

Chapter 3 Transit System Characteristics

This chapter provides an overview of public transportation services offered by the New York City Department of Transportation (NYCDOT) funded private operators, including local, limited, and express bus service based in the boroughs of Queens and the Bronx. Using data obtained from NYCDOT and other sources, it characterizes the network operated by these companies as well as the individual routes. Subsequent chapters present operating and financial data, as well as the data that was collected through the ride-check and load check component of this study.

3.1 Service Area

The service area taken as a whole encompasses the boroughs of Queens and the Bronx, as well as portions of Brooklyn and Manhattan. All NYCDOT-funded local and limited routes that are part of this study are based in Queens, but several include routing in Manhattan, Brooklyn, or the Bronx. Express routes provide service between Queens or the Bronx and Manhattan. As mentioned in chapter 1, Command Bus services are not included as part of this study. Table 3-1 indicates the number of local/limited and express routes provided by each company and locates their respective service areas. Figures 3-1 through 3-3 shows the Queens local bus network and Figures 3-4 through 3-6 show the express networks of the Bronx and Queens, including both NYCDOT-funded routes and those operated by the Metropolitan Transportation Authority-New York City Transit (MTA-NYCT).

3.2 Bus Network Structure & Characteristics

The networks of routes provided by the six companies in Table 3-1 are part of a larger bus network serving the City of New York, which is in turn part of a larger regional transit network that includes subway, commuter rail, and ferry services. The majority of city bus routes are operated by NYCT. NYCT operates 204 local/limited bus routes and 31 express bus routes. NYCT had almost four times as many vehicles in peak service as the private bus companies, including the ones profiled in this study and Command Bus. In Queens, privately operated bus routes are spread throughout the borough and operate in the same areas as NYCT buses in many cases. The same is generally true for express buses in Queens. In the Bronx, local and limited routes are largely operated by NYCT, whereas Liberty Lines and New York Bus Service split the responsibilities for express bus services among themselves.

It is not very helpful to consider in isolation the individual companies' bus routes without some understanding of the entire city bus network. The "One City, One Fare" policy instituted in the 1990s has enabled the public to use all bus routes interchangeably and has provided free bus-to-bus and bus-to-subway transfers, regardless of the operating company. Keeping this in mind, the following descriptions of the companies' route networks are provided.

Figure 3-1: Local Bus Route Network
Northern Queens

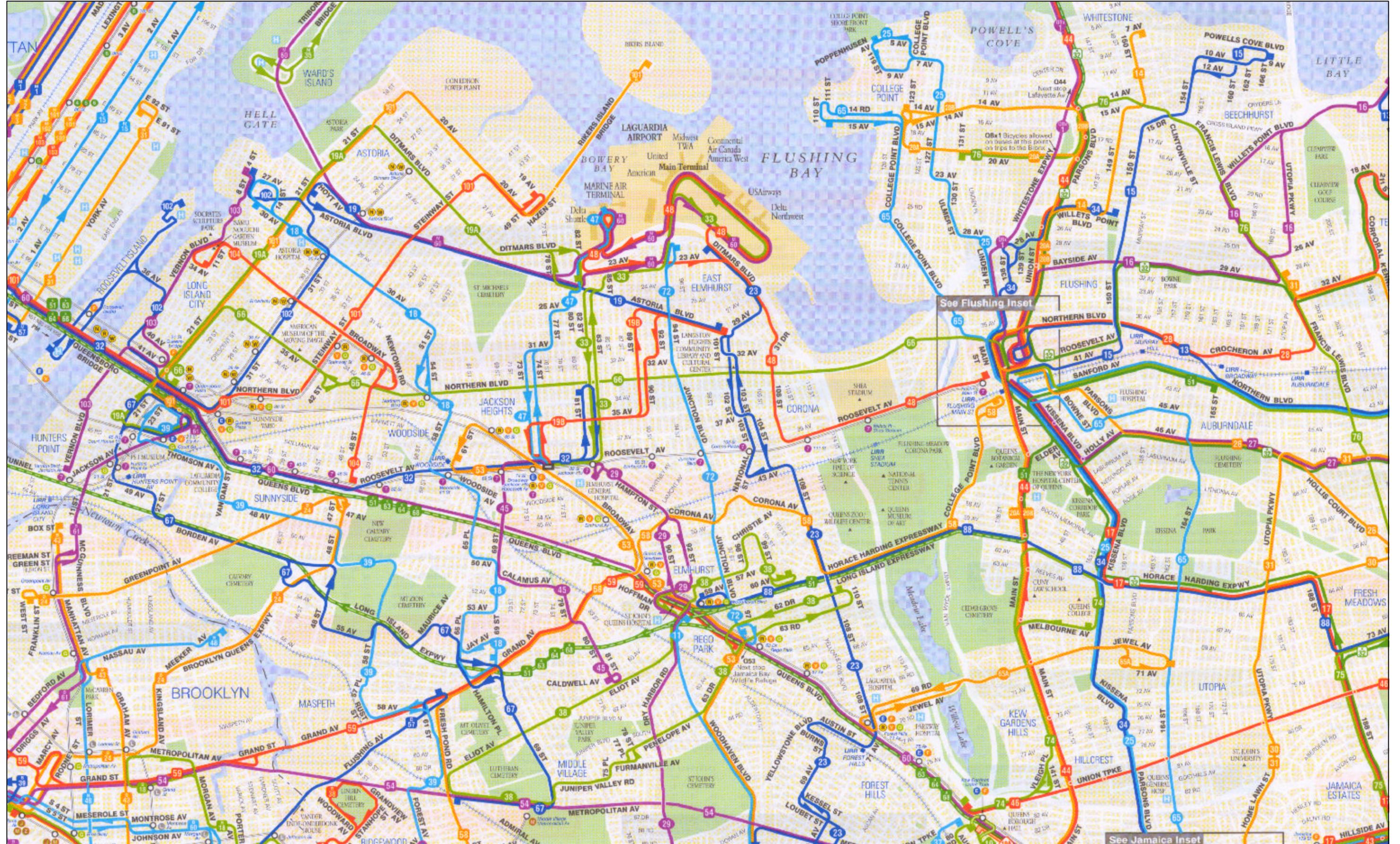
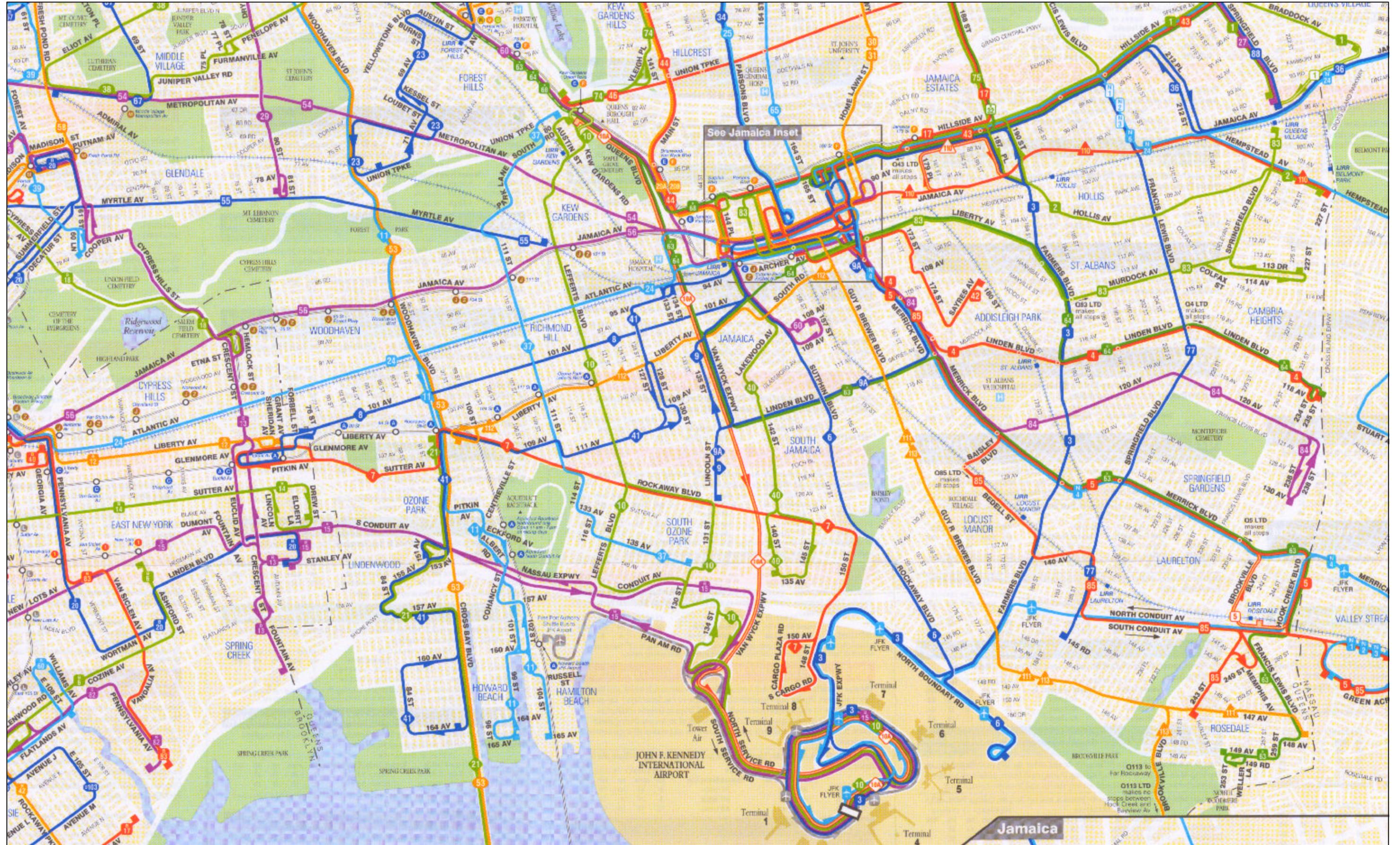


