HUTCHINSON RIVER PARKWAY TRANSPORTATION CORRIDOR STUDY

New York City Department of City Planning
Transportation Division
May 2015

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EXECUTIVE SUMMARY

Executive Summary

The New York City Department of City Planning (DCP) has conducted a transportation study of the Hutchinson River Parkway Corridor between Pelham Parkway and Ferry Point Park. The purpose of this study, which was a joint effort between DCP's Bronx Borough Office and Transportation Division, was to evaluate the transportation needs along and surrounding the Hutchinson River Parkway corridor with the goal of improving existing conditions and developing longer-term recommendations for improvements as the area continues to grow.

Current and planned developments in the study area, which include portions of Community Districts 10 and 11, include more than one million square feet of office space; more than 700,000 square feet of planned regional retail development; and a proposed commuter rail station. While the economic development is beneficial for this area, the additional auto-based trips have created traffic circulation and wayfinding problems in the street network, much of which includes lower density residential neighborhoods. As a result of increased traffic congestion, some locations have safety issues, and access to and from the Hutchinson River Parkway is also becoming more difficult. In order to address these issues, the study had the following objectives:

To examine and assess existing traffic conditions and street network within the corridor study area;

- To identify opportunities to accommodate new and existing uses;
- To improve connectivity and traffic circulation along selected corridors surrounding the Hutchinson River Parkway;
- To improve access and connectivity for pedestrians and bicyclists, including to the greenway;
- To support connections to transit;
- To enhance transportation safety within the study area for roadway users.

Summary of Identified Issues

As part of this study, NYCDCP met with many community stakeholders resulting in an inventory of key issues and opportunities. Depending on the groups present at individual meetings, the area of focus was either north or south of East Tremont Avenue (see last page for a listing of stakeholders).

Issues North of East Tremont Avenue

The focus north of East Tremont Avenue was on the following specific areas: Hutch Metro Center, West of the Hutch Metro Center, Proposed Metro North Station and Westchester Square.

A-Traffic Issues and Concerns

- *Access to the Hutchinson Metro Center is possible only through one entry point:* The intersection of Marconi Street and Waters Place. Another option besides this intersection is necessary. The other major issue for the Hutchinson Metro Center is the lack of internal streets connecting to the facilities inside the center.
- *Extension of Bassett Avenue (West of the Hutch Metro Center)*: At times traffic backs-up on Stillwell Avenue causing congestion. Community Board 11 would like to make Bassett Avenue (west of the rail lines) a through street, making it an alternate north-south connection to Pelham Parkway besides Stillwell Avenue.
- *Exit ramp at the end of Stillwell Avenue (West of the Hutch Metro Center*): According to Community Board 11, the exit ramp at the end of Stillwell Avenue (end of East Gun Hill Rd) was supposed to be temporary and negatively affects the traffic in the neighborhood.Its removal would be preferred by the community.
- *Pedestrian Crossings on Pelham Parkway (West of the Hutch Metro Center) and in the Westchester Square Area*: Illegal pedestrian mid-block crossings observed at both locations.

B-Public Transit Issues and Concerns

- *Bus Services (Hutchinson Metro Center)*: Access to the Hutchinson Metro Center by public transportation is not easy since there is no direct access by public transit into the center. Currently a shuttle bus service is provided to/from the Westchester Square subway station, but it is not sufficient.
- *Proposed Metro-North Morris Park Station and Local Bus Services (West of the Hutch Metro Center)*: It is anticipated by the community that additional commuter traffic into this area will be generated by the proposed Morris Park Metro-North Station when it gets built. The stakeholders would also like for the MTA to consider providing an east -west connection for pedestrians over the rail tracks to connect the neighborhoods.

C-Parking Issues and Concerns

According to some of the stakeholders, there is insufficient on-street parking in this area to meet the needs of the local residents.

Issues South of East Tremont Avenue

The focus south of East Tremont Avenue was on the following specific areas: Bruckner Interchange and Brush Avenue.

A-Traffic Issues and Concerns

- *Access to Bruckner Interchange/ Bruckner Boulevard and Trucks*: Traffic often backs-up at the interchange approach and many trucks end up on the local streets. Additionally, Brush Avenue will become the main access road to/from a growing number of new developments in this area.
- *Brush Avenue Traffic Circulation*: Traffic generally backs up on Brush Avenue as vehicles head north to the Bruckner Interchange. Truck turns are sometimes a problem at the end of Brush Avenue. There is a safety issue for cyclists using the Brush Avenue bicycle lanes, which often experience heavy truck traffic. Additionally Brush Avenue has no sidewalks from Wenner Place to the Pepsi Distribution facility to accommodate residents wanting to walk to Ferry Point Park.
- *Lafayette Avenue Traffic Circulation*: Consider improving traffic circulation and the capacity of this roadway as an important east-west corridor keeping in mind the anticipated future increases in vehicular traffic in this area.
- *Bridges (Brush Avenue Area)*: the concern was raised to have mitigation measures in place during the reconstruction of Unionport Bridge

period in order to not aggravate existing traffic conditions.

B-Public Transit Issues and Concerns

- *Bus Services and Proposed Developments (South of East Tremont Avenue):* The growing number of new developments planned for the area will generate additional vehicular trips on the roadways. Access by public transit or additional services to these sites should be considered to alleviate future traffic conditions.

C-Greenway Path and Open Spaces Issues and Concerns

- *Under the Bruckner Interchange:* the triangular space under the Bruckner Interchange is dark and unused.
- *Waterfront Path along Westchester Creek (Brush Avenue Area)*: The Friends of Ferry Point Park would like to have a greenway path along the Westchester Creek waterfront (east side of Westchester Creek).
- *Access to Ferry Point Park*: Access to Ferry Point Park from the east side of the park to the west is an issue. Stakeholders asked the city to consider a waterfront promenade for this park similar to what has been proposed in the NYC Greenway path. Additionally Ferry Point Park is often left in poor condition with trash and garbage by users of the sports fields.

Summary of Recommendations

Roadway Network and Corridor Improvements

Access to the Hutchinson Metro Center: This study recommends creating new entry points into the Hutch Metro Center by providing two additional access points along the southern border of the center. This recommendation is to be combined with a proposal to link private internal roads to another and convert them into public roads. A formal arrangement would need to be discussed with the developers of the Hutch Metro Center.

Alternate access to the northern part of the study area (to Pelham Parkway): A long term recommendation is to explore in the northern part of the study area other options for vehicular traffic from the Hutch Metro Center office complex to access Pelham Parkway. At least consider having another option put in place in order to be used during an emergency, when necessary. As designed all vehicles enter and exit the center through Marconi St at Waters Place.

Proposed East-West Connection: This study recommends for the MTA to consider providing an east -west connection for pedestrians to the proposed Morris Park Metro-North station by allowing an overpass over the rail tracks at the end of Morris Park Avenue that extends into the adjacent neighborhoods. Without this overpass pedestrians to the west of the rail lines are isolated and do not have easy access to the Hutchinson Metro Center and vice versa.

Extension of Bassett Avenue (West of the Hutch Metro Center): Extend Bassett Avenue further north to Pelham Parkway (Bassett Avenue west of the rail lines and have it become another option besides Stillwell Avenue for northbound traffic heading towards Pelham Parkway.

Exit ramp at the end of Stillwell Avenue at East Gun Hill Road (West of the Hutch Metro Center):

Community District 11 would like this ramp to be removed. NYCDOT recommends that the community district board reach out to the relevant state government agency to discuss the outcome of the traffic study that was done for this area in order to resolve this issue.

Access to the Bruckner Interchange/Bruckner Boulevard and Trucks - Short-Term Recommendations:

- Increase enforcement and police presence in this area. Encourage community boards (10 and 11) to meet, coordinate with local precincts

(NYPD) and to look into specific problematic locations.

- Consider improving signage to facilitate traffic circulation for trucks that need to utilize the local streets.

Access to the Bruckner Interchange/ Bruckner Boulevard and Trucks - Long-Term Recommendations:

- Freight by ferry was considered and researched for the southern part of the Bronx, but currently this mode of transportation is not feasible due to costs. However passenger ferry service could be considered in the long term in some capacity to alleviate vehicular traffic in the area.

- A proposal was made to explore other access points over Westchester Creek to alleviate congestion at the Bruckner Interchange.

- A proposal supported by Community Board 10 for a slipway at St Joseph's Place to I-95 interstate highway in order to provide a direct link to the Bruckner Expressway. Currently vehicles have to travel on the local road (Bruckner Boulevard) for more than 20 blocks in order to access the Bruckner Expressway. This is not feasible under existing conditions. Further study and analysis would be necessary, if it is to be considered in the future.

Brush Avenue Traffic Circulation - Alleviate Traffic Congestion:

- *Improve Intersection Operation:* NYCDOT as part of the Unionport Bridge reconstruction is looking into the following recommendations, which include expanding the northbound approach to add a third traffic lane on Brush Avenue, making signal timing adjustments, and relocating a bus stop on Brush Avenue.

- *Relocate Bus Stop*: Based on a site visit it is recommended move the Q44 and Q50 bus stop on Brush Avenue at Bruckner Boulevard (south-east corner) to a midblock location south of this intersection. This recommendation would require the assessment and approval of the NYCT.

- *Alternate Route for Trucks of Pepsi Facility:* This study recommends a feasibility analysis of creating a new access point for trucks into the Pepsi Distribution site from the Hutchinson River Parkway Service Road. This would divert the facility's truck traffic from Brush Avenue which is a local street. The new access point could be created by swapping the current location of the exit ramp with the current entrance ramp, allowing trucks to exit earlier onto the parkway's service road and easier access to the Pepsi facility. Approval and assessment by NYSDOT would be required for this alternative route.

Brush Avenue Traffic Circulation - Alleviate Traffic Congestion:

The "Ring Road" provides a critical roadway link in this area. It is currently accessible by all traffic and is used as such. As it operates today access and crossing points for pedestrians are not determined along this loop as they travel to and from developed recreational areas within Ferry Point Park raising pedestrian safety concerns for this area. This road is used as well by all types of vehicles and has the potential to attract more users with plans underway for significant new developments in the immediate area. These developments as new traffic generators can affect traffic operations along the Hutchinson River Parkway and eventually the use of the Ring Road.

As it operates today the Ring Road does not have the facilities necessary to support the current level of traffic and more so with future projected growth in the area. Therefore vehicular/pedestrians conflicts along the "Ring Road" would require the installation of traffic control devices and other safety treatments. These could include new roadway design such as buffers zones, speed reducers, fences, light poles, traffic and pedestrian signals, signs, etc. In addition under future conditions, widening of the "Ring Road" to increase capacity, or use of traffic calming and enforcement measures to discourage through traffic may be necessary. DCP is willing to coordinate with the Department of Parks, the Department of Transportation and potentially other stakeholders to resolve all outstanding issues with the operation and maintenance of the "Ring Road", leading to overall better traffic operations for this area of the Bronx.

Brush Avenue Traffic Circulation – Bicyclist Alternate Route:

Have an alternate bicycle route on the Hutchinson River Parkway Southbound service road besides Brush Avenue, which would also connect to Ferry Point Park. This bicycle route would be physically separated from vehicular traffic. This proposal requires approval from NYCDOT.

Wayfinding Signage from the Whitestone Bridge and Toll Plaza Area

This study recommends installing wayfinding signage to provide dedicated travel lanes and signage at the toll plaza/bridge area leading drivers to/from the Target Center and other sites of large developments.

Intersection Traffic Analysis and Operation Improvements

An evaluation of the traffic operations at "key" locations was performed for the above thirteen intersections to identify the level of service (LOS) and the level of traffic congestion in the study area during the peak periods of the day.

The LOS analysis identified certain deficiencies due to significant delays and congestion at five analyzed intersections under existing and near future traffic conditions. The five intersections are: Morris Park Avenue and Eastchester Road, Waters Place and Eastchester Road, Waters Place and Marconi Street, Westchester Avenue/Ericson Place and Middletown Road, and Brush Avenue and Bruckner Boulevard.

Below are the recommendations and potential roadway improvements proposed for these intersections:

Morris Park Avenue and Eastchester Road;

Waters Place and Eastchester Road;

Westchester Avenue, Ericson Place and Middletown Road

To accommodate future demand, signal timing modifications are recommended. These three key intersections can also benefit by having traffic agents during peak periods and continuous monitoring of traffic conditions that could lead to faster traffic adjustments and further improve congestion.

Waters Place and Marconi Street

There would be a need for the following re-configuration and signal timing changes to accommodate the future traffic at this intersection: on-street parking would be eliminated along Waters Place to create space for the additional lanes at the Marconi Street entrance, proper channelization of these newly created lanes would be required, and the creation of a new 3-phase traffic signal timing.

Brush Avenue and Bruckner Boulevard

The transportation consultant of the Target development is currently working with NYCDOT to expand the northbound approach to add a third northbound traffic lane on Brush Avenue. This improvement, with signal timing adjustments, would be necessary to avoid long vehicular spillbacks and delays along Brush Avenue.

Pedestrian/Bicycle Safety and Environment Improvements

The ten locations within the study area are analyzed in detail for safety improvements. They are:

- Eastchester Road and Waters Place *(Hutch Metro Center)*
- Eastchester Road/ Silver Street and Williamsbridge Road *(Hutch Metro Center)*
- Eastchester Road and Morris Park Avenue *(West of Hutch Metro Center)*
- Westchester Avenue and East Tremont Avenue *(Westchester Square Area)*
- Brush Avenue and Bruckner Boulevard *(Brush Avenue Area)*
- Westchester Avenue between Middletown Road and Waters Place *(Hutch Metro Center)* – 2 locations
- Hutchinson River Greenway and Pelham Parkway at Stillwell Avenue *(West of Hutch Metro Center)*
- Westchester Avenue and Ferris Place *(Westchester Square Area)*
- East Tremont Avenue between Fink, Ponton and Lane Avenues *(Westchester Square Area)*

General issues with these locations:

- Turning vehicles do not always yield to pedestrians in the crosswalk
- Several pedestrians have been observed crossing midblock (jaywalking)
- Due to the presence of columns supporting an elevated rail line on Westchester Avenue, pedestrians are not always visible to drivers
- Conflicts between motorists and cyclists were observed under the elevated rail line on Westchester Avenue as cyclists connect to the greenway path

Below are the recommendations and safety improvements proposed for these locations in terms of pedestrians and cyclists:

- Install "Turning Vehicles Yield to Pedestrians" signs which can help reduce pedestrian crashes and conflicts at particular intersections
- Install pedestrian countdown signals which can help reduce conflicts with vehicular traffic
- Install "Wait for Walk Signal to Cross" signs to discourage pedestrian crossings during motorists' protected left or right turn signal phase
- Install "No Pedestrian Crossing" signs at locations of illegal midblock crossings
- Install new crosswalks to provide a designated location for pedestrians to cross safely
- Slow down vehicles (traffic calming method) by widening and raising the marked traffic island where possible
- Have a red flashing traffic light asking drivers on Westchester Avenue, at an unsignalized location, to stop at pedestrian crossing and proceed with caution when clear
- Add signage on Westchester Avenue under the elevated tracks informing motorists of the presence of an on-street greenway connector to minimize conflicts between motorists and cyclists
- Have informational signs to guide bicyclists from Waters Place on Westchester Avenue as they make a connection to the Hutchinson River Greenway path.

Public Transit and Service improvements

Based on issues and concerns related to transit service that have been raised by the stakeholders and both community districts, the following recommendations have been developed:

- Consider additional bus services to accommodate the projected increase in commuters coming to areas of planned and proposed new developments.
- Consider the reroute of bus routes to serve the proposed Morris Park Metro-North Station (when built) in order to help reduce vehicular traffic in the area

New York City Transit (NYCT) needs to evaluate all areas of concern, the existing bus routes, and ridership levels before they can restructure any segment of a bus route.

Additionally, this study recommends that when the proposed Morris Park Station is built that it includes an east-west connection for pedestrians that would link both neighborhoods located on either side of the tracks.

Open Space Access Improvements and Streetscape Amenities

- *Under the Bruckner Interchange (where Brush Avenue intersects with Bruckner Boulevard):* the triangular space is dark and unused. This study recommends adding amenities including better lighting to enliven this space.
- *New Sidewalks (Brush Avenue Area):* This study recommends the installation of new sidewalks on Brush Avenue where sidewalks are missing to accommodate local residents wanting to walk to Ferry Point Park.
- *Access to the west side of Ferry Point Park:* Access to the west side of Ferry Point Park, where the ball fields are located, is difficult from the east side of park. The city should look into the option of installing a connection or path between Ferry Point Park East and Ferry Point Park West along the waterfront as shown on the NYC Greenway Plan. NYCDPR is currently looking into developing the waterfront path; however funding is critical to make it happen.

Stakeholders and Outreach Process

A total of twelve meetings with community groups, institutions, and developers took place from May through August 2013. The purpose of these meetings was to identify key elements of the Hutchinson River Parkway Corridor that would be studied within the scope of the project including:

- Identification of issues, concerns and constraints within the area of study
- Identification of key corridors and intersections to analyze
- Identification of strengths in the study area and of opportunities for improvements.

The stakeholders included:

- Community Board 10

- Community Board 11
- Bronx Borough President's Office
- City Councilman James Vacca
- New York State Senator Jeffrey D. Klein
- NYCEDC (NYC Economic Development Corporation)
- NYCDOT (NYC Department of Transportation) Bronx Borough Commissioner; Freight Division; and Traffic Planning
- NYSDOT (NY State Department of Transportation
- NYCDPR (NYC Department of Parks and Recreation)
- MTA (Metropolitan Transportation Authority – Metro-North and NYC Transit Operations)
- NYCDOT(Bronx Borough Commissioner and Traffic Planning)
- SOBRO (South Bronx Overall Economic Development Corporation)
- Westchester Square BID, Bronx Chamber of Commerce
- Northeast Bronx Association
- Morris Park Medical/Educational Institutions – Albert Einstein College of Medicine, Calvary Hospital; Jacobi Medical Center, Bronx Psychiatric Center, Montefiore
- Hutchinson Metro Center, Simone Development
- Pelham Bay Taxpayers
- Friends of Ferry Point Park
- Country Club Civic Association

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PART I:

EXISTING CONDITIONS:

Study Area Boundaries and Neighborhoods

While the focus of the Hutchinson River Parkway Corridor Transportation Study is the area within a ¼ mile of the Hutchinson River Parkway Corridor between Pelham Parkway and Ferry Point Park, the study area boundaries for most of the existing conditions analyses (except the socioeconomics analysis) extend beyond this focus area, encompassing nearby neighborhoods and land uses that provide context for the transportation study.

The study area beyond the ¼ mile of the Hutchinson River Parkway Corridor is bounded as follows: to the west by Castle Hill Avenue which leads into Bronxdale Avenue, continuing north to Antin Place/ Esplanade to Pelham Parkway; to the north by Pelham Parkway to where Eastchester Road meets East Gun Hill Road to Bartow Avenue to the New England Thruway; to the east by the New England Thruway into Bruckner Boulevard into the Bruckner Expressway into the Throgs Neck Expressway ending at Sunset Trail; and to the south by Ferry Point Park and the southern border of the Bronx.

The study area is located within Community Districts 10 and 11, and lies within the following neighborhoods: Pelham Bay, Middletown, Schuylerville, Throgs Neck, Unionport, Westchester Square and Morris Park. The neighborhoods that fall within the study area, described below, have diverse land use, zoning and transportation characteristics.

Pelham Bay is located in the north eastern Bronx, south of Pelham Parkway and west of Pelham Bay Park. The housing stock consists of brick apartment buildings, along with one and two family homes. Westchester Avenue is the principal commercial thoroughfare.

Middletown is located in the eastern Bronx bounded to the north by Pelham Bay Park, to the east by Country Club, to the South by Tremont Avenue, and to the west by the Hutchinson River Parkway. It consists of one- and two- family houses and small apartment buildings.

Schuylerville, located in the eastern Bronx is bounded to the north by the intersection of East Tremont Avenue and the Bruckner Expressway, to the east by East Tremont Avenue, to the south by Cross Bronx Expressway and St. Raymond's Cemetery, and to the west by the Hutchinson River Parkway. It consists mostly of one-family houses.

Throgs Neck is in the southeastern Bronx lying on a peninsula overlooking Long Island Sound, and the East River. The Throgs Neck Bridge was completed in

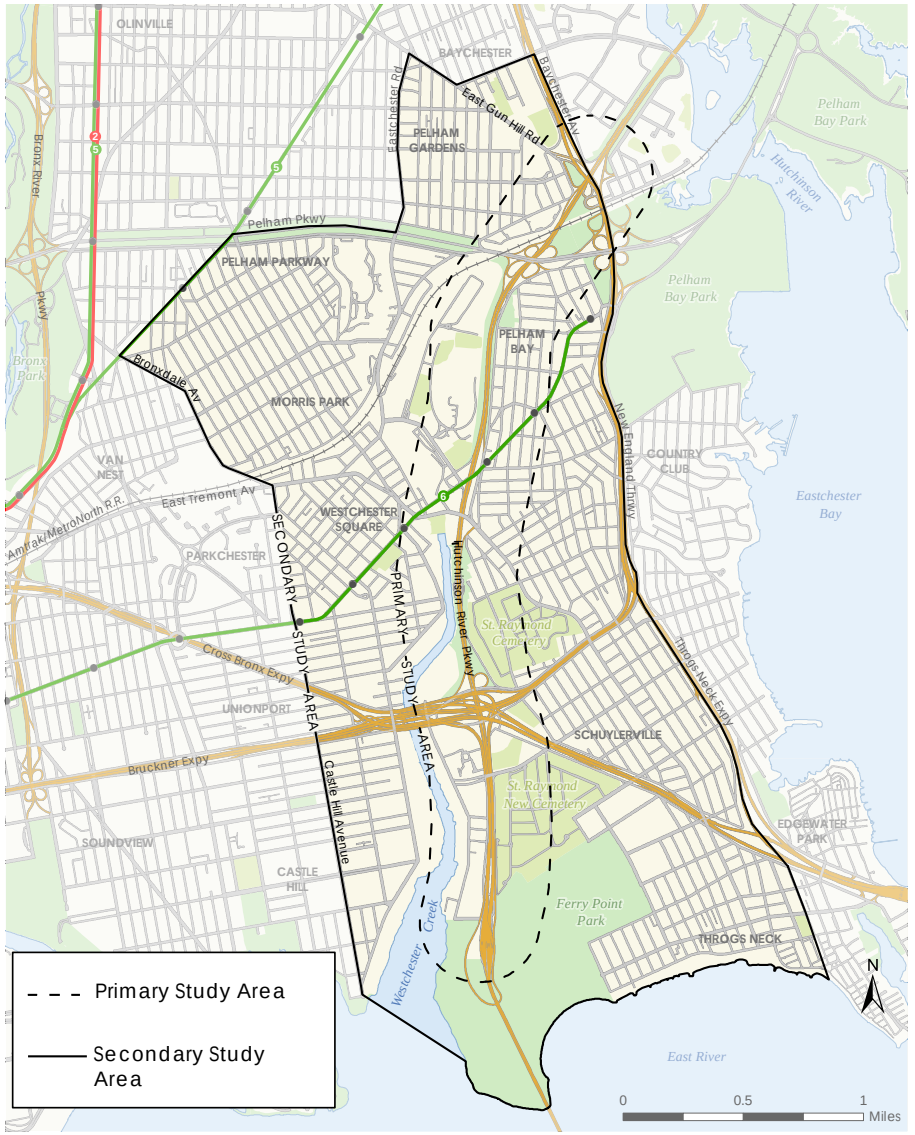
1961, providing a connection for the Bruckner, Cross Bronx and Throgs Neck Expressways. The neighborhood surrounding the bridge consists mostly of one- and two-family homes.

Unionport is in the eastern Bronx bounded to the north by Westchester Avenue, to the east by Westchester Creek Avenue, to the south by Bruckner Expressway, and to the west by Castle Hill Avenue.

The neighborhood consists of a combination of land uses including one- and two- family houses, commercial/ office buildings and industrial /manufacturing uses.

Westchester Square is located in the east central Bronx is a commercial area with many businesses, banks, shops, churches, schools and hospitals. The area is also a major public transportation hub with both subway and bus service.

Morris Park, located in the east central Bronx, is bounded by Pelham Bay Parkway to the north, Amtrak Hellgate Rail to the east, East Tremont Avenue to the south, and Van Nest to the west. Morris Park Avenue running east to west is the principal commercial thoroughfare in the neighborhood. The housing stock is made up of small one-family houses and two and three story apartment buildings.



Map of Study Area

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Chapter 1 Land Use and Zoning

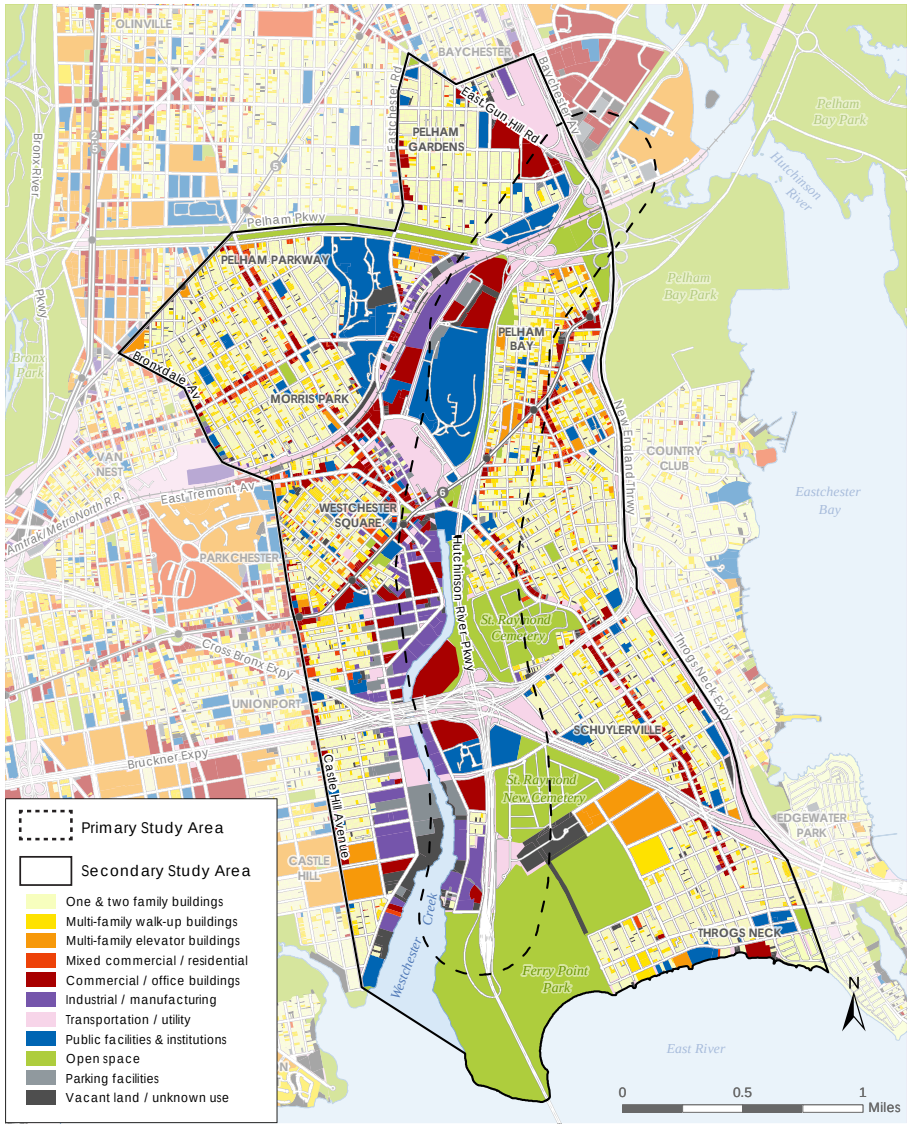

Figure E1.1: Land Use Map

Land Use

Regional Context

Within the study area, there are several major highways, including the Hutchinson River Parkway, which extends from the Bronx to both Westchester and Queens Counties; the New England Thruway, Bruckner Expressway, and the Cross Bronx Expressway, which carries I-95 Interstate traffic through the Bronx from the George Washington Bridge into Westchester County, Connecticut and New England. The Throgs Neck Bridge sits at the southern border of the study area, and connects the Bronx to Queens across the East River.

Accessible from these major highways are several noteworthy regional land use attractions located within the vicinity of the study area. These include several regional hospitals, health medical centers and educational institutions: the largest of which are Albert Einstein College of Medicine, Montefiore Hospital, Jacobi Hospital, Calvary Hospital and the Bronx Psychiatric Center. Most of these institutional land uses are situated west of the Hutchinson River Parkway along Eastchester Avenue in the Morris Park section of the Bronx.

The Hutchinson Metro Center Office Complex is a 42-acre suburban style campus located adjacent to the Hutchinson River Parkway in the Pelham Bay area of the Bronx. The center is home to office and commercial uses, and currently employs over 4,000 people.

Bay Plaza Shopping Center, located just north of the study area on Baychester Avenue along the Hutchinson River Parkway and I-95 highway, adjacent to Co-op City, is a regional attraction and destination for shopping. The existing facility is 1.3 million square feet, making it the largest shopping center in New York City. A planned addition (including Macy's) is in progress, and will bring the center's total size to 2 million square feet when it is completed in the spring of 2014.

Pelham Bay Park, located north of the study area, is the City's largest park property and is three times the size of Manhattan's Central Park. Pelham Bay Park includes Orchard Beach, which is the only public beach in the Bronx.

Study Area Land Uses

A variety of land use activities are located within the Hutchinson River Parkway Corridor study area. Generally located west of the corridor are the institutions, commercial and manufacturing uses, while east of the corridor are the open spaces, parks and a few residential uses. Immediately adjoining this mix of land uses and farther from the corridor are several low-density residential neighborhoods.

Residential Land Use

Residential land uses are mainly located in the neighborhoods beyond the Hutchinson River Parkway Corridor, except for the northeastern part of the study area where there are residences immediately adjacent to the corridor.

The study area housing stock consists mostly of single and two- family houses, and multi-family walkup buildings. There are also pockets of multi-family elevator buildings generally six stories tall scattered throughout the area.

Two major New York City Housing developments are located in the study area: the Throgs Neck Houses and the Castle Hill Houses.

The Throgs Neck Houses are roughly bordered by Randall, Calhoun, Sampson and Balcom Avenues. The development consists of 29 buildings with various heights (three and seven stories high). There are a total of 1,185 apartments in this housing complex of 32.83 acres. The Castle Hill Houses are bounded by Olmstead, Seward, Havemeyer, and Lacombe Avenues. The housing complex has 14 buildings with heights of twelve and twenty stories. The 41.35 acre site has 2,025 apartments.

The Albert Einstein College of Medicine also provides a generous supply of housing for its medical and graduate students. Einstein residential facilities located on Eastchester Road and Rhinelander Avenue contain about 760 apartments.

Commercial/Office Land Use

Commercial/office buildings and retail use can be found along the following corridors: East Tremont Avenue, Williamsbridge Road, Morris Park Avenue, Westchester Avenue, and the Westchester Square BID area.

East Tremont Avenue is a commercial strip that embodies neighborhood uses such as small retail stores, service shops, variety stores, delis, and small restaurants. Small commercial/office buildings and businesses are interspersed among the retail activities along this major arterial. Williamsbridge Road contains a mixture of retail, offices, and mixed-use buildings from Pelham Parkway to Morris Park Avenue and from the Amtrak rail line to East Tremont Avenue. Westchester Avenue has a variety of commercial and retail uses from Crosby Avenue to Pelham Bay Park and from Castle Hill Avenue to Commerce Avenue.

Morris Park Avenue consists mainly of mixed commercial and residential buildings on both sides of the road between Fowler and Haight Avenues. They are generally two to three stories buildings.

The Westchester Square Business Improvement District (BID) contains a mix of retail, commercial and neighborhood services. It is situated in the area roughly bounded by East Tremont Avenue, Williamsbridge Road, and Westchester Avenue. The district encompasses 90 tax lots and 145 businesses within Community Districts 10 and 11. There are also several chain stores in the area that include Walgreens, Footlocker and Rite Aid.

The Westchester Square neighborhood has a few office buildings on Commerce Avenue including the Department of Motor Vehicles, and the Affiliated Health Plan offices; and on Waterbury Avenue, including the NYS Department of Mental Retardation and Developmental Disabilities. The area also has some mixed-use developments on East Tremont Avenue, and north of St. Raymond's Cemetery.

In addition, there are several new commercial developments along the Hutchinson River Parkway corridor from Co-op City to Ferry Point Park. Hutchinson Metro Center (1200 Waters Place and 1250 Waters Place), includes a variety of office and medical uses, along with a café, fitness center, teleconference center, childcare center, and a bank. In 2007 a Home Depot opened further south at 2560 Bruckner Boulevard.

Industrial/Manufacturing Land Use

Light industrial /manufacturing uses are located mainly in the southern section of the study area. These land uses can be found from East Tremont Avenue to Ferry Point Park along Westchester Creek and west of the Hutchinson River Parkway Corridor, and are especially prevalent in the area designated as the Zerega Industrial Business Zone (IBZ) situated along Zerega Avenue. The IBZ was created by the City in 2006 as part of an initiative to facilitate industrial and manufacturing expansion. The Pepsi distribution facility, located along Brush Avenue was completed in 2009 as part of the IBZ initiative. In the northern section of the Hutchinson Corridor there are light manufacturing uses on several blocks located between Blondell Avenue and Williamsbridge Road from Eastchester Road to Westchester Avenue.

There is a large parcel of industrially zoned land, generally bounded by Stillwell Avenue and Marconi Street, north of Waters Place. This large parcel even though zoned industrial, currently has a variety of uses from the Modell's distribution facility to offices and institutions. This parcel is located in the Hutchinson Metro Center where several new commercial developments are underway such as a hotel and office spaces.

Transportation/Utility Land Use

The Amtrak-Hellgate Rail line runs through the northern section of the study area, and is used mostly for the transportation of Amtrak passengers and as well for freight movement. Currently, there are no Metro-North stations in the area, but there is a proposal to build a station at the end of Morris Park Avenue near the Hutchinson Metro Center along the Amtrak rail line. This is described in more detail in the *Public Transit* section of this report.

Additionally, the study area contains a large Metropolitan Transportation Authority (MTA) maintenance facility consisting of a subway yard and shops. The facility is bordered by Westchester Avenue to the south, Blondell Avenue to the west and Waters Place on the northeast.

