Laurelton/Rosedale Transportation Study

Final Report

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Laurelton/Rosedale Transportation Study

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EXECUTIVE SUMMARY

S-1 Introduction

The Laurelton/Rosedale Transportation Study was initiated in response to community concerns regarding pedestrian safety issues along 147th Avenue (in the vicinity of Brookville Park and the Little League baseball field) and traffic congestion generally along North Conduit Avenue and South Conduit Avenue, Belt Parkway, Merrick Boulevard, Francis Lewis Boulevard, and Brookville Boulevard. The purpose of the study is to assess the existing and future traffic and transportation conditions in the study area, address community concerns, and improve the traffic conditions for all street users. The study area is bounded by 130th Avenue to the north, Hook Creek Boulevard to the east, 147th/149th Avenues to the south, and Francis Lewis Boulevard/230th Place to the west. The entire study area falls within Queens Community District 13.

S-2 Demographic Analysis

The study area 2000 population of 25,689 decreased by 516 (-2.0%) to 25,173 in 2010. Much of the population loss occurred north of Conduit Avenue while tracts south of Conduit Avenue experienced growth or remained relatively stable. The study area's 16,330 persons/sq. mile population density is less than that of Queens and New York City while the 3.19 household size and $82,617 median household income were much higher than Queens and New York City. Eighty-seven percent of households in the study area owned at least one vehicle and the journey to work auto mode share of 57% was higher than the average in New York City.

S-3 Land Use and Zoning

The predominant land use in the study area is low density residential, with commercial retail on main corridors such as Merrick Boulevard, Francis Lewis Boulevard in the vicinity of North/South Conduit Avenues, 243rd Street, between Mayda Road and Caney Lane. The retail activity includes national chain stores, restaurants, general retail, and fast food chains.

Some manufacturing use exists on Hook Creek Boulevard between 145th and 147th Avenues in the southern most section of the study area.

S-4 Traffic and Transportation

The traffic and transportation analysis focused on the main corridors in the study area (Merrick Boulevard, North/South Conduit Avenues, Sunrise Highway, 147th Avenue, Francis Lewis Boulevard/230th Place, Laurelton Parkway, Brookville Boulevard and Hook Creek Boulevard).

Traffic capacity was done for 20 intersections under the 2012 existing traffic analysis and 2022 future conditions. The level of service analyses showed 10 intersections had one or more lane groups with a poor level of service (D, E, or F) during one or two peak hours. The most congested corridors are North/South Conduit Avenues, Merrick Boulevard, Hook Creek Boulevard and Sunrise Highway. The slowest travel speeds were recorded along Brookville Boulevard (average between 12-15 mph) and Francis Lewis Boulevard (11-13 mph).

S-5 Public Transportation

The existing public transportation services in the study area are provided by commuter rail and NYCT bus. Six local bus lines provide service on every major corridor. The X63 provides express service to Manhattan. The Rosedale station on the Long Island Rail Road's Atlantic Branch is located at the intersection of Sunrise Highway, Francis Lewis Boulevard and 243rd Street. The busiest bus line, the Q111, has 4,154,512 annual riders.

S-6 Parking

The parking analysis inventoried existing on-street and off-street parking facilities, capacities, and utilization. It also evaluated curb-side parking regulations. There are 97 accessory parking facilities in the study area with a total capacity of 2,105 spaces. On-street parking utilization on major corridors such as Jamaica Avenue, Hillside Avenue, Springfield

Boulevard, and sections of Francis Lewis Boulevard is high particularly during the PM peak hours.

S-7 Pedestrian Analysis & Bicycle Facilities

The pedestrian analysis identified locations with high pedestrian volume along major retail corridors, around bus stops, and adjacent to significant trip generators. Vehicle/pedestrian capacity analysis was conducted for corners and crosswalks and conflicts were observed. The intersections chosen for detailed LOS analysis were: Francis Lewis Boulevard/South Conduit Avenue, South Conduit Avenue/243rd Street, and Brookville Boulevard/147th Avenue. The study area has one protected bike path that extends from Merrick Boulevard to 147th Avenue through Brookville Park.

S-8 Crash Analysis

A detailed three-year crash analysis (2010-2012) was conducted for the entire study area. Three intersections were identified as high crash locations: 1) 230th Place and South Conduit Avenue; 2) Laurelton Parkway and Francis Lewis Boulevard; 3) Brookville Boulevard and South Conduit Avenue. Seven fatalities occurred during this period.

S-9 Goods Movement

Goods/truck movement is a function of designated truck routes along with the origin and destination of goods and services. North/South Conduit Avenues are through truck routes, while Merrick Boulevard is a local truck route. Truck activity is highest along North/South Conduit Avenues and Merrick Boulevard, particularly at the intersection of Merrick Boulevard and Francis Lewis Boulevard.

S-10 Public Participation

Public participation is an integral part of the planning process that helps to identify problems and issues in the study. This is achieved through a series of Technical Advisory Committee (TAC) and public meetings. A TAC meeting was held on March 20, 2013 and the first public meeting was held on June 11, 2013 to present the draft scope of the study. The

public concerns ranged from traffic congestion on principal arterials and pedestrian safety near the Brookville Park to truck traffic on residential streets.

S-11 Recommendations

The analysis and community input led to recommendations to enhance traffic operations and pedestrian safety. Issues based recommendations for the following seven locations were developed.

1. Brookville Boulevard at Merrick Boulevard (traffic operations)
2. Brookville Boulevard and 135th Avenue (traffic operations)
3. Sunrise Highway and Francis Lewis Boulevard (street lighting)
4. Sunrise Highway at Francis Lewis Boulevard (pedestrian safety)
5. Sunrise Highway at Hook Creek Boulevard (pedestrian safety)
6. Francis Lewis Boulevard between 246th Lane & 254th Street (speeding)
7. Francis Lewis Boulevard between 145th Avenue & 147th Avenue (lack of sidewalk)
8. 147th Avenue between Brookville Boulevard & 232nd Street (roadway configuration)

1 INTRODUCTION

1.1 Background

This study was initiated in response to requests from the community and elected officials to address traffic congestion and safety in the Laurelton/Rosedale area. Many of the principal arterials in the area experience significant peak hour congestion. The main congested corridors are: North and South Conduit Avenues/Sunrise Highway, Merrick Boulevard, Francis Lewis Boulevard, 147th Avenue, and Brookville Boulevard. The Belt Parkway/Sunrise Highway/North Conduit Avenue location was identified as a potential bottleneck in NYMTC's Regional Transportation Plan (RTP); also, the congestion maps identified this section of the Belt Parkway as being extremely congested. The existing level of congestion significantly affects the local surrounding street network. Large traffic generators such as the Green Acres Mall also contribute significantly to the congestion.

1.2 Study Area

The study area is bounded by 130th Avenue to the north, Hook Creek Boulevard to the east, 147th Avenue to the south and Francis Lewis Boulevard/230th Place to the west. It is located in the eastern most section of Queens and borders Nassau County. It is in relatively close proximity to JFK and LaGuardia airports; and it is well served by regional facilities, Long Island Rail Road (LIRR), and surface transit, but lacks subway service. Major arterials providing access to the study area are the Belt Parkway, North and South Conduit Avenues, Merrick Boulevard, Laurelton Parkway, Brookville Boulevard, Hook Creek Boulevard and Francis Lewis Boulevard. The study area's main commercial corridors are Merrick Boulevard and Francis Lewis Boulevard. It is home to Brookville Park that stretches along Brookville Boulevard from North Conduit Avenue to 147th Avenue and beyond. There are five public schools, four universal pre-kindergarten centers, and six day care centers in the study area. Figure 1-1 shows the study area in a regional context.

Figure 1-1: Regional Context

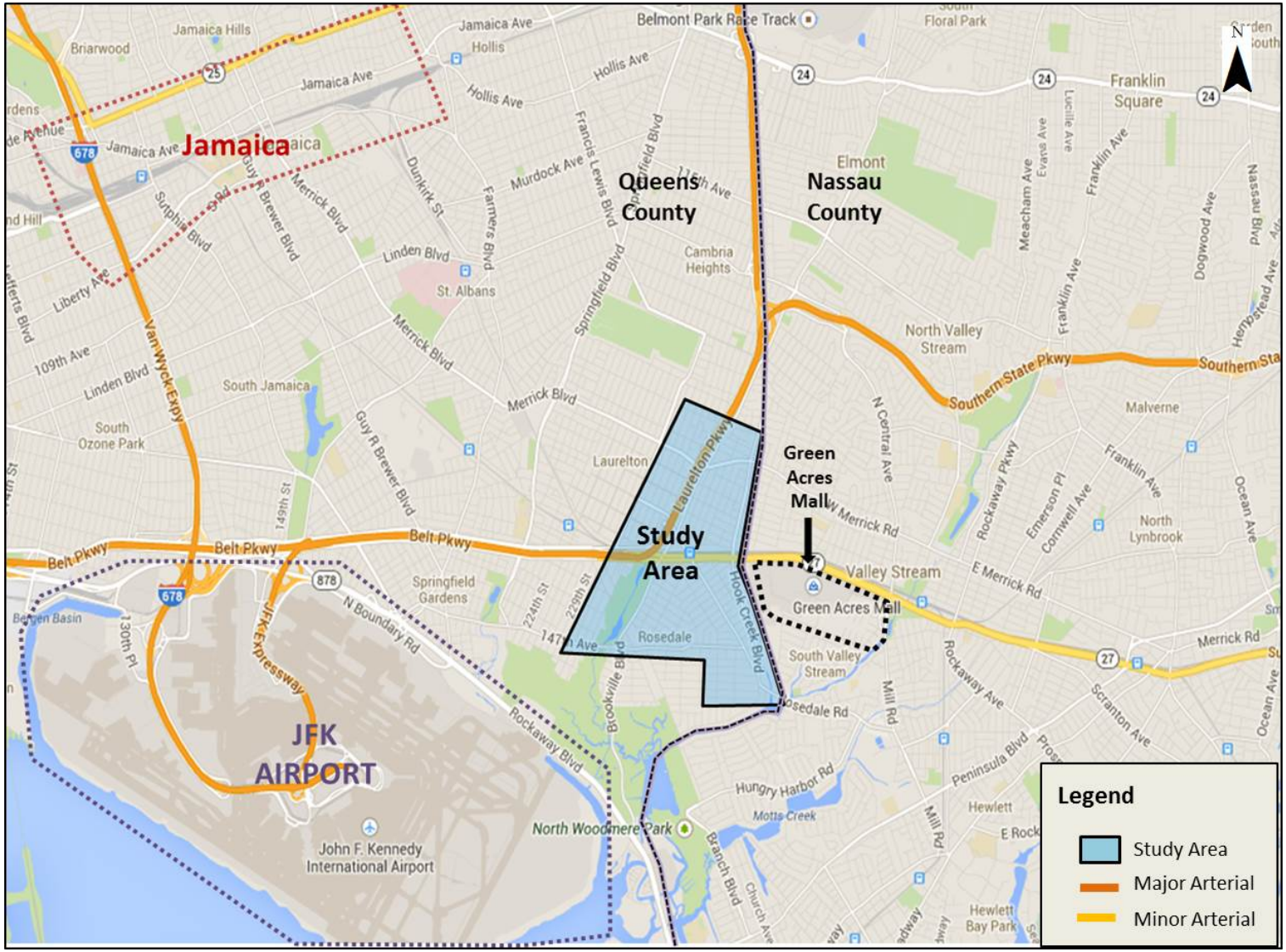
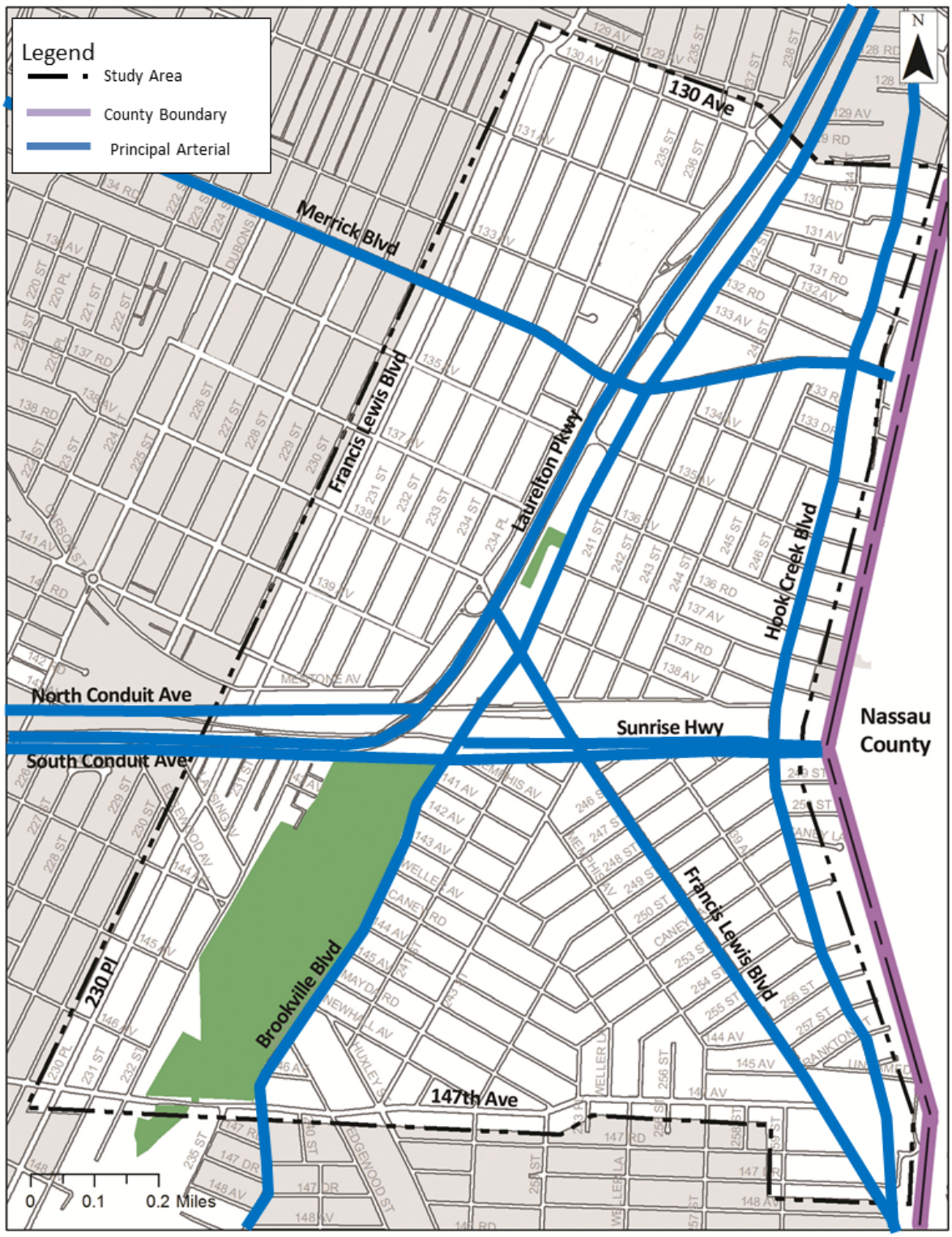


Figure 1-2: Study Area Principal Arterials



1.3 Goals and Objectives

The goal of the study is to reduce traffic congestion on the main corridors, address community concerns, and enhance safety for all road users. The main **objectives** are:

- To identify the travel and traffic characteristics and to assess the existing travel demand and traffic operations;
- To project and assess the future (2020) traffic conditions with a focus on demographics and land use, and;
- To develop recommendations/improvement measures with community input for implementation.

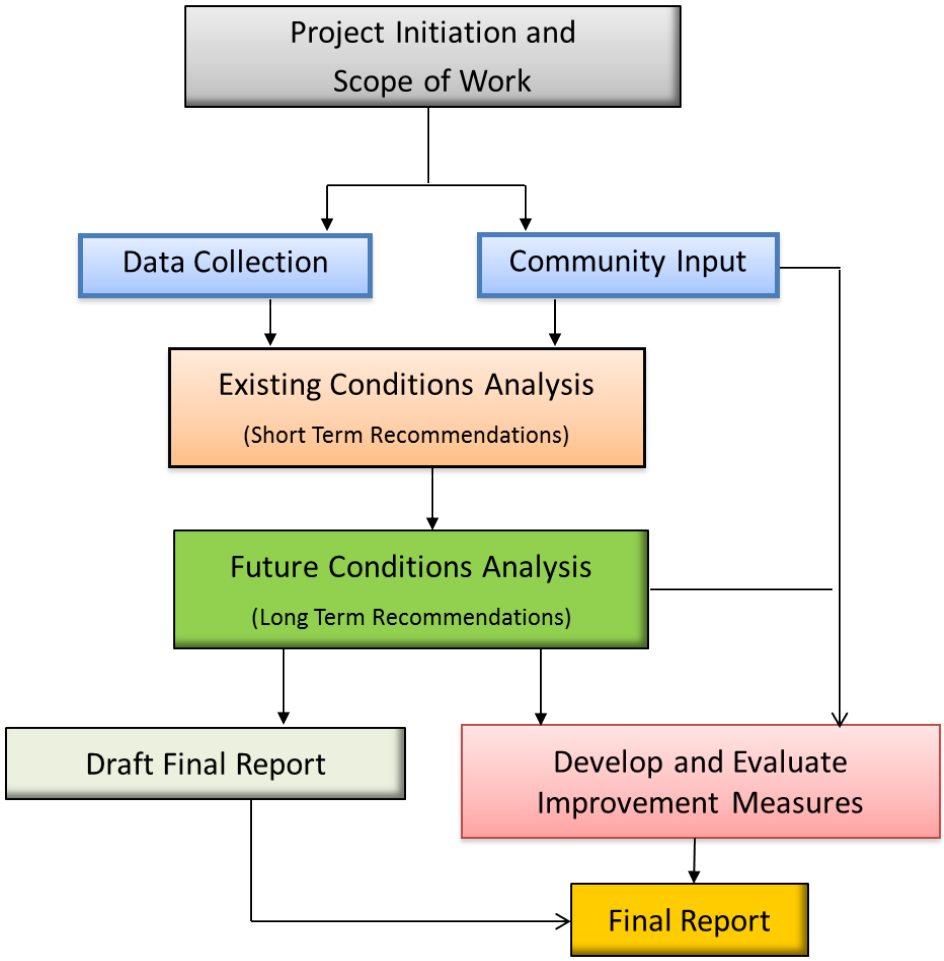
1.4 Project Organization and Methodology

The study will examine both existing and future traffic and transportation conditions by analyzing the following:

- Demographics
- Zoning and Land Use
- Traffic and Transportation
- Pedestrians
- Crashes/Accidents
- Parking
- Public Transportation
- Trucks/Goods Movement

The study process is shown in Figure 1-3 followed by description of study tasks.

Figure 1-3: Project Organization



The following tasks will be undertaken:

- *Task 1 - Project Organization and Management* - Establish Technical Advisory Committee (TAC) and develop a detailed work program that outlines tasks subtasks, and products.
- *Task* 2 - *Literature Search* - Identify relevant studies or projects in the study area.
- Task 3 - *Data Collection and Identification of Issues* - Collect data for demographics, land use and zoning, traffic, parking, pedestrians, bikes, transit, crashes and goods movement to assess travel and traffic conditions.
- Task 4 - Public Outreach – Establish Technical Advisory Committee (TAC) and conduct public meetings to insure the input from community stakeholders.

- Task 5 – Existing Conditions Analysis - Conduct a comprehensive traffic analysis of existing conditions and present findings to the TAC and the public.
- Task 6 – Future Conditions Analysis – Project and analyze 2022 future traffic conditions.
- Task 7 – Draft Existing and Future Conditions report
- Task 8 – Development & Evaluation of Improvement Measures - Generate improvement measures to address traffic and transportation deficiencies.
- Task 9 – Draft Final Report
- Task 10 – Prepare Implementation Plan

1.5 Other Studies/Project in the area

NYC Department of Design and Construction (DDC) is currently working on schematic geometric design for the reconstruction of Brookville-Edgewood Triangle and adjoining streets (HWQ724B) that includes the installation of storm and sanitary sewers as well as water mains in the Laurelton/Rosedale study area. The project also includes construction of a storm water collection and disposal system for the project streets as well as wetland mitigation. The project is expected to be completed in 2018. To the west of the area DEP is finalizing the reconstruction of 147th Avenue and Springfield Boulevard (xxxx).

2 DEMOGRAPHIC ANALYSIS

2.1 Introduction

The demographic/socioeconomic analysis examines population trends and socioeconomic characteristics such as household size, median household income, journey to work, and car ownership rates to assess and evaluate existing and future travel needs. The analysis relied on the New York City Department of City Planning and the United States Department of Commerce-Bureau of Census data. The analysis used 2000 and 2010 data and projected the 2020 future conditions. To better assess the population dynamics of the study area, comparisons were made with the Borough of Queens and New York City.

The study area includes 14 Census Tracts - three wholly and eleven partially; they are: 616.01*, 616.02*, 618, 620*, 632*, 638, 646*, 650*, 654, 656*, 660*, 664*, 680*, and 690*. The analysis of the partial census tracts assumes the population and other related variables are evenly distributed geographically. Figure 2-1 shows the census tracts with population change between 2000 and 2010.

2.2 Population Trends

The study area 2010 population was 25,173 while it was 25,689 in 2000 – a decrease of 516 (2%). Figure 2-1 shows population change by census tracts. Most of the population loss occurred north of Sunrise Highway/Conduit Avenue while south of Conduit Avenue/Sunrise Highway experienced growth. The study area's population density of 16,330 persons/sq. mile is lower than Queens (20,420 persons/sq. mi). The 2020 projected population for the study area is 26,467 based on Queens' growth rate projected by NYCDCP. Table 2-1 summarizes the population data.

*Tracts partially within the study area

Figure 2-1: Census Tract Population Change 2000-2010

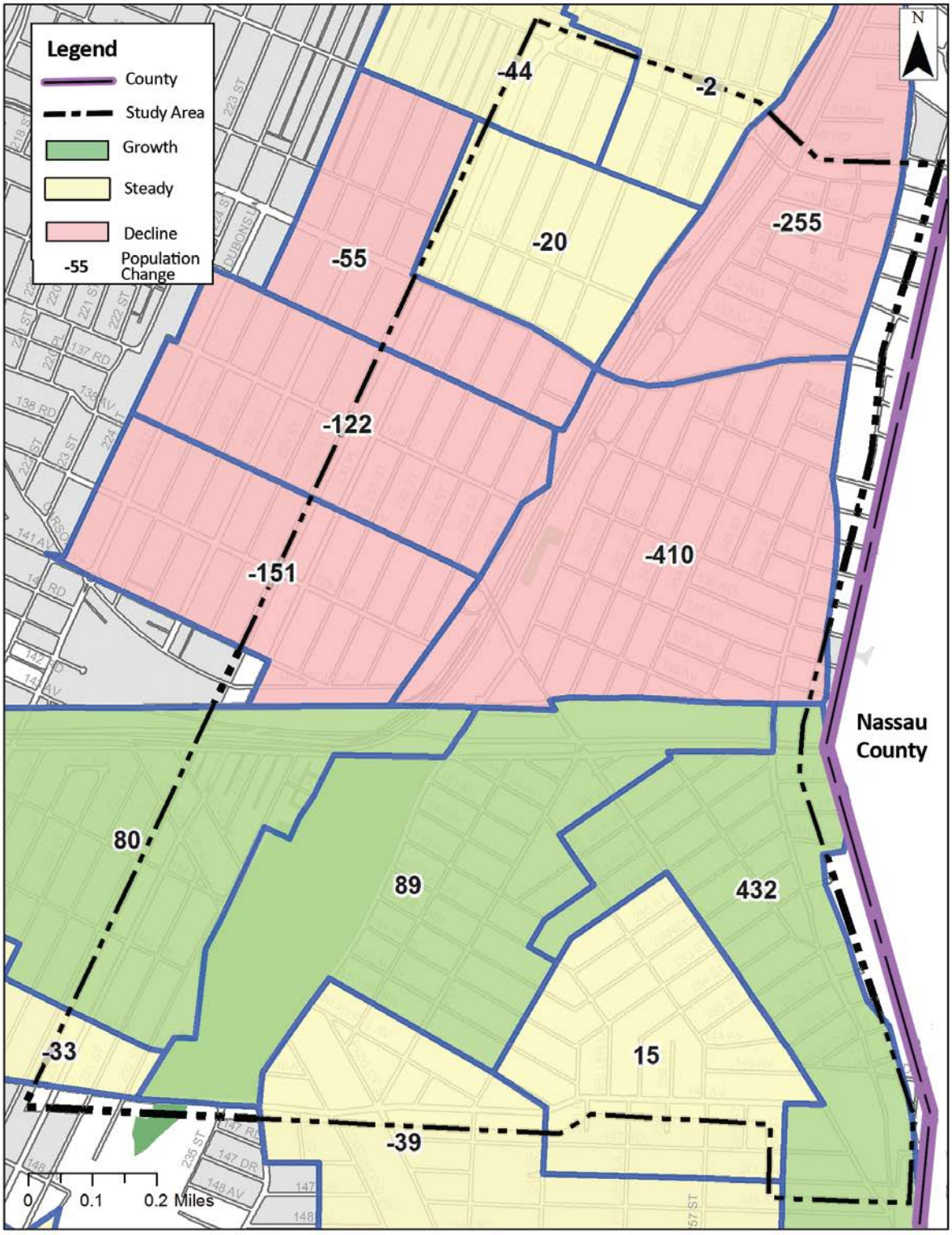


Table 2-1: Population

Characteristic	Year	Study Area		Queens		NYC	
		Total	% Change	Total	% Change	Total	% Change
Population	*2000*	25,698		2,229,379		8,008,278	
	2010	25,173	-2%	2,230,722	0%	8,175,133	2%
	**2020*	26,467	5%	2,350,200	5%	8,469,800	4%

*.0514 growth rate projected for Queens (DCP)

2.3 Household Characteristics

Similar to the population, households in the study area declined (-1%) between 2000 and 2010. In 2010 there were 7,873 households with an average household size of 3.19 which is larger than that of Queens and New York City. Over the last decade household size remained relatively constant over all geographies - a trend that is likely to continue. Table 2-2 shows the household size for study area, Queens, and New York City.

Table 2-2: Household Size

Characteristic	Year	Study Area		Queens		NYC	
		Total	% Change	Total	% Change	Total	% Change
Household Size	*2000*	3.21		2.81		2.59	
	2010	3.19	-1%	2.82	0%	2.57	-1%
	2020	3.19	0%	2.82	0%	2.57	0%

*Projected

2.4 Median Household Income

The study area's median household income of $82,617 is significantly higher than that of Queens and New York City. Over the decade it increased 38% while Queens increased 33% and New York City 34%. The rates of growth were used to project 2020 data; see Table 2-3.

Table 2-3: Median Household Income

Characteristic	Year	Study Area		Queens		NYC	
		Total	% Change	Total	% Change	Total	% Change
Median Household Income	*2000*	$ 59,782		$ 42,439		$ 38,293	
	2010	$ 82,617	38%	$ 56,406	33%	$ 51,270	34%
	**2020*	$ 114,011	38%	$ 75,020	33%	$ 68,702	34%

*Projected

2.5 Vehicle Ownership

Vehicle ownership in the study area is consistently higher than that of Queens and the City. In 2010, 87% of households in the study area owned at least one vehicle compared to 63% for Queens and 45% for the City. Between 2000 and 2010, households in the study area with two vehicles increased from 32% to 35% while those with three or more vehicles increased from 10% to 14%; see Table 2-4. No significant change in vehicle ownership rates is anticipated by 2020.

Table 2-4: Vehicle Ownership

Vehicles Available	Study Area		Queens		NYC	
2000	Total	% of Total	Total	% of Total	Total	% of Total
Total	7,031		782,664		3,021,588	
No vehicle	1,106	16%	295,049	38%	1,682,946	56%
1 vehicle	2,974	42%	321,337	41%	955,165	32%
2 vehicles	2,261	32%	132,217	17%	305,267	10%
3+ vehicles	690	10%	34,061	4%	78,210	3%
2010	Total	% of Total	Total	% of Total	Total	% of Total
Total	7,112		773,130		3,049,978	
No vehicle	940	13%	283,440	37%	1,679,025	55%
1 vehicle	2,730	38%	311,198	40%	955,187	31%
2 vehicles	2,470	35%	137,354	18%	325,755	11%
3+ vehicles	972	14%	41,138	5%	90,011	3%
*2020	Total	% of Total	Total	% of Total	Total	% of Total
Total Households	8,289		839,782		3,159,777	
No vehicle	961.52	12%	298,206.59	36%	1,737,877.35	55%
1 vehicle	2,984.04	36%	327,514.98	39%	979,530.87	31%
2 vehicles	3,149.82	38%	159,558.58	19%	347,575.47	11%
3+ vehicles	1,194	14%	54,502	6%	94,793	3%

*Projected

2.6 Journey to Work by Mode

Consistent with a relatively high vehicle ownership, the 2010 Journey to Work auto mode share of 57% in the study area is higher compared to Queens (39%) and New York City (28%). While auto mode share decreased from 61% in 2000 to 57% in 2010, this is largely due to a decrease in carpooling as those who drove alone increased slightly during this time. On the other hand, public transit mode share increased from 33.5% to 36.8% with buses having 16%, subway 14% and commuter rail 7%; see Table 2-5. Working from home represented 3.4% of the mode share while walking represented 1.7%. No significant changes in journey to work are expected by 2020.

Table 2-5: Journey to Work by Mode

Travel Mode	Study Area			Queens			NYC		
	2000	2010	*2020	2000	2010	2020	2000	2010	2020
Workers 16 and over	10,158	11,339	12,658	931,709	1,035,828	1,151,582	3,192,070	3,658,527	4,193,147
Car, truck, or van	61.4%	57.2%	55.0%	44.5%	39.1%	37.0%	32.9%	28.0%	28.0%
Car, truck, or van - Drove alone	*48.2%*	*49.8%*	*50.0%*	*34.3%*	*32.1%*	*31.0%*	*24.9%*	*22.8%*	*23.0%*
Car, truck, or van - Carpooled	*13.2%*	*7.3%*	5.0%	*10.2%*	*7.0%*	*6.0%*	*8.0%*	*5.2%*	*5.0%*
Public transportation	33.5%	36.8%	38.7%	47.4%	51.3%	52.8%	52.8%	55.4%	54.9%
Bus or trolley bus	*11.4%*	*15.9%*	17.0%	*10.2%*	*11.8%*	*12.5%*	*11.6%*	*12.4%*	*10.9%*
Subway or elevated	*15.5%*	*13.9%*	14.0%	*34.3%*	*37.0%*	*37.0%*	*37.6%*	*40.9%*	*42.0%*
Railroad	*5.5%*	*7.0%*	7.4%	*2.2%*	*2.5%*	*2.7%*	*1.6%*	*1.8%*	*2.0%*
Ferryboat	*0.0%*	*0.0%*	0.0%	*0.0%*	*0.0%*	*0.0%*	*0.4%*	*0.2%*	*20.0%*
Taxicab	*1.1%*	*0.2%*	0.3%	*0.7%*	*0.4%*	*0.6%*	*1.7%*	*1.1%*	*1.0%*
Motorcycle	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Bicycle	0.2%	0.0%	0.1%	0.3%	0.4%	1.0%	0.5%	0.7%	1.5%
Walked	2.7%	1.7%	2.0%	5.7%	5.8%	5.7%	10.4%	10.3%	10.0%
Other means	0.7%	0.7%	1.0%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%
Worked at home	1.3%	3.4%	3.6%	1.8%	2.5%	3.0%	2.9%	3.9%	4.0%

*projected

3 ZONING AND LAND USE

3.1 Introduction

The existing zoning and land use in the study area was examined to help understand travel characteristics, traffic, and congestion. Since different land uses have different trip generating characteristics and traffic flow is a function of the spatial distribution of land uses, field surveys were conducted to document the existing land uses. Additionally, secondary data from the Department of City Planning (Zoning Resolution) and other studies were also consulted.

3.2 Zoning

New York City has three basic zoning designations: residential (R), commercial (C), and Manufacturing (M). These are further subdivided to allow for low, medium, and high density developments which are governed by permitted coverage and floor area ratios.

The entire study area has been rezoned over the last ten years by three separate rezoning actions that sought to protect the low density residential characteristics of the area. The Brookville Rezoning (2004) rezoned 85 blocks and included the southwest corner of the study area. The Laurelton Rezoning (2008) rezoned 220 blocks and included the northwest section of the study area. The Rosedale Rezoning (2010) affected 193 blocks and included the eastern half of the study area. Figure 3-1 shows the three rezoned areas in relation to the study area. Figures 3-2 and 3-3 show Brookville, Figures 3-4 and 3-5 show Laurelton, and Figures 3-6 and 3-7 show Rosedale.