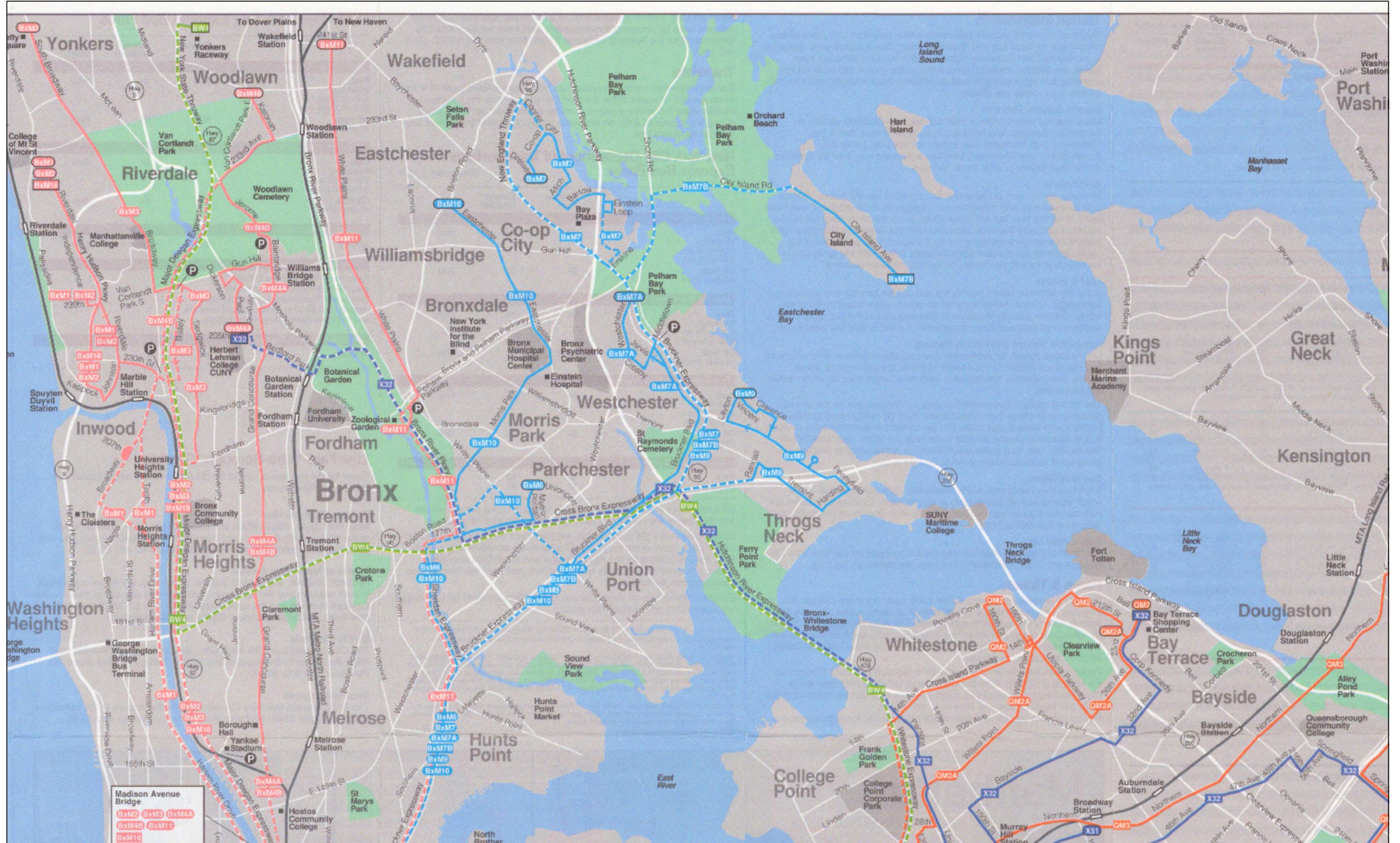
Figure 3-2: Local Bus Route Network
Southern Queens