Public Facilities and Institutions

A significant number of large medical and educational institutions are situated in the northern section of the study area in the Morris Park neighborhood, west of the Hutchinson River Parkway corridor. These include Albert Einstein College of Medicine, Montefiore Medical Center (teaching hospital for the Albert Einstein College of Medicine and one of the largest 50 employers in the state), Jacobi Hospital (another university program of the Albert Einstein College of Medicine), Calvary Hospital, and Bronx Psychiatric Center. Mercy College has a Bronx Campus at the Hutchinson Metro Center.

A United Cerebral Palsy facility (non-profit organization) occupies a large area on Stillwell Avenue (1770 Stillwell Avenue) west of the Hutchinson River Parkway and just north of Pelham Parkway.

Many public elementary and secondary schools serve the study area. There are a total of 23 schools listed below:

- PS 10 – 2750 Lafayette Avenue
- PS 14 (named for Senator John Calandra) – 3041 Bruckner Boulevard
- PS 304 Early Childhood School – 2750 Lafayette Avenue
- PS 71 (named for Rose E. Scala) – 3040 Roberts Avenue

- PS 72 (named for Dr. William Dorney) – 2951 Dewey Avenue
- PS/MS 194 – 2365 Waterbury Avenue
- MS 101 (named for Edward R. Byrne) – 2750 Lafayette Avenue
- Urban Institute of Mathematics – 650 Hollywood Avenue
- Mott Hall Community School – 650 Hollywood Avenue
- Urban Assembly Acad-Civic Engagement – 650 Hollywood Avenue
- PS 12 Lewis and Clark School – 2555 Tratman Avenue
- Herbert H. Lehman High School – 3000 East Tremont Avenue
- Renaissance High School – MTT – 3000 East Tremont Avenue
- Hospital Schools – 3450 East Tremont Avenue
- PS 108 (named for Philip J. Abinanti) – 1166 Neill Avenue
- PS 83 (named for Donald Hertz) – 950 Rhinelander Avenue
- PS/MS 498 Van Nest Academy – 1640 Bronxdale Avenue
- JHS 144 MichelAngelo – 2545 Gunther Avenue
- PS 721 (named for Steven McSweeney School) – 2697 Westchester Avenue
- Bronx High School for the Visual Art – 2040 Antin Place
- ICAHN Charter School 2 – 1640 Bronxdale Avenue
- ICAHN Charter School 4 – 1500 Pelham Parkway South
- ICAHN Charter School 5 – 1500 Pelham Parkway South

Two police stations are located within the study area. The 45th Precinct, which is located at 2877 Barkley Avenue, and the 49th Precinct located at 2121 Eastchester Road. There are also a number of firehouses in the study area.

Open Space and Recreation Land Use

Two major parks – Pelham Bay Park and Ferry Point Park, as well as a number of public small parks and playgrounds, serve the residents of the study area. The Hutchinson River Greenway follows the Hutchinson River Parkway beginning at Bruckner Boulevard and ending at Pelham Parkway. A connection to this greenway is provided south of Bruckner Boulevard to Ferry Point Park through an on-street route on Brush Avenue. It also links north to the greenway on Pelham Parkway leading users to Pelham Bay Park and City Island.

Pelham Bay Park is located in the northeastern area of the Bronx and extends partially into Westchester County. It is the largest park in New York City. The park has many amenities including bridle paths, hiking trails, Orchard Beach, the historic Bartow-Pell Mansion, two golf courses, fields and playgrounds.

Ferry Point Park is situated in the southeast corner of the Bronx, adjacent to the Throgs Neck neighborhood and bordered to the north by St. Raymond's Cemetery. This park offers great views of the East River and Manhattan skyline. The Hutchinson River Parkway crosses the park to the Bronx-Whitestone Bridge, splitting it into two: West Ferry Point Park and East Ferry Point Park. West Ferry Point Park includes playing fields for cricket, soccer, baseball/softball and football. On the east side there are plans to build a waterfront promenade and a world-class 18-hole golf course. The golf course is under construction and is planned to open to the public in 2015.

St. Raymond's Cemetery is a Roman Catholic Cemetery composed of two separate locations: the older section is at 1201 Balcom Avenue, and the newer section is at 2600 Lafayette Avenue, both east of the Hutchinson River Parkway. It is the only Catholic cemetery in the Bronx.

There are six smaller parks/playgrounds in the study area. Colucci Playground is east of the Hutchinson River Parkway between Wilkinson Avenue and East 197th Street. Samuel H. Young Park, with recreational fields and courts is located on Westchester Avenue between Waters Place and East Tremont Avenue. Owen F. Dolen Park is situated on Lane, East Tremont and Westchester Avenues. The recently upgraded Pearly Gates Playground, with a variety of 21st century sustainable design elements, is situated on St. Peter's Avenue at Tractman Avenue. Bufano Park, located on Bradford Avenue between La Salle and Waterbury Avenues, contains a playground, basketball and handball courts. Castle Hill Little League Park is located on Zerega Avenue between Commerce and Gleason Avenues and has a recreational field with baseball courts.

Vacant Lots

Four larger vacant lots can be found as land use in the study area. Two are situated along the southern portion of the Westchester Creek, a third lot is adjacent to the southern boundary of St. Raymond's Cemetery, and the last one is located immediately south of Pelham Parkway at the end of Marconi Street. In addition, many small vacant lots are scattered throughout the study area.

Future Developments

Bronx Psychiatric Medical Center - Redevelopment

The Bronx Psychiatric Medical Center is situated south of the Hutchinson Metro Center and is bounded by the Hutchinson River Parkway to the east and Waters Place to the south. This site currently has a 360-bed medical care facility (1.2 million square feet) that provides mental health services to the public and employs 950 people. The New York State Office of Mental Health (OMH) plans to redevelop this site with six new buildings to replace existing structures. The new buildings, to be sited close to Waters Place in the southern portion of site, will feature a total of 350,000 square feet of adult and children inpatient and outpatient mental health care facilities, including a Safe Horizon/Haven House; a transitional living residence; studio apartments; and 590 parking spaces. This redevelopment project is targeted for completion in 2015-2016.

The northern portion of the property is to be sold after reconstruction of the southern portion. On November 15, 2013 the New York State Urban Development Corporation d/b/a Empire State Development released a Request for Proposal (RFP) seeking proposals for the purchase and redevelopment of the northeastern parcel of the OMH campus (33 acres). The RFP stated that residential uses would not be considered for the site. In February of 2015 Simone Development companies, who owns the Hutchinson Metro Center, was announced as the RFP bid winner. They intend to build 1.9 million square feet of new and renovated commercial and office space on the site.

Hutchison Metro Center Developments and Expansion

The Hutchison Metro Center Office Complex (Simone Development Companies) is a 42-acre suburban- style campus located adjacent to the Hutchison River Parkway in the Pelham Bay area of the Bronx. The center is home to office and commercial uses, and currently employs over 4,000 people. There are 1,100 free parking spaces located within the center (which includes a 4-level covered parking garage in Tower 1). A complimentary shuttle bus service to/from nearby subway lines is provided for its tenants. Future developments include Towers 2 and 3 to be located adjacent to 1250 Waters Place (Tower 1), and the Metro Center Atrium under construction on Marconi Street near Waters Place.

Tower 2

This new 11-story tower will feature a total of 280,000 sf of office/medical space that will be leased to Montefiore Medical Center in its entirety. It is scheduled to be completed in 2014. The building will include an ambulatory surgery center with 12 operating rooms and four procedure rooms, an advanced imaging center, onsite laboratory services, a pharmacy, and new primary and specialty care practices.

Metro Center Atrium

This new mixed-use complex will feature 360,000 sf of office, retail, fitness, and hotel spaces. Currently under construction and slated for completion in 2014, the new building will feature three floors of office space, as well as an LA Fitness Center, and a 125-room Marriott Residence Inn.

Tower 3 (information about this future development not yet available).

Hutchinson Metro Center

Target Center

Public Safety Answering Center II (PSAC II)

The Public Safety Answering Center II (New York City Police Department), also known as PSAC II, is located at the intersection of the Hutchinson River and Pelham Parkways. It is situated just north of and adjacent to the Hutchinson Metro Center. The 8.9-acre site will be used as office/government space, and will employ an estimated 850 people. The 14-story building will have a total of 640,000 square feet, with 493,500 square feet of office space. An above-grade three-level parking garage will house 500 accessory parking spaces to serve the development. The development is targeted for completion in 2015.

Target Center

The Target retail complex (Simone Development Companies) is currently under construction adjacent to the Hutchinson River Parkway, and south of the Cross Bronx Expressway (815 Hutchinson River Parkway). The one-story retail center will have close to 285,000 square feet of retail space including a TJ Maxx retail store and an Applebee's casual dining restaurant. A mix of national and local retailers is to occupy the remaining space. In addition, nearly 900 parking spaces enclosed and unenclosed will be provided. The retail center was partially opened in 2014 and will be completely operational in 2015.

Figure E1.2: Map of Future Development Sites

Site of the former Whitestone Multiplex Cinemas

It is located just north of the intersection of the Cross Bronx Expressway and the Hutchison River Parkway (2505 Bruckner Boulevard) along Westchester Creek. This site is currently vacant and is zoned for commercial and light industrial use. It has the potential in the future to be the site of a large development and a new traffic generator that can contribute to the traffic volumes in the area.

Blondell Commons

Blondell Commons (Blondell Realty Corporation), located at 1346 Blondell Avenue, is a proposed mixed-use building featuring residential space, retail, office, and community facility spaces. The proposed project area is comprised of four blocks located in the Westchester Square neighborhood. The proposed seven-story structure would include 128 residential dwelling units, 22,809 sf of community facility, and a 65,521 sf of office and retail to be located on the first and second floors. Accessory parking for 159 vehicles will be provided on site. This project is subject to City Planning ULURP approvals.

Zoning

Overview of Zoning Regulations

The Hutchinson River Parkway Corridor Transportation Study area is zoned to allow residential, allowed commercial and manufacturing uses (See Appendix A for detailed analysis of zoning regulations).

The majority of the area outside of the Hutchinson River Parkway corridor is zoned for residential use although a significant area of manufacturing zoning districts is concentrated along this corridor mainly within the Industrial Business Zone (IBZ) adjacent to Castle Hill and Zerega Avenues. In addition, there are also several commercial zoning districts and commercial overlays located throughout the study area along the following corridors: East Tremont Avenue, Westchester Avenue, East Gun Hill Road, Eastchester Road, Williamsbridge Road, Morris Park Avenue, and Castle Hill Avenue.

Chapter 2 Socioeconomics

Socioeconomic Analysis

The socioeconomic analysis examines population trends, and household characteristics, including vehicular ownership and journey-to-work, in the immediate area along the Hutchinson River Parkway corridor (¼ mile area boundary). A detailed socioeconomic analysis is provided in Appendix B.

Households

According the 2010 U.S. Census, there are 13,396 households in the ¼ mile corridor study area, with an average of 2.71 persons per households. By comparison, the Bronx has a total of 483,449 households, with an average of 2.77 per household. New York City's total number of households is 3,109,794, with an average of 2.61 per household.

Vehicle Ownership

According to the 2010 American Community Survey (ACS) Census data, approximately 37 percent of households in the larger study area (beyond the ¼ mile corridor) have access to one or more vehicles. This vehicle ownership rate is lower than that of New York City at 44 percent, but comparable to that of the Bronx at 32 percent.

Journey -to-Work

The 2010 ACS data indicates that the larger study area has a labor force (16 years or older) of 70,715 workers who traveled into the study area to work. Of the total inbound labor force, 41 percent (28,937) used a car, truck or van, including driving alone or carpooling. Of the remaining inbound labor force, 24 percent (16,669) used public transportation, 6 percent (4,144) walked to work, and 0.2 percent cycled to work (155). The percentage of commuters who drive to work in the larger study area (beyond the ¼ mile corridor) is 1.5 times the percentage of those who use public transportation.

Chapter 3 Street Network

Figure E3.1: Street Network Map

Street Network

In general, the New York City street network is comprised of three types of roadways: limited access highways and parkways that join local communities with the metropolitan region; major arterials and roadways that connect local communities with adjacent local communities; and local roadways that provide access to businesses and residences within local communities.

Overview

The focus of this study is the Hutchinson River Parkway which extends from Bronx and Pelham Parkway to Ferry Point Park. South of Bruckner Boulevard and connecting with the Bronx-Whitestone Bridge it becomes (I-678). The other major highway such as the Cross Bronx Expressway (I-95) and the Bruckner Expressway (I-278) merge together in the southern area of the study area. Bruckner Expressway turns into the north-south New England Thruway (I-95), located to the east of the Hutchinson River Parkway. Another highway with limited access is the Throgs Neck Expressway (I-695), which connects to the Throgs Neck Bridge.

The major roadways located in the northern section of the study area travel in the east-west direction. They are: Bronx and Pelham Parkway (northern boundary of the study area), Morris Park Avenue, East Tremont Avenue, and Westchester Avenue. The major north-south roadways are Willamsbridge Road and Eastchester Road. The southern section of the study area also has a major east-west roadway: Bruckner Boulevard. The north-south major roadways are the Hutchinson River Parkway Service Roads.

The study area also contains numerous local roadways that link the local communities both to major roadways and to each other. In the northern study area these include Stillwell Avenue, Waters Place, Commerce Avenue, Middletown Road, Crosby Avenue and the southern study area they are Lafayette, Brush and Zerega Avenues.

A- **Limited Access Highways and Parkways**

Highways and parkways within the study area connect the Bronx to Westchester County and New England to the north; to Manhattan and New Jersey to the west; and to Queens and Long Island to the south. These highways also lead to several of the region's major bridges.

The Bruckner Interchange, located in the southern section of the study, is the intersection of several highways (Hutchinson River Parkway, Cross Bronx Expressway/New England Thruway and Bruckner Expressway) and Bruckner Boulevard, which provides access to major and local streets in the vicinity of the interchange. Below is a detailed description of the major highways and parkways.

Hutchinson River Parkway

The entire parkway is at grade-level connecting Westchester County to the north with Bronx-Whitestone Bridge to the south. For the most part there are three travel lanes in each direction. A greenway that is part of the Hutchinson River Greenway runs alongside the parkway from the Bronx and Pelham Parkway to Ferry Point Park. Connections with other highways and major roadways within the study area are with the Bronx-Pelham Parkway, Westchester /East Tremont Avenues, Bruckner Boulevard, Bruckner Expressway, Cross-Bronx Expressway and the Hutchinson River Parkway Service Roads. Trucks and commercial vehicles are prohibited from using the parkway, except for the section from the Bruckner Interchange to the Bronx-Whitestone Bridge where all commercial vehicles and trucks are allowed.

Bruckner Expressway

The Bruckner Express travels east-west in the southern area of the Bronx, connecting to the west to the Robert F. Kennedy Bridge and the Major Deegan Expressway and merging to the east with other major arterials at the Bruckner Interchange. There are three travel lanes in each direction, except at the Sheridan Expressway merger when there are two travel lanes in each direction. Commercial vehicles and trucks are permitted on this highway.

Cross Bronx Expressway/New England Thruway

The Cross Bronx Expressway lies across the southern section of the study area, along with the Bruckner Expressway and intersects with the Hutchinson River Parkway and Westchester Creek near the center of the study area. The Cross Bronx Expressway going west connects to Manhattan and the George Washington Bridge; to the east and north it becomes the New England Thruway which carries I-95 Interstate traffic through the Bronx into Westchester County, Connecticut and New England. The Cross Bronx Expressway at Buckner Boulevard turns south towards the Throgs Neck Bridge connecting to Queens. In general there are three travel lanes in each direction. Trucks are permitted on all sections of the expressway.

Throgs Neck Expressway

The Throgs Neck Expressway travels north to the New England Thruway connecting the roadways of Queens with the New England Expressway. There are three travel lanes in each direction and truck and commercial vehicles are permitted on this highway.

B- Major Arterials and Roadways

Major roadways are streets that connect local communities with adjacent local communities, and tend to have commercial activities, offices and public institutions. There are bus routes on many of these roadways. Below is a detailed description of the major roadways within the study area.

Bronx and Pelham Parkway

The Bronx and Pelham Parkway is the northern boundary of the study area, and connects with East Fordham Road. Together these two roads cross the entire borough east to west. In addition to the main road of the parkway there are service roads that are used for local traffic. Trucks and commercial vehicles are prohibited from the main road, but permitted on the service roads. The main road has two to three travel lanes in each direction while the service roads have one to two travel lanes in each direction depending on the curb regulations along the length of the roadway.

Morris Park Avenue, East Tremont Avenue and Westchester Avenue

These three east-west avenues are major roadways connecting the northern section of the study area with the streets of the western portion of the borough. Each are designated local truck routes and have two travel lanes in each direction. While Morris Park Avenue ends at Eastchester Road, both Westchester and East Tremont Avenues continue eastward towards eastern boundary of the Bronx.

Willamsbridge Road and Eastchester Road

These two north-south roads connect northern Bronx with the study area. Both are designated local truck routes and have two travel lanes in both directions. Each road ends near or at Westchester Square, a major transportation and retail hub in the area.

Bruckner Boulevard

Bruckner Boulevard parallels the Bruckner Expressway except for the section where it crosses over Westchester Creek via the Unionport Bridge, between Zerega and Brush Avenues, where the boulevard is under the expressway. Bruckner Boulevard North and Bruckner Boulevard South operate more like service roads to the expressway. Generally there are two travel lanes in each direction and most of the roadway is a local truck route in both directions.

Hutchinson River Parkway Service Roads

The service roads for the Hutchinson River Parkway run between Bruckner Boulevard and the" Ring Road" located in Ferry Point Park (near the entrance to the Bronx Whitestone Bridge). The southbound service road is a designated local truck route and has one travel lane. The northbound service road is not a designated truck route and has two travel lanes. Each service road has an entrance to and an exit from the Hutchinson River Parkway.

The Hutchinson River Parkway East is also a service road with northbound traffic from Westchester Avenue to the Bronx and Pelham Parkway. However, from East Tremont Avenue to Westchester Avenue, Hutchinson River Parkway East becomes a two-way traffic service road.

Unionport Bridge

The Unionport Bridge was opened to traffic in 1953, located in the midst of the Bruckner Interchange. It is presently a lift bridge (a moveable counterweight drawbridge) supporting Bruckner Boulevard over the Westchester Creek. The total length, including the approaches, is 526 feet, and the bridge carries two westbound and three eastbound lanes of traffic. The south side of the bridge has sidewalk for pedestrian and bicycle traffic.

The current bridge provides a channel with a horizontal clearance of 60 feet and a vertical clearance of 21 feet at lower water and 14 feet at higher water. Westchester Creek is currently a navigable water body for both commercial and recreational vessels; the bridge was opened 143 times in 2012.

C- Local Roadways

The local roadways within the study area provide access to both highways and major roadways, while serving the numerous local businesses and residences located along them. In the northern portion of the study area, these local roadways include Stillwell Avenue, Waters Place, Commerce Avenue, Middletown Road, and Crosby Avenue; in the southern portion, they include Lafayette, Brush and Zerega Avenues.

The local roadways connect to major arterials and tend to be busier in terms

of traffic. Most of the local streets consist of one to two travel lanes in both directions, and some have bus routes. Only Commerce and Zerega Avenues are designated local truck routes.

Though not technically a local roadway, the "Ring Road," located in Ferry Point Park under the Whitestone Bridge, is occasionally used by motorists. It is an unmapped, paved road owned by the NYC Department of Parks and Recreation (NYPDPR), and is called "Ring Road" by local residents.

D- **Truck Routes**

The New York City Truck Route Network is a set of roads that commercial vehicles must use in New York City. This network is comprised of two distinct classes of roadways: Local Truck Routes and Through Truck Routes.

All vehicles defined as a truck (two axles and six tires or three or more axles) are required to follow the truck route network. Commercial vehicles that do not meet the definition of a truck are not required to follow this network, but must follow all posted signage regarding the operation of commercial vehicles.

Certain roadways within New York City have commercial vehicle restrictions. For the most part, commercial vehicles are prohibited from using the portion of the highway network commonly referred to as the parkway system.

Local Truck Routes

Local truck routes are designated for use by trucks with an origin and/or a destination within a local area or borough. This includes trucks that are traveling to make a delivery, loading or servicing trip. Trucks should only use non-designated routes solely for the purpose of loading or unloading merchandise at the beginning or end of a trip.

Within the Hutchinson River Parkway Corridor Study Area the local truck route network includes:

- Bronx-Pelham Parkway North and South service roads
- Morris Park Avenue
- East Tremont Avenue
- Westchester Avenue
- Bruckner Boulevard

Figure E3.2: Map of Truck Routes

- Castle Hill Avenue
- Williamsbridge Road
- Zerega Avenue
- Commerce Avenue

Through Truck Routes

Through truck routes are primarily composed of major urban arterials and highways and must be used by trucks that have neither an origin nor a destination within a local area or borough.

The through truck routes include:

- Bruckner Expressway
- Cross Bronx Expressway
- New England Thruway
- Throgs Neck Expressway
- Hutchinson River Parkway (from the Bruckner Interchange to the Bronx-Whitestone Bridge)

E- **Bicycle and Greenway Routes**

The Hutchinson River Greenway is the only designated greenway route within the study area. This greenway starts at the Bronx and Pelham Parkway and runs alongside the southbound travel lanes to Hutchinson River Parkway to Bruckner Boulevard, crossing over to the opposite side of the parkway at Westchester Avenue. At Bruckner Boulevard, the bicycle route continues on-street along Brush Avenue as two-way striped and marked shared bicycle lanes to Ferry Point Park.

Hutchinson River Parkway Greenway

Ferry Point Park links to Soundview Park through the on-street bicycle route located along the Bruckner Interchange. The route connects to Quimby Avenue, which stretches for one block from Zerega to Havemeyer Avenues. From there, the route continues onto Havemeyer Avenue, which is connected to Lafayette Avenue and ends in Soundview Park.

In the north western section of the study area, there is a parallel pair of one-way on-streets bicycle lanes on Hering (southbound) and Yates (northbound) Avenues from Lydig Avenue to Pierce and Sackett Avenues (one block south of the Bronx-Pelham Parkway).

Figure E3.3: Map of Bicycle Network

Chapter 4 Parking and Public Transit

On-Street Parking Regulations

The on-street parking regulations within the study area are similar to those found within most New York City neighborhoods. While there are differences in day and night regulations, the most commonly found regulations are for New York City's Department of Sanitation Street Cleaning Regulations, curb use, metered parking, and bus stops.

On-street parking on most streets is governed by more than one curbside regulation. The parking signs regulate parking either during a specific time of day or on a specific day of the week. The curbside regulations also include "No Parking Anytime" and "No Standing" signs, pertaining to a specific use such as a school or a church. Detailed parking regulations are provided in Appendix C: Parking.

Off-Street Parking Facilities

There are ten licensed public parking lots and garages concentrated in the northern portion of the study area with a total of 1,688 off-street parking spaces. During the weekday midday peak period 1,143 spaces were occupied, representing a 68 percent utilization rate. Detailed off-street parking facility information is provided in Appendix C: Parking.

Public Transit

The study area is served by the number 6 subway line and twenty New York City Transit bus routes: Bx4, Bx4A, Bx5, Bx8, Bx12 Local, Bx12SBS, Bx21, Bx22, Bx23, Bx24, Bx26, Bx28, Bx29, Bx31, Bx38, Bx40, Bx42, Q44, Q50, and the BxM8, BxM9, BxM10 express buses. In addition, there is a free shuttle bus operated by the Hutchinson Metro Center connects the center with Westchester Square. In 2014, the Metropolitan Transit Authority extended the Bx24 bus route into the Hutchinson Metro Center from Westchester Square.

Currently, there is a proposal to create a new Morris Park Metro-North rail station within the study area. As part of this proposal, some New Haven Line trains would be diverted at New Rochelle down the Amtrak Hell Gate Line to four proposed new stations: Co-Op City, Morris Park, Hunts Point, and Parkchester.

A detailed description of the public transportation options and schedules are provided in Appendix D: Public Transit.

Chapter 5 Traffic Crash Analysis

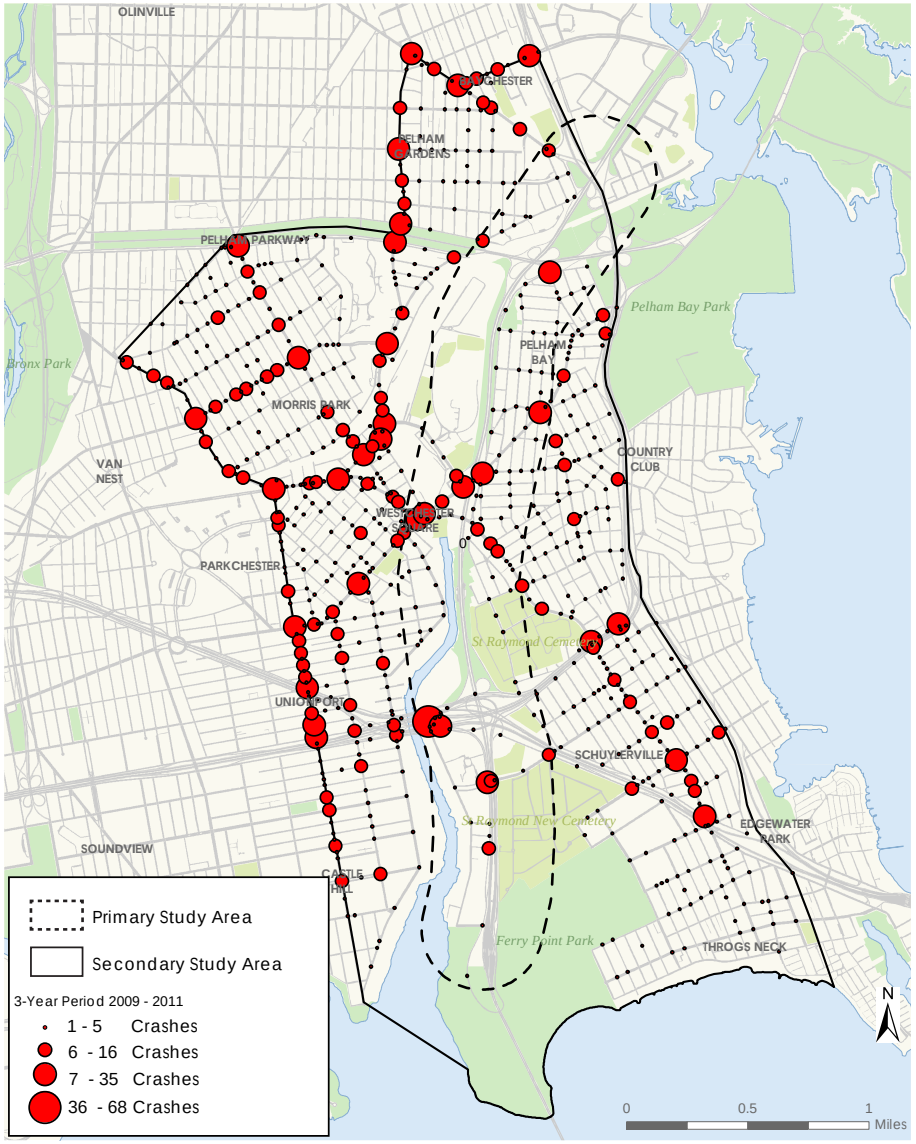

Figure E5.1: Map of Traffic Crashes: 2009 - 2011

The latest available years of crash data from NYCDOT at the time of this analysis were from 2009 to 2011. For the study area, there were a total 1,885 crashes from 2009 to 2011 at locations with a concentration of five (5) or more crashes. An analysis of the mapped crashed data revealed that a concentration of crashes occurred along several major corridors: Pelham Parkway, Westchester Avenue, Eastchester Avenue, Silver Street, Williamsbridge Road, Morris Park Avenue, East Tremont Avenue, and Bruckner Boulevard. The highest concentration of crashes occurred at the intersection of Brush Avenue and Bruckner Boulevard with 36 crashes.

Based on both the crash analysis and preliminary fieldwork, the following twelve problematic locations were selected for further analysis:

- Eastchester Road and Morris Park Avenue
- Eastchester Road/ Silver Street and Williamsbridge Road
- Eastchester Road and Waters Place
- Waters Place and Marconi Street
- East Tremont Avenue and Ericson Place
- Westchester Avenue and Middletown Road
- Westchester Avenue and Waters Place
- Westchester Avenue and Blondell Avenue
- Westchester Avenue and East Tremont Avenue
- Brush Avenue and Bruckner Boulevard
- Brush Avenue and Lafayette Avenue
- Lafayette Avenue and Hutchinson River Parkway Service Road

The chart below shows the distribution of crashes by year for each location. Two of the twelve analyzed locations had a steady increase of pedestrian crashes from 2009 to 2011: Westchester Avenue and East Tremont Avenue (near the Westchester Square BID area); and Eastchester Road and Morris Park Avenue.

The locations with the highest concentration of pedestrian crashes during the three-year period were: Eastchester Road/Silver Street and Williamsbridge Road with 10 pedestrian crashes; and Westchester Avenue and East Tremont Avenue with 6 pedestrian crashes.

For crashes involving bicyclists, in general, the number of crashes remained the same during this period, except for Eastchester Road/Silver Street and Williamsbridge Road where two crashes in connection with bicyclists occurred in 2010.

The total number of crashes over the three-year period for each location is provided in Appendix E, including a breakdown by type of crash.

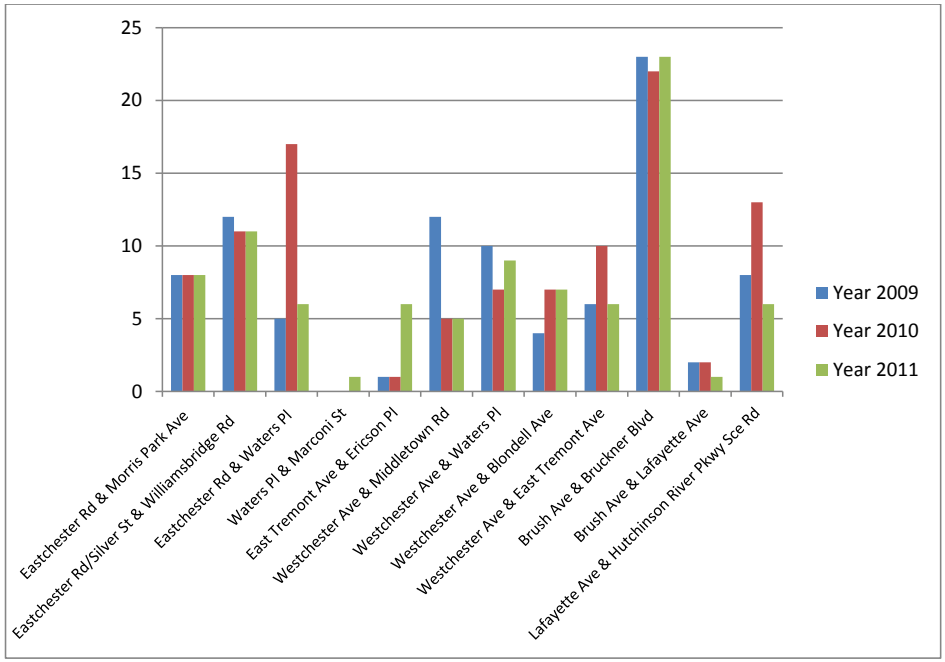

Table E5.1: Total Number of Crashes per Year (by location)

Location	Total Vehicles	Total Pedestrians	Total Bicyclists
Eastchester Road & Morris Park Avenue	21	3	0
Eastchester Road/ Silver Street & Williamsbridge Road	22	10	2
Eastchester Road & Waters Place	24	3	1
Waters Place & Marconi Street	1	0	0
East Tremont Avenue & Ericson Place	7	1	0
Westchester Avenue, Ericson Place & Middletown Road	20	1	1
Westchester Avenue & Waters Place	26	0	0
Westchester Avenue & Blondell Avenue	15	2	1
Westchester Avenue, Williamsbridge & East Tremont Avenue	15	6	1
Brush Avenue & Bruckner Boulevard	65	3	0
Brush Avenue & Lafayette Avenue	5	0	0
Lafayette Avenue & Hutchinson River Pkwy Service Road	27	0	0

Table E5.2: Type of Crashes - 3 Year Total (2009-2011)

PART II:

IDENTIFIED ISSUES:

Outreach and Interview Process

As part of this study, NYCDCP is working closely with stakeholders of the communities in the Bronx that surround the Hutchinson River Parkway Corridor to ensure that the outcome of the study reflects the communities' needs and best interests.

A total of twelve meetings with community groups, institutions, and developers took place from May through August 2013. The purpose of these meetings was to identify key elements of the Hutchinson River Parkway Corridor that would be studied within the scope of the project, including identification of:

- Issues, concerns and constraints within the area of study;
- Key corridors and intersections to analyze; and
- Strengths in the study area and of opportunities for improvements.

The stakeholders included:

- Community Board 10
- Community Board 11
- Bronx Borough President's Office
- City Councilman James Vacca
- New York State Senator Jeffrey D. Klein
- NYCEDC (NYC Economic Development Corporation)
- NYCDOT Bronx Borough Commissioner, Traffic Planning and Freight Divisions
- NYSDOT (NY State Department of Transportation
- NYCDPR (NYC Department of Parks and Recreation)
- MTA (Metropolitan Transportation Authority – Metro-North and NYC Transit Operations)
- SOBRO (South Bronx Overall Economic Development Corporation)
- Westchester Square BID, Bronx Chamber of Commerce

- Northeast Bronx Association
- Morris Park Medical/Educational Institutions – Albert Einstein College of Medicine, Calvary Hospital; Jacobi Medical Center, Bronx Psychiatric Center, Montefiore
- Hutchinson Metro Center, Simone Development
- Pelham Bay Taxpayers
- Friends of Ferry Point Park
- Country Club Civic Association

Below are the issues and opportunities that were identified by the stakeholders, many of which were important to more than one stakeholder group. This section summarizes the feedback heard at these community meetings regarding needs and concerns regarding traffic and transportation within the study area.

Depending on the groups present at individual meetings, the area of focus was either north or south of East Tremont Avenue.

ISSUES NORTH OF EAST TREMONT AVENUE:

The focus north of East Tremont Avenue was on the following specific areas: Hutch Metro Center, West of the Hutch Metro Center, Proposed Metro North Station and Westchester Square. See map below for an illustration.

