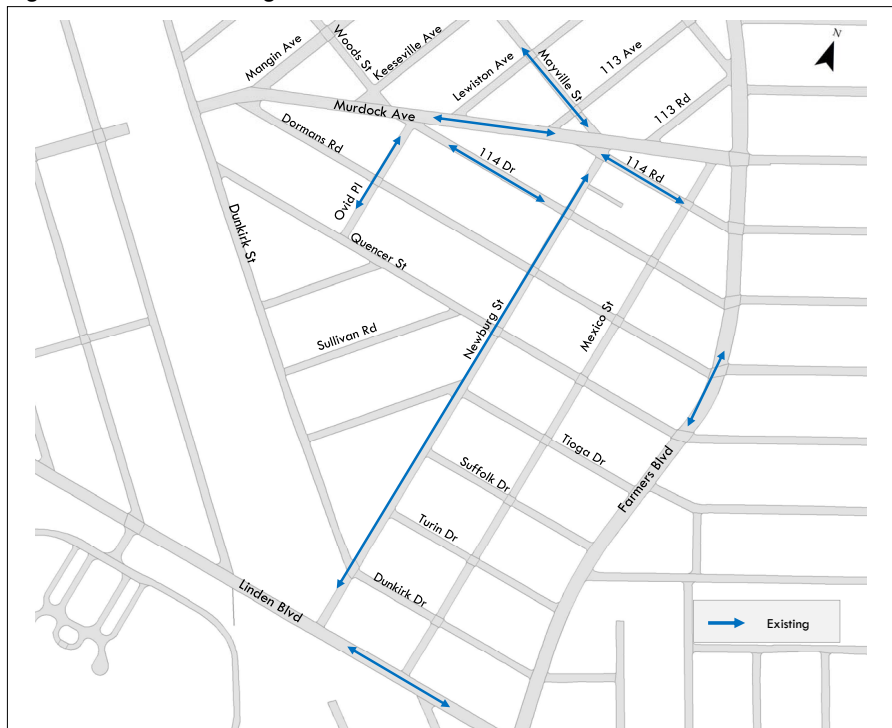
Figure 12-3-23b: Proposed



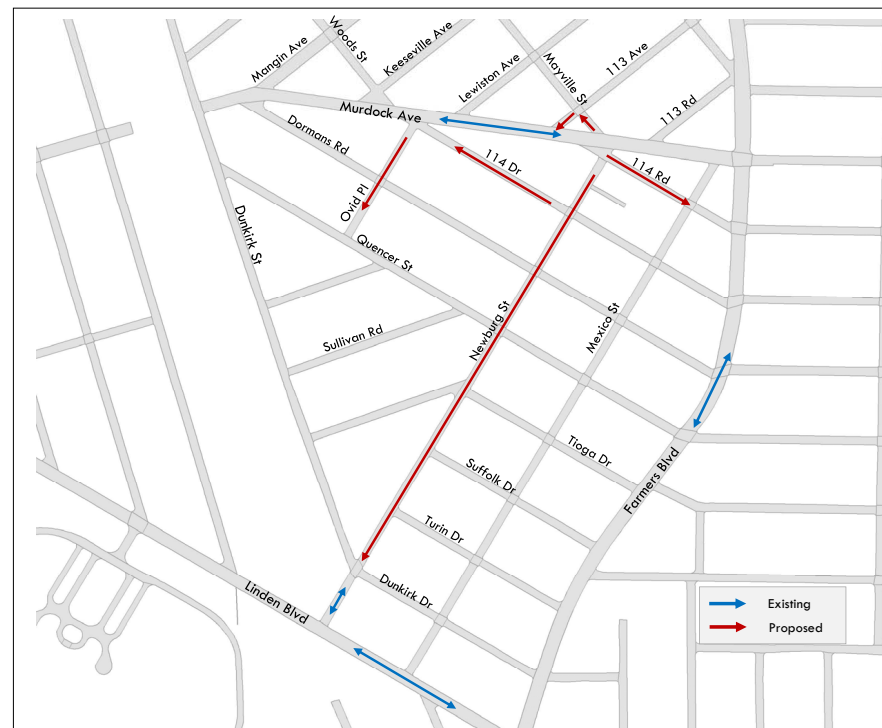


- 114th Road – Newburg Street to Farmers Boulevard (2 blocks) – eastbound
- 114th Drive - - Murdock Avenue to Farmers Boulevard (3 blocks) - westbound
- Ovid Place – 114th Drive to Quencer Road (2 blocks) - southbound
- Mayville Avenue - Murdock Avenue to 113th Avenue (1 block) - northbound
- 113th Avenue - Mayville Avenue to Murdock Avenue (1 block) - southbound

**Figure 12-3-23c: Existing**



**Figure 12-3-23d: Proposed**



## 12.4 Short/Medium Term Recommendations (3 - 5 years)

### 12.4.1 150th Street (Hillside Avenue to Jamaica Avenue)

#### Issues:

There are limited options for continuous north-south travel between Hillside and Liberty Avenues in Downtown Jamaica. Only four corridors offer continuous north-south travel – Sutphin Boulevard (two-way); Merrick Boulevard (one-way southbound); 168th Street (one-way northbound); and 150th Street (southbound only between Hillside and Jamaica Avenues; and two-way south of Jamaica Avenue). Because Sutphin Boulevard is the only two-way north-south arterial, it is generally congested during peak hours.

#### Proposal:

Convert 150th Street between Hillside and Jamaica Avenues from one-way southbound to two-way operation.

Figure 12-4-1a: One Way Conditions

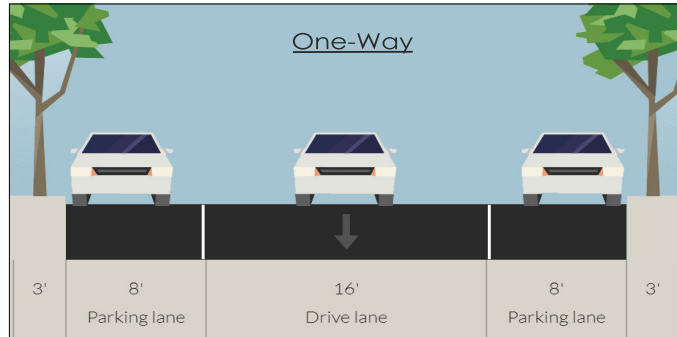
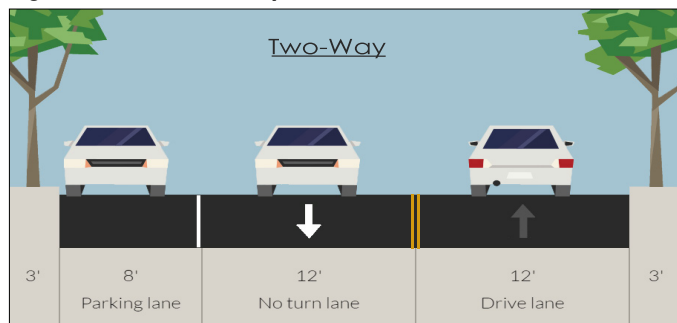


Figure 12-4-1b: Two Way Conditions



150th Street/Jamaica Avenue looking north

Figure 12-4-1c: Existing Street Directions

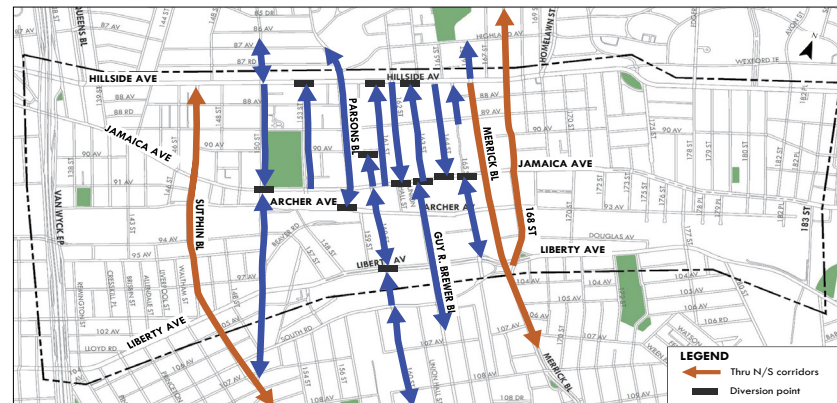
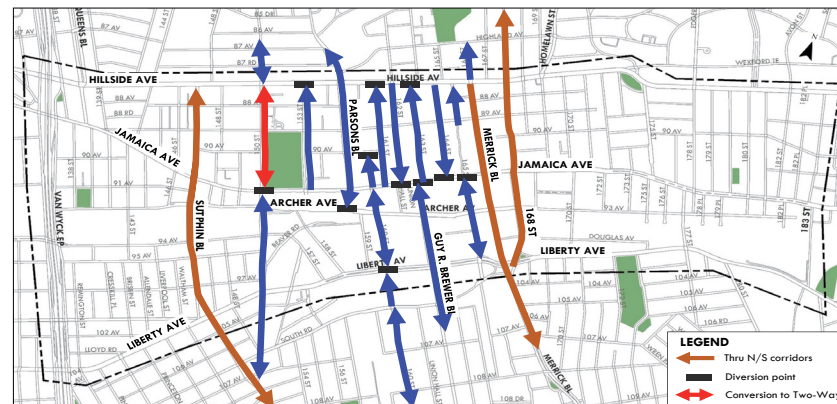


Figure 12-4-1d: Proposed Street Directions



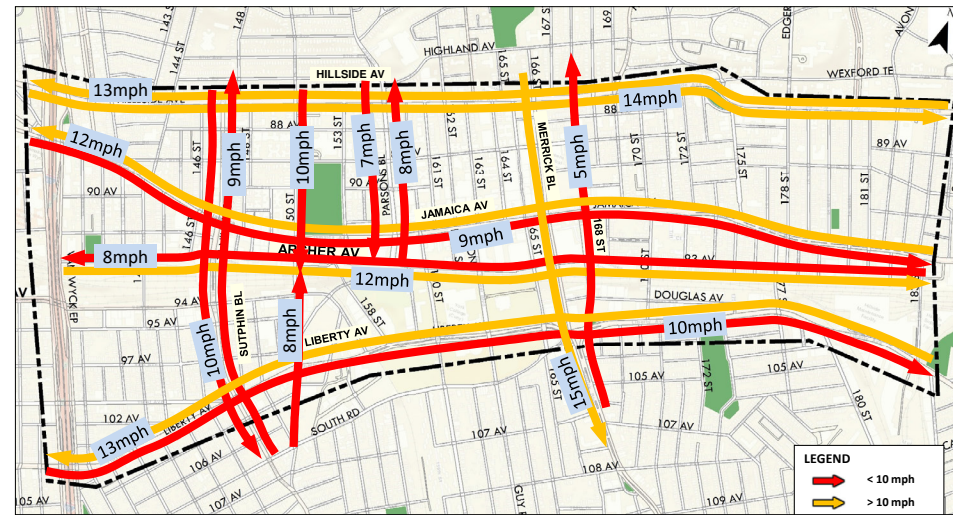


Because of the systemwide implications of this proposal, it was modelled with VISSIM to evaluate the effectiveness of the proposal. The average travel speeds on major corridors with and without the proposal were derived from computation and simulation. The results indicate most corridors will operate 1-3 mph faster during the AM and PM peak periods with the conversion. See Table 12-4-1 for the analysis results; Figure 12-4-1e to 12-4-1h for the mapped travel speeds by corridors for the AM and PM peak periods.

**Table 12-4-1: Average Travel Speed Comparison**

Corridor	Average Travel Speed (mph)			
	Future AM		Future PM	
	Without Conversion	With 150th St Conversion	Without Conversion	With 150th St Conversion
150th St NB	7.98	9.81	6.29	9.56
150th St SB	10.52	14.03	9.87	11.00
168th St NB	5.44	7.41	9.55	9.76
Archer Av EB	11.99	12.68	9.79	13.41
Archer Av WB	8.40	8.98	10.66	10.75
Hillside Av EB	14.15	13.99	14.46	14.66
Hillside Av WB	13.40	16.85	12.65	13.01
Jamaica Av EB	9.00	11.73	9.17	11.10
Jamaica Av WB	12.58	13.94	10.35	10.01
Liberty Av EB	10.92	12.38	11.82	10.96
Liberty Av WB	12.80	12.92	12.29	12.84
Merrick Blvd NB	14.65	15.96	13.11	13.84
Merrick Blvd SB	13.79	17.19	9.83	13.17
Parsons Blvd NB	8.29	10.60	4.96	8.75
Parsons Blvd SB	7.77	8.59	5.51	7.44
Sutphin Blvd NB	9.15	9.71	10.59	11.87
Sutphin Blvd SB	10.08	12.22	8.28	9.56

**Figure 12-4-1e: 150th Street No Build (Existing) - Average Travel Speed - AM Peak**



**Figure 12-4-1f: 150th Street Build (Future) - Average Travel Speed - AM Peak**

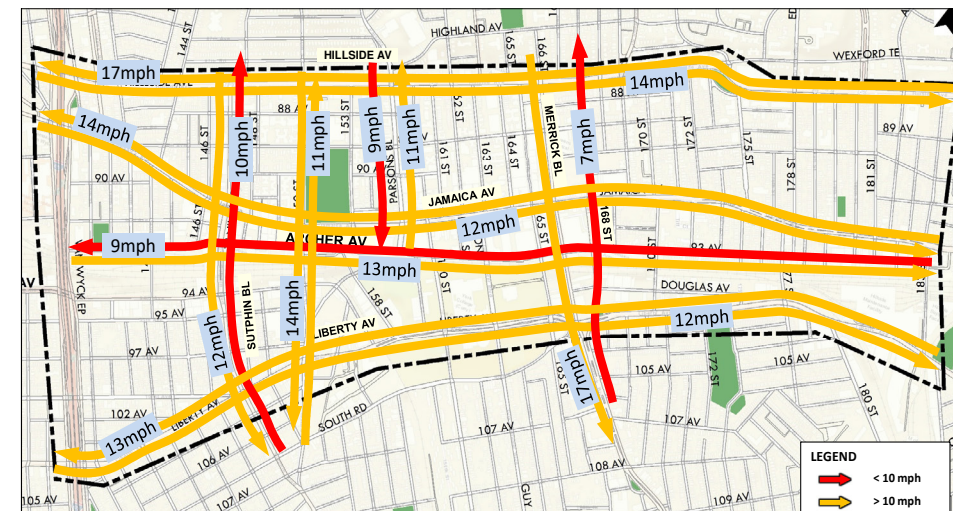


Chart 12-4-1g: 150th Street No Build (Existing) - Average Travel Speed - PM Peak

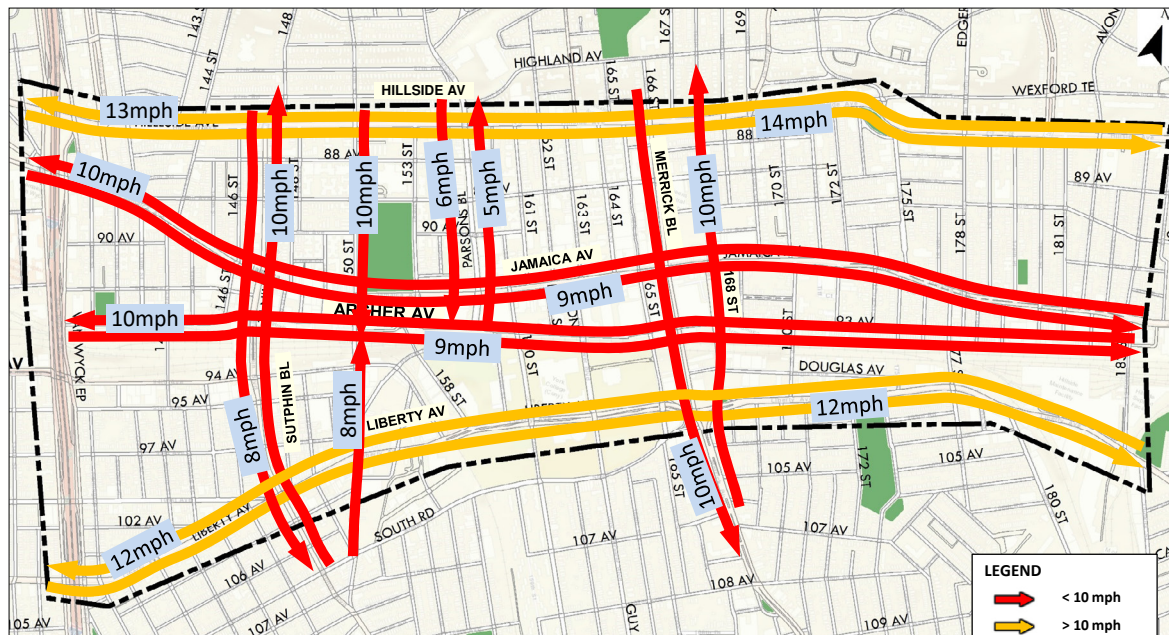
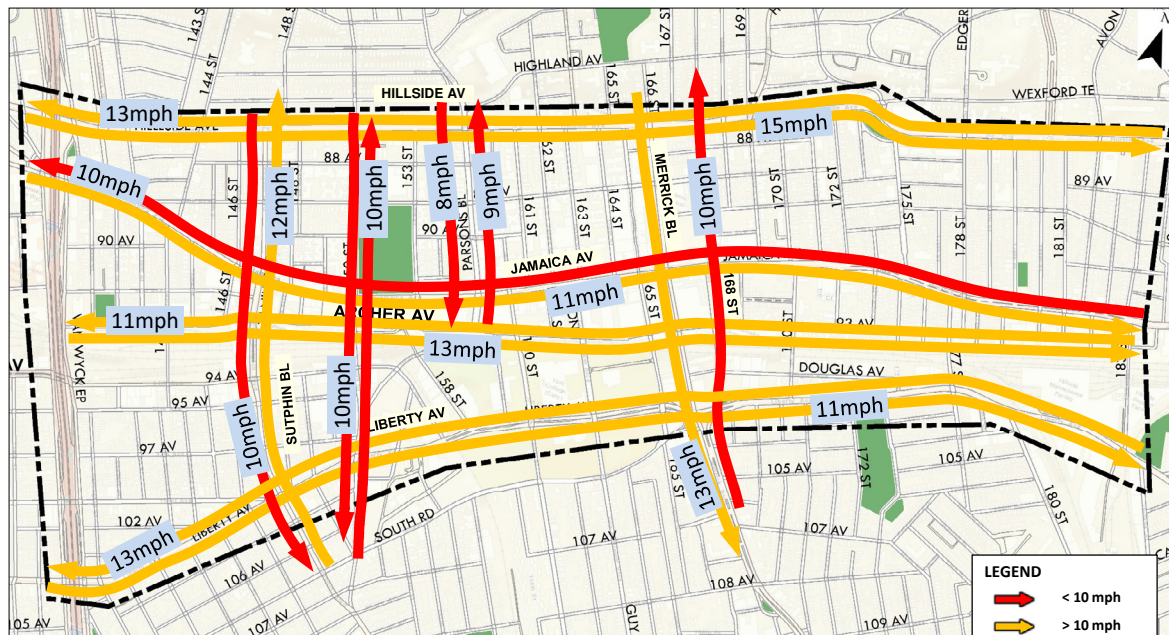


Chart 12-4-1h: 150th Street Build (Future) - Average Travel Speed - PM Peak





## 12.4.2 Two-way to One-way Conversions

### Issues:

Several streets in the study area are very narrow (less than 30 feet wide) with two-way operation. See Figure 12-4-3.

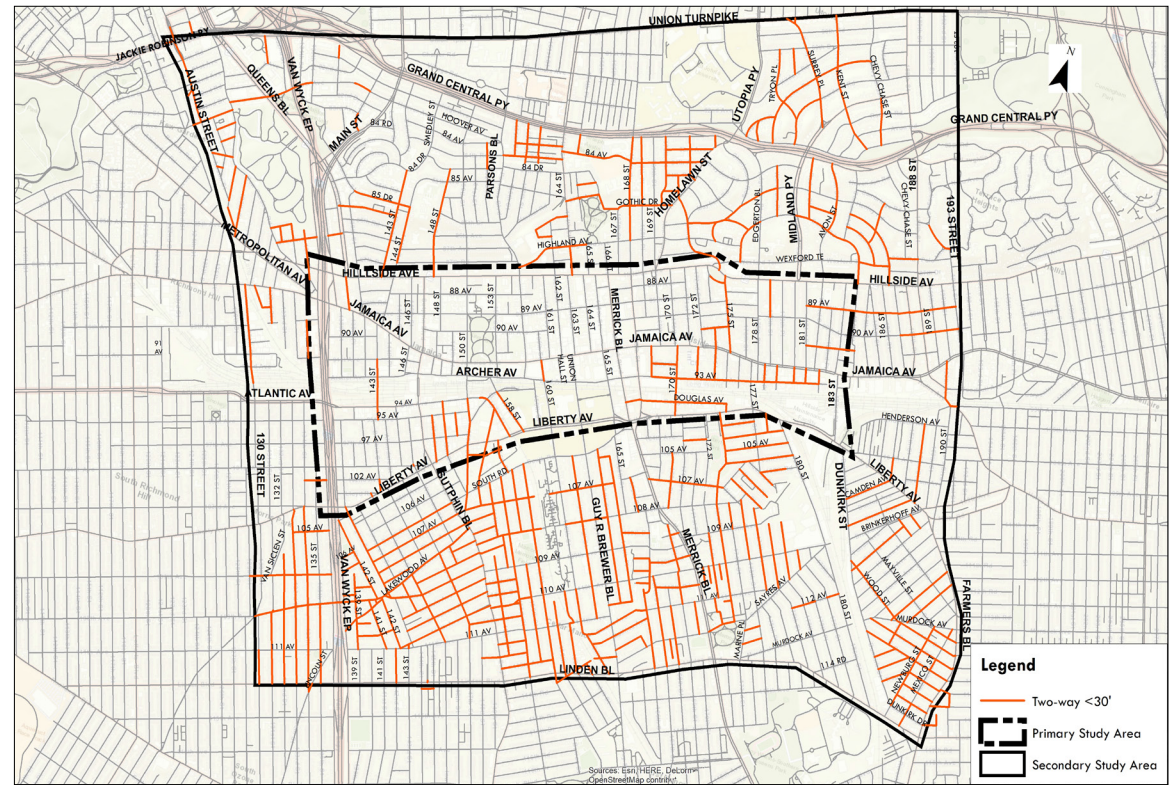
### Proposal:

Programmatically evaluate narrow two-way streets for conversion to one-way operation where feasible.



Brisbin Street between 97th & 95th Avenues looking south

Figure 12-4-2: Narrow Two-way Streets





### 12.4.3 Bicycle Parking Amenities

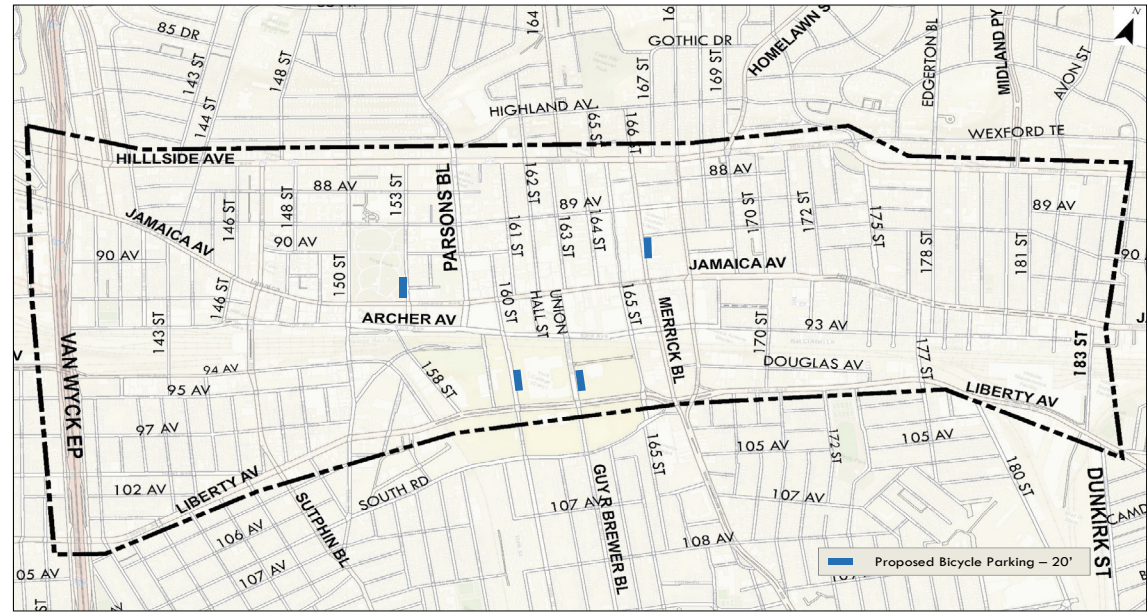
#### Issues:

Though cycling is growing in the city, it is not a major travel mode in the study area. However, in addition to planned potential bike network, the provision of bicycle parking amenities (bicycle racks) at major destinations would be beneficial

#### Proposal:

Install bike corrals adjacent to major destinations such as York College, Rufus King Park, and Queens Public Library. Figure 12-4-4 shows potential bike corral locations.

Figure 12-4-3: Potential Bike Corral Locations



Bicycle corral at Fulton Street, Brooklyn



Bicycle corral at 5th Avenue, Brooklyn



## 12.4.4 Parking Improvement Measures

### Issues:

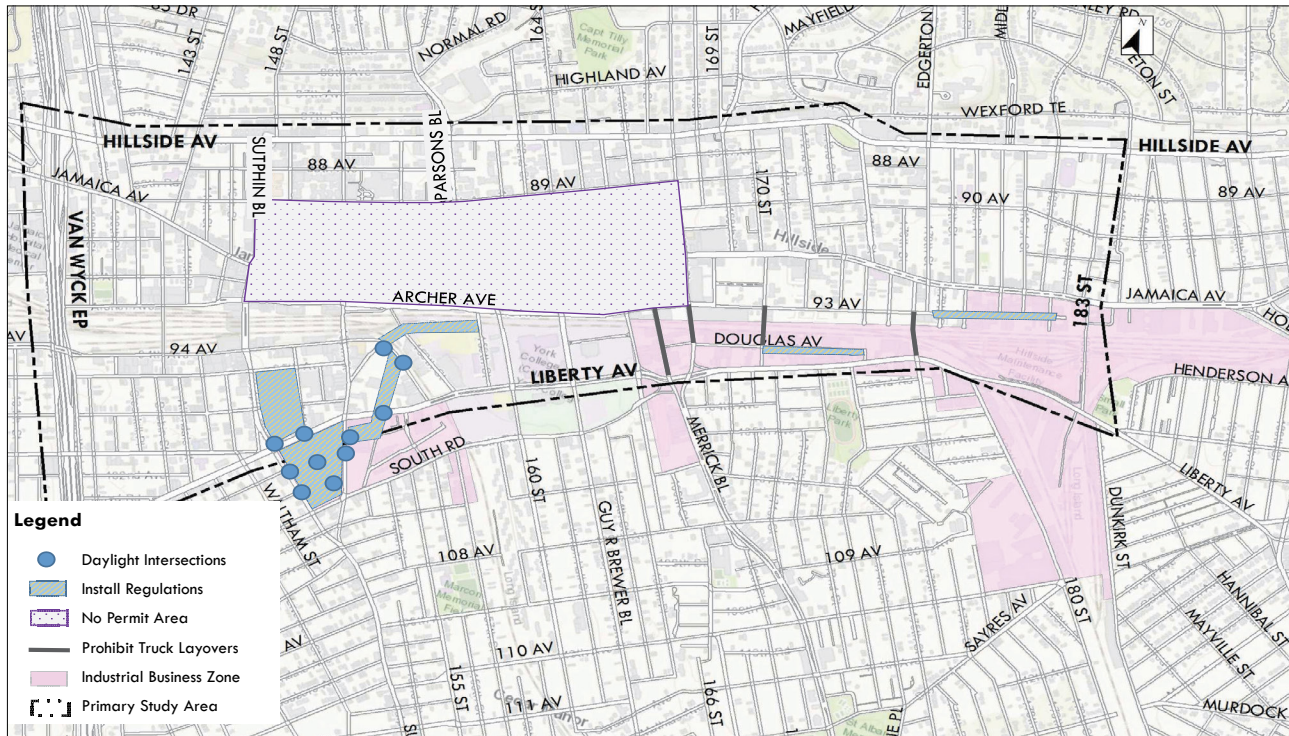
The high parking demand and short supply of parking spaces requires a multi-dimensional approach. There are numerous government agencies (local, state, and federal) with parking placards. There are 170 spaces allocated to agencies including the Social Security Administration, and the Court System.