Figure 3-1: Recent Rezoning Context

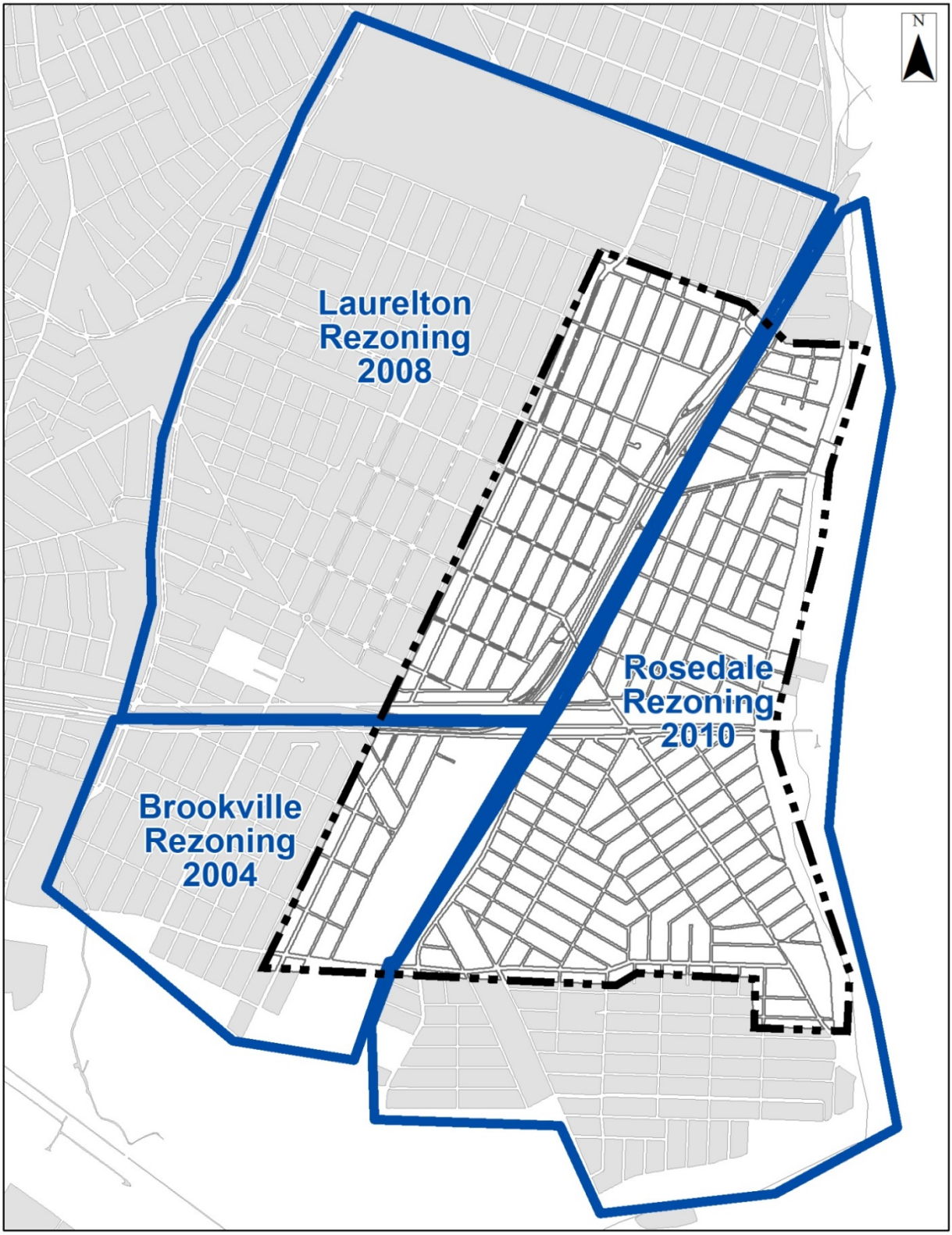


Figure 3-2: Brookville Zoning (2003)

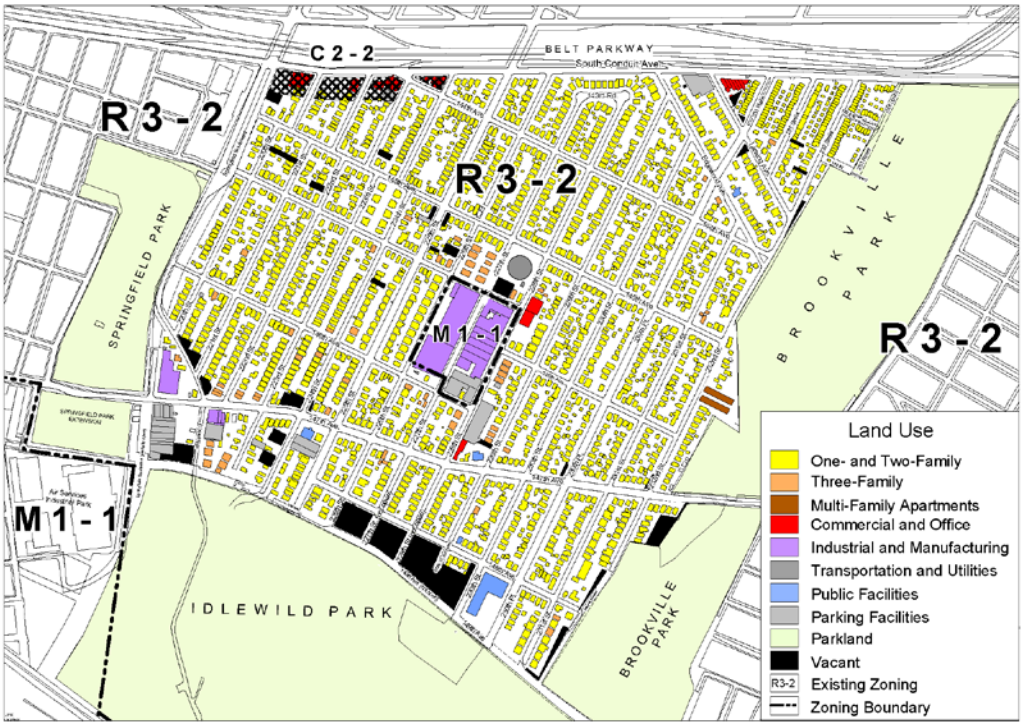


Figure 3-3: Brookville 2004 Rezoning

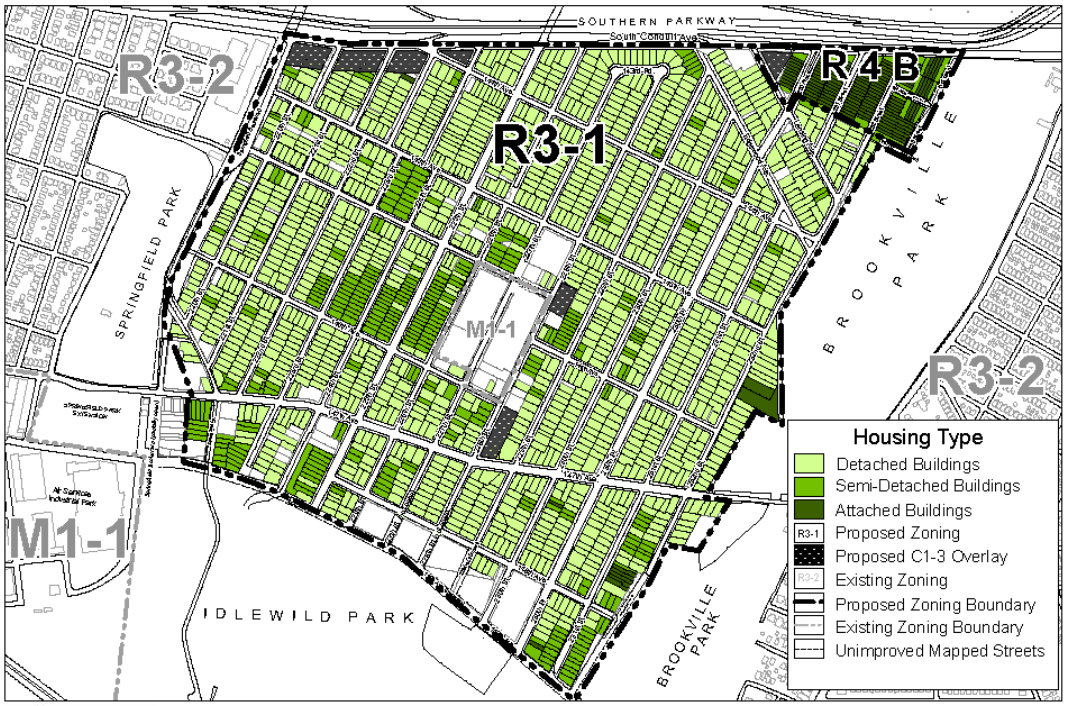


Figure 3-4: Laurelton Zoning (2007)

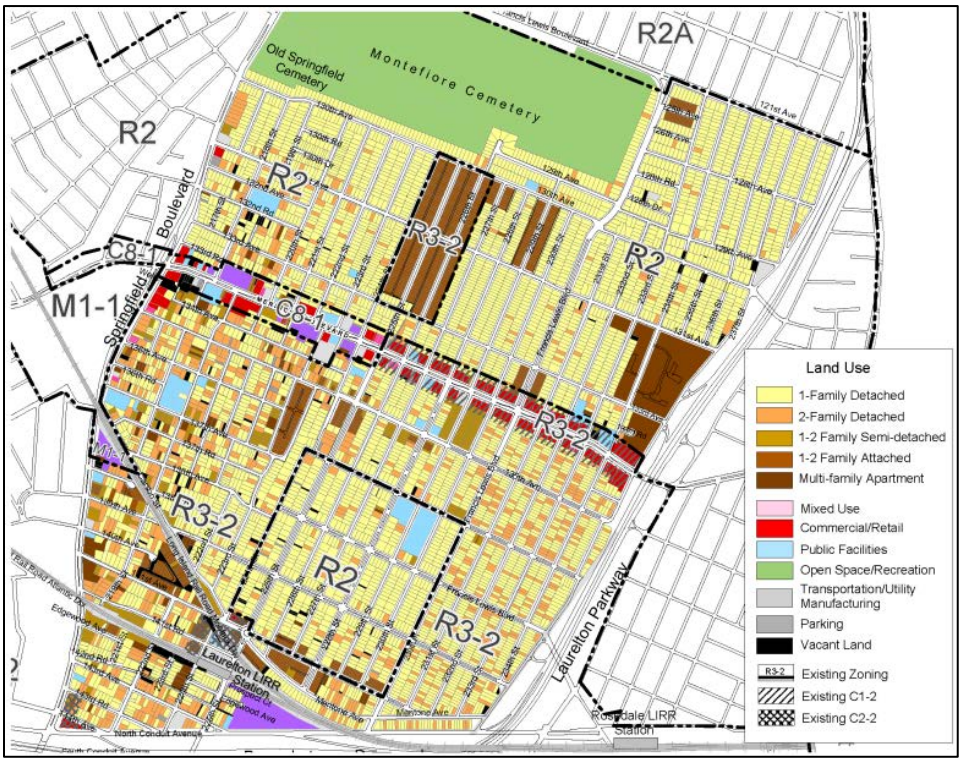


Figure 3-5: Laurelton 2008 Rezoning

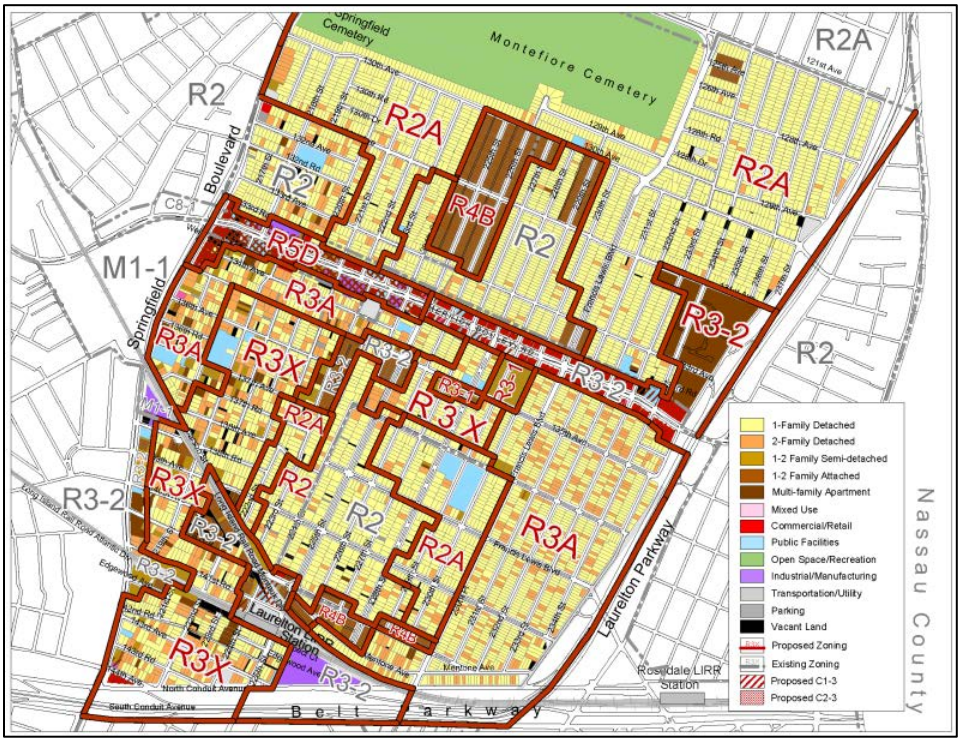


Figure 3-6: Rosedale Zoning (2009)

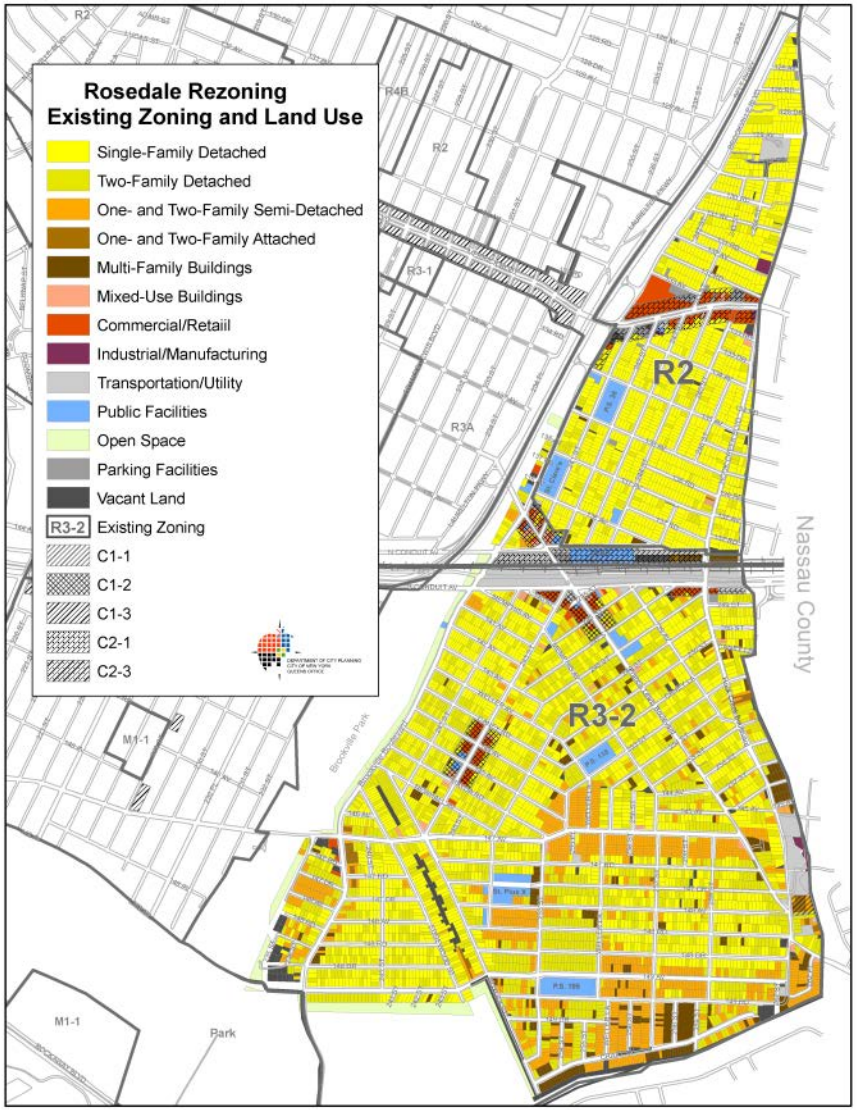
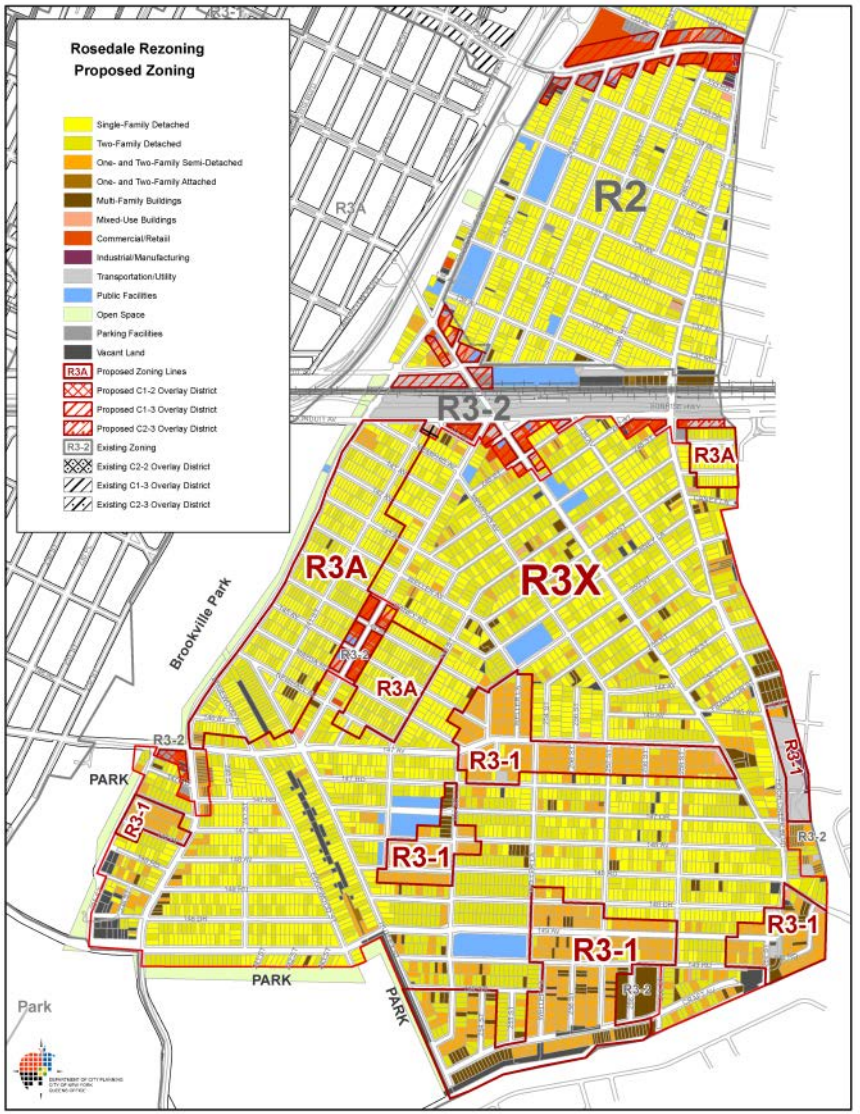


Figure 3-7: Rosedale 2010 Rezoning



The entire study area is zoned for low density residential uses with the new zoning designation ranging from R2 to R4. Table 3-1 shows the zoning districts in the study area and their constituent parts. Figure 3-8 shows the study area zoning.

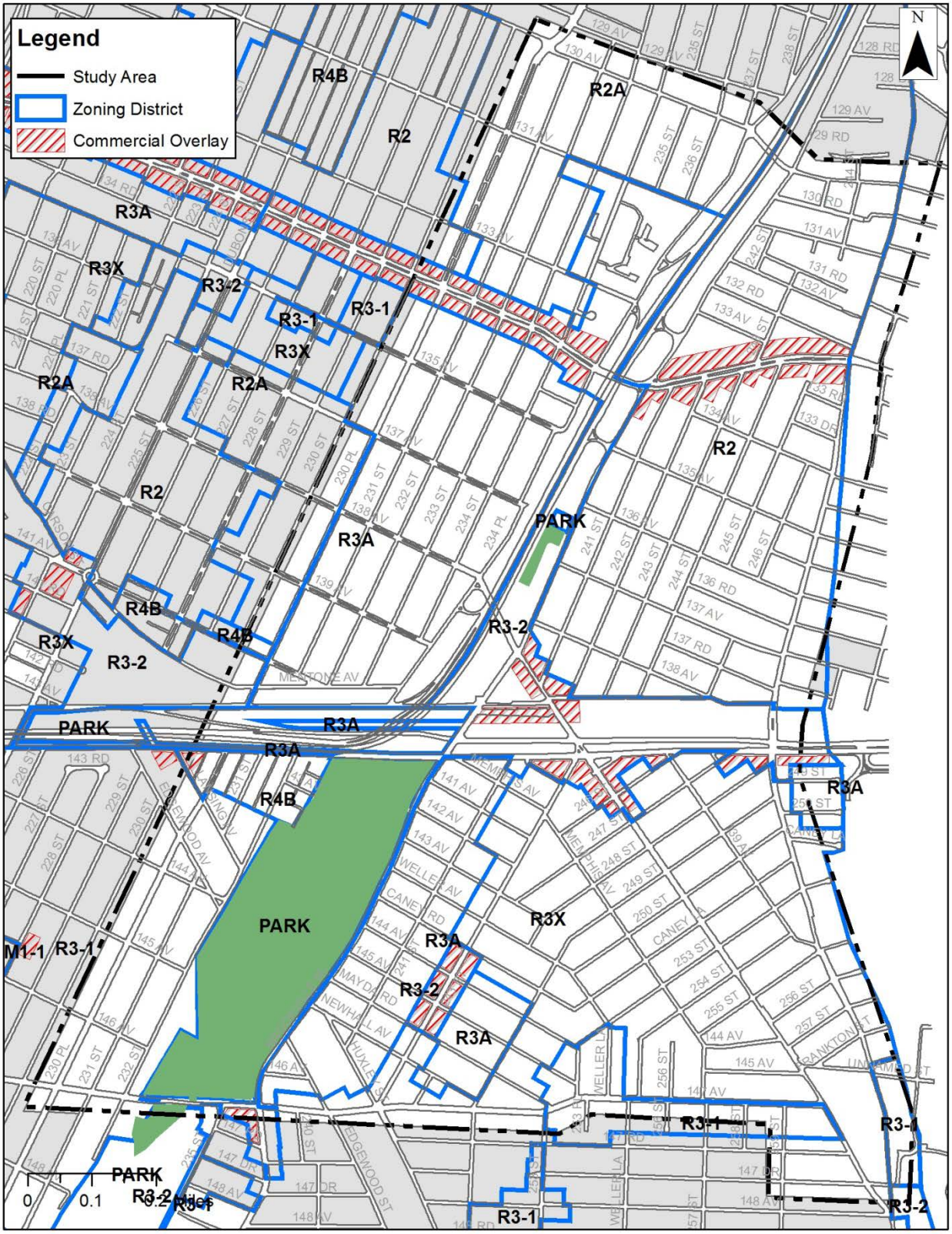
Table 3-1: Zoning Districts within the Study Area

Designation	Zoning	FAR	Portion
Residential	R2	0.5	30%
	R3	0.5	65%
	R4B	0.9	5%

The R2 and R2A zones allow only single family detached housing and are located in the northern part of the study area above North Conduit Ave. The R3A and R3-1 zones allow one and two family houses with R3-1 zones allowing semi-detached homes. There is a large R3A zone west of Laurelton Parkway in the middle of the study area while the R3-1 zone is in the southwest corner of the study area. R3-2 zones allow multiple dwellings and are low density general residence areas. The R4B zone allows for low-rise row houses. There is one R4B zone located south of South Conduit Avenue.

Commercial overlays allow local retail and mixed use along streets that serve the retail needs of the neighborhood. There are commercial overlays along Merrick Boulevard, Francis Lewis Boulevard, North and South Conduit Avenues (east of Laurelton Parkway) and along 243rd Street between Mayda Road and Caney Lane.

Figure 3-8: Current Zoning



3.3 Land Use

The study area, which is predominantly residential, has several commercial corridors with local retail, educational institutions, industrial uses, and recreational facilities. Figure 3-9 shows an existing residential use.

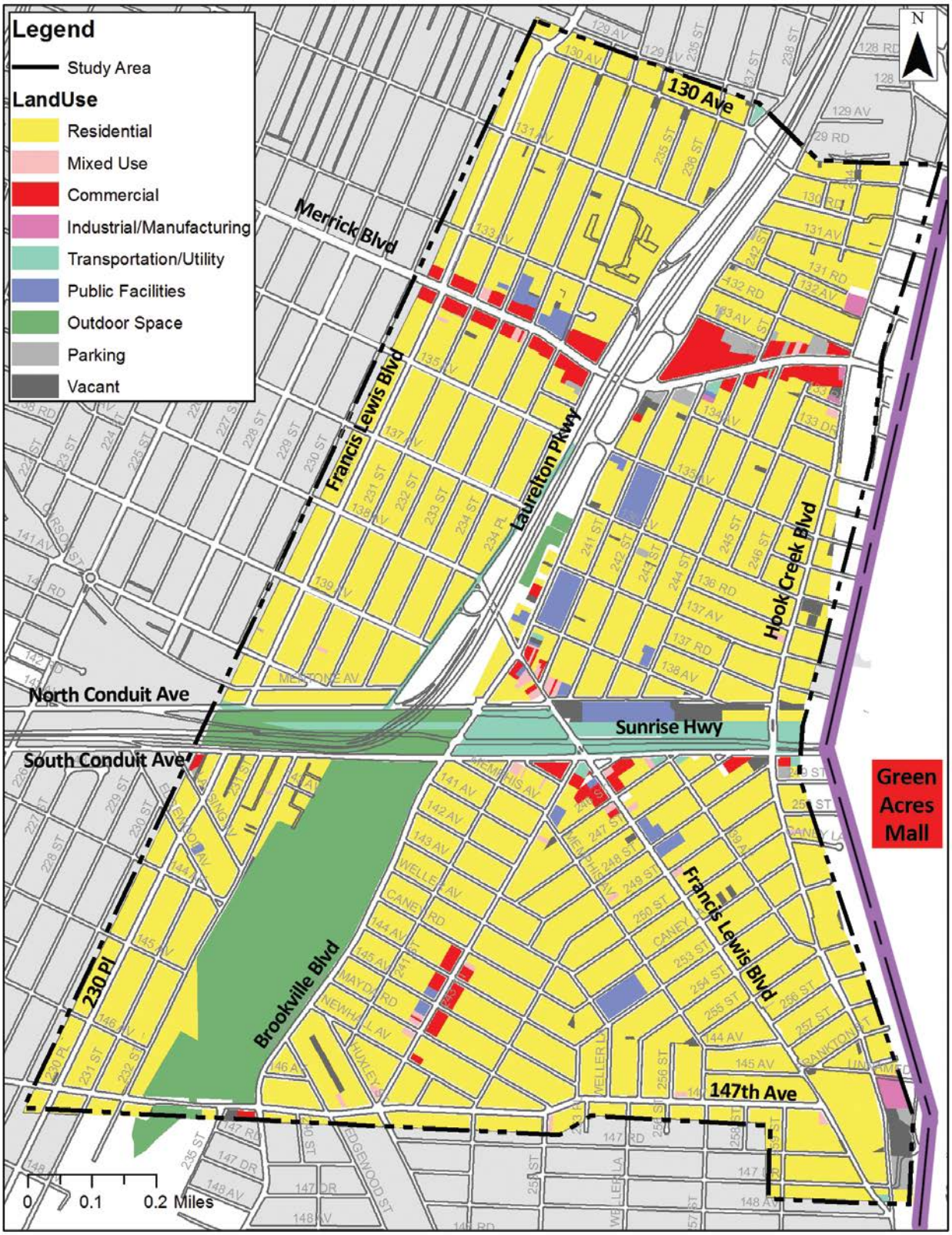
Figure 3-9: One Family Detached Housing

Residential Uses

Residential buildings are mainly single and two-family homes, but there are some with ground floor retail. One and two-family homes account for 70% of the area.

The only medium-density development is located on the western boundary of the study area – along Merrick Boulevard where there are multi-story residential buildings. Figure 3-10 shows typical one and two-family residences in the study area.

Figure 3-10: Existing Land Use



Commercial Uses

The commercial establishments which include national chain stores, clothing stores, restaurants, video rental stores, and banks are seen along the following major corridors:

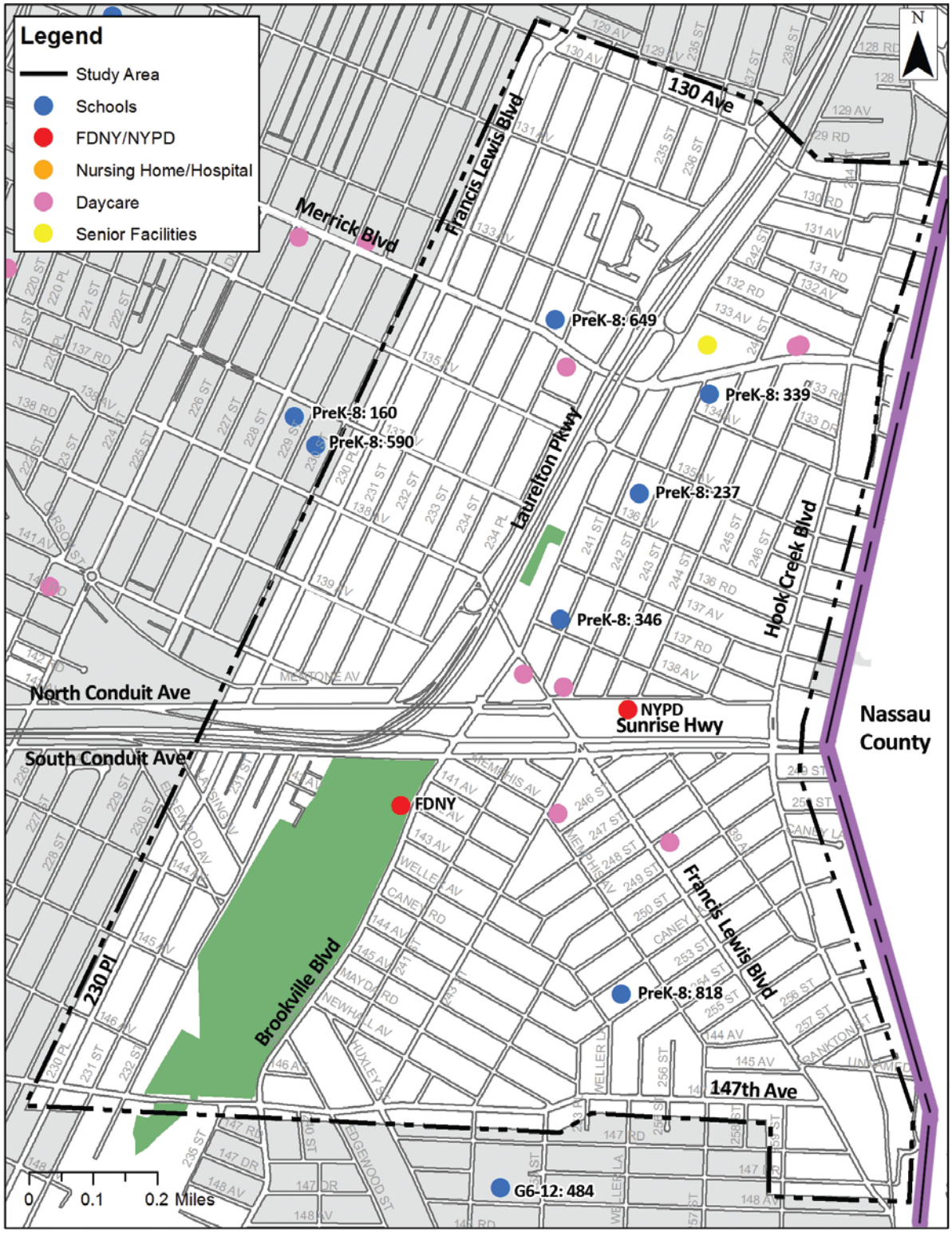
- Merrick Boulevard between Francis Lewis Boulevard and Hook Creek Boulevard,
- North Conduit Avenue between Brookville Boulevard and Hook Creek Boulevard,
- South Conduit Avenue between 139th Avenue and Hook Creek Boulevard,
- Francis Lewis Boulevard between South Conduit Avenue and 247th Street, and
- 243rd Street between Caney Lane and Mayda Road.

The establishments along Merrick Boulevard are mainly auto repair shops, and auto dealers, with parking lots between Brookville Boulevard and Hook Creek Boulevard. Cross Island Plaza, a large office complex, is located at Brookville Boulevard and Merrick Boulevard.

3.4 Community Facilities

There are five elementary schools and six day care centers in the study area. There is the 105th Police Precinct on North Conduit Avenue near the LIRR Rosedale station. A FDNY fire house is located on Brookville Boulevard and 142nd Avenue. Figure 3-11 shows the location of existing community facilities.