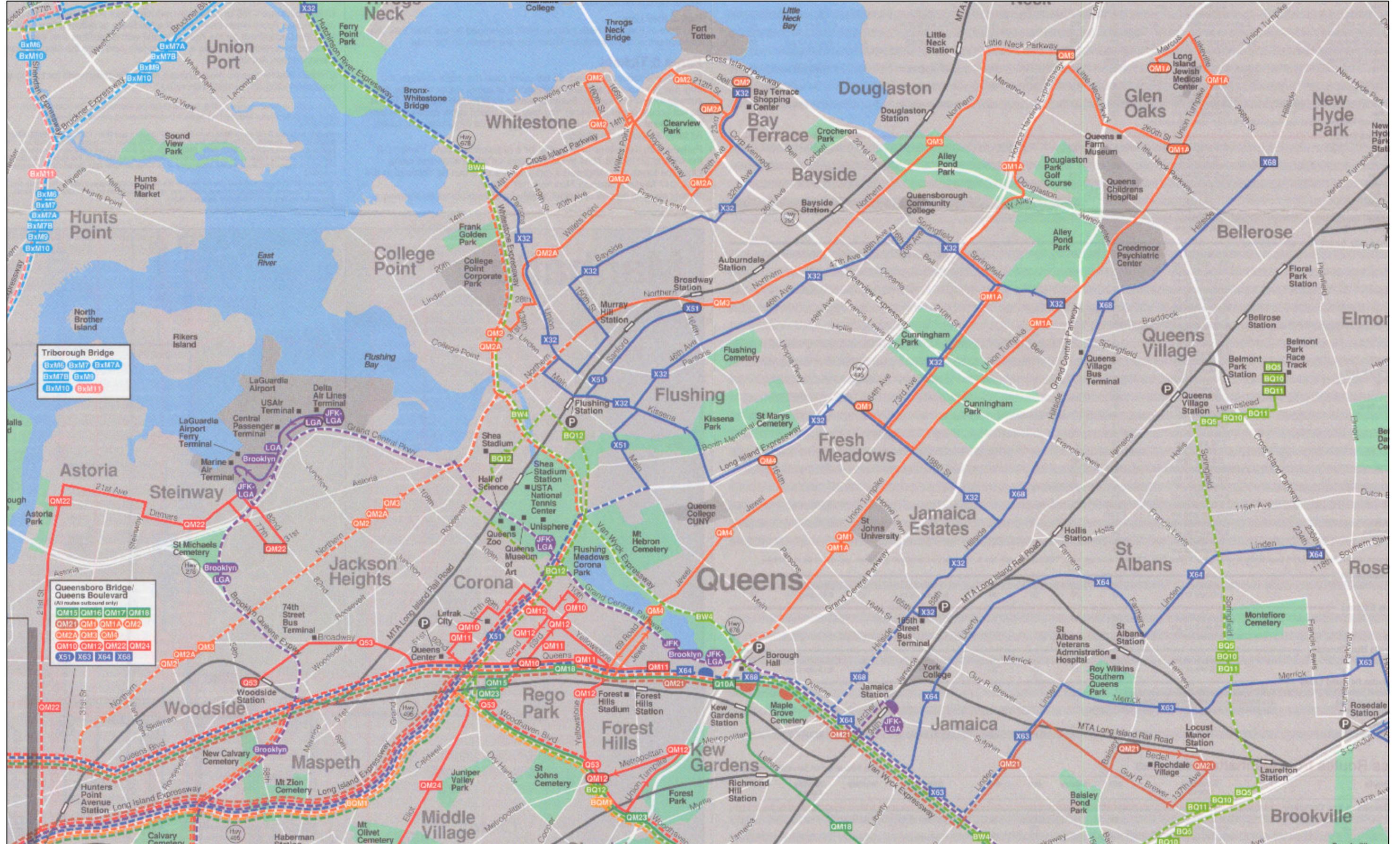
**Figure 3-3 Local Bus Route Network
Rockaway Peninsula**



Figure 3-4: Express Bus Route Network
Bronx



**Figure 3-5: Express Bus Route Network
Northern Queens**



**Table 3-1
Bus Company Service Areas and Routes**

Company	Local/Limited Service Area	# Local/Limited Routes*	Express Service Area**	# Express Routes)*
Green Bus Lines	Southern and Central Queens	16	Southern and Central Queens	5
Jamaica Buses	Southeastern Queens	4	Southeastern Queens	1
Queens Surface Corp.	Northeastern Queens, Northwestern Queens	12	Northeastern Queens	6
Triboro Coach Corp	Western and Central Queens	13	Western and Central Queens	5
Liberty Lines	NA	NA	Western and Central Bronx	7
New York Bus Service	NA	NA	Eastern Bronx	6
TOTAL		45		30

*Routes having distinct route numbers

**Express routes provide service to Midtown and/or downtown Manhattan from service area

Green Bus Lines

Green Bus Lines operates the most local/limited routes of all the private companies. Much of the service connects surrounding neighborhoods with downtown Jamaica, which is a major commercial and employment center as well as major intermodal center. Many Green Bus riders use local feeder routes as connector services to the Queens Boulevard and Jamaica subway lines, or the Long Island Railroad, all of which provide Manhattan-bound service. Several Green Bus routes provide arterial service on major streets in southern and central Queens. Queens Boulevard in central Queens, which is an important corridor that has employment, shopping, and intermodal opportunities, is served by Green Bus route Q60, connecting Jamaica with Midtown Manhattan. Other arterial roads served by Green Bus Lines include Woodhaven Boulevard (Q11), Lefferts Boulevard (Q10), Rockaway Boulevard (Q7), and Sutphin Boulevard (Q6).

Green Bus is also the major provider of bus service on the Rockaway Peninsula. Green also connects Queen's neighborhoods to JFK International Airport, as well as to neighborhoods in eastern Brooklyn.

Express Bus routes provided by Green Bus make stops in the Rockaways and Southern Queens and then travel to Manhattan via the Long Island Expressway, returning to Queens via Queens Boulevard or the Long Island Expressway.

Jamaica Buses

Jamaica Buses runs a system of four heavily-utilized arterial local routes and also provides one express route. Like Green Bus, Jamaica Bus routes converge in downtown Jamaica and serve areas to the east, west and south. The express route, QM21 serves Rochdale Village in southeastern Queens and makes a few additional stops on Queens Boulevard in central Queens before heading to Manhattan. One of the local routes, the Q113, also provides limited stop service between Jamaica and Far Rockaway.

Queens Surface Corporation

Queens Surface serves northern Queens both west and east of Flushing Meadow Corona Park. Several of its routes pass through or terminate in downtown Flushing, connecting to areas such as Whitestone and College Point to the north and Jamaica to the south. One route, the Q65A, serves as a subway feeder between Kew Gardens Hills and several housing complexes to Queens Boulevard in Forest Hills. In western Queens, Queens Surface Corporation shares bus route responsibilities with Triboro Coach, providing service in neighborhoods such as Astoria, Jackson Heights, and Long Island City.

Queens Surface also operates the QBx1 which provides a connection across the Whitestone Bridge between Flushing in Queens and Co-op City in the Bronx. This route also serves for local transportation within Co-op City and connects that area of the Bronx with subway service on the Pelham (#6) subway line. Many QBx1 trips only operate between Co-op City and Pelham Bay Park subway station.

Queens Surface provides several Manhattan-bound express routes, all of which serve northeast Queens, in areas where subway service is largely unavailable.

Triboro Coach Corp

The focus of Triboro Coach's bus service is in western Queens, where it provides 13 local and 5 express routes. Several of its routes terminate on Roosevelt Ave in Jackson Heights, where connections are available to the Flushing and Queens Boulevard subway lines. Some other routes feed into the Queens Plaza area in Long Island City. There are a few others that are integrated with Queens Surface routes into a rough north-south/east-west grid network. Triboro serves the main terminal area of La Guardia airport with its Q33 route, as well as the Marine Terminal with route Q47. A few routes also extend into central and southern Queens, such as the Q53 which travels along Woodhaven Boulevard, making limited stops down to Rockaway Peninsula, and the Q23 which serves Forest Hills.