### Proposal:

- Establish a No Permit Area in Downtown Jamaica bounded by Archer Avenue, Sutphin Boulevard, 89th Avenue, and 168th Street
- Install missing parking regulation signs
- Daylight intersections in the IBZ to facilitate large trucks turning
- Increase enforcement against illegal truck layovers



Figure 12-4-4a: Parking Improvement Measures



#### 12.4.4.1 Revise Existing Parking Regulations

The proposed parking regulations changes are summarized in Figure 12-4-5b

- Implement metered parking along all blockfaces of Hillside Avenue within the Study Area.
- Convert “No Parking Anytime” regulations to a particular time frame
- Convert regulations on “No Parking” blockface segments into an authorized vehicle zone.
- Convert “No Standing” and “No Parking” regulations on Parsons Boulevard (north of Jamaica Avenue) to metered parking.

#### 12.4.4.2 Increase Parking Enforcement

Increase enforcement in the areas indicated in Figure 12-4-5b with the following objectives:

- Increase turnover along metered blockfaces
- Reduce bus delays by actively towing vehicles parked in bus lanes
- Enforce meter violations and illegal parking on blocks with auto dealerships

#### 12.4.4.3 Provide Additional Loading Zones along Commercial Corridors

Establish metered “No Standing Commercial Loading and Unloading” zones along commercial corridors that have metered parking, such as Hillside Avenue, Sutphin Boulevard, and Jamaica Avenue (east of 168th Street), and other streets where truck double-parking is prevalent.

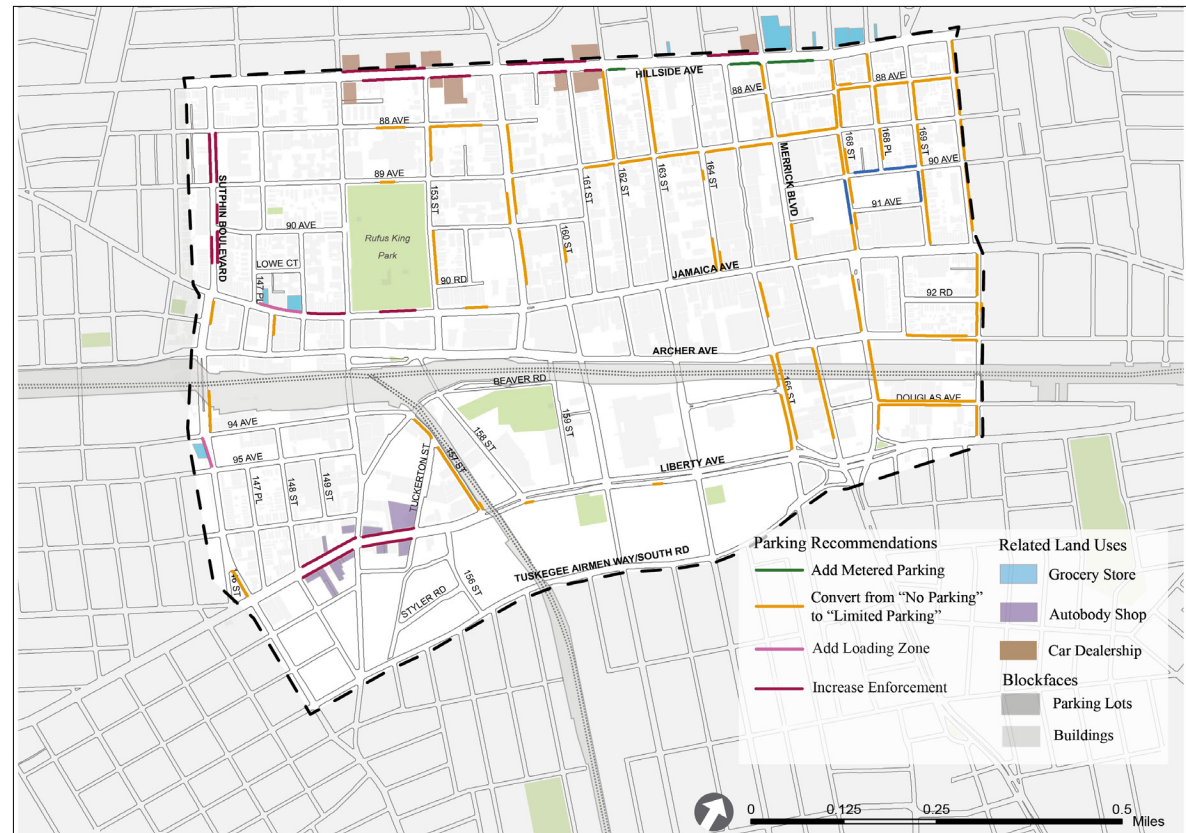
#### 12.4.4.4 Develop a parking wayfinding strategy to facilitate driver access to off-street facilities

The Greater Jamaica Development Corporation (GJDC) along with the BIDs and other community stakeholders should collaborate to create a wayfinding program that includes “public parking” signage, a parking facilities map, and digital content.

#### 12.4.4.5 Explore relaxing accessory parking regulations to encourage more efficient use of the parking supply

The Special District’s parking regulations should be similar to Downtown Manhattan, where little distinction is made between accessory and public parking garages.

Figure 12-4-4b: Recommended Parking Regulations Change





## 12.4.5 Liberty Avenue/103rd Avenue (134th Street to 131st Street) - For further evaluation

### Issues:

Liberty Avenue/133rd Street/103rd Avenue, an irregular, complex intersection with pedestrian/vehicular challenges. Liberty Avenue/134 Street intersection is unsignalized, offset, and wide; motorists traveling northbound on 134th Street must wait for gap to cross Liberty Avenue; due to congestion on Liberty Avenue compromises safety.

### Proposal:

- Extend and widen the existing concrete median on the east leg Liberty Avenue/133rd Street
- Install curb extension on the southeast corner of Liberty Avenue/133rd Street
- Upgrade crosswalks to high visibility
- Convert 134th Street from two-way to one-way northbound between Liberty Avenue and 105th Avenue.
- Signalize the intersection of Liberty Avenue and 134th Street
- Convert 103rd Avenue between 131st and 133rd Streets from two-way to oneway westbound



Liberty Avenue/134th Street looking east

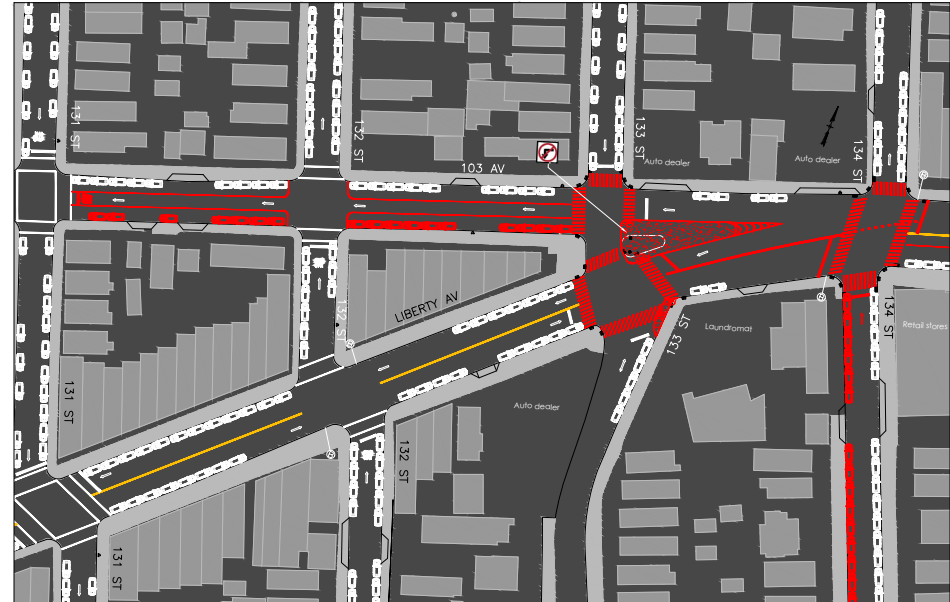


133rd Street and 103rd Avenue looking east

Figure 12-4-5a: Existing



Figure 12-4-5b: Proposed



## 12.4.6 Q40 Bus Circulation Improvements

### Issues:

Two of the main corridors along the Q40 bus operate are narrow (30 feet or less), two-way streets with parking on both sides. These operating conditions slow bus operations and contribute to congestion.

### Proposal:

Limit parking to one side (north and west curb) where street is 30 feet or less during AM and PM peak periods.

1. Lakewood Avenue – Pinegrove Street to Sutphin Boulevard
2. 142nd Street – Lakewood Avenue to 123rd Avenue



142nd Street/111th Avenue looking south

Figure 12-4-6a: Segments on Lakewood Av & 142nd St under consideration

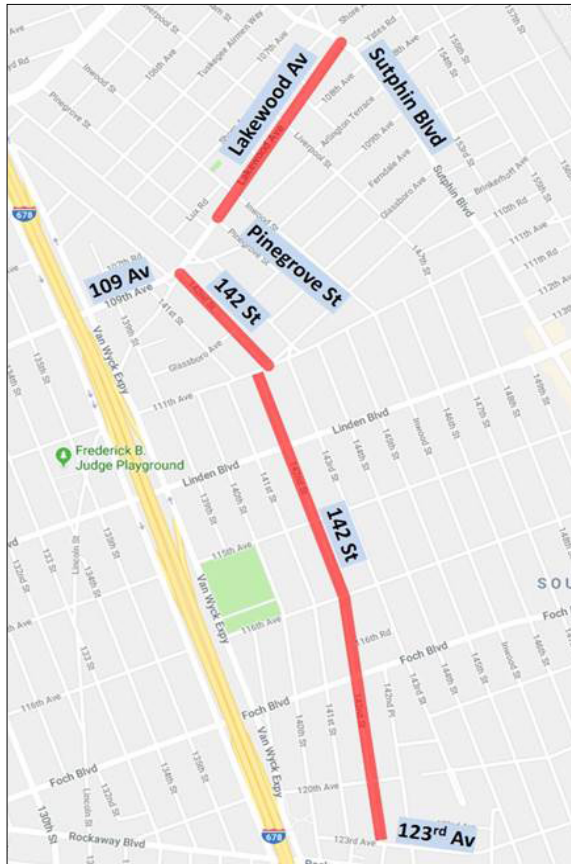


Figure 12-4-6b: Existing - 142nd Street

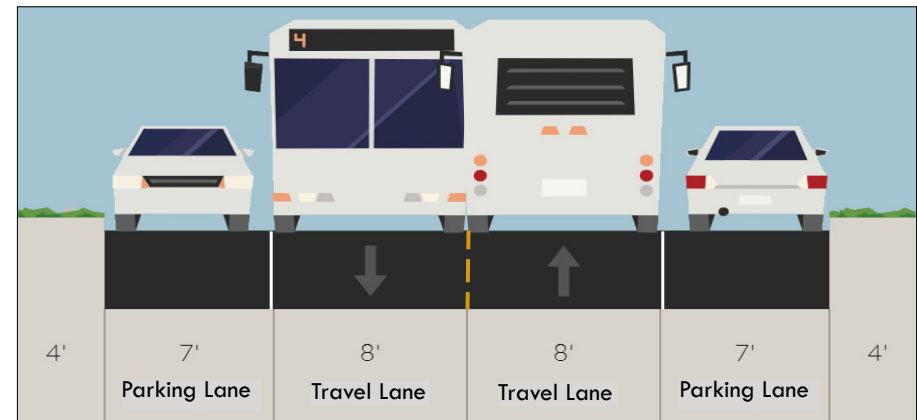
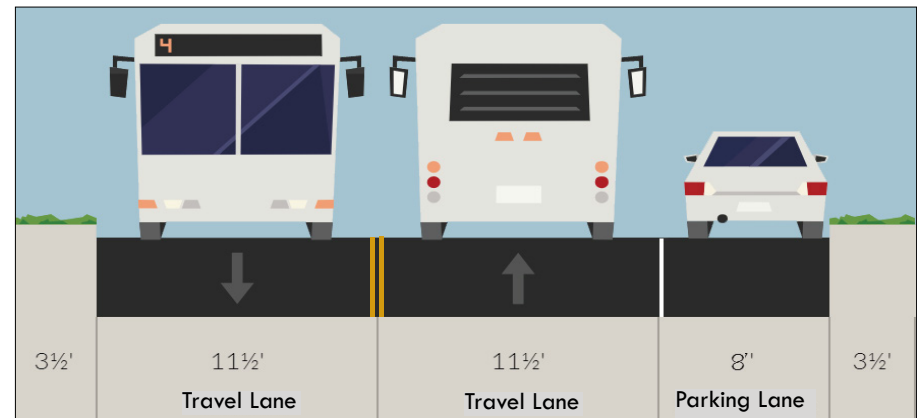


Figure 11-4-6c: Proposed - 142nd Street





## 12.4.7 Lincoln Street Roadway Improvements - Between Van Wyck Expressway Service Road/111th Avenue and Rockaway Boulevard

### Issues:

1. Poor surface conditions on Lincoln Street between Van Wyck Expressway Service Road/111th Avenue and Rockaway Boulevard.
2. Lincoln Street runs diagonally on the regular grid network and create irregular intersections at 135th, 134th, 133rd, and 132nd Streets.
3. Insufficient pedestrian crossing opportunities

### Proposal:

1. Resurface Lincoln Street upon completion of DDC water main capital project
2. At 111th Avenue, install concrete center island for pedestrian refuge

3. At 135th Street, install concrete center island for pedestrian refuge, and add curb extension on southeast corner
4. At 134th Street, convert 134th Street north of Linden Boulevard to oneway northbound toward Liberty Avenue, convert 134th Street south of Linden Boulevard to oneway southbound toward Lincoln Street. Stripe wide pedestrian crosswalk on Linden Boulevard between 134th Street and Lincoln Street to prevent vehicles block the intersection
5. At 133rd Street, install pedestrian refuge island on the existing hatched marking
6. Upgrade all existing pedestrian ramps to ADA standards

Figure 12-4-7a: Existing

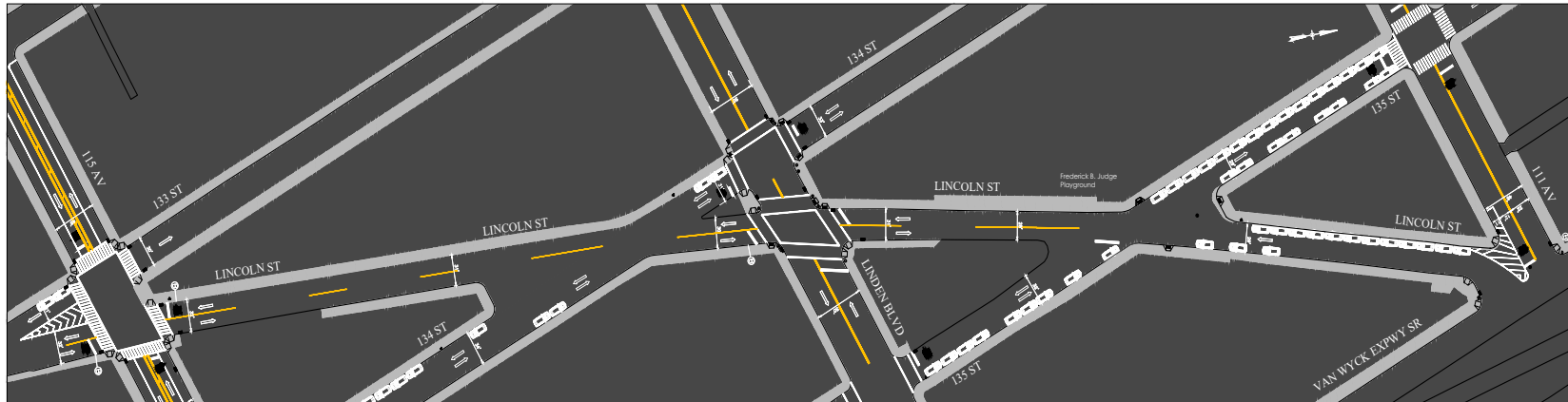
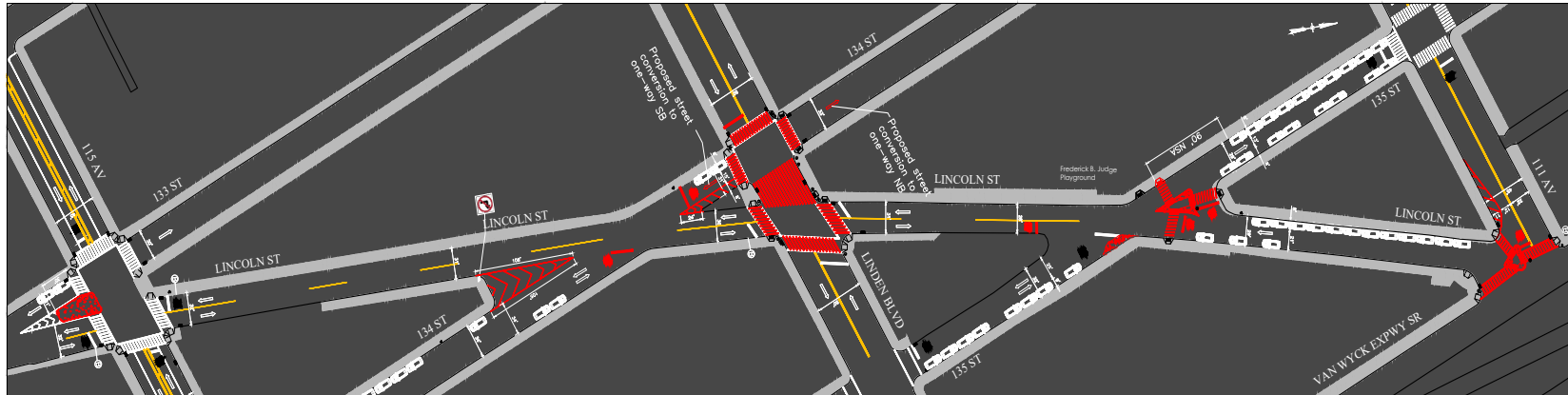


Figure 12-4-7b: Proposed



## 12.5 Long Term Recommendations/Potential Projects (5+ years)

### 12.5.1 Archer Avenue – Sidewalk Widening

#### Issues:

Archer Avenue south sidewalk between Parsons Boulevard and 160th Street is narrow and varies from 4' increasing to 6' at 160th Street. The multiple bus stops and pedestrian demand on this segment pose pedestrian safety issues.

#### Proposal:

Extend sidewalk for bus stop pedestrian space to 9' minimum.

Archer Avenue sidewalk east of Parsons Boulevard



Figure 12-4-1a: Existing

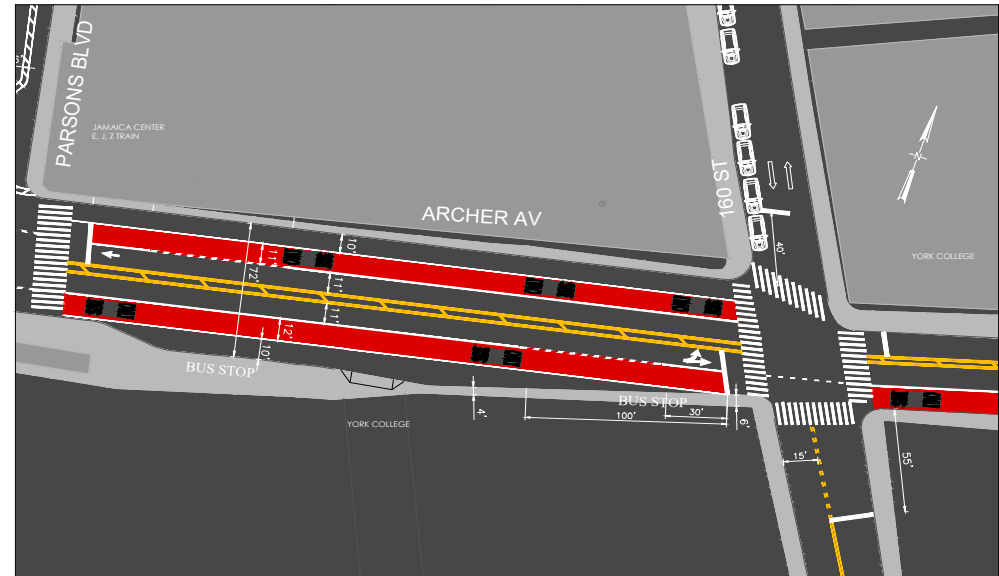
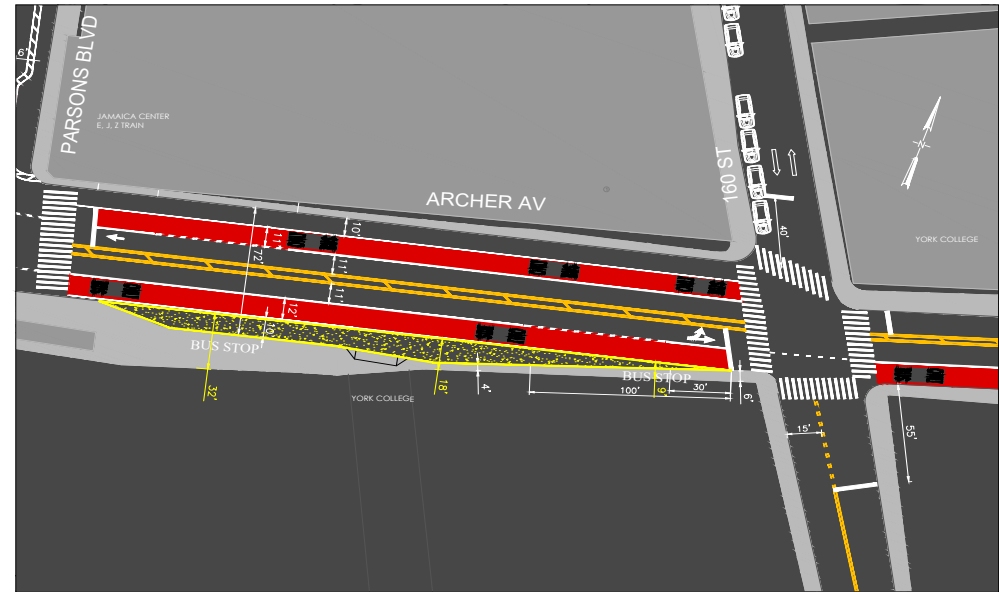


Figure 12-4-1b: Proposed





## 12.5.2 Archer Avenue Sidewalk Widening between Guy R Brewer Boulevard and 165th Street

### Issues:

Narrow south sidewalk 5' wide on Archer Avenue between Guy R Brewer Boulevard and 164th Street. Currently, a bus stop serving five routes is located mid-block. The narrow sidewalk space creates pedestrian safety issues.

### Proposal:

Shift westbound travel lanes and the eastbound bus lane to the north, and extend the sidewalk from 5' to 9' wide.



Archer Avenue/Guy R Brewer Boulevard looking east

Figure 12-5-2a: Existing

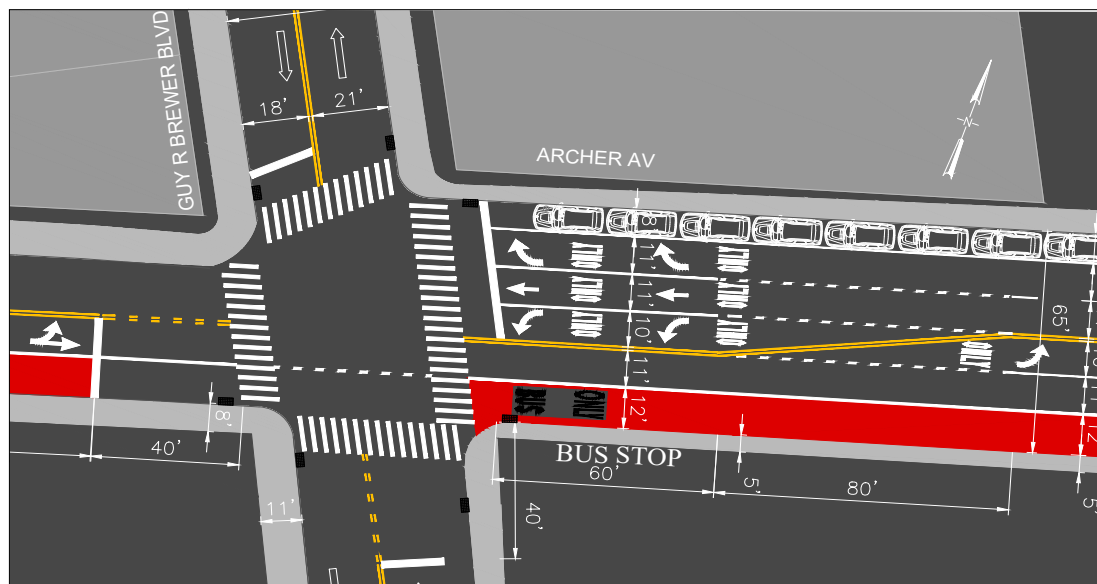
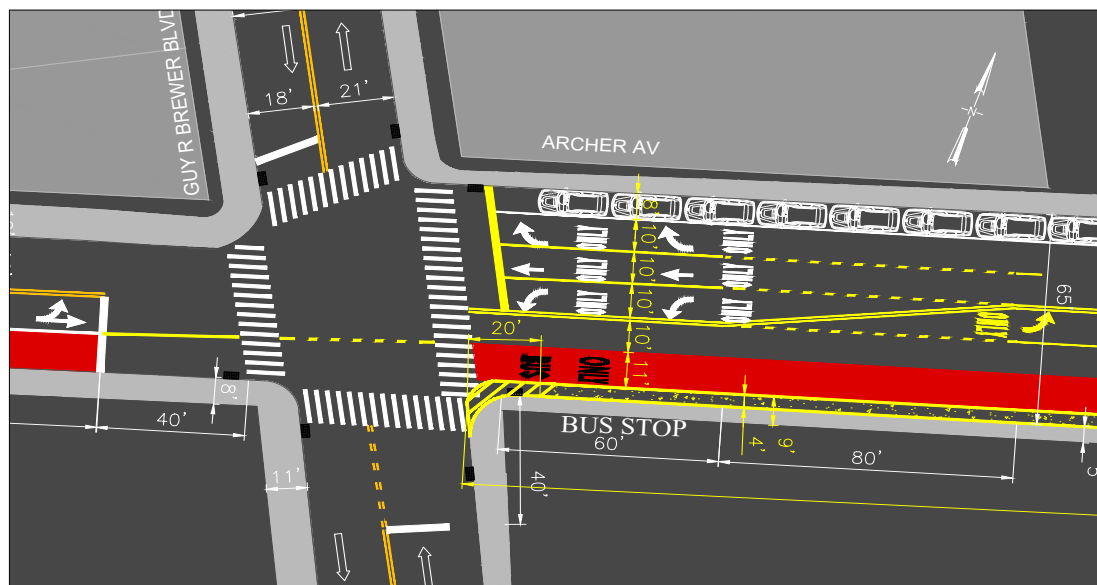


Figure 12-5-2b: Proposed



### 12.5.3 Douglas Avenue – 168th Street to 175th Street

**Issues:**

Douglas Avenue between 168th Street and 175th Street is in the heart of the industrial business zone. The roadway is in very poor condition with potholes and no sidewalk. Mainly due to trucking activity.