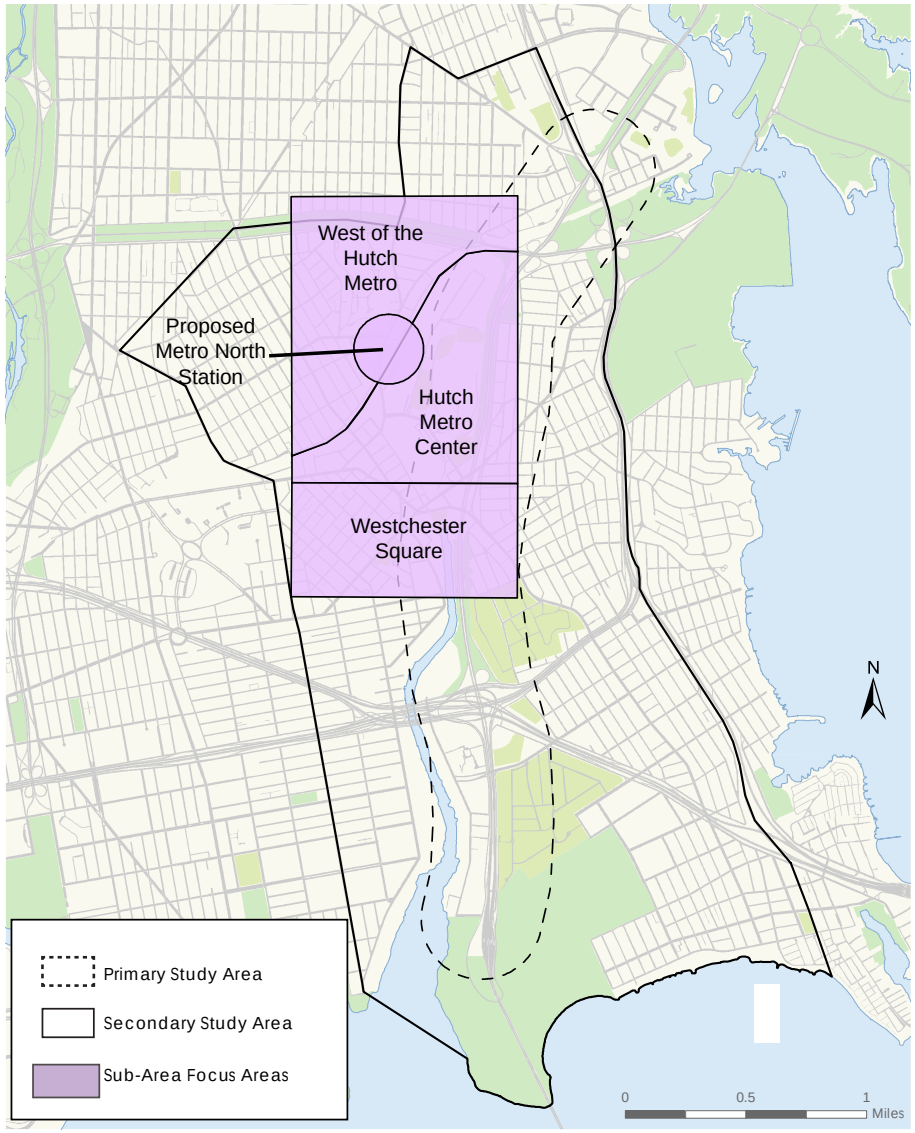

Figure I1: Areas of Focus - North of East Tremont Avenue

Depending on the groups present at individual meetings, the area of focus was either north or south of East Tremont Avenue.

A-Traffic Issues and Concerns

Access to the Hutchinson Metro Center:

Access to the Hutchinson Metro Center is possible only through one street: Marconi Street. The only entry point for traffic into this area is through the intersection of Marconi Street and Waters Place. Additionally, traffic often backs-up on Waters Place into Eastchester Road and, at times, into Stillwell Avenue.

Other locations of traffic congestion and bottlenecks were observed at the Middletown Road Junction where the Hutchinson River Parkway and Westchester Avenue intersect. Congestion also occurs on Pelham Parkway as motorists head towards or from the Hutchinson River Parkway. Generally, this roadway gets congested during the peak hours of the day. With several new developments planned for this area, increased traffic may overflow into the local streets of Community Board 10.

The other major issue for the Hutchinson Metro Center is the lack of internal streets connecting to the facilities inside the center. This causes all traffic to

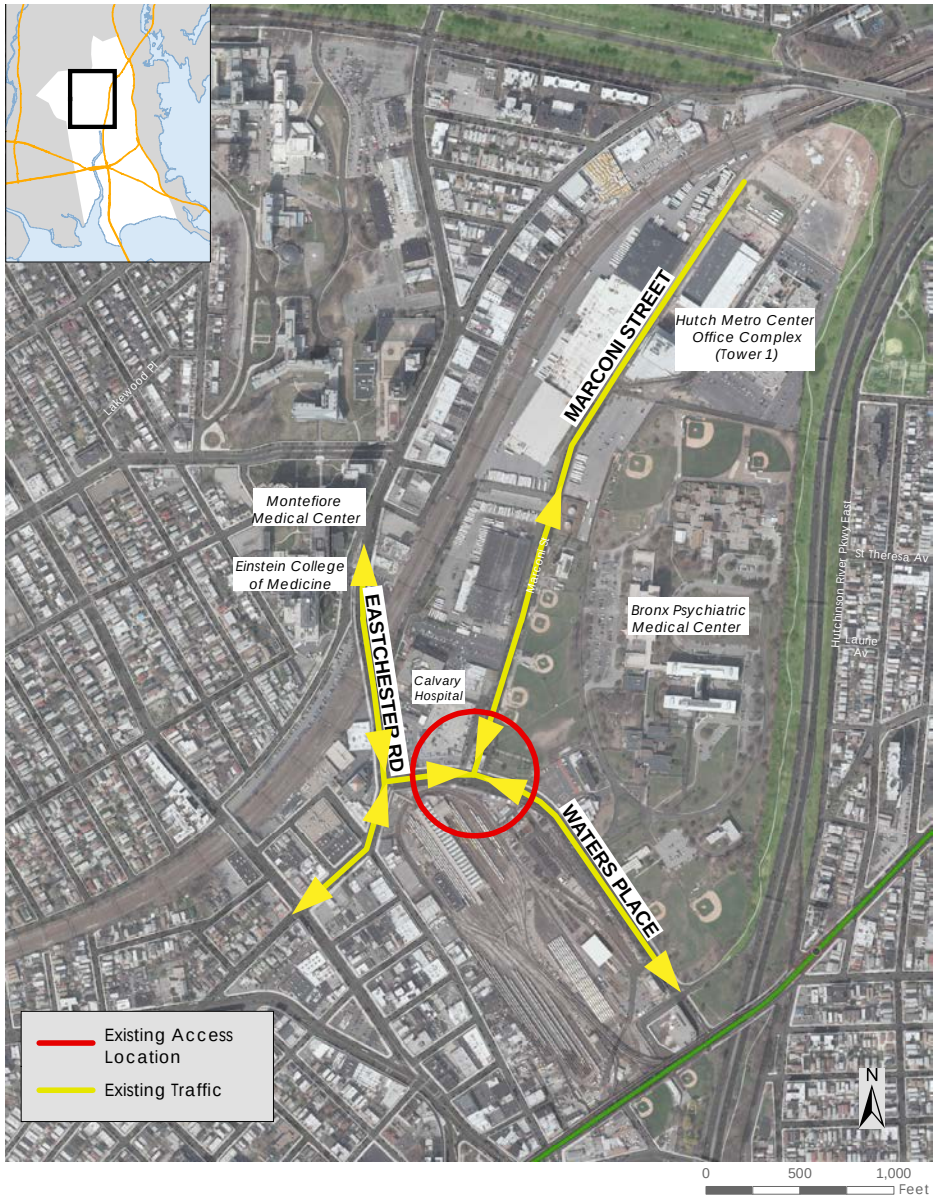

Figure I2: Hutchinson Metro Center Traffic Map

Kick-off Meeting with Stakeholders - April 29, 2013

end up on Marconi Street. Another option besides Marconi Street is necessary for entering, exiting and circulating within the Hutchinson Metro Center, especially with more developments planned for this area in the near future.

Exit ramp at the end of Stillwell Avenue (end of East Gun Hill Rd) – West of the Hutch Metro Center

According to Community Board 11, the exit ramp at the end of Stillwell Avenue (end of East Gun Hill Rd) was supposed to be temporary, and negatively affects the traffic in the neighborhood. Many southbound drivers make use of this ramp to travel through the local streets instead of staying on the Hutchinson River Parkway. Its removal would be preferred by the community in order to reduce traffic on the neighborhood's local streets. According to Community Board 11, this was to be a temporary ramp based on a traffic study done by New York State government.

Pedestrian Crossings: Pelham Parkway (West of Hutch Metro Center)

Currently, many pedestrians (visitors and employees of the Hutchinson Metro Center) are observed crossing illegally midblock east of Stillwell Avenue to get to the bus stop on the north side of Pelham Parkway. Improvements are needed at this location on Pelham Parkway to address this safety issue.

Pedestrian Crossings: Westchester Square Area

Pedestrians often cross midblock from the local stores along Lane Avenue to get to the east side of East Tremont Avenue or to reach the park from the Westchester Square triangular traffic island. Currently, there are no crosswalks at this location allowing pedestrians to cross either East Tremont Avenue or Lane Avenue (this location is near the Walgreens).

B-Public Transit Issues and Concerns

Bus Services – Existing Routes and Hutchinson Metro Center:

In the past, access to the Hutchinson Metro Center by public transportation was not easy: the Bx21 bus stops on Waters Place south of the center and the Bx31 stops on Eastchester Road west of the center. A shuttle bus service is provided to/from the Hutchinson Metro Center from/to the Westchester Square subway station, but was not sufficient. Having a public transit option available to commuters was necessary in order to alleviate traffic congestion in the area. In 2014, the Metropolitan Transit Authority proposed a solution and extended the Bx24 bus route into the Hutchinson Metro Center from Westchester Square.

According to Community Boards 10 and 11, an increase in bus services to/from nearby local subway stations, could accommodate the future potential increase of commuters coming into the area.

Proposed Metro-North Morris Park Station and Local Bus Services (West of the Hutch Metro Center)

It is anticipated by the community that additional commuter traffic into this area will be generated by the proposed Morris Park Metro-North Station when it gets built. Some stakeholders anticipate that many of these commuters will be residents living in the area and commuting to Manhattan. Therefore, it was suggested to either reroute nearby bus routes or provide additional bus service to the proposed station in order to help reduce vehicular traffic into this part of the study area. However, the MTA has stated that this station was designed more as a destination station to bring commuters from Westchester County or from Manhattan into the employment centers and attractions located in the study area. It is one of the reasons why parking is not planned for this station as it has been done for other Metro-North stations.

The stakeholders would also like for the MTA to consider providing an east -west connection for pedestrians to the proposed Morris Park Metro-North station by allowing an overpass over the rail tracks at the end of Morris Park Avenue that extends into the adjacent neighborhoods. Without this overpass pedestrians to the west of the rail lines are isolated and do not have easy access to the Hutchinson Metro Center and vice versa.

C-Parking Issues and Concerns

According to some of the stakeholders, there is insufficient on-street parking

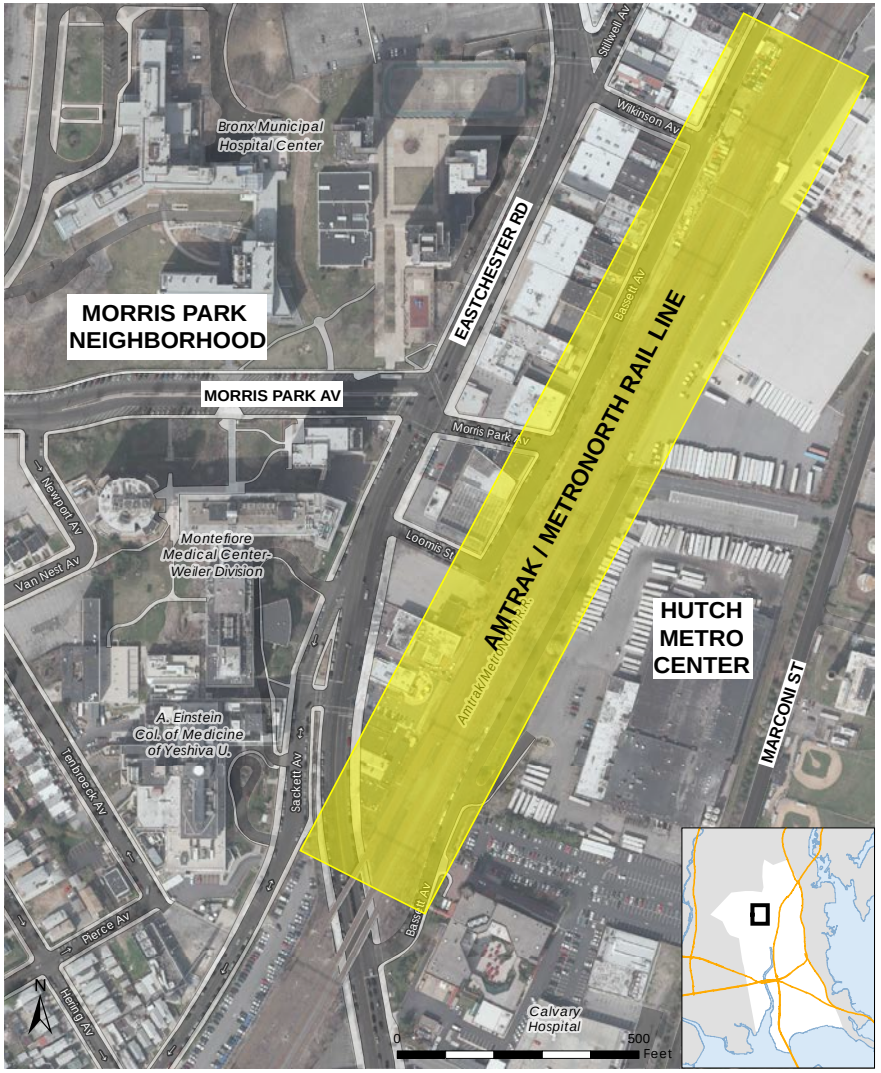

Figure I3: Area of Proposed Metro-North Morris Park Station

in this area to meet the needs of the local residents. This is because on-street parking spaces are often used by staff and employees that drive and park in the study area to get to work or to take the subway. It is therefore essential to better manage on-street parking to meet the needs of local residents.

ISSUES SOUTH OF EAST TREMONT AVENUE

The focus south of East Tremont Avenue was on the following specific areas: Bruckner Interchange and Brush Avenue. See map below for an illustration.

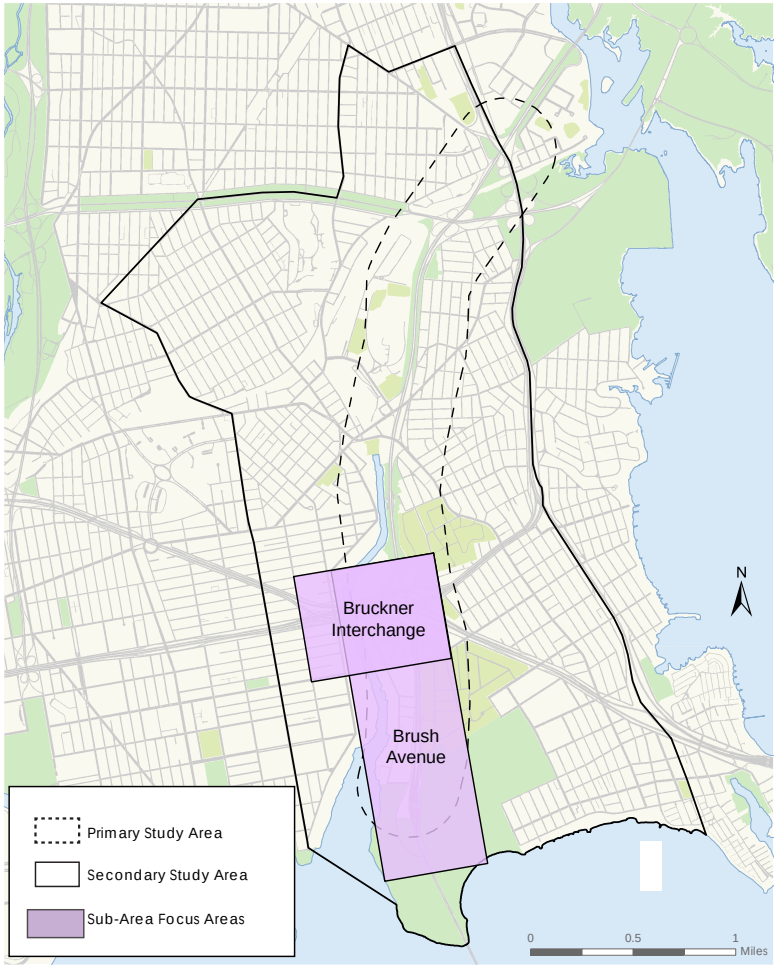

Figure I4: Areas of Focus - South of East Tremont Avenue

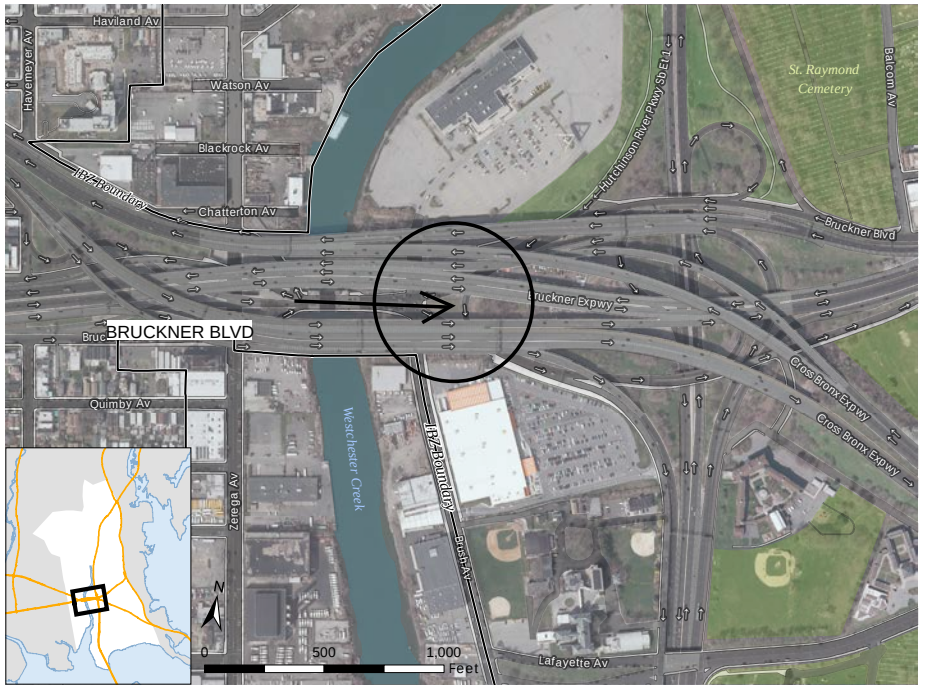

Figure I5: Area of Bruckner Interchange

A-Traffic Issues and Concerns

Access to Bruckner Interchange/ Bruckner Boulevard and Trucks

This area is generally one of the busiest for freight transportation, and includes trucks traveling from/to the Industrial Business Zone (IBZ) located west of the Hutchinson River Parkway. Traffic often backs-up at the interchange approach. In addition, many trucks end up on the local streets, such as Brush Avenue and Lafayette Avenue, in order to get back onto the Hutchinson Parkway Service Roads and the Bruckner Interchange. The current travel pattern of trucks in the south of the study area exacerbates the pollution and noise in the neighborhood and on local streets. Additionally, Brush Avenue will become the main access road to/from a growing number of new developments: the Target Development and the site of potential redevelopment, formerly the Whitestone Multiplex Cinemas.

According to the community, a lack of wayfinding signage in the study area makes accessing the Bruckner Interchange difficult for trucks from the Hutchinson River Parkway Service Road.

Brush Avenue Traffic Circulation:

Traffic Congestion: Traffic generally backs up on Brush Avenue as vehicles head north to the Bruckner Interchange. The location of the bus stop on Brush Avenue at the approach of Bruckner Boulevard (southeast corner) also contributes to the traffic delays and congestion on this street.

Truck Turns: Truck turns are a problem at the end of Brush Avenue. Trucks sometimes make wide turns at this location and the columns are in the way, which can contribute to traffic delays and congestion.

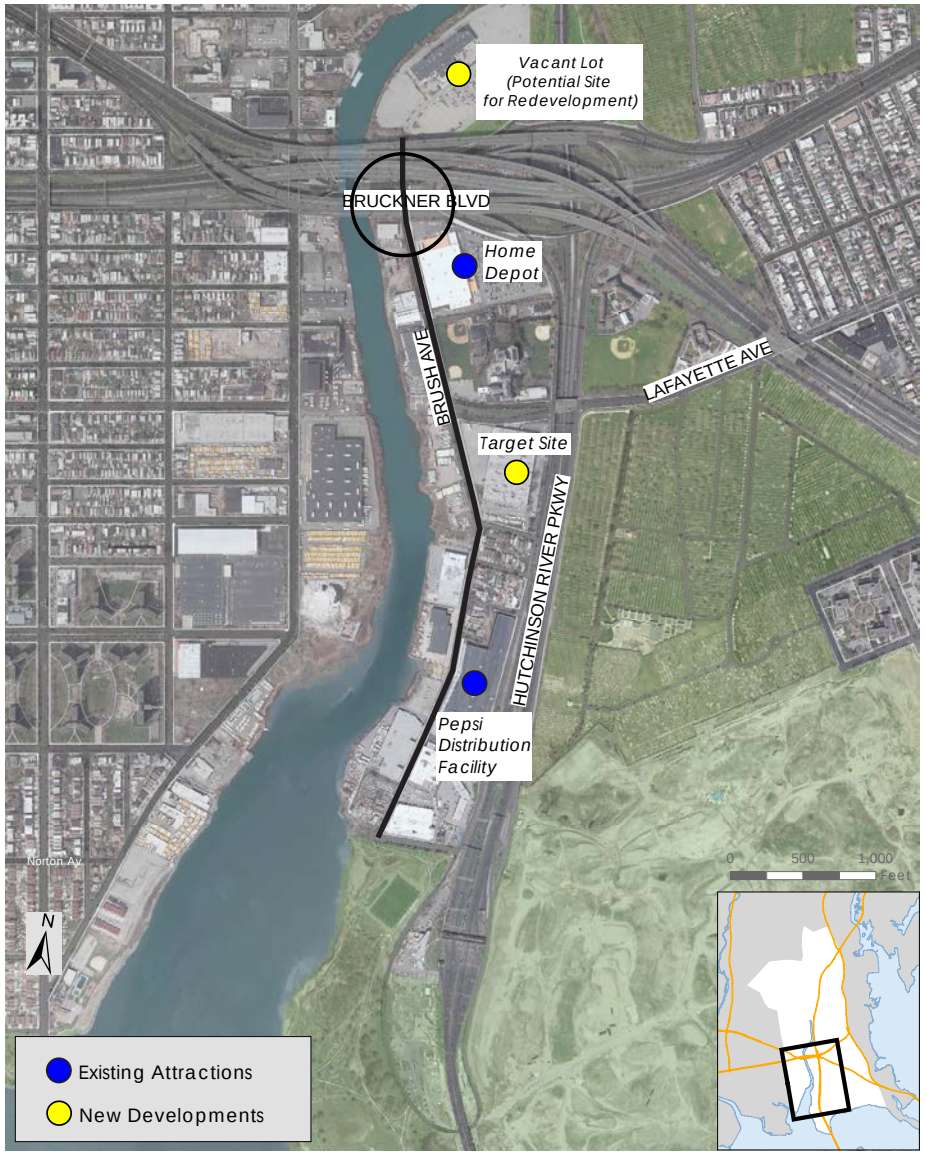

Figure I6: Area of Brush Avenue: Existing Facilities and Proposed Developments

Safety Issue: There is a safety issue for cyclists on Brush Avenue where bicycle lanes on Brush Avenue are used by cyclists, At the same time, Brush Avenue often experiences heavy truck traffic. For cyclists, Brush Avenue is the only connection between the Hutchinson River Greenway path and Ferry Point Park. Therefore, there is a need for some improvement in terms of safety and access for bicyclists.

Need for Sidewalks: Brush Avenue has no sidewalks from Wenner Place to the Pepsi Distribution facility. Having new sidewalks on this street would accommodate residents wanting to walk to Ferry Point Park.

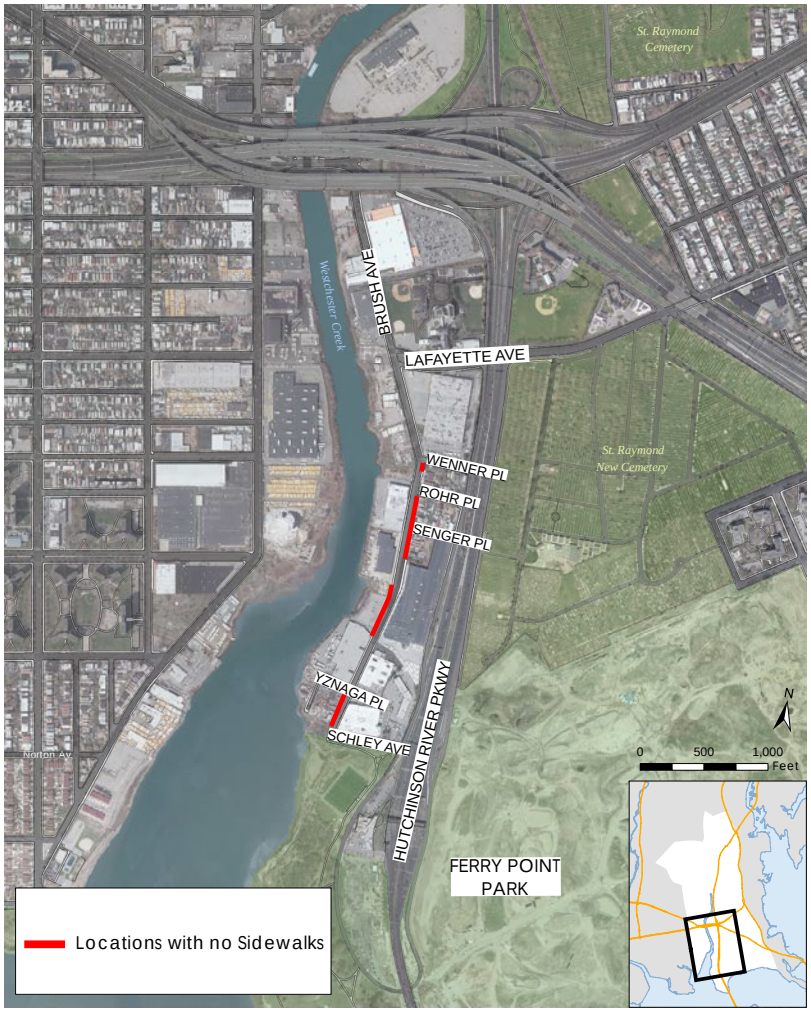

Figure I7: Brush Avenue: Sections with Missing Sidewalks

Lafayette Avenue Traffic Circulation

It is anticipated that in the future there will be an increase of vehicular traffic in this area. It is proposed by several community members to consider improving traffic circulation and the capacity of Lafayette Avenue as an important east-west corridor.

Bridges (Brush Avenue Area)

Reconstruction of Unionport Bridge: Under existing conditions, traffic backs-up on the Unionport Bridge which is planned for reconstruction in the near future. The concern was raised about mitigation measures being in place during the construction period in order to not aggravate existing traffic conditions.

B-Public Transit Issues and Concerns

Bus Services – Existing Routes and Proposed Developments (All areas south of East Tremont Avenue)

The growing number of new developments planned for the area, such as the Target Center and the large vacant lot with potential for future redevelopment (formerly the Whitestone Multiplex Cinemas), will generate additional vehicular trips on the roadways, which can lead to more traffic congestion and more traffic issues. Access by public transit or additional services to these sites should be considered to alleviate future traffic conditions in this part of the Bronx.

C-Greenway Path and Open Spaces Issues and Concerns

Under the Bruckner Interchange

The triangular space under the Bruckner Interchange is dark and unused, including the traffic island located along the bicycle route at the end of Brush Avenue.

Triangular space under the Bruckner Interchange

Waterfront Path along Westchester Creek (Brush Avenue Area)

Some stakeholders would like to have a greenway path along the Westchester Creek waterfront (east side of Westchester Creek).

Access to Ferry Point Park

Access to Ferry Point Park for those living east of the park is an issue. Residents on the east side of the park have to go through the streets north of the park to get to the west side of the park. However, the New York City Greenway Plan shows a proposed path to be located along the southern border of the park, under the Whitestone Bridge just south of the toll booths. Stakeholders asked the city to consider a waterfront promenade for this park in the future. Stakeholders also mentioned that Ferry Point Park is often left in poor condition with trash and garbage by users of the sports fields.

Figure I8: Ferry Point Park

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PART III:

RECOMMENDATIONS

Chapter 1

Roadway Network and Corridor Improvements

The New York City Department of City Planning plans to work with the community and relevant agencies to move toward the implementation of this study's recommendations. Many of the proposed improvements presented in this report are types of recommendations that can be easily implemented when funds become available. However, some of these recommendations may require structural and/or operational changes that may be subject to a traffic analysis prior to implementation.

Chapter 1- Roadway Network and Corridor Improvements

Access to the Hutchinson Metro Center:

This study recommends creating new access or entry points into the Hutch Metro Center by formalizing two additional access points along the southern border of the center: one access point on Waters Place east of Marconi Street; and the other on Eastchester Road west of Marconi Street (where Bassett Road ends). This recommendation must be combined with the proposal of linking private internal roads to one another to facilitate traffic flow inside the Hutch Metro Center and making them public roads. Establish as well new roads along the western and eastern edge of the Hutch Metro Center and south of the PSAC development site to create continuous connected roads throughout the center.

In addition, the developers and owners of the Hutch Metro Center, the Bronx Psychiatric Center and other properties adjacent to these private roads should collaborate as portions of these properties are proposed for conversion to a public roadway.

A ramp study for the Hutchinson River Parkway to determine its feasibility in relation to the Hutch Metro Center was conducted by the NYC Department of Transportation several years ago. Four options were developed: two proposals included exit ramps off of Pelham Parkway and the Hutchinson River Parkway south of the clover leaf area of ramps leading into the Hutch Metro Center; while the other two proposals had one exit ramp off of Pelham Parkway and the other off of the Hutchinson River Parkway north of the clover leaf area.

These four proposals also included a new point of entry and exit to/from the Hutch Metro Center via a proposed public road. The study's conclusions indicated that none of the options were feasible at the time. Issues with these proposals included the presence of trees along the parkway, which would have to be removed; the inevitable encroachment with the Amtrak rail line; and the proximity of the proposed exit and entrance ramps to the existing

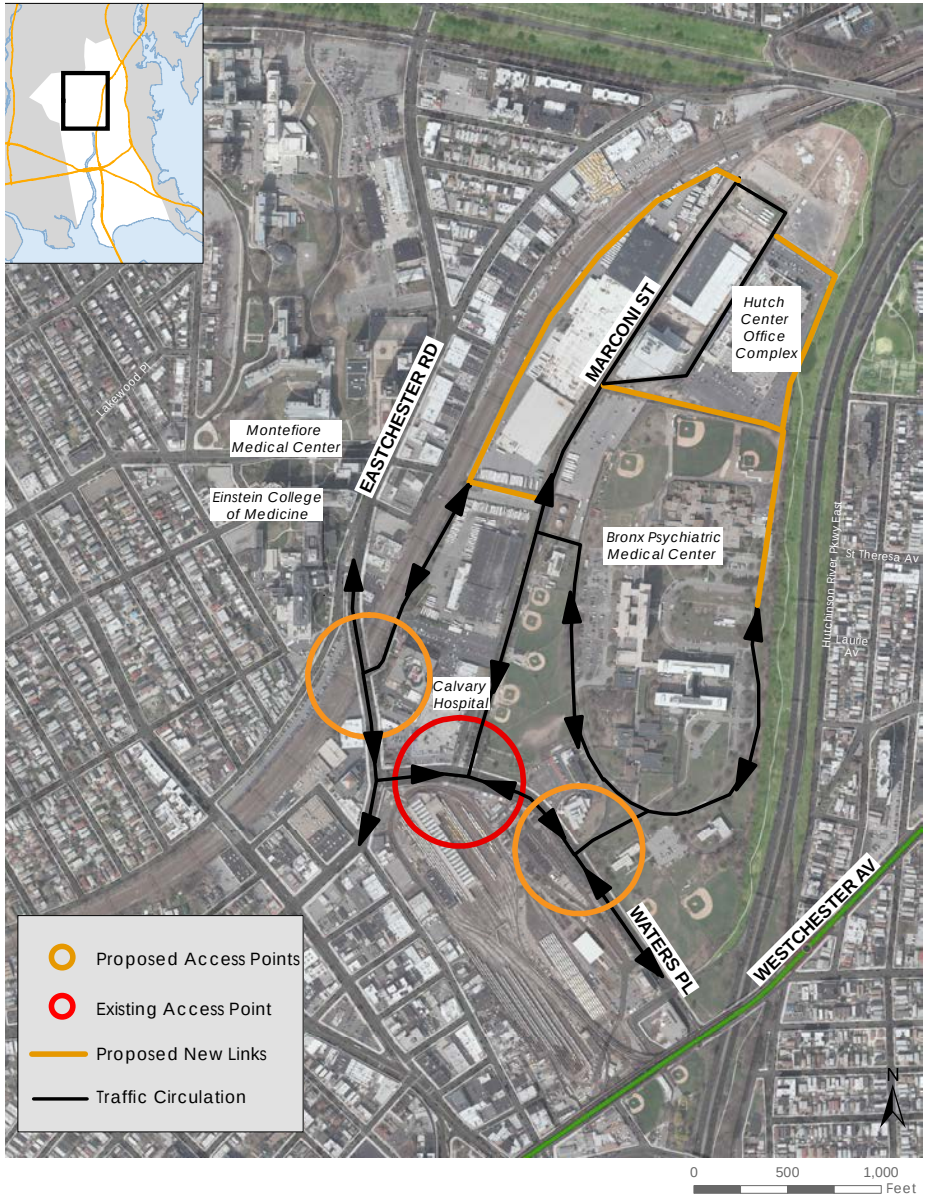


Figure R1.1: Hutchinson Metro Center - Proposed New Links and Traffic Circulation

ramps to allow for adequate acceleration onto and deceleration off of the proposed ramps.