Triboro Coach operates several express routes serving areas in Central Queens such as Lefrak City, Forest Hills, Glendale, and Middle Village, and one express route which serves the northern part of Jackson Heights and Astoria.

Liberty Lines

Liberty Lines provides no local/limited service in the Bronx, but does serve the western part of the borough with six express bus routes, in addition to a White Plains Road express route. Areas served in the western Bronx include Riverdale, Woodlawn, Kingsbridge, and the Grand Concourse.

New York Bus Service

New York Bus Service provides a similar role in the eastern Bronx as Liberty Lines in the west, with express routes to Manhattan from Co-op City, Morris Park, Parkchester, City Island, Pelham Bay, and Throgs Neck.

3.3 Days and Hours of Operation/Service Span

Given the number and diversity of routes represented in this study, it is not surprising that days and hours of operation, or service span, exhibits a high degree of variation. Table 3-2 shows the service span for all local and limited routes. Table 3-3 shows the span for express routes. Several routes provide service on a 7 day per week, 24-hour basis. These tend to be routes that are on major corridors without rapid transit, but provide connections to subway stations in other corridors, such as the Q11 on Woodhaven Boulevard, and the Q110 on Jamaica Avenue. A large number of local/limited routes run 7 days per week, but do not provide service in the early morning (e.g. 12 M – 5 AM). These routes usually have slightly shorter spans on weekends, starting later in the morning given the lack of a significant morning commute. Some routes operate only Monday through Friday. These routes tend to be commuter-focused. Express routes tend

to operate more during peak periods, however a number of routes do provide evening and weekend service.

**Table 3-2
Local/Limited Bus Route Span and Headways**

Route Number	Route Name	Service Span*	Headway (minutes)				
			Weekday			Saturday	Sunday
			AM Peak	PM Peak	Off Peak		
<i>Green Bus Lines</i>							
Q6	Sutphin	24 Hours	3	3	15-35	20-35	20-35
Q7	Rockaway	M/F - 4 AM –1 AM	10	10	30	30	30
		Sa - 4:30 AM–1 AM					
		Su – 4:30 AM-1 AM					
Q8	101 Avenue	M/F - 4 AM–12 AM	7	12	20-30	20-30	20-30
		Sa –5:30 AM–12 AM					
		Su –5:30 AM-12 AM					
Q9	Lincoln	5 AM – 1 AM	5	5	20-30	20-30	20-30
Q9A	Linden	M/F–10:30 AM -5 PM	No Service	60	60	No Service	No Service
Q10	Lefferts	24 Hours	5-10	5-10	10-45	12-45	12-45
Q10A	JFK Airport Limited	M/F – 7AM-9AM	20	No Service	No Service	No Service	No Service
Q11	Woodhaven	24 Hours	5-20	5-20	10-160	15-160	15-160
Q21	Cross Bay	6 AM–9:30 PM	36	36	72	72	72
Q22	Rockaway Beach	5:30 AM – 1 PM	9	12	15-30	15-30	20-30
Q22A	Bayswater	M/F - 7:30 AM –2:30 PM	1 trip	No Service	1 trip	No Service	No Service
Q35	Marine Pkwy	24 Hours	10	10	15-70	20-70	30-70
Q37	111 Street	6 AM – 1 AM	8	10	20-30	20-30	30
Q40	142 Street	M/F - 4 AM–2 AM	7	7	15-30	20-30	30
		Sa –4 AM–2 AM					
		Su –4 AM-2:30 AM					
Q41	127 Street	M/F-5 AM–11:30 PM	10	15	20-30	20-30	40-60
		Sa–5:30 AM–12:30 AM					
		Su –6 AM-12:30 AM					

*Times rounded to nearest ½ hour

**Table 3-2
Local/Limited Bus Route Span and Headways (cont.)**

Route Number	Route Name	Service Span*	Headway (minutes)				
			Weekday			Saturday	Sunday
			AM Peak	PM Peak	Off Peak		
<i>Green Bus Lines (cont)</i>							
Q60	Queens Blvd	M/F-5 AM – 1 AM	8	8	8-20	8-20	10-20
		Sa-5 AM-2 AM					
		Su – 5 AM-1 AM					
<i>Jamaica Buses</i>							
Q110	Jamaica Av	24 Hours	6	8	10-60	11-60	15-60
Q111	Guy R. Brewer	24 Hours	3-10	3-8	5-60	8-60	10-60
Q112	Liberty	M/F-5:30 AM-12 AM	8	10	15-30	15-30	30-60
		Sa-5:30 AM-12 AM					
		Su – 7 AM-10:30 PM					
Q113***	Guy R. Brewer	5 AM – 2:30 AM	10	15	20-30	15-30	20-40
<i>Queens Surface Corp</i>							
Q25	Parsons	M/F-4:30 AM-1:30 AM	3-12	3-12	10-30	15-30	15-30
		Sa-5 AM-1:30 AM					
		Su – 7 AM-1 AM					
Q34	Parsons	5:30 AM –12 AM	12	12	20-30	30	No Service
Q65	164 Street	24 Hours	5	8	12-90	15-90	20-90
Q65A	Jewel	4 AM – 2 AM	3	3	15-30	15-30	20-30
Q66	Northern	4 AM – 2 AM	5-15	8-15	12-24	15-30	15-30
Q67	Calvary	M/F-5 AM-11 PM	13	15	30-65	60	60
		Sa-7 AM- 11 PM					
		Su – 9 AM-11 PM					
Q101	Steinway	24 Hours	10	10	20-60	30-60	30-60
Q101R	Rikers Island Limited	24 Hours	12-15	10-15	30-60	8-60	8-60
Q102	31 st Street	5 AM-12:30 AM	15	20	30	30	30
Q103	Vernon	M/F – 7 AM – 6 PM	30	30	60	No Service	No Service
Q104	Broadway	M/F-6 AM-11:30 PM	20	20	30-40	30-40	30-40
		Sa-6:30 AM-11:30 PM					
		Su – 7 AM-11:30 PM					
QBX1	Flushing- Co-op City**	M/F-4:30 AM-1 PM	18	20	30-60	30-60	30-60
		Sa- 6 AM-12 PM					
		Su – 6 AM-12 PM					

*Times rounded to nearest ½ hour **QBX1 span and frequency does not include extra service within Bronx ***Additional limited stop provided