Figure 3-11: Community Facilities



***Pre-K - 12: 1309**
School Grade: Enrollment

4 TRAFFIC AND TRANSPORTATION

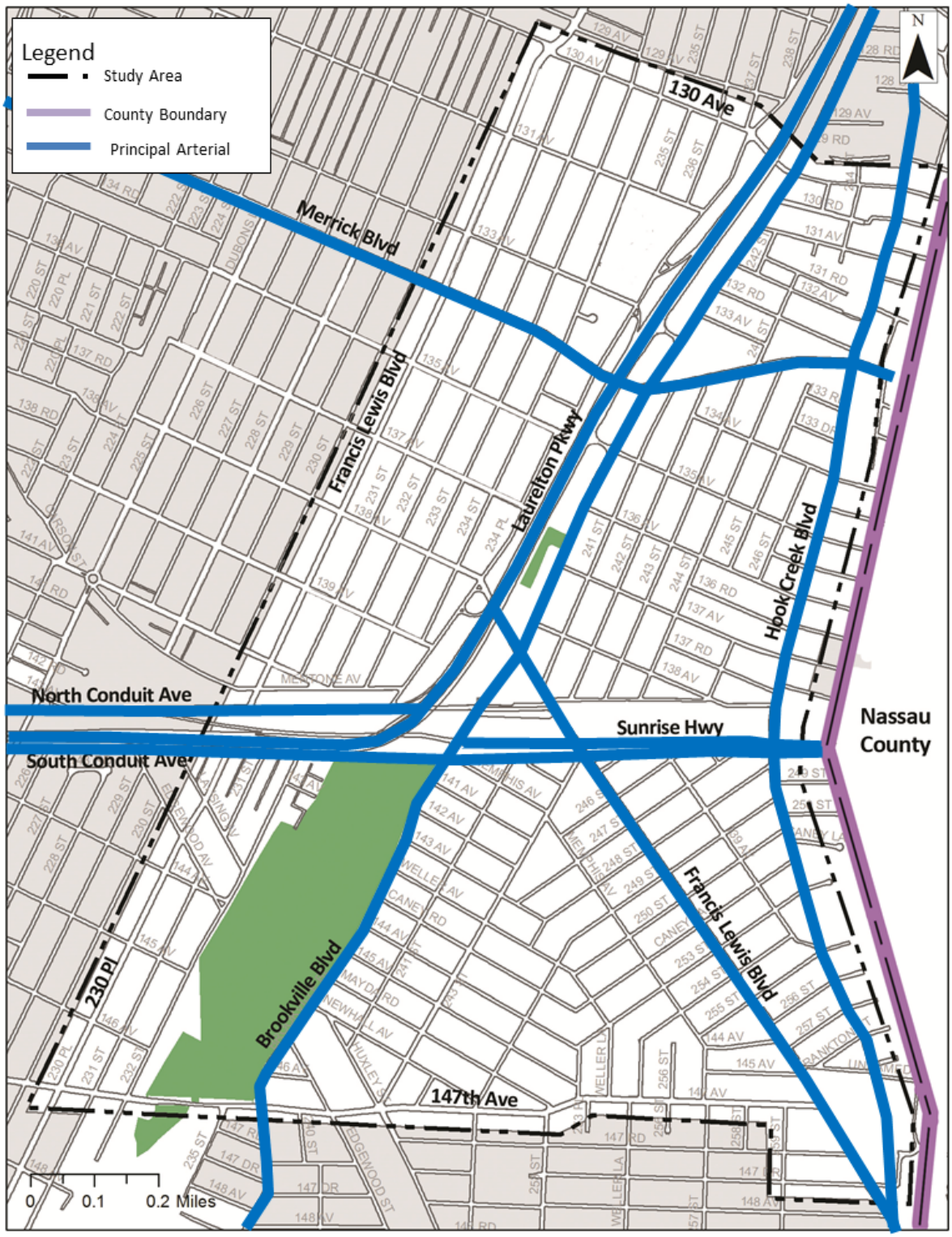
4.1 Introduction

Traffic congestion in the study area is due to mainly three reasons: (a) commuter peak hour congestion on major arterials such as Sunrise Highway, Francis Lewis Boulevard and Brookville Boulevard; (b) large traffic generators such as JFK International Airport, Five Towns Shopping Center, and Green Acres Mall; and major regional arterials such as the Belt Parkway and Sunrise Highway that connects to arterials such as Francis Lewis, Merrick, Brookville, and Hook Creek Boulevards. The study area traffic network is bounded by 130th Avenue to the north, Hook Creek Boulevard to the east, 147th Avenue to the south and Francis Lewis Boulevard/230th Place to the west. The street system is basically grid-like with some streets in the south east section diagonally oriented.

Street System and Roadway Characteristics

The street network has good access to major regional arterials such as the Belt Parkway, Sunrise Highway, Cross Island, Laurelton, and Southern State Parkways. The study area is essentially divided into three by Sunrise Highway/North and South Conduit Avenues, a major east-west corridor, and Laurelton Parkway running north-south. Merrick Boulevard and 147th Avenue are major east/west corridors in the north and south of the study area (respectively). The major north/south arterials are Francis Lewis, Brookville, and Hook Creek Boulevards. In the study area, Sunrise Highway and North/South Conduit Avenues are through truck routes while Merrick Boulevard is a local truck route. Figure 4-1 shows the main arterials in the study area.

Figure 4-1: Principal Arterials in the Study Area



4.2 Data Collection and Traffic Operations

Traffic Counts

Existing traffic conditions were defined through field surveys conducted in 2012. Traffic volume counts include vehicle classification and manual turning movements for one midweek day (Tuesday, Wednesday, or Thursday) during the AM and PM peak hours and one weekend day (Saturday) during the peak hour. Automatic Traffic Recorder (ATR) machines were placed at nine locations for the duration of seven days. Figure 4-2 shows the ATR and manual turning movement count locations. Travel speed and delay runs were also conducted for the various peak hours along major corridors such as Merrick Boulevard, Sunrise Highway, South Conduit Avenue, Francis Lewis Boulevard, and Brookville Boulevard.

ATR machines were placed at the following five locations:

1. Merrick Boulevard (EB/WB) between 232nd & 233rd Streets
2. Brookville Boulevard (NB/SB) between Sunrise Highway & S Conduit Avenue
3. Brookville Boulevard (NB/SB) between 137th & 138th Avenues
4. Brookville Boulevard (NB/SB) between 146th & 147th Avenues
5. Hook Creek Boulevard (NB/SB) between S Conduit Avenue & 248th Street

Vehicle classification and manual turning movement counts were conducted for the various peak hours at the following 15 intersections:

1. Sunrise Highway & Brookville Boulevard
2. North Conduit Avenue & Brookville Boulevard
3. South Conduit Avenue & Brookville Boulevard
4. Sunrise Highway & Hook Creek Boulevard
5. Brookville Boulevard & 138th Avenue
6. Brookville Boulevard & 135th Avenue
7. Merrick Boulevard & Brookville Boulevard
8. Francis Lewis Boulevard & Merrick Boulevard
9. Hook Creek Boulevard & Merrick Boulevard

10. Sunrise Highway & Francis Lewis Boulevard
11. South Conduit Avenue & 243rd Street/Francis Lewis Boulevard
12. Brookville Boulevard & 147th Avenue
13. Francis Lewis Boulevard & Brookville Boulevard
14. Francis Lewis Boulevard & 133rd Avenue
15. Laurelton Parkway Service Road/133rd Avenue & 237th Street

Parking Data

On and off-street parking capacity was inventoried including parking regulations and metered parking.

Crash Data

Crash data from NYSDOT and DMV records were analyzed for the study area from 2011 to 2013 to identify intersections or corridors with potential safety risks.

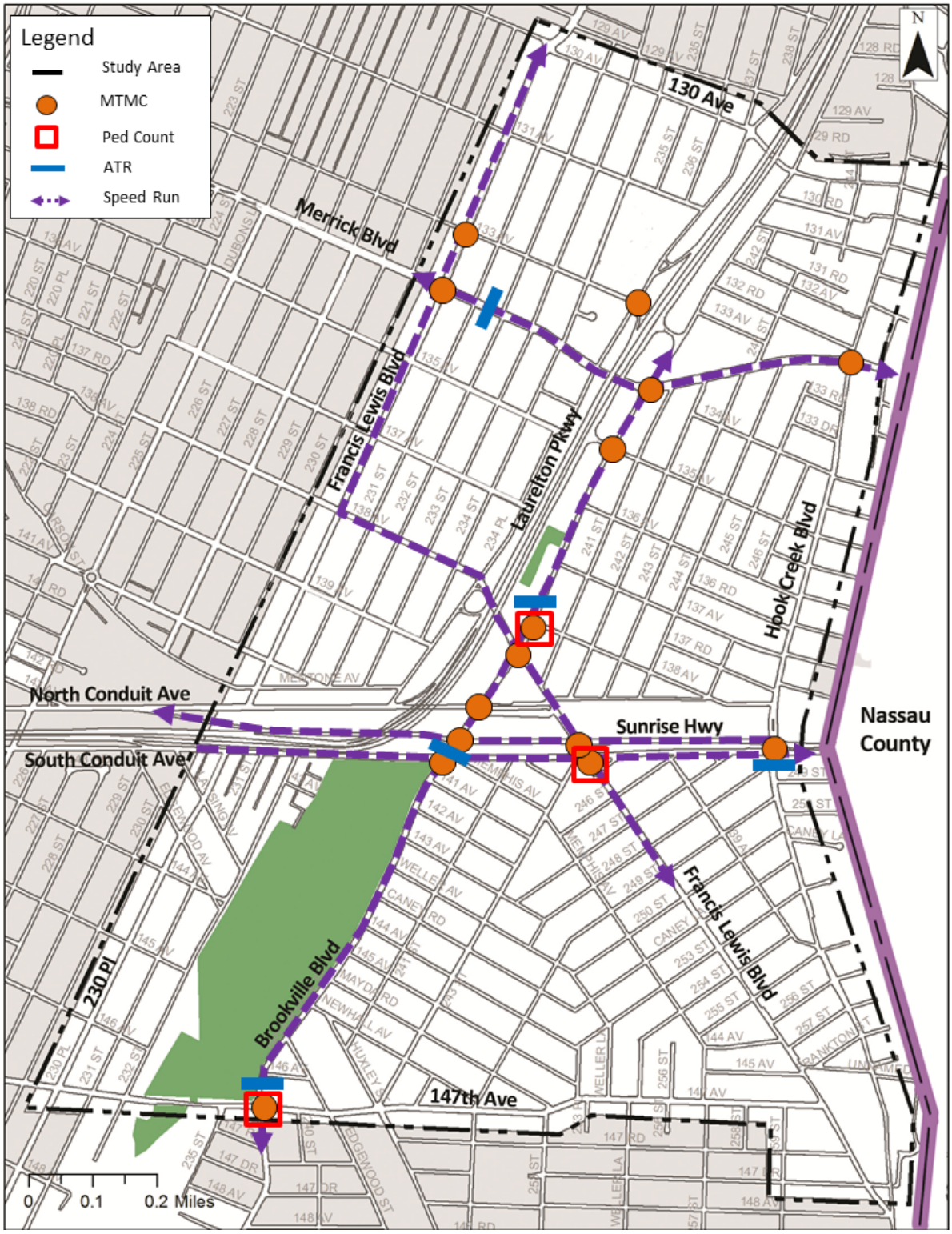
4.3 Traffic Network Volumes

Balanced traffic networks for the various peak periods were prepared using ATR and manual turning movement counts. This was plotted on traffic flow maps for the AM (7:30 ~ 8:30), PM (5:00 ~ 6:00), and Saturday Midday (1:00 ~ 2:00) peak hours. Figures 4-3 to 4-5 present the 2012 existing peak hour traffic volumes. Note the Saturday traffic analysis focused only on the central area where major commercial activities are concentrated. The observed traffic volumes along major corridors are as follows:

South Conduit Avenue eastbound, approaching Brookville Boulevard carries approximately 2,280, 2,930, and 2,750 vehicles during the AM, PM, and Saturday peak hours, respectively.

Sunrise Highway westbound, approaching Hook Creek Boulevard carries approximately 1,895 and 2,475 vehicles during the AM and PM peak hours, respectively.

Figure 4-2: Traffic Data Collection Plan



Brookville Boulevard southbound approaching Merrick Boulevard carries approximately 460, 395, and 455 vehicles during the AM, PM, and Saturday peak hours, respectively. The northbound approach has much higher volumes with approximately 1,045, 1,020, and 770 vehicles during the AM, PM, and Saturday peak hours, respectively.

Francis Lewis Boulevard northbound approaching South Conduit Avenue carries approximately 610, 355, and 540 vehicles during the AM, PM, and Saturday peak hours, respectively.

Francis Lewis Boulevard southbound approaching Sunrise Highway carries approximately 560, 625, and 575 vehicles during the AM, PM, and Saturday peak hours, respectively.

Merrick Boulevard westbound approaching Brookville Boulevard carries approximately 975 and 915 vehicles during the AM and PM peak hours, respectively. The eastbound approach carries higher volumes with approximately 995 and 1,180 vehicles during the AM and PM peak hours, respectively.

Figure 4-3: 2012 Existing Conditions Traffic Volume - AM Peak Hour

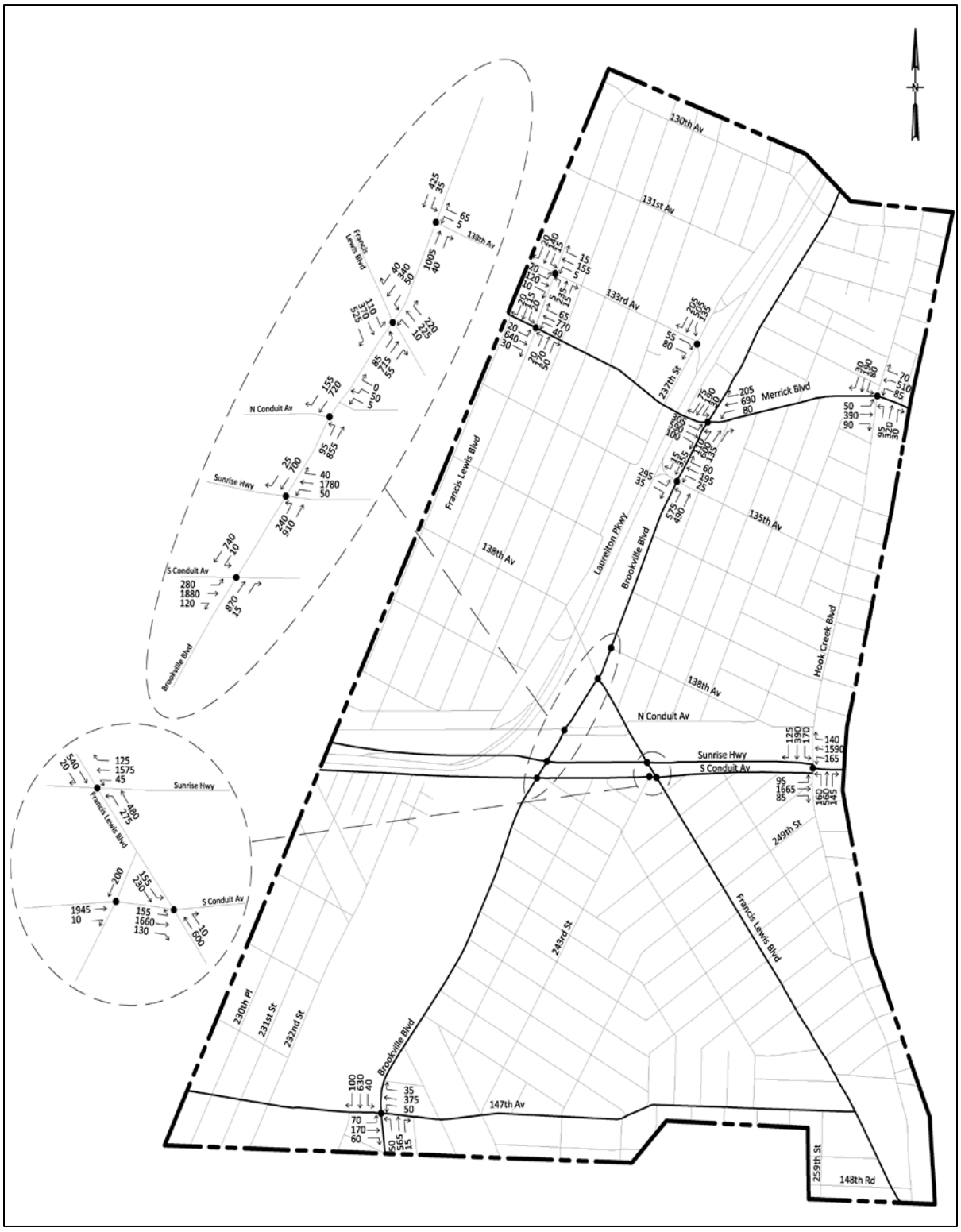


Figure 4-4: 2012 Existing Conditions Traffic Volume - PM Peak Hour

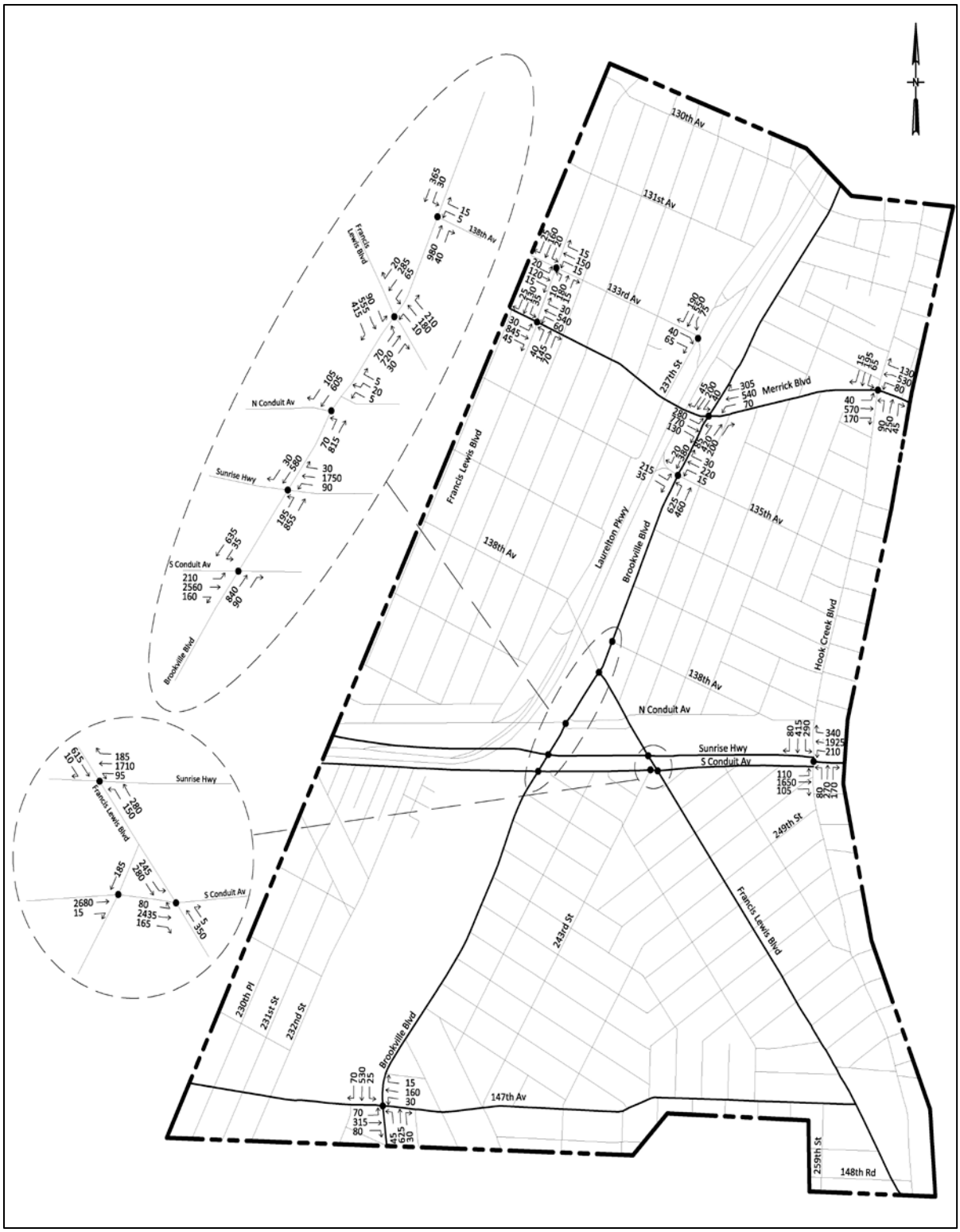
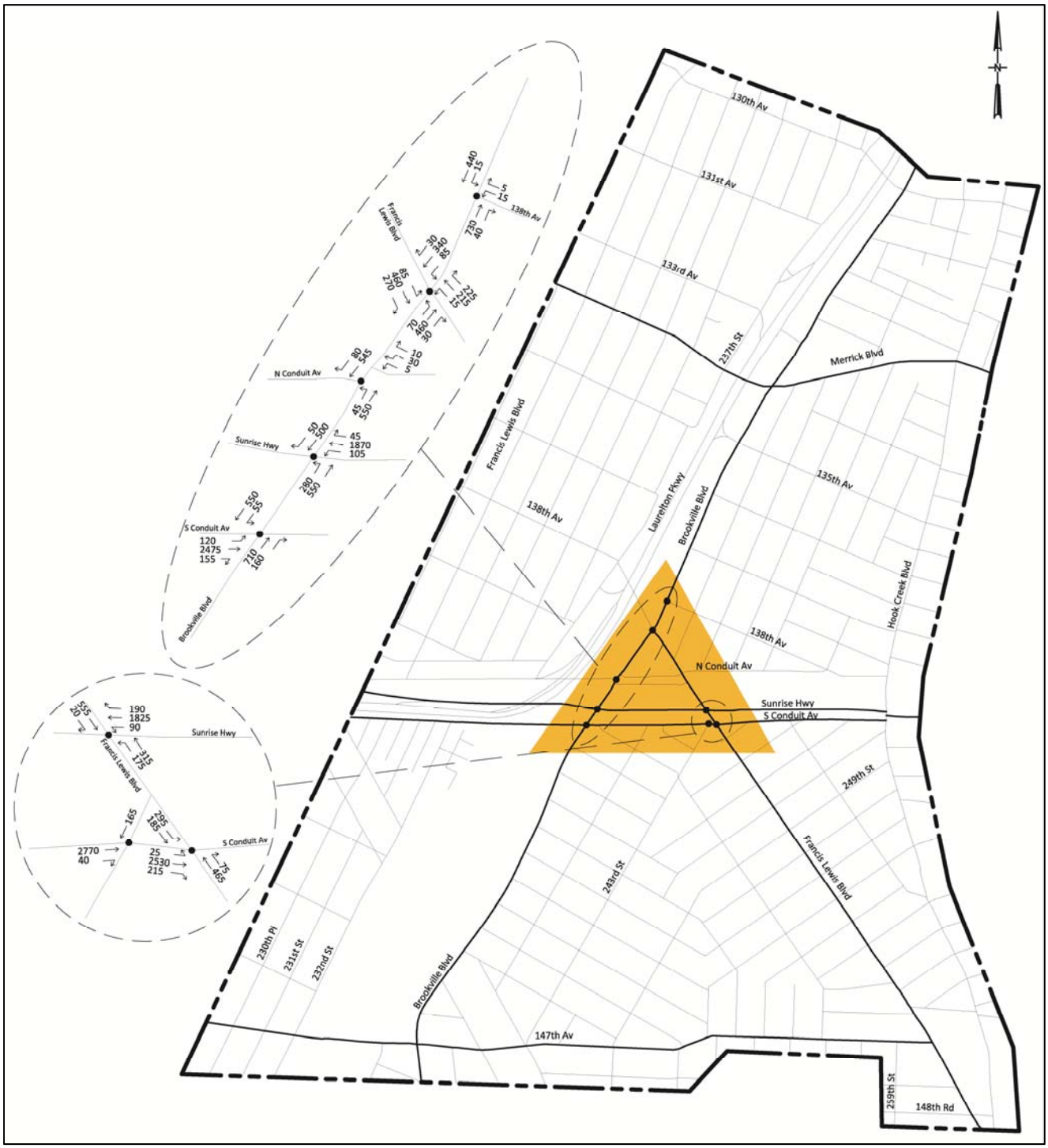


Figure 4-5: 2012 Existing Conditions Traffic Volume - Saturday MD Peak Hour



*Triangle denotes weekend traffic network

4.4 Street Capacity and Level of Service (LOS)

The capacity of a roadway is the maximum rate of flow which may pass through a section of roadway under prevailing traffic, roadway and signalization conditions. The capacity of a roadway is determined by several factors including turning movements, signal timing, geometric design of the intersection, pedestrian movements, type of vehicle, illegal and/or double parking, grade, roadway conditions, and weather. The 2010 Highway Capacity Manual (HCM) methodology was used for the traffic analysis. The methodology requires the use of official signal timings, street geometry, and other relevant information for performing capacity and LOS analyses. Within the study area 10 signalized and three un-signalized intersections were analyzed, and field surveys were conducted to observe the prevailing conditions of these intersections.

Traffic flow characteristics are measured in terms of the volume-to-capacity (v/c) ratios and delays. The quality of the traffic flow is expressed in terms of LOS (Level of Service), which is based on an average delay experienced by a vehicle. When the v/c ratio exceeds 1.0, a facility or intersection operates at or over capacity. In this situation severe congestion occurs with stop-and-start conditions, extensive vehicle queuing, and delays. Volume-to-capacity ratios of less than 0.85 are considered to be reflective of acceptable traffic conditions, with average delays of 45 seconds or less. Table 4-1a and 4-1b show the level of service criteria as specified in the 2010 HCM Methodology for un-signalized and signalized intersections, volume-to-capacity (v/c) ratios, vehicular delay, and level of service (LOS) for the weekday AM and PM peak hour as well as Saturday midday.

Table 4-1a: Un-signalized Intersection Level of Service (LOS)

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio*	
	v/c ≤ 1.0	*v/c* > 1.0
0-10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

Note: * For approaches and intersection wide assessment, LOS is defined solely by control delay.

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

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).	

4.5 Existing Traffic Conditions

Tables 4-2 and 4-3 show the 2012 existing conditions v/c ratios, delays and level of service (LOS) for the AM, PM, and Saturday peak hour for un-signalized and signalized intersections. The analysis showed that most intersections operated at an acceptable level-of-service with LOS D or better for all peak periods. However, some intersections experienced LOS E or F for some or all lane groups during some peak hours.

Figures 4-6, 4-7, and 4-8 show the overall intersection LOS. Intersections with approaches or lane groups with mid LOS D (equal to or greater than 45 sec/veh) or worse are listed below and are illustrated in Figures 4-9, 4-10, and 4-11.

- Merrick Boulevard & Brookville Boulevard (AM & PM)
- Merrick Boulevard & Hook Creek Boulevard (AM & PM)
- Brookville Boulevard & 135th Avenue (AM & PM)
- Brookville Boulevard & Francis Lewis Boulevard (AM & PM)
- Brookville Boulevard & Sunrise Highway (AM, PM, & Sat MD)
- Brookville Boulevard & S Conduit Avenue (AM, PM, & Sat MD)
- Brookville Boulevard & 147th Avenue (PM)
- Francis Lewis Boulevard & Sunrise Highway (AM, PM, & Sat MD)
- Francis Lewis Boulevard & S Conduit Avenue (AM, PM, & Sat MD)
- Hook Creek Boulevard & Sunrise Highway/S Conduit Avenue (AM & PM)

Table 4-2: Traffic Capacity Analysis for Un-signalized Intersections
2012 Existing Conditions

Intersection	Approac	EXISTING : Weekday AM						EXISTING : Weekday PM						EXISTING : Saturday MD					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Brookville Boulevard & 138th Avenue																			
	NB	L	1005					L	40					L	730				
		R	40					R	980					R	40				
	SB	L	35	LT	0.09	12.0	B	L	30	LT	0.11	11.7	B	L	15	LT	0.03	9.8	A
		T	425					T	365					T	440				
	WB	L	5	LR	0.54	42.7	E	L	5	LR	0.32	39.2	E	L	15	LR	0.14	18.9	C
		R	65					R	15					R	5				
Brookville Boulevard & N Conduit Avenue																			
	NB	L	65	LT	0.20	10.9	B	L	70	LT	0.11	10.0	B	L	45	LT	0.06	9.0	A
		T	855					T	825					T	550				
	SB	T	720					T	605					T	545				
		R	155					R	105					R	80				
	WB	L	5	LTR	2.20	760.5	F	L	5	LTR	0.62	95.7	F	L	5	LTR	0.39	33.2	D
		T	50					T	20					T	30				
		R	0					R	5					R	10				
Laurelton Parkway Service Road & 133rd Avenue																			
	SB	L	135	LT	0.59	16.9	C	L	75	LT	0.54	15.3	C						
		T	505	TR	0.65	17.6	C	T	550	TR	0.68	18.0	C						
		R	205					R	190					Intersection not analyzed at this period					
	EB	T	55					T	40										
		R	80					R	65										

Table 4-3: Traffic Capacity Analysis for Signalized Intersections - 2012 Existing Conditions
Page 1

Intersection	EXISTING : Weekday AM							EXISTING : Weekday PM						EXISTING : Saturday MD					
	Approach	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS
Merrick Boulevard & Francis Lewis Boulevard																			
	NB	L	20	LTR	0.63	31.5	C	L	40	LTR	0.74	37.0	D						
		T	170					T	145										
		R	50					R	70										
	SB	L	20	LTR	0.40	25.5	C	L	35	LTR	0.52	28.3	C						
		T	115					T	130										
		R	20					R	25					Intersection not analyzed at this period					
	EB	L	20	L	0.14	10.9	B	L	30	L	0.16	11.0	B						
		T	640	TR	0.56	14.5	B	T	845	TR	0.68	16.9	B						
		R	30					R	45										
	WB	L	40	L	0.24	12.5	B	L	60	L	0.48	20.1	C						
		T	770	TR	0.65	16.4	B	T	540	TR	0.50	13.6	B						
		R	65					R	30										
	Overall					18.4	B					19.9	B						
Merrick Boulevard & Brookville Boulevard																			
	NB	L	110	L	0.83	53.4	D	L	85	L	0.52	29.3	C						
		T	600	TR	1.27	160.0	F	T	420	TR	1.05	79.4	E						
		R	135					R	200										
	SB	L	30	LTR	1.05	91.6	F	L	40	LTR	1.03	84.3	F						
		T	190					T	200					Intersection not analyzed at this period					
		R	75					R	45										
	EB	L	305	L	0.89	56.8	E	L	280	L	0.74	37.5	D						
		T	590	T	0.82	35.5	D	T	770	T	0.90	41.4	D						
	WB	L	80	L	0.26	21.6	C	L	70	L	0.25	23.2	C						
		T	690	T	0.85	36.5	D	T	540	T	0.67	29.0	C						
	Overall					74.8	E					50.9	D						
Merrick Boulevard & Hook Creek Boulevard																			
	NB	L	95	LTR	1.01	72.8	E	L	90	LTR	0.89	47.7	D						
		T	320					T	250										
		R	30					R	45										
	SB	L	80	LTR	0.95	61.5	E	L	65	LTR	0.77	37.1	D						
		T	190					T	195										
		R	30					R	15					Intersection not analyzed at this period					
	EB	L	50	L	0.33	17.3	B	L	40	L	0.27	16.1	B						
		T	390	TR	0.44	15.4	B	T	570	TR	0.58	17.6	B						
		R	90					R	170										
	WB	L	85	L	0.30	15.8	B	L	80	L	0.49	23.0	C						
		T	510	TR	0.47	15.8	B	T	530	TR	0.56	17.2	B						
		R	70					R	130										
	Overall					35.7	D					25.4	C						
Brookville Boulevard & 135th Avenue																			
	NB	L	575	L	1.05	62.4	E	L	625	L	1.05	63.0	E						
		T	490	T	0.68	12.8	B	T	460	T	0.66	12.1	B						
	SB	T	355	TR	0.87	30.6	C	T	380	TR	0.61	18.6	B						
		R	15					R	20										
	EB	L	295	L	0.98	67.2	E	L	215	L	0.44	36.2	D						
		R	35	R	0.07	9.6	A	R	35	R	0.08	9.7	A	Intersection not analyzed at this period					
	WB	L	25	LTR	0.64	26.1	C	L	15	LTR	0.55	23.8	C						
		T	195					T	220										
		R	60					R	30										
	Overall					38.7	D					33.6	C						

Table 4-3: Traffic Capacity Analysis for Signalized Intersections - 2012 Existing Conditions
Page 2