Different options for the ramp proposal for the area should be studied in the future according to the community, representatives of the Hutch Metro Center and the elected officials. One recommendation of the Hutchinson River Parkway Corridor Transportation Study is undertaking a new engineering study of different ramp options; this is being considered and scoped by NYCDOT for 2015.

A long term recommendation is to explore in the northern part of the study area other options for vehicular traffic from the Hutch Metro Center office complex to access Pelham Parkway. Another access option should be put in place for emergency access, when necessary. As designed, all vehicles enter and exit the center through Marconi St at Waters Place.

This study also recommends for the MTA to consider providing an east-west connection for pedestrians to the proposed Morris Park Metro-North station by allowing an overpass over the rail tracks at the end of Morris Park Avenue that extends into the adjacent neighborhoods. Without this overpass pedestrians to the west of the rail lines are isolated and do not have easy access to the Hutchinson Metro Center and vice versa.

Extension of Bassett Avenue (West of the Hutch Metro Center)

This study recommends extending Bassett Avenue further north to Pelham Parkway (Bassett Avenue west of the rail lines). This new extension of Bassett Avenue would change this street into a through street and become another option besides Stillwell Avenue for northbound traffic heading towards Pelham Parkway.

The community board could consider adding this proposal to the district's capital budget plan and have it become a capital project to be implemented in the short term. The city would then consider ending the leases on Bassett Avenue and extend the road to Pelham Parkway.

Another approach for implementing this recommendation is to include the construction of Bassett Avenue as part of the future rezoning of this area, which could require all streets to be built out in the area of rezoning.

Figure R1.2: Extension of Bassett Avenue Proposal (West of the Hutch Metro Center)

Exit ramp at the end of Stillwell Avenue at East Gun Hill Road (West of the Hutch Metro Center)

The exit ramp at the end of Stillwell Avenue (at the end of East Gun Hill Rd) adversely affects the traffic in the neighborhood, according to the community. Many drivers use this exit ramp to travel through the local streets instead of remaining on the Hutchinson River Parkway. Some stakeholders would like this ramp to be removed in order to reduce traffic on the neighborhood's local streets.

NYCDOT recommends that the community board reach out to the relevant state government agency to discuss the outcome of the traffic study that was done for this area by the state in order to resolve this issue.

Access to the Bruckner Interchange/ Bruckner Boulevard and Trucks

Short-Term Recommendations:

This study recommends increasing enforcement and police presence in this area. Community Boards 10 and 11 are encourages to meet and coordinate with local precincts of NYPD to look into specific problematic locations on the local streets. A further recommendation is to consider improving signage to facilitate traffic circulation for trucks that need to utilize the local streets. Improved signage at points of egress and access of truck routes in combination with increased traffic enforcement in the area can better guide truck traffic through the study area and through the Bruckner Interchange

Long Term Recommendations:

Slipway at St Joseph's Place

A proposal supported by Community Board 10 as described in "Community Board 10's Traffic Management Plan" for the Bruckner Interchange is to add a slipway at St Joseph's Place to I-95 interstate highway in order to provide a direct link to the Bruckner Expressway. Currently, vehicles have to travel on the local road, Bruckner Boulevard for more than twenty blocks to access the Bruckner Expressway. This does not seem to be feasible under existing conditions due to the presence of columns in the interchange area, the placement of existing ramps, insufficient distance for acceleration, and the difference in grade. Further study and analysis would be necessary, if it is to be considered in the future.

Freight and Commuter Ferry

Freight-by-ferry was considered and researched for the southern part of the Bronx, but currently this mode of transportation is not feasible due to costs. However ferry passenger services could be considered in the long term in some capacity to alleviate vehicular traffic in the area. EDC completed in 2015 the "Citywide Ferry Study", a blueprint outlining the potential expansion of commuter ferry services in New York City. One commuter ferry service from Manhattan to the Soundview area has been identified and is on the priority list. It would be located adjacent to the study area.

Explore other Access Points over Westchester Creek

A proposal was made to explore other access points over Westchester Creek to alleviate congestion at the Bruckner Interchange. There are several benefits to this proposal. First, it could help improve access for bicyclists traveling to get to or from Soundview and Pugsley Creek Parks. Secondly, it would also strengthen neighborhood connections and facilitate pedestrians living or working on either side of Westchester Creek. Finally, with many health facilities in the study area located in the flood zone, it would be useful to have an alternate route or option to travel in this part of the Bronx over Westchester Creek.

Brush Avenue Traffic Circulation:

Wayfinding Signage from the Whitestone Bridge and Toll Plaza Area

This study recommends installing wayfinding signage to provide dedicated travel lanes and signage at the toll plaza/bridge area leading drivers to/from the future Target Center and the potential site of a large development (former site of the Whitestone Multiplex Cinemas). MTA, which has jurisdiction over the area along the bridge, and NYSDOT, which has jurisdiction of the road beyond the bridge, are amendable to discussing and adding signage at different points along this route according to Community Board 10 Traffic Management Plan.

Alleviate Traffic Congestion

Recommendations for improving the intersection of Brush Avenue and Bruckner Boulevard are described in the *Intersection Traffic Analysis and Operation Improvements* section of the report. Recommendations were developed by the consultant of the Target Center, who is currently working with NYCDOT on the improvements proposed. In addition, NYCDOT has plans in 2016 to reconstruct the Unionport Bridge which is part of the Bruckner Expressway service road. According to the preliminary draft design plan for this bridge, improvements developed for the intersection of Bruckner Boulevard and Brush Avenue are already being considered and include: expanding the northbound approach to

add a third traffic lane on Brush Avenue, making signal timing adjustments, and relocating a bus stop on Brush Avenue.

Regarding the Q44 and Q50 bus stop at Brush Avenue and Bruckner Boulevard, this study recommends further consideration for moving the bus stop from the southeast corner of Brush Avenue at Bruckner Boulevard (southeast corner) to a midblock location south of this intersection (approximately 500 feet from its current location) which could help reduce traffic delays and improve traffic circulation at this intersection. This bus stop is not a transfer point for another bus route and the relocation would only apply to the Q44 and the Q50. This recommendation would require the assessment and approval of the NYCT.

Another recommendation is to consider the feasibility of creating a new access point for trucks into the Pepsi Distribution site from the Hutchinson River Parkway Service Road in order to divert the facility's truck traffic from the local streets, particularly Brush Avenue. According to the Pepsi Company, on average 70 trucks per day come in and out of the Pepsi Distribution site (36 trucks make two trips per day).

This new access point for the Pepsi Distribution trucks could be created by swapping the current location of the entrance ramp with the current location of the exit ramp to/from the southbound service road of the Hutchinson River Parkway. This would allow trucks to exit the parkway earlier onto the service road in order to easily access the Pepsi Distribution facility on the east side of the property. Any modification to the location of these ramps must maintain adequate and safe distance between the two ramps for vehicles' acceleration onto the entrance ramp and deceleration off of the exit ramp. Additionally, the location of the proposed exit ramp must have adequate and safe distance from the existing two-lane entrance ramp of the Cross Bronx Expressway/Bruckner Expressway. The feasibility of this proposal requires the assessment and approval by NYSDOT. Any highway system access change may require as well the review and approval from the Federal Highway Administration (FHWA) according to NYSDOT. Furthermore acquiring funding for this ramp modification and future maintenance is necessary toward possible implementation of this proposal.

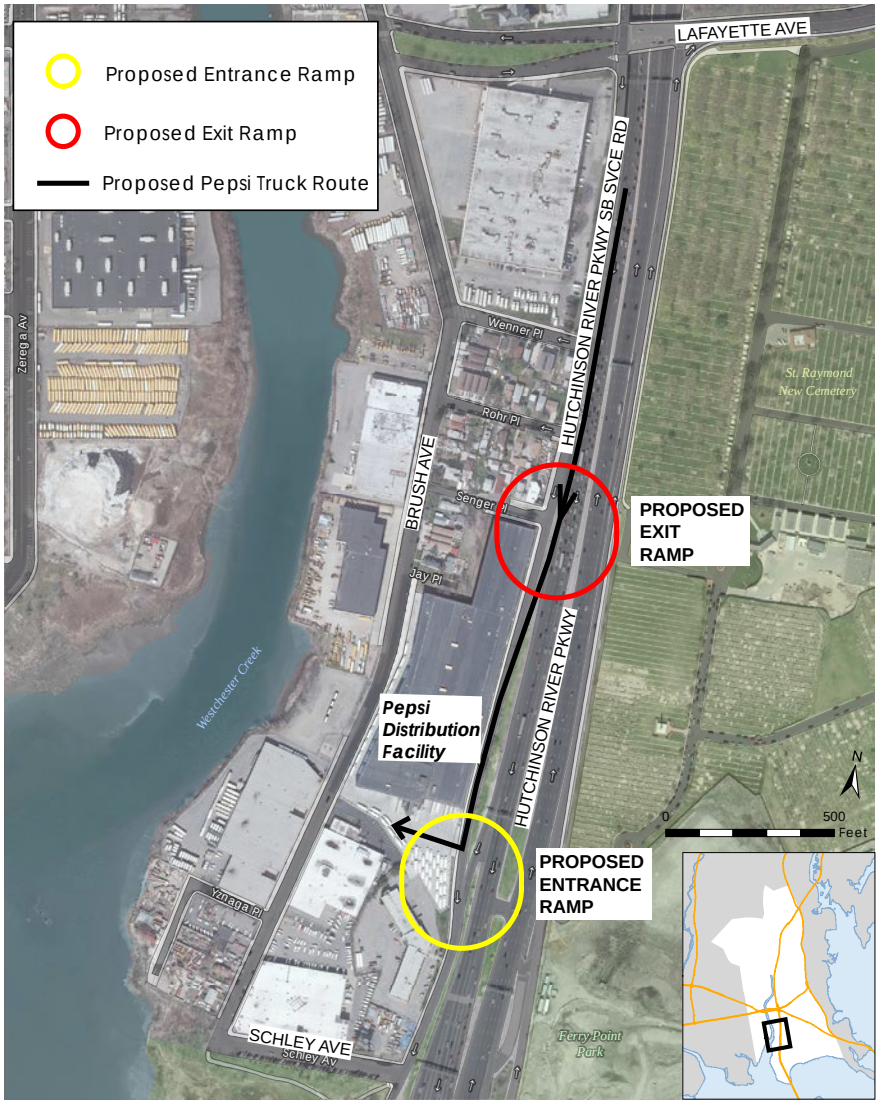


Figure R1.3: Brush Avenue - Ramp Modification Proposal

Ring Road Traffic Circulation

(The "Ring Road" is an uninterrupted circular road (i.e., no signals, signs or other access control) that loops and travels through Ferry Point Park with one lane of one-way traffic. It connects the southbound Hutchinson River Parkway Service Road with the northbound Hutchinson River Parkway Service Road.

Though it connects to mapped streets that lead into the Zerega IBZ on the west and provide access to the Hutchinson River Parkway to the east, within the boundaries of Ferry Point Park it is not a mapped city street and is considered parkland roadway.

However the roadway is currently accessible by all traffic and is used as such. As it operates today access and crossing points for pedestrians are not determined along this loop as they travel to and from developed recreational areas within Ferry Point Park raising pedestrian safety concerns for this area. This road is used as well by all types of vehicles and has the potential to attract more users with plans underway for significant new developments in the immediate area. These developments as new traffic generators can affect traffic operations along the Hutchinson River Parkway and eventually the use of the Ring Road.

As it operates today the Ring Road does not have the facilities necessary to support the current level of traffic and more so with future projected growth in the area. The following are the main issues that were identified and are linked to the southern part of the Bronx including the Ring Road:

Pedestrian Safety:

a) Presently, visitors of Ferry Point Park West cross the Ring Road to get to/from the various park activity areas (playing fields, picnic area, sitting area) located along this road. In addition, NYSDOT employees cross the Ring Road to get to/from the park or the greenway path. This represents a safety issue for pedestrians accustomed to crossing this road freely where there are no designated crossings for pedestrians. Currently the Ring Road is not signalized and there are no traffic control devices. Pedestrians cross the road at their own risk. With additional vehicular and pedestrian traffic anticipated for the future this situation is expected to get worse.

Traffic Congestion:

a) The Bruckner Interchange area is generally one of the busiest for freight transportation, and includes trucks traveling from/to the Industrial Business Zone (IBZ) located west of the Hutchinson River Parkway. Traffic often backs-up at the interchange approach. In addition, many trucks end up on the local streets, such as Brush Avenue, in order to get back onto the Hutchinson Parkway Service Roads and the Bruckner Interchange. The current travel pattern of trucks in the south of the study area exacerbates the pollution and noise in the neighborhood and on local streets.

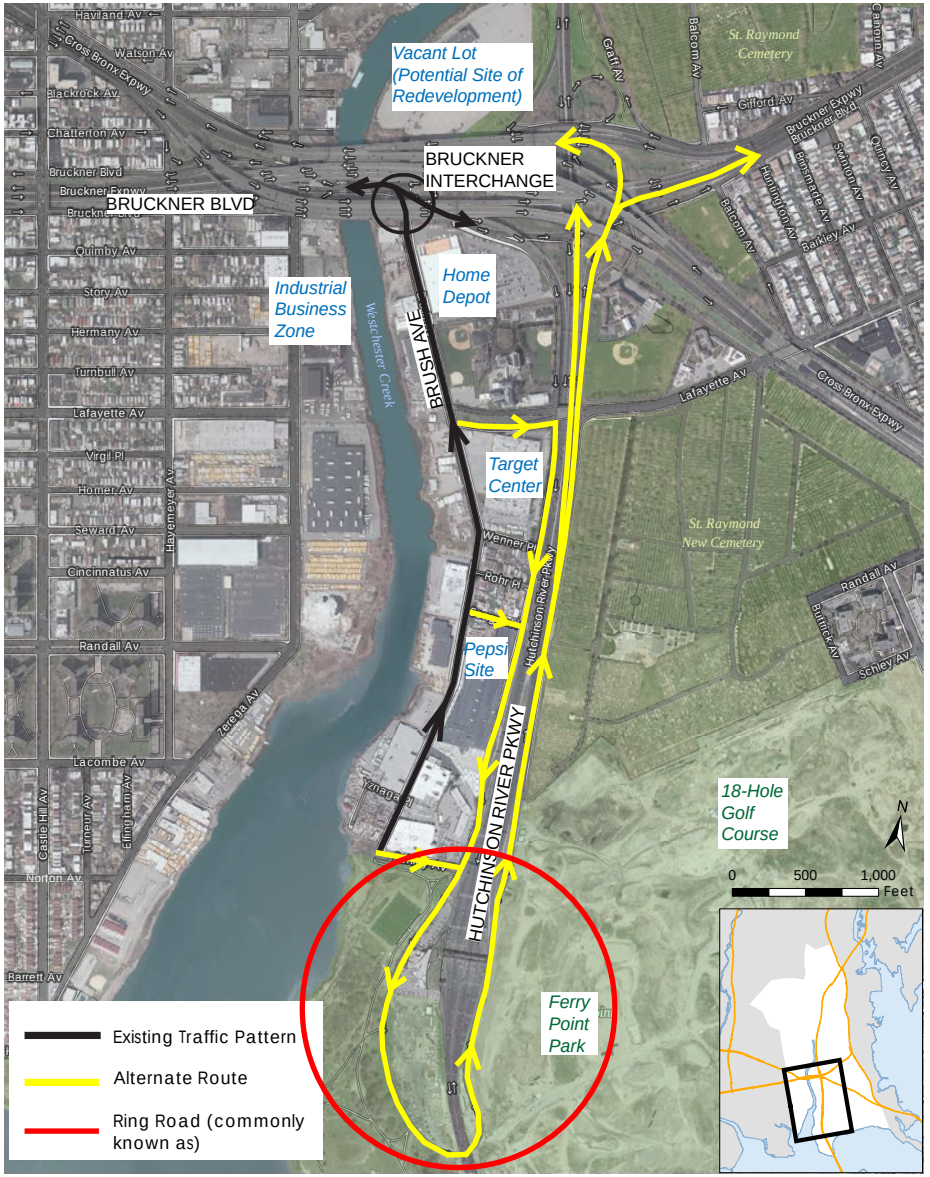


Figure R1.4: Ring Road Area

b) Traffic generally backs up on Brush Avenue as vehicles head north to the Bruckner Interchange.

Main Access Road:

a) Brush Avenue is the main access road to/from a number of existing large facilities: Home Depot, Pepsi Distribution facility, Ferry Point Park, Target (partially open). It will become a main access point as well to a growing number of new developments: the Target Development, the 18-hole Golf Course and the site of potential redevelopment former site of the Whitestone Multiplex Cinemas. Existing land uses are already bringing traffic to Brush Avenue and future proposals are going to add to this traffic. Brush Avenue will become a less convenient way to access and exit Ferry Point Park, which makes the Ring Road a more attractive option.

A qualitative analysis of the existing and 2020-future traffic conditions on the "Ring Road" in the Ferry Point Park area was done in order to address potential operational issues, pedestrian safety and an approach that would lead to future improvements of this road.

In the estimation of future traffic volumes along the "Ring Road" two traffic studies were reviewed:

1. The recent Unionport Bridge Replacement Traffic Study conducted recently by NYCDOT, which is based on the year 2013 data, and

2. An older Ferry Point Park Traffic Study, part of an EAS, which is based on the year 1999 data.

Currently the Ring Road has a vehicular capacity of approximately 1,500 vehicles per hour. It is currently operating as a public road for all types of vehicles with no restrictions and at half its capacity. Based on our field observation the "Ring Road" carries moderate amounts of through traffic during peak hours, primarily due to the existing major retail developments in the area (i.e., Home Depot, Target, etc.). When the Ferry Point Park is further developed (i.e., golf course, restaurants, waterfront park on east side of the Whitestone Bridge, etc.), the "Ring Road" will carry additional traffic. We have estimated that at that time approximately another 300 to 350 vehicles per hour would enter and exit Ferry Point Park during either the weekday evening or Saturday midday peak hour. Additionally, by the year 2020 an average of 250 to 350 vehicles per hour will use this road as through-traffic to access the nearby expressways (i.e., Bruckner Expressway, Hutchinson River Parkway and Cross Bronx Expressway).

Ring Road (Ferry Point Park)

Combining the Ferry Point Park project traffic with the average through traffic, the total peak hour traffic on "Ring Road" could be 550-700 vehicles/hour, which will be a higher volume of traffic than the 1999 Ferry Point Park Traffic Study. Regarding future truck traffic, we anticipate that a maximum of 35 - 40 trucks could be using the "Ring Road" during the morning and midday peak hours. There are currently no barriers from trucks using the road today, however it is recommended that significant roadway treatments be implemented to accommodate current and future traffic.

From preliminary drawings, we have identified that the various uses (current and future uses) inside Ferry Point Park (i.e., golf course, restaurants, park, and parking) would be located at different areas inside the park and could require vehicular and pedestrian access at various points along the "Ring Road". New vehicular/pedestrians conflicts along the "Ring Road" would require installation of traffic control devices and other safety treatments. These could include new roadway design such as buffers zones, speed reducers, fences, light poles, traffic and pedestrian signals, signs, etc. After their implementation, these necessary roadway treatments could slow down and/or interrupt the currently uninterrupted vehicular flow along the "Ring Road" resulting in a decreased vehicular capacity for one lane to possibly less than 700 vehicles per hour. Anticipated traffic increases in the near future along with potential reduction of the existing vehicular capacity could necessitate either widening the "Ring Road" to increase capacity, or traffic calming and enforcement measures to

discourage through traffic as may be necessary.

Based on our projections, the peak hour traffic along the "Ring Road" could reach up to 700 vehicles per hour by 2020. However, the internal circulation of the Ferry Point Park regarding vehicular and pedestrian flows and access points are not yet clearly defined. An additional study would be necessary to determine the Ferry Point Park development internal circulation with all the traffic and pedestrian safety treatments that would be necessary along the "Ring Road". Widening of the "Ring Road" to increase capacity, or traffic calming and enforcement measures to discourage through traffic as may be necessary. Regarding roadway construction and maintenance, it is preferable that the "Ring Road" serves all types of vehicles and is built with the same design standards as the two service roads to which it is connected to (i.e., Hutchinson River Parkway southbound and northbound service roads).

The Department of City Planning (DCP) believes that since Ferry Point Park is actively used (playing fields, picnic area, sitting area, etc.), and with plans underway for an 18-hole golf course, future plans for a waterfront promenade and due to its proximity and connectivity to all surrounding thoroughfares, the "Ring Road" provides a critical roadway link in this area. DCP is willing to coordinate with the Department of Parks, the Department of Transportation and potentially other stakeholders to resolve all outstanding issues with the operation and maintenance of the "Ring Road", leading to overall better traffic operations for this area of the Bronx.

Lafayette Avenue Traffic Circulation

One proposal that came out of the community was to improve traffic circulation and the capacity of Lafayette Avenue as an east-west connection by reconfiguring the center median of the road to accommodate future increases in traffic.

A level of service (LOS) analysis for Lafayette Avenue at the Hutchinson River Parkway was conducted. Under existing conditions, and based on traffic data collected, Lafayette Avenue and this intersection are operating at acceptable level of service.

The level of service on Lafayette Avenue is "B" during all peak periods of the weekday and weekend which is considered acceptable. The delay per vehicle ranges from 10.2 to 16.8 seconds. The intersection operates also at the same level of service B with traffic delay ranging from 12.0 to 16.5 seconds during all peak periods (according to the Highway Capacity Manual (HCM) 2000 at LOS B traffic flow and progression are characterized as good and most vehicles do not stop at the intersection).

Chapter 2 Intersection Traffic Analysis and Operation Improvements

Traffic Data Collection and Analysis

An evaluation of the traffic operations at "key" locations was performed as part of this study. Traffic data was collected in November 2013, including automatic traffic recorder (ATR) counts for one full week at five locations to identify the daily temporal variation of traffic; and peak period turning movement counts at thirteen intersections necessary to perform LOS analysis.

ATR counts were conducted at:

- Waters Place between Marconi Street and Eastchester Road,
- Waters Place between Marconi Street and Westchester Avenue,
- Eastchester Road between Morris Park Avenue and Stillwell Avenue,
- Blondell Avenue between Westchester Avenue and Eastchester Road, and
- Brush Avenue, between Lafayette Avenue and Bruckner Boulevard.

Turning movement counts were collected for the morning (7:00 AM – 9:00 AM), midday (12:00 PM – 2:00 PM), evening (4:00 PM – 6:00 PM), and Saturday midday (1:00 PM – 3:00 PM) peak periods at the following intersections (see the peak hour volumes in Appendix F):

- Lafayette Avenue and Hutchinson River Parkway (HPR) North Service Road,
- Lafayette Avenue and HPR South Service Road,
- Lafayette Avenue and Brush Avenue,
- Brush Avenue and Bruckner Boulevard,
- Westchester Avenue and East Tremont Avenue,
- Eastchester Road, Silver Street and Williamsbridge Road,
- Eastchester Road and Waters Place,
- Eastchester Road and Morris Park Avenue,
- Waters Place and Marconi Street,
- Westchester Avenue and Blondell Avenue,
- Westchester Avenue and Waters Place,
- Westchester Avenue, Ericson Place and Middletown Road, and
- East Tremont Avenue and Erickson Place.

A LOS analysis was performed for the above thirteen intersections to identify the existing level of traffic congestion in the study area during four peak periods: three weekday periods (morning, midday, and evening), and one Saturday period (midday). The analysis was based in the methodology presented in the Highway Capacity Manual (HCM) 2000 using the software release 5.5.

Besides traffic counts, other traffic data required for the analysis was also collected, including number and width of traffic lanes, vehicle classification counts, as well as other relevant roadway information related to physical and operational characteristics. Signal timing for each intersection was obtained from NYCDOT. The HCM methodology expresses the quality of traffic flow in terms of LOS, which is based on the amount of average traffic delay per intersection. For signalized intersections the levels of service range from A (no congestion, with average delay per vehicle of 10 seconds or less) to F (very high congestion, with average delay per vehicle of 80 seconds or greater).

Signalized Intersections Level of Service (LOS) Criteria

LOS	Delay (seconds/vehicle)
A	less than 10.1
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	Greater than 80.0

Source: *2000 Highway Capacity Manual*

As mentioned above, in the near future new development is expected to occur at three different sites within the study area. A major portion of this development is already under construction.

The new development considered in the traffic analysis will be located on:

- Site 1, Blondell Avenue (near Fink Avenue): 128 residential units, 65,500

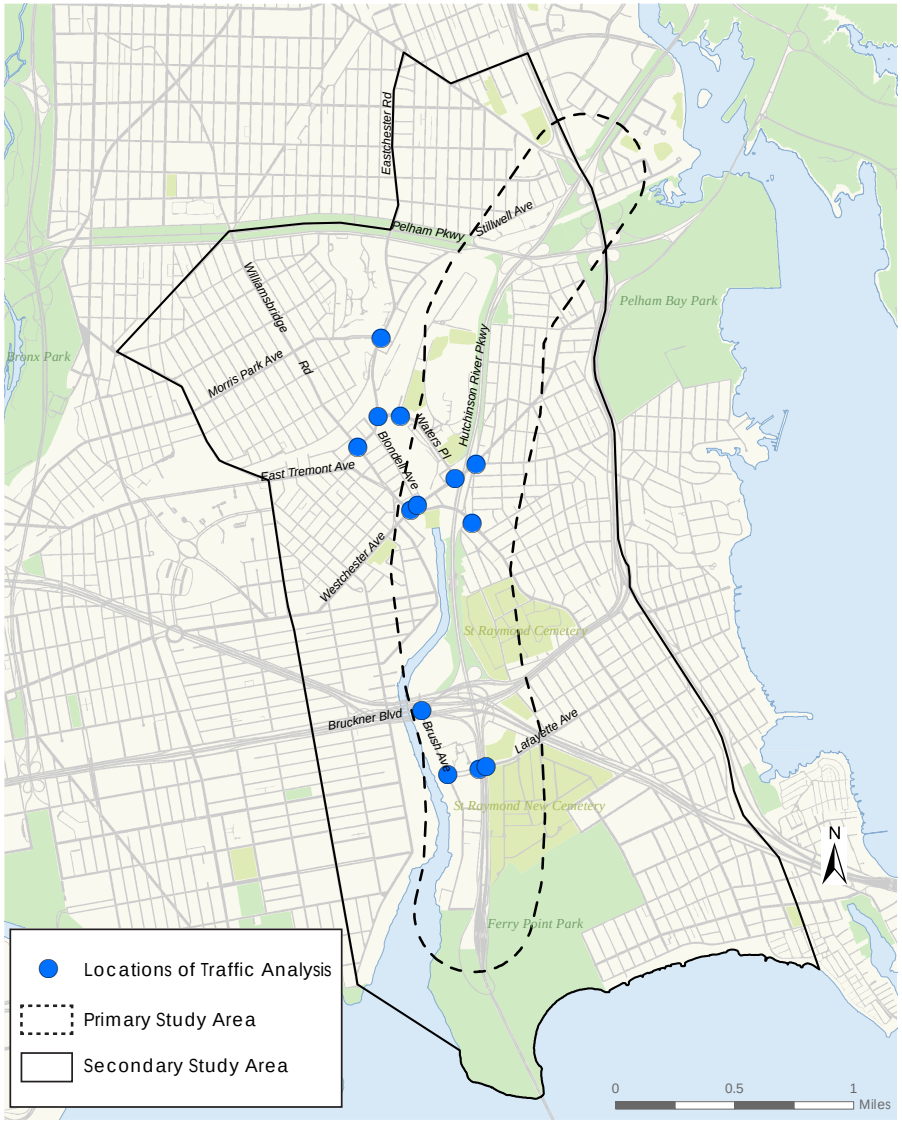


Figure R2.1: Locations of Traffic Analysis

square feet of office space, and 22,800 square feet of retail.

- Site 2, Hutchinson Metro Center: 140,000 square feet of office space, 43,000 square feet of retail, 125 room hotel, and 140,000 square feet community (medical) facility.

- Site 3, Between Brush Avenue and HRP South Service Road (south of Lafayette Avenue): 281,000 square feet of destination retail (Target).

The vehicular trip generation projections identified that Site 1 would generate less than 90 additional vehicles at any peak hour, while Site 2 would generate more than 500 additional vehicles during the weekday morning and evening peak hours (see Appendix F for Trip Generation Analyses for Sites 1 and 2). A traffic study conducted by the consultant of Site 3 identified that the new development at this site would generate more than 700 additional vehicles during the weekday midday and evening peak hours, and more than 800 additional vehicles during the Saturday peak hour[1].

In addition to the three development sites, a fourth potential development site could include the redevelopment of the former Whitestone Multiplex Cinemas area. This site, located on the north-east side of Bruckner Boulevard and Brush Avenue, was not included in the LOS analysis because it is not currently known when this potential redevelopment would occur. However, based on preliminary analysis, major roadway changes would be expected to take place along Bruckner Boulevard and Brush Avenue to accommodate the new traffic to be generated by this potential redevelopment.

The traffic generated by the three new developments was assigned to the thirteen analyzed intersections and added to the existing traffic volumes to estimate the near future traffic volumes (see traffic volume maps in Appendix F). In addition to the LOS analysis performed for the existing conditions, the LOS of the thirteen intersections was also analyzed for the near future conditions. Eight of the thirteen analyzed intersections currently operate and would continue to operate in the near future conditions at acceptable LOS, varying from A to D for all approaches and all peak periods (see Appendix F for detailed LOS summary results). However, the LOS analysis identified certain deficiencies at the other five analyzed intersections due to new project traffic and identified potential roadway improvements. The five intersections, which serve as critical traffic access and egress points of existing and future development are: Morris Park Avenue and Eastchester Road, Waters Place and Eastchester Road, Waters Place and Marconi Street, Westchester Avenue/Ericson Place and Middletown Road, and Brush Avenue and Bruckner Boulevard.

Morris Park Avenue and Eastchester Road

Currently, all approaches operate at an acceptable LOS (B to D) with an exception of the northbound left turns and southbound approach, which operate at LOS E at various peak periods. In the future, the northbound left turn (during the evening peak) and southbound approach (during the morning peak), would deteriorate from LOS E to LOS F.

To accommodate future demand, signal timing modification is recommended during the morning and evening peak periods (see Appendix F for more details).

With these changes the future LOS would be acceptable for most traffic movements during all periods (LOS A to D), with the exception of northbound left turns during the evening peak, which would continue to operate at LOS E with improved traffic delay.

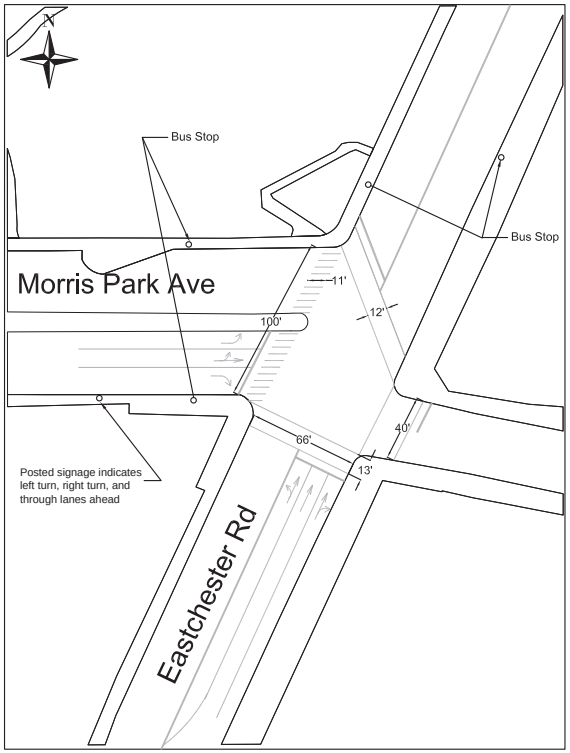


Figure R2.2: Intersection of Morris Park Avenue and Eastchester Road

Figure R2.3: Locations of Traffic Analysis with Poor Level of Service (north of East Tremont Avenue)

Waters Place and Eastchester Road

This signalized intersection provides the main westerly access/egress of all traffic entering and exiting the Hutchinson Metro Center area via Eastchester Road. Currently, most traffic movements operate at an acceptable LOS (A to D) with the exception of the westbound left turns, which operate at LOS E at various peak periods. In the near future, as new development occurs in the Metro Center area, this intersection would require signal timing adjustments to accommodate the new traffic demand. The level of service would continue to be acceptable for most movements (LOS A to D), with the exception of westbound and southbound left turns, which would operate at LOS E in some peak periods.