**Proposal:**

Reconstruct the roadway with sidewalk; to be coordinated with Street and Arterial Maintenance.



Douglas Avenue/172nd Street looking west



Aerial view of Douglas Avenue between 170th Street and 175th Street



## 12.5.4 Tuskegee Airmen Way – Guy R. Brewer Boulevard to 165th Street

### Issues:

South Road/Tuskegee Airmen Way between Guy R. Brewer Boulevard and 165th Street is two-way street with parking on the south curb. It is partially developed with approximately 25 feet paved roadway without sidewalk. The mapped ROW is approximately 50'. Pedestrians and vehicular travel conditions are poor.

### Proposal:

Reconstruct roadway with adequate width sidewalk and permit parking on north curb.



Tuskegee Airmen Way/164th Street looking west



Aerial view of South Road/Tuskegee Airmen Way between Guy R Brewer Boulevard to 165th Street

Figure 12-5-4a: Existing

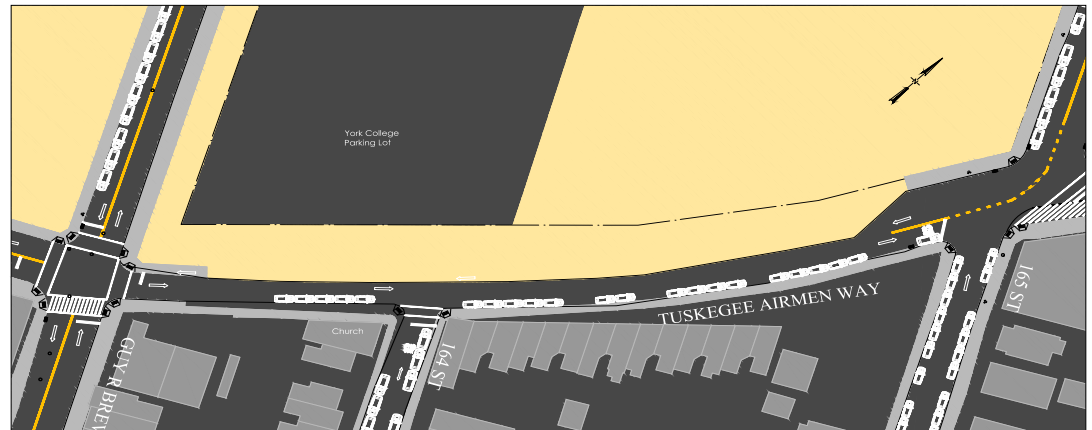
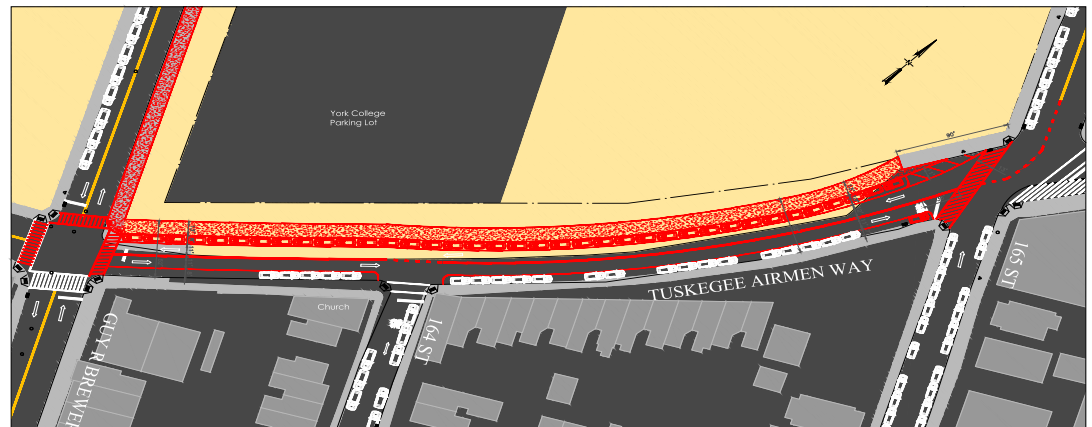


Figure 12-5-4b: Proposed







DO NOT  
ENTER

NEW  
DO NOT  
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NEW  
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DO NOT  
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113  
AV



# APPENDIX A

## TRAFFIC DATA COLLECTION, REDUCTION & ANALYSIS





## Manual Turning Movement and Classification Counts

### Primary Study Area

1. Hillside Avenue & Van Wyck Boulevard
2. Hillside Avenue & 139th Street
3. Hillside Avenue & 150th Street
4. Hillside Avenue & Parsons Boulevard
5. Hillside Avenue & 164th Street
6. Hillside Avenue & Merrick Boulevard/166th Street – plus Saturday
7. Hillside Avenue & 168th Street
8. 94th Avenue/Atlantic Avenue & Van Wyck Expressway Service Road (SB)
9. 94th Avenue/Atlantic Avenue & Van Wyck Expressway Service Road (NB)
10. Sutphin Boulevard & 89th Avenue
11. Sutphin Boulevard & Archer Avenue
12. Sutphin Boulevard & Jamaica Avenue – video and Saturday
13. Sutphin Boulevard & 94th Avenue
14. Sutphin Boulevard & Liberty Avenue
15. Archer Avenue & 150th Street
16. Archer Avenue & 160th Street
17. Archer Avenue & Guy R. Brewer Boulevard
18. Archer Avenue & 165th Street
19. Archer Avenue & Merrick Boulevard
20. Archer Avenue & 168th Street
21. Liberty Avenue & Van Wyck Expressway Service Road (SB)
22. Liberty Avenue & Van Wyck Expressway Service Road (NB)
23. Liberty Avenue & 150th Street
24. Liberty Avenue & Guy R. Brewer Boulevard
25. Liberty Avenue & 165th Street
26. Liberty Avenue & 168th Street
27. Jamaica Avenue & Van Wyck Expressway Service Road (SB)
28. Jamaica Avenue & Van Wyck Expressway Service Road (NB)
29. Jamaica Avenue & 170th Street
30. Jamaica Avenue & 175th Street
31. Jamaica Avenue & 177th Street
32. Jamaica Avenue & 183rd Street
33. Merrick Boulevard & 110th Avenue
34. 95th Avenue & 138th Place
35. 94th Avenue & 143rd Street

36. Sean Bell Way & 95th Avenue
37. Allendale Street & 101st Avenue
38. Hillside Avenue & Metropolitan Avenue
39. Hillside Avenue & 169th Street
40. Hillside Avenue & 183rd Street
41. Parsons Boulevard & 89th Avenue
42. Liberty Avenue & Merrick Boulevard
43. Liberty Avenue & 170th Street (West)
44. Liberty Avenue & 170th Street (East)
45. Liberty Avenue & 177th Street
46. Liberty Avenue & 183rd Street
47. Liberty Avenue & Dunkirk Street
48. Jamaica Avenue & 150th Street
49. Jamaica Avenue & Parsons Boulevard – plus Saturday
50. Merrick Boulevard & 89th Avenue – plus Saturday
51. Parsons Boulevard & Archer Avenue – video and Saturday

### Secondary Study Area

1. Queens Boulevard & 83rd Avenue
2. Union Turnpike & Main Street
3. Union Turnpike & Utopia Parkway
4. Union Turnpike & Parsons Boulevard
5. Union Turnpike & 164th Street
6. Union Turnpike & 168th Street
7. Union Turnpike & 188th Street
8. Main Street & Grand Central Parkway Service Road (WB)
9. Main Street & Grand Central Parkway Service Road (EB)
10. Parsons Boulevard & Grand Central Parkway Service Road (WB)
11. Parsons Boulevard & Grand Central Parkway Service Road (EB)
12. 168th Street & Grand Central Parkway Service Road (WB)
13. 169th Street & Grand Central Parkway Service Road (EB)
14. Homelawn Street/Utopia Parkway & Grand Central Parkway Service Road (WB)
15. Homelawn Street/Utopia Parkway & Grand Central Parkway Service Road (EB)
16. Midland Parkway & Grand Central Parkway Service Road (WB)
17. Midland Parkway & Grand Central Parkway Service Road (EB)



18. 188th Street & Grand Central Parkway Service Road (WB)
19. 189th Street & Grand Central Parkway Service Road (EB)
20. Linden Boulevard & Van Wyck Expressway Service Road (SB)
21. Linden Boulevard & Van Wyck Expressway Service Road (NB)
22. Linden Boulevard & Sutphin Boulevard
23. Linden Boulevard & Guy R. Brewer Boulevard





## Automatic Traffic Recorder (ATR) Counts

### Primary Study Area

1. Hillside Avenue between Van Wyck Boulevard and 138th Street (EB/WB)
2. Hillside Avenue between Parsons Boulevard and 153rd Street (EB/WB)
3. Hillside Avenue between Merrick Boulevard and 167th Street (EB/WB)
4. Hillside Avenue between 183rd Street and 182nd Place (EB/WB)
5. Jamaica Avenue between Van Wyck Boulevard (SB) and Van Wyck Boulevard (NB) (EB/WB)
6. Jamaica Avenue between 153rd Street and Parsons Boulevard (EB/WB)
7. Jamaica Avenue between Merrick Boulevard and 168th Street (EB/WB)
8. Jamaica Avenue between 178th Street and 178th Place (EB/WB)
9. Archer Avenue between Merrick Boulevard and 168th Street (EB/WB)
10. Archer Avenue between Parsons Boulevard and 160th Street (EB/WB)
11. Atlantic Avenue between Van Wyck Boulevard SB and NB (EB/WB)
12. Liberty Avenue between Van Wyck Boulevard SB and NB (EB/WB)
13. Liberty Avenue between Sutphin Boulevard and 101st Avenue (EB/WB)
14. Liberty Avenue between Guy R Brewer Boulevard and 165th Street (EB/WB)
15. Liberty Avenue between 183rd Street and 180th Street (EB/WB)
16. Sutphin Boulevard between Archer Avenue and 94th Avenue (NB/SB)
17. 150th Street between Jamaica Avenue and Archer Avenue (NB/SB)
18. Parsons Boulevard between Hillside Avenue and 88th Avenue (NB/SB)
19. Parsons Boulevard between Jamaica Avenue and Archer Avenue (NB/SB)
20. Guy R. Brewer Boulevard between Archer Avenue and Jamaica Avenue (NB/SB)
21. Merrick Boulevard between Jamaica Avenue and Archer Avenue (SB)
22. 168th Street between Hillside Avenue and 88th Avenue (NB)
23. 168th Street between 93rd Avenue and Douglas Avenue (NB)
24. 178th Street between 90th Avenue and Jamaica Avenue (NB)
25. 177th Street between 93rd Avenue and Liberty Avenue (NB/SB)

26. 183rd Street between Liberty Avenue and Jamaica Avenue (NB/SB)
27. Sean Bell Way between 94th & 95th Avenues (NB/SB)
28. Allendale Street between 95th & 97th Avenues (NB/SB)
29. Remington Street between 95th & 97th Avenues (NB/SB)
30. Brisbin Street between 95th & 97th Avenues (NB/SB)
31. 168th Place between Hillside Avenue and 88th Avenue (NB)

### Secondary Study Area

1. Union Turnpike between Grand Central Parkway & Main Street (EB/WB)
2. Union Turnpike between Parsons Boulevard & 159th Street (EB/WB)
3. Union Turnpike between 168th Street & 169th Street (EB/WB)
4. Union Turnpike between Utopia Parkway & 177th Street (EB/WB)
5. Union Turnpike between 188th Street & 189th Street (EB/WB)
6. 84th Drive between Queens Boulevard & Manton Street (EB/WB)
7. Manton Street between 84th & 85th Drives (NB/SB)
8. Main Street between Union Turnpike & 81st Avenue (NB/SB)
9. Parsons Boulevard between Union Turnpike & Geothals Avenue (NB/SB)
10. 164th Street between Union Turnpike & 81st Avenue (NB/SB)
11. 168th Street between Union Turnpike & 81st Avenue (NB/SB)
12. 168th Place between GCP S Service Road and 84th Avenue (NB/SB)
13. Utopia Parkway between Union Turnpike & 80th Road (NB/SB)
14. 188th Street between Union Turnpike & 80th Road (NB/SB)



## **Study Area Roadway Characteristic**

### **Major regional facilities:**

**Grand Central Parkway** operates with three lanes on the mainline and one lane on the service road (at portions) in both directions from the Tri-Borough Bridge to the Northern State Parkway. The service road can be accessed from numerous minor and major streets within the study area, but the mainline can only be accessed from Union Turnpike, Homelawn Street/Utopia Parkway, and 188th Street.

**Van Wyck Expressway** operates two-way with three lanes in both directions from Northern Boulevard/Whitestone Expressway to JFK Airport. It is generally very congested between Grand Central Parkway and the Belt Parkway, but especially during the AM and PM peak periods. The mainline can be accessed at Union Turnpike, Hillside Avenue, Jamaica Avenue, Atlantic Avenue, Liberty Avenue, Queens Boulevard, and Linden Boulevard.

### **Local East – West Arterials**

**Jamaica Avenue** is one of the major east/west corridors and the center of commercial retail activity in Downtown Jamaica. It generally operates two-way with two effective moving lanes and parking on both sides (during specific times and on specific segments). Within the primary study area there are segments with only one moving lane in each direction. East of 168th Street a center median divides the roadway; and it is local truck route east of Merrick Boulevard to Francis Lewis Boulevard. There is a westbound bus lane between 168th Street and Sutphin Boulevard and an eastbound bus lane between Parsons Boulevard and 168th Street.

**Archer Avenue** operates two-way from the Van Wyck Expressway to 168th Street with one or two effective moving lanes in each direction depending on the roadway width. It is the most heavily used bus route in the study area with over 275 buses during the AM peak hour. It has a westbound bus lane from 160th Street to 150th Street and one eastbound from Sutphin Boulevard to Merrick Boulevard. The two major subway stations in the study area (Sutphin Boulevard/JFK Airport and Jamaica Center) are located along Archer Avenue.

Currently Archer Avenue has very limited commercial/retail activity and pedestrian activity except at the transit hubs and bus stops. However, this reality will change in the very near future as the on-going developments along the corridor are completed.

**Liberty Avenue** is a local truck route in the study area with two moving and one parking lane in each direction (from 133rd Street to 183rd Street). From 183rd Street to Farmers Boulevard, the roadway narrows to one lane with parking. West of Dunkirk Street the primary use along the corridor is manufacturing while east of Dunkirk Street it's primarily residential. The roadway is divided from 157th Street to 168th Street. York College is one of the major uses found along Liberty Avenue.

**Hillside Avenue** operates two-way with two effective moving lanes and parking on both sides. It is the second commercial/retail spine in Downtown Jamaica, but it carries the highest traffic in the primary study area. Although the roadway is not divided with a median, there are pedestrian refuge islands at many major intersections. The F

train makes stops along Hillside Avenue at Sutphin Boulevard, Parsons Boulevard, 169th Street, and 179th Street. In the study area, Hillside Avenue is a through truck route, and its generally congested between the Van Wyck Expressway and Parson Boulevard during the AM and PM peak periods.

**Atlantic Avenue** is a through truck route that extends from the Brooklyn Bridge Park (Brooklyn) to the Van Wyck Expressway; it operates with two effective moving lanes and parking on both sides for the majority of the corridor. A proposed extension from the Van Wyck Expressway Service Road to 138th Place is planned that will convert 94th Avenue to one-way westbound and 95th Avenue to one-way eastbound.

**Linden Boulevard** is the southern boundary of the study area; it operates as an undivided two-way street with one moving and one parking lane in each direction. It connects to the Cross Island Parkway to the east, and to the Van Wyck Expressway to the west. It has a mix of residential and commercial uses. Between Newburg Street and Farmers Boulevard it is classified as a local truck route.

**Union Turnpike** operates two-way with two lanes and parking in both directions from Myrtle Avenue in the west to Marcus Avenue in Nassau County in the east. St John University is located on the southwest corner of Union Turnpike and Utopia Parkway and the Utopia Center mall located on the southeast corner. Union Turnpike in the study area is a local truck route. The corridor becomes more congested as it nears the Van Wyck Expressway and Queens Boulevard.



### **Local North-South Arterials**

**Sutphin Boulevard** extends from Hillside Avenue in the north to Rockaway Boulevard in the south. Within the study area it operates with one effective moving lane and parking on both sides expanding briefly to two lanes between Jamaica Ave and 94th Avenue. Jamaica Station is located at Archer Avenue and there is a taxi stand on the curb of the underpass. The Queens Supreme Courthouse is located between 88th and 89th Avenue. Sutphin Boulevard between Liberty Avenue and Hillside Avenue is heavily congested in both directions during the AM and PM peak periods.

**Guy R. Brewer Boulevard** runs from Jamaica Avenue in the north to Rockaway Boulevard in the south. Within the study area it operates with one effective moving lane and parking in both directions. York College campus exist between Jamaica Avenue and 104 Rd. Guy R. Brewer Boulevard is a local truck route throughout the study area.

**Queens Boulevard** runs from the Queensboro Bridge in the West to Jamaica Avenue in the East. It operates two way with three effective moving lanes and parking in both directions. The segment between Hillside Avenue and Jamaica Avenue has one effective moving lane and parking in both directions. Queens Boulevard is a through truck route from Hillside Avenue to Queensboro Plaza.

**Parsons Boulevard** runs from the Long Island Expressway in the North to Archer Avenue in the South. It operates one effective moving lane in each direction with parking on both sides and has a shared bike lane in both directions from 84 Drive to 90 Avenue. The Queens Hospital complex is located between Parsons Boulevard and 164th St along Goethals Avenue. Parsons Boulevard is

congested between Hillside Ave and Archer Avenue in the PM peak period.

**Utopia Parkway** operates from the Cross Island Parkway in the North to 169th St/Hillside Avenue in the south becoming Homelawn Street south of Grand Central Parkway. The section north of Grand Central Parkway is two effective moving lanes in both directions with parking on both sides while the Homelawn Street section is one effective moving lane in each direction. St John's University bordered by Utopia Parkway between Union Turnpike and Grand Central Parkway.

**188th Street** operates two-way between Utopia Parkway and Hillside Avenue with one effective moving lane in each direction and parking on both sides. Between Hillside Avenue and Jamaica Avenue, it operates one-way northbound with two effective moving lanes and parking on the west curb only.

**Merrick Boulevard** is one of the major north/south corridors in the study area extending from Hillside Avenue southwards. Land use, travel direction, and roadway widths change along the corridor. It is a local truck route which operates one-way southbound between Hillside Avenue and Liberty Avenue and two-way separated by a raised concrete median between Liberty Avenue and Linden Boulevard. A typical section of one-way operation comprise of two striped moving lanes, parking on both sides, and roadway width of 40 feet; the two-way operation has two striped moving lanes and one parking lane in each direction, a 10-foot median, and roadway width of 73 feet.

**168th Street** runs parallel to Merrick Boulevard after the split at Liberty Avenue; it serves north-

bound traffic while Merrick Boulevard serves southbound traffic. It operates one-way northbound with continuous connection to the Grand Central Parkway further north. Similar to Merrick Boulevard, land use, moving lanes, and roadway widths change along the corridor. 168th Street is also a local truck route.



Figure A-1: 2016 Existing Conditions Traffic Volumes - Saturday MD Peak Hour





Figure A-2: 2016 Existing Conditions Traffic Volumes - AM Peak Hour (Secondary Area)

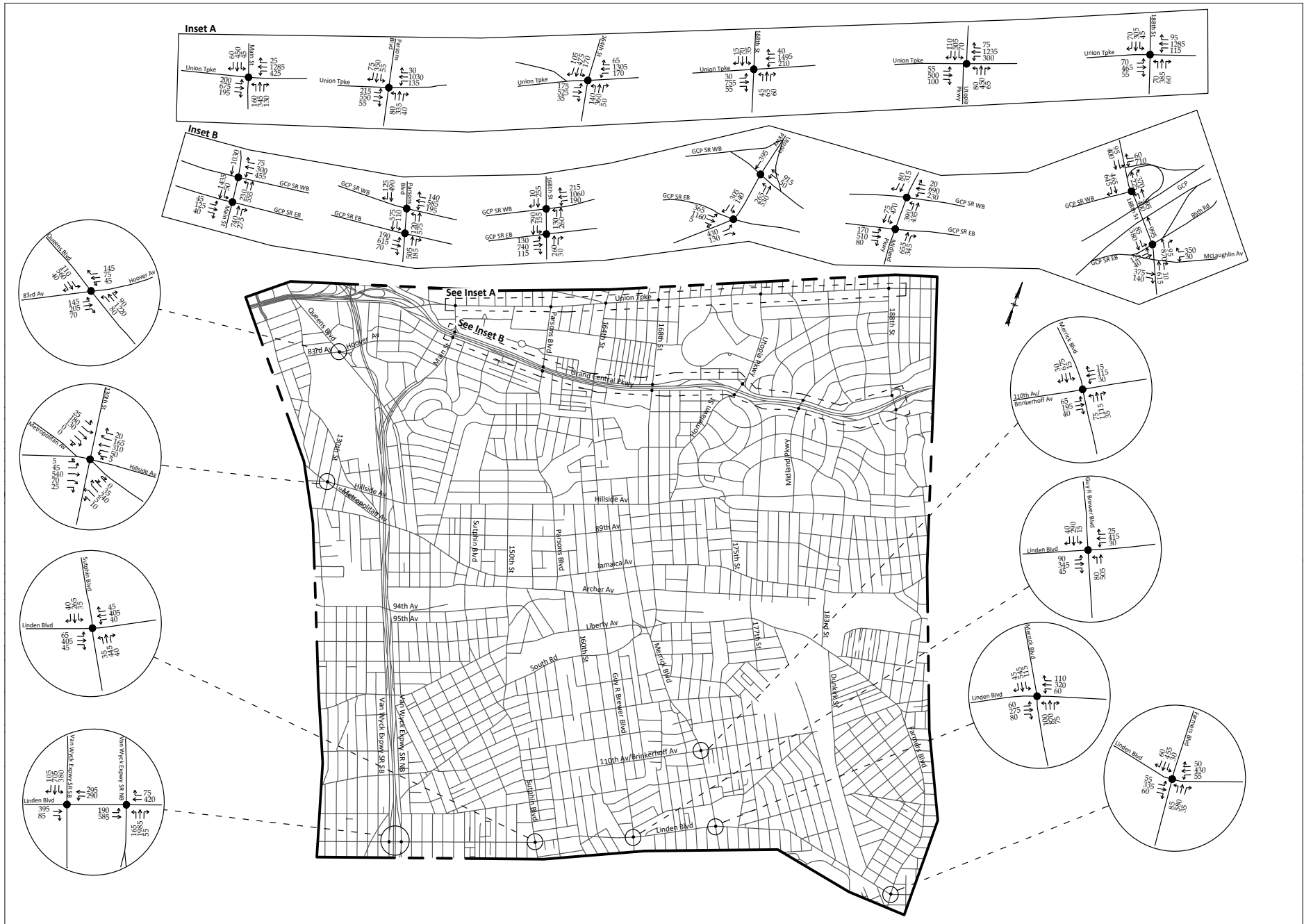
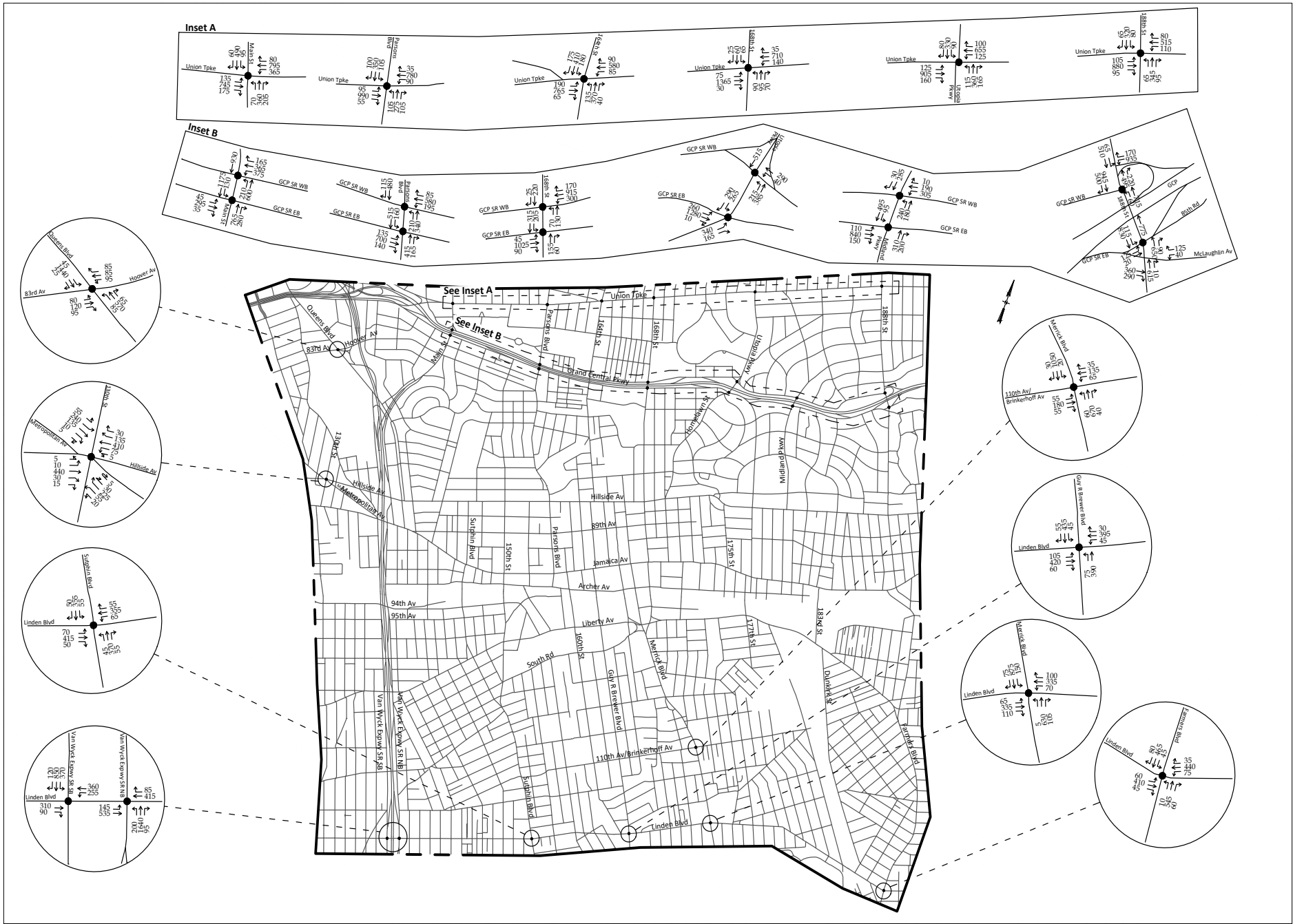