**Table 3-2
Local/Limited Bus Route Span and Headways (Cont.)**

Route Number	Route Name	Service Span*	Headway (minutes)				
			Weekday			Saturday	Sunday
			AM Peak	PM Peak	Off Peak		
<i>Triboro Coach Company</i>							
Q18	30 Avenue	4 AM – 1:30 AM	8	10	18-30	20-30	20-30
Q19	Astoria	M/F– 6 AM–6:30 PM	20	20	40	40	40
		Sa- 8:30AM – 6 PM					
		Su- 8:30AM – 6 PM					
Q19A	21 Street	M/F – 5AM-1AM	5	8	15-30	20-30	20-30
		Sa-4:30AM–1:30AM					
		Su-4:30AM–1:30AM					
Q19B	35 Avenue	4 AM – 1:30 AM	6	8	20-30	20-30	30
Q23	108 Street	M/F-4:30AM–1:30 AM	6-12	8-15	20-30	20-30	20-30
		Sa – 5 AM- 1:30 AM					
		Su- 4:30 AM –1:30 AM					
Q29	80 Street	4:30AM–1:30AM	7-13	8-15	20-30	20-30	20-60
Q33	82 Street	24 Hours	5	5	15-60	15-60	20-60
Q38	Elliot	M/F-5:30AM–12AM	10	15	20-30	30-40	40-80
		Sa- 6AM – 12 AM					
		Su – 7:30 AM-12AM					
Q39	Forest	4 AM-1:30 AM	4	7	15-30	30	30
Q45	69 Street	M/F – 5AM – 1 AM	10	13	20-30	30-40	40
		Sa –6 AM–12:30 AM					
		Su – 8 AM–1 AM					
Q47	74 Street	M/F–5AM–12:30AM	9	10	30	30-40	40-50
		Sa–6:30AM-12:30AM					
		Su – 8 AM–12 AM					
Q53	Rockaway Park Limited	6 AM – 11 PM	20-30	15	30-60**	30	30
		7AM – 11PM					
		7AM – 11PM					
Q72	Junction	4 AM – 1:30 AM	10	15	20-30	20-30	30

*Times rounded to nearest ½ hour **Q53 has 15 minute midday headways during the summer

**Table 3-3
Express Bus Route Span and Headways**

Route Number	Route Name	Service Span*	Headway (minutes)				
			Weekday			Saturday	Sunday
			AM Peak	PM Peak	Off Peak		
Green Bus Lines							
QM15	Lindenwood Express	M/F - 7 AM- 11 PM	5	8	No Service	1 trip in each direction	No Service
		SA- 10AM & 4:30 PM					
QM16	Rockaway Park Express	M/F - 7:16 AM & 5:12 PM	1 trip	1 trip	No Service	No Service	No Service
QM17	Far Rockaway Express	M/F - 6:30 AM – 5:30 PM	2 trips	2 trips	No Service	No Service	No Service
QM18	Lefferts Express	M/F - 7 AM – 5:30 PM	12	15	No Service	No Service	No Service
QM23	Brooklyn Manor Express	M/F - 7:40 AM & 5:30 PM	1 trip	1 trip	No Service	No Service	No Service
Jamaica Buses							
QM21	Rochdale Village Express	M/F – 6 AM –11 PM	8	8	30-80	No Service	No Service
Queens Surface Corp							
QM1	Fresh Meadows Express**	M/F - 6AM – 7PM	2-3	7	30	No Service***	No Service***
QM1A	Glen Oaks/Union Turnpike Express**	M/F 6 AM – 12 PM	2-3	2-3	20-30	30-60	30-60
		Sa- 6:30 AM- 10 PM					
		Su- 7 AM – 7:30 PM					
QM2	Bayside Express**	M/F – 6 AM–12 AM	3-4	5	15-60	60	60
		Sa- 6:30 AM – 10 PM					
		Su–8:30AM–7:30PM					
QM2A	Clearview Express	M/F - 6 AM – 11:30 PM	6	10	60	No Service	No Service
QM3	Deepdale Express	M/F - 6 AM – 6 PM	30	30	No Service	No Service	No Service
QM4	Jewel Express**	M/F – 6 AM–12 AM	5-6	8-10	30-60	60	60
		Sa- 7 AM – 10 PM					
		Su–8:30AM–7:30PM					

*Times rounded to nearest ½ hour **Trips travel to Manhattan 3rd Ave, 6th Ave, or Wall Street.

***QM1 passengers served by QM1A on weekends

**Table 3-3
Express Bus Route Span and Headways (cont.)**

Route Number	Route Name	Service Span*	Headway (minutes)				
			Weekday			Saturday	Sunday
			AM Peak	PM Peak	Off Peak		
<i>Triboro Coach</i>							
QM10	Lefrak City Express**	M/F – 6:30 AM – 7 PM	5-6	8-9	150	No Service	No Service
QM11	Lefrak City Express	M/F – 6:30 AM – 6 PM	7	15	No Service	No Service	No Service
QM12	Forest Hills Express**	M/F – 6:30 AM – 6:30 PM	4-5	8-9	No Service	No Service	No Service
QM22	Jackson Heights Express**	M/F –7:30 AM & 5:20 PM	2 trips	2 trips	No Service	No Service	No Service
QM24	Glendale Express***	M/F – 6:30 AM – 6:30 PM	2	12	No Service	No Service	No Service
<i>Liberty Lines</i>							
BxM1	Riverdale Express	M/F-5:30AM – 12M	4	5	15-30	30	60
		Sa- 6:30AM-12:30AM					
		Su- 8AM – 11:30PM					
BxM2	Riverdale Express	M/F- 6AM – 12M	15	10	30	30	60
		Sa- 6:30AM-12AM					
		Su- 8AM – 11PM					
BxM3	Sedgwick Express	M/F-5:30AM-12:30AM	8	15	30-60	60	60
		Sa- 6:30AM-12:30AM					
		Su-8:30AM-11:30PM					
BxM4A	Grand Concourse Express	M/F-6:30AM-12:30AM	40	20	60-120	120	120
		Sa- 6:30AM-12:30AM					
		Su-8:30AM-11:30PM					
BXM4B	Grand Concourse Express	M/F-6AM-11:30AM	40	20	60-120	120	120
		Sa- 8AM-11AM					
		Su-10AM-11PM					
BxM11	White Plains Rd Express	M/F-5:30AM-12AM	5-6	7	15-60	30	60
		Sa- 6:30AM-11AM					
		Su-8AM-11PM					

*Times rounded to nearest ½ hour **Trips travel to Manhattan 3rd Ave, or 6th Ave. *** Trips travel to Manhattan 3rd Ave, 8th Ave, or Wall Street

**Table 3-3
Express Bus Route Span and Headways (cont.)**

Route Number	Route Name	Service Span*	Headway (minutes)				
			Weekday			Saturday	Sunday
			AM Peak	PM Peak	Off Peak		
<i>Liberty Lines</i>							
BxM18	Riverdale Express	M/F – 6:30 AM – 7 PM	15	30	No Service	No Service	No Service
<i>New York Bus Service</i>							
BxM6	Parkchester Express	M/F– 6:30AM – 12M	20	10	60	60	60
		Sa**- 7 AM – 7 PM					
		Su**- 8 AM – 7 PM					
BxM7	Co-op City Express	M/F–5AM-12:30AM	4	10	30	30	30
		Sa– 5AM-1:30AM					
		Su-6AM-12M					
BxM7A	Pelham Bay Express	M/F–6AM-12M	10	10	30-60	60	60
		Sa– 7AM-8PM					
		Su-8AM-7PM					
BxM7B	City Island Express	M/F – 7 AM – 5PM	2 trips	2 trips	No Service	No Service	No Service
BxM9	Throgs Neck Express	M/F–5:30AM-12M	10	10	30-60	60	60
		Sa– 7AM-11PM					
		Su-8AM-7PM					
BxM10	Morris Park Express	M/F–6AM-12M	5	10	30-60	60	60
		Sa– 7AM-12:30AM					
		Su-8AM-11PM					

*Times rounded to nearest ½ hour

**On weekends after 8:00 PM, alternate service is provided by BxM10 Morris Park Express

3.4 Headways and Layovers

The routes operated by NYCDOT franchise bus carriers serve many different purposes, and carry different volumes of passengers, thus the headways of these services vary from route to route. Some routes run as frequently as every 2 minutes during the peak periods, while others have only one or two trips throughout the entire day. Also, the headways vary by time of day, with shorter headways in the morning and afternoon peak periods, and considerably longer headways during the evenings and nighttime periods. Table 3-2 shows the headways by time of day and day of week for local routes, with express routes shown on Table 3-3.