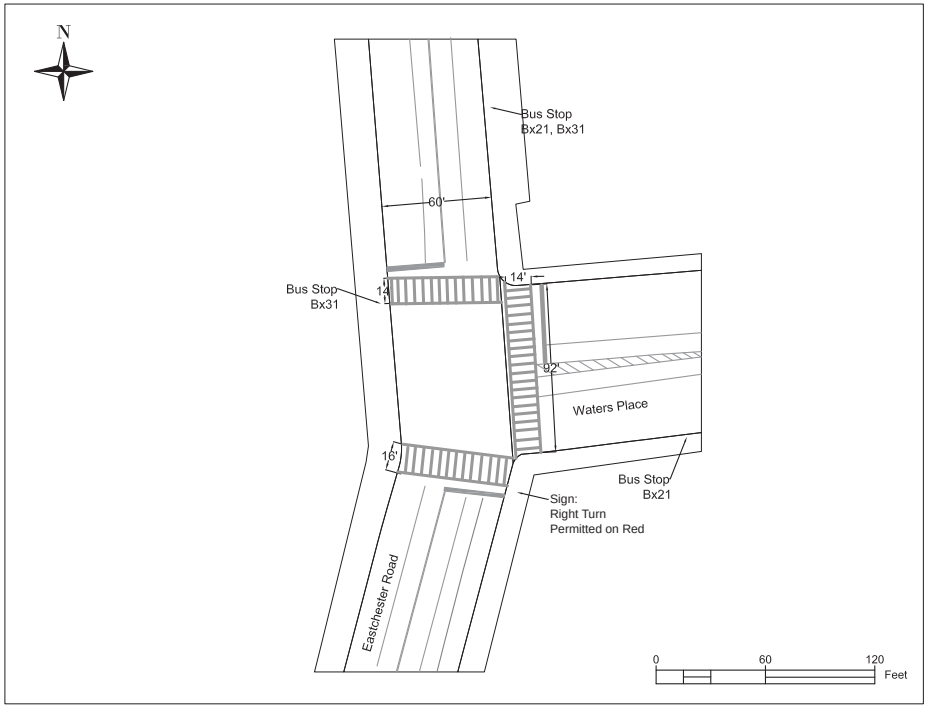


Figure R2.4: Intersection of Waters Place and Eastchester Road

Waters Place and Marconi Street

This signalized intersection serves as the main and only entrance/exit to and from the Hutchinson Metro Center via Waters Place. Currently, most traffic movements at this intersection operate at acceptable levels (LOS A to D), with the exception of southbound left turns during the evening peak period, which operates at LOS E. In the near future and due to new development, this intersection would have to accommodate approximately 450 additional vehicles entering the Metro Center, using the eastbound left turns and westbound right turns during the morning peak hour. An equal amount of additional traffic would have to exit the Metro Center during the evening peak hour via Marconi Street. Regarding the Metro Center related traffic, the westbound right turns and eastbound left turns are the most critical (heaviest) during the morning peak period and the southbound left and right turns most critical during the evening peak period. The total estimated future traffic entering in the morning and exiting in the evening would be:

AM peak hour (Metro Center entering traffic): EB left turns – 544 vehicles, WB right turns – 909 vehicles

PM peak hour (Metro Center exiting traffic): SB right turns – 561 vehicles, SB left turns – 641 vehicles

The amount of future traffic, especially during the morning peak period, would be significant and the operation of this intersection would likely fail with current lane configuration and signalization.

Based on this analysis, there would be a need for lane re-configuration and signal timing changes to accommodate the future traffic. The changes could include:

1. Along Waters Place, the on-street parking would be eliminated to create space for the addition of eastbound left and westbound right turn entering lanes at the Marconi Street entrance, while maintaining two through traffic lanes per direction. At this section, the pavement width of Waters Place is approximately 75-80 feet, which is adequate for the new configuration. Recently, NYCDOT installed a left turn signal from Waters Place on to Marconi Street for eastbound traffic.

2. Proper channelization of the newly created eastbound left lane on Waters Place to allow traffic entering safely and simultaneously with the westbound right turns onto Marconi Street. This might require further

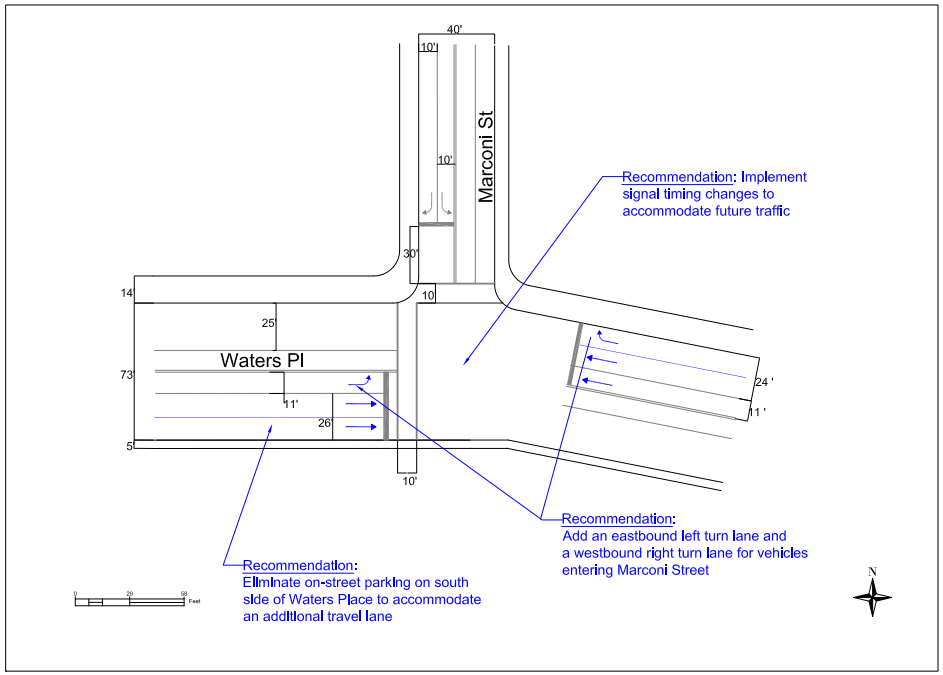


Figure R2.5: Intersection of Waters Place and Marconi Street with proposed improvements

widening of the entrance (i.e., larger right turn radius) and channelization of the existing two entering lanes onto Marconi Street to minimize overlapping turning paths. These changes will be finalized when the new development is in place.

3. Create a new 3-phase signal for this intersection. For the morning peak period the signal timing (in seconds) would be:

   Phase1-Waters Place, EB/WB all movements: green-32 sec, yellow-3 sec, all red-2 sec,

   Phase2-Waters Place, EB only (left arrow), WB right arrow, SB (Marconi St.) right arrow: green-21 sec, yellow-3 sec, all red-2 sec, and

   Phase3-Marconi Street, SB (left and right): green-22 sec, yellow-3 sec, all red-2 sec.

The signal timing for the other periods is included in Appendix F.

With these changes, the future LOS would be acceptable for most traffic movements during all periods (LOS A to D), with the exception of eastbound left turns during the morning peak period, which would operate at LOS E.

In addition, creation of new roadway links inside the Metro Center site, to provide new access/egress points and improve the internal circulation, would give drivers traveling to and from this site more choices for their route and likely reduce the amount of traffic concentrated at this intersection.

Westchester Avenue, Ericson Place and Middletown Road

This is a complex five-leg signalized intersection, which serves Westchester Avenue, Erickson Place, Middletown Road and Hutchinson River Parkway East. Along Westchester Avenue, this intersection is the next intersection going north-east from Waters Place and in the evening peak period carries heavy amounts of Westchester Avenue's eastbound traffic. In order to accommodate all the traffic movements from different directions, this intersection operates on a 4-phase signal, which limits its capacity to distribute large amounts of

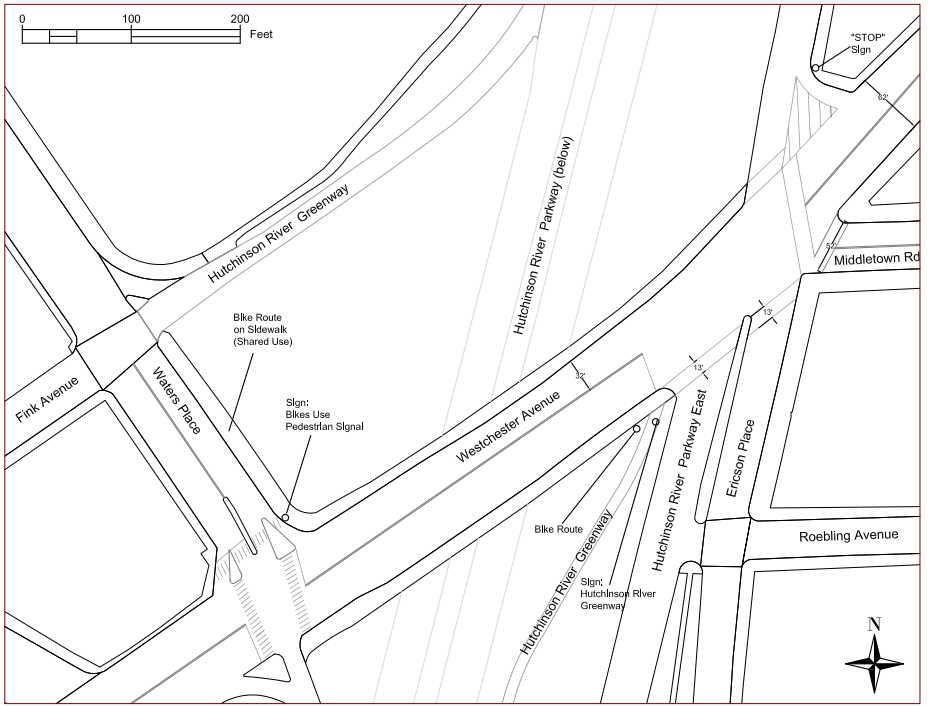


Figure R2.6: Intersection of Westcheser Avenue, Ericson Place and Middletown Road

green time for each of the traffic approaches it serves. Currently, this intersection operates at acceptable levels of service for most traffic movements (LOS C to D), with the exception of the northbound traffic, which operate at LOS E during the morning peak period and the eastbound left turns onto the Hutchinson River Parkway, which operate at LOS E during the evening peak period. The eastbound Westchester Avenue traffic in the future, generated primarily from the Metro Center site, would further exacerbate the traffic conditions during the peak periods at this intersection. Therefore, signal timing adjustments would be necessary to provide more green time to the eastbound only traffic movements (see Appendix F).

Even with the signal timing adjustments, considering the higher future traffic, this intersection would operate in the future at a similar level of service with the existing conditions. Still, the eastbound left turns would operate at LOS E, which could result in traffic congestion (i.e., lane blockage for northbound through lanes, etc.) in the entire eastbound approach. Based on field observations, the eastbound approach of this intersection could occasionally become a traffic "choke" point in the evening peak period, creating long vehicular queues, extending south-west on Westchester Avenue past Waters Place. When this happens, the south-eastbound approach of Waters Place at Westchester Avenue cannot process traffic appropriately, and starts creating spillbacks into Waters Place. As more traffic feeds into eastbound Waters Place (i.e., from Metro Center and Eastchester Road), this creates a systemic traffic network congestion, which could take a long time to clear.

Regarding traffic improvements other than signal timing adjustments, this and other "key" intersections (i.e., Eastchester Road and Waters Place) could also benefit by having traffic agents directing traffic during peak periods. Traffic agents monitoring of the traffic conditions along Westchester Avenue (and possibly other streets) could lead to safer and faster traffic adjustments. Also, the creation of new roadway links, where this is possible, could provide drivers with alternate routes to their destination by avoiding areas of severe traffic congestion.

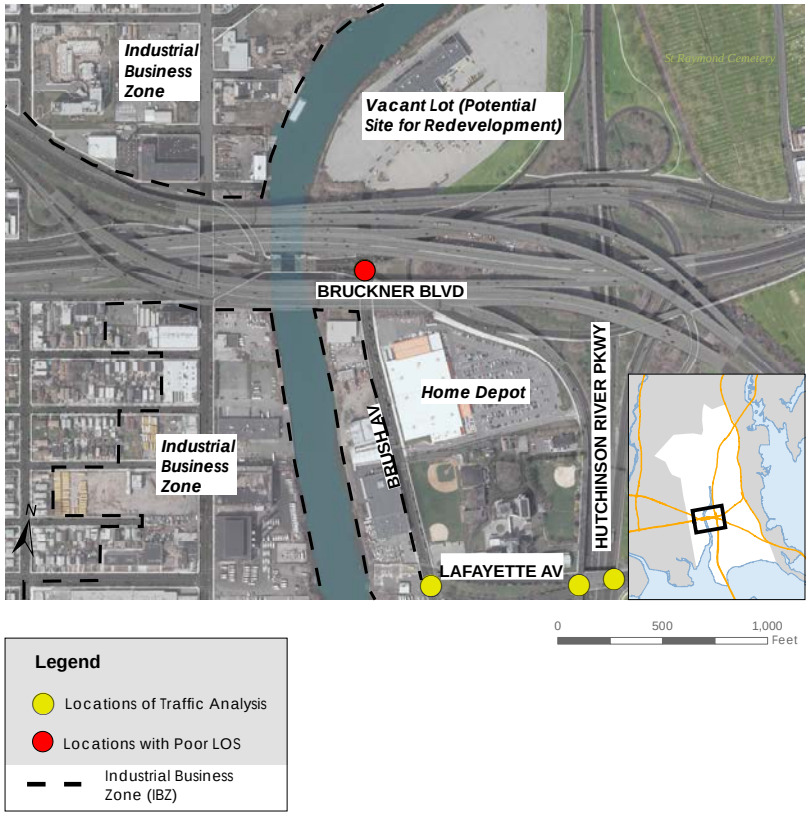


Figure R2.7: Locations of Traffic Analysis with Poor Level of Service (south of East Tremont Avenue)

<u>Brush Avenue and Bruckner Boulevard</u>

This intersection is the most congested of the 13 analyzed intersections in the study area. Bruckner Boulevard operates with three lanes in each direction and approximately carries 1,500 to 2,500 vehicles per hour (vph) in each direction. Brush Avenue has two lanes in each direction, although, only the northbound approach carries heavy traffic, due to existing development south of the Bruckner Boulevard. The most congested period is the evening peak period, where more than 4,900 vehicles pass through this intersection in one hour (eastbound-2,584 vph, westbound-1,819 vph, and northbound-531 vph). For different traffic movements and time periods, the current LOS varies from B to D, with the exception of the eastbound and northbound directions during the PM and Saturday peak hours, which would operate at LOS F (heavy congestion). Furthermore, the upcoming Target development is soon expected to add additional traffic on this approach (approximately 250 vph during the midday, evening and Saturday peak periods). Therefore, traffic improvements would be necessary to increase the northbound vehicular capacity on Brush Avenue and to improve overall the operation of the entire intersection.

Recommendations were developed by the consultant of the Target Center for the intersection of Bruckner Boulevard and Brush Avenue, and by NYCDOT which has plans to reconstruct the Unionport Bridge and improve this intersection as part of the bridge reconstruction. The recommendations include

expanding the northbound approach to add a third northbound traffic lane on Brush Avenue. This improvement, with necessary signal timing adjustments, would be necessary to avoid long vehicular spillbacks and delays along Brush Avenue and perhaps other adjacent streets. However, similar to current conditions, the LOS would still continue to be F during the Saturday peak period. Therefore, other roadway improvements would be necessary in the future. For example, improving the Ring Road in Ferry Point Park and its connection to Brush Avenue could provide alternative north-south connection to Hutchinson River Parkway and other highways in this area.

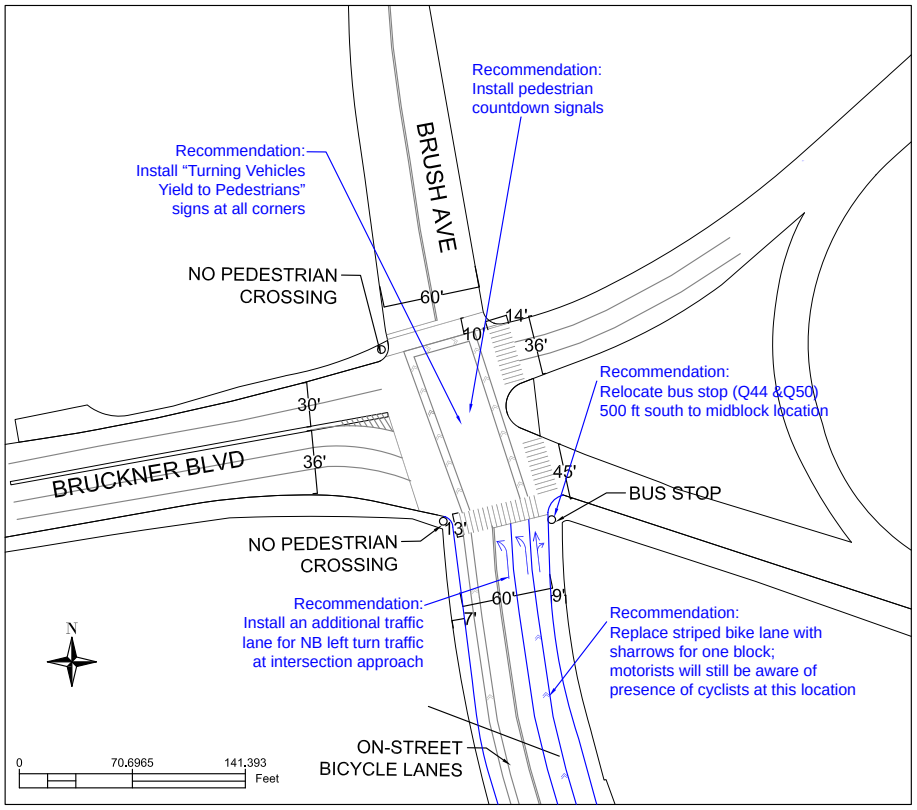


Figure R2.8: Intersection of Brush Avenue and Bruckner Boulevard with proposed improvements

Chapter 3

Pedestrian/Bicycle Safety and Environment Improvements

An analysis of pedestrian and bicycle safety was conducted for the study area. Ten locations shown on the map below were selected for further analysis. These locations are mainly concentrated in the northern part of the study area with one location in the southern part on Brush Avenue at Bruckner Boulevard.

A-Pedestrian Crash Locations Analyzed

An analysis of pedestrian and bicycle safety was conducted for the study area. Ten locations shown on the map below were selected for further analysis. These locations are mainly concentrated in the northern part of the study area with one location in the southern part on Brush Avenue at Bruckner Boulevard.

A-Pedestrian Crash Locations Analyzed

The pedestrian and bicycle crash locations selected for analysis were based on the following criteria: locations with the highest concentration of vehicular crashes over the most recent 3-year period available (2009 -2011) and with the occurrence of at least one pedestrian crash for two years within the 3-year period. Five intersections within the study area met these criteria and have been analyzed in detail for safety improvements:

- Eastchester Road and Waters Place (Hutch Metro Center)
- Eastchester Road/ Silver Street and Williamsbridge Road (Hutch Metro Center)
- Eastchester Road and Morris Park Avenue (West of Hutch Metro Center)
- Westchester Avenue and East Tremont Avenue (Westchester Square Area)
- Brush Avenue and Bruckner Boulevard (Brush Avenue Area)

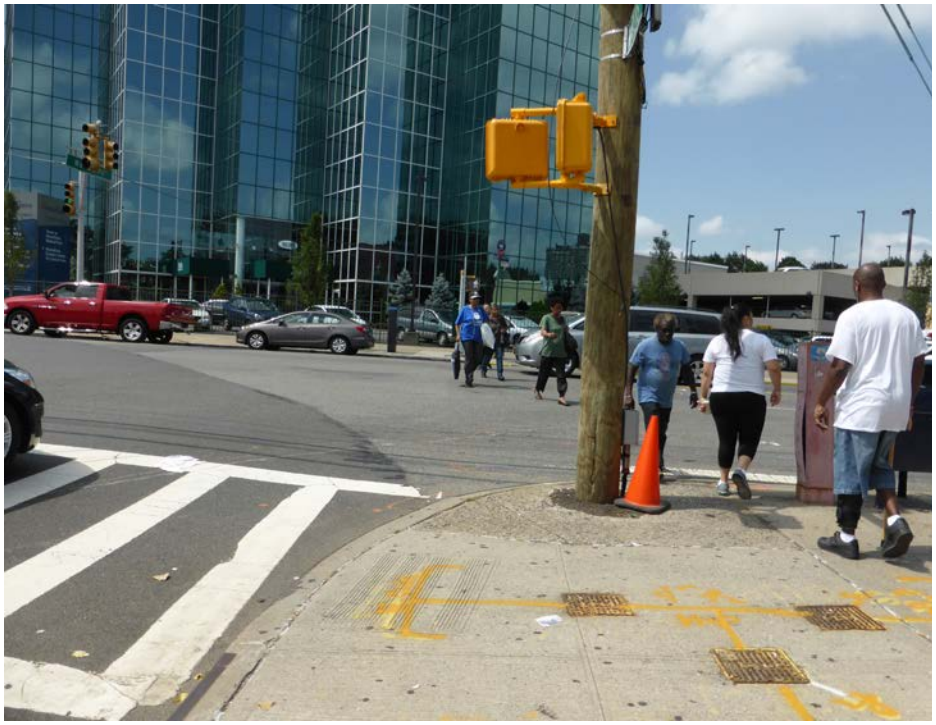
Eastchester Road and Waters Place (Hutch Metro Center)

There were 3 pedestrian crashes for this location over the 3-year period (2009-2011). One bicycle crash took place at this location during the same period.

Issues:

A large volume of vehicles travel through this intersection, especially during the peak hours, when motorists head to and from the Hutch Metro Center. Based on field observations, motorists do not always yield to pedestrians.

Figure R3.1: Locations of Pedestrian and Bicycle Safety Analysis



Pedestrians crossing Eastchester Road at Waters Place

Recommendations:

Pedestrian countdown signals were recently installed by NYCDOT at this intersection which is one of the recommendations from this study. This improvement could help reduce conflicts with vehicular traffic including the incidences of pedestrian crashes.

The installation of two types of signage is also recommended for this location. The first type, "Wait for Walk Signal to Cross," is to discourage pedestrians to cross during motorists' turning movements. It should be noted that the intersection has protected left and right turn vehicular signal phases. The other type of signage recommended, "Turning Vehicles to Yield to Pedestrians," would be mainly for vehicles turning from Eastchester Road onto Waters Place. Recently, NYCDOT installed a "NO RIGHT TURN" sign restricting turns from 7:00AM to 4:00PM at certain approaches.

An additional recommendation is to restripe the crosswalks on Eastchester Road to increase visibility to roadway users.

Eastchester Road/ Silver Street and Williamsbridge Road (Hutch Metro Center)

There were 10 pedestrian and 2 bicycle crashes at this location over the 3-year period (2009-2011).

Issues:

One of the main issues at this intersection is that turning vehicles do not always yield to pedestrians in the crosswalk. Several trucks have been observed as well at this location traveling on both streets, which are designated local truck routes.

Several pedestrians have been observed crossing midblock (jaywalking) at this location mainly on Eastchester Road.

Recommendations:

This study recommends installing pedestrian countdown signals at this intersection which could help reduce conflicts with vehicular traffic and help decrease pedestrian crashes. Additionally, the study recommends signage at this location requesting "Turning Vehicles Yield to Pedestrians" in the crosswalks.

To discourage jaywalking by pedestrians, the study recommends the posting of "No Pedestrian Crossing" for one block on Eastchester Road between Williamsbridge Road and Jarrett Place on both sides of the street. It can be combined with an increase of enforcement presence in the area against jaywalking.

Eastchester Road and Morris Park Avenue (West of Hutch Metro Center)

There were 3 pedestrian crashes at this location over the 3-year period (2009-2011).

Issues:

This is an awkwardly shaped intersection because the streets are not at right angles. There is also a variation in width of Morris Park Avenue which creates a wide street of 100 feet for pedestrians to cross west of the intersection.

Frequent turning vehicles have been observed, and motorists do not always yield to pedestrians at this intersection .

Recommendations:

This study recommends installing pedestrian countdown signals and new

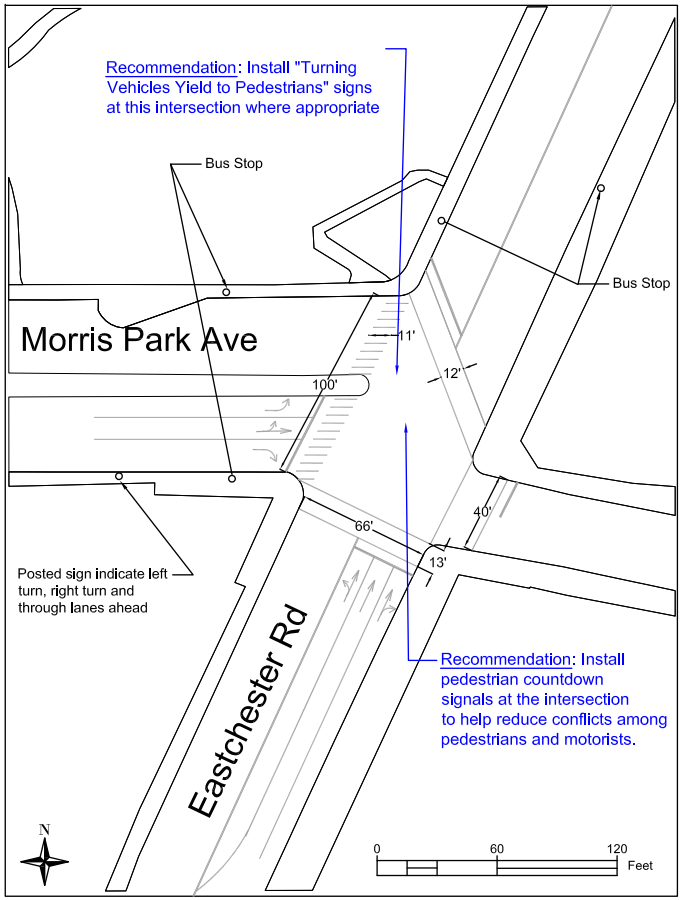


Figure R3.2: Intersection of Eastchester Road and Morris Park Avenue (with proposed improvements)

signage at the intersection which could help decrease conflicts with vehicular traffic. Pedestrian countdown signals in combination with the installation of signage requesting "Turning Vehicles to Yield to Pedestrians" could help towards the reduction of pedestrian crashes at this intersection.

Westchester Avenue and East Tremont Avenue (Westchester Square Area)

There were 6 pedestrian crashes at this location over the 3-year period (2009-2011).

Issues:

Right turning vehicles do not always yield to pedestrians at this intersection. It should be noted that restrictions in turning movements are already in place: left turns are not permitted from any approach and "No Turns" signs are posted for northbound and westbound traffic. Therefore, right turns are allowed only for southbound and eastbound traffic.

Due to the presence of columns supporting an elevated rail line on Westchester Avenue, pedestrians are not always visible to drivers especially for eastbound vehicles making right turns from East Tremont Avenue onto Westchester Avenue.

Recommendations:

This study recommends installing signage requesting "Turning Vehicles Yield to Pedestrians" at this intersection at corners where right turns are permitted.

Note: This intersection was recently refurbished and restriped. It also has countdown pedestrian crossing signals.

Intersection of Westchester and East Tremont Avenues (looking north)

Brush Avenue and Bruckner Boulevard

There were 3 pedestrian crashes at this location over the 3-year period (2009-2011).

Issues:

A significant volume of vehicles travel through this intersection daily, especially during the evening peak hours, where more 4,900 vehicles pass through in one hour. Motorists do not always yield to pedestrians as they make a turn. Most of the turns made during the day occur from Bruckner Boulevard onto Brush Avenue.

Recommendations:

This study recommends installing pedestrian countdown signals at this intersection which could help reduce conflicts between pedestrians and vehicles and decrease the occurrence of pedestrian crashes. Additionally, this study recommends installing signage requesting turning Vehicles to Yield to pedestrians at this location where there are crosswalks.

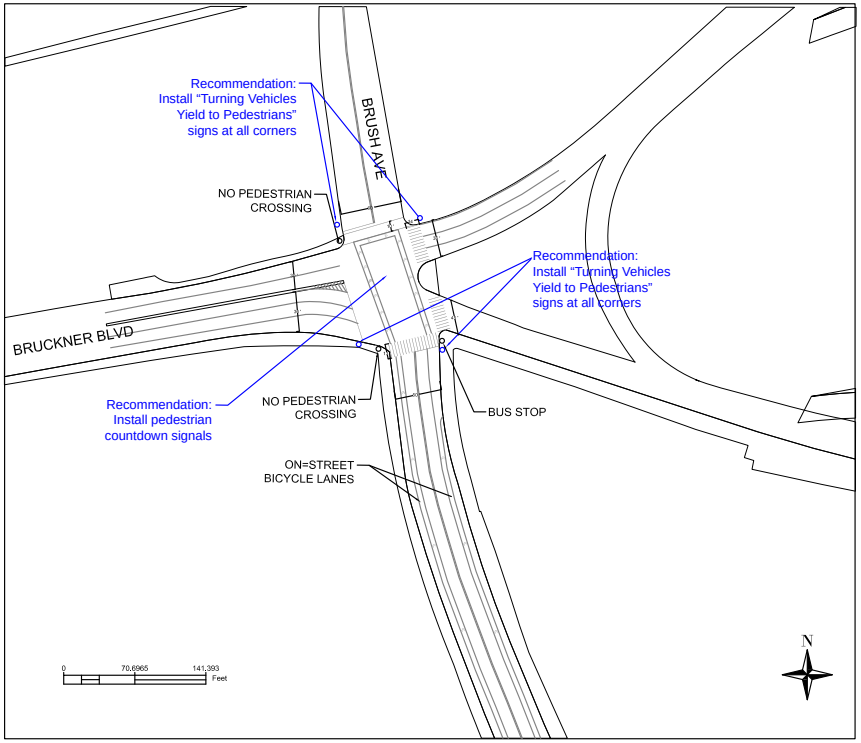


Figure R3.3: Intersection of Brush Avenue and Bruckner Boulevard (with proposed improvements)

B- Problematic Locations

The problematic locations selected for analysis were identified during fieldwork observations as having issues related to safety and/or efficiency for pedestrians and/or bicyclists. The following four locations were identified:

- Westchester Avenue between Middletown Road and Waters Place *(Hutch Metro Center)*
- Hutchinson River Greenway and Pelham Parkway at Stillwell Avenue *(West of Hutch Metro Center)*
- Westchester Avenue and Ferris Place *(Westchester Square Area)*
- East Tremont Avenue between Fink, Ponton and Lane Avenues *(Westchester Square Area)*

Westchester Avenue between Middletown Road and Waters Place (Hutch Metro Center)

Issues Relevant to Pedestrians:

Turning vehicles do not always yield to pedestrians at the intersection of Westchester Avenue, Hutchinson River Parkway East and Middletown Road. It is a wide and awkwardly shaped intersection and due to the presence of columns supporting an elevated rail line on Westchester Avenue pedestrians are not always visible to drivers as they make turns onto Westchester Avenue.

Another issue with this intersection is that vehicles approaching Hutchinson River Parkway East, including those making a turn into this roadway have a tendency to start speeding up as they approach the entrance to the Hutchinson River Parkway. A traffic island has been placed in the middle of the intersection approach to narrow the roadway and slow down vehicular traffic. In addition, pedestrians use this traffic island when waiting to cross Hutchinson River Parkway East an , while on this traffic island in the middle of the road, pedestrians lack physical protection from turning vehicles. An additional field observation is that at the end of the island in the middle of the road there is a pole with a pedestrian traffic signal.

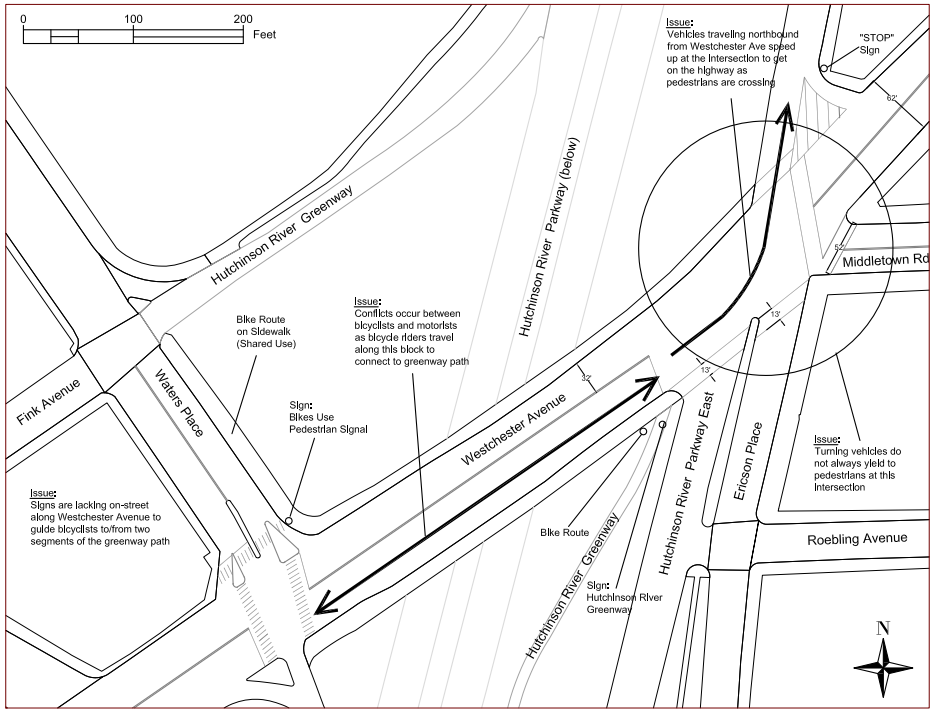


Figure R3.4: Westchester Avenue between Middletown Road and Waters Place

Recommendations for Improving Pedestrian Safety:

This study recommends installing signage requesting "Turning Vehicles to Yield to Pedestrians" in the crosswalks at this intersection at all corners with pedestrian crossings.

It is also recommended that the marked traffic island at this intersection be raised and widened by 5-6 ft to calm traffic and slow down vehicles as they approach the entrance ramp to the Hutchinson River Parkway East. Further analysis is required to determine vehicle turning radii at this location prior to changing the marked traffic island into a raised median.

This study also recommends that Greenstreet elements be added, if possible, at this location to enliven the proposed raised island at this intersection. Adding Greenstreets elements to the proposed median in the roadway would require approval from NYCDPR and NYCDEP. If the Greenstreets request is not part of an infrastructural improvement project, then it should have independent and full funding for its construction and maintenance.