Figure A-3: 2016 Existing Conditions Traffic Volumes - PM Peak Hour (Secondary Area)







**Table A-1: Existing Conditions Intersection Level of Service Analysis - Primary Study Area (Cont'd)**

Intersection	Approach	EXISTING : Weekday AM						EXISTING : Weekday PM					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Jamaica Av & Merrick Blvd	SB	L	40	LTR	0.81	42.0	D	L	55	LTR	0.68	34.2	C
		T	470				T	710					
	R	60				R	70						
	T	385	TR	0.46	18.0	B	T	455	T	0.69	25.2	C	
	R	70				R	95	T	0.26	16.1	B		
WB	L	50	LT	0.58	20.3	C	L	65	LT	0.57	20.6	C	
	T	900				T	400						
<b>Overall</b>					27.3	C					27.4	C	
Jamaica Av & 189th St	NB	L	120	L	0.87	78.0	E	L	80	L	0.29	31.5	C
		T	570	T	1.05	93.4	F	T	465	T	1.05	93.9	F
	R	75	R	0.67	32.1	D	R	70	R	0.32	32.4	C	
	T	80	L	0.54	26.3	C	L	80	L	0.30	16.0	B	
	T	295	TR	0.34	13.8	B	T	350	TR	0.39	14.3	B	
WB	L	100	L	0.36	15.5	B	L	75	L	0.28	14.6	B	
	T	530	TR	0.49	15.7	B	T	385	TR	0.34	13.6	B	
<b>Overall</b>					41.4	D					36.2	D	
Jamaica Av & 189th St	SB	L	125	L	0.47	42.6	D	L	205	L	0.61	46.9	D
		R	125	R	0.44	42.3	D	R	165	R	0.63	48.9	D
	T	435	T	0.28	8.7	A	T	470	T	0.29	8.6	A	
	R	700	T	0.47	16.3	B	T	450	T	0.29	8.7	A	
	<b>Overall</b>											20.5	C
Jamaica Av & 170th St	NB	L	25	LTR	0.97	80.9	F	L	25	LTR	0.78	52.5	D
		T	240				T	145					
	R	70				R	30						
	T	75	LTR	0.80	25.3	C	T	85	LTR	0.73	20.1	C	
	T	395				T	455						
WB	L	90	L	0.63	16.7	B	L	110	LT	0.60	16.6	B	
	T	675	R	0.23	11.0	B	T	425	R	0.15	10.1	B	
<b>Overall</b>					30.7	C					23.8	C	
Jamaica Av & 175th St	NB	L	35	LTR	0.89	85.3	F	L	25	LTR	0.57	53.8	D
		T	40				T	40					
	R	55				R	20						
	T	70	L	0.50	53.5	D	L	150	L	0.84	94.7	F	
	T	55	R	0.30	43.4	D	R	90	R	0.50	50.2	D	
WB	L	65	LT	0.67	17.1	B	L	55	LT	0.48	11.8	B	
	T	485				T	545						
<b>Overall</b>					25.1	C					26.0	C	
Jamaica Av & 177th St	NB	L	90	LR	0.80	66.0	E	L	65	LR	0.75	58.8	E
		R	85				R	95					
	T	470	TR	0.39	9.7	A	T	595	TR	0.51	11.1	B	
	R	115				R	120						
	T	1080	LT	0.98	38.2	D	L	90	LT	0.53	12.0	B	
<b>Overall</b>					31.9	C					16.9	B	
Jamaica Av & 183rd St	NB	L	320	L	1.04	110.3	F	L	130	L	0.46	47.0	D
		R	150	R	0.75	63.3	E	R	100	R	0.50	49.7	D
	T	15	LTR	0.44	48.1	D	L	30	LTR	0.73	62.8	E	
	R	85				R	130						
	T	35	R	0.31	46.0	D	T	25	R	0.23	44.3	D	
WB	L	550	TR	0.63	25.6	C	T	750	TR	0.78	30.5	C	
	T	135				T	155						
<b>Overall</b>					61.5	E					56.7	E	
Archer Av & Sutphin Blvd	NB	L	80	LTR	1.05	75.1	E	L	65	LTR	1.02	70.2	E
		T	480				T	340					
	R	200				R	180						
	T	30	LTR	0.71	31.1	C	L	45	LTR	1.05	78.7	E	
	T	305				T	500						
WB	L	15	L	0.41	23.9	C	L	15	L	0.22	17.7	B	
	T	140	TR	0.38	18.1	B	T	185	TR	0.52	20.3	C	
<b>Overall</b>					50.3	D					53.3	D	
Archer Av & 180th St	NB	L	130	LTR	0.78	28.0	C	L	55	LTR	0.52	18.7	B
		T	150				T	80					
	R	90				R	100						
	T	65	LTR	0.49	27.7	C	L	110	LTR	0.49	26.0	C	
	T	60				T	5						
WB	L	10	LTR	0.37	17.8	B	L	0	LTR	0.83	37.0	D	
	T	285				T	335						
<b>Overall</b>					25.1	C					18.8	B	

Intersection	Approach	EXISTING : Weekday AM						EXISTING : Weekday PM					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Archer Av & 158th St	NB	L	50	LR	1.01	77.6	E	L	20	LR	0.60	30.5	C
		R	335				R	185					
	T	440	T	0.26	11.6	B	T	545	T	0.46	14.4	B	
	T	305	T	0.28	12.0	B	T	250	T	0.20	11.2	B	
	<b>Overall</b>					34.2	C					17.3	B
Archer Av & 153rd St	EB	L	100	L	0.33	13.7	B	L	100	L	0.31	13.3	B
		T	675	T	1.05	88.9	E	T	630	T	1.04	67.6	E
	R	305	B	0.59	17.8	B	T	250	T	0.59	16.5	B	
	R	195	R	0.34	12.8	B	R	270	R	0.65	20.7	C	
	<b>Overall</b>					41.7	D					40.6	D
Archer Av & Parsons Blvd	SB	L	180	L	0.53	30.5	C	L	220	L	0.59	32.2	C
		R	60	R	0.40	29.7	C	R	125	R	0.73	46.5	D
	L	125	L	0.79	45.6	D	L	115	L	0.59	27.0	C	
	T	550	T	0.49	16.8	B	T	515	T	0.50	17.1	B	
	<b>Overall</b>					21.8	C					22.6	C
Archer Av & 160th St	NB	L	80	LTR	1.05	94.6	F	L	65	LTR	0.97	77.8	E
		T	245				T	140					
	R	45				R	40						
	T	10	LTR	0.57	38.8	D	L	50	LTR	0.95	79.4	E	
	T	55				T	75						
WB	L	30	LTR	0.81	21.7	C	L	15	LTR	0.68	16.8	B	
	T	560				T	510						
<b>Overall</b>					50.6	D					45.8	D	
Archer Av & Guy R Brewer Blvd	NB	L	70	LTR	0.98	68.7	E	L	15	LTR	0.61	28.9	C
		T	260				T	160					
	R	25				R	90						
	T	90	LTR	0.43	26.0	C	L	20	LTR	0.40	24.9	C	
	T	15				T	20						
WB	L	20	LTR	0.62	18.1	B	L	35	LTR	0.65	18.8	B	
	T	465				T	445						
<b>Overall</b>					26.0	C					24.5	D	
Archer Av & 165th St	NB	L	150	LTR	1.05	81.1	F	L	140	LTR	1.02	73.9	E
		T	200				T	100					
	R	105				R	115						
	T	10	LTR	0.17	16.4	B	L	20	LTR	0.47	21.4	C	
	T	30				T	100						
WB	L	20	L	0.31	20.9	C	L	40	L	0.32	19.5	B	
	T	395	TR	0.97	55.6	E	T	445	TR	0.97	55.8	E	
<b>Overall</b>					62.3	E					58.1	E	
Archer Av & Merrick Blvd	SB	L	30	LTR	0.58	20.9	C	L	60	LTR	0.83	28.7	C
		T	500				T	715					
	R	60				R	95						
	T	335	TR	0.50	19.6	B	T	365	TR	0.61	21.6	C	
	T	175				R	215						
<b>Overall</b>					40.9	D					28.8	C	
Archer Av & 168th St	NB	L	360	L	0.79	27.5	C	L	195	L	0.45	16.1	B
		T	590	TR	0.70	18.4	B	T	430	TR	0.48	14.8	B
	R	140				R	100						
	T	30	LR	0.84	43.7	D	L	30	LR	0.56	20.1	C	
	T	120				R	145						
WB	L	150	LT	1.05	78.8	E	L	150	LT	1.05	71.9	E	
	T	215				T	275						
<b>Overall</b>					31.9	C					32.0	C	
Liberty Av & Van Wyck Expwy SR SB	SB	L	240	LTR	0.58	19.5	B	L	180	LTR	0.69	21.7	C
		T	570				T	855					
	R	125				R	145						
	T	60	T	0.81	39.1	D	T	530	T	0.70	33.8	C	
	T	75	R	0.33	28.3	C	R	175	R	0.67	36.6	C	
<b>Overall</b>					36.6	D			</				



**Table A-1: Existing Conditions Intersection Level of Service Analysis - Primary Study Area (Cont'd)**

Intersection	Approach	EXISTING : Weekday AM						EXISTING : Weekday PM					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Liberty Av & Van Wyck Expwy SR NB	NB	L	105	LTR	1.05	60.2	E	L	215	LTR	1.03	52.8	D
		T	1625					T	1546				
	R	95					R	90					
	EB	L	290	L	1.01	86.2	F	L	155	L	0.57	40.0	D
		T	590	LT	0.61	19.2	B	T	555	LT	0.65	20.5	C
WB	T	675	T	0.64	53.3	D	T	890	T	1.05	78.2	E	
	R	215	R	0.75	44.0	D	R	140	R	0.56	34.9	C	
<b>Overall</b>					53.1	D					52.0	D	
Liberty Av & Sutphin Blvd	NB	L	115	LTR	0.82	27.7	C	L	90	LTR	0.69	20.7	C
		T	320				T	275					
	R	25				R	25						
	SB	L	55	LTR	0.63	18.5	B	L	65	LTR	0.53	16.4	B
		T	285				T	285					
EB	R	15				R	5						
	T	125	L	1.05	235.7	F	T	99	L	0.64	80.1	F	
WB	T	785	TR	0.92	34.4	C	T	655	TR	0.77	20.2	C	
	R	65				R	85						
<b>Overall</b>					38.2	D					21.2	C	
Liberty Av & 150th St	NB	L	45	LTR	0.84	26.2	C	L	30	LTR	0.39	13.3	B
		T	385				T	115					
	R	55				R	50						
	SB	L	45	LT	0.18	11.3	B	L	55	LTR	0.42	13.9	B
		T	25	R	0.13	10.7	B	T	55				
EB	R	40				R	35						
	T	75	L	0.83	62.6	E	T	60	L	0.78	54.5	D	
WB	T	840	TR	0.86	25.6	C	T	700	TR	0.74	19.8	B	
	R	25				R	35						
<b>Overall</b>					60.8	E					18.0	B	
Liberty Av & Guy R Brewer Blvd	NB	L	125	LTR	0.80	26.5	C	L	100	LTR	0.86	38.0	D
		T	220				T	140					
	R	40				R	50						
	SB	L	15	L	0.09	11.2	B	L	90	L	0.29	13.6	B
		T	315	TR	0.81	27.0	C	T	175	TR	0.70	21.1	C
EB	R	65				R	180						
	T	90	L	0.74	41.8	D	T	80	L	0.54	25.1	C	
WB	T	710	TR	0.92	30.7	C	T	815	TR	0.93	31.1	C	
	R	115				R	160						
<b>Overall</b>					21.5	C					33.2	C	
Liberty Av & 165th St	NB	L	70	LT	0.57	16.1	B	L	25	LT	0.42	13.1	B
		T	175	R	0.50	15.4	B	T	205	R	0.39	13.3	B
	R	175				R	160						
	SB	L	70	LTR	0.29	11.2	B	L	80	LTR	0.36	12.0	B
		T	50				T	90					
EB	R	70				R	85						
	T	70	L	0.55	27.0	C	T	85	L	0.55	25.5	C	
WB	T	660	TR	0.74	20.7	C	T	825	TR	0.93	32.6	C	
	R	15				R	45						
<b>Overall</b>					16.1	B					40.1	D	
Liberty Av & Merrick Blvd	SB	L	90	LTR	0.76	27.0	C	L	130	LTR	1.05	146.6	F
		T	560				T	770					
	R	85				R	70						
	EB	T	695	TR	0.58	26.4	C	T	805	TR	0.73	29.6	C
		R	150				R	190					
WB	L	140	L	0.53	33.1	C	L	170	L	0.77	54.8	D	
	T	905	T	0.86	30.4	C	T	910	T	0.80	27.1	C	
<b>Overall</b>					28.4	C					69.5	E	
Liberty Av & 168th St	NB	L	295	L	0.55	22.0	C	L	215	L	0.40	18.7	B
		T	800	T	1.05	72.6	E	T	465	T	0.91	44.2	D
	R	70	R	0.21	16.3	B	R	75	R	0.16	15.5	B	
	EB	L	190	L	1.04	98.4	F	L	130	L	0.99	92.4	F
		T	595	T	0.49	19.2	B	T	805	T	0.76	25.6	C
WB	T	750	T	0.88	23.1	C	T	740	T	0.65	22.3	C	
	R	25	R				R	45					
<b>Overall</b>					41.5	D					31.3	C	
Liberty Av & 170th St (East)	SB	L	70	LR	0.43	25.2	C	L	210	LR	0.61	28.2	C
		T	125				T	110					
	R	195	Def/L	0.97	112.3	F	R	135	Def/L	0.97	54.5	D	
	EB	T	505	LT	0.83	52.0	D	T	885	LT	0.97	54.5	D
		R	620	TR	0.82	23.9	C	R	570	TR	0.61	16.3	B
<b>Overall</b>					42.2	D					38.0	D	

Intersection	Approach	EXISTING : Weekday AM						EXISTING : Weekday PM					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Liberty Av & 177th St	NB	L	135	LT	1.05	160.0	F	L	130	LT	1.05	167.1	F
		T	360	R	0.07	12.1		T	290	R	0.09	12.3	
	SB	R	20				R	25					
		L	10	L	0.08	12.6	B	L	35	L	0.24	16.3	B
	EB	T	315	TR	0.81	29.8	C	T	410	TR	0.95	59.0	E
R		100				R	125						
WB	L	130	LTR	0.83	22.9	C	L	85	LTR	0.79	19.5	B	
	T	455				T	655						
<b>Overall</b>					41.2	D					15.8	B	
Liberty Av & 183rd St	SB	L	230	L	0.58	22.5	C	L	315	L	0.75	29.7	C
		R	105	R	0.36	18.4	B	R	90	R	0.28	17.1	B
	EB	L	125	LT	1.04	122.9	F	L	100	LT	0.99	61.6	E
		T	660				T	915					
	WB	T	700	TR	0.92	27.7	C	T	880	TR	0.65	13.0	B
R		345				R	130						
<b>Overall</b>					60.7	E					37.4	D	
Liberty Av & Dumark St	NB	L	405	LR	0.95	65.0	E	L	350	LR	0.95	63.9	E
		R	10				R	15					
	EB	T	530	T	0.86	30.1	C	T	630	T	0.99	75.0	E
		R	360	R	0.16	10.6	B	R	600	R	0.69	21.9	C
	WB	L	5	LT	1.05	145.5	F	L	15	LT	0.95	58.9	E
T		640				T	460						
<b>Overall</b>					82.0	F					59.6	E	
Atlantic Av & Van Wyc Expwy SR SB	SB	L	125	LTR	0.79	25.8	C	L	90	LTR	1.05	63.5	E
		T	610				T	1160					
	EB	R	330				R	255					
		T	690	TR	0.79	32.0	C	T	650	TR	0.77	31.2	C
	WB	L	160	L	0.72	47.5	D	L	230	L	0.82	50.6	D
T		360	LT	0.34	29.1	C	T	350	LT	0.30	13.8	B	
<b>Overall</b>					29.1	C					47.2	D	
Atlantic Av & Van Wyc Expwy SR NB	NB	L	70	LTR	0.88	28.5	C	L	165	LTR	1.05	64.5	E
		T	1615				T	1595					
	R	15				R	15						
	EB	L	405	L	1.00	67.2	E	L	350	L	0.87	49.0	D
		T	410	T	0.42	18.1	B	T	390	T	0.32	13.9	B
WB	L	450	TR	0.86	43.2	D	L	415	TR	0.91	53.1	D	
	R	150				R	100						
<b>Overall</b>					34.8	C					53.7	D	
Allendale St & 101st Av	NB	L	20	LTR	0.77	45.6	D	L	20	LTR	0.47	31.3	C
		T	100				T	100					
	SB	R	50				R	50					
		L	15	LTR	0.23	26.4	C	L	10	LTR	0.23	26.2	C
	EB	T	10				T	10					
L		20	LTR	0.58	14.3	B	L	20	LTR	0.41	11.2	B	
WB	T	245				T	245						
	R	10	LTR	0.64	15.7	B	R	10	LTR	0.43	11.5	B	
<b>Overall</b>					21.7	C					16.1	B	
Sutphin Blvd & 89th Av	NB	L	70	LT	0.57	10.3	B	L	40	LT	0.58	12.2	B
		T	440				T	245					
	SB	T	215	TR	0.24	6.9	A	T	275	TR	0.58	12.3	B
		R	65				R	55					
	WB	T	75	LTR	1.03	77.3	E	T	240	LTR	1.05	83.2	F
R		15				R	20						
<b>Overall</b>					27.8	C					37.5	D	

**Table A-2: Existing Conditions Intersection Level of Service Analysis - Secondary Study Area**

Intersection	Approach	Movement	EXISTING : Weekday AM					EXISTING : Weekday PM						
			Volume	Lane Group	V/O Ratio	Avg Delay	LOS	Volume	Lane Group	V/O Ratio	Avg Delay	LOS		
Union Tpke & Main St	NB	L	150	L	0.88	110.6	F	L	70	L	0.41	48.9	D	
		T	345	TR	0.77	54.9	D	T	360	T	0.72	54.3	D	
		R	130	R	1.05	90.0	E	R	205	R	1.05	125.1	F	
	SB	L	45	L	0.26	43.1	D	L	95	L	0.51	51.1	D	
		T	450	TR	0.85	60.0	E	T	490	TR	0.86	62.7	E	
		R	60	R	1.05	90.0	E	R	135	R	0.36	22.2	C	
	EB	L	200	L	0.78	55.3	E	L	745	L	0.56	23.8	C	
		T	675	TR	0.54	22.3	C	T	175	T	0.36	22.2	C	
		R	195	R	1.05	90.0	E	R	365	R	0.92	62.6	E	
	WB	L	425	DefL	1.05	88.5	F	L	795	L	0.59	24.4	C	
		T	1285	TR	1.05	69.8	E	T	80	T	0.59	24.4	C	
		R	25	R	1.05	90.0	E	R	80	R	0.59	24.4	C	
Overall				59.1	E				43.5	D				
Union Tpke & Parsons Blvd	NB	L	80	LTR	1.05	97.3	F	L	105	LTR	1.05	98.5	F	
		T	335	TR	0.66	45.8	D	T	275	TR	0.66	45.8	D	
		R	40	R	1.05	90.0	E	R	105	R	1.05	93.2	F	
	SB	L	55	LTR	1.05	96.6	F	L	105	LTR	1.05	93.2	F	
		T	350	TR	0.66	45.8	D	T	275	TR	0.66	45.8	D	
		R	75	R	1.05	100.8	F	R	100	R	0.45	14.0	B	
	EB	L	245	L	1.05	100.8	F	L	95	L	0.45	14.0	B	
		T	550	TR	0.48	18.7	C	T	990	T	0.73	24.7	C	
		R	55	R	0.10	14.1	B	R	55	R	0.09	14.0	B	
	WB	L	135	L	0.42	13.5	B	L	90	L	0.46	18.4	B	
		T	1030	TR	0.57	20.1	C	T	750	TR	0.40	17.2	B	
		R	30	R	1.05	90.0	E	R	35	R	1.05	90.0	E	
Overall				51.5	D				47.00	D				
Union Tpke & 164th St	NB	L	140	L	1.05	128.9	F	L	135	L	0.78	73.0	E	
		T	360	TR	0.66	45.8	D	T	370	TR	0.84	57.1	E	
		R	50	R	1.05	90.0	E	R	40	R	1.05	90.0	E	
	SB	L	170	L	0.72	60.0	E	L	180	L	0.84	74.8	E	
		T	475	TR	1.05	145.1	F	T	410	TR	1.05	96.8	F	
		R	105	R	1.05	90.0	E	R	175	R	0.49	25.6	C	
	EB	L	175	L	1.05	123.8	F	L	190	L	0.49	25.6	C	
		T	525	TR	0.46	20.5	C	T	755	TR	0.60	28.3	C	
		R	35	R	0.08	15.9	B	R	65	R	0.27	22.3	C	
	WB	L	170	L	0.50	25.0	C	L	85	L	0.27	22.3	C	
		T	1305	TR	0.87	32.7	C	T	580	TR	0.44	25.3	C	
		R	65	R	1.05	90.0	E	R	90	R	1.05	90.0	E	
Overall				52.2	D				48.4	D				
Union Tpke & 168th St	NB	L	45	LTR	0.84	70.9	E	L	90	LTR	1.05	115.4	F	
		T	65	TR	0.61	51.7	D	T	95	TR	0.61	51.7	D	
		R	60	R	1.05	90.0	E	R	70	R	1.05	90.0	E	
	SB	L	35	LTR	0.81	51.7	D	L	65	LTR	0.73	60.6	E	
		T	70	TR	0.61	51.7	D	T	60	TR	0.61	51.7	D	
		R	15	R	1.05	90.0	E	R	25	R	1.05	90.0	E	
	EB	L	30	L	0.36	22.2	C	L	75	L	0.46	18.9	B	
		T	755	TR	0.58	16.7	B	T	1365	TR	1.02	51.8	D	
		R	55	R	1.05	90.0	E	R	30	R	1.05	90.0	E	
	WB	L	210	L	0.82	15.3	B	L	140	L	0.73	45.4	D	
		T	1495	TR	0.82	10.5	B	T	710	TR	0.31	7.2	A	
		R	40	R	1.05	90.0	E	R	35	R	1.05	90.0	E	
Overall				18.9	B				44.9	D				
Union Tpke & Utopia Pkwy	NB	L	80	DefL	1.05	90.4	F	L	115	DefL	0.94	95.1	F	
		T	450	LTR	1.05	90.4	F	T	360	LTR	0.88	55.5	E	
		R	65	R	1.05	90.0	E	R	165	R	0.88	55.5	E	
	SB	L	70	DefL	1.05	88.0	F	L	90	DefL	0.89	91.3	F	
		T	505	LTR	1.05	88.0	F	T	330	LTR	0.89	91.3	F	
		R	110	R	0.31	38.0	D	R	80	R	0.63	41.0	D	
	EB	L	50	L	0.31	38.0	D	L	125	L	0.36	21.6	C	
		T	500	TR	0.45	23.1	C	T	905	TR	0.66	27.3	C	
		R	100	R	1.05	90.0	E	R	125	R	0.43	32.2	C	
	WB	L	300	L	0.88	54.8	D	L	125	L	0.43	32.2	C	
		T	1235	TR	0.94	42.5	D	T	555	TR	0.43	22.8	C	
		R	75	R	1.05	90.0	E	R	100	R	1.05	90.0	E	
Overall				57.4	E				38.4	D				
Union Tpke & 188th St	NB	L	70	LTR	0.82	47.1	D	L	65	LTR	0.71	40.6	D	
		T	385	TR	0.77	44.0	D	T	345	TR	0.77	44.0	D	
		R	60	R	1.05	90.0	E	R	95	R	1.05	90.0	E	
	SB	L	45	LTR	0.77	44.0	D	L	80	LTR	0.82	48.1	D	
		T	305	TR	0.77	44.0	D	T	320	TR	0.82	48.1	D	
		R	70	R	1.05	90.0	E	R	65	R	1.05	90.0	E	
	EB	L	70	L	0.61	70.6	E	L	105	L	0.89	107.4	F	
		T	465	TR	0.47	24.9	C	T	880	TR	0.81	34.8	C	
		R	55	R	0.09	105.3	F	R	95	R	0.09	105.7	F	
	WB	L	115	L	0.89	105.3	F	L	110	L	0.89	105.7	F	
		T	1285	TR	0.82	33.6	C	T	515	TR	0.50	25.5	C	
		R	95	R	1.05	90.0	E	R	80	R	1.05	90.0	E	
Overall				39.7	D				42.0	D				
GCP SR WB & Main St	NB	L	230	L	0.77	58.7	E	L	210	L	0.67	49.2	D	
		T	555	TR	0.35	12.2	B	T	600	TR	0.36	12.3	B	
		R	1030	TR	1.05	73.7	E	R	930	TR	0.88	44.8	D	
	SB	L	455	L	0.91	59.3	E	L	375	L	0.75	43.7	D	
		T	300	TR	0.58	36.1	D	T	365	TR	0.71	40.9	D	
		R	50	R	1.05	90.0	E	R	40	R	1.05	90.0	E	
	Overall				54.0	D				38.7	D			
	GCP SR EB & Main St	NB	T	740	TR	0.99	59.1	E	T	765	TR	0.83	34.0	C
			R	275	R	0.12	11.1	B	R	280	R	0.31	12.4	B
			L	50	L	0.12	11.1	B	L	130	L	0.31	12.4	B
		SB	L	1435	TR	0.94	40.0	D	L	1175	TR	0.59	10.9	B
			T	45	LTR	0.41	40.0	D	T	295	LTR	0.66	47.4	D
R			125	R	1.05	90.0	E	R	35	R	1.05	90.0	E	
Overall					38.7	D				25.3	C			
GCP SR WB & Parsons Blvd		NB	L	120	LT	0.63	13.2	B	L	210	DefL	0.58	25.5	C
			T	575	TR	0.58	21.9	C	T	340	TR	0.36	9.9	A
			R	490	R	0.58	21.9	C	T	420	TR	0.51	20.5	C
		SB	L	125	LT	0.86	37.3	D	L	115	L	0.50	73.3	E
			T	585	TR	0.50	28.7	C	T	580	TR	0.50	28.7	C
	R		140	R	1.05	90.0	E	R	85	R	1.05	90.0	E	
	Overall				24.5	C				41.8	D			