Intersection	EXISTING : Weekday AM							EXISTING : Weekday PM						EXISTING : Saturday MD					
	Approach	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS
Brookville Boulevard & Francis Lewis Boulevard																			
	NB	L	85	LTR	1.05	68.3	E	L	70	LTR	1.05	67.4	E	L	70	LTR	0.76	24.2	C
		T	715					T	720					T	460				
		R	55					R	30					R	30				
	SB	L	50	LTR	1.00	61.7	E	L	65	LTR	0.83	33.6	C	L	85	LTR	0.88	37.0	D
		T	340					T	285					T	340				
		R	40					R	20					R	30				
	EB	L	110	LTR	1.05	69.9	E	L	90	LTR	1.05	70.4	E	L	85	LTR	0.93	41.3	D
		T	370					T	555					T	460				
		R	525					R	415					R	270				
	WB	L	10	LTR	0.66	27.0	C	L	10	LTR	0.53	23.4	C	L	15	LTR	0.60	24.8	C
		T	225					T	180					T	215				
		R	220					R	210					R	225				
	Overall					61.0	E					56.9	E					33.2	C
Brookville Boulevard & Sunrise Highway																			
	NB	L	240	L	0.87	67.1	E	L	70	L	0.53	44.2	D	L	280	L	0.76	55.7	E
		T	910	T	1.25	156.0	F	T	815	T	1.26	160.6	F	T	550	T	0.92	52.2	D
	SB	T	700	TR	1.05	94.3	F	T	605	TR	0.91	62.1	E	T	500	TR	0.89	60.2	E
		R	25					R	105					R	50				
	WB	L	50	LTR	0.93	38.4	D	L	5	LTR	0.97	43.6	D	L	105	LTR	0.99	49.3	D
		T	1780					T	20					T	1870				
		R	40					R	5					R	45				
	Overall					79.6	E					74.7	E					52.2	D
Brookville Boulevard & S Conduit Avenue																			
	NB	T	870	TR	0.74	31.9	C	T	840	TR	0.75	32.4	C	T	710	TR	0.77	33.4	C
		R	15					R	90					R	160				
	SB	L	10	L	0.16	23.8	C	L	35	L	0.43	37.9	D	L	55	L	0.64	51.6	D
		T	740	T	1.03	74.9	E	T	635	T	0.88	44.2	D	T	550	T	0.96	56.2	E
	EB	L	280	L	0.50	24.5	C	L	210	L	0.39	22.0	C	L	120	L	0.24	19.5	B
		T	1880	TR	0.88	33.2	C	T	2560	TR	1.05	64.5	E	T	2475	TR	1.00	48.9	D
		R	120					R	160					R	155				
	Overall					39.7	D					52.7	D					45.9	D
Brookville Boulevard & 147th Avenue																			
	NB	L	50	LTR	0.81	22.8	C	L	45	LTR	0.83	23.5	C						
		T	565					T	625										
		R	15					R	30										
	SB	L	40	LTR	0.82	22.5	C	L	25	LTR	0.60	16.0	B						
		T	630					T	530										
		R	100					R	70										
	EB	L	70	LTR	0.91	40.8	D	L	70	LTR	1.05	67.9	E	Intersection not analyzed at this period					
		T	170					T	315										
		R	60					R	80										
	WB	L	50	LTR	0.94	42.4	D	L	30	LTR	0.46	15.3	B						
		T	375					T	160										
		R	35					R	15										
	Overall					29.6	C					31.8	C						

Table 4-3: Traffic Capacity Analysis for Signalized Intersections - 2012 Existing Conditions
Page 3

Intersection	EXISTING : Weekday AM							EXISTING : Weekday PM						EXISTING : Saturday MD					
	Approach	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS
Francis Lewis Boulevard & 133rd Avenue																			
	NB	L	5	LTR	0.47	14.8	B	L	10	LTR	0.31	12.4	B						
		T	235					T	180										
		R	15					R	15										
	SB	L	15	LTR	0.33	12.6	B	L	20	LTR	0.40	13.6	B						
		T	140					T	160										
		R	20					R	25										
	EB	L	20	LTR	0.34	23.6	C	L	20	LTR	0.38	24.2	C	Intersection not analyzed at this period					
		T	120					T	120										
		R	10					R	15										
	WB	L	5	LTR	0.35	23.6	C	L	15	LTR	0.43	25.0	C						
		T	155					T	150										
		R	15					R	15										
	Overall					17.8	B					18.5	B						
Francis Lewis Boulevard & Sunrise Highway																			
	NB	L	275	L	1.05	104.8	F	L	150	L	0.57	36.1	D	L	175	L	0.57	35.6	D
		T	480	T	1.01	77.1	E	T	280	T	0.50	31.3	C	T	315	T	0.60	33.9	C
	SB	T	540	TR	0.79	49.8	D	T	615	TR	0.87	55.9	E	T	555	TR	0.79	49.6	D
		R	20					R	10					R	20				
	WB	L	45	L	0.08	14.3	B	L	95	L	0.20	15.7	B	L	90	L	0.15	15.2	B
		T	1575	TR	0.83	27.9	C	T	1710	TR	0.83	27.7	C	T	1825	TR	0.90	31.8	C
		R	125					R	185					R	190				
	Overall					47.3	D					33.9	C					34.9	C
Francis Lewis Boulevard & S Conduit Avenue																			
	NB	T	600	TR	0.81	47.3	D	T	350	TR	0.55	38.4	D	T	465	TR	0.67	41.6	D
		R	10					R	5					R	75				
	SB	L	155	L	0.77	70.1	E	L	245	L	1.00	97.6	F	L	295	L	1.05	110.1	F
		T	230	T	0.36	28.2	C	T	280	T	0.53	31.9	C	T	185	T	0.36	28.2	C
	EB	L	155	LTR	0.76	24.5	C	L	80	LTR	1.03	53.9	D	L	25	LTR	1.04	55.1	E
		T	1660					T	2435					T	2530				
		R	130					R	165					R	215				
	Overall					32.0	C					53.2	D					56.2	E
Sunrise Highway/ S Conduit Avenue & Hook Creek Boulevard																			
	NB	L	160	L	1.05	131.3	F	L	80	L	1.04	146.5	F						
		T	560	TR	1.32	203.3	F	T	270	TR	1.05	104.3	F						
		R	145					R	170										
	SB	L	170	L	1.05	109.1	F	L	290	L	1.05	105.1	F						
		T	390	TR	0.82	46.6	D	T	415	TR	0.67	41.8	D						
		R	125					R	80					Intersection not analyzed at this period					
	EB	L	95	L	0.86	99.8	F	L	110	L	0.95	116.4	F						
		T	1665	TR	0.81	31.7	C	T	1650	TR	0.91	35.7	D						
		R	85					R	105										
	WB	L	165	L	1.05	135.2	F	L	210	L	1.26	206.4	F						
		T	1590	TR	0.97	46.9	D	T	1925	TR	1.12	94.2	F						
		R	140					R	340										
	Overall					69.1	E					75.4	E						

Figure 4-6: Intersection LOS – AM Peak Hour

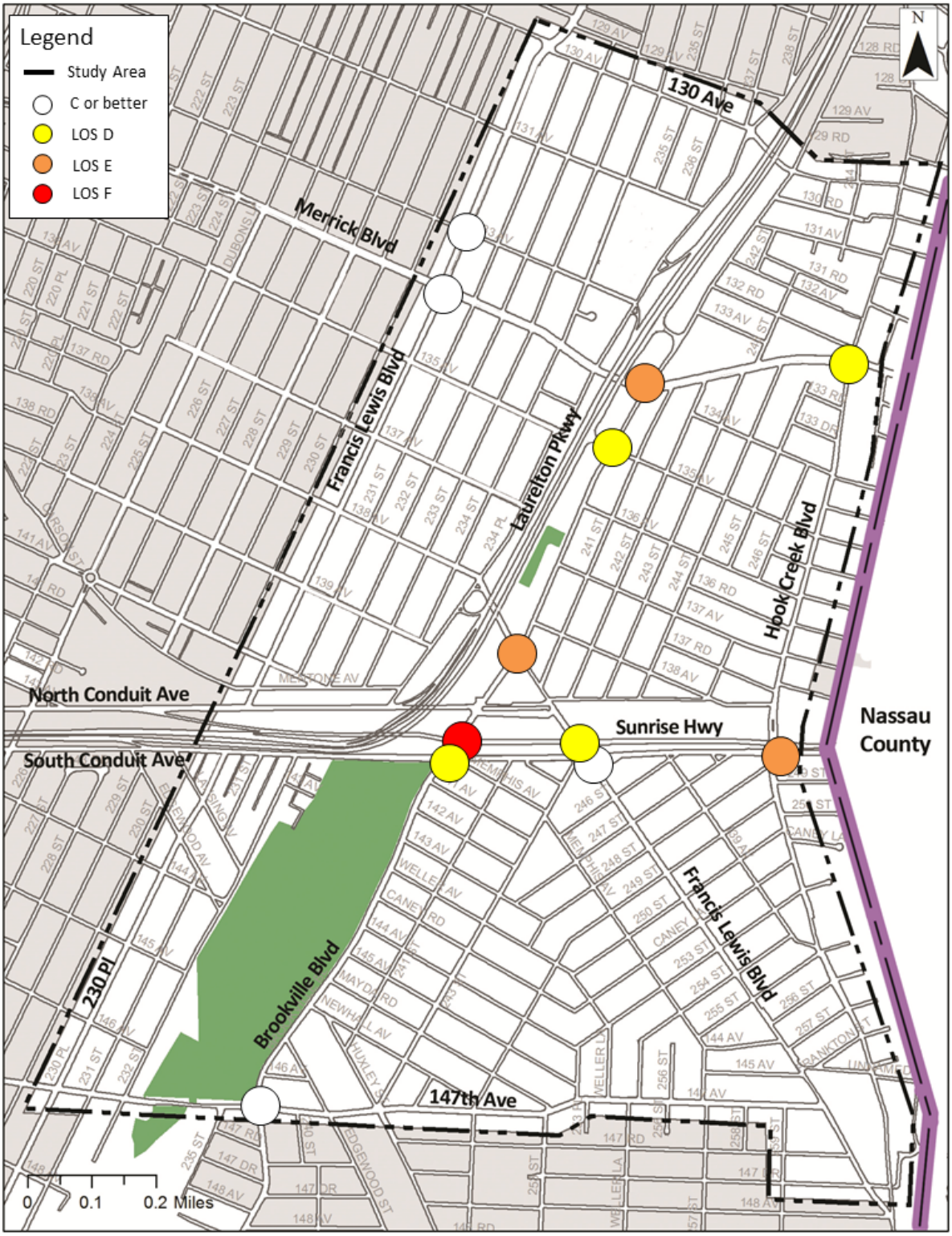


Figure 4-7: Intersection LOS – PM Peak Hour

Figure 4-8: Intersection LOS – Saturday MD Peak Hour

Figure 4-9: Intersection Lane Group with LOS D or Worst – AM Peak Hour

Figure 4-10: Intersection Lane Group with LOS D or Worst – PM Peak Hour

Figure 4-11: Intersection Lane Group with LOS D or Worst – Saturday MD Peak Hour

4.6 Vehicular Travel Speeds

Several corridors are congested particularly during the peak hours. The congestion is attributed to several factors including vehicular and/or pedestrian conflicts and illegal activities that reduce roadway capacity resulting in delays and reduced travel speeds. The "floating car" method (a technique whereby a field vehicle travels at speeds under prevailing traffic conditions) was used for the travel time runs on the following corridors for each peak period:

East-West Bound

- Merrick Boulevard between Francis Lewis Boulevard and Hook Creek Boulevard (EB & WB)
- Sunrise Highway between 225th Street and Hook Creek Boulevard (WB)
- South Conduit Avenue between 225th Street and Hook Creek Boulevard (EB)

North-South Bound

- Francis Lewis Boulevard between Merrick Boulevard and 249th Street (NB & SB)
- Brookville Boulevard between Merrick Boulevard and 147th Avenue (NB & SB)

Figures 4-12 and 4-13 show the peak hour travel speeds on major corridors. Tables 4-4a and 4-4b summarize the average travel time and travel speeds for each corridor by direction. The travel speeds throughout the study area range from 11 mph to 30 mph.

Figure 4-12: Corridors Average Travel Speed (mph) – AM Peak

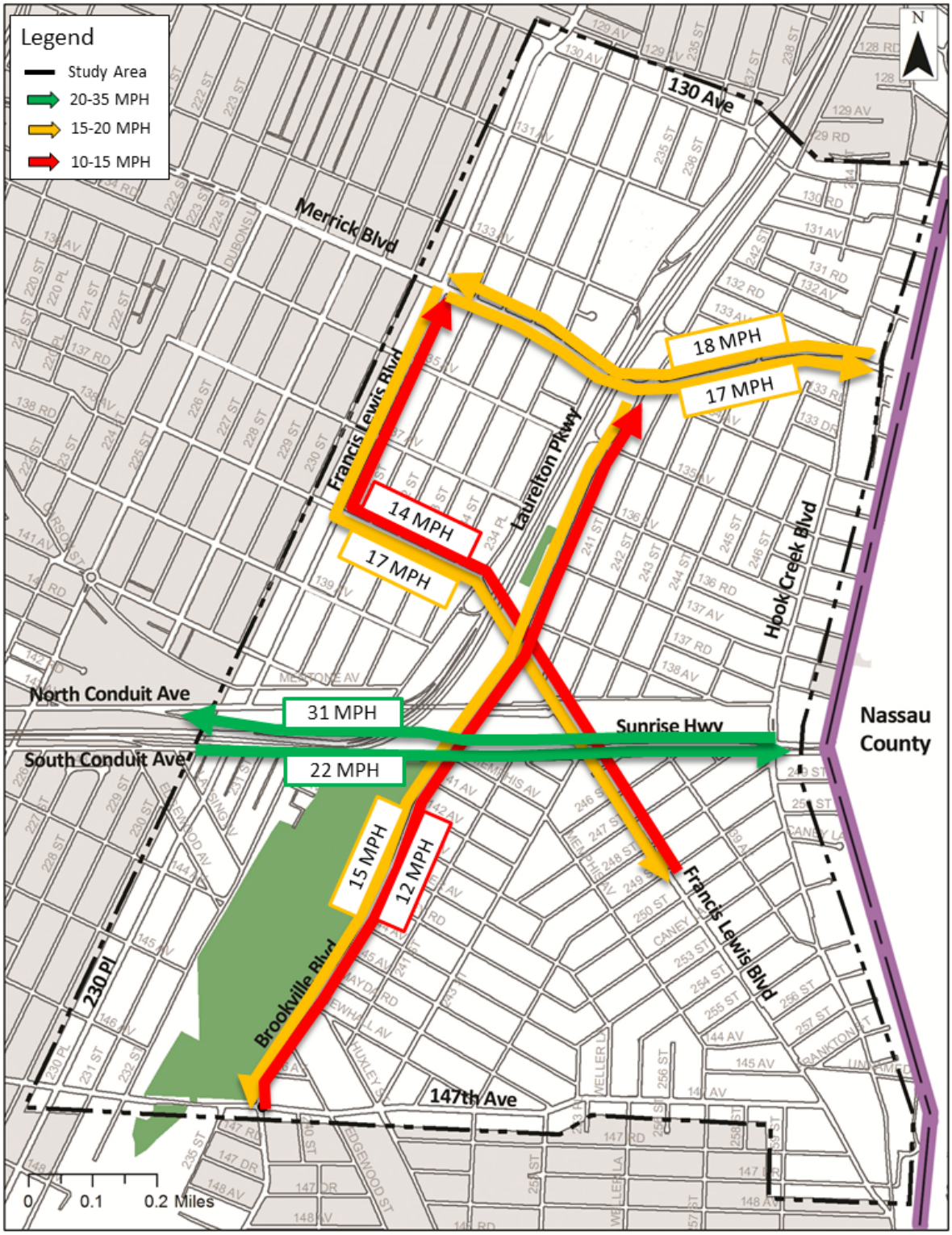


Table 4-4a: Corridor Travel Speeds – AM Peak

Corridor	Direction	Between	Average Travel Time (sec)	Average Travel Speed (mph)
Merrick Boulevard	EB	Francis Lewis Boulevard and Hook Creek Boulevard	136	17.9
Merrick Boulevard	WB	Francis Lewis Boulevard and Hook Creek Boulevard	139	17.4
Francis Lewis Boulevard	NB	Merrick Boulevard and 249th Street	299	13.9
Francis Lewis Boulevard	SB	Merrick Boulevard and 249th Street	248	16.9
Brookville Boulevard	NB	147th Avenue and Merrick Boulevard	380	12.1
Brookville Boulevard	SB	147th Avenue and Merrick Boulevard	301	15.1
S Conduit Avenue	EB	225th Street and Hook Creek Boulevard	191	22.3
Sunrise Highway	WB	225th Street and Hook Creek Boulevard	136	30.8

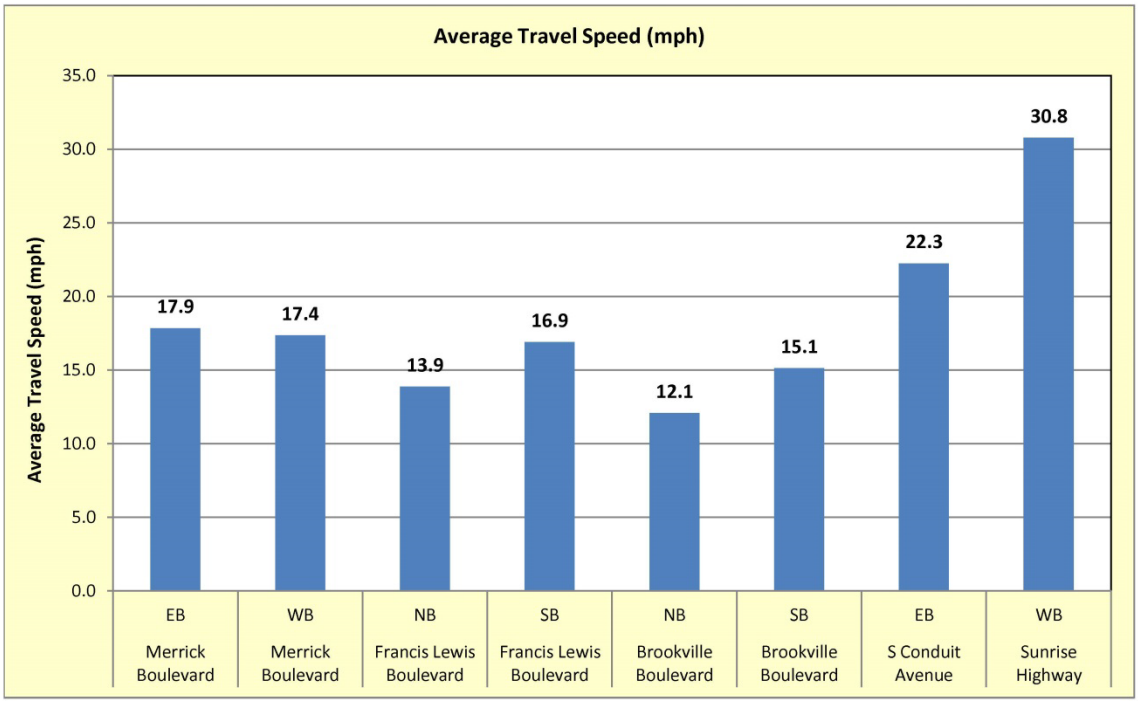


Figure 4-13: Corridors Average Travel Speed (mph) – PM Peak

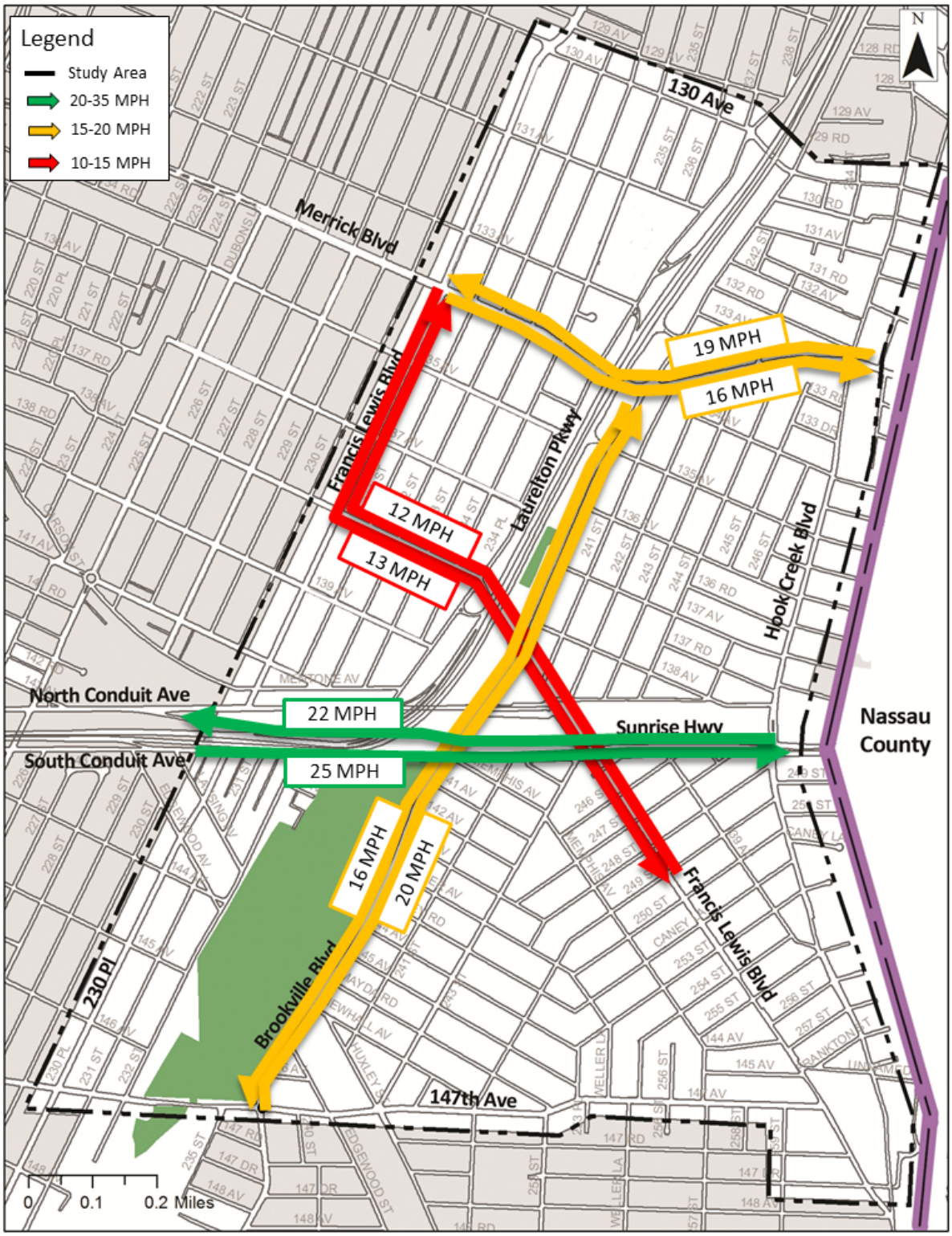
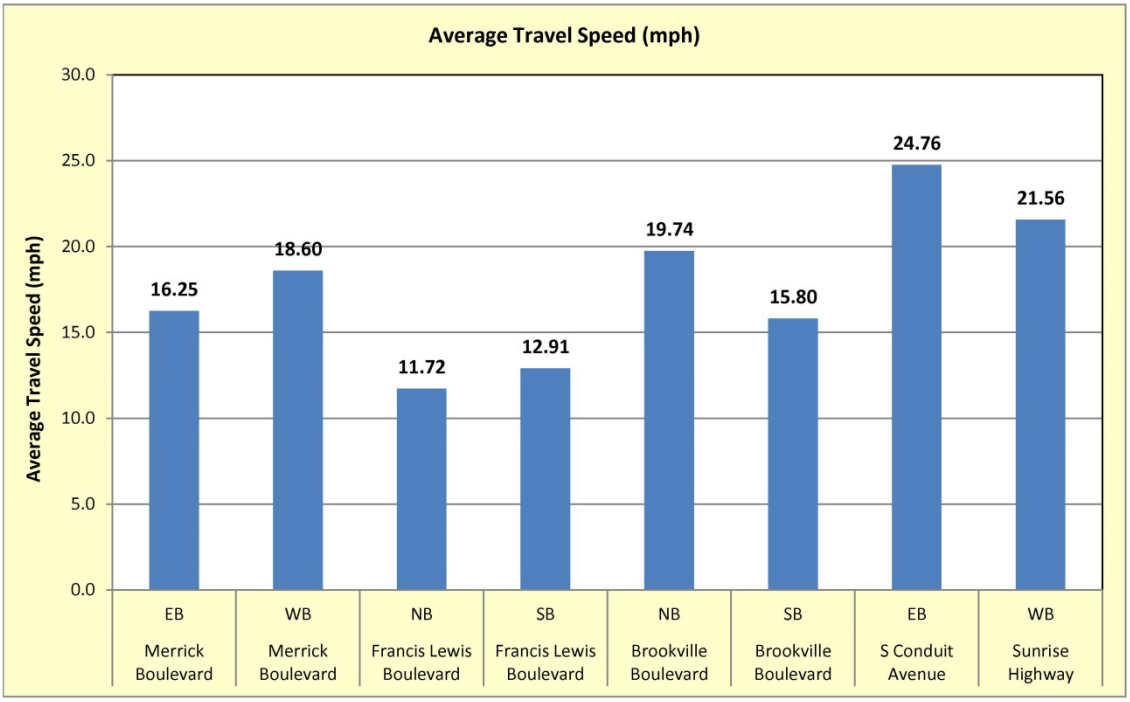


Table 4-4b: Corridor Travel Speeds – PM Peak

Corridor	Direction	Between	Average Travel Time (sec)	Average Travel Speed (mph)
Merrick Boulevard	EB	Francis Lewis Boulevard and Hook Creek Boulevard	149	16.3
Merrick Boulevard	WB	Francis Lewis Boulevard and Hook Creek Boulevard	130	18.6
Francis Lewis Boulevard	NB	Merrick Boulevard and 249th Street	354	11.7
Francis Lewis Boulevard	SB	Merrick Boulevard and 249th Street	324	12.9
Brookville Boulevard	NB	147th Avenue and Merrick Boulevard	233	19.7
Brookville Boulevard	SB	147th Avenue and Merrick Boulevard	288	15.8
S Conduit Avenue	EB	225th Street and Hook Creek Boulevard	172	24.8
Sunrise Highway	WB	225th Street and Hook Creek Boulevard	194	21.6



4.7 Future Conditions

The 2022 future traffic volumes were developed by growing the 2012 existing traffic volume by 0.5 percent per year for the first five years and 0.25 percent per year for the next five years (0.38 percent per year over the ten years period). Figures 4-14, 4-15, and 4-16 show the future traffic volumes for the AM, PM, and Saturday peak hours, respectively. Tables 4-5 and 4-6 show the 2022 future conditions v/c ratios, delays and level of service (LOS) for the AM, PM, and Saturday peak hour for un-signalized and signalized intersections.

Figure 4-14: 2022 Future Conditions Traffic Volume - AM Peak Hour

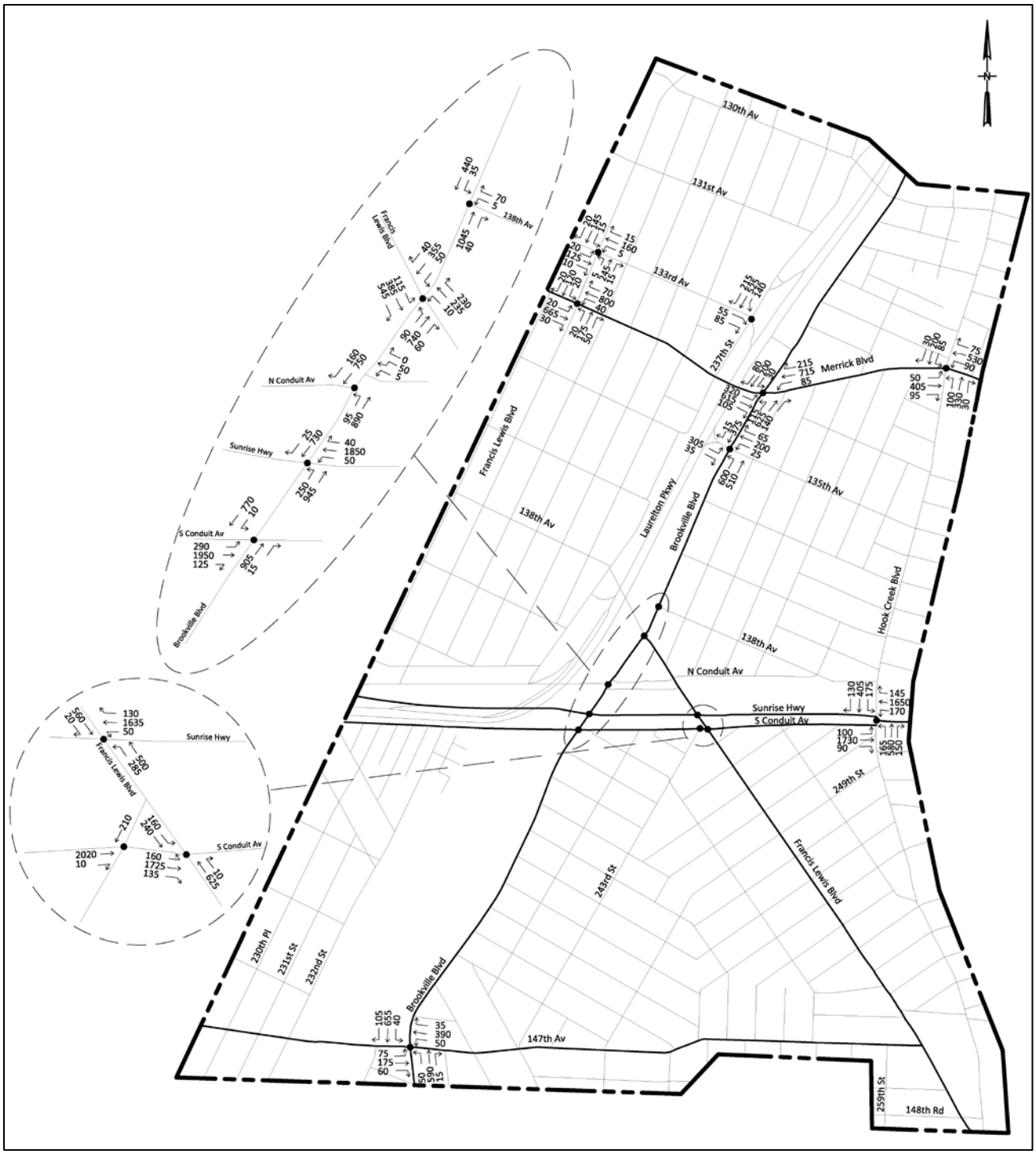


Figure 4-15: 2022 Future Conditions Traffic Volume - PM Peak Hour

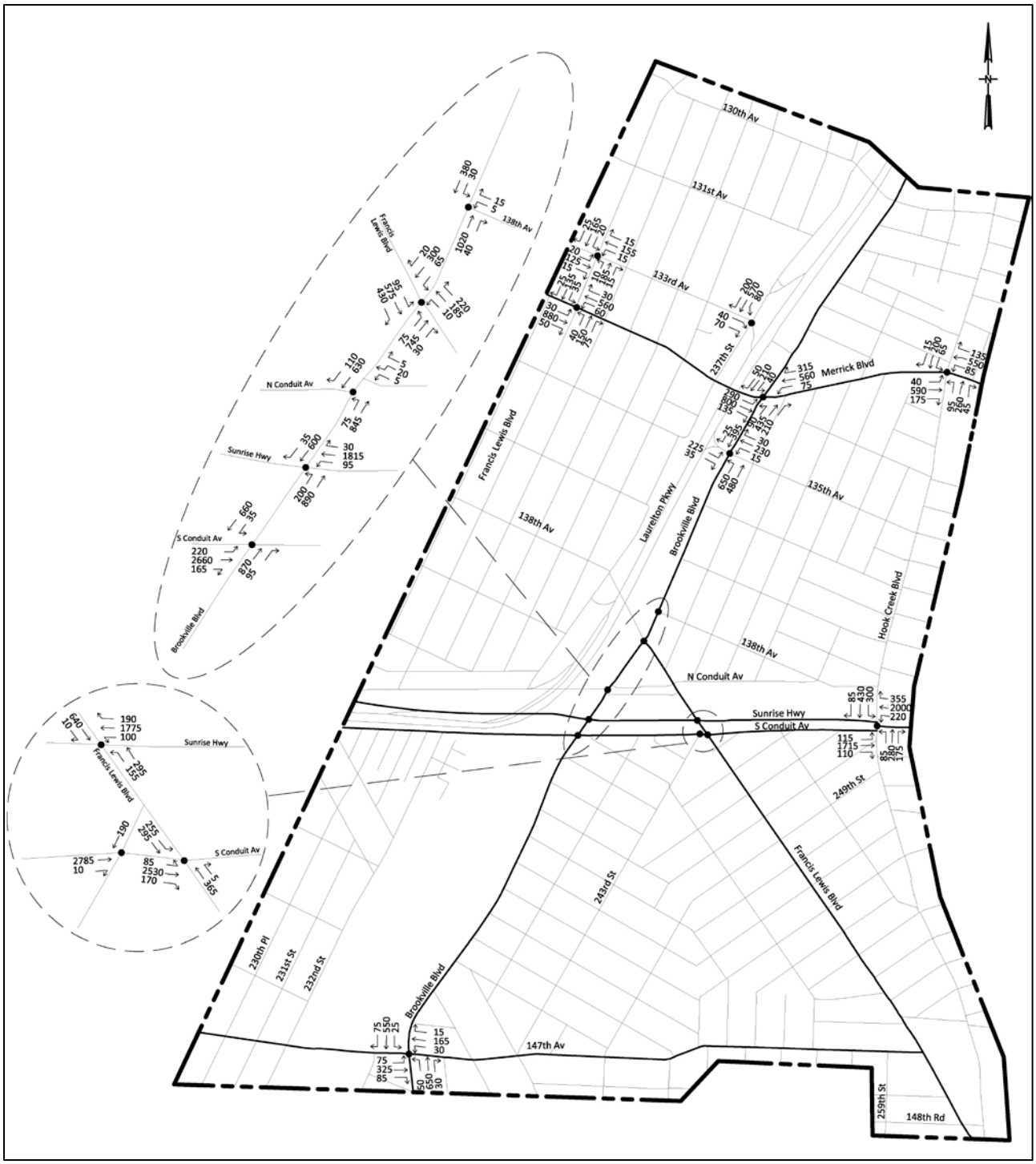


Figure 4-16: 2022 Future Conditions Traffic Volume – Saturday MD Peak Hour

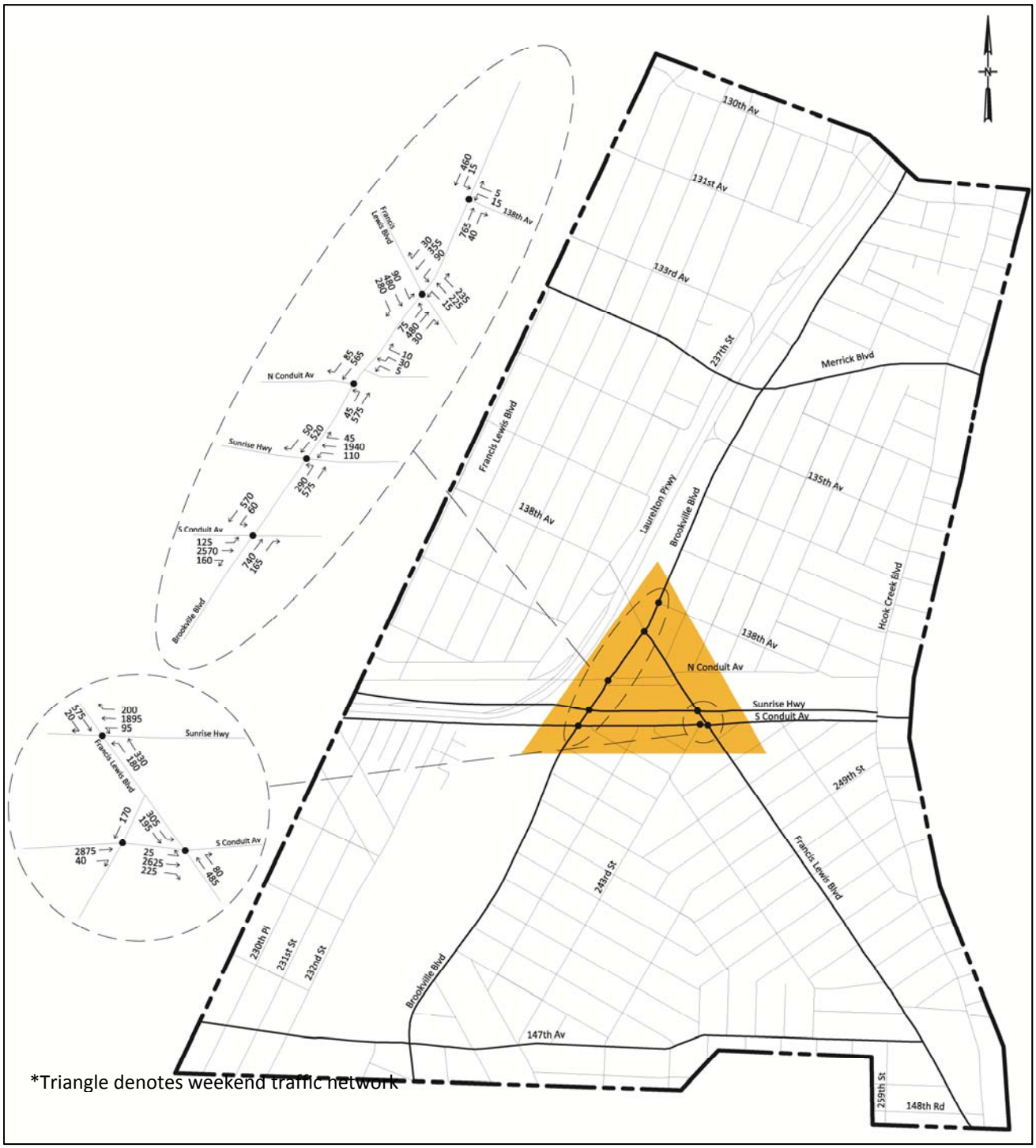


Table 4-5: Traffic Capacity Analysis for Un-signalized Intersections
2022 Future Conditions