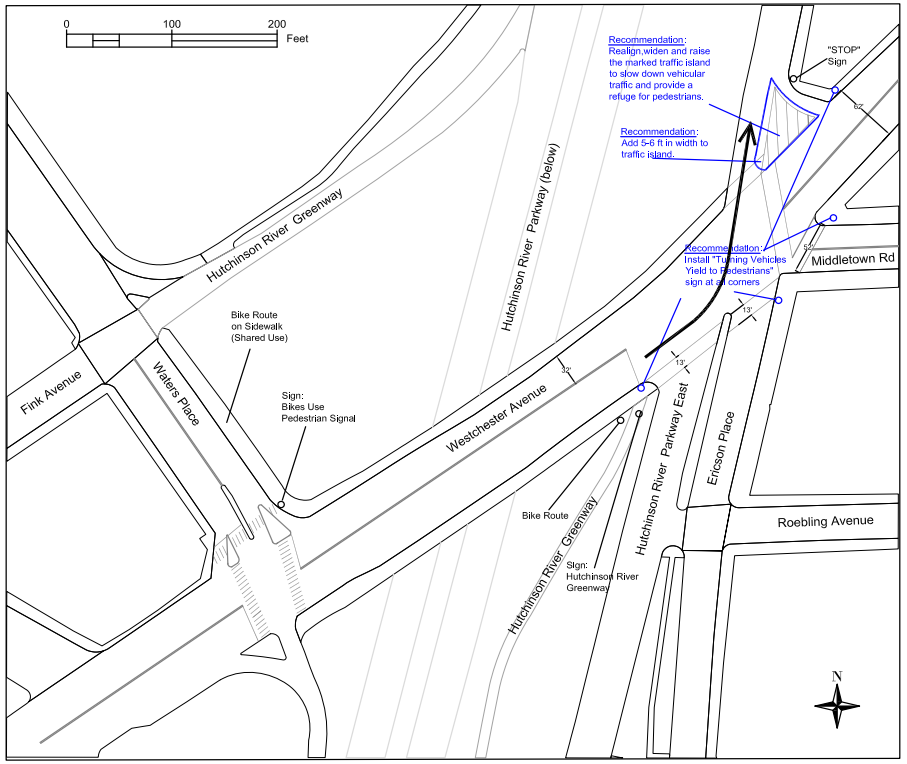


Figure R3.5: Westchester Avenue between Middletown Road and Waters Place (with proposed improvements for pedestrians)

Issues Relevant to Bicyclists:

Conflicts between motorists and cyclists were observed under the elevated rail line as cyclists connect to the greenway path along the Hutchinson River Parkway. The greenway path at this location switches from the west side of the Hutchinson River Parkway to the east side where bicyclists travel on-street on Westchester Avenue to continue their route and connect to the greenway.

Signs are lacking on Westchester Avenue to inform motorists of the presence of bicyclists crossing at Waters Place to get to the greenway path. Furthermore, signs are lacking on the road to guide bicyclists to and from the greenway connector.

Recommendations for Improving Bicyclist Safety:

This study recommends adding signage on Westchester Avenue under the elevated tracks, such as a "Share the Roadway" sign and a "Bicycle Crossing

Warning" sign. These signs would inform motorists of the presence of an on-street greenway connector on Westchester Avenue and of a crossing for cyclists at this location to minimize conflicts between motorists and cyclists.

In addition, informational signs referring to the greenway (greenway medal-

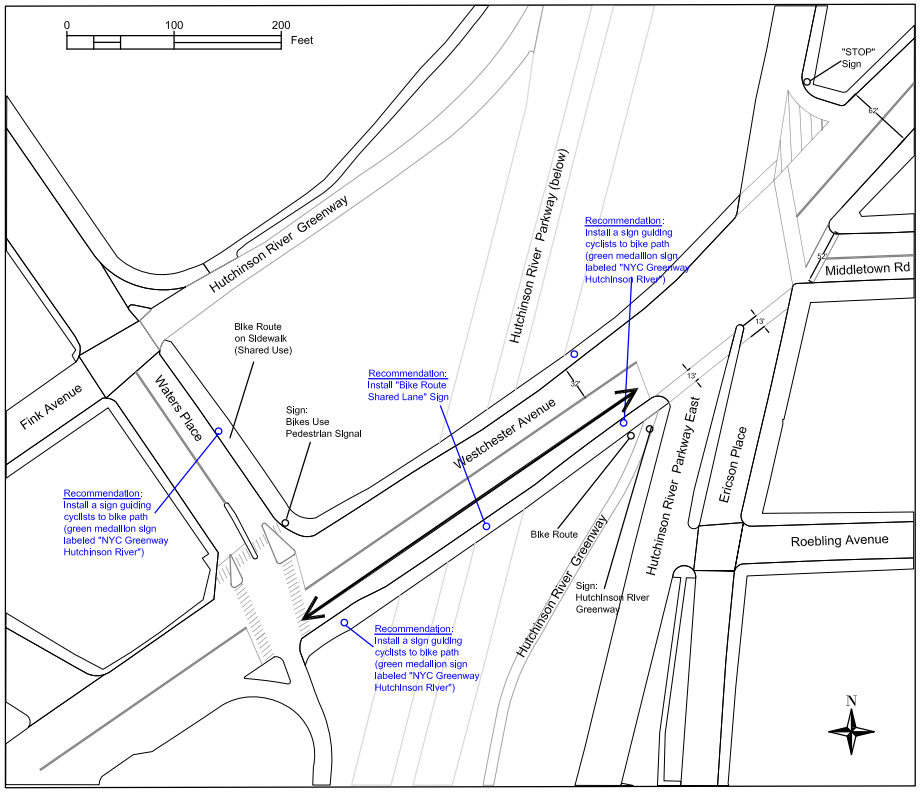


Figure R3.6: Westchester Avenue between Middletown Road and Waters Place (with iproposed improvements for bicyclists)

lions) could be placed along Westchester Avenue to guide bicyclists from Waters Place to Middletown Road (and vice versa) as they make a connection to the Hutchinson River Greenway path.

This study also considered installing a separated or protected bicycle path on Westchester Avenue against the east curb. However, the presence of "No Standing Anytime" regulation signs on the east side of the road indicates that the full roadway may be needed due to the heavy volume of vehicles on Westchester Avenue.

Any bicycle route modification has to be reviewed and approved by the Bicycle Division at NYCDOT.

<u>Pelham Parkway at Stillwell Avenue</u> (West of the Hutch Metro Center)

Issues:

At the intersection of Pelham Parkway and Stillwell Avenue the greenway path on Pelham Parkway switches from Pelham Parkway north to Pelham Parkway south. There are signs guiding bicyclists at this transition point. However, there are no signs guiding cyclists to the start of the Hutchinson River Greenway further east, about 500 feet away.

The sidewalks on the south side of Pelham Parkway before and after the span of the bridge (over the Amtrak rail tracks) are in poor condition. They are uneven and have several pot holes. The sidewalks are also part of the bicycle route.

Recommendations:

This study recommends installing signage at this intersection to inform bicyclists and pedestrians of the nearby Hutchinson River Greenway. NYCDOT already has a sign plan for this area which includes highlighting this connection. It will direct cyclists from the Pelham Parkway Greenway to the Hutchinson

Sidewalks on south side of Pelham Parkway (near bridge over Amtrak rail lines)

River Greenway.

Another recommendation is to reconstruct or repair the sidewalks along Pelham Parkway, which would enhance the pedestrian environment. These sidewalks are located near a bridge therefore the entity or agency that has jurisdiction of this bridge would make the necessary repairs.

Westchester Avenue and Ferris Place (Westchester Square Area)

Issues:

The intersection of Westchester Avenue and Ferris Place is a T-shaped intersection. Ferris Place traffic is controlled by a "stop sign," while traffic on Westchester Avenue is generally controlled by traffic signals. However, there are no traffic signals at this intersection. One crosswalk has been provided (south of this intersection) for pedestrians to cross Westchester Avenue from the subway station to the east side of Westchester Avenue. There are two issues at this intersection. First, though vehicles on Westchester Avenue are informed with warning signs that pedestrians cross at this location the vehicles do not always yield to pedestrians in the crosswalk. Pedestrian crossings are frequent due to the subway station at this location. Second, in spite of the signs warning motorists to keep the intersection clear, vehicles often block the intersection, causing traffic congestion.

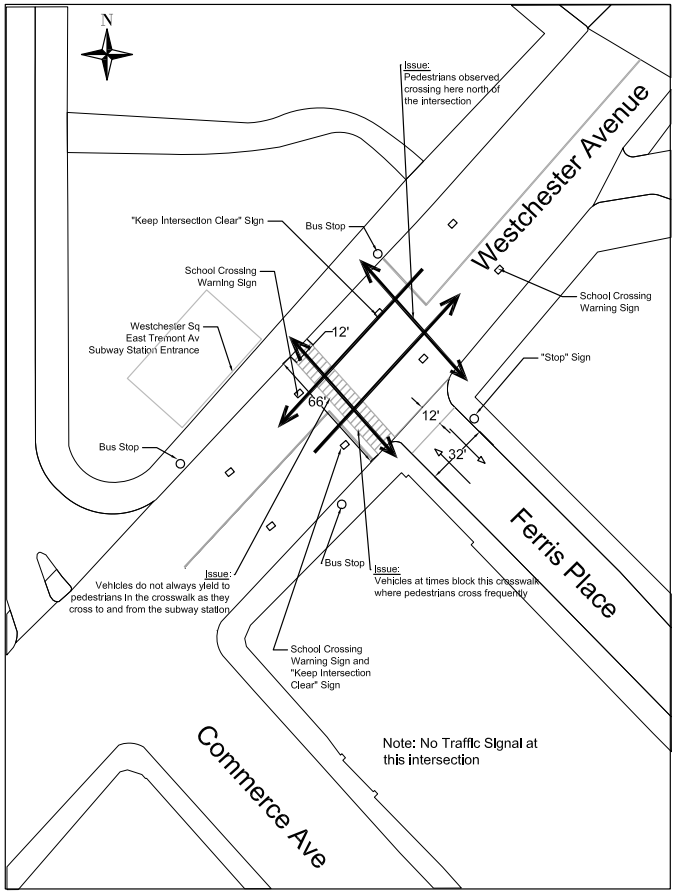


Figure R3.7: Intersection of Westchester Avenue and Ferris Place

This study recommends installing a combination of different warning devices that complement each other and would further encourage motorists to yield to pedestrians at this intersection. The potential new devices and treatments include:

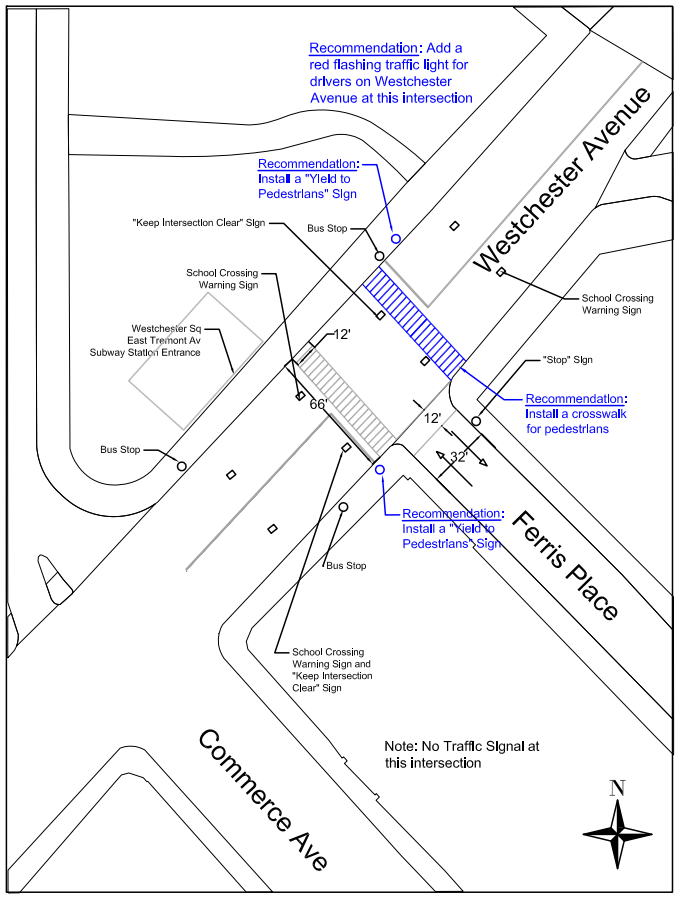


Figure R3.8: Intersection of Westchester Avenue and Ferris Place (with proposed improvements)

a) A red flashing traffic light asking drivers on Westchester Avenue to stop at the intersection and proceed with caution when clear.

b) A crosswalk on the north side of Ferris Place. There is currently a stop bar for southbound vehicular traffic indicating drivers to stop.

c) "Yield to Pedestrian" signs for motorists at the existing and proposed crosswalks.

Prior to implementation, it is recommended that this location be evaluated for signalization and a warrant analysis be completed according to NYCDOT's warrant guidelines.

East Tremont Avenue between Fink, Ponton and Lane Avenues (Westchester Square Area)

Issues:

Pedestrians often cross midblock from two locations at this square: from the local stores aligned along Lane Avenue to get to the east side of East Tremont Avenue and from the Westchester Square triangular traffic island to reach Owen F. Dolen Park. At the start of this study, there were no crosswalks allowing pedestrians to cross either East Tremont Avenue or Lane Avenue.

Midblock jaywalking on East Tremont Avenue between Ponton and Fink Avenues

Based on field observations illegal midblock pedestrian crossings occur mainly when vehicles on the streets intersecting with East Tremont Avenue (Fink, Ponton and Lane Avenues) have the green light.

Additionally, a crosswalk located at the northern tip of the park provides a designated crossing for pedestrians to the triangular raised island of this square. It is in poor condition and is barely visible to roadway users.

Recommendations:

This study recommends installing an additional crosswalk at the intersection

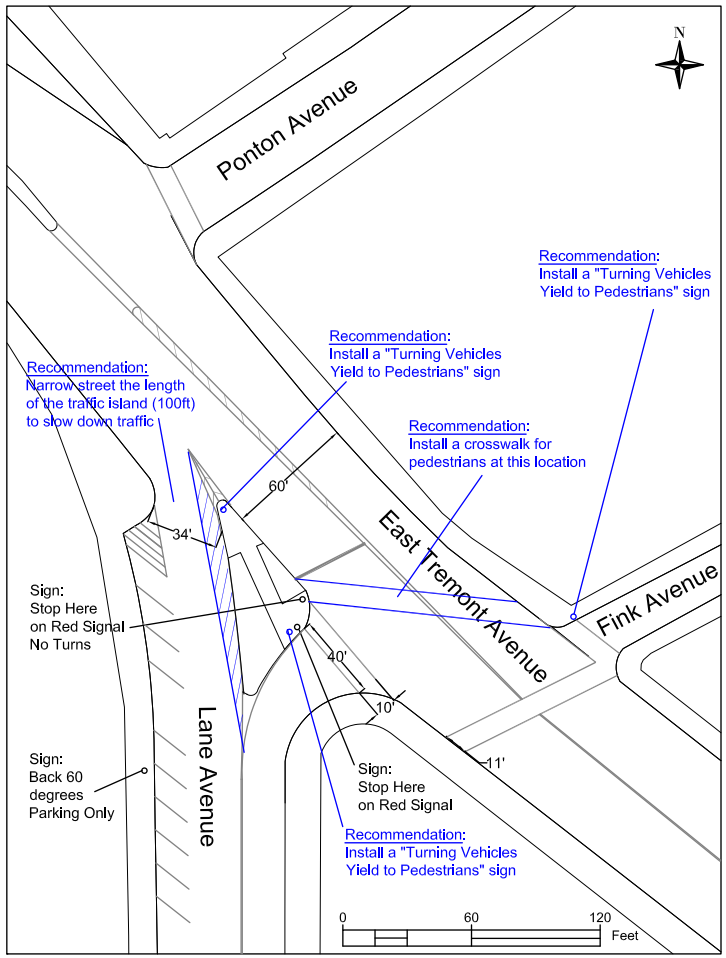


Figure R3.9: East Tremont Avenue between Fink, Ponton and Lane Avenues (with proposed improvements)

of Fink Avenue and East Tremont Avenue, just north of the south crosswalk where the stop bar for vehicles is currently located. This would make it safer for pedestrians to cross at that location by providing a designated crosswalk.

In addition, install "Turning Vehicles Yield to Pedestrians" signs at a few specific locations for drivers to easily see. For eastbound traffic on East Tremont Avenue install one sign at the triangular median island for vehicles turning into Lane Avenue. At this intersection, install the same signage: one sign for traffic coming from Fink Avenue and one for traffic from Lane Avenue.

In combination with this solution, this study recommends slowing down traffic

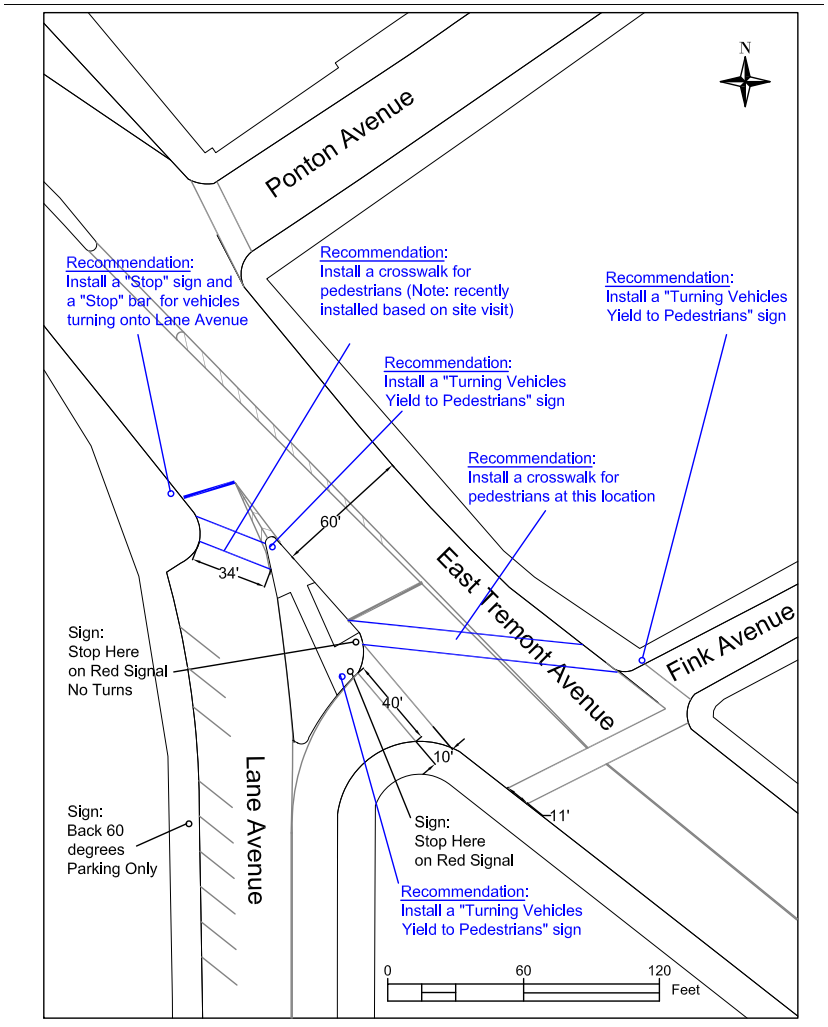


Figure R3.10: East Tremont Avenue between Fink, Ponton and Lane Avenues (with proposed improvements)

Eastbound traffic on East Tremont Avenue at Fink Avenue

Lane Avenue traffic at triangular median in Westchester Square

as vehicles enter Lane Avenue by narrowing the roadway and adding pavement markings, which widen the triangular median island.

As an additional safety improvement to slow down traffic entering Lane Avenue, this study recommends installing a stop sign for eastbound traffic making a right turn into Lane Avenue and a crosswalk for pedestrians. Based on a site visit in March 2014, NYCDOT has recently installed this crosswalk.

To increase visibility on the road at this intersection, this study recommends restriping the faded crosswalk linked to the northern tip of the park so pedestrians can see where to cross safely.

Slow Zone Program

NYCDOT is planning to implement the "Slow Zone Program" in Westchester Square which will be beneficial to pedestrians in this area. The goal of this new program is to reduce pedestrian fatalities and to reduce the speed from 30 to 20 mph on residential streets. Street treatments include bumps and signage. Locations and streets for implementation of this new program are to be determined by NYCDOT. The first slow zone was installed in the Claremont section of the Bronx.

Bicyclist Safety (Brush Avenue Area):

This study recommends that NYCDOT consider creating an alternate route for bicyclists besides the one on Brush Avenue. This could mean installing a bicycle lane on the southbound service road of the Hutchinson River Parkway, which also connects to Ferry Point Park. This road already has signage directing cyclists to/from Ferry Point Park and to the greenway path in the park. However since this road is a designated local truck route, a bicycle path adjacent

to the curb physically separated from motorized traffic would be preferable for added protection for cyclists. In addition, safety treatments could be put in place (signage, rumble strips and markings) where the proposed bicycle path intersect with a road in order to have motorists look for and yield to cyclists traveling on the southbound service road of the Hutchinson River Parkway. Signs could be installed as well to alert cyclists about oncoming cars as they approach an intersection.

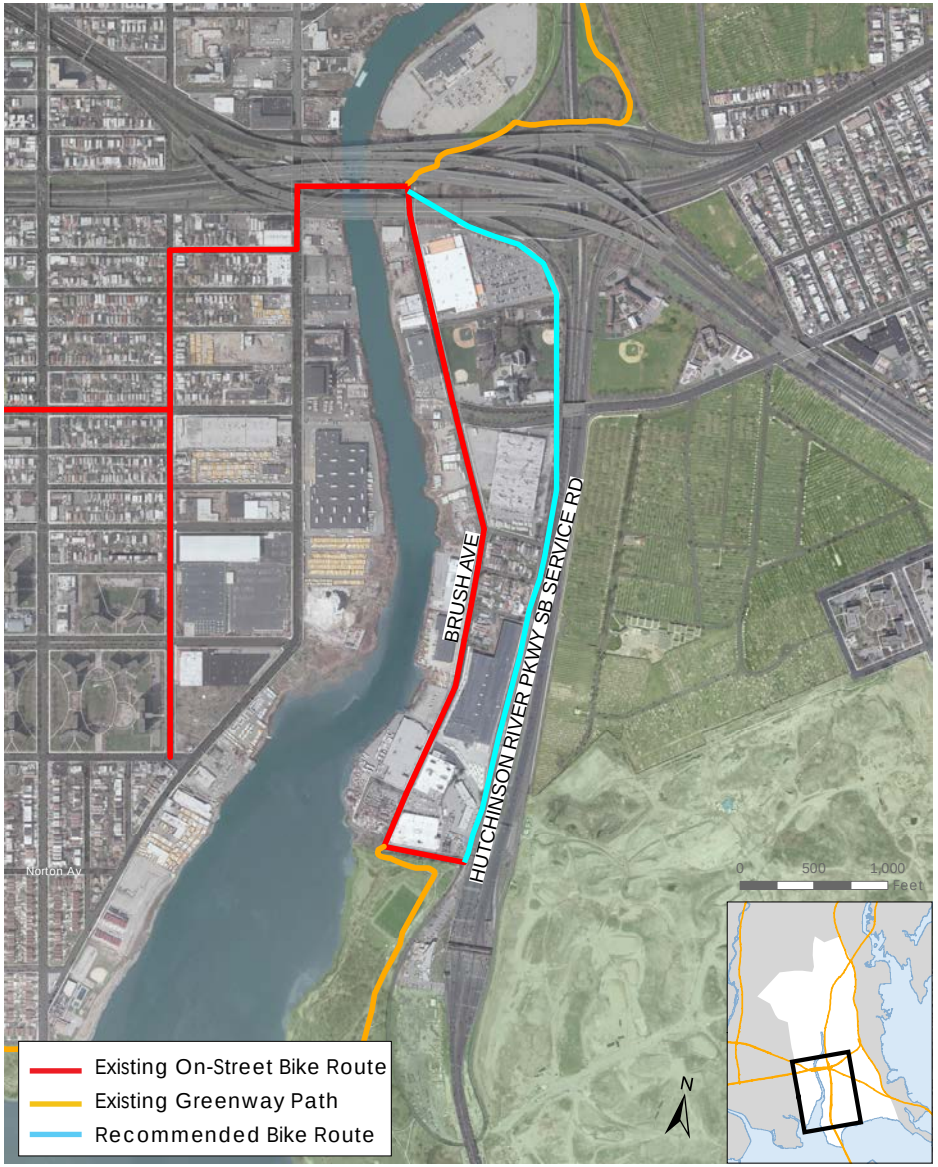


Figure R3.11: Proposed Bicycle Improvements south of East Tremont Avenue

Under this scenario, the bicycle route on Brush Avenue would remain, but in order to accommodate the recommendations developed for the intersection of Brush Avenue and Bruckner Boulevard (described earlier in the report), the striped existing bicycle lanes would need to be replaced for one block by a shared lane with sharrows between Bruckner Boulevard and Lafayette Avenue. This treatment would maintain the bicycle route on Brush Avenue while making drivers aware of the presence of cyclists on the roadway. Currently, only the northbound striped bike lane is designed with sharrows and pegga-tracks at the intersection approach.

Any bicycle route proposal has to be reviewed and approved by the Bicycle Division at NYCDOT.

Temporary pedestrian walkway gives an idea of the space that can be dedicated to cyclists along the parkway

Proposed signage at location of proposed new entry point to Pepsi facility

Chapter 4 Public Transit Access and Service Improvements

<u>Connections to Local Bus Services</u> (Hutch Metro Center and West of the Hutch Metro Center)

This study recommends that NYCT consider additional bus services for the Hutchinson Metro Area in order to accommodate the projected increase in commuters coming to this location. This recommendation is supported by Community Boards 10 and 11.

MTA has addressed this issue with the extension of the Bx24 from Westchester Square to the Hutch Metro Center. This extension was implemented in 2014. Sidewalks and crosswalks were also installed for pedestrians in relation to the new bus service along Marconi Street.

In addition, in order to help reduce future increase of vehicular traffic in this area, it is recommended by Community Boards 10 and 11 that nearby bus routes be rerouted to serve the proposed Morris Park Metro-North Station (when built).

New York City Transit (NYCT) needs to evaluate the area of concern, the existing bus routes, and ridership levels before they can restructure any segment of a bus route in this part of the study area, including to/ from the proposed Morris Park Metro-North Station. This proposed station was designed more as a destination station to bring commuters from Westchester County or from Manhattan into the employment centers and attractions located in this part of the Bronx. As a result, future vehicular traffic generated by this station would most likely come from residents living in the area travelling to the station to commute to Manhattan.

Additionally, Westchester Square BID has proposed a private shuttle system that would start at the Westchester Square BID area and serve the northern and southern portions of the study area. This study recommends that this proposal be looked into further as a viable solution in improving access to new developments in the area. The Hutchinson Metro Center currently provides a shuttle bus service from the Westchester Square area to the Hutchinson Metro Center. The proposed new shuttle bus service would supplement the existing service.

Figure R4.1: Bus Routes Serving Hutchinson Metro Center

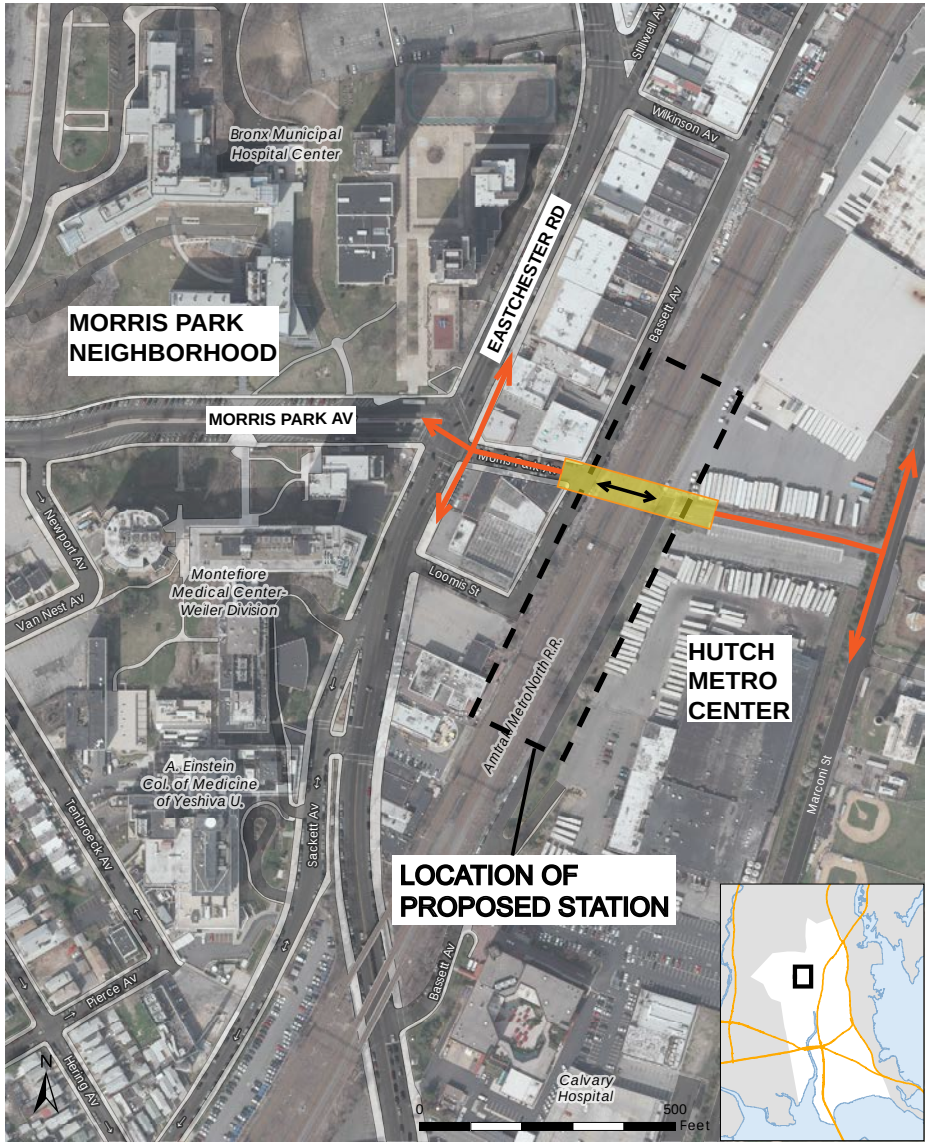


Figure R4.2: Proposed East-West Connection in Area of Proposed Metro-North Station

East-West Connection to Proposed Metro-North Station (West of the Hutch Metro Center)

This study recommends that when the proposed Morris Park Station is built, that it includes an east-west connection for pedestrians that would extend into both neighborhoods located on either side of the tracks and link them together. This connection could be an overpass over the rail tracks at the end of Morris Park Avenue at the location of the proposed rail station. The MTA has plans to provide access to the public and pedestrians from both sides of the proposed station. DCP's Sustainable Communities in the Bronx report recommended that if a pedestrian bridge is built as part of the proposed Metro-North station it should be designed to ensure that non-riders are able take advantage of this feature. DCP should continue to coordinate with Metro-North to serve as a resource as this project moves forward. However, having an overpass over the rail tracks would have to be further analyzed because of the liability issues that may arise from the presence of a crossing over the tracks.

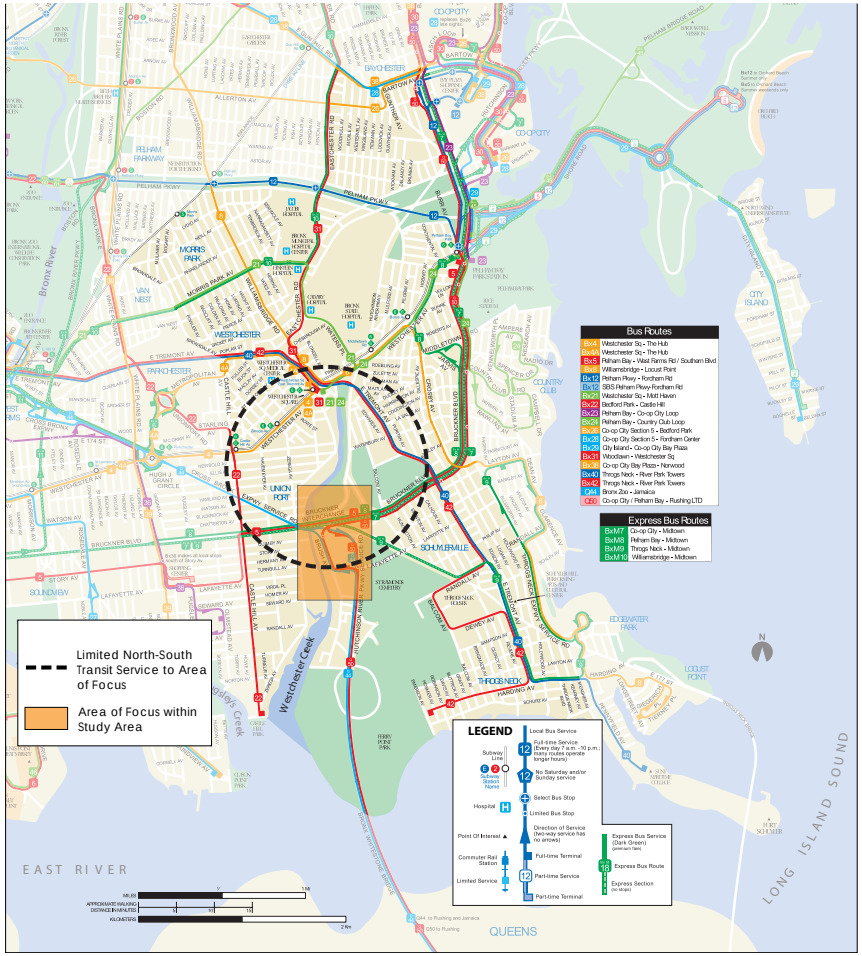


Figure R4.3: Lack of Bus Routes Serving Area of Focus South of Bruckner Interchange

<u>Access to Sites of Proposed Developments</u> (Bruckner Boulevard Interchange Area)

This study recommends that NYCT consider public transit improvements that would provide access to new proposed developments, including the Target Center and the former site of the Whitestone Multiplex Cinemas, potential site for redevelopment, in order to help alleviate vehicular traffic in this area by offering another mode of transportation. For example, NYCT could consider extending a bus route from Westchester Square to these two sites.

As mentioned earlier in the report, NYCT needs to evaluate this area of concern, the current bus routes, and the ridership levels before they can restructure any segment of a bus route. Once this is done, NYCT can then decide on how to best restructure bus services.

Chapter 5

Open Space Access Improvements and Streetscape Amenities

Under the Bruckner Interchange

The triangular space under the Bruckner Interchange is dark and unused. This study recommends that NYCDPR and NYCDEP consider adding Greenstreets elements to enliven the space under the Bruckner Interchange and at the traffic island located along the bicycle route at the end of Brush Avenue where it intersects with Bruckner Boulevard.

Adding Greenstreets elements to the proposed median in the roadway would require approval from NYCDPR and NYCDEP. If the Greenstreets installation is not part of an infrastructural improvement project, then it will require securing funds for its construction and maintenance.

Triangular space under the Bruckner Interchange

Waterfront Path along Westchester Creek (Brush Avenue Area)

Community stakeholders had asked the city to consider installing a greenway path along the Westchester Creek waterfront, east side of Westchester Creek.