Ideally, there would be locations for drivers to layover at each end of each route. However, in several cases, especially in Manhattan, no established layover sites exist, and drivers must find a location on their own. In some instances, the lack of an established layover location results in buses blocking lanes or double parking.

In many instances one or both ends of the route are located in a neighborhood business district where transfers to other buses and subways occur. At these locations, there are parking areas, in most cases on-street, for the buses to park while on a layover. At locations that there are no dedicated layover facilities, buses usually park at the first or last bus stop of the route to layover.

3.5 Route Lengths/Running Times

All of the bus routes vary in length and time it takes to run the route. Some of the routes are short subway feeder routes that have a short running time. Others, specifically some of the express routes, are much longer routes that take quite a while to complete a trip. Running times also vary by time of day, insofar as they are dependent on traffic conditions. Crowding affects running time for each route since it takes longer to load and unload a crowded bus versus an empty bus. A running time analysis, based on data collected from the ride-check survey is presented later in this document.

For the most part, route miles are consistent for all routes, and do not vary by time of day or day of the week. There are a few exceptions, however. One is that some routes have short trips that turnaround at location that is not the end of the route. Also, some routes have multiple branches, and each individual branch may be a different length.

3.6 Route Descriptions

The bus routes operated by the private companies serve many different areas in Queens and the Bronx, and have different purposes. Some are express routes connecting outlying areas with major employment locations in Manhattan, others provide local and/or limited stop service along major arterial roadways, while others serve to feed subway stations from residential areas. In some cases a single route might serve multiple purposes at different locations throughout the route. Individual route descriptions are provided in Appendix B.

3.7 Schedule Convenience and Transfer Coordination

The realities of transit service in New York City dictate that buses need to operate quite frequently to keep up with demand. Because of this most local bus schedules are not coordinated with each other, since passengers rarely need to wait long to connect between buses or subways. There are a number of locations throughout Queens where numerous bus routes meet, and connect with subways, creating de facto transfer locations. These locations include Downtown Flushing, Downtown Jamaica, Jackson Heights (74th Street and Broadway), Queens Plaza, and Queens Center Mall in Rego Park. Express bus routes are designed to provide service between residential areas in Queens and the Bronx and major employment areas in Manhattan. Some express bus passengers transfer to bus and subway services in Manhattan. Schedules are generally guided by demand for service, and transfers are not coordinated.

3.8 Fleet Inventory and Facilities Review

The combined fleet of the NYCDOT franchise bus carriers, including Command, consists of about 1,289 vehicles making it the 9th largest bus system in the United States and Canada. This fleet operates out of 8 bus depots. A significant portion of the buses are fueled by Compressed Natural Gas (CNG). Due to weight restrictions, CNG buses have a lower passenger capacity, which is reflected on the maximum load figures in Appendix B for companies in this study that operate CNG vehicles, which are Queens Surface and Triboro Coach. Most of the buses (1,258 of 1,289) and two of the depots are owned by NYCDOT, with the rest owned by the individual companies. The services in the Bronx and Queens are operated out of seven depots, using 1,153 buses.

Federal Transit Guidelines state that the minimum useful life of heavy duty transit vehicles is 12 years or 500,000 miles. The average fleet age of the private fleet is 10.6 years, with 52% (597) of buses older than this 12 year guideline. The year make and model of the fleet of the Bronx and Queens franchised carriers is provided on Table 3-4. Also included on this table is the average age of the fleet for each company.

Each company has a bus depot where buses are stored and maintained. These depots also house dispatch and administrative functions for each of the companies, as well as driver rooms where drivers may prepare for a shift. All local bus facilities were visited by the consultant for the ride-check survey.

Green Bus Lines operates out of two facilities. The main facility is located on Rockaway Boulevard in Jamaica, across from Kennedy airport. This facility has enough room to store the fleet that is housed there, however if the vehicle requirements at this depot grows, this facility will be space constrained. The driver's room and dispatch functions are located in temporary trailers next to the administration building.

Green Bus Lines also has a satellite facility that houses the portion of the fleet dedicated to service in the Rockaway section in Queens, as well as some buses that provide service

on mainland Queens. This facility is located in the Arverne neighborhood along Rockaway Beach Boulevard. This is a small facility that is used to house vehicles and provide light maintenance work. All major maintenance work is done in the Jamaica facility. This facility has enough room for the current fleet with enough space for increases in service.

Jamaica Buses has one depot that is located in Jamaica on Guy R Brewer Boulevard near Linden Boulevard. This facility at one time housed 173 buses, which is more than the current fleet. While there is room for an expanded fleet, care should be taken not to overburden this facility when expanding the Jamaica Buses fleet. There is a small drivers and locker room located within this facility.

Liberty Lines has a facility located in Yonkers, on Babcock Place. This facility houses the vehicles for express service provided by Liberty Lines in the western part of the Bronx. This facility was not visited by the consultant team.

New York Bus Service has a facility located in the Co-op City section of the Bronx. This facility houses all vehicles for New York Bus Service, include its school bus operation. This facility was not visited by the consultant team.

Queens Surface operates out of a fairly new facility located in the Flushing/College Point area. The facility is located on 28th Avenue near the New York Times printing plant. This facility has plenty of room to store the current fleet, as well as plenty of room for growth. The driver and dispatch area at this garage is rather large, and lockers are provided for drivers.

Triboro Coach has one facility located on 24th Avenue in Jackson Heights. This facility is located right across from LaGuardia Airport. This facility is space constrained to the point that many Triboro Coach vehicles are forced to park out on adjacent streets. Drivers are provided a locker room and driver room within the facility.

The New York Metropolitan Transportation Council (NYMTC) in its Transportation Improvement Program (TIP) identifies a number of projects that deal with the franchised bus program. These include replacement vehicles, as well as outfitting bus depots for compressed natural gas. Also, included is a new depot for private buses in Queens. Bus depot projects are summarized on Table 3-5, while vehicle for replacements and fleet expansion are presented on Table 3-6. Due to budget constraints, projects to outfit bus depots for CNG operations has been put on hold indefinitely, as well as design and construction of an additional bus depot in Queens. This is due to a change in procurement policy from 100% CNG to 80% clean diesel and 20% CNG.

Table 3-6 shows that there are 799 vehicles proposed to be purchased. Of these vehicles, 292 were funded prior to Fiscal Year 2002. While the table lists certain vehicles as replacements, and others as purchases, most of the vehicles purchased will be used to replace vehicles that have reached the end of their useful life. Delivery of these vehicles is expected to begin in July 2005 beginning with New York Bus Service and continue until May 2006 for the initial orders. Delivery of additional vehicles above the base order

would occur until July 2006. These orders include vehicles that have been ordered for all of the franchised bus companies. The NYCDOT proposed delivery schedule for these vehicles to operators in the Bronx and Queens is presented on Table 3-7. The number of vehicles that are shown on the delivery plan differ from the TIP for a number of reasons such as that some of the vehicles are slated to go to Command Bus in Brooklyn, and that funding constraints might limit the number of vehicles that can be purchased. Certain vehicles are contingent on modifying depots for CNG vehicles, which is a project that has been put on hold. For Triboro Coach, which already is a CNG operator, additional CNG vehicles are contingent on additional capacity for these vehicles.