Intersection	Approach	2022 FUTURE : Weekday AM						2022 FUTURE : Weekday PM						2022 FUTURE : Saturday MD					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS
Brookville Boulevard & 138th Avenue																			
	NB	L	1045					L	1020					L	765				
		R	40					R	40					R	40				
	SB	L	35	LT	0.10	12.3	B	L	30	LT	0.11	12.0	B	L	15	LT	0.03	10.0	A
		T	440					T	380					T	460				
	WB	L	5	LR	0.62	50.9	F	L	5	LR	0.35	43.1	E	L	15	LR	0.15	19.9	C
		R	70					R	15					R	5				
Brookville Boulevard & N Conduit Avenue																			
	NB	L	95	LT	0.21	11.3	B	L	75	LT	0.12	10.3	B	L	45	LT	0.06	9.1	A
		T	890					T	845					T	575				
	SB	T	750					T	630					T	565				
		R	160					R	110					R	85				
	WB	L	5	LTR	2.50	918.3	F	L	5	LTR	0.72	125.3	F	L	5	LTR	0.42	37.1	E
		T	50					T	20					T	30				
		R	0					R	5					R	10				
Laurelton Parkway Service Road & 133rd Avenue																			
	SB	L	140	LT	0.62	17.8	C	L	80	LT	0.57	15.9	C						
		T	525	TR	0.69	18.8	C	T	570	TR	0.71	19.4	C						
		R	215					R	200					Intersection not analyzed at this period					
	EB	T	55					T	40										
		R	85					R	70										

Table 4-6: Traffic Capacity Analysis for Signalized Intersections - 2022 Existing Conditions
Page 1

Intersection	Approach	2022 FUTURE : Weekday AM						2022 FUTURE : Weekday PM						2022 FUTURE : Saturday MD					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS
Merrick Boulevard & Francis Lewis Boulevard																			
	NB	L	20	LTR	0.64	32.0	C	L	40	LTR	0.77	38.9	D						
		T	175					T	150										
		R	50					R	75										
	SB	L	20	LTR	0.41	25.7	C	L	35	LTR	0.54	28.7	C						
		T	120					T	135										
		R	20					R	25										
	EB	L	20	L	0.15	11.2	B	L	30	L	0.17	11.1	B						
		T	665	TR	0.58	14.8	B	T	880	TR	0.71	17.7	B						
		R	30					R	50										
	WB	L	40	L	0.25	12.8	B	L	60	L	0.51	22.1	C						
		T	800	TR	0.68	17.1	B	T	560	TR	0.52	13.9	B						
		R	70					R	30										
	Overall					18.8	B					20.7	C						
Merrick Boulevard & Brookville Boulevard																			
	NB	L	115	L	0.90	65.6	E	L	90	L	0.57	31.5	C						
		T	625	TR	1.32	182.3	F	T	435	TR	1.10	93.4	F						
		R	140					R	210										
	SB	L	30	LTR	1.11	109.4	F	L	40	LTR	1.09	100.7	F						
		T	200					T	210										
		R	80					R	50										
	EB	L	320	L	0.96	69.6	E	L	290	L	0.78	41.1	D						
		T	615	T	0.86	37.9	D	T	800	T	0.93	45.8	D						
	WB	L	85	L	0.28	22.9	C	L	75	L	0.27	24.6	C						
		T	715	T	0.88	38.9	D	T	560	T	0.70	29.8	C						
	Overall					85.3	F					57.9	E						
Merrick Boulevard & Hook Creek Boulevard																			
	NB	L	100	LTR	1.06	87.0	F	L	95	LTR	0.93	53.8	D						
		T	330					T	260										
		R	30					R	45										
	SB	L	85	LTR	1.01	76.3	E	L	65	LTR	0.78	38.3	D						
		T	200					T	200										
		R	30					R	15										
	EB	L	50	L	0.34	17.9	B	L	40	L	0.29	16.6	B						
		T	405	TR	0.46	15.7	B	T	590	TR	0.60	18.0	B						
		R	95					R	175										
	WB	L	90	L	0.33	16.5	B	L	85	L	0.55	25.7	C						
		T	530	TR	0.49	16.1	B	T	550	TR	0.58	17.6	B						
		R	75					R	135										
	Overall					41.3	D					26.9	C						
Brookville Boulevard & 135th Avenue																			
	NB	L	600	L	1.09	77.0	E	L	650	L	1.10	77.4	E						
		T	510	T	0.71	13.6	B	T	480	T	0.68	12.9	B						
	SB	T	375	TR	0.91	35.9	D	T	395	TR	0.64	19.4	B						
		R	15					R	25										
	EB	L	305	L	1.01	75.1	E	L	225	L	0.80	38.7	D						
		R	35	R	0.07	9.6	A	R	35	R	0.08	9.7	A						
	WB	L	25	LTR	0.66	26.8	C	L	15	LTR	0.57	24.1	C						
		T	200					T	230										
		R	65					R	30										
	Overall					44.9	D					38.7	D						

Intersection not analyzed at this period

Table 4-6: Traffic Capacity Analysis for Signalized Intersections - 2022 Existing Conditions
Page 2

Intersection	Approach	2022 FUTURE : Weekday AM						2022 FUTURE : Weekday PM						2022 FUTURE : Saturday MD					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS
Brookville Boulevard & Francis Lewis Boulevard																			
	NB	L	90	LTR	1.10	83.7	F	L	75	LTR	1.09	80.8	F	L	75	LTR	0.79	25.9	C
		T	740					T	745					T	480				
		R	60					R	30					R	30				
	SB	L	50	LTR	1.04	72.8	E	L	65	LTR	0.86	37.3	D	L	90	LTR	0.94	46.6	D
		T	355					T	300					T	355				
		R	40					R	20					R	30				
	EB	L	115	LTR	1.09	84.1	F	L	95	LTR	1.10	84.6	F	L	90	LTR	0.97	48.0	D
		T	385					T	575					T	480				
		R	545					R	430					R	280				
	WB	L	10	LTR	0.70	28.4	C	L	10	LTR	0.56	24.1	C	L	15	LTR	0.64	25.8	C
		T	235					T	185					T	225				
		R	230					R	220					R	235				
	Overall					72.9	E					67.2	E					38.1	D
Brookville Boulevard & Sunrise Highway																			
	NB	L	250	L	0.91	71.8	E	L	200	L	0.55	44.8	D	L	290	L	0.79	58.0	E
		T	945	T	1.30	176.3	F	T	890	T	1.31	182.5	F	T	575	T	0.96	59.8	E
	SB	T	730	TR	1.10	108.7	F	T	600	TR	0.95	68.2	E	T	520	TR	0.92	64.3	E
		R	25					R	35					R	50				
	WB	L	50	LTR	0.96	43.2	D	L	95	LTR	1.00	51.6	D	L	110	LTR	1.03	59.1	E
		T	1850					T	1815					T	1940				
		R	40					R	30					R	45				
	Overall					90.0	F					85.4	F					60.1	E
Brookville Boulevard & S Conduit Avenue																			
	NB	T	905	TR	0.77	33.0	C	T	870	TR	0.78	33.6	C	T	740	TR	0.80	34.8	C
		R	15					R	95					R	165				
	SB	L	10	L	0.18	24.9	C	L	35	L	0.48	43.8	D	L	60	L	0.78	73.2	E
		T	770	T	1.07	88.2	F	T	660	T	0.91	48.4	D	T	570	T	0.99	64.1	E
	EB	L	290	L	0.52	24.9	C	L	220	L	0.41	22.3	C	L	125	L	0.25	19.7	B
		T	1950	TR	0.92	35.6	D	T	2660	TR	1.09	80.1	F	T	2570	TR	1.04	60.0	E
		R	125					R	165					R	160				
	Overall					43.7	D					62.8	E					54.3	D
Brookville Boulevard & 147th Avenue																			
	NB	L	50	LTR	0.85	25.2	C	L	50	LTR	0.91	30.2	C						
		T	590					T	650										
		R	15					R	30										
	SB	L	40	LTR	0.85	24.3	C	L	25	LTR	0.63	16.4	B						
		T	655					T	550										
		R	105					R	75										
	EB	L	75	LTR	0.96	50.8	D	L	75	LTR	1.10	85.1	F	Intersection not analyzed at this period					
		T	175					T	325										
		R	60					R	85										
	WB	L	50	LTR	0.97	48.3	D	L	30	LTR	0.47	15.6	B						
		T	390					T	165										
		R	35					R	15										
	Overall					33.7	C					38.8	D						

Table 4-6: Traffic Capacity Analysis for Signalized Intersections - 2022 Existing Conditions
Page 3

Intersection	Approach	2022 FUTURE : Weekday AM						2022 FUTURE : Weekday PM						2022 FUTURE : Saturday MD					
		Movement	Volume	Lane Group	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS	Movement	Volume	Movement	V/C Ratio	Avg Delay	LOS
Francis Lewis Boulevard & 133rd Avenue																			
	NB	L	5	LTR	0.32	12.4	B	L	10	LTR	0.32	12.4	B						
		T	245					T	185										
		R	15					R	15										
	SB	L	15	LTR	0.33	12.7	B	L	20	LTR	0.41	13.7	B						
		T	145					T	165										
		R	20					R	25										
	EB	L	20	LTR	0.35	23.7	C	L	20	LTR	0.39	24.4	C	Intersection not analyzed at this period					
		T	125					T	125										
		R	10					R	15										
	WB	L	5	LTR	0.36	23.7	C	L	15	LTR	0.44	25.2	C						
		T	160					T	155										
		R	15					R	15										
	Overall					17.7	B					18.6	B						
Francis Lewis Boulevard & Sunrise Highway																			
	NB	L	285	L	1.09	116.6	F	L	155	L	0.58	36.9	D	L	180	L	0.59	36.4	D
		T	500	T	1.05	89.1	F	T	295	T	0.53	32.0	C	T	330	T	0.63	34.8	C
	SB	T	560	TR	0.81	51.4	D	T	640	TR	0.91	59.5	E	T	575	TR	0.81	51.2	D
		R	20					R	10					R	20				
	WB	L	50	L	0.09	14.4	B	L	100	L	0.21	15.9	B	L	95	L	0.16	15.2	B
		T	1635	TR	0.86	29.5	C	T	1775	TR	0.91	32.7	C	T	1895	TR	0.94	35.4	D
		R	130					R	190					R	200				
	Overall					51.7	D					37.6	D					37.6	D
Francis Lewis Boulevard & S Conduit Avenue																			
	NB	T	625	TR	0.84	49.4	D	T	365	TR	0.58	38.9	D	T	485	TR	0.71	42.7	D
		R	10					R	5					R	80				
	SB	L	160	L	0.99	108.5	F	L	255	L	1.07	118.2	F	L	305	L	1.09	122.5	F
		T	240	T	0.46	30.2	C	T	295	T	0.56	32.7	C	T	195	T	0.38	28.5	C
	EB	L	160	LTR	0.79	25.4	C	L	85	LTR	1.07	68.5	E	L	25	LTR	1.08	69.5	E
		T	1725					T	2530					T	2625				
		R	135					R	170					R	225				
	Overall					35.8	D					65.4	E					67.7	E
Sunrise Highway/ S Conduit Avenue & Hook Creek Boulevard																			
	NB	L	165	L	1.09	141.8	F	L	85	L	1.14	176.7	F						
		T	580	TR	1.36	223.2	F	T	280	TR	1.09	114.3	F						
		R	150					R	175										
	SB	L	175	L	1.08	118.2	F	L	300	L	1.09	115.6	F						
		T	405	TR	0.85	48.7	D	T	430	TR	0.70	42.8	D						
		R	130					R	85					Intersection not analyzed at this period					
	EB	L	100	L	0.91	108.2	F	L	115	L	1.00	128.5	F						
		T	1730	TR	0.85	33.1	C	T	1715	TR	0.95	39.5	D						
		R	90					R	110										
	WB	L	170	L	1.08	145.8	F	L	220	L	1.32	230.9	F						
		T	1650	TR	1.01	55.3	E	T	2000	TR	1.17	112.9	F						
		R	145					R	355										
	Overall					75.9	E					86.5	F						

4.8 Future Speeds

The future peak hour travel speed and delays were computed from HCS. Projected future vehicular trips are relatively small. Therefore, the future travel speeds will principally remain the same or slightly worsen along major corridors analyzed in the study area. Tables 4-7a and 4-7b show the comparison of the average travel speeds for the corridors analyzed under the existing and projected future conditions.

Table 4-7a: Average Speeds Comparison – AM Peak Period

Corridor	Direction	Between	Average Travel Time (sec)		Average Travel Speed (mph)	
			2012 Existing	2022 Projected Future	2012 Existing	2022 Projected Future
Merrick Boulevard	EB	Francis Lewis Boulevard and Hook Creek Boulevard	136	144	17.9	16.9
Merrick Boulevard	WB	Francis Lewis Boulevard and Hook Creek Boulevard	139	147	17.4	16.5
Francis Lewis Boulevard	NB	Merrick Boulevard and 249th Street	299	339	13.9	12.2
Francis Lewis Boulevard	SB	Merrick Boulevard and 249th Street	248	269	16.9	15.6
Brookville Boulevard	NB	147th Avenue and Merrick Boulevard	380	433	12.1	10.6
Brookville Boulevard	SB	147th Avenue and Merrick Boulevard	301	348	15.1	13.1
S Conduit Avenue	EB	225th Street and Hook Creek Boulevard	191	203	22.3	21.0
Sunrise Highway	WB	225th Street and Hook Creek Boulevard	136	155	30.8	27.0

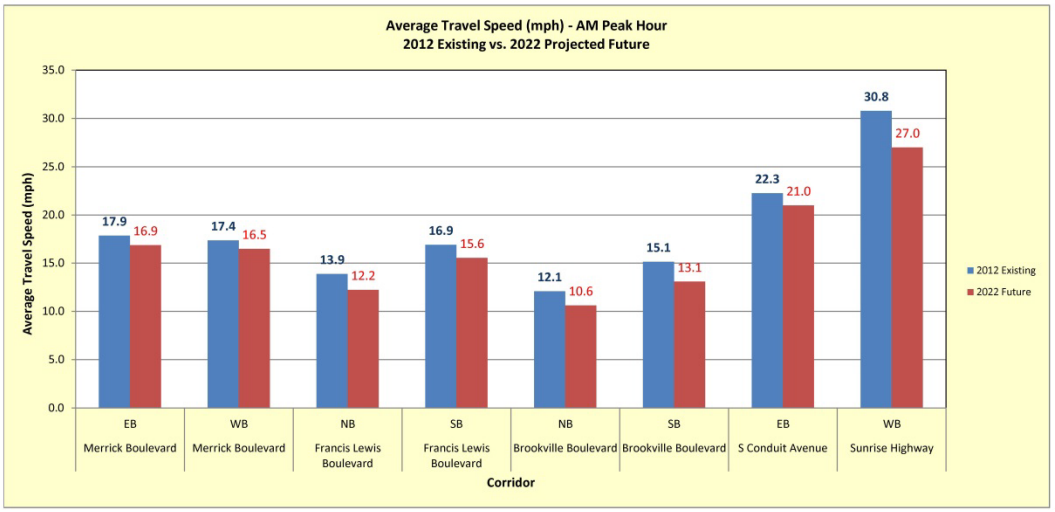
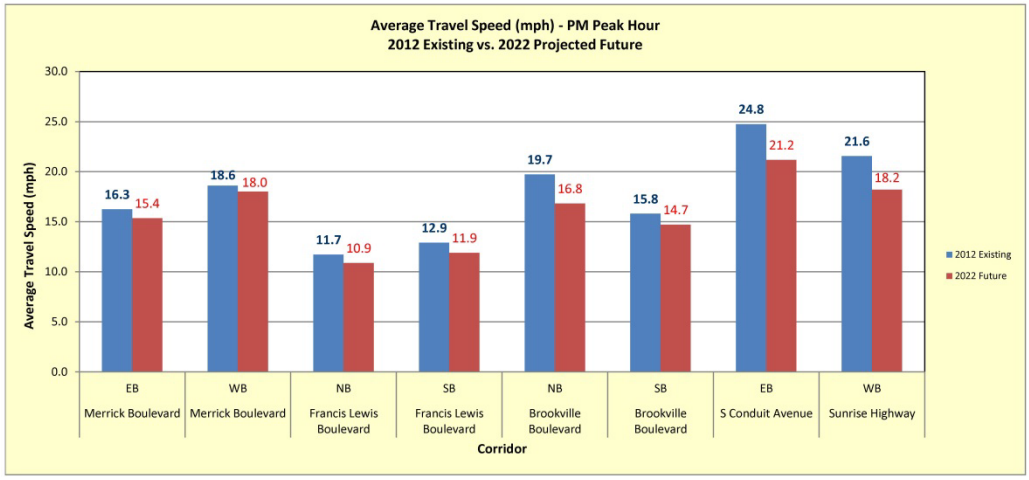


Table 4-7b: Average Speeds Comparison – PM Peak Period

Corridor	Direction	Between	Average Travel Time (sec)		Average Travel Speed (mph)	
			2012 Existing	2022 Projected Future	2012 Existing	2022 Projected Future
Merrick Boulevard	EB	Francis Lewis Boulevard and Hook Creek Boulevard	149	158	16.3	15.4
Merrick Boulevard	WB	Francis Lewis Boulevard and Hook Creek Boulevard	130	134	18.6	18.0
Francis Lewis Boulevard	NB	Merrick Boulevard and 249th Street	354	381	11.7	10.9
Francis Lewis Boulevard	SB	Merrick Boulevard and 249th Street	324	352	12.9	11.9
Brookville Boulevard	NB	147th Avenue and Merrick Boulevard	233	273	19.7	16.8
Brookville Boulevard	SB	147th Avenue and Merrick Boulevard	288	310	15.8	14.7
S Conduit Avenue	EB	225th Street and Hook Creek Boulevard	172	201	24.8	21.2
Sunrise Highway	WB	225th Street and Hook Creek Boulevard	194	229	21.6	18.2



5 PUBLIC TRANSPORTATION

5.1 Introduction

While there is no subway service in the study area, it is well served by a network of bus routes on major corridors - Merrick Boulevard, North and South Conduit Avenues, 147th Avenue, Hook Creek Boulevard, Francis Lewis Boulevard, Brookville Boulevard, and 243rd Street. Seven bus lines provide service in the area - Q5, Q85 (MTA NYC Transit), Q111, Q113 (MTA Bus Company), X63 (MTA Express Bus), and N4, N8 (Nassau Inter-County Express). The Long Island Rail Road (LIRR) has one station in the area located at the intersection of Francis Lewis Boulevard and 243rd Street. Rail service from this station goes to Atlantic Center in Brooklyn and Far Rockaway, Queens.

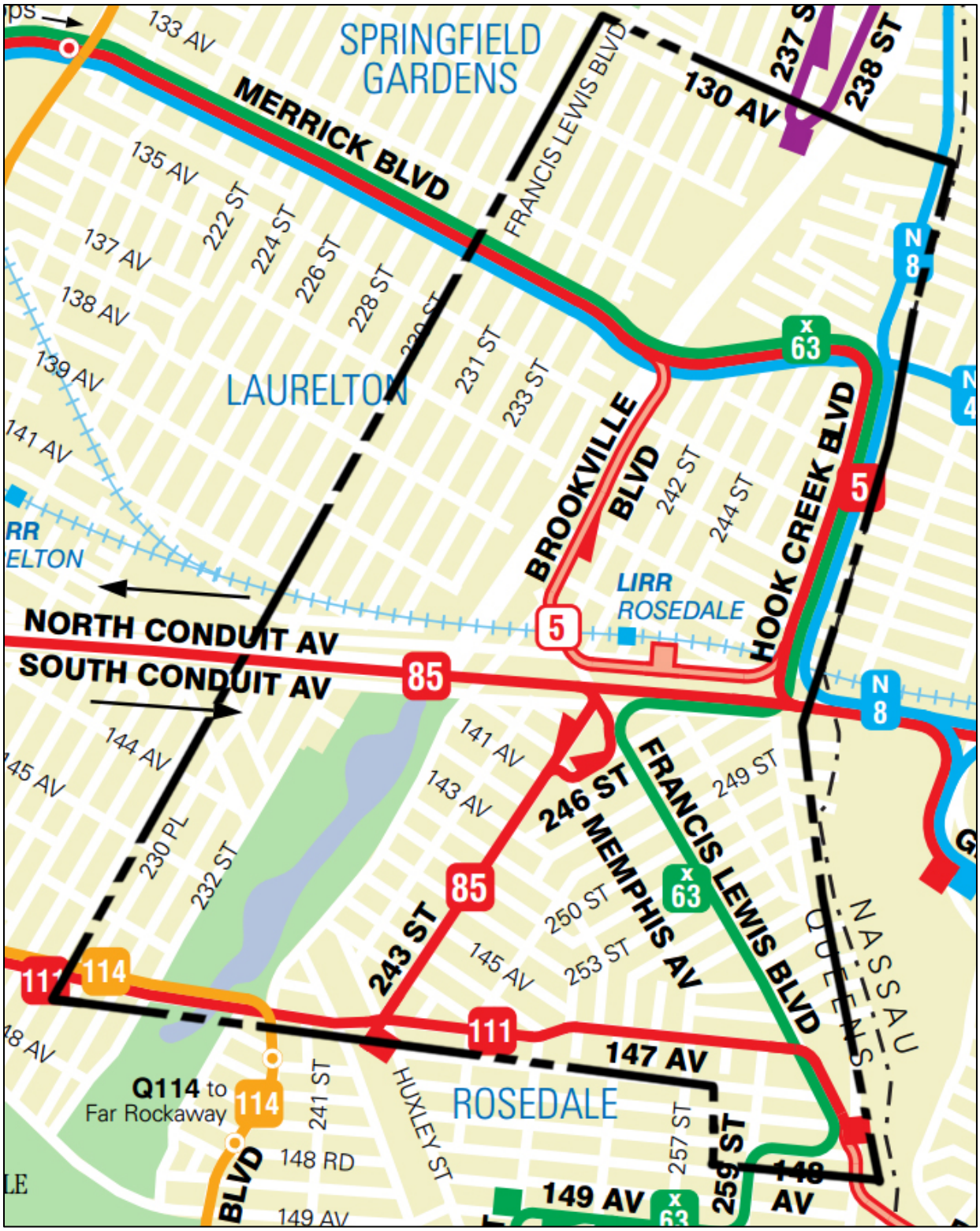
5.2 Bus Routes

MTA and NICE provide surface transit service in the study area; their routes are shown in Figure 5-1. The frequency of bus service varies greatly, reflecting different user patterns within the area. Table 5-1 shows bus headway information.

Q5: The Q5 which travels between Jamaica Center (Parsons/Archer) and Green Acres Mall has two routes – one, via Merrick Boulevard and Hook Creek Boulevard or two, via Brookville Boulevard and Francis Lewis Boulevard (with a stop at the LIRR Rosedale station). During weekday rush hours all buses go to Green Acres Mall; outside rush hour buses operate either to Green Acres Mall or Rosedale. All late night buses operate between Jamaica Center (Parsons/Archer) and the Rosedale LIRR Station. The Q5 (LTD) operates between Jamaica Center (Parsons/Archer) and the LIRR Rosedale station during weekday rush hours.

Q85: The Q85 operates between Jamaica Center (Persons/Archer) and Green Acres Mall or 243rd Street/Huxley Street in Rosedale. Within the study area, the Q85 travels along North & South Conduit Avenue to Green Acres Mall or along 243rd Street to Huxley Street in Rosedale. The major transfer point along this route is North/South Conduit Avenue and Hook Creek Boulevard (connections to LIRR via Q5, N8, and X63). The Q85 (LTD) operates

Figure 5-1: Bus Route Map



between Jamaica Center (Parsons/Archer) and 243rd Street/Huxley Street in Rosedale, weekdays only.

Q111: The Q111 operates between 148th Avenue/Francis Lewis Boulevard (Rosedale) and Jamaica Center (Parsons/Archer). There is also a Q111 service that operates between Farmers Boulevard/Guy R. Brewer Boulevard, or 137th Avenue/Guy R. Brewer Boulevard and Jamaica Center (Parsons/Archer). Within the study area, the Q111 travels along 147th Avenue with transfer points at Brookville Boulevard (Q114), 243rd Street (Q85), and at Francis Lewis Boulevard (X63).

Q114: The Q114 operates between Jamaica Center (Parsons/Hillside) and Far Rockaway (Beach 20th Street/Seagirt Boulevard) via Brookville/Rockaway Boulevards daily. Within the study area, it travels along 147th Avenue to Brookville Boulevard and south to Rockaway Boulevard.

X63: The X63 express operates between Rosedale (149th Avenue/253rd Street) and Manhattan (23rd Street/1st Avenue) during weekdays rush hours only. Within the study area en route to Manhattan it travels along 149th Avenue, 259th Street, Francis Lewis Boulevard, Hook Creek Boulevard, and Merrick Boulevard. There are transfer points at 148th Avenue/Francis Lewis Boulevard (Q111), North/South Conduit Avenue and Hook Creek Boulevard (Q85, Q5, and N8), and Hook Creek/Merrick Boulevards (Q5, N4, and N8).

N4: The N4 bus operates between Jamaica Center (Parsons/Archer) and the LIRR-Freeport Station. Within the study area, it travels along Merrick Boulevard with a major transfer point at Hook Creek Boulevard providing connections to the Q5 and X63 express.

N8: The N8 operates between Floral Park and Green Acres Mall Loop in Nassau County via Hook Creek Boulevard and Sunrise Highway during weekdays and Saturdays. Within the study area, it travels along Hook Creek Boulevard and Sunrise Highway to Green Acres Mall.

Table 5-1: Average Frequency of NYCT and NICE Bus Service (in minutes)

	Weekday					Saturday					Sunday				
Route	**AM**	**Noon**	**PM**	**Eve**	**Night**	**AM**	**Noon**	**PM**	**Eve**	**Night**	**AM**	**Noon**	**PM**	**Eve**	**Night**
MTA NYCT Bus															
Q5	8	8	6	8	60	9	9	7	8	60	15	12	10	10	60
Q5(Ltd)	8	-	8	12	-	-	-	-	-	-	-	-	-	-	-
Q85 (Rosedale)	8	15	16	17	40	11	20	16	20	40	15	24	23	20	40
Q85(mall)	24	15	18	17	-	60	20	16	17	-	60	24	20	20	-
Q85(Ltd)	6	-	13	20	-	-	-	-	-	-	-	-	-	-	-
X63	17	-	15	-	-	-	-	-	--	-	-	-	-	-	-
MTA Bus															
Q111	2	5	3	6	30	5	5	6	10	30	15	5	6	10	30
Q111(additional)	6	10	5	8	60	10	10	10	20	60	30	10	15	20	60
Q114	12	20	10	20	60	20	20	20	20	60	20	20	20	20	60
NICE Bus															
N4	9	20	10	20	-	18	20	20	20	-	30	30	30	30	-
N8	60	60	60	120	-	-	120	120	-	-	-	-	-	-	-

Notes: Time Periods: AM= 7-9 AM, Noon= 11 AM-1 PM, PM= 4-7 PM, Eve= 7-9 PM and Night= Midnight - 4 AM
"-" = no service during time period.

5.3 2013 Bus Ridership

Bus ridership includes all passengers who board buses using a valid Metro Card, cash, transfer, SBS ticket, or pass. Ridership does not include employees, non-revenue passengers (e.g., children under 44" tall traveling with an adult). Average weekday, Saturday, and Sunday ridership includes every weekday, Saturday, and Sunday in the year, except major holidays. Average Weekend ridership is the two day sum of average Saturday plus average Sunday ridership. Ridership on major holidays (New Year's Day, Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas) is included only in the annual total.

At the end of 2013, the New York City Transit bus system had 192 local, 6 Select Bus Service, and 26 express routes, and the MTA Bus Company had 45 local and 35 express routes. Of the 192 local bus routes, the Q5 was ranked 61st with 3,991,253 annual riders, while the Q85 ranked 62nd with 3,943,267 annual riders. The X63 was ranked 19 of 29 express busses. Of the MTA Bus Company routes the Q111 ranked 7th out of 45 bus lines with 4,274,980 annual riders, and the Q113 ranked 10th with 3,595,325 annual riders. Bus ridership within the study area is shown in the Table 5-2, 5-3 and Figure 5-2.

Table 5-2: 2013 MTA NYCT Ridership

Bus Route	*Rank	Annual Total	Weekday Average	Weekend Average
Q5	61	3,990,760	12,510	14,841
Q85	62	3,966,722	12,900	12,554
X63	19	170,165	670	-

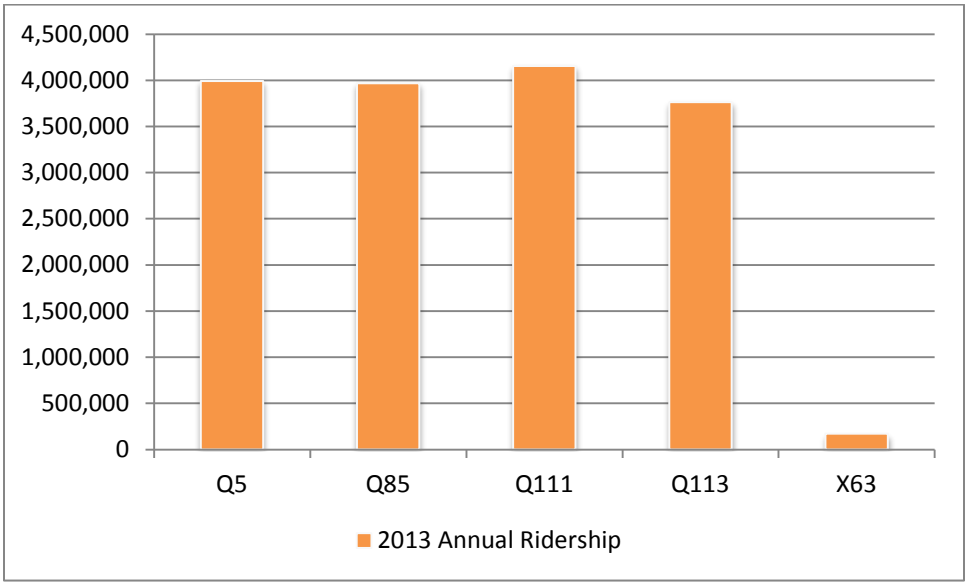
*Ranking out of 190 bus line and 29 Express routes.
Source: MTA

Table 5-3: 2013 MTA Bus Company Ridership

Bus Route	*Rank	Annual Total	Weekday Average	Weekend Average
Q111	7	4,154,512	13,832	11,644
Q113	10	3,762,914	11,745	14,136

*Ranking out of 45 bus lines.
Source: MTA

Figure 5-2: MTA NYC Transit 2013 Annual Ridership



5.4 Long Island Railroad

The Long Island Rail Road (LIRR), Far Rockaway branch-Rosedale station is located at the intersection of Francis Lewis Boulevard/Sunrise Highway and 243rd Street (Rosedale). This intersection is a major transfer point that provides connections to the Q5, Q85, and X63 express.