This proposal is not feasible due to the presence of private properties along the waterfront south of the Bruckner Interchange. Public access is usually not allowed on private properties unless the owner provides such access to the public.

New Sidewalks (Brush Avenue Area):

Another request from the community for the Brush Avenue area was to install new sidewalks on Brush Avenue where sidewalks are missing to accommodate local residents wanting to walk to Ferry Point Park.

NYCDOT has a capital reconstruction program to install/replace sidewalks where necessary. Other city agencies may install new sidewalks through their capital program by filing a Sidewalk, Curb and Roadway Application (SCARA) with NYCDOT. In addition, private developers can install new sidewalks through the Builders Pavement Plan (BPP) application with the Department of Buildings.

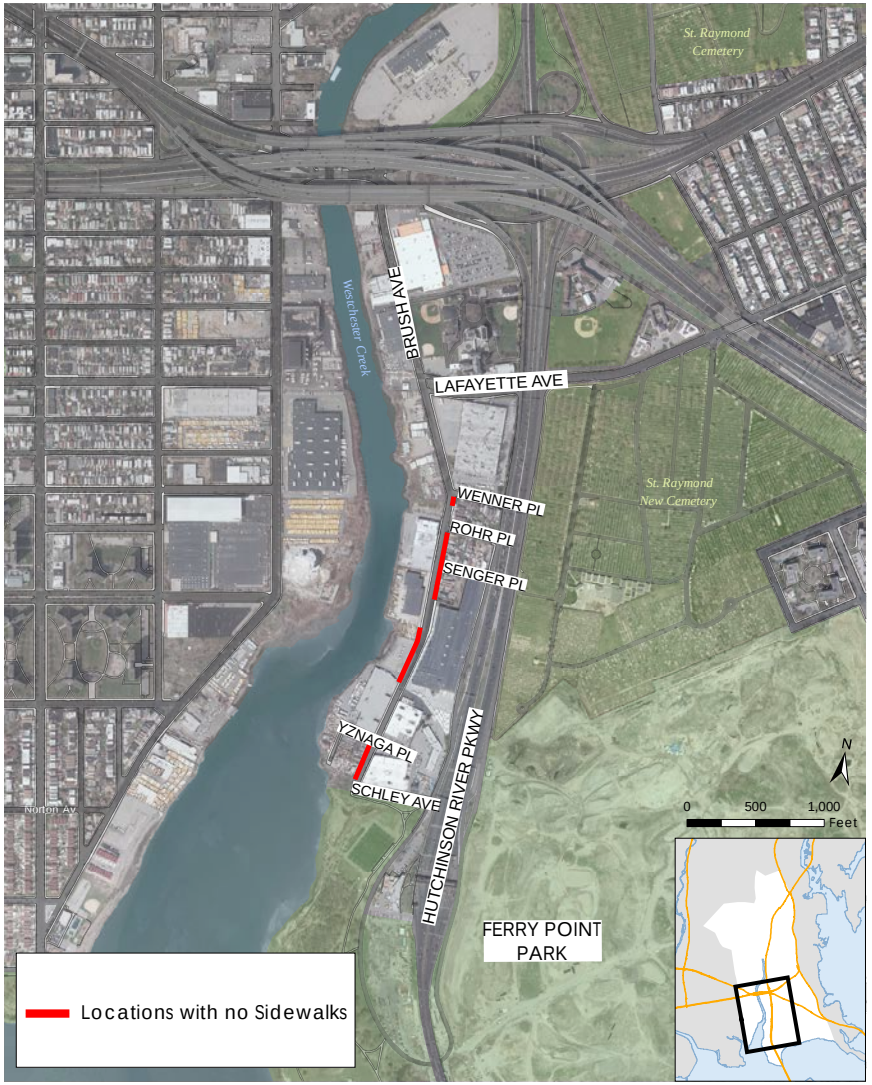


Figure R5.1: Limited Sidewalks along Brush Avenue

Lack of Sidewalks on Brush Avenue
to accommodate pedestrians

Access to Ferry Point Park

Access to the west side of Ferry Point Park, where the ball fields are located, is difficult for those living east of the park. The city should look into the option of installing a connection or path between Ferry Point Park East and Ferry Point Park West. A path along the waterfront as shown on the NYC Greenway Plan is recommended and would link the east side of the park to the west side. Currently, there are plans by NYCDPR to build a waterfront promenade in the park along the southern border of Ferry Point Park. A design project for the waterfront park is underway. However, locating a source of funds is critical for the construction of this waterfront path.

Figure R5.2: Ferry Point Park

Summary of Recommendations

This study includes both short-term and long-term recommendations at various locations throughout the study area which, as an overall package, can help reduce traffic congestion and improve traffic circulation.

Shown on the map below, these proposed improvements include: creating new access points and connections; providing alternate routes for traffic; reducing congestion; modifying the street geometry; making adjustments to the traffic signal timing; installing signage to guide roadway users; increasing public transit service; installing new crosswalks; improving pedestrian walkways and bikeways; and improving the street environment and links to open spaces.

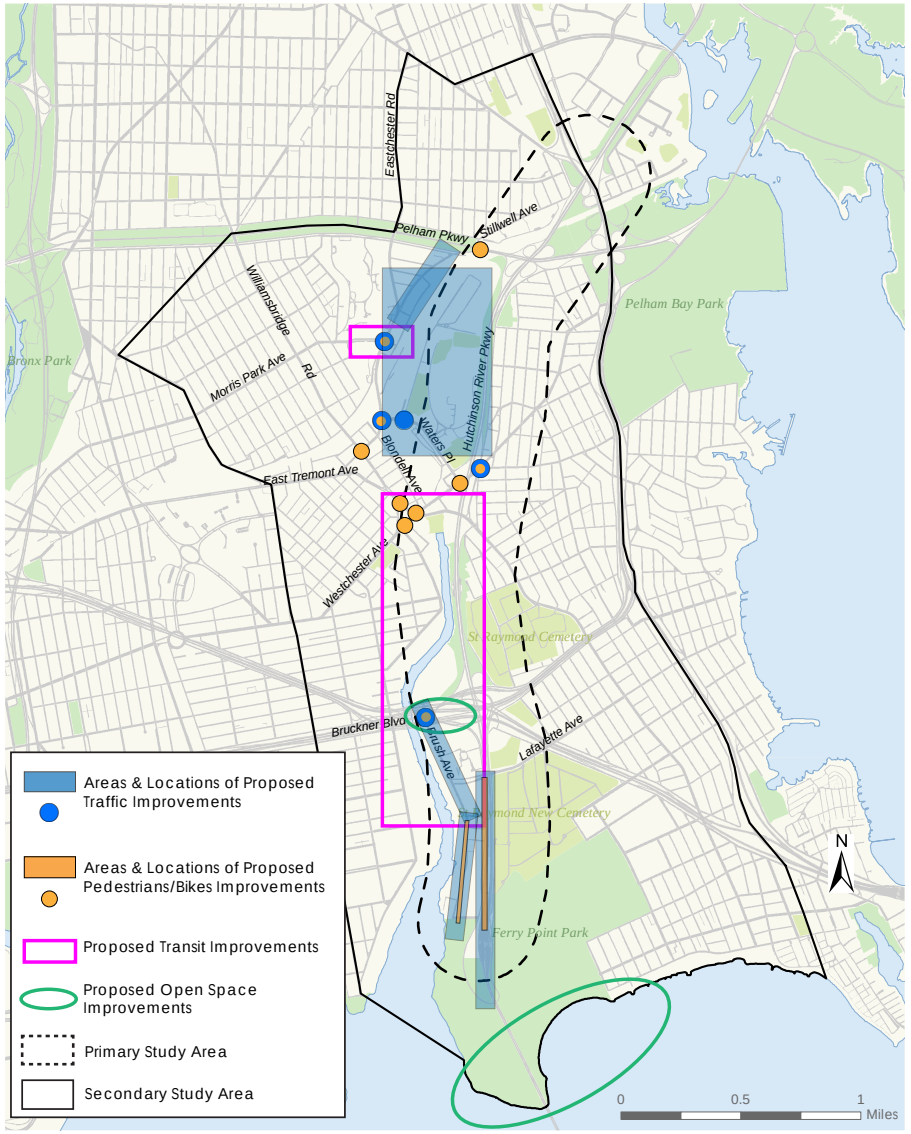


Figure R5.3: Summary Map of Recommendations

Endnotes

1 PHA Traffic Study, Target Retail Development, December 2011

2 PHA Tech Memo, Traffic Assessment for Redevelopment of Whitestone Cinema, February 2012

PART IV:

CONCLUSION

CONCLUSION AND NEXT STEPS

The Hutchinson River Parkway Transportation Corridor Study is a first step towards addressing the community's concerns regarding vehicular, pedestrian, bicycle, transit and parking issues surrounding this corridor. This study analyzed and assessed the existing conditions within the study area, including the vehicular level of service (LOS), pedestrian and bicycle circulation, transit utilization and service, and a survey of on-street parking regulations and off-street parking utilization. In relation to the future conditions, this report provided a comprehensive analysis of the proposed and potential developments to occur in the near future (1-2 years) and their impact on future vehicular traffic.

Recommendations have been developed to address issues at problematic locations and intersections within the study area. The vast majority of the proposals focused on easily implementable options such as signal timing modifications, intersection striping, geometry reconfiguration and signage. Community and steering committee members have been involved throughout the process and expressed concern over the recommendations because they wanted to see the inclusion of bolder capital type solutions that they believe could have a significant impact on the traffic in the study area.

In response to the requests of the community, we have met with the relevant government agencies to discuss bolder, long-term recommendations that fall under their jurisdictions to determine the feasibility of the proposals. We have also worked with these agencies see how these long-term recommendations might fit into the agency's broader plans for the area. Based on these discussions, it was determined that a more comprehensive and detailed transportation analysis of the study area was necessary for the two long-term recommendations presented in this study: improving access to the Hutch Metro Center, and improving access and mobility at the approach of the Bruckner Interchange and along Brush Avenue. The comprehensive transportation planning study for these improvements is to be done with the involvement of many different agencies and the community boards, including New York City Department of Transportation, New York State Department of Transportation, Metropolitan Transportation Authority, New York City Police Department, New York City Department of Parks and Recreation, New York City Department of Environmental Protection, Community Boards 10 and 11 and local elected officials.

PART V:

APPENDICES

Appendix A

Detailed Zoning Analysis

Described below are the regulations pertaining to the zoning districts found within the study area.

Residential Districts Regulations (13)

R3-1 District

R3-1 contextual districts are the lowest density districts that allow semi-detached single and two-family residences, as well as detached homes. A floor area ratio (FAR) of 0.5 is generally permitted. The maximum building height is set at 35 feet under the R3-1 zoning district.

R3-2 District

The R3-2 zoning districts are general residence districts that allow a variety of housing types, including low-rise attached houses, small multi-family apartment houses, and detached and semi-detached single and two-family residences. R3-2 zoning districts allow an FAR of up to 0.5 with a maximum building height of 35 feet.

R3A District

The R3A zoning districts are found in many of the city's older neighborhoods, featuring modest single and two-family detached residences on zoning lots as narrow as 25 feet in width. The maximum FAR is 0.5 for R3A districts and the maximum building height permitted is 35 feet.

R3X District

R3X districts are contextual zoning districts mapped extensively in lower density neighborhoods. They permit only single and two-family detached homes on lots that must be at least 35 feet wide. The maximum building height allowed is 35 feet and the FAR for this district is 0.5.

R4 District

The R4 district is a general residence zone that allows for a variety of housing types including single and two family residences that are detached or semi-detached, row houses and garden apartments. The FAR of 0.75 produces in general buildings that are no taller than three stories.

R4-1 District

The R4-1 districts permit only single and two-family detached and semi-de-

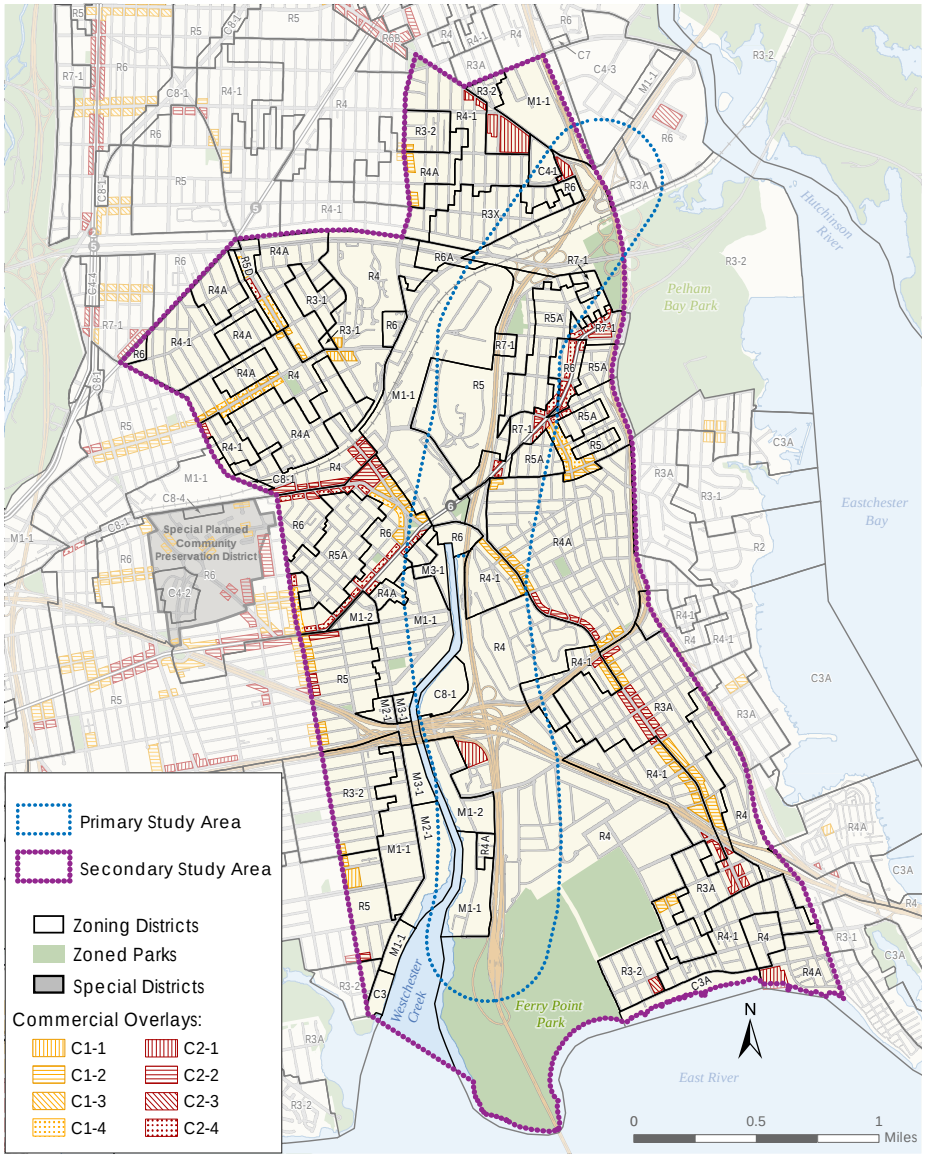


Figure A.1: Zoning Map

tached residences. The maximum FAR is 0.75 for R4-1 districts and the maximum building height permitted is 35 feet

R4A District

R4A contextual districts are similar to R3A and R3X districts, which permit only single and two-family detached residences. R4A districts have an FAR of up to 0.75 and a minimum lot width of 30 feet.

R5 District

R5 districts allow a variety of housing types at a higher density than permitted in R3-2 and R4 districts. The allowable FAR of 1.25 typically produces three and four story attached houses and small apartment houses.

R5A District

R5A contextual districts permit only single and two-family detached residences with a maximum FAR of 1.1. Similar to R4A districts, R5A districts are characterized by houses with two stories and an attic beneath a pitched roof, but the greater FAR allow for somewhat larger buildings.

R5D District

R5D contextual districts, designed to encourage residential growth along major corridors in auto dependent areas of the city. Characterized by moderate-density, multi-family housing, R5D districts have a maximum floor area ratio of 2.0 and a maximum height of 40 feet.

R6 District

R6 districts are widely mapped in built-up areas. The R6 zoning is typically found in medium density areas of the city including the Bronx. The apartment buildings in this district can range from row houses to tower developments with surrounding open space. The allowable FAR range is from 0.78 to 2.43 pursuant to height factor regulations.

The Quality Housing Regulations (produce high lot coverage buildings) optional in R6 districts permit an FAR of 3.0 on wide streets with a maximum building height of 70 feet and an FAR of 2.2 on narrow streets with a maximum building height of 55 feet.

R6A District

R6A is a contextual district where the Quality Housing bulk regulations are mandatory. These regulations produce high lot coverage, six or seven-story apartment buildings set at or near the street line. The floor area ratio in R6A districts is 3.0.

R7-1 District

The R7-1 district is a medium density apartment house district mapped in much of the Bronx. The FAR range is from 0.87 to 3.44 under the height factor developments and up to 4.0 for quality housing development regulations.

The Quality Housing Regulations optional in R7-1 districts permit an FAR of 4.00 on wide streets with a maximum building height of 80 feet. The maximum FAR on narrow streets is 3.44 with a maximum building height of 75 feet.

Attic allowance

As a general rule, the FAR for the residential districts described above: R3-1, R3-2, R3A, R3X, R4, R4-1, and R4A may be increased up to 20% by an attic allowance for the inclusion of space beneath a pitched roof.

Community Facilities

Community facilities are permitted in most of the city's residential, commercial and light manufacturing districts, but bulk regulations differ according to type of facility and zoning district.

According to the zoning resolution in contextual residential and commercial districts, the maximum permitted floor area ratio is generally the same for residential and community facility buildings. Whereas in non-contextual residential, commercial and light manufacturing districts, the maximum FAR for community facility buildings is generally higher than it is for other buildings.

Commercial District Regulations (4)

C3 and C3A Districts

C3 and C3A districts permit waterfront recreational activities in areas along the waterfront that are usually adjacent to residential districts. These districts also permit residences and all types of community facilities. The commercial floor area ratio permitted in C3 districts is 0.5. Commercial buildings may be no more than two stories or 30 feet high, whichever is less. Residential development in C3 districts is governed by R3-2 district regulations; in C3A districts, residential development is governed by R3A regulations which permit single and two-family detached residences with an FAR of 0.5.

C4-1 District

The C4-1 district permits major shopping centers, department stores, theaters, and other commercial uses that serve a larger region and generate more traffic than neighborhood shopping areas. This district is usually mapped outside of central business districts. The commercial FAR permitted in C4-1 districts is 1.0 and has an R5 residential district equivalent.

C8-1 District

The C8-1 district allows for automotive sales, service establishments, and other heavy commercial services typically located along major vehicular traffic arteries where concentrations of such uses have developed. Housing is not permitted in this district. The commercial FAR permitted in C8-1 districts is 1.0.

Commercial Overlays C1-1, C1-2, C1-3, C1-4, C2-1, C2-2, C2-3, C2-4

C1-1 through C1-5 and C2-1 through C2-5 districts are commercial overlays mapped within residential districts, and are found extensively in the city's lower and medium density areas. Mapped along streets that serve local retail needs and that typically include neighborhood grocery stores, restaurants and beauty parlors. C2 districts permit a slightly wider range of uses that would not be supported by smaller neighborhoods, such as funeral homes and repair services. In mixed-use buildings commercial uses are limited to one or two floors and must always be located below the residential use. When commercial overlays are mapped in R1 through R5 districts, the maximum commercial FAR is 1.0; when mapped in R6 through R10 districts, the maximum commercial FAR is 2.0.

Manufacturing District Regulations (4)

M1-1 and M1-2 District

The M1 district is often a buffer between M2 or M3 districts and adjacent residential or commercial districts. Light industries are typically found in M1 areas, which include woodworking shops, repair shops, and wholesale service and storage facilities. Nearly all industrial uses can locate in M1 areas if they meet the more stringent M1 performance standards. Offices, hotels and most retail uses are also permitted. Certain community facilities are permitted by special permit such as hospitals, but houses of worship are permitted as-of-right. The

permitted maximum FAR for M1-1 is 1.0 and for M1-2 is 2.0.

M2-1 District

M2 districts are located between light and heavy industrial areas, and are mapped mainly in the city's older industrial areas along the waterfront. The permitted FAR for this district is 2.0.

M3-1 District

M3 districts allow heavy industries that generate noise, traffic or pollutants. Like M2 districts, M-3 districts are usually located near the waterfront and buffered from residential uses. The maximum FAR for a M3-1 district is 2.0.

Zoning Districts within the Study Area

In order to analyze existing zoning, the study area has been divided into four quadrants using the Hutchinson River Parkway as the eastern or western boundary, and East Tremont Avenue as the northern or southern boundary. The quadrants' boundaries are described below:

Quadrant I: bounded by Bartow Avenue into East Gun Hill Road into Eastchester Road and Pelham Parkway to the north, Bronxdale Avenue to the west, East Tremont Avenue to the south and Hutchinson River Parkway to the east.

Quadrant II: bounded generally by the end of the New England Thruway to the north, Hutchinson River Parkway to the north and west, East Tremont Avenue to the south, and the Bruckner Expressway to the east.

Quadrant III: bounded by East Tremont Avenue to the north, Castle Hill Avenue to the west, the East River to the south, and Hutchinson River Parkway to the east.

Quadrant IV: bounded by East Tremont Avenue into Bruckner Boulevard to the north, Hutchinson River Parkway to the west, Ferry Point Park and the East River to the south, and Throgs Neck Expressway to the east.

Zoning Districts Located in Quadrant I

Residential Districts

The following residential zoning districts are located in Quadrant I: R3-1, R3-2, R3X, R4, R4-, R4A, R5, R5D, R6, and R6A.

The two R3-1 districts are situated along Tenbroeck Avenue generally between Lydig Avenue and Morris Park Avenue. The three R3-2 districts and the R3X district are concentrated north of Pelham Parkway. One R4 district occupies a large portion of the Quadrant I area and is located south of Pelham Parkway. The second R4 stretches along East Tremont Avenue from Bronxdale Avenue to Silver Street. The R4-1 and R4A districts are mainly concentrated south of Pelham Parkway and west of the Amtrak Railroad Line. A large R4-1 district is located north of Pelham Parkway, bordering East Gun Hill Road. Adjacent to this district is a R4A district located roughly between Allerton and Astor Avenues. The only R5 district in the Quadrant is mapped west of the Hutchinson River Parkway. The R5D district runs along Williamsbridge Road. There are three small R6 districts scattered throughout the quadrant. The one R6A district runs along the south side of Pelham Parkway.

Commercial Districts

The following commercial zoning districts are located in Quadrant I: C4-1 and C8-1. The C4-1 district is situated along East Gun Hill Road and the C8-1 district runs along the Amtrak Railroad Line and Bronxdale Avenue.

The following commercial overlay zoning districts are found in Quadrant I:

C1-1, C1-2, C1-4, C2-1, C2-2 and C2-4.

The C1-1 commercial overlay districts are mainly mapped along Tenbroek Avenue. The C1-2 overlays are situated further north and west of the C1-1 districts along Williamsbridge Road between Rhinelander and Morris Park Avenues. They also lie along Morris Park Avenue between Bronxdale and Haight Avenues. In the northern portion of the quadrant, there are a few C1-2 overlays located along three blocks of Eastchester Road. Generally the C1-4 overlay districts are situated along Williamsbridge Road between Rhinelander Avenue and Pelham Parkway; on either side of Morris Park Avenue between Haight and Bogart Avenues.

C2-1 overlay districts are located in the northern portion of the quadrant along East Gun Hill Road roughly between Kingsland Avenue and the New England Thruway. The C2-2 overlay districts lie along East Tremont Avenue and Williamsbridge Road just south of Amtrak Railroad Line. The small C2-4 overlay lies along Williamsbridge Road between Neill and Lydig Avenues.

Manufacturing Districts

The following manufacturing zoning districts are located in Quadrant I: M1-1 (2

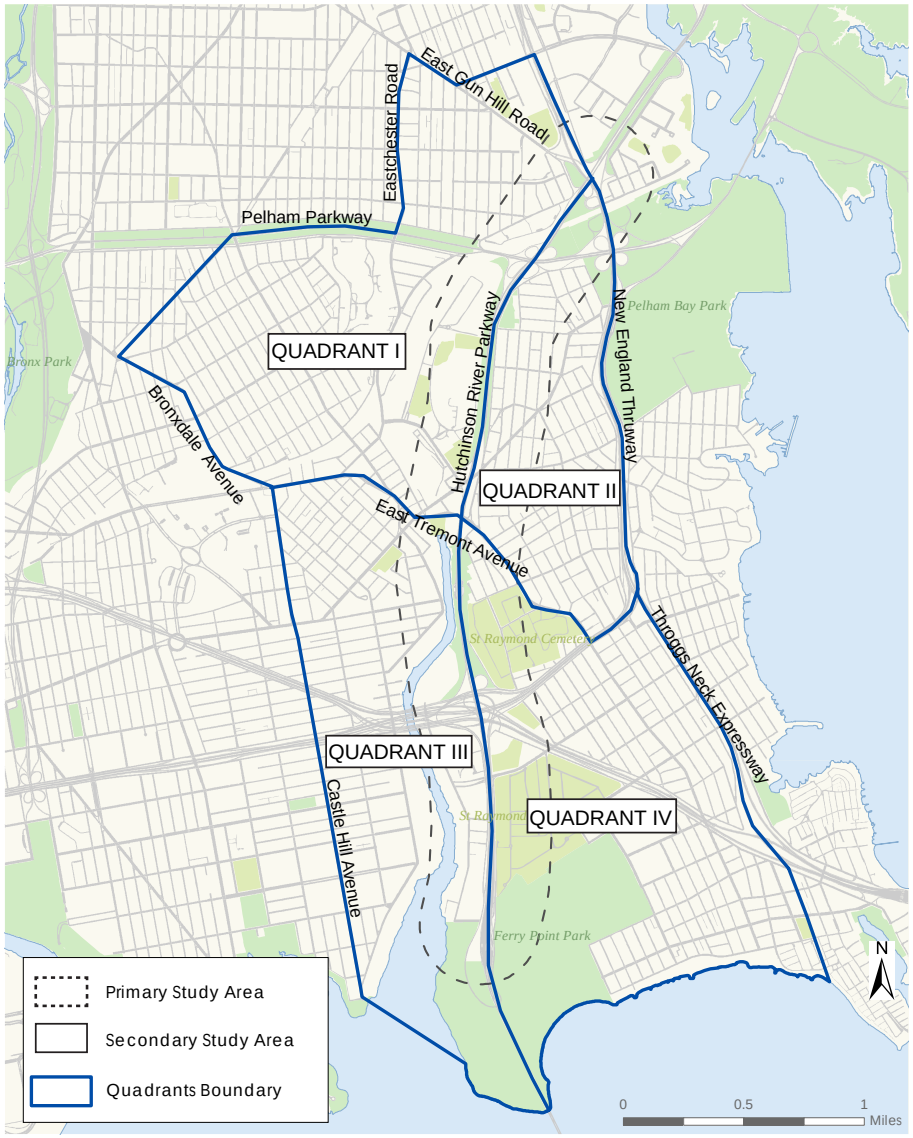


Figure A.2: Subdivision in Quadrants of Study Area

districts).

One large M1-1 district is located south of Pelham Parkway between Eastchester Road and Hutchinson River Parkway, north of East Tremont Avenue. The other M1-1 district is in the northern portion of the quadrant bordered by Bartow Avenue, East Gun Hill Road and the New England Thruway.

Zoning Districts Located in Quadrant II

Residential Districts

The following residential zoning districts are located in Quadrant II: R3-2, R4, R4A, R5, R5A, R6, and R7-1.

The R3-2 residential district is situated along the east side of the Hutchinson River Parkway and is a continuation of the R3-2 district located north of the rail line. A large R4A district is located just north of East Tremont Avenue and expands up to Middletown Road. Just south of this district is a R4 district that occupies a small area at the location where the Bruckner Expressway meets with the Throgs Neck. Directly north of Middletown Road are a small R5 district and four R5A districts, which are generally found on either side of Crosby and Westchester Avenues. In the middle of it all, there is a R6 district generally surrounded by the R5 and R5A districts. The R7-1 districts occupy small pockets of the study area and are scattered within the quadrant mainly between Pelham Parkway and Middletown Road.

Commercial Districts

There are no commercial zoning districts in Quadrant II; however several commercial overlays are located in this quadrant: C1-2, C2-2, C1-4, and C2-4.

The C1-2 commercial overlay districts are located along East Tremont Avenue (between Ericson Place and Waterbury Avenue), along the Bruckner Expressway (for two blocks east of East Tremont Avenue) and along Middletown Road. The C1-4 overlay districts are situated along Crosby Avenue between Westchester Avenue and Middletown Road. The C2-4 overlay districts run generally along the length of Westchester Avenue within Quadrant II. The C2-2 commercial overlay districts mainlystretch along East Tremont Avenue from Waterbury Avenue to Bruckner Expressway. The other C2-2 overlay districts are scattered along Westchester Avenue and are located at Crosby Avenue and at Continental Avenue.

Manufacturing Districts

There are no manufacturing zoning districts located in Quadrant II.

Zoning Districts Located in Quadrant III

Residential Districts

The following residential zoning districts are located in Quadrant III: R3-2, R4, R4A, R5, R5A, and R6.

The R3-2 district is mapped on the western border of the study area between Bruckner Expressway and Seward Avenue. The R4 district is situated along the south eastern border of the Hutchinson River Parkway and spills into Quadrant III. One of the R4A districts is located along the Hutchinson River Parkway between Wenner Place and Jay Place, and the other is further north in the quadrant and just east of Westchester Avenue. One large R5A district lies in the northwestern portion of the quadrant to the west of Westchester Avenue. Two R5 districts are situated along the western border of Quadrant III, one to the north of the Bruckner Expressway and the other just south of Seward Avenue. A small area designated with a few R6 districts stretches along East Tremont Avenue and partially along the Hutchinson River Parkway.

Commercial Districts

The following commercial zoning districts are located in Quadrant III: C3 and C8-1. The small C3 district is located at the southern boundary of the study area and the C8-1 district is situated adjacent to the Westchester Creek just north of the Bruckner Expressway.

The following commercial overlay districts are located in Quadrant III: C1-1, C1-2, C1-4, C2-1, C2-2, and C2-4.

The only C1-1 overlay district is located along Castle Hill Avenue between Seward Avenue and Randall Avenues. Several C1-2 commercial overlay districts lie along Castle Hill Avenue from the Bruckner Expressway to Westchester Avenue. An additional C1-2 overlay district is situated further north in the quadrant in the Westchester Square BID area. A few C1-4 commercial overlay districts are mapped as well north of Westchester Avenue along Castle Hill Avenue and along East Tremont Avenue near Lane Avenue. The C2-1 commercial overlay is indicated as a small pocket just south of the intersection of the Bruckner Expressway and Hutchinson River Parkway. The C2-2 commercial overlay districts are roughly scattered along Castle Hill Avenue, Westchester Avenue and East Tremont Avenue. The C2-4 overlay districts lie also mainly along Westchester Avenue and East Tremont Avenue.

Manufacturing Districts

The following manufacturing zoning districts are located in Quadrant III: M1-1, M1-2, M2-1, and M3-1.

Several M1-1 districts are generally located along Zerega Avenue from Westchester Avenue to the southern tip of the quadrant. There is one M1-1 district situated close to Ferry Point Park on the east side of the Westchester Creek between Wenner Place and Schley Avenues. There are two M1-2 districts. The larger of the two M1-2 districts is mapped along Westchester Creek between Wenner Place and the Bruckner Expressway. The other M1-2 district is further north just below Westchester Avenue. There are also two M2-1 districts. The larger M2-1 district lies along the Westchester Creek between Lafayette and Lacombe Avenues, and the smaller M2-1 district is located just north of the Cross Bronx Expressway bounded by Havemeyer Avenue to the west and Zerega Avenue to the east. The three small M3-1 districts are scattered along Westchester Creek from Lafayette Avenue to Westchester Avenue.

Zoning Districts Located in Quadrant IV

Residential Districts

The following residential zoning districts are located in Quadrant IV: R3-2, R3A, R4, R4-1, and R4A.

The R3-2 residential district is located along the southern border to the east of Ferry Point Park. The R3A district mainly runs along and follows East Tremont Avenue. The largest of the R4 districts lies along the Hutchinson River Parkway and expands from Ferry Point Park reaching East Tremont Avenue to the north. The second R4 district runs along Throgs Neck Boulevard. Finally a small R4 district is located further south bounded by Lawton Avenue to the north, Revere Avenue to the west, Schurz Marina Drive to the south and Hollywood Avenue to the east. There are four R4-1 districts scattered from the north to the south throughout Quadrant IV. A small R4A district is mapped at the south east corner of the study area along Throgs Neck Boulevard.

Commercial Districts

There is one commercial zoning district located in Quadrant IV: C3A. It lies at the southern end of the study area generally bordered by Schurz Marina Drive to the north, Emerson Avenue to the west, and Revere Avenue to the east.

The following commercial overlay zoning districts are located in Quadrant IV:

C1-2, C1-3, C2-1, C2-2, and C2-3.

The C1-2 commercial overlay districts run generally along East Tremont Avenue: a few are grouped between Philip Avenue and the Cross Bronx Expressway; others are grouped between Meyers Street and Barkley Avenue; and many lie between the Hutchinson River Parkway and Waterbury Avenue. A small area along Sampson Avenue just east of Ferry Point Park is also occupied by a C1-2 commercial overlay. Among the commercial overlays along East Tremont Avenue a C1-3 overlay district is found between Philip and Randall Avenues. A C2-1 commercial overlay district is situated at the southern border of Quadrant IV and other C2-1 overlay districts lie along East Tremont Avenue just south of the Cross Bronx Expressway. C2-2 commercial overlay districts run along East Tremont Avenue on either side of the Bruckner Expressway. There is one small area of C2-2 overlay district lying along the Cross Bronx Expressway at Dewey Avenue. Finally there is a C2-3 overlay district mapped between Davis and Buttrick Avenues near the southern border of the quadrant.

Manufacturing Districts

There are no manufacturing zoning districts located in Quadrant IV.

Appendix B
Socioeconomics Characteristics

The area for the socioeconomic analysis is comprised of fourteen census tracts that are completely within or lie at least 50 percent or more in the ¼ mile buffer around the Hutchinson River Parkway from Pelham Parkway to Ferry Point Park. The census tracts are as follows: 110, 166, 194, 264, 266.01, 266.02, 300, 90, 96, 284, 310, 88, 94 and 102.