Intersection	Approach	Movement	EXISTING : Weekday AM					EXISTING : Weekday PM						
			Volume	Lane Group	V/O Ratio	Avg Delay	LOS	Volume	Lane Group	V/O Ratio	Avg Delay	LOS		
GCP SR EB & Parsons Blvd	NB	T	505	TR	0.70	24.8	C	T	415	TR	0.53	21.0	C	
		R	185	R	0.70	18.5	B	R	165	R	0.70	18.0	B	
		L	110	L	1.05	74.9	E	L	160	L	1.05	74.6	E	
	SB	L	575	L	0.26	43.1	D	L	135	L	0.26	43.1	D	
		T	490	TR	0.86	62.7	E	T	700	TR	0.87	23.3	C	
		R	70	R	1.05	90.0	E	R	140	R	1.05	90.0	E	
	Overall				41.5	D				42.0	D			
	GCP SR WB & 188th St	NB	L	130	LT	1.05	88.3	F	L	70	LT	0.52	25.5	C
			T	260	TR	0.57	23.5	C	T	130	TR	0.57	23.5	C
			R	255	R	1.04	100.6	F	R	220	R	0.82	56.6	E
		SB	L	190	L	0.06	30.5	C	L	25	R	0.20	33.3	C
			T	190	LTR	0.99	39.3	D	T	300	LTR	0.87	23.3	C
R			215	R	1.05	90.0	E	R	170	R	1.05	90.0	E	
Overall					56.4	E				27.6	C			
GCP SR EB & 188th St		NB	T	260	TR	1.01								



**Table A-2: Existing Conditions Intersection Level of Service Analysis - Secondary Study Area (Cont'd)**

Intersection	Approach	Movement	EXISTING : Weekday AM					EXISTING : Weekday PM					
			Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	
<b>Linden Blvd &amp; Guy R Brewer Blvd</b>													
NB	L	L	80	LT	0.60	21.5	C	L	75	LT	0.53	20.2	C
	T	T	505					T	390				
SB	L	L	15	LTR	0.35	17.2	B	L	45	LTR	0.54	20.2	C
	T	T	290					T	435				
EB	R	R	40					R	55				
	L	L	90	L	0.52	23.8	C	L	105	L	0.45	22.5	C
WB	T	T	345	T	0.64	24.2	C	T	420	T	0.67	25.2	C
	R	R	45	R	0.15	15.5	B	R	60	R	0.13	15.2	B
WB	L	L	30	L	0.13	15.8	B	L	45	L	0.26	18.3	B
	T	T	415	T	0.72	27.3	C	T	395	T	0.63	23.6	C
WB	R	R	25	R	0.08	14.6	B	R	30	R	0.07	14.6	B
						23.3	C					21.7	C
<b>Overall</b>													
<b>Linden Blvd &amp; Farmers Blvd</b>													
NB	L	L	85	L	0.82	57.3	E	L	10	L	0.10	16.2	B
	T	TR	580	TR	0.55	20.1	C	T	545	TR	0.56	20.4	C
SB	R	R	35					R	50				
	L	L	30	L	0.20	17.3	B	L	45	L	0.29	19.7	B
EB	T	TR	455	TR	0.96	53.7	D	T	465	TR	1.00	61.9	E
	R	R	60					R	80				
WB	L	L	55	LTR	1.05	81.8	F	L	60	LTR	1.05	79.3	E
	T	T	335					T	410				
WB	R	R	60					R	45				
	L	L	55	LT	0.94	49.3	D	L	75	LT	0.97	55.4	E
WB	T	T	430	R	0.17	15.9	B	T	440	R	0.11	15.1	B
	R	R	50					R	35				
<b>Overall</b>													
<b>Hillside Av &amp; Metropolitan Av</b>													
NB	L	L	45	LTR	0.44	30.8	C	L	75	LTR	0.48	31.8	C
	T	T	245					T	225				
SB	R	R	40					R	40				
	L	L	190	Dv/L	0.86	65.7	E	L	250	Dv/L	1.05	106.2	F
EB	T	TR	130	TR	0.37	30.4	C	T	135	TR	0.42	31.4	C
	R	R	30					R	65				
WB	L	L	50	LTR	0.76	25.1	C	L	15	LTR	0.39	15.8	B
	T	T	540					T	440				
WB	R	R	100					R	45				
	L	L	55	LTR	0.69	23.2	C	L	80	LTR	0.66	21.4	C
WB	T	T	310					T	410				
	R	R	185					R	170				
<b>Overall</b>													
<b>Queens Blvd &amp; 68th Av</b>													
NB	L	L	80	L	0.72	93.3	F	L	85	L	0.68	83.2	F
	T	TR	1220	TR	0.90	47.0	D	T	570	TR	0.43	32.2	C
SB	R	R	90					R	65				
	L	L	110	L	1.05	156.0	F	L	45	L	0.29	64.4	E
EB	T	TR	560	TR	0.46	30.9	C	T	1440	TR	0.93	52.2	D
	R	R	40					R	25				
WB	L	L	145	LT	1.05	109.1	F	L	80	LT	0.66	49.8	D
	T	T	205	R	0.20	34.9	C	T	120	R	0.27	38.3	D
WB	R	R	70					R	95				
	L	L	45	LTR	1.05	113.2	F	L	95	LTR	1.05	109.2	F
WB	T	T	75					T	85				
	R	R	145					R	85				
<b>Overall</b>													
<b>Merick Blvd &amp; 110th Av</b>													
NB	L	L	75	L	0.34	13.0	B	L	60	L	0.40	17.4	B
	T	TR	1115	TR	0.93	29.3	C	T	670	TR	0.51	12.7	B
SB	R	R	35					R	40				
	L	L	15	L	0.21	13.6	B	L	20	L	0.10	9.2	A
EB	T	TR	675	TR	0.54	13.1	B	T	1050	TR	0.76	17.9	B
	R	R	30					R	30				
WB	L	L	85	LTR	1.05	92.4	F	L	55	LTR	1.05	95.4	F
	T	T	195					T	180				
WB	R	R	40					R	55				
	L	L	30	LTR	0.69	39.4	D	L	65	LTR	0.93	67.2	E
WB	T	T	115					T	135				
	R	R	15					R	35				
<b>Overall</b>													



Figure A-4: Future Traffic Volumes - Saturday Midday Peak Hour (Primary Study Area)





Figure A-5: Future Traffic Volumes - AM Peak Hour (Secondary Study Area)

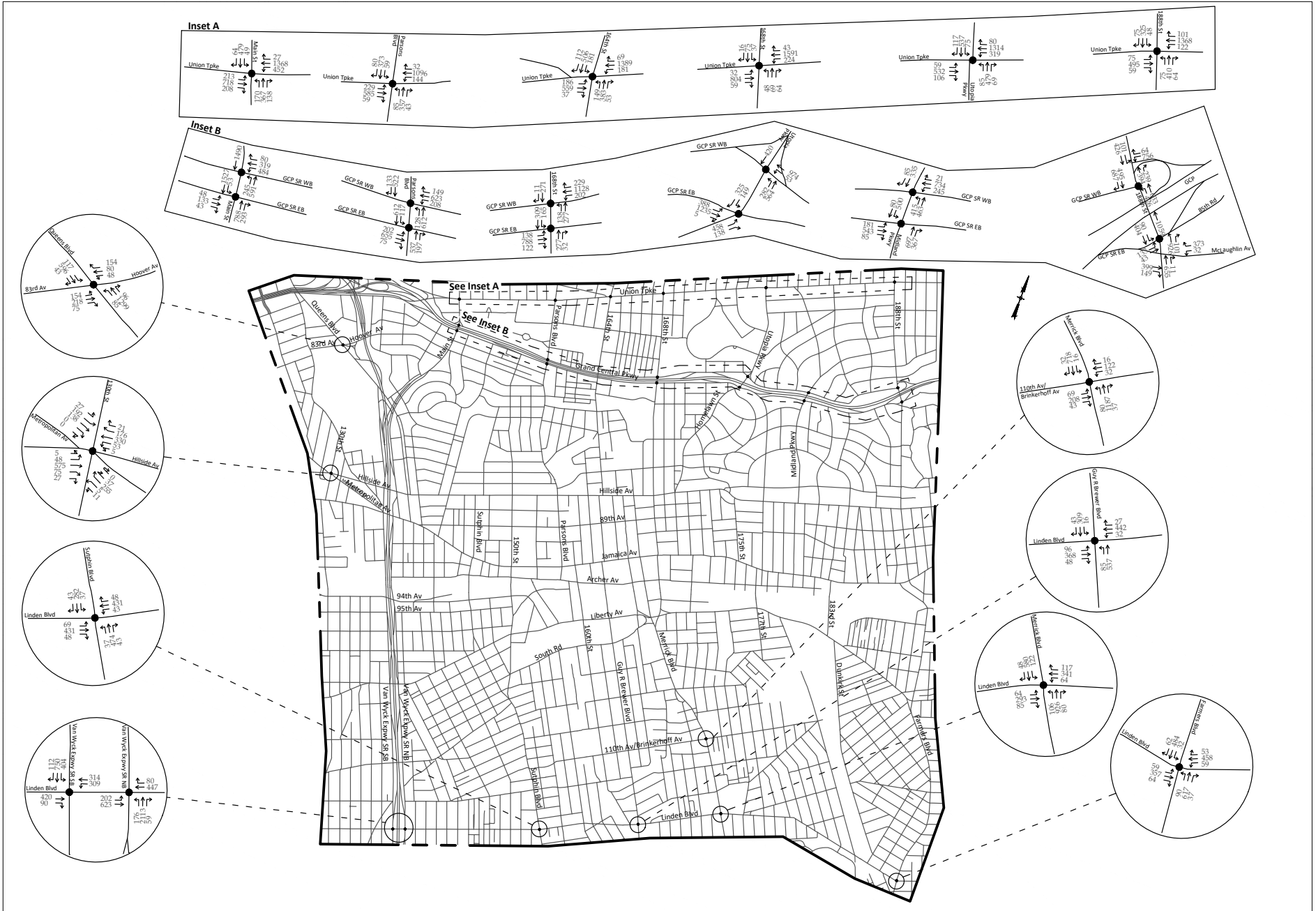
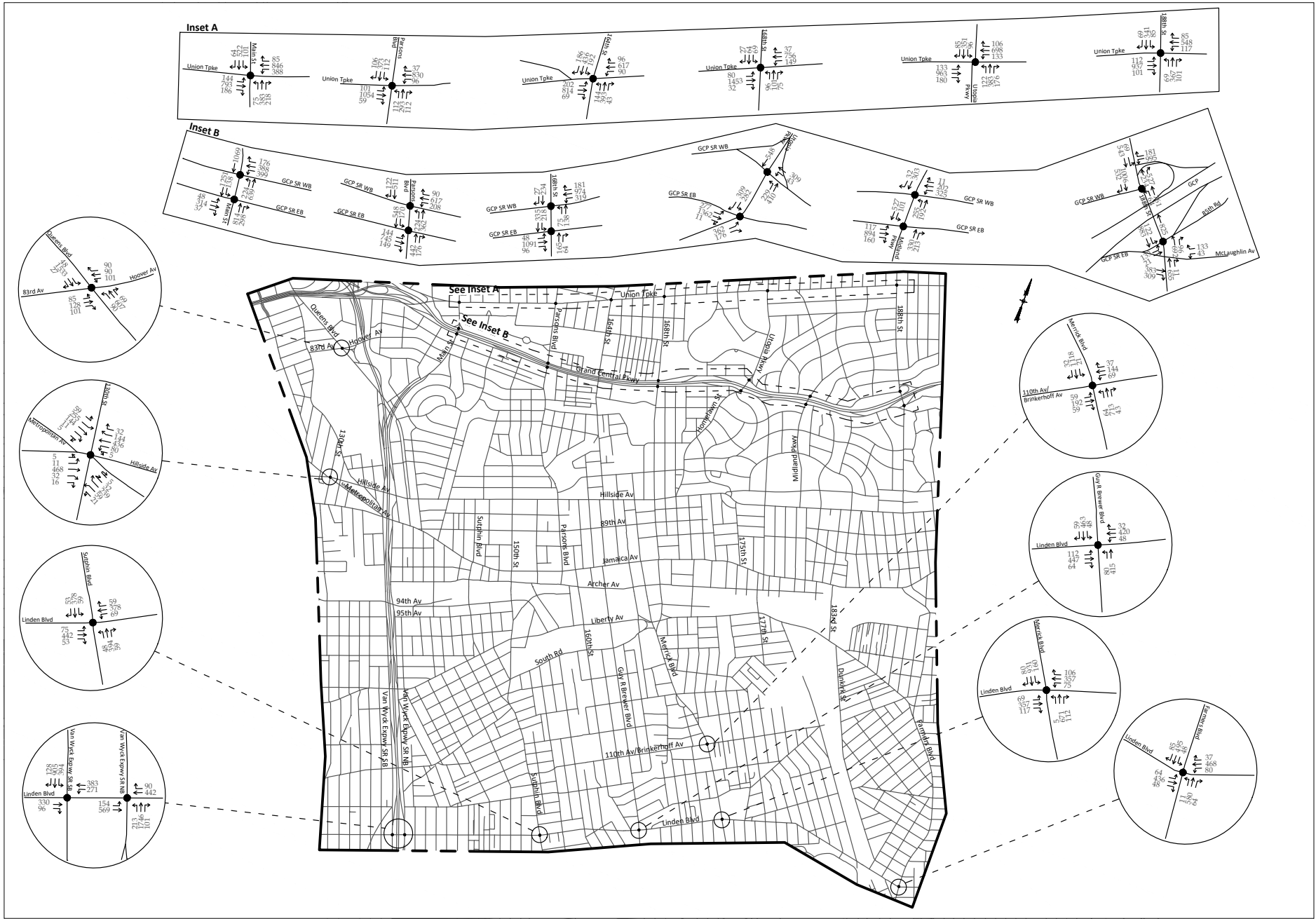


Figure A-6: Future Traffic Volumes - PM Peak Hour (Secondary Study Area)





**Table A-3: Future Conditions Intersection Level of Service Analysis - Primary Study Area**

Intersection	Approach	FUTURE: Weekday AM						FUTURE: Weekday PM					
		Movement	Volume	Lane Group	VIC Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	VIC Ratio	Avg Delay	LOS
Hillside Av & Van Wyck Expwy SR SB	SB	L	442	L	0.85	46.2	D	L	245	L	0.51	29.1	C
		T	351	TR	0.67	37.8	D	T	495	TR	0.74	33.9	C
	R	255					R	218					
	EB	T	926	TR	0.74	36.1	D	T	1118	TR	0.96	52.5	D
	WB	L	213	L	0.90	77.3	E	L	346	L	1.09	115.4	F
Overall	T	953	T	0.87	34.0	C	T	697	T	0.50	21.3	C	
					38.8	D					47.0	D	
Hillside Av & 138th St	NB	L	53	LT	1.11	260.9	F	L	75	LTR	0.84	48.1	D
		T	804	R	0.42	37.7	D	T	665				
	R	106					R	181					
	EB	L	309	L	1.10	275.1	F	L	479	L	1.11	270.0	F
	WB	T	1059	T	0.60	15.0	F	T	883	T	0.46	10.7	C
Overall	T	1112	TR	0.83	30.0	C	T	969	TR	0.78	28.6	C	
	R	325					R	330					
				99.1	F					62.4	E		
Hillside Av & Sutphin Blvd	NB	L	160	L	0.63	49.1	D	L	106	L	0.43	43.3	D
		R	117	R	0.98	27.8	C	R	117	R	0.44	30.6	C
	EB	T	777	TR	0.87	34.7	C	T	1006	TR	0.92	40.5	D
	WB	L	192	L	1.08	127.2	F	L	176	L	1.10	128.0	F
	Overall	T	1410	T	0.90	27.7	C	T	947	T	0.55	11.1	B
				37.9	D					35.6	D		
Hillside Av & 150th St	SB	L	53	LTR	1.09	251.8	F	L	149	LTR	1.10	270.8	F
		T	181				T	149					
	R	48				R	64						
	EB	L	133	L	0.69	50.7	F	L	138	L	0.49	28.9	C
	WB	T	891	TR	0.49	16.7	B	T	1032	TR	0.74	23.8	C
Overall	R	83				R	37						
	L	32	L	0.15	11.8	B	L	37	L	0.21	21.3	C	
	T	1299	TR	0.75	22.7	C	T	953	TR	0.77	24.6	C	
	R	128				R	69						
				51.1	D					61.3	E		
Hillside Av & Parsons Blvd	NB	L	133	L	1.13	151.2	F	L	96	L	0.63	51.2	D
		T	224	TR	0.54	39.1	D	T	271	TR	0.92	62.0	E
	R	90				R	192						
	EB	L	69	L	0.53	47.9	D	L	106	L	1.11	163.6	F
	WB	T	208	TR	0.55	39.2	D	T	165	TR	0.47	37.3	D
Overall	R	85				R	75						
	L	101	L	0.70	43.0	D	L	133	L	0.83	45.0	D	
	T	788	TR	0.64	22.8	C	T	1128	TR	1.11	92.2	F	
	R	154				R	80						
	L	101	L	0.54	20.2	C	L	106	L	0.63	51.3	D	
	T	1112	TR	1.11	89.7	F	T	836	TR	0.52	37.4	D	
	R	160				R	117						
				58.8	E					64.9	E		
Hillside Av & 164th St	SB	L	149	R	0.46	36.3	D	R	192	R	0.51	38.7	D
		T	314	L	0.55	9.3	A	T	239	L	0.34	1.7	A
	R	905	T	0.28	0.2	A	T	1533	T	0.41	0.3	A	
	EB	L	761	TR	0.42	13.5	B	T	591	TR	0.29	11.5	B
	Overall	R	90				R	48					
				9.1	A					6.0	A		
Hillside Av & Merrick Blvd	EB	L	43	L	0.25	11.2	B	L	27	L	0.09	9.8	A
		T	750	TR	0.46	10.7	B	T	1128	TR	0.70	17.8	B
	R	208				R	426						
	WB	L	415	L	1.11	96.3	F	L	303	L	0.72	37.2	D
	Overall	T	1128	TR	0.49	11.0	B	T	671	TR	0.31	11.3	B
	R	27				R	64						
				27.6	C					18.2	B		
Hillside Av & 168th St	NB	L	213	LTR	1.11	117.8	F	L	96	LTR	0.77	51.6	D
		T	265				T	224					
	R	75				R	106						
	EB	L	69	L	0.48	18.5	B	L	53	L	0.22	8.8	A
	WB	T	750	T	0.35	8.3	A	T	1219	T	0.47	9.4	A
Overall	R	1176	TR	0.55	10.5	B	T	830	TR	0.39	8.7	A	
	R	96				R	64						
				34.3	C					16.7	B		
Hillside Av & 169th St	SB	L	69	L	0.30	41.8	D	L	106	L	0.41	44.6	D
		T	229	T	0.78	63.3	E	T	218	T	0.84	75.8	E
	R	101	R	0.56	51.5	D	R	112	R	0.61	57.5	E	
	EB	L	128	L	0.84	74.4	E	L	149	L	0.66	38.1	D
	WB	T	650	TR	0.56	16.1	B	T	1070	TR	0.90	31.6	C
Overall	R	75				R	122						
	L	69	L	0.20	11.8	B	L	80	L	0.38	27.2	C	
	T	1128	TR	0.97	52.1	D	T	809	TR	0.78	23.6	C	
	R	213				R	224						
				43.2	D					34.3	C		
Jamaica Av & Van Wyck Expwy SR SB	SB	L	112	LTR	0.70	43.5	D	L	149	LTR	0.95	60.0	E
		T	420				T	761					
	R	64				R	80						
	EB	T	862	TR	0.90	34.9	C	T	724	TR	0.87	32.7	C
	WB	L	234	L	1.11	118.8	F	L	213	L	1.09	118.9	F
Overall	T	548	T	0.57	11.6	B	T	532	T	0.57	11.9	B	
				44.6	D					47.8	D		

Intersection	Approach	FUTURE: Weekday AM						FUTURE: Weekday PM					
		Movement	Volume	Lane Group	VIC Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	VIC Ratio	Avg Delay	LOS
Jamaica Av & Van Wyck Expwy SR NB	NB	L	271	LTR	0.92	56.5	E	L	250	LTR	0.89	53.0	D
		T	479				T	591					
	R	90				R	85						
	EB	L	176	L	0.44	11.3	B	L	250	L	0.80	21.7	C
	WB	T	798	T	0.68	23.2	C	T	623	T	0.89	20.1	C
Overall	T	644	TR	0.49	19.4	B	T	596	TR	0.50	19.5	B	
	R	21				R	37						
				35.0	C					31.9	C		
Jamaica Av & Sutphin Blvd	NB	L	27	LT	0.58	26.3	C	L	16	LT	0.31	21.4	C
		T	404	R	0.44	26.8	C	T	255	R	0.46	25.9	C
	R	117				R	64						
	SB	L	116	LTR	0.42	23.4	C	L	11	LTR	0.53	25.9	C
	WB	T	192				T	373					
Overall	R	48				R	59						
	L	5	LTR	0.45	23.8	C	L	5	LTR	0.36	22.2	C	
	T	261				T	266						
	R	80				R	85						
	L	90	LTR	0.89	42.3	D	L	106	LTR	0.72	32.3	C	
	T	596				T	282						
	R	43				R	21						
				31.0	C					25.9	C		
Jamaica Av & 150th St	NB	L	80	LR	1.12	329.1	F	L	53	LR	1.12	363.5	F
		T	117				T	59					
	R	85	LTR	0.73	53.3	D	R	75	LT	0.99	142.5	F	
	EB	T	75	R	0.64	51.1	D	T	160	R	0.48	44.3	D
	WB	L	122	TR	0.37	15.3	B	L	112	TR	0.26	11.8	B
Overall	R	16				R	16						
	L	43	LT	1.11	247.8	F	L	59	LT	0.44	14.6	B	
	T	644				T	298						
				182.2	F					77.7	E		
Jamaica Av & Parsons Blvd	NB	L	5	LTR	0.81	45.1	D	L	11	LTR	0.83	71.4	E
		T	117				T	90					
	R	32				R	32						
	SB	L	90	LTR	0.74	45.1	D	L	112	LTR	0.99	105.9	F
	WB	T	197				T	287					
Overall	R	53				R	64						
	L	11	LTR	0.91	46.7	D	L	11	LTR	0.48	20.3	C	
	T	532				T	399						
	R	53				R	69						
	L	5	LTR	0.76	27.9	C	L	11	LTR	0.48	20.8	C	
	T	639				T	330						
	R	117											

**Table A-3: Future Conditions Intersection Level of Service Analysis - Primary Study Area (Cont'd)**

Intersection	Approach	FUTURE: Weekday AM						FUTURE: Weekday PM					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Jamaica Av & Merrick Blvd	SB	L	43	LTR	0.87	47.1	D	L	59	LTR	0.74	35.9	D
		T	509					T	770				
	EB	R	64					R	75				
		T	410	TR	0.49	18.7	B	T	484	T	0.74	25.1	C
	WB	R	80					R	120	R	0.32	17.3	B
L		53	LT	0.62	21.5	C	L	69	LT	0.62	22.2	C	
Overall	T	639					T	426					
Jamaica Av & 189th St	NB	L	128	L	0.42	35.5	D	L	85	L	0.31	31.9	C
		T	654	T	1.77	394.1	F	T	528	T	1.19	144.5	F
	EB	R	80	R	0.49	38.2	D	R	75	R	0.34	33.0	C
		L	85	L	0.62	32.0	C	L	64	L	0.34	17.1	B
	WB	R	314	TR	0.37	14.1	B	T	373	TR	0.56	18.2	B
L		53					R	106	R	0.22	12.6	B	
Overall	T	106	L	0.37	15.9	B	L	80	L	0.30	14.7	B	
	R	564	TR	0.51	16.0	B	T	410	TR	0.37	13.9	B	
	R	106					R	85					
				140.5		F					51.5	D	
Jamaica Av & 189th St	SB	L	133	L	0.50	43.4	D	L	218	L	0.63	47.9	D
		R	133	R	0.47	43.1	D	R	176	R	0.65	49.9	D
	EB	T	463	T	0.30	8.8	F	T	500	T	0.30	8.8	A
		L	745	L	0.50	11.0	B	L	479	L	0.31	8.9	A
	Overall	T				16.7	B	T				21.2	C
Jamaica Av & 170th St	NB	L	27	LTR	1.04	98.2	F	L	27	LTR	0.82	55.8	E
		T	255					T	154				
	EB	R	75					R	53				
		L	80	LTR	0.89	33.0	C	L	90	LTR	0.77	21.8	C
	WB	R	420					R	484				
L		96					R	144					
Overall	T	69	LT	0.69	18.3	B	L	117	LT	0.63	16.3	B	
	R	718	R	0.24	11.2	B	T	452	R	0.15	10.2	B	
	R	133					R	106					
				37.1		D					25.4	C	
Jamaica Av & 175th St	NB	L	37	LTR	0.92	92.0	F	L	27	LTR	0.60	55.4	E
		T	43					T	43				
	SB	R	59					R	21				
		L	75	L	0.53	92.0		L	160	L	0.98	103.7	F
	EB	R	59	R	0.04	38.2	D	R	96	R	0.51	50.8	D
L		69	LT	0.72	18.8	B	L	59	LT	0.50	12.2	B	
WB	T	516	TR	0.79	19.0	B	T	490	TR	0.39	10.5	B	
	R	208					R	128					
Overall	T				28.4	C	T				27.4	C	
Jamaica Av & 177th St	NB	L	96	LR	0.86	73.0	E	L	69	LR	0.78	63.4	E
		R	90					R	101				
	EB	T	500	TR	0.41	9.9	A	T	633	TR	0.54	11.6	B
		L	122					R	128				
	WB	L	122	LT	1.06	61.9	E	L	96	LT	0.59	63.4	E
T		1149					T	511					
Overall	T				47.1	D	T				18.1	B	
Jamaica Av & 183rd St	NB	L	341	L	1.26	186.7	F	L	138	L	0.48	47.8	D
		R	160	R	0.80	68.3	E	R	106	R	0.52	51.0	D
	SB	L	16	LTR	0.47	49.0	D	L	32	LTR	0.76	67.1	E
		T	90					T	138				
	EB	R	37	R	0.34	46.6	D	R	27	R	0.25	44.8	D
L		585	TR	0.67	26.8	C	T	798	TR	0.83	33.1	C	
WB	L	144					R	165					
	T	122	De/L	1.51	26.8	C	L	128	De/L	2.07	536.0	F	
Overall	T	1144					T	596					
				165.6		F					112.0	F	
Archer Av & Sutphin Blvd	NB	L	85	LTR	1.11	97.8	F	L	69	LTR	1.13	106.1	F
		T	511					T	362				
	SB	R	213					R	170				
		L	32	LTR	0.78	35.0	C	L	48	LTR	1.16	119.0	F
	EB	R	16					R	16				
L		48	L	0.45	25.7	C	L	27	L	0.24	18.2	B	
WB	T	149	R	0.41	18.4	B	T	176	TR	0.54	20.9	C	
	L	112					R	122					
Overall	T	202	De/L	1.05	93.3	F	L	112	De/L	0.44	25.7	C	
	T	170	TR	0.82	48.7		T	128	TR	0.59	24.8	C	
	R	85					R	48					
				63.0		E					76.8	E	
Archer Av & 150th St	NB	L	138	LTR	0.84	29.4	C	L	59	LTR	0.56	19.6	B
		T	160					T	85				
	SB	R	96					R	106				
		L	69	LTR	0.53	29.4	C	L	117	L	0.50	26.7	C
	EB	T	0					T	5				
L		64					R	112					
WB	R	11	LTR	0.40	18.3	B	L	0	LTR	0.80	42.8	D	
	L	303					R	5					
Overall	T	80	LTR	0.55	21.2	C	L	48	LTR	0.47	19.6	B	
	T	27					T	213					
				25.2		C					28.0	C	