6 PARKING

6.1 Introduction

Parking is an essential part of the transportation system as parking maneuvers and ins and outs to facilities can have significant impact on traffic flow. Inadequate parking can cause unnecessary circulation as drivers search for parking spaces; and roadway capacity may be reduced by illegal parking.

An extensive survey was conducted during the weekday peak periods (7:30-9:30AM, and 4:00-6:00PM) of all parking facilities along major corridors. It documented the number of parking spaces supplied, existing on-street demand (utilization), and price structure.

On-street parking is generally permitted on all streets except where prohibited by regulations to facilitate street cleaning or rush hour parking restrictions to provide an additional lane for traffic. Off-street parking facilities (lot/garage) were mainly accessory parking associated with retail stores, offices, and residential buildings.

6.2 Off-Street Parking

An inventory of off-street accessory parking (garage/lots) identified 27 facilities with a combined capacity of 1,166 spaces. The majority of the garages/lots are located along Merrick Boulevard, North Conduit Avenue, and Sunrise Highway. See Figure 6-1.

There is one Municipal parking lot, the Rosedale Municipal Parking Field, on Francis Lewis Boulevard between Sunrise Highway and North Conduit Avenue near the LIRR Rosedale Station. The lot has 164 spaces, 41 spaces are priced at 25¢ per 15 minutes and 123 spaces are for quarterly permit at $110. The NYPD 105th Precinct has two lots located along North Conduit Avenue. The remaining 23 off-street facilities are accessory to businesses (banks, restaurants, auto repair, and supermarkets). The largest facility, the Cross Island Plaza office complex on Merrick Boulevard between Brookville Boulevard and 243rd Street, has 425 spaces.

Table 6-1 lists the capacity for the accessory parking facilities during the weekday peak period and Figure 6-1 shows the location of each facility. The parking capacities for some facilities were estimated, as access was restricted.

Table 6-1: Off-Street Parking Facilities

ID	Lot/Garage Name	Location	Cap.	Type
1	Classical Transportation	Francis Lewis Blvd b/w Laurelton Parkway/Brookville Blvd	6	Commercial
2	Golden Krust	Francis Lewis Blvd b/w Brookville Blvd/N. Conduit Ave	6	Commercial
3	Grocery Store/Church Parking	Francis Lewis Blvd b/w Brookville Blvd/N. Conduit Ave	4	Commercial
4	Municipal Parking	Francis Lewis Blvd b/w Sunrise Hway/N. Conduit Ave	164	Government
5	Citgo Gas Station	Francis Lewis Blvd b/w Sunrise Highway/245 St	6	Commercial
6	Rite Aide	Francis Lewis Blvd b/w 245th St & 246 St	35	Commercial
7	NY Public Adjusters	Francis Lewis Blvd b/w 246th St & 247 St	14	Commercial
8	NYPD	N. Conduit Ave (s) b/w 242 St & 243 St	15	Government
9	NYPD	N. Conduit Ave (s) b/w 244 St & 138 Ave/246th St	120	Government
10	AT&T/Happy Nail Spa	S. Conduit Ave b/w Hook Creek Blvd & 247 St	15	Commercial
11	Check Cashing	S. Conduit Ave b/w Hook Creek Blvd & 247 St	16	Commercial
12	Express Gas Station	S. Conduit Ave b/w 247 St & 246 St	6	Commercial
13	BP Gas Station	S. Conduit Ave b/w 246 St & 245 St	6	Commercial
14	Bank of America	S. Conduit Ave b/w 243 St & 140 Ave	14	Commercial
15	Duane Reade	Merrick Blvd (N) b/w 230 St & Francis Lewis Blvd	34	Commercial
16	Ridgewood Savings Bank	Merrick Blvd (S) b/w 230 St & Francis Lewis Blvd	6	Commercial
17	J Cap Programs	Merrick Blvd (N) b/w 231 St & 232 St	30	Commercial
18	Dry Cleaners	Merrick Blvd (N) b/w 232 St & 233 St	8	Commercial
19	Laurelton Plaza	Merrick Blvd (N) b/w 234 St & 237 St	10	Commercial
20	Cross Island Plaza Parking	Merrick Blvd (S) b/w Brookville Blvd & 241 St	70	Commercial
21	Cross Island Plaza	Merrick Blvd (N) b/w Brookville Blvd & 243 St	425	Commercial
22	USA Diner	Merrick Blvd (N) b/w 243 St & Hook Creek Blvd	25	Commercial
23	Private Parking	Merrick Blvd (N) b/w 245 St & Hook Creek Blvd	70	Public
24	State Farm Insurance/JS Pizza	Merrick Blvd (N) b/w 243 St & Hook Creek Blvd	10	Commercial
25	McDonalds	Merrick Blvd (S) b/w 244 St & Hook Creek Blvd	30	Commercial
26	7-Eleve/City Auto Body	Merrick Blvd (S) b/w Hook Creek Blvd & West End Ave	15	Commercial
		Total	**1,160**	

Figure 6-1: Off-Street Parking Facilities

6.3 On-Street Parking

The on-street parking capacity varies by time of day due to parking regulations that range from alternate side of the street parking to rush hour regulations. The field survey focused on major corridors where commercial activities are concentrated. Table 6-2 lists on-street parking regulation codes and Figure 6-2 shows the location of these regulations in the study area.

Table 6-2: On Street Parking Regulation Codes

Code	Regulation	Time	Day
1	1 Hour Parking	9:00AM-7:00PM	Except Sunday
2	2 Hour Parking	9:00AM-7:00PM	Except Sunday
3	No Parking Anytime		
4	No Parking	3:00-6:00AM	Tuesday
5	No Parking	7:00AM-4-00PM	School Days
6	No Standing/Bus Stop		
7	No Standing Anytime		
8	No Standing	4:00PM-7PM	Mon-Fri

On-Street Parking Utilization/Demand

The parking survey documented the parking utilization (number of parked vehicles) by time of day (AM: 7:30- 8:30 and PM: 5:00-6:00) and parking regulations on each block face along the major corridors. Table 6-3 shows parking capacity and utilization by corridor.

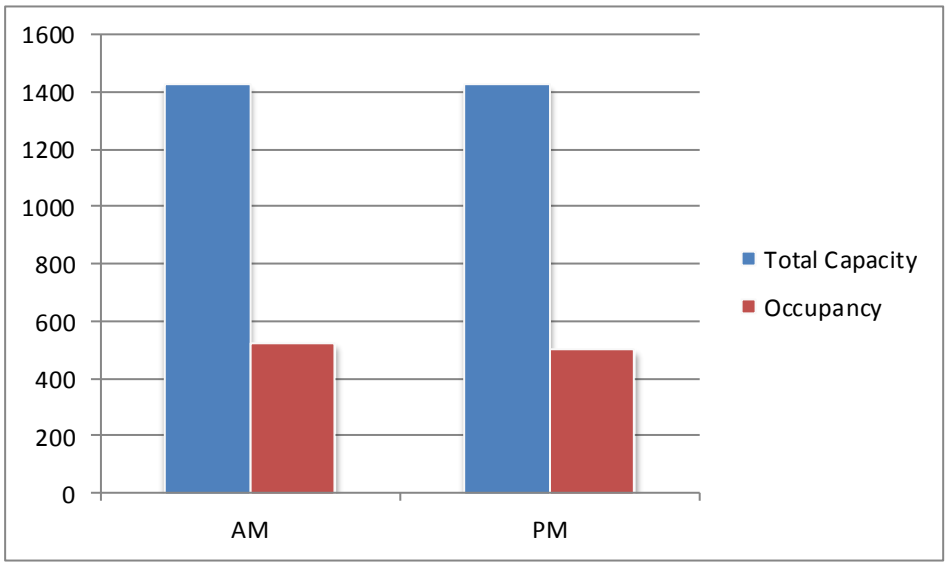
There are approximately 1,428 on-street parking spaces in the study area; however, only 527 and 504 parking spaces are utilized during the AM and PM peak hours, respectively. The average parking utilization is approximately 36.9% and 35.3% during the AM and PM peak hours, respectively. See Figure 6-3.

Figure 6-2: Parking Regulation

Table 6-3: On-Street Parking Supply and Demand

Location	Curb	Capacity		Occupancy		Utilization (%)	
		AM	PM	AM	PM	AM	PM
Francis Lewis Boulevard	East- North	177	177	79	76	44.6	42.9
	West - South	168	168	58	56	34.5	33.3
230th Place	East	145	145	79	64	54.5	44.1
	West	139	139	63	42	45.3	30.2
Merrick Boulevard	North	80	80	37	52	46.3	65.0
	South	77	77	50	50	64.9	64.9
Brookville Boulevard	East	82	82	18	19	22.0	23.2
	West	73	73	18	25	24.7	34.2
147th Avenue	North	86	86	49	41	57.0	47.7
	South	139	139	34	43	24.5	30.9
Hook Creek Boulevard	East	145	145	30	21	20.7	14.5
	West	117	117	12	15	10.3	12.8
Total		**1,428**	**1,428**	**527**	**504**	**36.9**	**35.3**

Figure 6-3: On-Street Parking Capacity and Utilization



Metered Parking

The municipal parking system uses fees and time restrictions to encourage parking turnover in commercial areas. There are 77 metered parking spaces, concentrated mainly on Merrick and Francis Lewis Boulevards. These metered parking spaces cost 0.25 cents/15-minute with one or two hour limits. Figure 6-4 shows locations of metered parking.

Double Parking

Even though the area's supply exceeds demand, localized parking shortfall and double parking was observed on corridors with commercial activity. On Francis Lewis Boulevard near the LIRR station double parking occurs during the AM and PM peak hours due to commuter drop off and pick up.

Figure 6-4: Metered and No Standing Regulations

7 PEDESTRIAN ANALYSIS

7.1 Introduction

All person trips generated by land uses generally contain a walking component either at the beginning or at the end of each trip. These trips contribute to the pedestrian loads/volumes on sidewalks and crosswalks. Pedestrian counts were conducted at key locations and the Highway Capacity Manual (HCM) methodology was used to analyze pedestrian LOS.

7.2 Existing Condition

There were a few locations in the study area with high concentrations of pedestrians. Therefore, the pedestrian analysis focused on crosswalks and corners at two intersections along South Conduit Avenue, near the entrances and exits to the LIRR rail station, and the intersection of Brookville Boulevard and 147th Avenue, Q111 and Q114 bus transfer point. Pedestrian counts were conducted during the AM (7:30-8:30) and PM (5:00-6:00) peak hour at three intersections listed below, and shown in Figure 7-2.

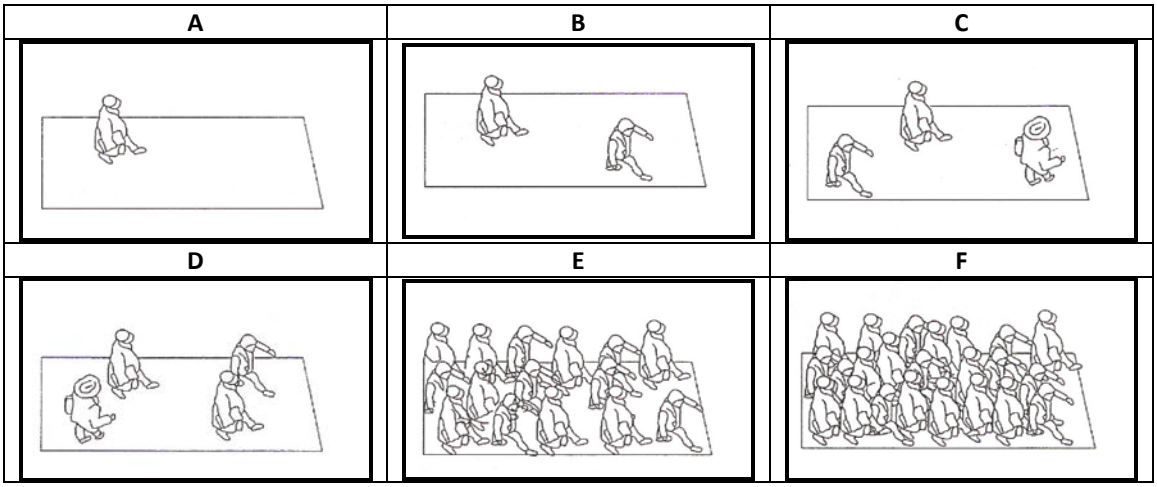
1. Francis Lewis Boulevard at South Conduit Avenue
2. South Conduit Avenue at 243rd Street
3. Brookville Boulevard at 147th Avenue

The pedestrian level of service analysis (LOS) was conducted using the 2000 Highway Capacity Manual methodology. Pedestrian LOS is measured as the pedestrian flow rate per minute per foot of width (p/min/ft). This indicates the quality of pedestrian movement and comfort, and is defined in a density-comfort relationship. LOS Criteria for crosswalks and corners, which are measured in square feet of space per pedestrian, are shown in Table 7-1 and Figure 7-1.

Table 7-1: Pedestrian LOS Criteria

LOS	Description	Space (ft^2/persons)	Flow Rate (persons/min/ft)	Speed (ft/sec)	V/C Ratio
A	Unrestricted	> 60	< or= 5	> 4.25	< or = 0.21
B	Slightly restricted	40-60	5-7	4.17-4.25	0.21-0.31
C	Restricted, but fluid	24-60	7-10	4.00-4.17	0.31-0.44
D	Restricted, necessary to continuously alter walking stride and direction	15-24	10-15	3.75-4.00	0.44-0.65
E	Severely restricted	8-15	15-23	2.50-3.75	0.65-1.00
F	Forward progress only by shuffling; no reverse movement possible	< or = 8	Variable	< or = 2.50	Variable

Figure 7-1: Pedestrian LOS



Crosswalk Analysis

The highest pedestrian volumes were recorded on the north and south crosswalks of Brookville Boulevard and 147th Avenue intersection during the PM peak hour; the analysis shows all crosswalks operating at LOS A. Table 7-2 provides a summary of the crosswalk analysis and Figure 7-2 shows the pedestrian volumes.

Table 7-2: Existing Conditions Crosswalk Level of Service (LOS)

Location	Intersection	Crosswalk	AM		PM	
			SF/P	LOS	SF/P	LOS
1	Francis Lewis Boulevard & S. Conduit Avenue	North	-	-	-	-
		South	1189.3	A	742.7	A
		East	119.3	A	104.4	A
		West	-	-	-	-
2	S. Conduit Avenue & 243rd Street	North	-	-	-	-
		South	627.7	A	383.8	A
		East	-	-	-	-
		West	140.2	A	111.2	A
3	Brookville Boulevard & 147th Avenue	North	458.2	A	1229.8	A
		South	3942	A	1996.3	A
		East	469.4	A	632.2	A
		West	941.0	A	856.5	A

7.3 Future Conditions

Under the 2022 future conditions pedestrian volumes are not expected to increase as a result of new developments or any other socioeconomic factors. A growth rate of 3.8% was applied to existing pedestrian volumes for the analysis and no significant changes were observed. See Figure 7-3 and Table 7-3.

Figure 7-2: 2012 Existing Conditions Pedestrian Volumes – AM/PM

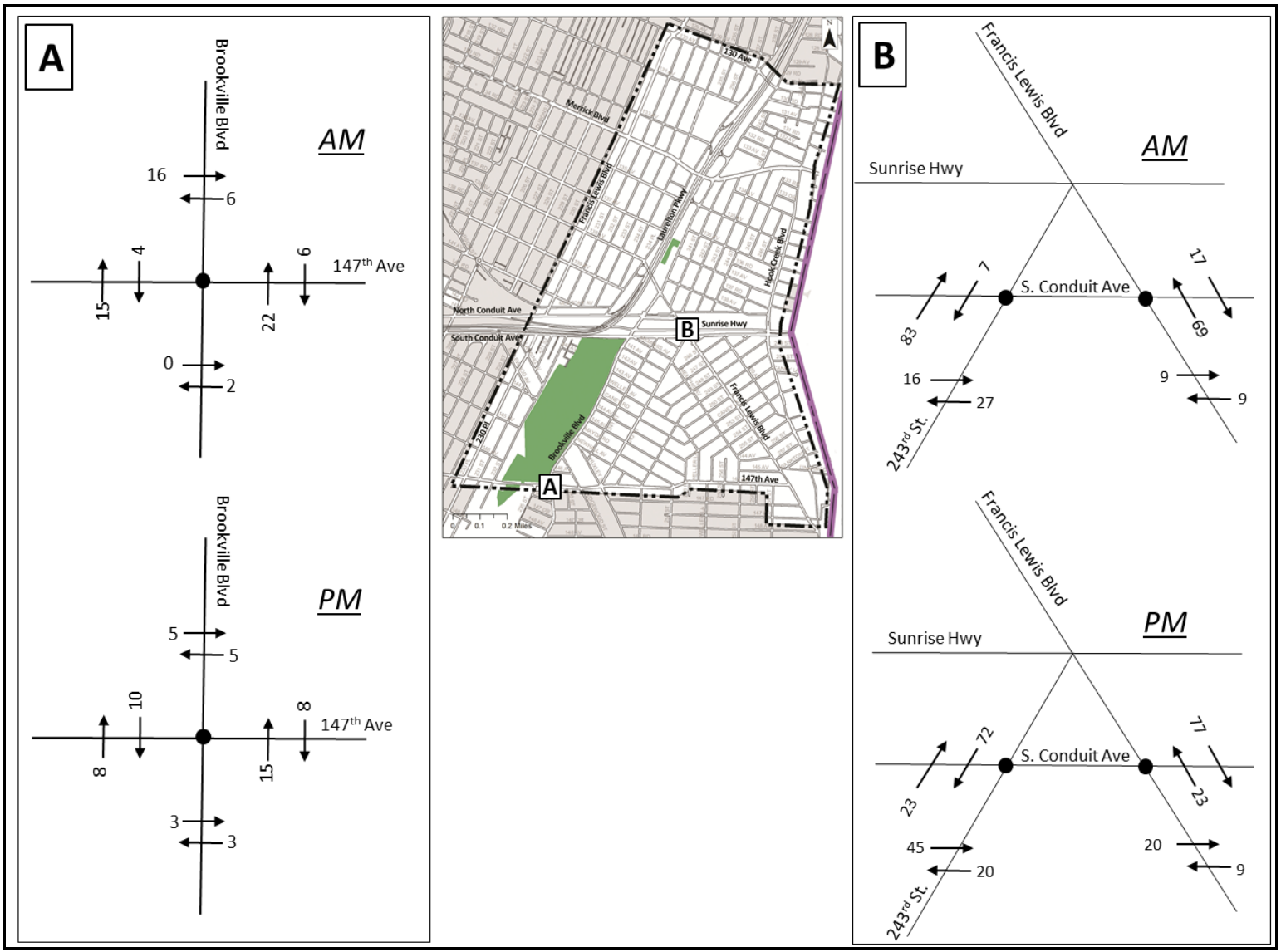


Figure 7-3: 2022 Future Conditions Pedestrian Volumes – AM/PM

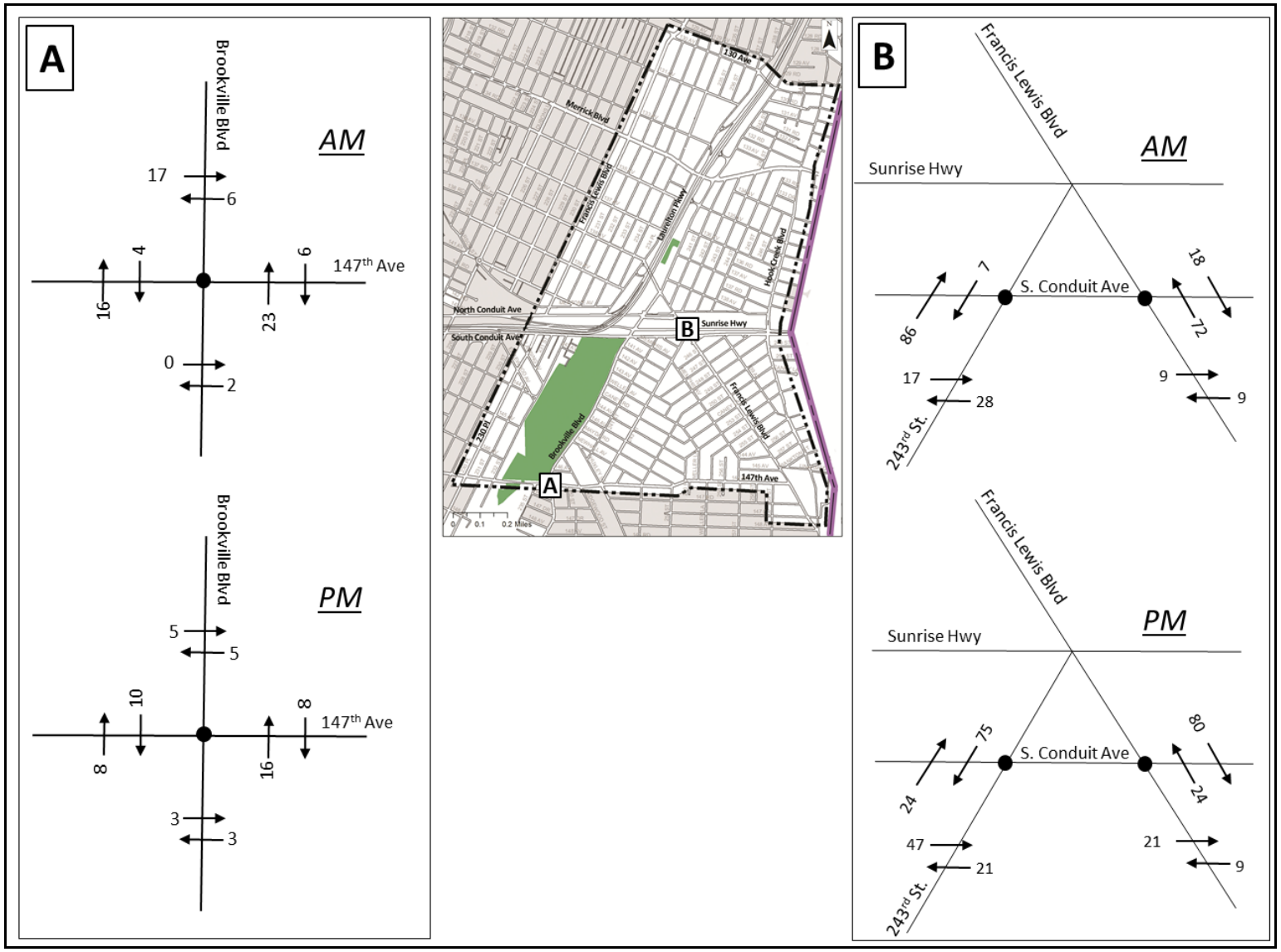


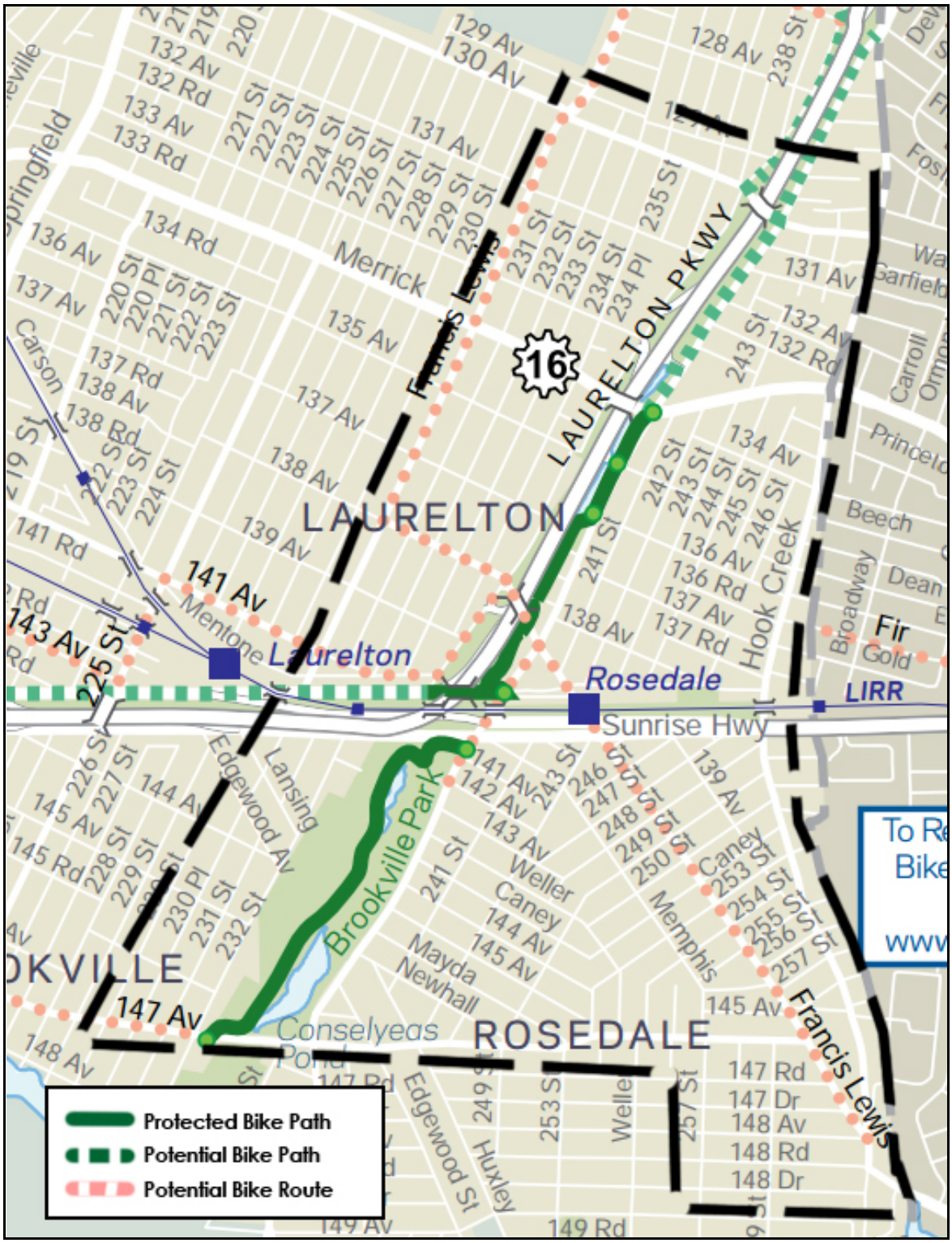
Table 7-3: Future Conditions (2022) Crosswalk Level of Service

Location	Intersection	Crosswalk	AM		PM	
			SF/P	LOS	SF/P	LOS
1	Francis Lewis Blvd & South Conduit Ave	North	-	-	-	-
		South	1186.1	A	98.9	A
		East	113.1	A	712.3	A
		West	-	-	-	-
2	South Conduit Ave & 243rd St	North	-	-	-	-
		South	603.3	A	370.6	A
		East	-	-	-	-
		West	135.6	A	106.5	A
3	Brookville Blvd & 147th Ave	North	436.9	A	1224.4	A
		South	3942	A	1987.6	A
		East	453.8	A	605.2	A
		West	892.8	A	850.2	A

7.4 Bicycle Facilities

There are two protected bike paths running north to south in the middle of the study area. The northern path is parallel to the Laurelton Parkway and the southern path runs along the spine of Brookville Park. See Figure 7-4.

Figure 7-4: Existing and Potential Bicycle Facilities



8 CRASH ANALYSIS

8.1 Introduction

The loss of life and property damage due to traffic crashes makes crash analysis an important aspect of any traffic study. The main purpose of this analysis is to first develop an understanding of crash history in the area, identify locations with safety issues that may need special attention, and possibly recommend improvement measures to enhance safety.

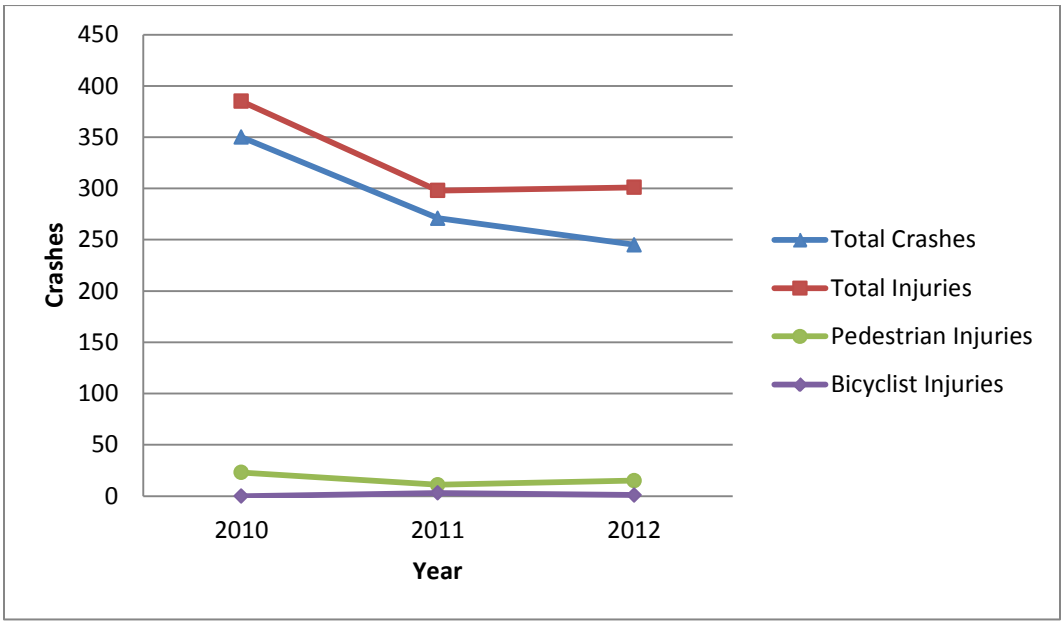
In an attempt to establish from the crash history any patterns, existing reportable crash data for the most recent three years (2010-2012) was assembled and analyzed. These records were collected from New York City Department of Transportation (NYCDOT) crash database which includes New York State Department of Motor Vehicle (NYSDMV) and New York Police Department reported crashes. This data provides information on location, severity, collision type, time of crash, and other pertinent factors such as weather and roadway conditions.

8.2 Crashes 2010-2012

Crash records were examined for 328 intersections within the study area for the 3-year period between 2010 and 2012. The data identifies the total number of reportable crashes (involving fatalities, injury, and property damage of more than $1,000). It also provides a yearly breakdown of pedestrian and bicycle related crashes at each location.

There were 866 crashes resulting in 931 injuries to driver or vehicle occupants, 49 pedestrian injuries and 4 bicyclist injuries. The data shows total reportable crashes decreased by 30% from 350 in 2010 to 245 in 2012.

Figure 8-1: Crashes by Year



Between 2010 and 2012, pedestrians were involved in 5% of all crashes, while less than 1% involved bicyclists. Less than 3% of all injuries were type A (bleeding wound), 6% were type B (bruises), and 91% were type C (no visible injury), while 26% of all crashes resulted in property damage of $1,000 or more. The three most common collision types were rear end (16%), right angle (11%), and overtaking (8%). Wet roadway conditions were reported in 11% of all crashes, while 25% of all crashes occurred during off-peak hours.

8.3 High Crash Locations

From the analysis, three intersections were identified as "High Crash Locations". A high crash location is defined as a location where five or more pedestrian crashes or 23 reportable crashes occur during any 12 consecutive months of the most recent 3-year period for which data is available. The three locations are South Conduit Avenue at 230th Place, South Conduit Avenue at Brookville Boulevard, and Laurelton Parkway at Francis Lewis Boulevard. Tables 8-1, 8-2, and 8-3 show a breakdown of the crashes. Figure 8-2 shows the "High Crash Locations" and fatal crash locations. Brookville Boulevard at South Conduit Avenue recorded the highest rear end crashes, while 230th Place at Laurelton Parkway recorded the highest number of Type A injuries.

Table 8-1: High Crash Locations (2010-2012)

Intersection	Crashes			Pedestrian			Bikes		
	2010	2011	2012	2010	2011	2012	2010	2011	2012
230th Pl./S. Conduit Ave.	13	26	22	3	2	0	0	0	0
Laurelton PY/Francis Lewis Blvd.	28	9	7	0	0	0	0	0	0
Brookville Blvd./S. Conduit Ave.	40	35	23	0	0	1	0	0	0

Table 8-2: High Crash Details

Intersection	Total Crashes	Severity Type			Rear End	Overtaking	Right Angle
	2010-2012	A	B	C			
230th Pl./S. Conduit Ave.	61	2	4	62	14	8	0
Laurelton PY SR. Francis Lewis Blvd.	44	0	2	45	18	8	2
Brookville Blvd./S. Conduit Ave.	98	1	0	117	46	6	6

8.4 Fatalities & Injuries

There were seven fatalities that involved four pedestrians, two motorcyclists, and one motorist. Table 8-3 below lists the locations and related information, while Figure 8-2 shows the locations.