**Table 3-4
Fleet Inventory and Average Fleet Age
As of December 2002**

Year	Make and Model	Company						Total
		Green Bus Lines	Jamaica Buses	Liberty Lines	New York Bus Service	Queens Surface	Triboro Coach	
2002	MCI D4500-54394C	0	0	0	6	0	0	6
2000	Orion 05.501	0	0	0	0	2*	0	2
1999	Orion 05.501	4	0	0	0	133*	14*	151
1998	Orion 05.501	0	0	0	0	51*	58*	109
1997	Orion 05.501	50	0	0	0	0	0	50
1994	TMC RTS-06	40	36	0	0	96	(42+24*)66	238
<i>Total Younger Than 12 Years</i>		<i>94</i>	<i>36</i>	<i>0</i>	<i>6</i>	<i>282</i>	<i>138</i>	<i>556</i>
1989	MCI Classic	14	8	10	16	0	26	74
1988	MCI Classic	0	0	76	93	55	0	224
1986	GMC RTS-06	39	28	0	0	0	27	94
1986	GMC RTS-04	23	19	0	0	0	27	71
1985	GMC RTS-04	65	12	0	0	0	31	117
1984	GM of Canada Classic	0	0	0	3	0	0	3
1982	GM of Canada T8H-5307A	0	0	0	25	0	0	25
<i>Total Older Than 12 Years</i>		<i>141</i>	<i>67</i>	<i>86</i>	<i>137</i>	<i>55</i>	<i>111</i>	<i>597</i>
Total All Vehicles		235	103	86	143	337	249	1,153
<i>Percent Older than 12 Years</i>		<i>60%</i>	<i>65%</i>	<i>100%</i>	<i>96%</i>	<i>16%</i>	<i>45%</i>	<i>52%</i>
Average Fleet Age (years)		12.2	13.1	13.9	14.4	6.4	10.2	10.5

*CNG Powered Bus

Source: NYCDOT

Table 3-5: Bus Facility Capital Projects (\$Millions)

Project	Pre FY 2002	1st Year FY 2002	2nd Year FY 2003	3rd Year FY 2004	Total
Engineering and Design for Queens Bus Storage Facility II	\$0.0	\$0.0	\$4.1	\$0.0	\$4.1
Construction and Project Management for Queens Bus Storage Facility II	\$0.0	\$0.0	\$0.0	\$35.0	\$35.0
Purchase/Install/Modify CNG Bus Fueling Station at Green Bus Lines	\$10.7	\$1.3	\$0.0	\$0.0	\$12.0
Purchase/Install/Modify CNG Bus Fueling Station at New York Bus Service	\$8.0	\$0.0	\$0.0	\$0.0	\$8.0
Purchase/Install/Modify CNG Bus Fueling Station at Jamaica Buses	\$8.5	\$0.0	\$0.0	\$0.0	\$8.5
Total	\$27.2	\$0.0	\$4.1	\$35.0	\$66.3

Source: NYMTC

Table 3-6: New Vehicle Purchases for Private Franchised Carriers (\$Millions)

Project	Replacement Vehicles	Expansion Vehicles	Pre FY 2002	1st Year FY 2002	2nd Year FY 2003	3rd Year FY 2004	Total
Purchase of 22 CNG Replacement Buses for GBL	22	0	\$6.2	\$0.0	\$0.0	\$0.0	\$6.2
Purchase of 28 CNG Transit Buses	0	28	\$9.3	\$0.0	\$0.0	\$0.0	\$9.3
Purchase of 78 Transit Buses	0	78	\$41.2	\$0.0	\$0.0	\$0.0	\$41.2
Purchase of 82 Transit Buses	0	82	\$28.1	\$0.0	\$0.0	\$0.0	\$28.1
Purchase of 82 Transit Buses	0	82	\$28.7	\$0.0	\$0.0	\$0.0	\$28.7
Purchase of 80 Transit Buses	0	80	\$0.0	\$33.9	\$0.0	\$0.0	\$33.9
Purchase of 78 Transit Buses	0	78	\$0.0	\$0.0	\$27.5	\$0.0	\$27.5
Purchase of 60 Transit Buses	0	60	\$0.0	\$0.0	\$0.0	\$26.0	\$26.0
Purchase of 100 Replacement Buses	100	0	\$0.0	\$35.0	\$0.0	\$0.0	\$35.0
Purchase of 96 Replacement Buses	96	0	\$0.0	\$0.0	\$35.0	\$0.0	\$35.0
Purchase of 93 Replacement Buses	93	0	\$0.0	\$0.0	\$0.0	\$16.0	\$16.0
Total	311	488	\$113.5	\$68.9	\$62.5	\$42.0	\$286.9

Source: NYMTC

Table 3-7: Transit Vehicle Delivery Schedule 2004-2006

Company	Order Category	Fuel Type	Start Delivery	End Delivery	Number of Vehicles	Total Base Vehicles	Total Maximum Vehicles	Total Option Vehicles
Green Bus Lines	Local-Base*	CNG	January 2005	May 2005	141	276	15	0
	Local-Base	Diesel	December 2005	March 2006	135			
	Express-Maximum	Diesel	March 2006	March 2006	15			
Jamaica Buses	Express-Option*	CNG	April 2005	July 2005	7	62	6	67
	Local-Option*	CNG	June 2005	August 2005	60			
	Local-Base	Diesel	October 2005	December 2005	53			
	Express-Base	Diesel	November 2005	November 2005	9			
	Express-Maximum	Diesel	February 2006	February 2006	6			
Liberty Lines	Express-Base	Diesel	September 2005	November 2005	66	66	20	0
	Express-Maximum	Diesel	January 2006	February 2006	20			
New York Bus Service	Express-Base*	CNG	December 2004	April 2005	157	265	36	0
	Express-Base	Diesel	July 2005	September 2005	108			
	Express-Maximum	Diesel	December 2005	January 2006	36			
Queens Surface	Express-Option	CNG	April 2005	July 2005	55	27	14	55
	Express-Base	CNG	December 2005	January 2006	27			
	Express-Maximum	CNG	May 2006	June 2006	14			
Triboro Coach	Local-Base	CNG	January 2005	May 2005	11	47	116	0
	Express-Option	CNG	April 2005	July 2005	26			
	Local-Option	CNG	June 2005	August 2005	90			
	Local-Base	CNG	April 2006	May 2006	36			
Unassigned Vehicles	Express-Maximum	Diesel	April 2006	April 2006	24	0	80	0
	Local-Maximum	Diesel	May 2006	June 2006	45			
	Local-Maximum	CNG	June 2006	July 2006	11			

*Contingent on depot modification to support CNG vehicles
Source: NYCDOT

3.9 Vehicle Requirements

The vehicle requirements of a particular bus route are determined by the frequency or service provided as well as the length of the route. Table 3-8 provides the peak number of buses required for the private franchised bus companies, by each individual company. Queens Surface has the highest peak vehicle requirement with 281 vehicles needed. Liberty Lines requires the fewest vehicles, only needing 75 vehicles. For local services, Green Bus Lines requires the most vehicles, with 201 buses needed during peak periods. Two companies, Liberty Lines and New York Bus Service do not operate local routes, and therefore do not require any local vehicles. For express services, the company that requires the most vehicles is Queens Surface, needing 152 buses. Jamaica Buses only requires 15 vehicles to provide service on one express route.