Intersection	Approach	FUTURE: Weekday AM						FUTURE: Weekday PM					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Archer Av & 158th St	NB	L	53	LR	1.03	80.7	F	L	21	LR	0.84	31.9	C
		T	357					T	197				
	EB	R	468	T	0.48	14.2	B	T	580	T	0.51	14.9	B
		L	325	T	0.36	12.5	B	T	266	T	0.22	11.4	B
Overall	T				35.5	D	T				17.9	B	
Archer Av & 153rd St	EB	L	106	L	0.36	14.5	B	L	106	L	0.34	13.9	B
		T	718	T	1.11	91.2	F	T	671	T	1.11	90.1	F
	WB	R	325	T	0.62	16.9	B	T	266	T	0.56	17.4	C
		L	298	R	0.36	13.1	B	R	287	R	0.70	22.4	C
Overall	R				53.1	D	R				51.5	D	
Archer Av & Parsons Blvd	SB	L	192	L	0.61	33.4	C	L	234	L	0.62	33.6	C
		R	64	R	0.86	56.6	E	R	133	R	0.76	51.4	D
	EB	L	133	L	0.86	56.6	E	L	122	L	0.84	30.3	C
		T	468	T	0.52	17.4	B	T	548	T	0.53	17.7	B
Overall	R	21	TR	0.30	15.2		R	420	TR	0.30	14.4	B	
					23.5	C					23.9	C	
Archer Av & 160th St	NB	L	85	LTR	1.38	220.8	F	L	69	LTR	1.02	90.9	F
		T	261					T	149				
	SB	R	48	LTR	0.66	43.7	D	R	43	LTR	1.17	145.2	F
		L	11					L	106				
EB	R	16					R	16					
	L	32	LTR	0.73	18.3	B	L	16	LTR	0.72	18.1	B	
WB	L	596					L	543					
	R	149	LTR	2.59	751.1	F	R	224	LTR	1.03	74.7	E	
Overall	T	388					T	346					
	R	117					R	85					
					317.7	F					62.9	E	
Archer Av & Guy R Brewer Blvd	NB	L	75	LTR	0.46	26.7	C	L	16	LTR	0.65	30.2	C
		T	277					T	170				
	SB	R	27	LTR	0.46	26.7	C	R	96	LTR	0.52	25.4	C
		L	16					L	21				
EB	R	16					R	21					
	L	21	LTR	0.66	19.0	B	L	37	LTR	0.68	20.1	C	
WB	T	495					T	474					
	R	213					R	261					
Overall	L	112	L	0.73	38.1	D	L	117	L	0.85	53.8	D	
	T	436	T	0.70	22.6	C	T	378	T	0.57	15.5	B	
	R	117	R	0.34	14.7	B	R	69	R	0.14	12.1	B	
					34.6	C					24.4	C	
Archer Av & 165th St	NB	L	160	LTR	1.12	105.0	F	L	149	LTR	1.08	92.5	F
		T	213					T					



**Table A-3: Future Conditions Intersection Level of Service Analysis - Primary Study Area (Cont'd)**

Intersection	Approach	FUTURE: Weekday AM						FUTURE: Weekday PM					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Liberty Av & Van Wyck Expwy SR NB	NB	L	112	LTR	1.12	85.4	75.1	L	229	LTR	1.10	76.4	E
		T	1730					T	1644				
	R	101					R	96					
	L	309	L	1.10	114.1	F	L	165	L	0.61	41.5	D	
	T	628	LT	0.66	20.5	C	T	591	LT	0.69	21.7	C	
WB	T	718	T	1.00	65.9	E	T	947	T	1.12	102.0	F	
	R	229	R	0.80	48.0	D	R	149	R	0.59	36.3	D	
Overall				70.8	E				70.3	E			
Liberty Av & Sutphin Blvd	NB	L	122	LTR	0.90	20.1	C	L	96	LTR	0.74	23.2	C
		T	341				T	293					
	R	27				R	27						
	L	59	LTR	0.88	20.1	C	L	69	LTR	0.55	16.8	B	
	T	303				T	303						
EB	R	16	L	1.12	300.4	F	R	5	L	0.87	101.1	F	
	L	133	TR	0.88	59.2	E	L	96	TR	0.80	22.6	C	
WB	R	69	L	0.64	39.2	D	R	90	L	0.45	24.6	C	
	T	1059	TR	0.98	45.1	D	T	1054	TR	0.84	20.8	C	
Overall				55.1	E				23.9	C			
Liberty Av & 150th St	NB	L	48	LTR	0.90	10.8	B	L	32	LTR	0.40	13.6	B
		T	410				T	122					
	R	59				R	53						
	L	48	LT	0.21	11.6	B	L	59	LTR	0.44	14.4	B	
	T	27	R	0.13	10.8	B	T	37					
EB	R	43	L	0.89	73.7	E	R	64	L	0.83	62.6	E	
	L	80	TR	0.92	30.7	C	L	745	TR	0.78	21.5	C	
WB	R	27	L	1.12	85.3	F	R	37	L	0.37	20.4	C	
	T	1048	TR	0.15	12.3	B	T	1096	TR	1.11	79.7	E	
Overall				51.8	D				47.1	D			
Liberty Av & Guy R Brewer Blvd	NB	L	133	LTR	0.88	34.3	C	L	106	LTR	0.98	60.9	E
		T	234				T	149					
	R	43				R	53						
	L	16	L	0.10	11.4	B	L	96	L	0.30	14.1	B	
	T	335	TR	0.86	31.3	C	T	108	TR	0.75	23.1	C	
EB	R	69	L	0.90	69.8	E	R	112	L	0.64	32.8	C	
	L	96	TR	0.98	40.2	D	L	85	TR	0.99	41.4	D	
WB	R	122	L	0.43	23.1	C	R	170	L	0.82	38.6	D	
	T	809	TR	0.92	31.3	C	T	758	TR	0.77	19.9	B	
Overall				35.9	D				32.2	C			
Liberty Av & 168th St	NB	L	75	LT	0.61	17.3	B	L	27	LT	0.45	13.6	B
		T	186	R	0.53	16.2	B	T	218	R	0.41	13.7	B
	R	186				R	170						
	L	75	LTR	0.31	11.5	B	L	85	LTR	0.40	12.4	B	
	T	53				T	96						
EB	R	75	L	0.64	33.6	C	R	90	L	0.62	30.7	C	
	T	702	TR	0.79	22.5	C	T	878	TR	0.99	42.1	D	
WB	R	16	L	0.93	76.3	E	R	48	L	0.70	44.4	D	
	T	734	T	0.52	15.4	B	T	772	T	0.49	15.0	B	
Overall				21.0	C				26.0	C			
Liberty Av & Merrick Blvd	SB	L	96	LTR	0.81	29.5	C	L	138	LTR	1.09	256.7	F
		T	596				T	820					
	R	90				R	75						
	L	740	TR	0.62	27.1	C	T	857	TR	0.77	31.0	C	
	T	160				T	202						
WB	L	149	L	0.59	37.0	D	L	181	L	0.82	62.5	E	
	T	963	T	0.91	36.8	D	T	969	T	0.86	30.5	C	
Overall				31.9	C				108.2	F			
Liberty Av & 168th St	NB	L	314	L	0.59	22.9	C	L	229	L	0.42	18.1	B
		T	851	T	1.12	96.1	F	T	455	T	0.97	54.9	D
	R	75	R	0.22	16.5	B	R	80	R	0.17	15.7	B	
	L	202	L	1.10	117.1	F	L	138	L	1.12	133.5	F	
	T	633	T	0.52	19.7	B	T	857	T	0.81	27.7	C	
WB	T	798	T	0.73	24.3	C	T	788	T	0.69	23.4	C	
	R	27				R	37						
Overall				50.1	D				36.8	D			
Liberty Av & 170th St (East)	SB	L	75	LR	0.46	25.8	C	L	224	LR	0.63	30.0	C
		R	133				R	117					
	L	208	DefL	1.03	176.1	F	L	144	DefL	1.00	80.6	F	
	T	537	LT	0.98	86.9	F	T	729	LT				
	T	680				T	607						
WB	T	149	TR	0.87	28.0	C	T	90	TR	0.63	16.8	B	
	R					R							
Overall				61.6	F				48.1	D			

Intersection	Approach	FUTURE: Weekday AM						FUTURE: Weekday PM					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Liberty Av & 177th St	NB	L	144	LT	1.12	260.4	F	L	138	LT	1.12	272.0	F
		T	383	R	0.08	12.2		T	309	R	0.10	12.3	B
	R	21				R	27						
	L	11	L	0.16	15.0	B	L	37	L	0.27	17.1	B	
	T	335	TR	0.88	35.4	D	T	435	TR	0.99	104.9	F	
EB	R	106	L	1.09	297.7	F	R	133	L	0.85	22.7	C	
	L	138	TR	0.74	18.7	B	L	90	TR				
WB	T	484	LTR	0.96	48.6	D	T	897	LTR	0.65	16.8	B	
	R	96				R	149						
Overall				92.9	F				82.9	F			
Liberty Av & 163rd St	SB	L	245	L	0.82	23.6	C	L	335	L	0.80	33.5	C
		T	112	R	0.39	18.8	B	T	96	R	0.28	17.2	B
	R	133	LT	1.11	226.8	F	L	106	LT	1.06	139.2	F	
	L	702				L	974						
	T	745	TR	0.98	48.2	D	T	724	TR	0.89	13.9	B	
Overall				107.8	F				73.0	E			
Liberty Av & DuSable St	NB	L	431	LR	1.01	114.2	F	L	373	LR	0.99	112.1	F
		R	11				R	16					
	L	564	T	0.91	39.9	D	L	671	T	1.05	147.5	F	
	T	436	R	0.22	11.3	B	T	839	R	0.78	27.6	C	
	T	681	L	1.11	247.3	F	L	16	LT	0.96	108.4	F	
Overall				134.9	F				108.7	F			
Atlantic Av & Van Wyc Expwy SR SB	SB	L	133	LTR	0.84	28.0	C	L	96	LTR	1.12	88.5	F
		T	649				T	1235					
	R	351				R	271						
	L	734	TR	0.84	34.3	C	L	692	TR	0.79	32.0	C	
	T	138				T	213						
WB	L	170	L	0.78	53.8	D	L	245	L	0.89	59.9	E	
	T	583	LT	0.37	30.3	C	T	373	LT	0.32	14.1	B	
Overall				30.3	C				61.2	E			
Atlantic Av & Van Wyc Expwy SR NB	NB	L	75	LTR	0.93	33.2	C	L	176	LTR	1.12	90.4	F
		T	1719				T	1698					
	R	16				R	16						
	L	431	L	1.06	83.2	F	L	373	L	0.92	56.5	E	
	T	436	T	0.44	18.4	B	T	415	T	0.33	14.4	B	
WB	T	479	TR	0.92	49.3	D	T	442	TR	0.97	62.7	E	
	R	160				R	106						
Overall				40.6	D				71.1	E			
Allendale St & 161st Av	NB	L	21	LTR	0.81	49.7	D	L	11	LTR	0.50	32.1	C
		T	106				T	43					
	R	53				R	21						
	L	16	L	0.25	26.7	C	L	11	L	0.26	26.6	C	
	T	11				T	27						
EB	L	11	LTR	0.62	15.3	B	L	11	LTR	0.44	11.7	B	
	T	261				T	239						
WB	L	11	L	0.68	17.1	B	L	16	L	0.46	11.9	B	
	T	325	TR			T	255	TR					
Overall				23.4	C				18.6	B			
Sutphin Blvd & 89th Av	NB	L	75	LT	0.61	11.1	B	L	43	LT	0.63	12.4	B
		T	468				T	261					
	R	229	TR	0.25	7.0	A	T	293	TR	0.62	13.2	B	
	L	69				L	59						
	T	80	LTR	1.10	98.2	F	T	80</					

Table A-4: Future Conditions Intersection Level of Service Analysis - Secondary Study Area

Intersection	Approach	Movement	Volume	Future : Weekday AM				LOS	Movement	Volume	Future : Weekday PM				LOS
				Lane Group	V/O Ratio	Avg Delay	F				Lane Group	V/O Ratio	Avg Delay	F	
Union Tpke & Main St	NB	L	170	1.08	140.7	F	L	75	0.46	52.9	D				
		T	367	0.82	57.8	E	T	383	0.76	56.8	E				
		R	138	1.12	146.1	F	R	218	0.57	54.6	D				
	SB	L	48	0.29	44.9	D	L	101	0.57	54.6	D				
		T	479	0.91	65.8	E	T	522	0.94	70.3	E				
		R	64	0.87	68.4	E	R	64	0.40	20.7	C				
	EB	L	213	0.87	68.4	E	L	144	0.40	20.7	C				
		T	718	0.58	23.0	C	T	793	0.58	24.5	C				
		R	208	0.87	68.4	E	R	186	0.58	24.5	C				
	WB	L	452	1.12	110.7	F	L	388	0.63	15.1	B				
		T	1368	1.12	95.1	F	T	846	0.63	15.1	B				
		R	27	0.87	68.4	E	R	85	0.58	24.5	C				
Overall			72.7	E											
Union Tpke & Parsons Blvd	NB	L	85	1.12	121.3	F	L	112	1.88	490.6	F				
		T	357	0.70	46.8	D	T	293	1.71	380.4	F				
		R	43	0.87	68.4	E	R	112	0.58	24.5	C				
	SB	L	59	1.12	120.2	F	L	112	1.12	117.3	F				
		T	373	0.70	46.8	D	T	373	0.70	46.8	D				
		R	80	0.87	68.4	E	R	106	0.58	24.5	C				
	EB	L	229	1.12	121.8	F	L	101	0.50	15.6	B				
		T	585	0.53	19.2	B	T	1054	0.76	26.5	C				
		R	59	0.11	14.2	B	R	59	0.10	14.5	B				
	WB	L	144	0.47	14.8	B	L	96	0.56	23.8	C				
		T	1096	0.61	20.8	C	T	830	0.43	17.5	B				
		R	32	0.87	68.4	E	R	37	0.58	24.5	C				
Overall			61.5	E			99.10	F							
Union Tpke & 184th St	NB	L	149	1.12	146.3	F	L	144	0.87	86.3	F				
		T	383	0.70	46.8	D	T	394	0.89	63.0	E				
		R	53	0.87	68.4	E	R	43	0.58	24.5	C				
	SB	L	181	0.80	68.6	E	L	192	0.94	93.2	F				
		T	506	1.12	121.1	F	T	436	1.12	119.6	F				
		R	112	0.87	68.4	E	R	186	0.58	24.5	C				
	EB	L	186	1.12	146.3	F	L	202	0.53	29.1	C				
		T	559	0.49	21.1	C	T	814	0.64	29.1	C				
		R	37	0.09	15.9	B	R	69	0.10	14.5	B				
	WB	L	181	0.55	28.3	C	L	90	0.30	24.4	C				
		T	1389	0.93	37.8	D	T	617	0.47	25.7	C				
		R	69	0.87	68.4	E	R	96	0.58	24.5	C				
Overall			60.6	E			55.9	E							
Union Tpke & 188th St	NB	L	48	0.91	83.7	F	L	96	1.13	138.7	F				
		T	69	0.70	46.8	D	T	75	0.89	63.0	E				
		R	64	0.87	68.4	E	R	64	0.58	24.5	C				
	SB	L	37	0.87	54.9	D	L	69	0.81	68.0	E				
		T	75	0.70	46.8	D	T	64	0.58	24.5	C				
		R	16	0.45	30.0	C	R	27	0.52	21.1	C				
	EB	L	804	0.82	17.5	B	L	80	1.08	73.3	E				
		T	59	0.70	19.9	B	T	32	0.85	65.9	E				
		R	224	0.86	11.2	B	R	758	0.33	17.8	B				
	WB	L	1594	0.86	11.2	B	L	37	0.58	24.5	C				
		T	43	0.87	68.4	E	T	37	0.58	24.5	C				
		R	69	0.87	68.4	E	R	69	0.58	24.5	C				
Overall			20.9	C			58.5	E							
Union Tpke & Utopia Pkwy	NB	L	85	1.12	113.9	F	L	123	1.03	121.0	F				
		T	479	0.70	46.8	D	T	383	0.94	63.5	E				
		R	69	0.87	68.4	E	R	176	0.58	24.5	C				
	SB	L	15	1.11	110.5	F	L	96	1.03	134.5	F				
		T	537	0.70	46.8	D	T	351	0.67	59.9	E				
		R	117	0.87	68.4	E	R	85	0.58	24.5	C				
	EB	L	59	0.33	42.6	D	L	133	0.33	18.4	B				
		T	532	0.48	23.6	C	T	963	0.70	28.5	C				
		R	106	0.87	68.4	E	R	170	0.58	24.5	C				
	WB	L	319	0.88	74.3	E	L	133	0.48	37.0	D				
		T	1314	1.00	54.2	D	T	698	0.34	21.4	C				
		R	60	0.87	68.4	E	R	106	0.58	24.5	C				
Overall			71.9	E			43.7	D							
Union Tpke & 188th St	NB	L	75	0.91	56.9	E	L	69	0.78	44.1	D				
		T	410	0.70	46.8	D	T	367	0.89	63.0	E				
		R	64	0.87	68.4	E	R	101	0.58	24.5	C				
	SB	L	48	0.85	50.6	D	L	85	0.90	56.8	E				
		T	325	0.70	46.8	D	T	341	0.70	46.8	D				
		R	75	0.87	68.4	E	R	69	0.58	24.5	C				
	EB	L	75	0.66	74.0	E	L	112	0.95	119.1	F				
		T	495	0.50	25.5	C	T	937	0.86	38.1	D				
		R	59	0.87	68.4	E	R	101	0.58	24.5	C				
	WB	L	122	0.95	118.0	F	L	117	0.95	118.7	F				
		T	1368	0.87	38.5	D	T	548	0.53	26.1	C				
		R	101	0.87	68.4	E	R	85	0.58	24.5	C				
Overall			44.4	D			46.5	D							
GCP SR WB & Main St	NB	L	245	0.82	63.5	E	L	224	0.74	55.1	E				
		T	591	0.37	12.5	B	T	639	0.38	12.6	B				
		R	1096	1.09	91.4	F	R	904	0.94	51.4	D				
	SB	L	484	0.97	70.2	E	L	399	0.80	47.0	D				
		T	319	0.62	37.3	D	T	388	0.75	43.2	D				
		R	62	0.87	68.4	E	R	80	0.58	24.5	C				
	Overall			66.2	E			40.6	D						
	GCP SR EB & Main St	NB	T	788	1.05	76.6	E	T	814	0.86	36.1	D			
			R	293	0.13	12.4	B	R	298	0.33	13.6	B			
			L	53	1.00	38.6	D	L	1251	0.61	11.3	B			
		SB	L	1527	0.43	40.5	D	L	48	0.89	48.2	D			
			T	48	0.87	68.4	E	T	314	0.53	26.1	C			
R			133	0.87	68.4	E	R	37	0.58	24.5	C				
WB		L	149	0.87	68.4	E	L	224	0.63	29.5	C				
		T	612	0.37	12.5	B	T	362	0.39	10.1	B				
		R	522	0.62	22.6	C	R	511	0.54	21.1	C				
SB		L	133	0.91	42.6	D	L	122	1.12	96.9	F				
		T	208	0.53	29.6	C	T	617	0.53	26.1	C				
		R	623	0.87	68.4	E	R	90	0.58	24.5	C				
WB	L	149	0.87	68.4	E	L	224	0.63	29.5	C					
	T	612	0.37	12.5	B	T	362	0.39	10.1	B					
	R	522	0.62	22.6	C	R	511	0.54	21.1	C					
SB	L	133	0.91	42.6	D	L	122	1.12	96.9	F					
	T	208	0.53	29.6	C	T	617	0.53	26.1	C					
	R	623	0.87	68.4	E	R	90	0.58	24.5	C					
WB	L	149	0.87	68.4	E	L	224	0.63	29.5	C					
	T	612	0.37	12.5	B	T	362	0.39	10.1	B					
	R	522	0.62	22.6	C	R	511	0.54	21.1	C					
SB	L	133	0.91	42.6	D	L	122	1.12	96.9	F					
	T	208	0.53	29.6	C	T	617	0.53	26.1	C					
	R	623	0.87	68.4	E	R	90	0.58	24.5	C					
WB	L	149	0.87	68.4	E	L	224	0.63	29.5	C					
	T	612	0.37	12.5	B	T	362	0.39	10.1	B					
	R	522	0.62	22.6	C	R	511	0.54	21.1	C					
SB	L	133	0.91	42.6	D	L	122	1.12	96.9	F					
	T	208	0.53	29.6	C	T	617	0.53	26.1	C					
	R	623	0.87	68.4	E	R	90	0.58	24.5	C					
WB	L	149	0.87	68.4	E	L	224	0.63	29.5	C					
	T	612	0.37	12.5	B	T	362	0.39	10.1	B					
	R	522	0.62	22.6	C	R	511	0.54	21.1	C					
SB	L	133	0.91	42.6	D	L	122	1.12	96.9	F					
	T	208	0.53	29.6	C	T	617	0.53	26.1	C					
	R	623	0.87	68.4	E	R	90	0.58	24.5	C					
WB	L	149	0.87	68.4	E	L	224	0.63	29.5	C					
	T	612	0.37	12.5	B	T	362	0.39	10.1	B					
	R	522	0.62	22.6	C	R	511	0.54	21.1	C					
SB	L	133	0.91	42.6	D	L	122	1.12	96.9	F					
	T	208	0.53	29.6	C	T	617	0.53	26.1	C					
	R	623	0.87	68.4	E	R	90	0.58	24.5	C					
WB	L	149	0.87	68.4	E	L	224	0.63	29.5	C					
	T	612	0.37	12.5	B	T	362	0.39	10.1	B					
	R	522	0.62	22.6	C	R	511	0.54	21.1	C					
SB	L	133	0.91	42.6	D	L	122	1.12	96.9	F					









# **APPENDIX B**

## **PEDESTRIANS AND BIKES**



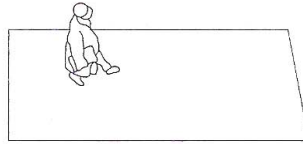


**Figure B-1: Pedestrian Level of Service Criteria**

**LOS A**

*Pedestrian Space > 60 ft<sup>2</sup>/p Flow Rate ≤ 5 p/min/ft*

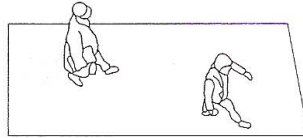
At a walkway LOS A, pedestrians move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.



**LOS B**

*Pedestrian Space > 40–60 ft<sup>2</sup>/p Flow Rate > 5–7 p/min/ft*

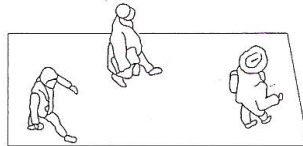
At LOS B, there is sufficient area for pedestrians to select walking speeds freely, to bypass other pedestrians, and to avoid crossing conflicts. At this level, pedestrians begin to be aware of other pedestrians, and to respond to their presence when selecting a walking path.



**LOS C**

*Pedestrian Space > 24–40 ft<sup>2</sup>/p Flow Rate > 7–10 p/min/ft*

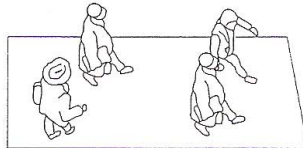
At LOS C, space is sufficient for normal walking speeds, and for bypassing other pedestrians in primarily unidirectional streams. Reverse-direction or crossing movements can cause minor conflicts, and speeds and flow rate are somewhat lower.



**LOS D**

*Pedestrian Space > 15–24 ft<sup>2</sup>/p Flow Rate > 10–15 p/min/ft*

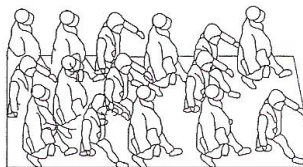
At LOS D, freedom to select individual walking speed and to bypass other pedestrians is restricted. Crossing or reverse-flow movements face a high probability of conflict, requiring frequent changes in speed and position. The LOS provides reasonably fluid flow, but friction and interaction between pedestrians is likely.



**LOS E**

*Pedestrian Space > 8–15 ft<sup>2</sup>/p Flow Rate > 15–23 p/min/ft*

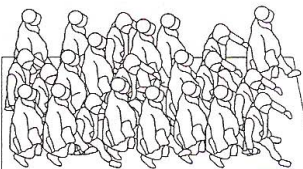
At LOS E, virtually all pedestrians restrict their normal walking speed, frequently adjusting their gait. At the lower range, forward movement is possible only by shuffling. Space is not sufficient for passing slower pedestrians. Cross- or reverse-flow movements are possible only with extreme difficulties. Design volumes approach the limit of walkway capacity, with stoppages and interruptions to flow.



**LOS F**

*Pedestrian Space ≤ 8 ft<sup>2</sup>/p Flow Rate varies p/min/ft*

At LOS F, all walking speeds are severely restricted, and forward progress is made only by shuffling. There is frequent, unavoidable contact with other pedestrians. Cross- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrian streams.