Table 8-3: Fatalities 2010-2012

		Fatality/Injury Type					
Intersection	Crashes		A	B	C	Total	PDO
Merrick Blvd/241 St	2	1-Ped			1	2	0
Brookville Blvd/136 Ave	12	1-Motorist	0	0	17	18	4
Francis Lewis Blvd/246 St	11	1-Ped	1	1	5	8	3
243 St/145 Ave	5	1-Ped	0	0	1	2	3
Francis Lewis Blvd/Laurelton Pkwy SR	32	1-Motorcyclist	0	2	24	27	9
Laurelton Pkwy/1-10 Mile N/O Francis Lewis Blvd	1	1-Ped	0	0	0	1	0
Belt PY E/O 232 St	1	1-Motocyclist	0	0	0	1	0

Figure 8-2: High Crash & Fatalities Locations (2010-2012)

9 GOODS MOVEMENT

9.1 Introduction

New York City is heavily dependent on trucks to supply the city with goods and services. Their presence in the traffic network impacts traffic conditions and contribute to congestion, thereby affecting traffic flows. Adequate space for truck loading and unloading is necessary, and there are numerous quality of life issues associated with truck traffic such as noise, air pollution and safety.

Trucks are generally defined as any vehicle or combination of vehicles designed for the transportation of property which has either of the following characteristics: two axels and six tires, or three or more axels. In New York City, trucks are confined to designated routes (local and through) except on reaching their origin or destination. They must leave a designated truck route at the nearest intersection that provides the most direct route to their destination.

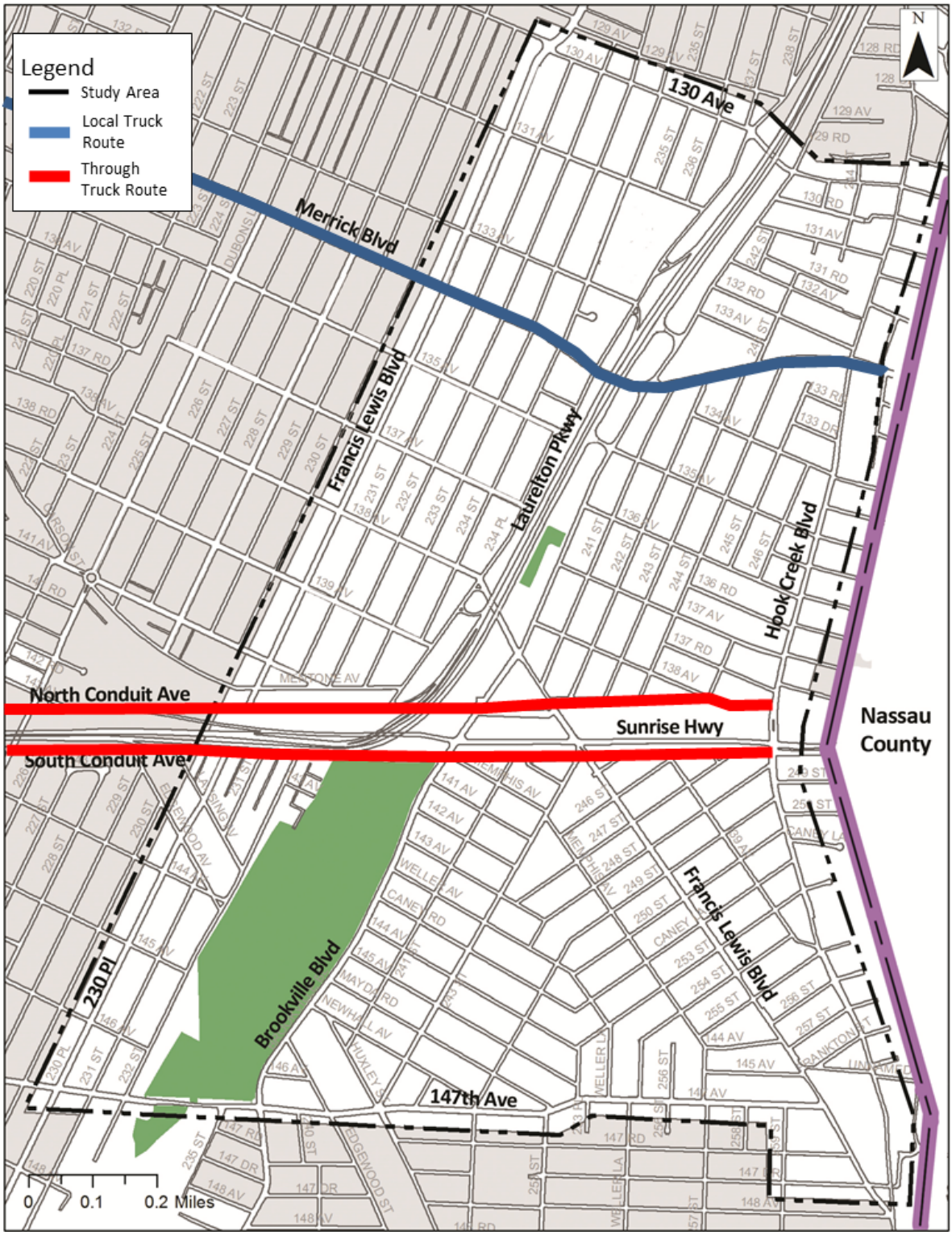
9.2 Truck Routes in the Study Area

Truck traffic is influenced by the designated truck routes and the location of concentrated industrial and commercial activities. There are two categories of truck routes in New York City:

- Through truck routes – routes for use by all trucks and;
- Local truck routes – routes for use by trucks with local origins and/or destinations.

Within the study area North and South Conduit Avenue (Route 27) are through truck routes while Merrick Boulevard is a local truck route. See Figure 9-1.

Figure 9-1: Truck Routes



9.3 Truck Traffic in the Study Area

Truck volume counts were conducted at 16 locations during the weekday AM and PM peak hours (7:30 – 9:00AM and 5:00 – 6:00PM). Trucks made up 3.9% and 2.2% of the total traffic during the AM and PM peaks, respectively. See Table 9-1.

Table 9-1: Truck Volumes by Peak Hour

	AM	PM
Total Vehicle	**40,255**	**41,820**
Trucks	**1,565**	**916**
% Trucks	**3.9%**	**2.2%**

The highest truck volumes were observed during the AM peak hour and the locations were Brookville Boulevard at Sunrise Highway/North Conduit Avenue, Francis Lewis Boulevard at 133rd Avenue, and Francis Lewis Boulevard at Sunrise Highway. Table 9-2 shows the total traffic volume and truck traffic at major intersections while Figure 9-2 shows the truck traffic sample locations.

Table 9-2: Truck Traffic as a Percent of Total Traffic

Intersection	AM			PM		
	Total Volume	Truck Volume	% Trucks	Total Volume	Truck Volume	% Trucks
Brookville Blvd and:						
S Conduit Ave	3,915	191	4.9%	4,530	105	2.3%
N Conduit Ave	1,880	100	5.3%	1,625	55	3.4%
Sunrise Hway	3,745	210	5.6%	3,530	120	3.4%
Francis Lewis Blvd	2,745	120	4.4%	2,650	70	2.6%
138th Ave	1,575	57	3.6%	1,435	30	2.1%
Merrick blvd	3,110	49	1.6%	3,085	40	1.3%
135th Ave	2,045	20	1.0%	2,000	15	0.8%
147th Ave	2,160	75	3.5%	1,995	45	2.3%
Francis Lewis Blvd and:						
133rd Ave	755	70	9.3%	745	15	2.0%
Merrick Blvd	1,960	65	3.3%	1,995	40	2.0%
Sunrise Hway	3,060	175	5.7%	3,045	106	3.5%
S Conduit Ave	2,940	140	4.8%	3,560	90	2.5%
Hook Creek Blvd and:						
Merrick Blvd	1,940	35	1.8%	2,180	20	0.9%
S Conduit Ave	5,290	158	3.0%	5,645	155	2.7%
133rd Ave and:						
237th St	980	20	2.0%	920	5	0.5%
S Conduit and:						
243rd St	2,155	80	3.7%	2,880	5	0.2%
Total (16 intersection)	**40,255**	**1,565**	**3.9%**	**41,820**	**916**	**2.2%**

Figure 9-2: Trucks as Percentage of Total Traffic - AM Peak

10 PUBLIC PARTICIPATION

10.1 Introduction

As part of the planning process, to ensure ample public participation and address community concerns, a series of Technical Advisory Committee (TAC) and public meetings were conducted. Two TAC meetings and one public meeting were hosted by DOT. The project team also attended other community meetings.

10.2 Notes of Meeting

The notes of the three meetings (TAC and public) conducted by DOT follow.

1. TAC Kickoff Meeting (March 21, 2013)
2. Public Meeting (June 11, 2013)
3. TAC Meeting #2 (May 29, 2014)

Notes of TAC Meeting for the Laurelton/Rosedale Transportation Study

Held on March 21, 2013 at Queens Borough Commissioner's Office

120-55 Queens Boulevard

On March 21st 2013, Traffic Planning conducted the Technical Advisory Committee kick-off meeting for the Laurelton/Rosedale Transportation Study at the Queens Borough Commissioner's office, 120-55 Queens Boulevard. In attendance were representatives from Community Board 13, Queens Borough President's office, New York State Senators Tony Avella, James Sanders Jr., and Malcolm A. Smith's offices; Council Members Leroy Comrie and Mark Weprin's Offices.

DOT Borough Commissioner, Dalila Hall, opened the meeting and invited attendees to introduce themselves and their organizations/agencies before the presentation was made. The objective of the meeting was to present the draft scope of the study and to receive technical and community input from the TAC. DOT then proceeded to make a PowerPoint presentation that identified the study area boundaries, goals/objectives and the subjects that will be examined for the existing conditions analysis. The subjects are demographics, zoning and land use, traffic, parking, pedestrians, crashes/safety, public transit, and goods movement. The overall response to the presentation was very positive and many issues were raised and suggestions made related to traffic and transportation issues in CB13.

After the presentation during the Q & A session the following issues were discussed:
Jerry Lamura, QBP's representative raised the issue of congestion and pedestrian/vehicular safety where Francis Lewis Boulevard merges into Hungry Harbor Road/Rosedale Road, leading to Nassau County. He explained that it is a major connector between the study area and Nassau County with multiple issues on the Queens border and in the vicinity of 148th Avenue and Francis Lewis Boulevard.

He inquired if the southern boundary of the study area includes the marshlands including Brookville Boulevard between 147th Avenue and Rockaway Boulevard, which is narrow and

winds through the marshland and is often subjected to flooding. It is also a bus route into Far Rockaway.

He expressed the need for it to be studied as a project for long term improvement. He also commented that the street lights along this roadway are frequently out and in need of maintenance.

He also stated that, at Brookville Boulevard and the South Conduit Avenue, a utility pole is leaning, possibly dangerously, and asked DOT for follow-up to address this longstanding issue.

He also said that the left turn movement onto Francis Lewis Boulevard from Sunrise Highway is potentially dangerous for vehicles caught with south bound through vehicles. During the holiday season Green Acre Mall traffic creates severe congestion on Sunrise Highway at the Brookville Boulevard and Francis Lewis Boulevard intersections making it difficult to cross both for vehicles headed northbound or southbound.

Tanya Cruz, CB 13 representative requested that the study area be extended north to 130th Avenue to capture vehicles exiting CIP/Laurelton Pkwy Merrick Boulevard exit and using 131st and 133rd Avenues west bond towards Francis Lewis Boulevard. Motorists use this as detour to avoid congestion on Laurelton Parkway.

Ron Bramsen of DOT spoke about the parking situation near North Conduit Avenue where there is a municipal parking lot, which is underutilized. The LIRR commuters park for free throughout the neighborhood north of the Laurelton LIRR Station, which caused the community to complain about not having parking during the day.

Jerry LaMura noted that area residents in Rosedale in the vicinity north and south of the LIRR station are also complaining that this is limiting their ability to park directly in front of their homes while the Rosedale municipal lot remains underutilized. The transient vehicular parking has also created littering issues for homeowners.

Notes of Community Meeting for the Laurelton/Rosedale Transportation Study

Held on June 11, 2013 at St. Clare's Church (Gymnasium)

13725 Brookville Boulevard, Queens

On June 11th 2013, Traffic Planning conducted the first Public Meeting to introduce the Laurelton/Rosedale Transportation Study to area residents. The meeting was held at St. Clare's Church at 137-25 Brookville Boulevard. In attendance were representative from Queens Borough Commissioner's office, Rosedale Civic Association, and residents.

Michael Griffith from DOT Traffic Planning opened the meeting. The objective of the meeting was to present the study and to receive community input from Laurelton/Rosedale area residents and civic associations. DOT then proceeded to make a PowerPoint presentation that identified the study area boundaries, goals/objectives and the subjects that will be examined for the existing conditions analysis. The subjects are demographics, zoning and land use, traffic, parking, pedestrians, crashes/safety, public transit, and goods movement. The overall response to the presentation was very positive and many issues were raised and suggestions made related to traffic and transportation issues in the study area.

After the presentation during the Q & A session the following issues were discussed:
Bill Perkins, Rosedale Civic Association representative, asked if the recommendations be implemented at the conclusion of the study (end of 2014).

Guy Lallemand, Rosedale Civic Association representative, asked if there is an internal mechanism to track all the studies being conducted by different city agencies within a specific area simultaneously.

Deacon Chris Barber, St. Clare's Roman Catholic Church, raised several issues regarding parking, speeding and not having a recreational facility within the study area for kids. He raised the following issues:

- Heavy traffic on Hook Creek Boulevard NB passes Merrick Boulevard leading to the connection to the Southern State Parkway. Vehicle speeding issues along 136th Street with the dollar vans running back and forth
- No storage between Sunrise Highway and the S Conduit Avenue for traffic going on S Conduit Avenue EB making left turns at Brookville Boulevard and Francis Lewis Boulevard, and safety concern for kids.
- Residents living in the vicinity of Green Acres Mall have difficulty making turns at West Circle Drive & Sunrise Highway EB, instead they need to go further east and make turn at Mill Road (outside the study area).
- He also made a few recommendations to solve quality of life issues within the study area, such as:
    - Free parking along South Conduit Avenue by the LIRR station at 245th Street for park and ride purposes
    - The need to explore the possibility to build parks/recreation place for kids to provide a safe place for them to play

At the end of the meeting Bill Perkins indicated that a list of all traffic, safety and quality of life issues was created by his office.

Notes of TAC 2 Meeting - Laurelton Rosedale Transportation Study

Held on May 29, 2014 at Queens Borough Commissioner's Office

120-55 Queens Boulevard

On May 29th 2014, Traffic Planning conducted the Second Technical Advisory Committee meeting for the Laurelton/Rosedale Transportation Study at the Queens Borough Commissioner's office, 120-55 Queens Boulevard. In attendance were representatives from NYS Senator James Sanders Jr.'s office and New York Metropolitan Transportation Council.

DOT Borough Commissioner, Dalila Hall, opened the meeting and invited attendees to introduce themselves and their organizations/agencies before the presentation was made. The objective of the meeting was to present findings of the existing conditions analysis and to receive technical and community input from the TAC. DOT then proceeded to make a PowerPoint presentation that identified the study area boundaries, goals/objectives and the subjects that will be examined for the existing conditions analysis. The subjects are demographics, zoning and land use, traffic, parking, pedestrians, crashes/safety, public transit, and goods movement. The overall response to the presentation was very positive; however, representatives from CB 13 and Laurelton/Rosedale Civic Association were unfortunately not in attendance. Therefore only a few issues relating directly to the study area were raised.

After the presentation and during Q & A session the following issues were discussed:
Representative from Senator James Sanders Jr.'s office asked whether DOT will address street flooding issues along Francis Lewis Boulevard/147th Avenue. QBC Dalila Hall's response was that it will be addressed through a capital project.

The representative from DCP commented that DEP will soon initiate a "Water for the Future" project along Brookville and Merrick Boulevards.

QBC Hall then asked the DCP representative, if there were new developments from DCP's perspective in the Laurelton/Rosedale study area. The representative from DCP replied, no.

QBC Hall then asked the project team how a study area boundary is defined? A team member indicated that it is defined mainly by input from the CBs.

A project team member asked QBC Hall to provide status of roadway repaving along Hook Creek Boulevard north of Merrick Boulevard.

10.3 Other Community Concerns

Community Board 13 provided a list of traffic, safety and quality of life concerns in the study area and beyond that included speeding, roadway conditions and use of a vacant lot for parking.

Specifically, the community identified the following issues:

- Safety concerns on 147th Avenue in the vicinity of the Little League Baseball Field
- Crossing opportunities on Brookville Boulevard in proximity to Brookville Park
- Congestion on Brookville Boulevard and Sunrise Highway
- Inadequate lighting at some locations/intersections on Sunrise Highway
- Commuter parking impacting residences near the LIRR station
- Need to improve Brookville Boulevard particularly from 147th Avenue to Rockaway Boulevard; and address drainage in the area
- Speeding on certain roadway

The community concerns are mapped in Figure 10-1 and discussed below. DOT evaluated the feasibility of these proposals based on traffic analysis and field observations.

Signal Timing Adjustment

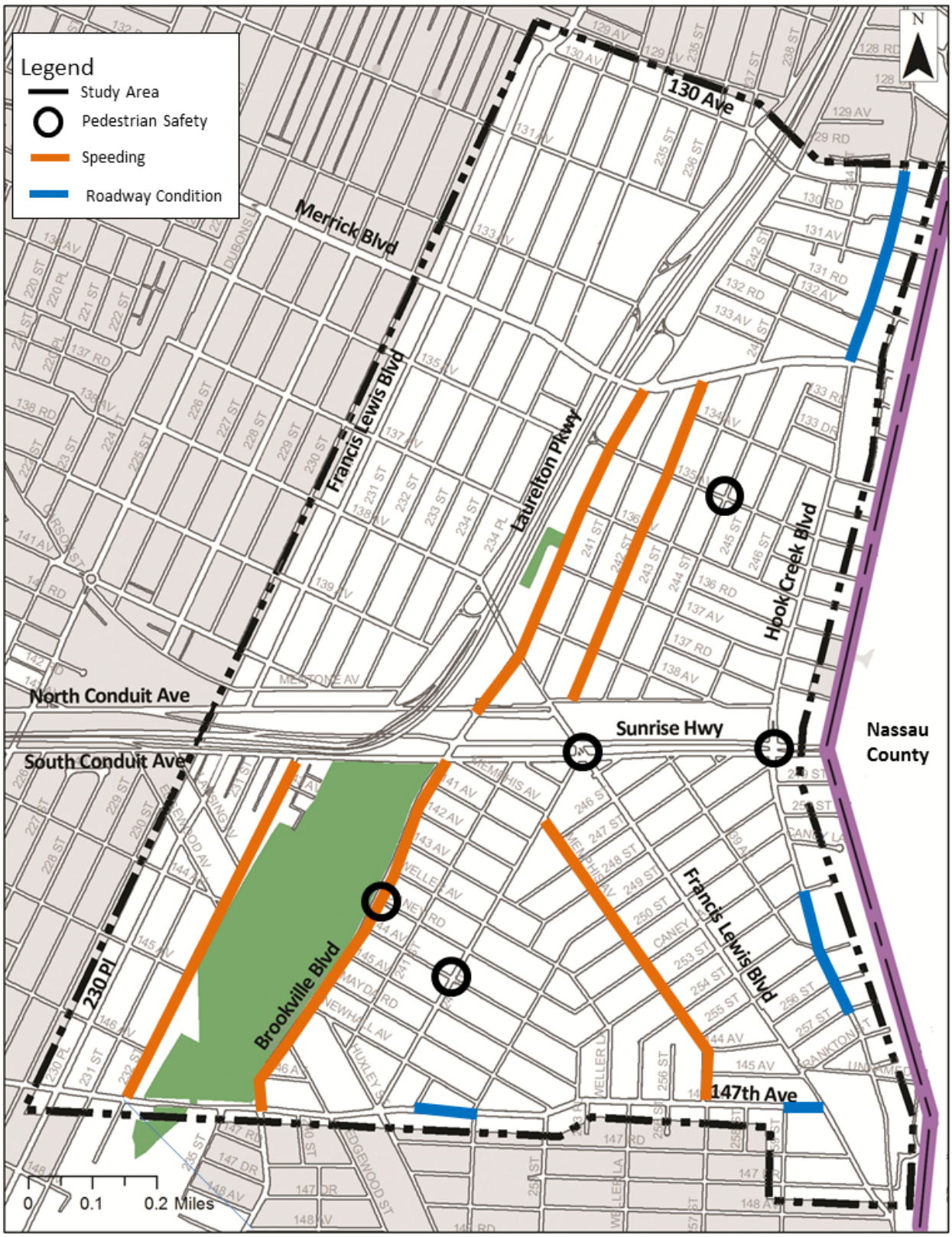
Location:

1. Sunrise Highway and Francis Lewis Boulevard
2. Sunrise Highway and Hook Creek Boulevard

Issue: Community suggested that more time should be allowed for pedestrian to crossing Sunrise Highway.

DOT reviewed current signal timings for these intersections and found that the intersection is timed to give pedestrians maximum time allowable to cross; no further adjustments can be made.

Figure 10-1: Community Identified Issues



Install Traffic Signal

Location:

1. Brookville Boulevard and Caney Lane
2. 144th Avenue and 243rd Street

Issue: Community requested DOT investigate the above locations for the installation of traffic signals.

DOT collected traffic data and conducted a signal warrant analysis to determine the feasibility of installing traffic signals at these intersections. Traffic signals are not warranted due to low traffic volume.

Slow Zones

The community requested slow zones at the following locations:

1. 232nd Street between 147th Avenue and Sunrise Highway
2. Brookville Boulevard between 147th Avenue and Sunrise Highway
3. Brookville Boulevard between Francis Lewis Boulevard and 135th Avenue
4. 242nd Street between N Conduit Avenue and 135th Avenue
5. Memphis Avenue between 243rd Street and 147th Avenue
6. 131St Avenue between Hook Creek Boulevard and Brookville Boulevard

DOT evaluated the feasibility of creating arterial slow zones at the above locations. The assessment revealed that most of the sites are in residential areas with low traffic volumes and moderate travel speeds during all peak periods; thus the creation of slow zones was not warranted.

11 RECOMMENDATIONS

11.1 Issues and Improvement Measures

To identify areas for potential improvements, traffic and transportation issues identified through existing and future conditions analysis were overlaid with community concerns. The community concerns varied from speeding and pedestrian safety to street lighting and poor roadway conditions. The traffic analysis and community concerns formed the basis of the improvement measures. Figure 11-1 shows the locations for targeted improvements which fall into six categories:

1. Traffic Operations
   - Brookville Boulevard at Merrick Boulevard
   - Brookville Boulevard and 135th Avenue
2. Street Lighting
   - Sunrise Highway and Francis Lewis Boulevard
3. Pedestrian Safety
   - Sunrise Highway at Francis Lewis Boulevard
   - Sunrise Highway at Hook Creek Boulevard
4. Speeding
   - Francis Lewis Boulevard between 246th Lane & 254th Street
5. Lack of Sidewalk
   - Francis Lewis Boulevard between 145th Avenue & 147th Avenue
6. Roadway Condition
   - 147th Avenue between Brookville Boulevard & 232nd Street

Figure 11-1: Proposed Recommendations Locations by Issue

11.2 Traffic Operations

The existing conditions HCS analysis identified intersections and approaches with poor Level of Service (LOS) during the AM and PM peak periods. The northbound approach on Brookville Boulevard at Merrick Boulevard had a failing LOS F. Also, the eastbound left-turn movement at Brookville Boulevard and 135th Avenue operated at LOS E. The operation of the following intersections can be improved by implementing various measures:

Merrick Boulevard & Brookville Boulevard

Issue(s):

- Heavy volume and delay on the northbound approach,

Recommendation(s):

- Remove the concrete island at the eastbound approach,
- Restripe EB to provide one left turn lane, one thru lane, and one shared thru-right lane,
- Shift the centerline 11 feet to the west on the northbound approach, and restripe to provide three travel lanes (one left turn bay, one thru lane, and one shared thru-right lane),
- Prohibit left turn on the southbound approach.

See Figures 11-2 and 11-3.

Figure 11-2: Merrick Boulevard and Brookville Boulevard – Existing

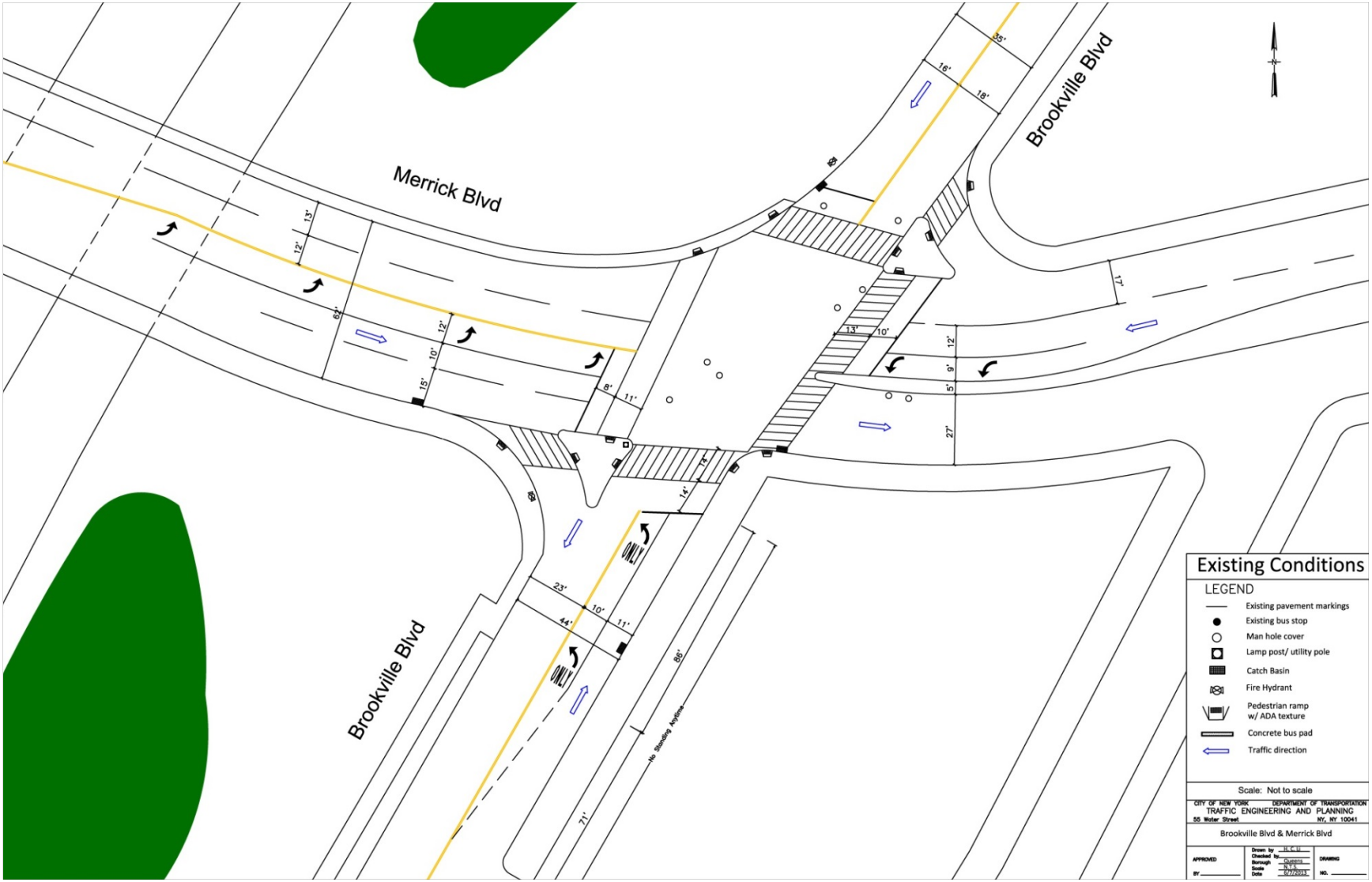
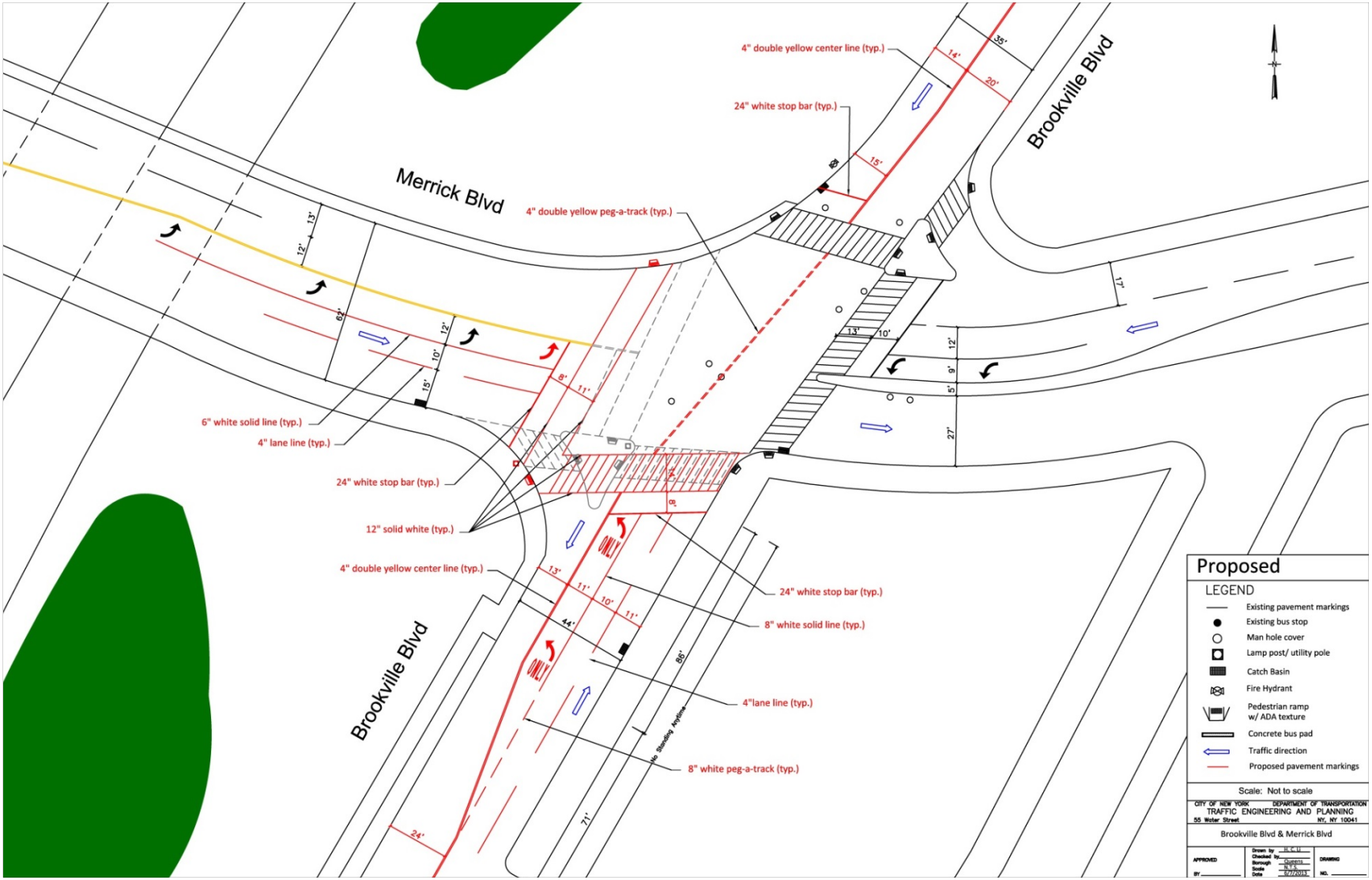


Figure 11-3: Merrick Boulevard and Brookville Boulevard - Proposed



Brookville Boulevard & 135th Avenue

Issue(s):

- Heavy delay on the eastbound left turn,

Recommendation(s):

- Restripe the eastbound approach to provide two travel lanes – one exclusive left turn lane and one shared left-right lane.

See Figures 11-4 and 11-5.

11.3 Street Lighting

Representatives from the Rosedale Civic Association expressed concern about inadequate lighting at the northeast corner of Sunrise Highway and Francis Lewis Boulevard. A lighting evaluation was conducted that confirmed the community concerns and a lighting upgrade will be implemented.

11.4 Pedestrian Safety

Representatives from the Rosedale Civic Association expressed concern about pedestrian safety at the intersections of Sunrise Highway, Francis Lewis Boulevard and Hook Creek Boulevard, and suggested DOT install pedestrian countdown signals. The proposal was evaluated and qualified for pedestrian countdown signals.