This table also shows the ratio of spare vehicles for each of the companies. Queens Surface has the most spare vehicles with at 76, and the highest spares ratio at 29%. New York Bus Service has the lowest spares ratio at 14%, however Liberty Lines has the fewest spare vehicles, only having 11. For Queens and the Bronx services, the spares ratio is 22%, with 213 spare vehicles. With the exception of Liberty Lines and New York Bus, all companies have an adequate spare ratio.

Table 3-8: Peak Vehicle Requirements by Company

Company	Local	Express	Total	Spares	Total Fleet	Spares Ratio
Green Bus Lines	176	25	201	34	235	17%
Jamaica Buses	70	15	85	18	103	21%
Liberty Lines	0	75	75	11	86	15%
New York Bus Service	0	125	125	18	143	14%
Queens Surface	120	141	261	76	337	29%
Triboro Coach	130	74	204	56	260	27%
Total	496	455	951	213	1,164	22%

Source: NYCDOT

3.10 Fare Structure and Transfer Policy

Fare and transfer policy for franchised services has been established by New York City Department of Transportation. In most instances, the policy integrates very well with that of MTA-NYCT. Franchised bus carriers do accept Metrocard as fare media to board buses, and transfers are allowed between the private franchised buses and MTA-NYCT buses and subways. The new fareboxes in use on the private carriers are compatible with Metrocard, and are the same as those in use by MTA-NYCT, therefore, cash fares need to be paid with coins. Liberty Lines and New York Bus have Bill Accepting Units attached to their fareboxes, so cash fares can be paid with dollar bills for these companies.

The fare policy of New York City private franchised buses identifies three different service types in operation, with a fare policy set for each type. These three service types

are local service, 1-zone express service, and 2-zone express service. Local service refers to all local bus routes, and includes local services operated by Command Bus, Green Bus Lines, Jamaica Buses, Queens Surface Corporation, and Triboro Coach. 1-zone express buses are intra-boro express buses such as the B103 of Command Bus, and Liberty Lines Express buses that provide intra-Manhattan service. 2-zone express buses are the express buses operated by all of the private franchised companies connecting the outer boroughs to Manhattan. Table 3-9 provides an overview of fares charged for franchised transit services.

The base fare for local service is \$1.50. During off-peak hours, cash paying passengers are only charged \$1.00 while passengers who use Metrocard are still charged \$1.50. Unlimited ride Metrocards are accepted for travel on all local services. NYCT tokens are also valid form of payment, with a value of \$1.50. Transfers to other local routes are free, both among and between NYCT routes and NYCDOT routes. If paying with a MetroCard, transfers to subways and express routes (with step-up fare) are also free. All transfers are valid for 2 hours after paying the initial fare. With valid identification, senior citizens and disabled passengers pay half fare. When accompanying a disabled passenger, an attendant may ride for free. Free transportation is also available for up to three children under five years of age. Other people who may ride free on private franchised buses include New York City Police, New York City Fire Marshals, personnel authorized by the carrier and/or New York City Department of Transportation, and letter carriers on certain routes.

The base fare for 1-zone express services is also \$1.50, and the fare policy is similar to local services. The main difference is that there is no off-peak discount, at all times the fare is \$1.50. Half fare for senior or disabled passengers does not apply during peak periods. A one-day borough specific pass is available to riders for \$3.00 for unlimited rides on 1-zone express buses in that borough. Metro-card (both pay-per-ride and unlimited) as well as NYCT tokens are accepted as payment on all 1-zone express buses. All transfers are accepted on 1-zone express buses, except those issued onboard a route with the same designation. In certain instances an additional “step-up” charge may be charged. Transfers are good for two hours after issuance. Free transportation is available for person authorized by the carrier and/or New York City Department of Transportation as well as a personal care attendant for a paying disabled passenger.

The base fare charged on 2-zone express services is \$3.00. Fares can be paid in cash, with pay-per-ride Metro-Card, as well as express bus unlimited Metro-Cards. NYCT tokens are accepted and count \$1.50 towards the fare on all 2-zone express services. Senior citizens and disabled passengers are entitled to ride at half fare (\$1.50) during off-peak hours only. Passengers can transfer to any other bus route in New York City within two hours with a MetroCard, except one that is the same route of the original bus. Local and 1-zone transfers are valid for the equivalent of \$1.50 onboard a 2-zone express bus. Transfers from NYCT express bus routes are accepted without any additional charge. Student Metro-cards are accepted as \$1.50 of the fare aboard a 2-zone express bus. Personal care attendants, as well as persons designated by either New York City Department of Transportation or the individual carrier, may travel free on 2-zone express buses.

Table 3-9: Fare Structure

Fare Category	Local Service	1-zone Express	2-zone Express
Base Fare	\$1.50	\$1.50	\$3.00
Off-Peak (Cash Only)	\$1.00	\$1.50	\$3.00
Senior Citizen/Disabled	\$0.75	\$1.50	\$3.00
Senior Citizen/Disabled (Off-Peak)	\$0.50	\$0.75	\$1.50
Children Accompanied by Adult	Free	Free	Free

Source: NYCDOT

3.11 Potential Policy Changes

Since the initiation of this study, serious and significant discussion of policy changes have taken place that would have an effect on the NYCDOT privately operated bus route network. Insofar as some of these changes take place, the study team will need to account for them. However, they should not affect the overall goal of the study, which is to evaluate services from an operational standpoint.

First and foremost, the Mayor of New York, as part of the efforts to address the current municipal fiscal crisis, has publicly discussed the option of shifting funding and oversight responsibility for the privately-operated bus routes from NYCDOT to the Metropolitan Transportation Authority, and at the same time reducing city subsidies for transit. This is scheduled to occur by July 1, 2004. This study will remain relevant insofar as service recommendations would be of use to whatever entity is responsible for the bus network that is being evaluated.

Another proposed policy change which has been made, also in response to the City's fiscal difficulties, has been an increase in the cost of a one-way express bus fare from \$3 to \$4 for all private carriers, as well as end the off-peak discount for local passengers paying with cash. If implemented, this is set to take effect around April 1.

On March 6, 2003, the MTA board approved an increase in the fares paid for all agencies within the MTA umbrella, including fares for New York City Transit bus and subway services. MTA will raise local bus and subway base fares to \$2.00, with express bus fare raised to \$4.00. It is uncertain what affect this will have on NYCDOT Franchised service fares, however it is likely that the NYCDOT fare policy will be affected by any fare change implemented by the MTA. On March 24, 2003, NYCDOT will hold a public hearing, along with the franchise review committee, to tie any future local fare increase to fares charged by the MTA-NYCT. Another subject of this public hearing is a proposal to end off-peak discounted cash fare on local buses.

An issue that is of great concern to reliability of service, especially for Manhattan bound express service, is security checkpoints at bridges and tunnels entering Manhattan. These

checkpoints delay service due to backups on the roadways leading to the checkpoints, and the delay for security personnel to inspect the buses. However, security checkpoints are a random occurrence that is not conducted on a daily basis at a given location. As such, it would be very difficult to design schedules to account for these random events.