**Table B-1: Existing Conditions Pedestrian Level of Service**

No.	Intersection	Crosswalk	AM		PM	
			SF/P	LOS	SF/P	LOS
1	150 Street & Jamaica Avenue	North	387.1	A	146.2	A
		South	341.6	A	170.5	A
		East	329.7	A	460.5	A
		West	511.5	A	334.7	A
2	153 Street & Jamaica Avenue	North	667.4	A	124.2	A
		South	824.3	A	212.9	A
		East	49.9	B	158.1	A
		West	162.4	A	264.6	A
3	160 Street & Archer Avenue	North	187.7	A	96.3	A
		South	331.2	A	236.1	A
		East	188.5	A	144.4	A
		West	160.1	A	120.7	A
4	160 Street & Liberty Avenue	North	654.4	A	945.8	A
		South	587.9	A	587.5	A
		East	73.8	A	89.7	A
		West	243.4	A	151.0	A
5	168 Street & Jamaica Avenue	North	368.8	A	69.9	A
		South	377.2	A	112.1	A
		East	110.4	A	105.9	A
		West	350.6	A	116.6	A
6	169 Street & Hillside Avenue	North	182.2	A	127.7	A
		South	201.0	A	112.8	A
		East	92.2	A	51.3	B
		West	78.6	A	58.7	B
7	179 Street & Hillside Avenue	North	-	-	-	-
		South	148.9	A	284.3	A
		East	92.6	A	133.5	A
		West	153.1	A	98.6	A
8	Guy R. Brewer Boulevard & Archer Avenue	North	638.9	A	407.2	A
		South	318.6	A	137.0	A
		East	113.8	A	46.9	B
		West	85.0	A	77.4	A
9	Guy R. Brewer Boulevard & Jamaica Avenue	North	-	-	-	-
		South	263.8	A	55.5	B
		East	585.6	A	108.1	A
		West	194.2	A	54.2	B
10	Guy R. Brewer Boulevard & Liberty Avenue	North	1322.2	A	425.1	A
		South	425.4	A	274.7	A
		East	155.8	A	90.9	A
		West	391.9	A	186.1	A
11	Merrick Boulevard & 89 Avenue	North	113.8	A	81.5	A
		South	187.3	A	69.8	A
		East	324.5	A	104.6	A
		West	245.9	A	80.7	A
12	Merrick Boulevard & Archer Avenue	North	441.5	A	217.9	A
		South	379.1	A	259.8	A
		East	606.0	A	140.5	A
		West	268.3	A	258.2	A
13	Merrick Boulevard & Jamaica Avenue	North	809.6	A	73.7	A
		South	749.1	A	102.6	A
		East	523.3	A	195.5	A
		West	321.1	A	130.0	A

No.	Intersection	Crosswalk	AM		PM	
			SF/P	LOS	SF/P	LOS
14	Parsons Boulevard & Archer Avenue	North	89.3	A	107.9	A
		South	-	-	-	-
		East	44.3	B	33.1	C
		West	135.7	A	70.2	A
15	Parsons Boulevard & Hillside Avenue	North	63.7	A	139.1	A
		South	89.4	A	159.7	A
		East	14.7	E	33.2	C
		West	26.0	C	39.1	C
16	Parsons Boulevard & Jamaica Avenue	North	103.2	A	44.7	B
		South	116.8	A	73.5	A
		East	24.5	C	23.9	D
		West	73.0	A	48.7	B
17	Sutphin Boulevard & Archer Avenue	North	163.3	A	159.0	A
		South	46.7	B	59.1	B
		East	29.0	C	40.1	B
		West	22.7	D	18.7	D
18	Sutphin Boulevard & 94 Street	North	169.6	A	545.2	A
		South	458.0	A	2431.7	A
		East	159.9	A	64.7	A
		West	26.5	C	19.3	D
19	Sutphin Boulevard & Hillside Avenue	North	-	-	-	-
		South	600.6	A	317.2	A
		East	211.2	A	96.6	A
		West	106.9	A	54.1	B
20	Sutphin Boulevard & Jamaica Avenue	North	213.8	A	110.7	A
		South	246.9	A	80.0	A
		East	136.3	A	62.9	A
		West	85.5	A	39.2	C
21	Main Street & Union Turnpike	North	228.4	A	198.8	A
		South	1049.3	A	964.4	A
		East	36.7	C	34.7	C
		West	115.3	A	107.4	A
22	Parsons Boulevard & Union Turnpike	North	577.7	A	616.3	A
		South	957.5	A	979.6	A
		East	133.3	A	125.9	A
		West	197.7	A	172.2	A
23	164 Street & Union Turnpike	North	522.9	A	287.1	A
		South	493.0	A	280.5	A
		East	173.9	A	95.9	A
		West	93.6	A	98.5	A
24	168 Street & Union Turnpike	North	1289.1	A	508.6	A
		South	862.9	A	548.2	A
		East	297.1	A	199.4	A
		West	186.9	A	417.5	A
25	Utopia Parkway & Union Turnpike	North	370.0	A	247.0	A
		South	747.1	A	255.8	A
		East	357.3	A	184.4	A
		West	365.7	A	141.1	A
26	188 Street & Union Turnpike	North	363.2	A	380.5	A
		South	304.5	A	307.5	A
		East	261.6	A	240.9	A
		West	317.5	A	226.4	A





**Table B-2: Existing Conditions Intersection Corner Pedestrian Level of Service**

No.	Intersection	Corner	EXISTING AM			EXISTING PM		
			Peak hour vol.	SF/P	LOS	Peak hour vol.	SF/P	LOS
1	150 Street & Jamaica Avenue	NE	57	57.4	B	69	31.3	C
		SE	45	303.4	A	38	219.5	A
		SW	23	294.3	A	84	140.3	A
		NW	51	426.6	A	113	179.1	A
2	153 Street & Jamaica Avenue	NE	34	348.5	A	62	280.5	A
		SE	188	118.8	A	177	121.5	A
		SW	17	230.8	A	12	122.9	A
		NW	11	129.6	A	4	56.6	B
3	160 Street & Archer Avenue	NE	12	223.9	A	14	133.7	A
		SE	16	116.1	A	23	82.3	A
		SW	96	288.2	A	63	245.5	A
		NW	58	171.6	A	86	100.2	A
4	160 Street & Liberty Avenue	NE	31	198.4	A	37	247.7	A
		SE	12	-146.0	F	18	-174.3	F
		SW	61	132.1	A	59	102.3	A
		NW	10	327.3	A	17	257.3	A
5	168 Street & Jamaica Avenue	NE	216	108.8	A	98	56.1	B
		SE	19	63.9	A	50	25.9	C
		SW	45	227.1	A	75	68.7	A
		NW	68	370.7	A	110	92.3	A
6	169 Street & Hillside Avenue	NE	202	107.8	A	119	80.9	A
		SE	194	177.0	A	349	101.6	A
		SW	98	166.8	A	262	99.8	A
		NW	42	237.5	A	70	166.8	A
7	179 Street & Hillside Avenue	SE	38	177.8	A	34	301.6	A
		SW	78	172.2	A	103	246.0	A
8	Guy R. Brewer Boulevard & Archer Avenue	NE	58	199.3	A	41	102.9	A
		SE	19	62.5	A	34	19.7	D
		SW	13	142.3	A	86	83.2	A
		NW	129	213.3	A	25	224.3	A
9	Guy R. Brewer Boulevard & Jamaica Avenue	SE	76	295.1	A	361	64.0	A
		SW	90	228.4	A	225	49.6	B
10	Guy R. Brewer Boulevard & Liberty Avenue	NE	31	801.6	A	76	421.3	A
		SE	21	426.0	A	36	281.1	A
		SW	15	63.3	A	31	35.7	C
		NW	1	4778.5	A	9	1894.9	A
11	Merrick Boulevard & 89 Avenue	NE	38	171.2	A	9	95.9	A
		SE	15	337.7	A	126	103.1	A
		SW	7	440.9	A	12	157.8	A
		NW	30	187.7	A	52	85.3	A
12	Merrick Boulevard & Archer Avenue	NE	8	918.3	A	17	333.0	A
		SE	14	830.6	A	16	358.8	A
		SW	19	219.0	A	13	193.1	A
		NW	156	498.4	A	125	411.0	A
13	Merrick Boulevard & Jamaica Avenue	NE	18	416.2	A	99	59.5	B
		SE	31	298.1	A	35	63.7	A
		SW	28	608.7	A	69	144.6	A
		NW	64	268.1	A	133	50.5	B

No.	Intersection	Corner	EXISTING AM			EXISTING PM		
			Peak hour vol.	SF/P	LOS	Peak hour vol.	SF/P	LOS
14	Parsons Boulevard & Archer Avenue	NE	3222	21.5	D	2154	27.3	C
		NW	24	203.9	A	22	164.8	A
15	Parsons Boulevard & Hillside Avenue	NE	489	31.0	C	116	79.9	A
		SE	267	27.8	C	376	79.2	A
		SW	101	14.4	E	139	42.8	B
		NW	127	37.8	C	86	62.6	A
16	Parsons Boulevard & Jamaica Avenue	NE	103	51.5	B	235	32.1	C
		SE	566	61.9	A	1140	48.2	B
		SW	120	55.4	B	71	34.7	C
17	Sutphin Boulevard & Archer Avenue	NW	84	110.5	A	112	55.6	B
		NE	283	156.1	A	88	216.4	A
		SE	953	35.5	C	290	73.1	A
18	Sutphin Boulevard & 94 Street	SW	235	145.9	A	120	110.4	A
		NW	34	105.9	A	83	115.7	A
		NE	10	267.5	A	26	228.0	A
19	Sutphin Boulevard & Hillside Avenue	SE	1	1077.2	A	-	-	-
		SW	9	197.8	A	10	293.8	A
		NW	21	149.1	A	8	205.9	A
20	Sutphin Boulevard & Jamaica Avenue	SE	36	767.0	A	79	386.9	A
		SW	37	458.2	A	50	255.4	A
21	Main Street & Union Turnpike	NE	45	183.1	A	110	82.7	A
		SE	152	105.7	A	321	38.4	C
		SW	64	29.0	C	224	6.8	F
		NW	117	60.7	A	98	24.8	C
22	Parsons Boulevard & Union Turnpike	NE	21	323.3	A	35	253.9	A
		SE	18	605.3	A	19	446.3	A
		SW	1	684.7	A	4	724.7	A
		NW	189	85.1	A	58	116.0	A
23	164 Street & Union Turnpike	NE	53	424.2	A	24	489.0	A
		SE	6	759.3	A	23	680.9	A
		SW	23	632.3	A	7	684.9	A
		NW	4	689.3	A	16	633.7	A
24	168 Street & Union Turnpike	NE	42	202.3	A	24	222.0	A
		SE	6	568.1	A	17	520.7	A
		SW	48	688.4	A	37	435.2	A
		NW	7	1396.1	A	4	875.1	A
25	Utopia Parkway & Union Turnpike	NE	43	893.5	A	65	580.3	A
		SE	16	821.2	A	34	655.8	A
		SW	-	-	-	1	965.8	A
		NW	20	1458.0	A	49	818.6	A
26	188 Street & Union Turnpike	NE	7	589.5	A	39	298.6	A
		SE	117	494.1	A	113	257.6	A
		SW	7	913.3	A	20	381.1	A
		NW	52	567.3	A	21	403.9	A
27	188 Street & Union Turnpike	NE	-	-	-	14	702.3	A
		SE	13	979.3	A	36	703.9	A
		SW	6	432.4	A	17	369.6	A
		NW	38	249.3	A	66	200.3	A



**Table B-3: Future Conditions Pedestrian Level of Service**

No.	Intersection	Crosswalk	AM		PM	
			SF/P	LOS	SF/P	LOS
1	150 Street & Jamaica Avenue	North	372.2	A	140.0	A
		South	331.3	A	164.4	A
		East	319.2	A	442.7	A
		West	486.6	A	322.0	A
2	153 Street & Jamaica Avenue	North	639.0	A	124.2	A
		South	798.8	A	212.6	A
		East	47.9	B	158.1	A
		West	157.0	A	264.0	A
3	160 Street & Archer Avenue	North	180.4	A	92.4	A
		South	319.7	A	227.3	A
		East	180.2	A	139.7	A
		West	154.3	A	116.0	A
4	160 Street & Liberty Avenue	North	613.8	A	945.8	A
		South	572.2	A	571.3	A
		East	71.0	A	86.1	A
		West	232.4	A	146.0	A
5	168 Street & Jamaica Avenue	North	354.7	A	67.1	A
		South	361.8	A	107.6	A
		East	106.9	A	101.7	A
		West	336.5	A	91.9	A
6	169 Street & Hillside Avenue	North	175.8	A	122.9	A
		South	193.0	A	108.4	A
		East	137.7	A	162.0	A
		West	75.7	A	56.4	B
7	179 Street & Hillside Avenue	North	-	-	-	-
		South	142.9	A	273.0	A
		East	88.7	A	128.5	A
		West	147.3	A	94.7	A
8	Guy R. Brewer Boulevard & Archer Avenue	North	607.5	A	392.6	A
		South	307.7	A	132.0	A
		East	109.5	A	45.1	B
		West	81.5	A	74.3	A
9	Guy R. Brewer Boulevard & Jamaica Avenue	North	-	-	-	-
		South	247.1	A	47.7	B
		East	567.0	A	101.5	A
		West	181.5	A	50.7	B
10	Guy R. Brewer Boulevard & Liberty Avenue	North	1267.1	A	408.5	A
		South	412.0	A	265.1	A
		East	150.7	A	87.9	A
		West	377.6	A	179.7	A
11	Merrick Boulevard & 89 Avenue	North	109.2	A	78.3	A
		South	181.1	A	67.0	A
		East	312.9	A	100.8	A
		West	237.0	A	77.6	A
12	Merrick Boulevard & Archer Avenue	North	432.1	A	210.4	A
		South	366.1	A	251.0	A
		East	757.7	A	135.6	A
		West	257.0	A	175.5	A
13	Merrick Boulevard & Jamaica Avenue	North	780.4	A	70.8	A
		South	716.2	A	98.6	A
		East	500.6	A	187.7	A
		West	309.2	A	124.8	A

No.	Intersection	Crosswalk	AM		PM	
			SF/P	LOS	SF/P	LOS
14	Parsons Boulevard & Archer Avenue	North	84.7	A	102.0	A
		South	-	-	-	-
		East	42.5	B	31.0	C
		West	130.1	A	67.5	A
15	Parsons Boulevard & Hillside Avenue	North	61.2	A	133.8	A
		South	86.0	A	153.6	A
		East	14.1	E	32.0	C
		West	24.9	C	37.6	C
16	Parsons Boulevard & Jamaica Avenue	North	99.1	A	42.8	B
		South	112.2	A	70.6	A
		East	23.4	D	22.9	D
		West	70.0	A	46.8	B
17	Sutphin Boulevard & Archer Avenue	North	54.7	B	119.1	A
		South	24.4	C	63.3	A
		East	42.5	B	29.3	C
		West	20.4	D	9.3	E
18	Sutphin Boulevard & 94 Street	North	164.6	A	520.9	A
		South	446.5	A	2431.1	A
		East	154.5	A	62.3	A
		West	25.4	C	18.5	D
19	Sutphin Boulevard & Hillside Avenue	North	-	-	-	-
		South	583.9	A	306.1	A
		East	204.1	A	92.7	A
		West	100.0	A	52.1	B
20	Sutphin Boulevard & Jamaica Avenue	North	205.3	A	106.4	A
		South	283.3	A	76.9	A
		East	131.1	A	60.4	A
		West	82.0	A	37.6	C
21	Main Street & Union Turnpike	North	214.1	A	186.4	A
		South	1004.6	A	724.3	A
		East	34.5	C	30.5	C
		West	106.7	A	100.9	A
22	Parsons Boulevard & Union Turnpike	North	541.6	A	580.4	A
		South	903.7	A	924.8	A
		East	124.1	A	117.2	A
		West	186.0	A	161.9	A
23	164 Street & Union Turnpike	North	489.1	A	269.8	A
		South	461.0	A	263.2	A
		East	88.1	A	92.8	A
		West	163.6	A	89.9	A
24	168 Street & Union Turnpike	North	1212.4	A	478.3	A
		South	814.6	A	512.7	A
		East	177.1	A	187.7	A
		West	278.1	A	391.2	A
25	Utopia Parkway & Union Turnpike	North	345.9	A	232.4	A
		South	694.9	A	240.1	A
		East	340.4	A	132.6	A
		West	331.1	A	173.2	A
26	188 Street & Union Turnpike	North	343.3	A	357.1	A
		South	283.6	A	285.5	A
		East	294.9	A	226.0	A
		West	243.6	A	212.3	A





**Table B-4: Future Conditions Intersection Corner Pedestrian Level of Service**

No.	Intersection	Corner	FUTURE AM			FUTURE PM		
			Peak hour vol.	SF/P	LOS	Peak hour vol.	SF/P	LOS
1	150 Street & Jamaica Avenue	NE	61	57.7	B	73	30.2	C
		SE	48	350.1	A	40	203.4	A
		SW	24	356.8	A	89	131.1	A
		NW	54	398.8	A	120	168.1	A
2	153 Street & Jamaica Avenue	NE	36	326.7	A	66	262.9	A
		SE	200	110.6	A	188	113.7	A
		SW	18	216.1	A	13	115.0	A
		NW	12	120.3	A	4	52.7	B
3	160 Street & Archer Avenue	NE	13	208.6	A	15	125.1	A
		SE	17	107.9	A	24	77.1	A
		SW	102	270.0	A	67	230.1	A
		NW	62	160.4	A	92	93.3	A
4	160 Street & Liberty Avenue	NE	33	185.7	A	39	233.2	A
		SE	13	-137.6	F	19	-164.4	F
		SW	65	124.0	A	63	94.4	A
		NW	11	305.8	A	18	240.2	A
5	168 Street & Jamaica Avenue	NE	230	101.6	A	104	52.0	B
		SE	20	59.3	A	53	23.5	D
		SW	48	213.3	A	80	60.1	A
		NW	72	348.3	A	117	80.8	A
6	169 Street & Hillside Avenue	NE	215	113.5	A	127	107.8	A
		SE	206	180.2	A	371	115.0	A
		SW	104	156.3	A	279	93.2	A
		NW	45	221.5	A	75	155.7	A
7	179 Street & Hillside Avenue	SE	40	166.8	A	36	282.7	A
		SW	83	161.4	A	110	230.8	A
8	Guy R. Brewer Boulevard & Archer Avenue	NE	62	186.8	A	44	96.0	A
		SE	20	58.2	B	36	17.6	D
		SW	14	133.4	A	92	80.1	A
		NW	137	199.4	A	27	221.3	A
9	Guy R. Brewer Boulevard & Jamaica Avenue	SE	81	277.4	A	384	59.7	A
		SW	96	213.7	A	239	46.1	B
10	Guy R. Brewer Boulevard & Liberty Avenue	NE	33	758.9	A	81	389.1	A
		SE	22	402.6	A	38	263.5	A
		SW	16	59.1	B	33	32.9	C
		NW	1	4549.0	A	10	1776.3	A
11	Merrick Boulevard & 89 Avenue	NE	40	160.9	A	10	89.6	A
		SE	16	317.7	A	134	96.6	A
		SW	7	415.4	A	13	148.1	A
		NW	32	176.2	A	55	79.6	A
12	Merrick Boulevard & Archer Avenue	NE	9	916.4	A	18	312.5	A
		SE	15	842.9	A	17	336.9	A
		SW	20	206.9	A	14	148.9	A
		NW	166	468.3	A	133	337.9	A
13	Merrick Boulevard & Jamaica Avenue	NE	19	389.4	A	105	55.2	B
		SE	33	278.2	A	37	59.2	B
		SW	30	570.6	A	73	135.3	A
		NW	68	251.9	A	142	46.9	B

No.	Intersection	Corner	FUTURE AM			FUTURE PM		
			Peak hour vol.	SF/P	LOS	Peak hour vol.	SF/P	LOS
14	Parsons Boulevard & Archer Avenue	NE	3429	19.9	D	2293	25.1	C
		NW	26	188.9	A	23	152.6	A
15	Parsons Boulevard & Hillside Avenue	NE	520	28.8	C	123	73.9	A
		SE	284	24.5	C	400	73.9	A
		SW	107	9.8	E	148	39.6	C
16	Parsons Boulevard & Jamaica Avenue	NW	135	19.8	D	92	57.3	B
		NE	110	47.7	B	250	29.4	C
		SE	602	57.4	B	1213	44.7	B
		SW	128	51.4	B	76	31.8	C
17	Sutphin Boulevard & Archer Avenue	NW	89	102.8	A	119	51.3	B
		NE	301	54.5	B	94	76.1	A
		SE	1014	95.4	A	309	167.6	A
18	Sutphin Boulevard & 94 Street	SW	250	76.6	A	128	87.4	A
		NW	36	90.3	A	88	82.4	A
		NE	11	250.3	A	28	213.3	A
19	Sutphin Boulevard & Hillside Avenue	SE	1	1010.8	A	-	-	-
		SW	10	166.4	A	11	275.5	A
		NW	22	111.8	A	9	192.6	A
20	Sutphin Boulevard & Jamaica Avenue	SE	38	717.6	A	84	363.3	A
		SW	39	416.7	A	53	236.3	A
21	Main Street & Union Turnpike	NE	48	171.6	A	117	78.9	A
		SE	162	98.6	A	342	34.7	C
		SW	68	26.6	C	238	5.7	F
		NW	125	56.2	B	104	22.3	D
22	Parsons Boulevard & Union Turnpike	NE	22	303.1	A	37	237.9	A
		SE	19	569.9	A	20	417.8	A
		SW	1	640.8	A	4	682.3	A
		NW	201	79.4	A	62	107.9	A
23	164 Street & Union Turnpike	NE	56	397.0	A	26	456.4	A
		SE	6	711.7	A	24	638.2	A
		SW	24	596.2	A	7	646.7	A
24	168 Street & Union Turnpike	NW	4	647.8	A	17	595.5	A
		NE	45	189.1	A	26	207.6	A
		SE	6	533.7	A	18	488.9	A
		SW	51	645.3	A	39	407.5	A
25	Utopia Parkway & Union Turnpike	NW	7	1315.5	A	4	821.9	A
		NE	46	841.4	A	69	545.9	A
		SE	17	775.8	A	36	615.6	A
		SW	-	-	-	1	905.3	A
26	188 Street & Union Turnpike	NW	21	1371.5	A	52	769.9	A
		NE	7	549.6	A	42	279.8	A
		SE	125	460.6	A	120	241.2	A
		SW	7	852.4	A	21	357.6	A
27	188 Street & Union Turnpike	NW	55	528.9	A	22	410.8	A
		NE	-	-	-	15	658.2	A
		SE	14	910.5	A	38	658.0	A
		SW	6	403.2	A	18	344.4	A
28	188 Street & Union Turnpike	NW	40	234.3	A	70	187.7	A







# APPENDIX C

## PUBLIC PARTICIPATION/COMMUNITY OUTREACH





It should be noted that in addition to the three TACs and three public meetings, a series of update presentations were made to JLC and CB12. Also specific project presentations were made to CB8 and CB12.

## I. Technical Advisory Committee #1, November 6, 2015, Queens Borough Commissioner's Office

Representatives from NYCT, York College, Community Boards 8, 10, and 12, NICE Bus, Council Member Lancman's office, Long Island Railroad, Greater Jamaica Development Corporation (GJDC), State Senator Leroy Comrie, and various NYCDOT units were in attendance. The objective of the meeting was to introduce the study, present the draft scope of work as well as receive feedback from the TAC.

Carren Simpson (NYCDOT) presented the draft scope of work identifying the study area boundaries, study process, the various subjects and issues, the study timeline, and the relationship to the Jamaica Now Streetscape Initiative. After the presentation, attendees were invited to comment or ask questions.

Pertinent comments and questions are outlined below.

- Comment: *State Senator Leroy Comrie* – made general comments on truck issues in the area. He also stated that 170th Street should be a natural truck route for north/south access because no one would use 168th Street which is generally blocked by NYPD and many trucks ticketed. He also stated that Liberty Avenue is not a truck route and that there are a lot of industrial enterprises on Liberty Avenue with significant truck traffic.
- Question: *Mark Nieves (GJDC)* – is the scope of work for the study being developed by a consultant? And, would projects generated by the study be further developed by consultants? Michael Griffith, DOT, stated that the transportation study would be conducted in-house and Erin Maciel (DOT Urban Design) informed the group that a consultant would do the streetscape study.
- Question - *James Minto, York College* – would the study address ADA issues? Michael Griffith stated that ADA issues will be addressed and that meeting the needs of individuals with mobility challenges is very important to the agency in that a unit was recently created that addresses those issues.
- Question – The study timeline shows three public meetings, would there be a website to provide interim updates? And would there be any other means for the community to express their concerns? Erin Maciel, stated that DOT is looking forward to have extensive public participation. She pointed out that the official website of GJDC is one of the resources for the public to get updates. Also, DOT is open to workshops in the future to facilitate community input. The Jamaica Now website is also a resource.
- Question - *Jacob Balter, LIRR* - would the off- street parking study examine both private and publicly accessible parking? Michael Griffith responded in the affirmative.
- Question – would the study address public parking, parking permits (placard), and business parking needs?
- Comment - The feasibility of multi-level park stalls (seen in Manhattan) should also be examined.
- Comment - SBS style fare collection should be considered in areas where bus ridership is high and where a large number of commuters wait for buses.



**I. Technical Advisory Committee #1, November 6, 2015, Queens Borough Commissioner's Office cont'd**

- Question: What measures would be used to inform the public of upcoming public meetings as many people would want to attend? Michael Griffith responded that the information would be disseminated through flyers, Community Boards, BIDs, elected officials and local community papers such as the Queens Chronicle.
- Question: *NYCT representative* - would DOT be considering other possible SBS routes such as Q113 and Q114?
- Question: When will the first public meeting be held? It was stated that the first public meeting would be held in early December.



## II. Public Meeting #1, December 2, 2015, The Harvest Room, 90-40 160th Street, Jamaica

The first public meeting was held in a workshop format with breakout sessions. Six topics of discussion were identified. They were: 1) Mobility, Pedestrians, Bicycles and Safety, 2)

### Discussion Topic #1: Mobility, Pedestrian, Bicycles and Safety

The following pedestrian, bicycle and safety issues were raised:

#### 1. Bus & pedestrian safety issues:

- Sutphin Boulevard and Jamaica Avenue are heavy bus routes that impede pedestrian safety along these corridors.
- Consider 150th Street as a bus route instead of Sutphin Blvd; few people travel on some of the buses.
- Buses Q6 and Q8 should be rerouted.
- Too many buses competes each other for the space.
- Bus lanes on Jamaica Ave are not used by buses.
- Streets are too narrow for the buses when they are trying to make left/right turns.
- Jamaica Ave EB from Parsons Boulevard is congested. Intersection of Archer Ave/Parsons Blvd should be studied for safety reasons.
- Traffic on Jamaica Ave goes from two lanes to one, than again from one to two lanes at Walgreens, thus creating a bottleneck along corridor.
- Taxis, vans drive unsafe, cutting corners with dangerous moves.
- Green cars-taxi near E, J, F stations becomes hazard to pedestrians, especially at SW corner of the intersection (Archer Ave/Sutphin Blvd).
- Terminal located at 165th Street/89th Avenue and Merrick Blvd is an unsafe place for pedestrians. Though LPI is present here, pedestrians need more time for safe crossings.
- Hillside Avenue has long blocks with no crossings; there is a large gap for pedestrians to cross the street.
- Pedestrians cross Hillside Avenue everywhere - jaywalking, particularly between 160th, 164th, and 165th Streets.
- Too many buses making left turns with their dangerous moves jeopardize pedestrians.