Figure 11-4: Brookville Boulevard and 135th Avenue - Existing

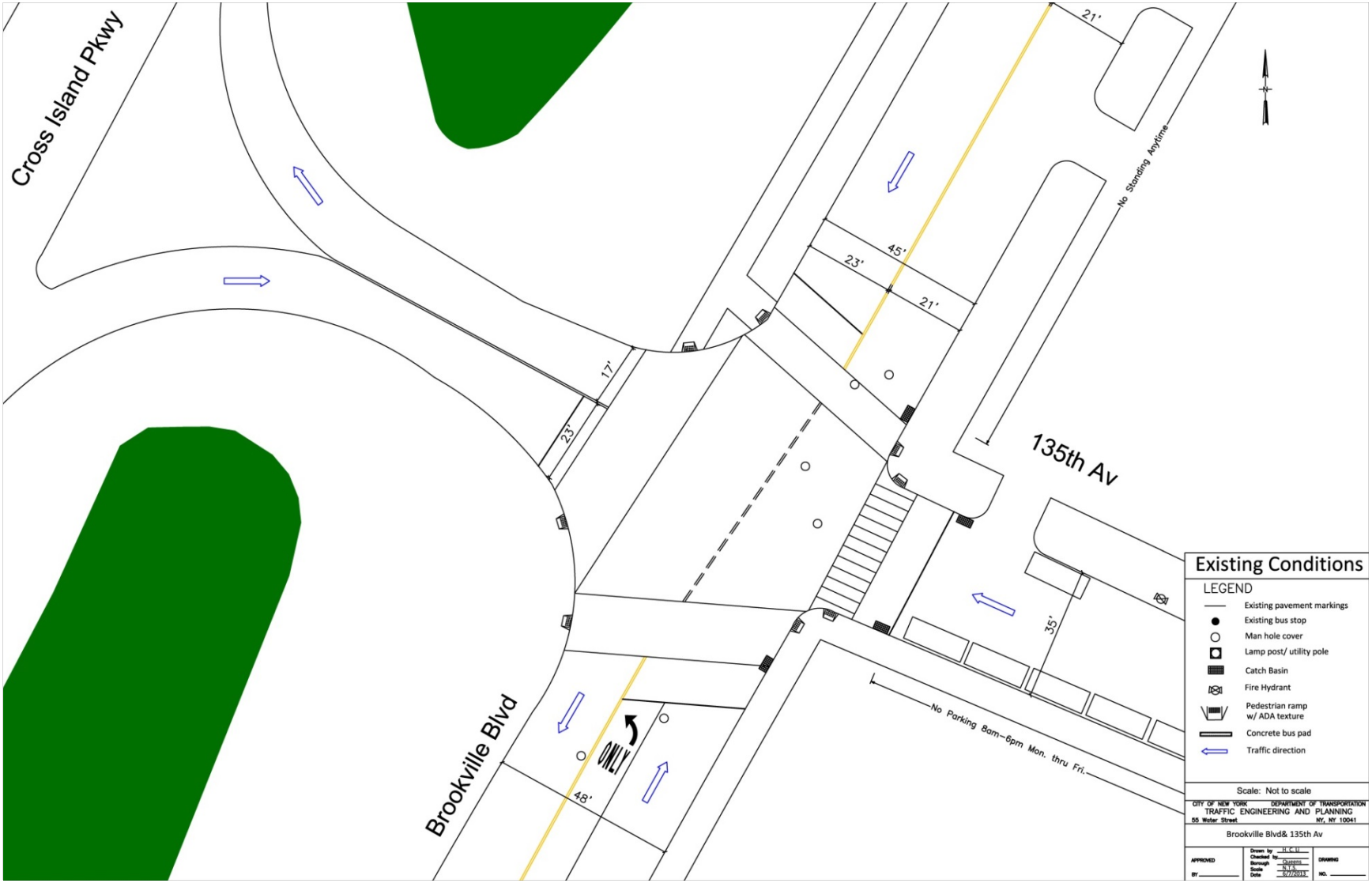
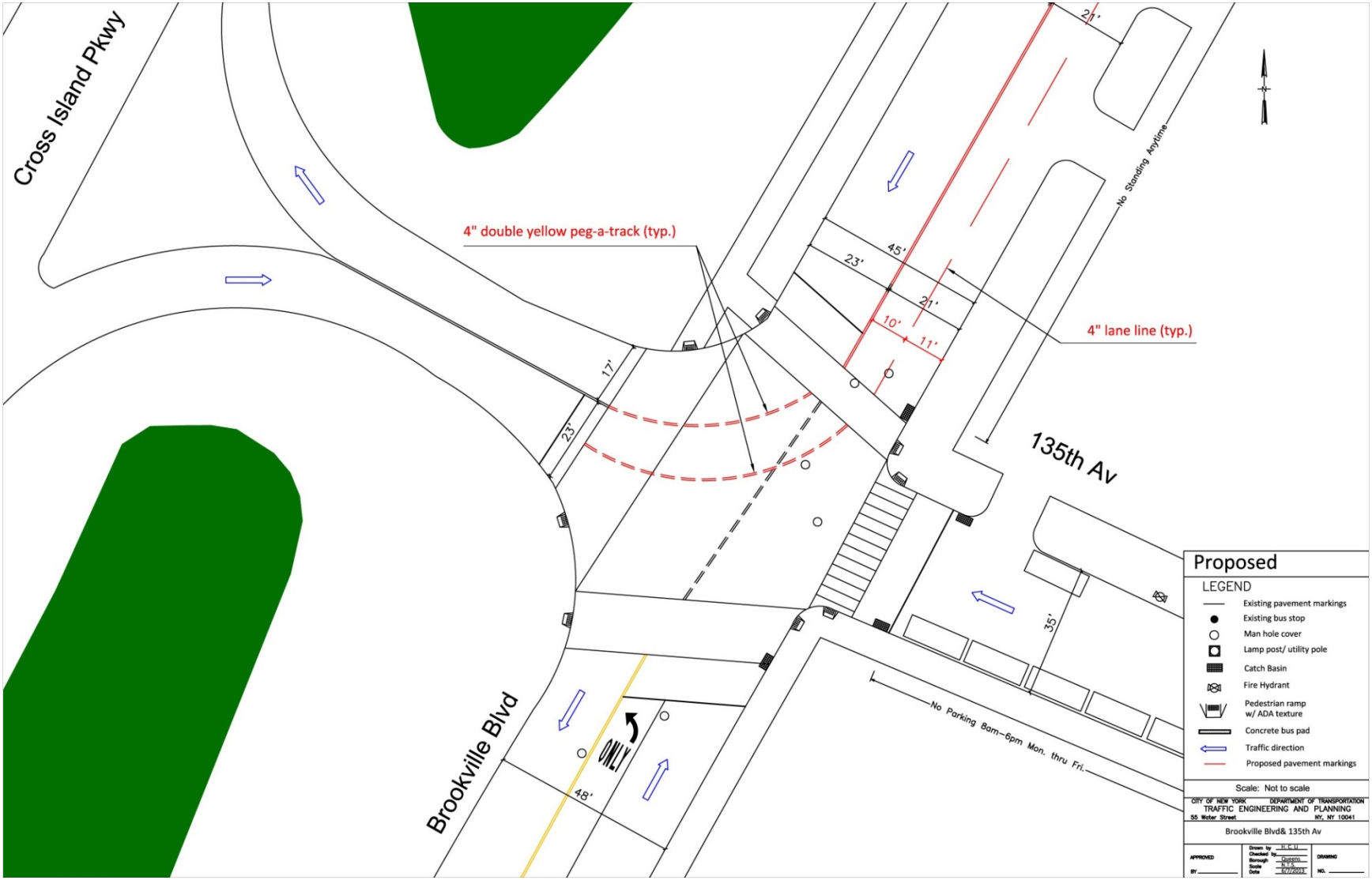


Figure 11-5: Brookville Boulevard and 135th Avenue - Proposed



11.5 Speeding

Speeding was identified as an issue on Francis Lewis Boulevard between 246th Lane and 245th. It was stated that the roadway is very wide, which contributes to speeding, creating unsafe conditions for pedestrians.

Francis Lewis Boulevard between 246th Lane & 254th Street

Issue(s):

- Reported speeding along this section of Francis Lewis Boulevard created unsafe conditions for pedestrians.

Recommendation(s):

- Narrow the existing travel lane from 16 feet to 13.5 feet in both directions by creating a 6 feet wide stripped median.

See Figures 11-6 and 11-7.

11.6 Lack of Sidewalks

Francis Lewis Boulevard between 145th Avenue & 147th Avenue

Issue(s):

- Lack of sidewalk creates unsafe and uncomfortable conditions for pedestrians.

Recommendation(s):

- Install sidewalk on the east and west curbs of Francis Lewis Boulevard between 147th and 145th Avenues, and on the northwest corner of 147th Avenue and Francis Lewis Boulevard.

See Figures 11-8 and 11-9.

Figure 11-6: Francis Lewis Boulevard between 246th Lane & 254th Street - Existing

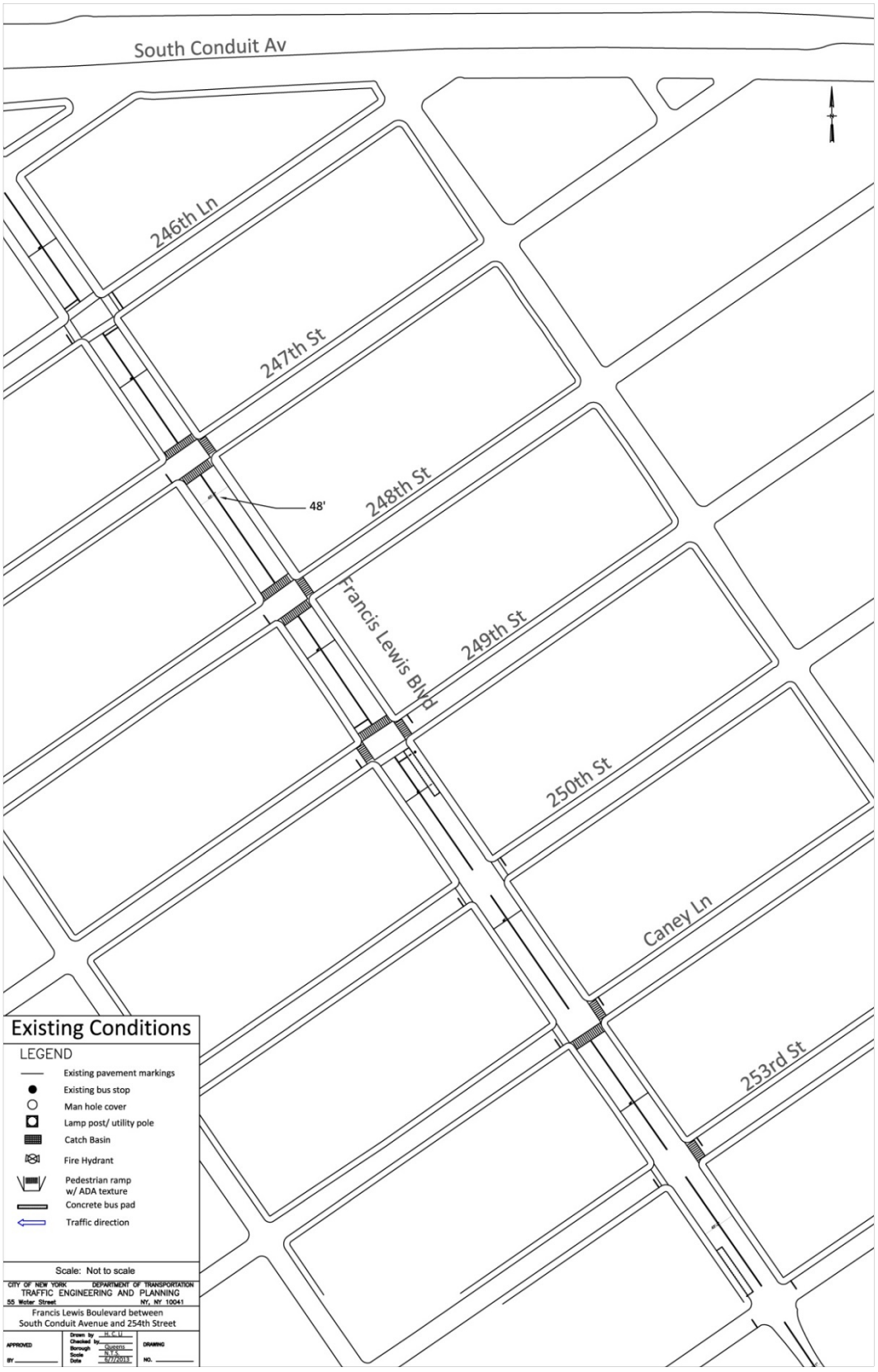


Figure 11-7: Francis Lewis Boulevard between 246th Lane & 254th Street - Proposed

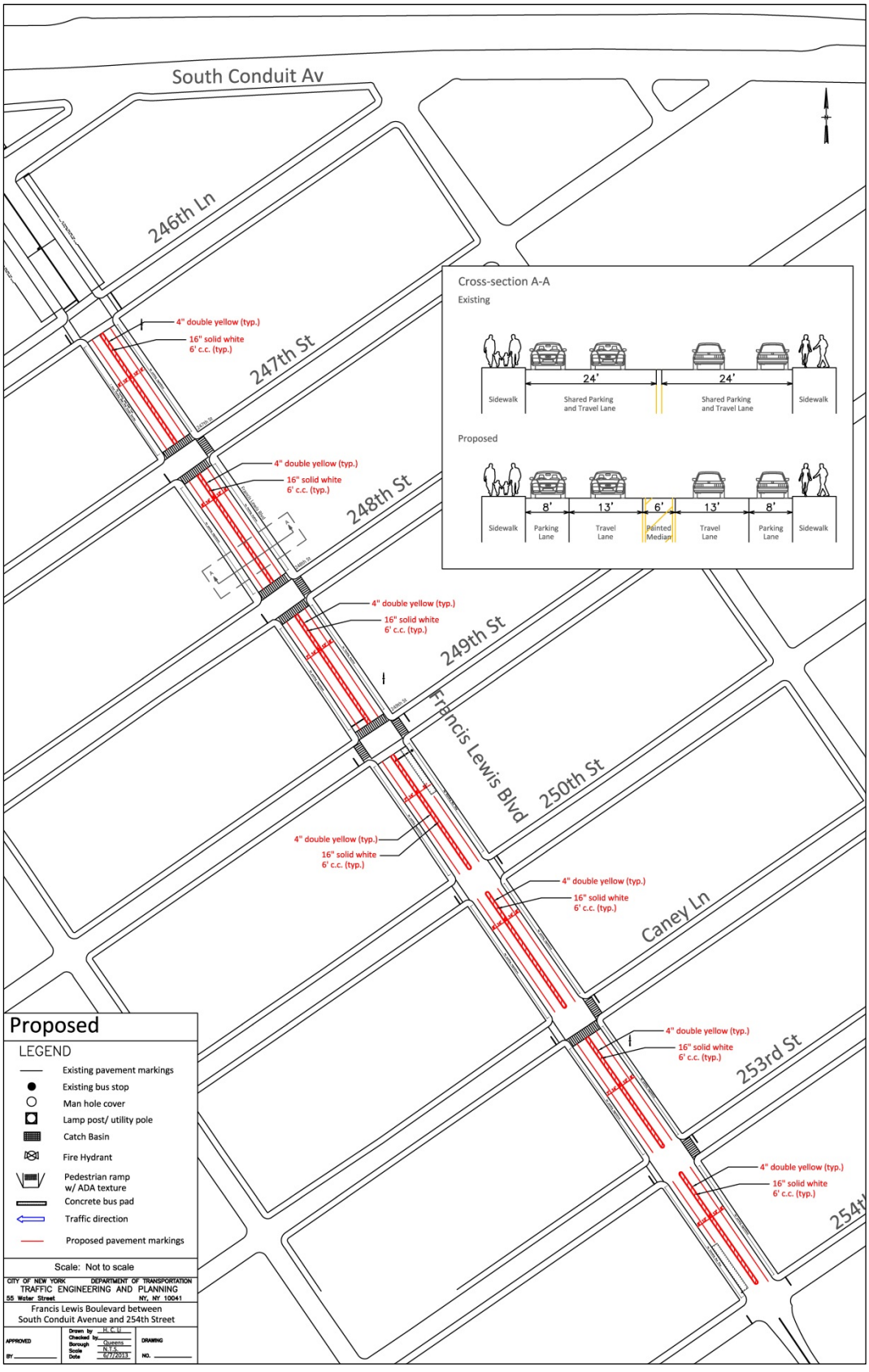


Figure 11-8: Francis Lewis Boulevard between 145th Avenue & 147th Avenue - Existing

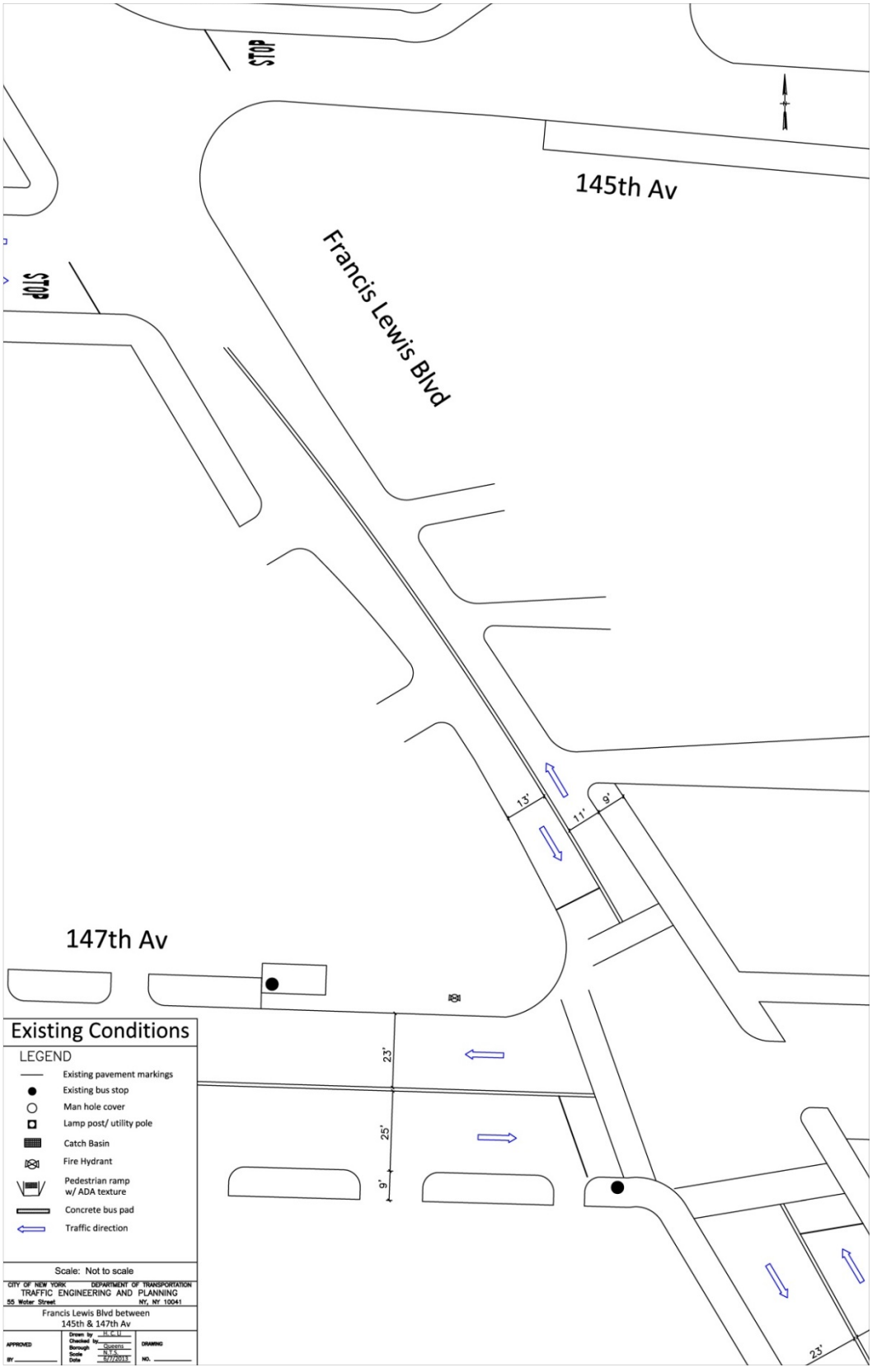
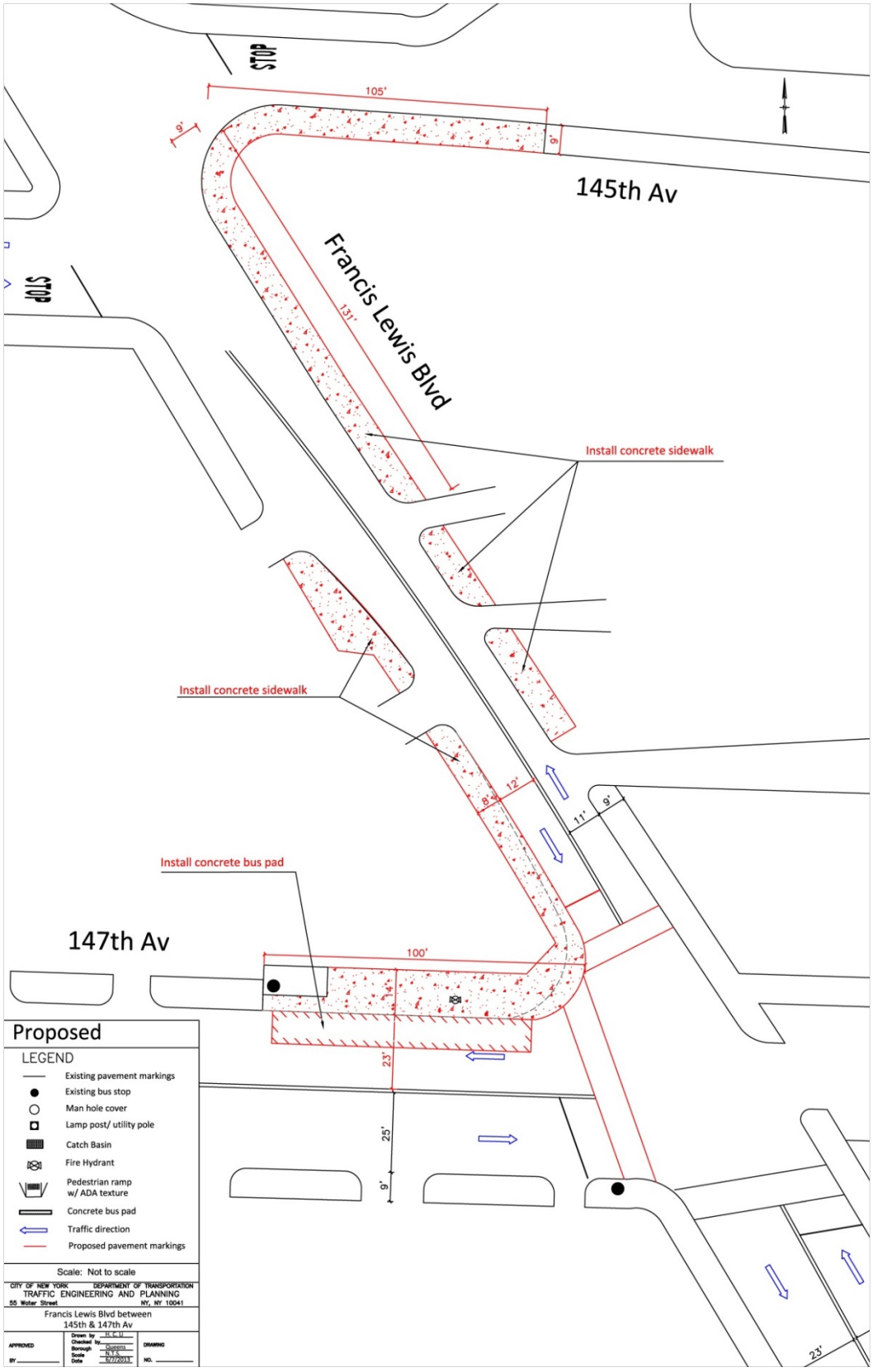


Figure 11-9: Francis Lewis Boulevard between 145th Avenue & 147th Avenue - Proposed



11.7 Roadway Condition

Field survey revealed that 147th Avenue between Brookville Boulevard and 232nd Street is narrow (30') at the creek. There are unpaved areas with no sidewalks on the north side of the roadway. The bus stop on the south curb has no bus pad. The roadway narrows over the culvert, which creates unsafe traffic conditions. The Department of Design & Construction (DDC) acting on behalf of the Department of Environmental Protection (DEP) is widening the existing culvert from 30 to 60 feet which allows for the reconstruction of a 50 feet roadway (curb to curb).

147th Avenue between Brookville Boulevard and 232nd Street

Issue(s):

- Lack of sidewalks.
- Unpaved parking area adjacent to Brookville Park.
- Narrow roadway over the culvert.

Recommendation(s):

- Construct pedestrian sidewalk on south curb of 147th Avenue between 235th Street and Brookville Boulevard.
- Repave the parking area along the north curb of 147th Avenue between Brookville Boulevard and 232nd Street, and provide bicycle lane, parallel parking, and pedestrian sidewalk.
- Restripe to provide parallel parking on the south curb of 147th Avenue between 232nd Street and 235th Street.
- Install crosswalk at the entrance of Brookville Park on 147th Avenue between 232nd Street and 235th Street.

See F*igures 11-10 and 11-11.*

Figure 11-10: 147th Avenue between Brookville Boulevard & 232nd Street – Existing

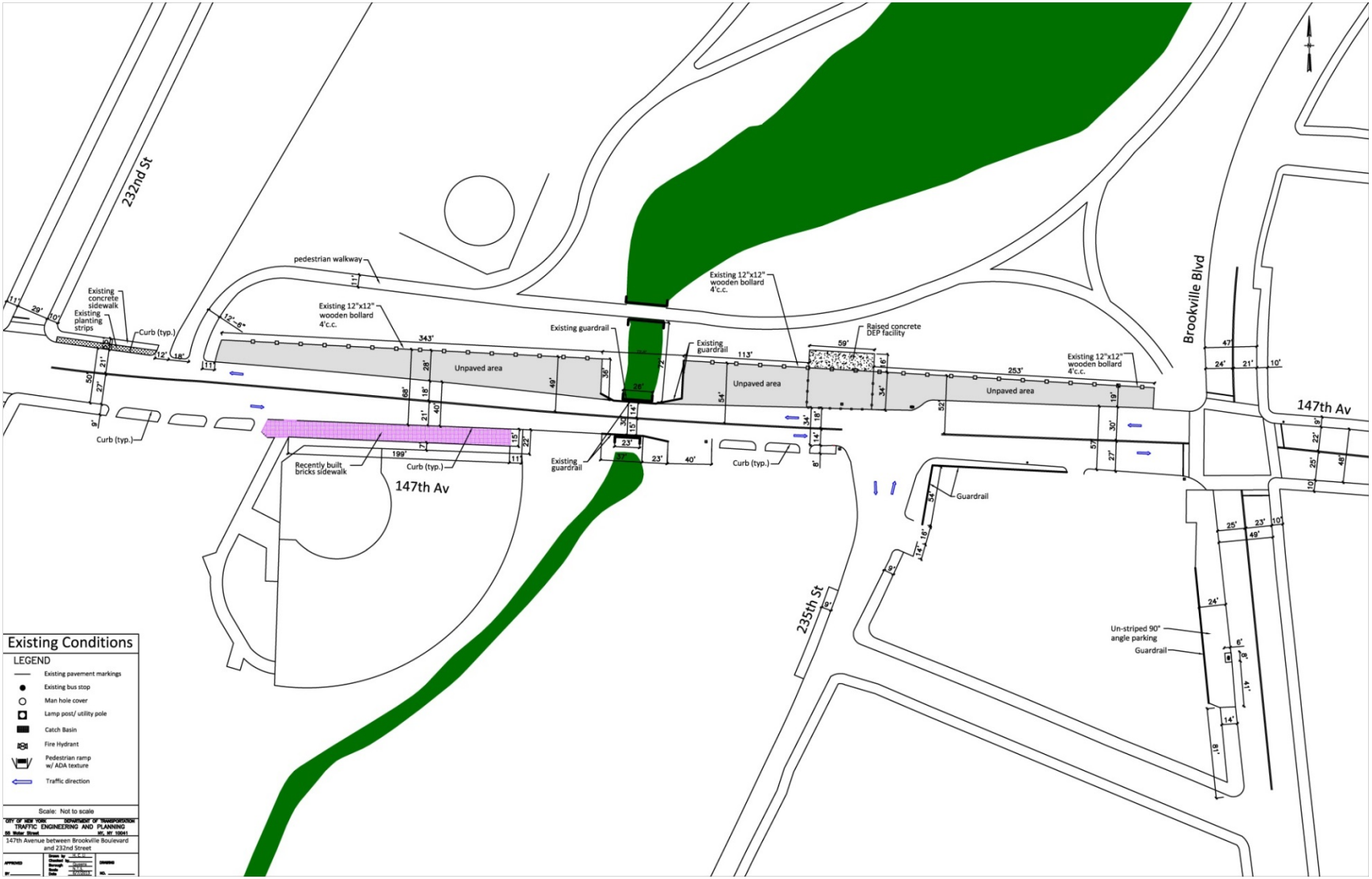
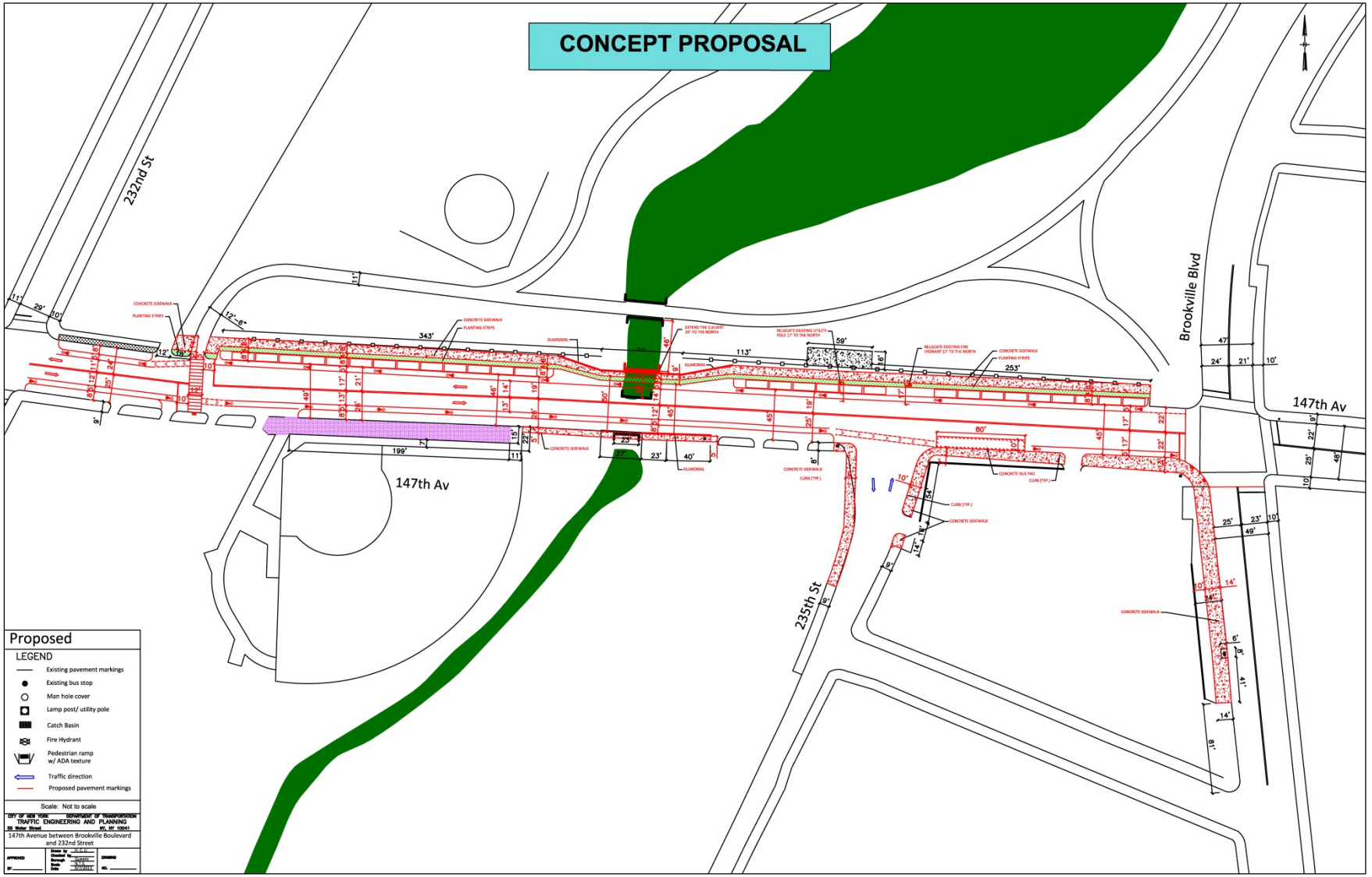


Figure 11-11: 147th Avenue between Brookville Boulevard & 232nd Street – Proposal



11.8 Other Recommendations/Improvements

DOT continues to take action to help enhance traffic operation and pedestrian safety. Figure 11-12 shows the locations where action have been taken and/or planned:

1. Evaluation for new pedestrian actuated flashing signals are underway for the following locations:
    - 147th Avenue between 232nd and 235th Street

2. Evaluation for new traffic signals are underway for the following locations:
    - Brookville Boulevard at 143rd Avenue
    - Brookville Boulevard at 144th Avenue
    - Brookville Boulevard and Newhall Avenue
    - Brookville Boulevard and 137th Road

In addition to the above traffic control evaluations, the 147th Avenue construction project from Springfield Lane to Brookville Boulevard which includes the culvert widening will result in a widened roadway with sidewalks and bicycle lanes to help improve traffic operation and pedestrian safety in the area.

Figure 11-12: Locations with action taken and/or planned