#### 2. Bikes:

- Bring "CitiBikes" to the downtown Jamaica.
- Is Jamaica Avenue suitable for a bike route?
- Bring more bike racks to the downtown area.
- The area around Jamaica Hospital is not quite utilized-congested;
- York College can be connected via bike routes to subway/bus stations.
- Bike as a travel mode is good alternative to reduce traffic congestion, parking shortage, air pollution and noise in the downtown area.

#### 3. Environmental/quality of life:

- Poor quality of street; pavement and sidewalk conditions deteriorated along Archer Ave and Sutphin Blvd (since last year 13 storms occurred).
- Cobblestones are half cracked; existing sidewalks need repair.
- Provide better lighting on Jamaica Avenue. It's dark and unsafe to walk along Jamaica Avenue between Sutphin and Parsons Blvds.
- No Police or Traffic Enforcement Agents presence!
- No transit police at the stations!
- Provide more enforcement to the area, particularly near the subway stations. Also, somebody must be directing traffic!



## II. Public Meeting #1, December 2, 2015, The Harvest Room, 90-40 160th Street, Jamaica cont'd

### 4. Traffic circulation:

- Consider converting Jamaica and Archer Avenues as one-way pair. Use the space to create an exclusive bus lane full time, one protected bike lane, and parking.

### Discussion Topic #2: Traffic and Congestion

#### 1. Dilapidated/Distressed pavement condition.

- Pavement condition on Jamaica Ave between 175th Street and 183rd Street is poor
- DDC completed a project on the northwest section of the secondary study area between Hillside Ave and Union Turnpike and between 168th Street and Main Street, but the roadway condition in this section of the study area is poor.
- On Archer Avenue between Van Wyck Expressway and Merrick Boulevard the pavement markings/bus lane is worn out and the roadway condition is poor.

#### 2. Truck activities and speeding in residential area.

- Truck activities have been observed in residential areas between 178th Street and 155th Street.
- Truck drivers try to avoid heavy traffic delay on Hillside and Jamaica Avenues in order to access Van Wyck Expressway.
- A new construction on Jamaica Avenue/183rd Street contributes to traffic delays.
- Trucks accessing the industrial section along Dunkirk Street between Liberty Avenue and Ilion Avenue obstruct traffic movement blocking the lane.
- Truck on Dunkirk Street, heading south to Linden Boulevard, speeds in the residential section and creates a major safety issue.
- Truck loading and unloading activities on 94th Avenue between Van Wyck Expressway and Sutphin Boulevard creates congestion

#### 3. Lane Configuration/Signal

##### A. Van Wyck Expressway @ Atlantic Avenue

- The lane configuration on the EB approach was one left, one left-through, and a through (L-LT-T); this was changed to one left and two through lanes, but drivers are still using one of the through lanes as a left turn. Police uses this spot to issue tickets to drivers making this illegal maneuver since most drivers don't know about the change or do not follow the lane configuration.

##### B. Linden Boulevard and Farmers Boulevard

- Heavy left turn NB and SB on Farmers Boulevard and signal issues at this location; examine the feasibility of having a left turn signal on these approaches.

##### C. Marne Place @ Sayres Avenue

- There are safety issues due to the roadway configuration; an all way stop sign be installed forcing traffic to stop on all approaches.

#### 4. Transit/ Bus operation/Dollar Van

- There are too many buses on the street, especially on 91st Avenue and Sutphin Boulevard.
- Too many buses make a left turn at Jamaica Ave/Sutphin Boulevard
- Dollar vans normally block the bus stop on Parson Boulevard and park illegally in front of the Social Security building.
- Bus idling in the area around the bus depot on 105 Avenue and Merrick Boulevard poses threat to residents.





## II. Public Meeting #1, December 2, 2015, The Harvest Room, 90-40 160th Street, Jamaica cont'd

### 5. Speed/Traffic delays

- Traffic delay on Hillside Ave between 183rd Street and 172nd Street is problematic
- During the PM peak hours there is generally traffic delay on Guy R Brewer Boulevard between Archer Avenue and Linden Boulevard due to narrow lanes and heavy bus activity

### 6. General issues

- The absence of direct North-South through access in the study area is problematic. The possibilities of street direction changes to address this should be explored
- Traffic enforcement agents should be present in the primary study area.
- Linden Boulevard between Merrick Boulevard and Farmer Boulevard is restriped as one moving lane and a bike lane but drivers, including dollar vans drivers, use it as two moving lanes.
- The vicinity of the western section of Hillside Avenue has a high number of schools that bring high pedestrian traffic to the area.

## Discussion Topic #3: Transit

### 1. Buses

- There are too many buses at the intersections of Jamaica Ave/Sutphin Boulevard and Jamaica Ave/Parsons Blvd.
- Parking in bus lanes, especially near the Social Security building, is common.
- Additional traffic enforcement is needed to manage traffic and reduce illegal parking in bus lanes. Jamaica Avenue/Sutphin Boulevard – buses make left turn from the travel lanes.
- Dedicated bus lanes take a traffic lane away.
- Bus travel time is slow because of congestion near LIRR station.
- A bus terminal near the train station is needed. Convert a municipal parking lot, but many are privately owned. Merrick site to become a bus depot, existing one too small.
- Why can't buses that make a left from Jamaica Ave to Sutphin Blvd use 150th Street?
- Green cabs often park in Sutphin Boulevard/Archer Avenue intersection.
- Buses, some empty, are sometimes observed on small side streets, eg., 90th Avenue and 170th Street – why are they there? They park in front of homes.
- Bus shelters on Archer Ave are old.
- Bus stop in front of a slaughter house on Archer Ave is unappealing.
- There are too many people under Sutphin Boulevard/Archer Avenue overpass; green cabs should be relocated; they need a base or cab stand.
- 94th Ave and Sutphin Boulevard (side street) - why are taxis not using this street? It is made for drop off but is not used for that – taxi activity should be here to clear roads for buses
- Archer Avenue/153rd Street (north side) – this area could be a good place for taxis but the Social Security Building loading dock makes it unfeasible.

## II. Public Meeting #1, December 2, 2015, The Harvest Room, 90-40 160th Street, Jamaica cont'd

### 2. Commuter Vans (aka Dollar Vans)

- Dollar vans sitting in bus stops force buses to pick up passengers away from the curb, this happens mostly at night.
- Police doesn't stop illegal dollar van activities. Police say if they get 5 reports in a short time they will do something.
- Fines should be increased for dollar vans and more frequent license renewal. Cost of a license is \$75,000. 158th Street under tunnel is a designated spot. Need signage for this.
- The study area is served by buses, so commuter vans are not needed.
- Vans are \$2 and are faster than buses.
- Archer Ave/Parsons Blvd – MTA allows vans to be in bus stops.
- Dollar vans are going to Far Rockaway.
- Signage, police presence, and surveillance cameras are needed to stop people from picking up passengers in bus stops.
- TLC should be able to fine or seize illegal dollar vans.

### 3. General Issues:

- There are issues with crime and insufficient lighting at Jamaica Center Station
- 160th Street – not enough lighting, drug use.
- Traffic on Jamaica Ave is unpredictable due to double parking.
- During the morning rush hour, there are people smoking herbal cigarettes – police should prohibit smoking in the train station.
- While Jamaica is changing, the needs of the present community should be addressed.
- On Mondays the metro card vending machines will not take cash.
- Too many vehicles are parked near the Social Security building. Social Security employees park around the building.

## Discussion Topic #4: Quality of Life, Streetscape & Environmental Factors

### 1. Streetscape Issues

- Lack of lighting along major portions of the Jamaica, Merrick Boulevard, and Archer corridors has not made the area more inviting and welcoming. People do not feel safe. A representative from the Jamaica Development Corporation discussed some business concerns about poor lighting and attracting business during the night time.
- More art work along LIRR Retaining Wall. Some segments of the wall are not beautified and are an eyesore to the community.
- Rufus King Park has been deemed as unsafe and uninviting. They'd like to see a more opened park with future events. More concerts and other events are desirous at this park.
- Jamaica Ave, east of Merrick Boulevard, needs green improvements (plants and trees).
- The concentrated NYPD presence around Jamaica Ave/Parsons Blvd is not as effective as if they were more dispersed along key corridors to make patrons and customers feel safer.
- Need for sidewalk widening and city benches were identified in various locations.
- Participants suggested developing a partnership with MTA to improve the experience.





## II. Public Meeting #1, December 2, 2015, The Harvest Room, 90-40 160th Street, Jamaica cont'd

### 2. Major Destinations

- Transportation Hub, Movie Theater, York College, Queens Central Library, Children Discovery Center have been identified as major trip generators in the study area and are pleasant experiences.

### 3. Parking

- Residents noted that their commute to Downtown Jamaica is mostly facilitated by bus.
- Lack of parking is a deterrent to accessing the CBD by the auto mode. Those who drove were generally accompanied by someone who would drop them off at their desired location to avoid searching for parking.
- More parking is needed

### 4. Road Resurfacing

- Poor pavement condition has made it a challenge to use bike lanes, and creates uncomfortable rides through the area.

### 5. Character

- More department stores on Jamaica Ave was desirable to some residents; others felt that what makes it unique is the large concentration of “mom and pop” stores and they loved the idea of knowing their vendors and interacting with them.

### 6. Bus Circulation

- Pedestrian and vehicular safety improvements are needed at the 165th St Bus Terminal (Merrick Boulevard between 89th & 90th Ave) due to unsafe bus operations.
  - a. Numerous complaints have been filed
  - b. What is DOT's process in determining Vision Zero priority intersections/corridors? A site visit of the operations was requested for further investigation.
  - c. Increased use of the terminal by additional bus routes has occurred recently
  - d. A detailed assessment of the history of bus operations at the terminal was requested.
  - e. DOT was asked to explore redesigning the bus terminal (similar to Archer Ave), possible roadway conversions in the area to facilitate safe bus operations for all road users, as well as provide proper delineation of right of way.

### Discussion Topic #5: Parking

- Parking is in very high demand around the transit hubs and near the theater
- Dollar vans are often double parked along Parsons Blvd to load and unload passengers
- Trucks are often double parked on Jamaica Ave for loading and unloading
- Hillside Ave has similar double parking issues to Jamaica Ave, but its width allows vehicles to pass
- There were previous issues of park and ride activities near the 179th street F Train station but that is no longer a problem.
- Dense residential land uses north of Hillside Ave make it extremely difficult to find parking spaces. As single family houses are replaced by higher density multifamily residential uses, the on-street parking demand increases



- Many folks who shop in the downtown core park south of Liberty Ave and walk north into the core.
- Illegal, short term parking activities is common near the York College main entrance on Guy Brewer Blvd. Consider changing the parking regulations to facilitate this need.
- Variable rate parking in the downtown core should be considered.
- Residential parking permits, similar to Jersey City, should be considered.
- Merrick Boulevard, south of Liberty Ave, has major double parking issues
- Use of alternate side parking regulations might help get parked cars moving
- Foch Boulevard has a wide planted median but the street is too narrow.
- Zoning requirements for affordable housing require less off-street parking spaces which increases the on-street parking demand

#### **Discussion Topic #6: Trucks**

- Trucks using 170th Street to travel between Liberty Avenue and Jamaica Avenue are a nuisance to residents. Trucks from “Regal Recycling” (located on Douglas Avenue just east of 170th Street) and other trucks from the direction of Long Island use 170th Street to bypass the legal truck routes.
- Truck traffic was substantially reduced on 170th Street after “No Trucks” signs were installed following complaints to the city; in response truck traffic shifted to adjacent streets parallel to 170th Street.
- A representative from the NY State Senator Leroy Comrie’s office asked that 170th Street and possibly other parallel streets be designated as local truck routes to provide access to trucks travelling in the north-south direction.
- There is heavy truck traffic in the vicinity of York College
- Use of non-truck routes to connect between the parallel truck routes of Hillside Ave, Jamaica Ave and Liberty Ave was an issue for many residents; only one connector exists between these three streets
- Commuter van users noted that truck loading and unloading causes congestion on 94th Avenue EB, between Sean Bell Way and Sutphin Boulevard.
- Industrial businesses located across the street from the train station should be considered for inclusion in off hour deliveries or least not between 7-9 am.
- Night Enforcement could be improved, since trucks are reportedly using non truck routes even nearby though truck routes are not congested



### III, Public Meeting # 1 – Part 2, December 16, 2015, Queens Borough Commissioner's Office

CM Lancman requested that another public meeting to be held to benefit CB 8 as some residents and community representatives from the northern section of the study area (secondary) could not attend the first meeting. Their concerns/issues expressed are highlighted below.

- The area does not have bicyclists - very few, therefore putting bikes on the roadway taking away capacity is not good for traffic, especially on the major corridors of the study area such as Hillside Avenue
- Install a pedestrian countdown signal at Queens Boulevard and Main Street, and Queens Boulevard and 84th Drive
- In the area of Main Street and 84th Road there is the need for traffic calming as there is speeding; intersection should be signalized; there is a school nearby
- On Main Street northbound right side people walk along the wall heading to the train station, the area is very isolated, dark, and there is a lot of traffic. Requested to look to the lighting and see if can be improved.
- At the intersection of Queen Boulevard SR close to Van Wyck there is a need for a traffic light at this location; drivers making the left turn do not see the traffic.
- Traffic signals at Grand Central Parkway exits at 164th Street, Parsons Boulevard, and Main Street are not to be synchronized with adjacent signal; as a result there is heavy congestion, and there have been a number of crashes on this segment of the roadway.
- There are problems in all WB left on Grand Central Parkway.
- The need for stop signs along 84 Drive and at Smedly Street. There is school very closed by, and no crosswalks.
- Bad roadway conditions in the area north-west section of Hillside Avenue after some sewer work had been done. This issue was raised before by another community member.
- There are no problems north of Hillside Avenue with van or busses. A new SBS bus line was installed in Main Street. At this point is too early to say if the new route is beneficial or not.
- It was expressed the possibility of exploring assigning commercial spaces for trucks loading and unloading sections. An example already in place is at Sutphin Boulevard between Hillside and Archer Avenues.
- There is a need for parking in the area, particularly when there have been intense residential developments taking place in the area.
- Queen Boulevard with Hillside and Main Street there are issues with the police parking on the area next to the server road.
- A need for a crosswalk on Grand Central SR and Main Street NB
- During rush hour (7-8 AM), 178th Street and 179th Place is very congested. It takes approximately 20 minutes to travel from Jamaica Avenue to Hillside Avenue. A traffic signal analysis should be done at 90 Avenue and 178th Street.
- Around intersection of 84 Drive and 143 St there is a school. Drivers have low visibility while doing the turn. Request for investigating those 3 locations.
- Double parking on Hillside Avenue, especially north side, between 164 Street and 169 Street, a lot of commercial activities due to the presence of many stores.
- Investigate traffic operation (left turn movements) at Hillside Avenue and Midland Parkway.
- There is a lot of congestion north of Hillside Avenue because both 168th Street and 168th Place are northbound; can 168th Place be made southbound? If 168th Place is reversed it may reduce congestion at 169th Street/Hillside Avenue caused by merge of traffic from Homelawn Street
- Consider installing metered parking on Hillside Avenue (north and south sides) between 179th Place and 182nd Street to provide additional parking for businesses.
- There are a lot of buses at the Hillside Avenue/179th Street intersection that queue and block the crosswalk; there are many buses on these corridors
- Roadway condition on Jamaica Avenue around 186th Street is so poor that many motorists use Hillside Avenue as an alternative; this contributes to congestion on Hillside Avenue



#### IV. Technical Advisory Committee Meeting #2, March 8, 2017, Queens Borough Commissioner's Office

In attendance were representatives from LIRR, NYCT, RPA, PANY/NJ, NYSDOT, MTA Bus, AM. C. Vanel; SS. L. Comrie and various DOT units. The purpose of the meeting was to present the existing conditions analysis and preliminary short-term recommendations. Following the presentation, a few comments were made and questions asked.

The comments and questions are outlined below.

- Question: There are other initiatives undertaken by other agencies, how are they coordinated?
- Comment: It was suggested that a map with the locations of the various initiatives be prepared.
- Comment: 159th Street by York College (gateway street) needs to be improved.
- Question: It was asked if there is a slide summarizing the short term recommendations.
- Response: In terms of initiative, BC Garcia said pedestrian islands will be built along Hillside Avenue and a solid double line will be installed on Jamaica Avenue





## V. Public Meeting # 2, March 20, 2017, The Harvest Room, 90-40 160th Street, Jamaica

The objective of the meeting was to present the findings of existing conditions analysis. Michael Griffith made a brief introduction to provide background information on the study. Carren Simpson, the project manager, then made a presentation of the Existing Conditions Analysis and Preliminary Recommendations. Following the presentation, members from the audience were invited to comment or ask questions. In general attendees expressed a lot of frustration about transportation issues (MTA/NYCT surface transit related).

This meeting was attended by elected officials (I. Daneek Miller), elected official representatives, CB 12 representatives, NYPD, residents, and DOT staff. Comments from meeting attendees:

### 1. Surface Transit - buses

- Bus traffic in Jamaica is horrible. Bus volume must be reduced.
- MTA needs to be at the table to answer to the community.
- MTA representatives should be present at meetings to discuss the transit issues that the area faces.
- A resident mentioned that she stopped taking the bus because it is too crowded and began to drive to work
- Inadequate bus service that forces people to take commuter vans is a form of “transportation apartheid”; southeast Queens communities need to be connected, so should transportation in CB 12.
- The new 165th Street bus depot will have negative impacts in traffic and the environment.
- Select Bus Service was implemented without adequate community involvement. The high number of buses contributes to air pollution and deteriorate the quality of life of the residents. Participants also said that they want to see that city agencies are really working together with the people in the community to create a real plan that address the real concerns and problems that they have.
- CB 12 should be at the table on major issues affecting the community. The CB was not at the table when the Q44 was being discussed. The bus does not serve the community and is generally empty in the community
- Wait time for buses is very long and buses are generally crowded; also they run very slow, taking a long time to get to their destinations.
- Some sidewalk space is inadequate and very dangerous for people waiting for the bus.

### 2. Commuter Vans

- Additional enforcement is needed for commuter vans; the 158th Street underpass needs to be cleaned

### 3. Trucks

- Trucks associated with Royal Waste/Regal are a major problem in the community. Why are Merrick Bl/168th St truck routes? Trucks should not be on these streets. Why are trucks allowed to park under LIRR tracks?
- More police enforcement needed to manage impact of heavy truck activity on residential uses.

### 4. Traffic

- Study looked at one peak hour. Analysis should expand beyond the peak hour of knowing that congestion span a few hours.
- Proposals for street conversion must be more finalized to see how many parking spaces will be taken; the presence of the school should be considered in the analysis.
- Analysis should include: impact of school children on transit service; express buses going to Manhattan; commuter van and how residents are



## V. Public Meeting # 2, March 20, 2017, The Harvest Room, 90-40 160th Street, Jamaica cont'd

being affected economically by having to pay 2 fares to commute every day.

- Question: Will the analysis include new big development coming to the area and their traffic implications? Response: The future conditions analysis will take into account all the new developments and the trips will be added to the future 2026 network.
- Poor sidewalk conditions should be addressed
- CM Daneek Miller – a comprehensive study of Queens is needed; for 25 years there has been talk of bus depot; but no conversation on how to improve service provision to the community and how to reduce pollution; truck traffic is destroying infrastructure; many intersections need to be daylighted; along Union Turnpike the express bus runs throughout the day but express buses from southeast Queens only run during the AM and PM peak period and these express buses do not go downtown to lower Manhattan so SE Queens residents must pay an additional fare; LIRR should have fare equity – there will be a pilot project next year; fare equity would help to reduce congestion; more should be done.

### 5. Other

- Extend study area beyond Linden Boulevard; 50% of commuter to Downtown Jamaica is beyond Linden Boulevard
- Enforcement is key to address commuter van, placard, and truck violations.
- The 165th Street Bus Terminal generates a lot of noise; the terminal is inappropriately located in the midst of residential/institutional uses





## VI. Technical Advisory Committee Meeting, #3 March 21, 2018, Queens Borough Commissioner's Office

The third and final technical advisory committee was held to culminate study findings, and to address issues with proposed solutions. About fifteen transportation professionals attended the meeting and represented agencies including: the Metropolitan Transit Authority (MTA), New York State Department of Transportation (NYSDOT), New York City Transit (NYCT), Long Island Rail Road (LIRR), the New York State Senator Leroy Comrie's Office, the Queens Borough President's Office and the Department of City Planning, Queens. Each representative served as an advisory member from their perspective field of focus and asked questions accordingly.

Feedback comments and questions are outlined below.

- Comment: *MTA Representative* - Jamaica Avenue between 147th and 148th avenue will need truck loading and unloading zones. The need for these zones extend out to all of Jamaica Avenue, as it is a commercial strip.
- Question: *Representative from New York State Senator's Office* – Regarding community input, how do we prioritize needs? There are conflicting desires within the input and the recommendations.
- Comment: *Representative from the Queens Borough NYCDOT Office* – There have been 19 one-way conversions last summer. It's like playing chicken with one another. To choose between parking or loading zones, we would prioritize residents and their safety. Vision zero is an initiative for safety and is our top priority.



## VII. Public Meeting # 3, March 28, 2018, The Harvest Room, 90-40 160th Street, Jamaica

On March 28th Traffic Engineering & Planning conducted the third and final public meeting for the Downtown Jamaica Transportation Study. The attendance reflected a broad spectrum of the community - residents, business owners, elected official representatives, commuter van drivers and commuters, stakeholders such as Greater Jamaica Development Corporation, Borough President Office, Community Board 12, Jamaica Center BID, and Department of City Planning among others. The meeting was attended by several commuter van operators and riders who expressed their opposition to the planned relocation of the commuter van stop from Parsons Boulevard to 153rd Street.

Michael Griffith, NYCDOT, opened the meeting by welcoming attendees and introducing the study team; he then made a brief presentation on the history and background to the study, its goal and objective, and the study area boundaries. Subsequently, Carren Simpson, project manager, presented the summary of findings and recommendations. After the presentation, attendees were given the opportunity to ask questions or make comments on the presentation which are summarized below by subject.

Some pertinent comments:

Comment: The presentation did not discuss van operation, truck activity and livery cars.

DOT Response: The study is very comprehensive and address a lot of areas. However, due to time constrains not all the recommendation could be presented. For example, the study looked at truck activity but there is also a citywide truck study that will examine more closely truck issues in the area. Also, the study identified some space for the livery taxis (black cars) on 91 Avenue at Sutphin Boulevard which when implemented will help to decrease congestion caused by these vehicles.

Comment: Explain again the bus lane proposal for Jamaica Avenue to move it to the middle lane.

DOT response: In the analysis, it was observed that most of the buses about 60% made the left turn at Sutphin Boulevard, therefore this proposal will improve through traffic and ease congestion.

Comment: Converting 91 Avenue to one-way eastbound will interfere with the daycare operation as it will be and inconvenience for the kids who are special needs kids and parents.

DOT response: The proposal will not create additional conflicts. DOT met with school representatives and they did not have any concerns about the proposal.

Comment/Question: Why something similar to Fulton Street Mall (transit plaza) was not applied in this study? Did the study look at bikes routes?

DOT response: The conditions of this area are very different - features such as the LIRR wall, York College, and the land use is different - these things limit the possibilities of implementing similar solution. In regards to bike, the study team met with the bike group to explore possibilities. Based on previous meeting, they have not been requested by the community and the demand is low in the area. However, the study team will continue to look for ways to expand bike facilities in the future.

Comments: 1) one recommendation is to take parking from one side in a residential area. This recommendation should be done in consultation with the residents of the block; 2) three major developments are coming, how the area is going to deal with all these traffic coming; 3) 150th Street is very narrow how will the conversion to two-way work when there is not enough space.

DOT response: Most of the proposals still have to be presented to the community board for approval and they are still being studied and analyzed, and DOT will address the issues being raised.





## VII. Public Meeting # 3, March 28, 2018, The Harvest Room, 90-40 160th Street, Jamaica cont'd

Question/Comment: What is the approval process and timeline for the implementation of the recommendations presented? It would be helpful for the community to see a chart/table showing this information so the community will have a more real expectation of what to expect and when.

DOT response: Due to the size of the study area and the nature of the recommendations, there is not one particular answer for all of them, it varies. For example signal timing changes can be done soon, within 1 to 3 months. However, other recommendation such as street improvement projects can take longer. These SIP projects requires further analysis and coordination with other city agencies and could take from 1 to 3 years to implement. On the other hand, capital projects could take from 5 to 10 years while going thru the process of preliminary design/ final design and construction. In each of these projects there is a time after implemented to evaluate the changes and made adjustments, if needed.

Comment: Attendee expressed strong concerns about upstate food vendors being given preference over local residents, such as van operators. The relocation of the commuter van stop was being done without talking to the community or consulting with the community vans owners. Relocation of the commuter van stop will affect their business greatly.

DOT response: The study documented the van activity and is aware of their demand and the needs for vans in the area.

Comment: Does the study consider school children in the area.

DOT response: As part of the analysis, schools were examined and the specifics of each of them, including conducting counts to understand demand. DOT School Safety Unit is looking to do a few improvement measures around these schools.

Comment: Moving the van stop to have a streetscape project in that area is not beneficial to the residents. People like to use the vans to get to the train station because the buses are not sufficient and they run slow, especially later in the day. 47% of the residents are immigrants and they count on the vans as their main mode of transportation to conduct business and to get people to work filling up the gap that the busses cannot provide. The plaza will be a pedestrian place for people to look at the Social Security Building across the street, which is not a benefit or beautification in any way.

Other comments from meeting attendees:

### 1. Surface Transit - buses

- Buses need to run efficiently, as they run slowly and are often delayed.
- The MTA needs to be present during meetings to hear community concerns.
- Will there be an expansion of bus services once developments are completed?

### 2. Commuter Vans

- Drivers are a staple of Downtown Jamaica, and commuter vans provide low-level entry jobs for a competitive market.
- Drivers come from the neighborhood and may have secondary sources of income.
- Service is imperative as many residents rely on commuter vans when NYCT buses and MTA trains have issues.
- It is a cheap way to navigate the neighborhood
- The newly proposed location for the commuter van stop is a place where people congregate for illegal activities. It is an uncomfortable spot, particularly for women.
- Taking away commuter vans would “bring in people from other states”—or entice food vendors from outside of the neighborhood to come in.



## VII. Public Meeting # 3, March 28, 2018, The Harvest Room, 90-40 160th Street, Jamaica cont'd

### 3. Trucks

- The weight of the trucks are tearing up the roads.
- Truck activity and delivery cars were not discussed in the presentation.

### 4. Traffic

- In addition to changing land use, new developments may exacerbate traffic conditions
- Adding a median to stop the U-turn is counter intuitive as it will block the street for emergency vehicles to operate. Left turn calming implementations may also be hindered by the snow, and may not work as effectively as planned. Both devices may act as a hindrance, rather than a tool for the community.
- 150th Street will not be able to accommodate buses as its very narrow. The only solution is to widen the street.
- The peak hour should be adjusted to accommodate traffic.
- Poor sidewalk conditions should be addressed as soon as possible.

### Other

- Many commuters come from outside the indicated study areas, especially if they are attending high school or college here.
- Presence and enforcement of MTA and NYPD cops needed.
- Other methods of community outreach would be appreciated, such as community surveys or community based discussions to better identify issues within the neighborhood.