Vehicular ownership and journey-to-work socioeconomic characteristics gathered for this report are an aggregate of all census tracts within the larger study area which extends beyond the ¼ mile area boundary. This was done because the 2010 Census changed the way information can be extrapolated from the data collected. The "Long Form" was removed from the census after 2000 and a separate survey called the American Community Survey (ACS) was developed. The American Community Survey provides yearly, three-year and five-year estimates of the survey. However, both the number of recipients and respondents is significantly lower than the decennial census. The problem faced in this study is reliability – especially at smaller levels where only a small sampling of the population received the ACS form compared with 2000, when the census bureau collected data from a larger sample of the population. Therefore, the census bureau releases data with a "margin of error" that indicates the level of reliability of the given data.

Population

The population analysis covers the U.S. Census decennial years 1990, 2000 and 2010. The ¼ mile corridor study area had a population increase of close to 10 percent over this 20 year period, growing from 31,685 residents in 1990 to 34,775 in 2010. From 1990 to 2000, the population grew by 7 percent, and from 2000 to 2010, it grew by another 3 percent. For the same 20-year period,

	1990	2000	2010	1990-2000 % change	2000-2010 % change	1990-2010 % change
NYC	7,322,564	8,008,278	8,175,133	9%	2%	12%
Bronx	1,203,789	1,332,650	1,385,108	11%	4%	15%
Study Area	31,685	33,769	34,775	7%	3%	10%

Source: US Census 1990, 2000, and 2010

Table A.1: Population Trends by Area

Total Population Change 1990, 2000 and 2010									
Census Tract	Year 1990	Year 2000	1990-2000 Number Change	1990-2000 % Change	Year 2010	2000-2010 Number Change	2000-2010 % Change	1990-2010 Number Change	1990-2010 % Change
110	476	21	-455	-96%	151	130	619.0%	-325	-68%
166	1,998	2,226	228	11%	2,166	-60	-2.7%	168	8%
194	1,471	1,666	195	13%	1,903	237	14.2%	432	29%
264	4,286	4,798	512	12%	4,935	137	2.9%	649	15%
266.01	3,056	3,003	-53	-2%	2,911	-92	-3.1%	-145	-5%
266.02	5,162	5,266	104	2%	5,301	35	0.7%	139	3%
300	5,516	5,862	346	6%	5,838	-24	-0.4%	322	6%
90	N/A	3,687	-	-	3,667	-20	0.5%	-	-
96**	405	2,099	1694	418%	2,594	495	24%	2189	540%
284	910	857	-53	-6%	894	37	4%	-16	-2%
310	3,581	4,284	703	20%	4,415	131	3.1	834	23%
88*	3,499	-	-	-	N/A	-	-	-	-
94***	1,306	-	-	-	N/A	-	-	-	-
102*	19	-	-	-	N/A	-	-	-	-
Total	31,685	33,769	2084	7%	34,775	1,006	3%	3090	9%

Source: US Census 1990, 2000, 2010

Note: * Census Tracts 88 and 102 were changed in 2000 and 2010 into Census Tracts number 90.
** Censust Tract 196 changed to Census Tract 96 for the 2000 and 2010 Census.
*** Census Tract 94 in 1990 was changed in 2010 to Census Tract 96

Table A.2: Study Area Population Change (1990 -2010)

New York City's population grew by 12 percent, while the population of the Bronx grew by 15 percent.

Households

According to the 2010 U.S Census, there are 13,396 households in the ¼ mile corridor study area, with an average of 2.71 persons per households By comparison, New York City's total number of households is 3,109,794, with an average of 2.61 per household, and the Bronx has a total of 483,449 households, with an average of 2.77 per household.

	Total Households	Persons per Household Average
NYC	3,109,794	2.61
Bronx	483,449	2.77
Study Area	13,396	2.71

Table A.3: Total Number of Households (Year 2010)

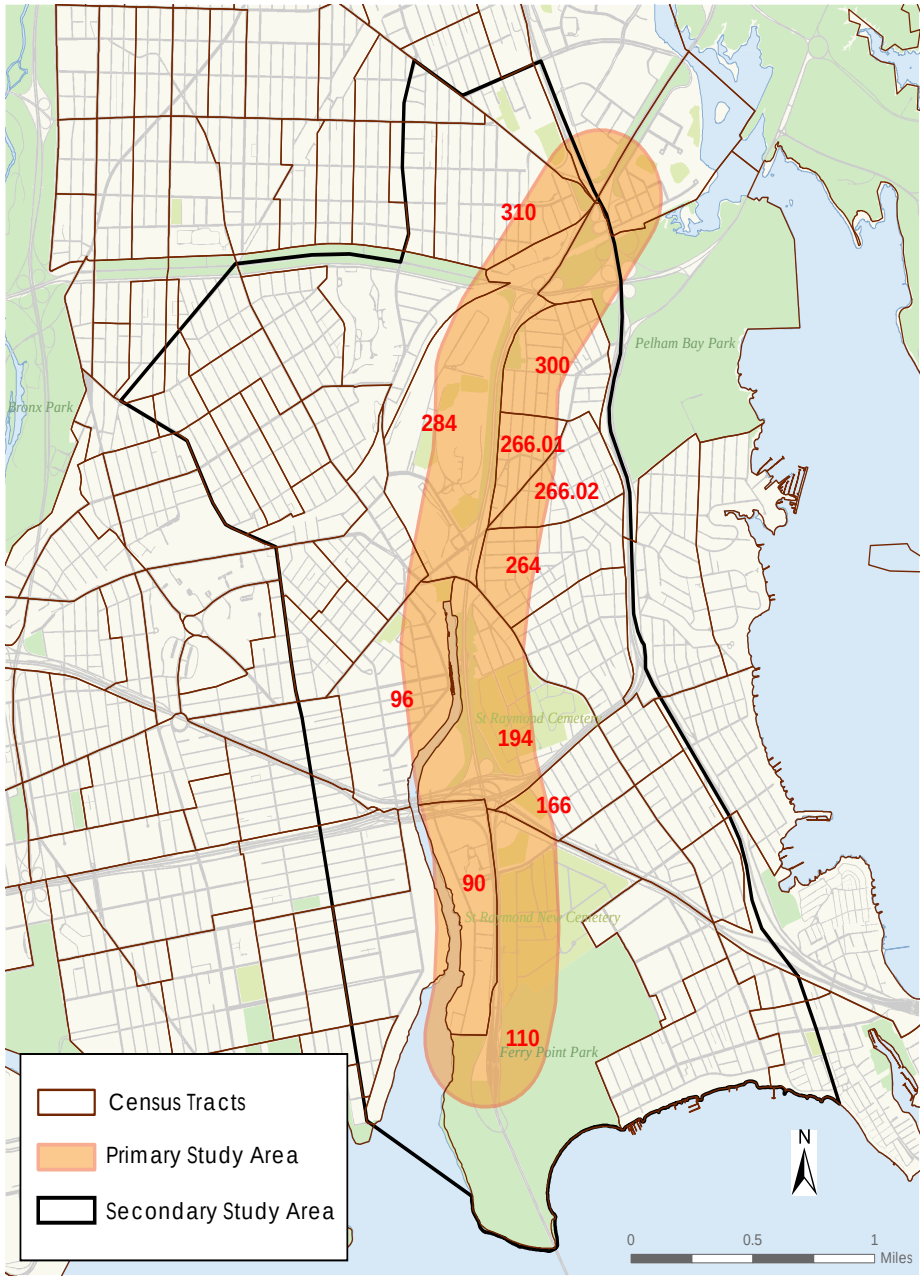


Figure A.3: Study Area Census Tracts Map

Further analysis of the average persons per household by census tract show that census tracts 110, 90 and 96, located in the southern section of the study area, have the highest average number of persons per household, with 3.51, 3.14 and 3.38 respectively.

Census Tract	Total Households	Persons per Household Average
110	43	3.51
166	762	2.83
194	675	2.81
264	2,162	2.43
266.01	1,391	2.09
266.02	2,549	2.08
300	2,592	2.25
90	1,167	3.14
96	710	3.38
284	61	2.54
310	1,284	2.77
Total/Average	**13,396**	**2.71**

Source: US Census 1990, 2000 and 2010

Table A.4: Total Number of Households by Census Tracts (2010)

Vehicle Ownership

2010 ACS Census data suggests that car ownership in the larger study area (beyond the ¼ mile corridor) is lower than in New York City, but comparable to that of the Bronx. The Bronx does not account for all households as documented in the chart below and there is a +/- 5,577 margin of error in the reporting. Below is a breakdown of car ownership in the larger study area: 16,660 households have one or more vehicles with a margin of error of 785 and 28,335 households do not own a vehicle with a margin of error of 1,086.

	Total Households	Total Households with No Vehicle	Percentage of Households	Total Households with one or more Vehicles	Percentage of Households
NYC	3,039,467	1,691,386	56%	1,348,081	44%
Bronx	471,912	285,482	61%	150,430	32%
Study Area	44,995	28,335	63%	16,660	37%

Table A.5: Vehicle Ownership by Household

Journey -to-Work

The 2010 ACS data indicates that the larger study area has a labor force (16 year or older) of 70,715 workers who traveled into the study area to work. Of the total inbound labor force, 41 percent (28,937) used a car, truck or van, including driving alone or carpooling. Of the remaining inbound labor force, 24 percent (16,669) used public transportation, 6 percent (4,144) walked to work, and 0.2 percent cycled to work (155). The percentage of commuters who drive to work in the larger study area (beyond the ¼ mile corridor) is 1.5 times the percentage of those who use public transportation.

	Auto	Public Transport	Walk	Bicycle	Other Means	All Workers
NYC *	1,001,982	2,012,726	364,827	27,930	208,124	3,615,588
Bronx *	144,157	302,018	38,070	2,030	21,319	507,594
Study Area **	28,937	16,669	4,559	155	20,395	70,715

* Source: American Community Survey (ACS), 2010 One-Year Estimates, www.census.gov/acs - S0801: Commuting Characteristics

** Source: American Community Survey (ACS), 2010 One-Year Estimates

Table A.6: Journey-to-Work Modal Split for Workers 16 Years and Older (2010)

Several employers in the Morris Park area provided an estimate of the number of employees who work at their establishments in order to provide insight to how many commuters come to work at their facilities located within the study area.

Institutions	Employees
Albert Einstein College of Medicine at Yeshiva University	2,895
Jacobi Medical Center	3,867
Calvary Hospital	764
Bronx Psychiatric Center	950
New York Westchester Square Medical Center	609
Albert Einstein Hospital (Montefiore Medical Center)	2,000 (faculty members)
PSAC II	850 (estimated)
Hutchinson Metro Center Office Complex	4,000 +
The Morris Park (Merchants)Alliance	200 (member businesses)

Table A.7: Morris Park Area Institutions and Number of Employees (estimation)

Appendix C
Parking

On-Street Parking

A- Street Cleaning Regulations

Many streets in New York City have alternate side regulations, which allow for street cleaning. Most alternate side parking signs are clearly marked with signs featuring a "P" crossed by a broom. The City can suspend alternate side parking rules on legal and religious holidays and for emergency suspensions due to severe weather or other emergencies.

There are two types of street cleaning regulations along the corridor study area and surrounding neighborhoods:

Daytime street cleaning regulations:

- No parking due to street cleaning/garbage pickup:
    - Generally twice a week or for the entire week except Sundays:
        - 9:30am-11:00am
        - 8:30am-10:00am
        - 11:30am-1:00pm
    - A few streets with 30minute restrictions in the morning during the following periods:
        - 7:30 – 8:00am
        - 8:00 – 8:30am
        - 8:30 – 9:00am

Nighttime street cleaning regulations:

- Restricted parking at night requiring "No Parking"

B- Metered Parking

Some metered parking zones have alternate side parking rules. When alternate side parking is suspended for a holiday or other reason, the parking meters remain in effect.

Metered Parking Regulations:

Figure A.4: On-Street Parking Regulations Map

- 2-hour metered parking
    - 8:00am - 7:00pm except Sundays
    - 8:30am - 7:00pm except Sundays
    - 9:00am - 8:00pm except Sundays
    - 9:00am - 7:00pm except Sundays
- 1-hour metered parking
    - 8:30 – 7:00pm except Sundays
- Muni-meter parking restrictions: many streets in the study area are now controlled by muni-meters during the following periods:
    - 9:30am - 7:00pm except Sundays
    - 9:00am - 7:00pm except Sundays
    - 8:30am - 7:00pm except Sundays

C- Curb Use Restrictions

If there is more than one sign posted for the same area, the more restrictive one is the one in effect. If a sign is missing, the remaining posted regulations are the ones that are in effect.

- No Standing/No Parking during certain hours of the day during the week except on Sundays
- No Standing/No Parking during certain hours of the day during the week except on Saturdays and Sundays
- No Parking during school days
- No Standing except authorized vehicles (such as government agencies, ambulance, ambulette, doctors, NYPD, FDNY)
- No Standing Anytime
- No Standing at bus stops

Off-Street Parking Facilities

The locations of all public parking lots and garages within the study area licensed by the New York City Department of Consumer Affairs have been inventoried. There are ten parking lots and garages concentrated in the northern portion of the study area mainly adjacent to the Hutchinson Metro Center (west and south), near the Westchester Square BID area and in the neighborhood of Pelham Bay.

The off-street public parking was surveyed in April 2014 by contacting the manager of each facility by telephone to assess the approximate utilization levels during the weekday midday period. Data was collected for 8 of the 10 parking facilities. Currently there are 1,688 off-street parking spaces available in the study area. During the weekday midday peak period 1,143 spaces were occupied, representing a 68 percent utilization rate leaving 32 percent underutilized.

Garage Name	Type	Garage Location	License Number	Capacity (spaces)	Typical Midday Utilization (spaces)	Typical Midday Utilization (percentage)
1- Palmer Realty Co (Gambardella, Anthony) *	Lot	1602 Castle Hill Avenue, 10462	0959606	*10*	No information available	No information available
2-PF Parking Corp. (Central Pkg System)	Garage	1975 Eastchester Road, 10461	1393075	691	280	40%
3-Earnest Massa Family LLC	Lot	3113 Westchester Avenue, 10461	1194021	*12*	No information available	No information available
4-MP Pearl LLC	Lot	2510 Westchester Avenue, 10461	1361271	131	92	70%
5-Quik Park Monte LLC - Montefiore Hospital (Central Parking System of NY Inc)	Garage	1601 Seddon Street, 10461	1151772	150	80	53%
6-MP POP LLC	Lot	1527 Blondell Avenue, 10461	1283185	30	30	100%
7-G & R Parking Service Inc.	Garage	1550 Blondell Avenue, 10461	0883497	245	245	100%
8-Central Parking System of NY Inc.	Lot	1811 Eastchester Road, 10461	1177347	225	200	89%
9-Central Parking System of NY Inc.	Lot	3260 Westchester Avenue, 10461	1279597	176	176	100%
10-Central Parking System of NY Inc. **	Lot	3261 Westchester Avenue	1279598	40	40	100%
TOTAL				1,688	1,143	68%

*Parking spaces are rented to neighborhood residents

**Parking spaces often rented to doctors of nearby medical facilities

Table A.8: 2014 Off-Street Parking Utilization

Figure A.5: Off-Street Parking Facilities Map

Appendix D Public Transportation

Subway Service

The Lexington Avenue number 6 route runs along the Pelham Line between Brooklyn Bridge-City Hall and Pelham Bay Park. The 6 route traverses the study area along Westchester Avenue, making stops at Westchester Square, Middletown Road, Buhre Avenue and Pelham Bay Park. The 6 service runs at all times.

Bus Service

A route-by-route description of the New York City Transit buses in the area of study follows. In general the buses run at all times, except if described otherwise.

Bx4/Bx4A

Both of these services run between Westchester Avenue and Bergen Avenue (aka "The Hub), and Westchester Square, at Westchester Avenue and Lane Avenue. Bx4 service runs almost exclusively along Westchester Avenue, while the Bx4A runs through Parkchester via Metropolitan Avenue, Castle Hill Avenue and East Tremont Avenue.

Bx5

Bx5 service runs between West Farms Road/Westchester Avenue and Southern Boulevard in Hunts Point, and the Pelham Bay Park (6) subway terminal. On summer weekends, service is extended to Orchard Beach. Numerous Bx5 runs do not extend into the study area, terminating to the west at a shopping center in Soundview.

Bx8

Bx8 service runs between East 226th Street and White Plains Road in Williamsbridge and Tierney Place and Longstreet Avenue in Locust Point. On weekdays and weekend early mornings and evenings, not all buses run the full route; most of these abbreviated runs provide services from Westchester Square to the south, while a smaller amount serve Westchester Square to the north.

Bx12 Local/BX12 Select Bus Service (SBS)

Although both the Bx12 Local and the Bx12 SBS travel the same route across the Bronx, they are scheduled separately. The "Public Transit Services Frequen-

Figure A.6: Bus Routes and Subway Line Map

cies" table at the end of this section summarizes both routes.

SBS differs from conventional local and limited-stop service. Passengers pre-pay their fares at SBS stop vending machines, and are permitted to board the bus through any door. Where feasible, SBS services have a dedicated traffic lane, speeding travel times. Stops are also spaced farther apart, similar to the distance between most subway stops.

Bx21

Bx21 service runs between Lincoln Avenue and East 136th Street in Mott Haven and Westchester Square. A small amount of runs do not extend east beyond West Farms Square.

Bx22

All Bx22 service runs along the southwestern periphery of the study area, via Castle Hill Avenue.

Bx22 service has three patterns:

- Between Castle Hill Avenue and Zerega Avenue in Castle Hill and the Pelham Parkway (2, 5) subway station only. This service pattern runs late nights and early weekend mornings.
- Between Castle Hill Avenue and Zerega Avenue in Castle Hill, and East Fordham Road and Valentine Avenue in Fordham. This service essentially runs 7 days a week, except late nights. (From approximately 5:30pm to 9:45pm weekdays, all northbound service follows the third pattern, described below).
- Between Castle Hill Avenue and Zerega Avenue in Castle Hill, and West 205th Street and Paul Avenue in Bedford Park. This pattern runs from approximately 6:45am to 10:00am weekdays, but does not run weekends. Southbound buses serve East Fordham Road and Valentine Avenue, while northbound buses pass a block to the north.

Bx23

All Bx23 service begins and ends at the Pelham Bay Park (6) subway station, looping both clockwise and counterclockwise through some or all of Co-Op City's five sections in one of three service patterns:

- via Sections 1, 2, 3 and 4 (which have internal streets beginning with

the letters A through D). This service pattern runs during AM and PM rush hours only, generally at 15-minute intervals in each direction.

- via Section 5 (which has internal streets beginning with the letter E). This service pattern also runs only during rush hours, at 7- to 15-minute intervals in the AM peak and at 15-minute intervals in the PM peak.
- via all five sections. Bx23 service uses this pattern at all other times. Service runs at 30-minute headways weekday middays in each direction, and at 20- to 30-minute intervals weekday evenings. Service runs at half-hour intervals in each direction Saturday middays.

Bx24

All Bx24 service begins and ends at Westchester Square, running north to Pelham Bay Park, south along Bruckner Boulevard, and then looping counterclockwise through multiple streets in the Country Club neighborhood. The Bx24 route currently serves Westchester Avenue and stops at all subways stations along the 6 line between Westchester Square and Pelham Bay subway stations.

The Metropolitan Transit Authority announced in July 2013 plans to extend the Bx24 to the Hutchinson Metro Center from Westchester Square in order to serve this growing area. The modified route is to be implemented in mid-2014.

Bx26

Bx26 bus service runs between West 205th Street and Paul Avenue in Bedford Park and Erskine Place and Earhart Lane in Co-Op City.

Bx28

Bx28 service generally runs between Valentine Avenue and East 192nd Street in Kingsbridge, and Erskine Place and Earhart Lane in Co-Op City. This route only serves the southern part of Co-Op City during most hours, but serves all of Co-Op City late evenings, overnights and early mornings. Overnight service does not travel west of Bainbridge Avenue and East 206th Street.

Bx29

Bx29 service runs between Co-Op City Boulevard and Bartow Avenue in Co-Op City, and City Island Avenue and Rochelle Street on City Island, via the Pelham Bay Park (6) subway station.

Bx31

Bx31 service runs between Westchester Square and the Bronx-Westchester border at Katonah Avenue and East 242nd Street in Woodlawn.

Bx38

Bx38 service runs between Bainbridge Avenue and East 206th Street in Norwood and Bay Plaza Shopping Center in Co-Op City.

Bx40/Bx42

Bx40 and Bx42 buses follow an identical route through most of the Bronx. Their western endpoint is at Cedar Avenue and Undercliff Avenue in Morris Heights, near the Morris Heights Metro-North station, River Park Towers, and Roberto Clemente State Park. Both routes then cross the Bronx via Burnside Avenue and East Tremont Avenue. The routes only diverge at their eastern ends in Throgs Neck, with the Bx40 traveling to SUNY Maritime College and the Bx42 serving the Throgs Neck Houses and the western end of Harding Avenue.

Q44 LTD

Q44 buses run from Merrick Boulevard and Archer Avenue in Jamaica, Queens to East 180th Street in the Bronx, adjacent to the Bronx Zoo.

Q50 LTD

Q50 Limited service runs between Main Street and Roosevelt Avenue in Flushing, Queens and Erskine Place and Earhart Lane in Co-Op City.

BxM8 (Express Bus)

The BxM8 is an express bus route which runs between Madison Square Park in Manhattan and the Pelham Bay Park (6) subway station. Two trips originate at City Island Avenue and Rochelle Street in City Island in the AM peak and terminate there in the PM peak.

BxM9 (Express Bus)

The BxM9 is an express bus route which runs between Madison Square Park in Manhattan and Layton Avenue in Schuylerville.

BxM10 (Express Bus)

The BxM10 is an express bus route which runs between Madison Square Park in Manhattan and Eastchester Road and Boston Road in Williamsbridge.

Metro Center Shuttle Bus Service

A free shuttle bus operated by the Hutchinson Metro Center connects the center with Westchester Square.

The shuttle operates in a loop from 7:00am to 7:00pm weekdays and makes the following stops:

1. Westchester Square, on Westchester Avenue north of East Tremont Avenue.
2. Metro Center entrance on Marconi Street
3. Towers (1250)
4. Mercy College
5. 1200-North Lobby
6. 1200-South Lobby
7. Marconi Street and Waters Place
8. Return to Westchester Square

The shuttle system does not operate on a fixed schedule.

Proposed Metro-North Service

As part of Metro-North's Penn Station Access Study, an environmental analy-

Table A.9: Public Transit Service Frequencies Table - July 2013 (in minutes)

(1 of 2)

Route	AM Peak	Midday	PM Peak	Evenings	Late Nights	Saturday Midday
Subway line 6(EB)	2-5	5-6	2-5	4-6	8-20	4-6
Subway line 6(WB)	2-5	5-7	3-7	4-7	12-20	4-6
Bx4/Bx4A (NB)	3-13	6-15	3-15	6-20	Ends 1:53a	5-15
Bx4/Bx4A (SB)	3-10	7-14	8-16	9-20	Ends 12:50a	6-14
Bx5 (EB)	6-11	18-24	5-17	7-12; ends 10:40p		11-14
Bx5 (WB)	5-13	15-24	8-17	8-12; ends 10:18p		12-13
Bx8 (NB)	6-15	7-17	5-17	15-30; ends 10:01p		30-31
Bx8 (SB)	9-19	10-20	7-12	17-30; ends 11:01p		29-30
Bx12 Local (EB)	5-14	5-11	4-10	7-15	14-40	5-8
Bx12 Local (WB)	4-12	5-10	7-10	6-15	14-40	3-6
Bx12 SBS (EB)	3-11	5-10	5-9	1-10; ends 11:17p		6-13
Bx12 SBS (WB)	5-6	6-8	4-7	9-10; ends 10:01p		5-8
Bx21 (NB)	6-14	7-12	6-15	6-20	18-45	12-17
Bx21 (SB)	5-10	6-10	7-12	15-20	20-45	12-15
Bx22 (NB)	7-12	10-12	7-12	12-20	58-62	10-13
Bx22 (SB)	7-13	10-13	6-8	8-15	20-62	10-13

Table A.9: Public Transit Service Frequencies Table - July 2013 (in minutes)

(2 of 2)

Route	AM Peak	Midday	PM Peak	Evenings	Late Nights	Saturday Midday
Bx23	See route description.					
Bx24 (EB)	30	28-30	30-32	30-33; ends 10:13p		30
Bx24 (WB)	30	30-31	29-30	28-30; ends 10:43p		30
Bx26 (EB)	6-14	10-15	6-9	10-20; ends 11:43p		15-16
Bx26 (WB)	6-12	8-15	9-15	15-20; ends 10:39p		15-16
Bx28 (EB)	10-15	14-20	14-15	13-22	8-40	15-21
Bx28 (WB)	10-17	12-17	15-17	15-24	26-40	15
Bx29 (NB)	15-21	30	15-20	20-32		20-22
Bx29 (SB)	15-30	20-30	15-20	20-30		20
Bx31 (NB)	8-12	7-12	10-11	15-20		15
Bx31 (SB)	5-11	12-13	6-10	10-20	ends 1:45a	15-16
Bx38 (EB)	10-12	12-20	13-15	19-20; ends 10:35p		15-21
Bx38 (WB)	10-17	12-17	15-17	24; ends 9:52p		15
Bx40/Bx42 (EB)	5-11	7-10	4-11	9-12	14-60	12-13
Bx40/Bx42 (WB)	4-12	6-12	7-12	12-15	12-60	10-15
Q44 (NB)	5-12	7-13	7-9	7-16	9-30	8-10
Q44 (SB)	5-9	7-9	6-8	5-13	10-30	8-10
Q50 (NB)	11-20	20-32	12-15	20-30	ends 1:45a	30-33
Q50 (SB)	15-30	15-30	15-20	30-60		30-32
BxM8 (NB)	30; starts 7:55a	30-61	5-30	12-60	ends 2:05a	30-62
BxM8 (SB)	7-30	30	30	60		30
BxM9 (NB)	30; starts 7:51a	30-60	6-15	20-60	ends 2:01a	30-62
BxM9 (SB)	5-30	29-30	30-60	60; ends 11:11p		30
BxM10 (NB)	15-33; starts 7:56a	30	5-25	25-60	ends 1:10a	30-60
BxM10 (SB)	6-30	30	29-30	60; ends 11:09p		30-31

sis is being prepared regarding the feasibility of rerouting some Metro-North Hudson Line and New Haven Line trains from Grand Central Terminal to Penn Station upon the completion of the LIRR East Side Access project. (East Side Access will enable some LIRR trains now using Penn Station to be diverted to Grand Central Terminal, free up slots at Penn Station for other services.) As part of this proposal, some New Haven Line trains would be diverted at New Rochelle down the Amtrak Hell Gate Line to four new stations at Co-Op City, Morris Park, Hunts Point, and Parkchester.

The proposed Morris Park station, located one block west of the Albert Einstein College of Medicine and adjacent to the Hutch Metro Center campus, falls within the Hutchinson River Parkway Transportation Corridor study area. The Morris Park station proposal calls for direct pedestrian access to be provided from the station platform to the Metro Center campus, and to Morris Park Avenue to the west.

Metro-North estimates an approximately 25-minute commute time from Morris Park to Penn Station, and a 35-minute commute time to Stamford, Connecticut. Metro-North's reverse commuters, who live in the Bronx and work in Westchester or Connecticut, have been a growing market segment for many years – according to XXXXXXX, 5,000 Bronx residents use the railroad to commute to suburban jobs.

Metro-North service to and from Penn Station, including service to the proposed Morris Park Station cannot begin before LIRR East Side Access is complete. As of 2014, the projected completion date for the LIRR East Side Access project is scheduled for 2023.

Appendix E

Crash Data by Location and by Year

The data for the crash analysis was compiled from the New York City Department of Transportation (NYCDOT) crash database, which originated from the crash database managed by the state's Department of Transportation. In general NYCDOT excludes the following types of crashes from their database: non-reportable crashes that do not result in an injury or significant property damage; crashes that occurred on state roadways; and crashes with a location that could not be mapped. The roadway crash data maintained by NYSDOT is usually collected on-site by the local police department (City of New York Police Department), which informs the New York State Department of Motor Vehicles of all crashes.

Location	Total (3-yr period)
Eastchester Road & Morris Park Avenue	24
Eastchester Road/ Silver St & Williamsbridge Road	34
Eastchester Road & Waters Place	28
Waters Place & Marconi Street	1
East Tremont Avenue & Ericson Place	8
Westchester Avenue and Middletown Road	22
Westchester Avenue & Waters Place	26
Westchester Avenue & Blondell Avenue	18
Westchester Avenue and East Tremont Avenue	22
Brush Avenue & Bruckner Boulevard	68
Brush Avenue & Lafayette Avenue	5
Lafayette Avenue & Hutchinson River Pkwy Service Road	27

Table A.10: Total Three-Year Crashes (2009 -2011)

Location	Year 2009			Year 2010			Year 2011		
	Vehicular	Pedestrians	Bicyclists	Vehicular	Pedestrians	Bicyclists	Vehicular	Pedestrians	Bicyclists
Eastchester Road & Morris Park Avenue	8	0	0	7	1	0	6	2	0
Eastchester Road/ Silver Street & Williamsbridge Road	10	2	0	4	5	2	8	3	0
Eastchester Road & Waters Place	4	1	0	15	2	0	5	0	1
Waters Place & Marconi Street	0	0	0	0	0	0	1	0	0
East Tremont Avenue & Ericson Place	1	0	0	0	1	0	6	0	0
Westchester Avenue & Middletown Road	10	1	1	5	0	0	5	0	0
Westchester Avenue & Waters Place	10	0	0	7	0	0	9	0	0
Westchester Avenue & Blondell Avenue	4	0	0	4	2	1	7	0	0
Westchester Avenue & East Tremont Avenue	5	1	0	7	2	1	3	3	0
Brush Avenue & Bruckner Boulevard	22	1	0	20	2	0	23	0	0
Brush Avenue & Lafayette Avenue	2	0	0	2	0	0	1	0	0
Lafayette Avenue & Hutchinson River Pkwy Service Road	8	0	0	13	0	0	6	0	0

Table A.11: Type of Crashes by Year (2009 -2011)

Appendix F
Traffic Analysis Data

1- Vehicular Trip Generation Projections due to New Developments

2- Level of Service Analysis

3- Signal Timing for Recommendations

4- Data Comparison Existing Conditions

5- Data Comparison Future Conditions

6- Traffic Volume Diagrams

1- Vehicular Trip Generation Projections due to New Developments

Table A.12: Hutchinson Metro Center Area

Metro Center, Bronx

Modal Split, Trip generation, Temporal Distribution Assumptions

	Office		Retail		Hotel		Community Medical Facility			
							Staff		Visitors	
Land Use	Weekday	Saturday	Weekday	Saturday	Weeekday	Saturday	Weekday	Saturday	Weekday	Saturday
Daily Trips	18	1.6	82.56	82.56	9.4	11.07	10	4.3	33.6	14.5
Per Unit	1000 sf		1000 sf		room		1000 sf	1000 sf	1000 sf	1000 sf
Size	140		43		125		140			
Person Trips										
Peak Hour Demand										
AM Temporal Distribution	0.12		0.03		0.08		0.24		0.06	
Midday Temporal Distribution	0.15		0.19		0.14		0.17		0.09	
PM Temporal Distribution	0.14		0.10		0.13		0.24		0.05	
SAT MD Temporal Distribution	0.15		0.10		0.15		0.17		0.09	
Peak hour In/Out Split	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Daily	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
AM	0.96	0.04	0.50	0.50	0.39	0.61	1.00	0.00	0.92	0.08
Midday	0.39	0.61	0.50	0.50	0.54	0.46	0.50	0.50	0.50	0.50
PM	0.05	0.95	0.50	0.50	0.65	0.35	0.00	1.00	0.31	0.69
SAT MD	0.60	0.40	0.50	0.50	0.54	0.46	0.50	0.50	0.50	0.50
Mode Split	**ALL**		**ALL**		**ALL**		**AM/PM**	**Midday**	**ALL**	
Auto	0.523		0.03		0.100		0.65	0.02	0.25	
Taxi	0.016		0.02		0.180		0.01	0.01	0.15	
Bus	0.040		0.10		0.030		0.17	0.07	0.19	
Subway	0.207		0.05		0.460		0.09	0.07	0.21	
Walk	0.103		0.80		0.230		0.08	0.83	0.20	
Other	0.111		0.00		0.000		0.00	0.00	0.00	
	1.000		1.00		1.00		1.00	1.00	1.00	
Vehicle Occupancy										
Auto	1.37		1.60		1.40		1.00		1.65	
Taxi	1.40		1.20		1.80		1.40		1.20	

Truck Trips Generation Characteristics (Source: EISs, US Government, et al)

Land Use	Office		Retail		Hotel		Community Medical Facility	
	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday
Truck Trips	0.15	0.01	0.45	0.02	0.06		0.45	0.02
per unit	1000 sf		1000 sf		room		1000 sf	
Truck Demand								
Peak Hour Demand								
AM	0.10		0.10		0.12		0.10	
Midday	0.11		0.08		0.09		0.08	
PM	0.01		0.05		0.00		0.05	
SAT MD	0.11		0.11		0.11		0.08	
Truck Trips								
Peak Hour In/Out Split	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
AM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Midday	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
PM	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
SAT MD	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Metro Center, Bronx

Vehicle Trip Calculations

NET TOTAL TRIPS
25% Linked Trips for Local Retail

Land Use	Office		Retail		Hotel		Community Medical Facility				0.75*(PROPOSED)			Totals		
							Staff		Visitors							
Auto Trips	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In & Out**	**In**	**Out**	**In & Out**
Daily	481	481	33	33	42	42	456	456	356	356	25	25	50	1361	1361	2722
AM	109	5	1	1	2	4	219	0	39	3	1	1	2	371	13	384
Midday	56	88	6	6	7	6	2	2	32	32	5	5	10	102	133	235
PM	7	125	3	3	7	4	0	219	11	25	2	2	4	27	375	401
SAT	8	5	3	3	8	7	33	33	14	14	2	2	4	65	61	126
Taxi Trips	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In & Out**	**In**	**Out**	**In & Out**
Daily	14	14	30	30	59	59	5	5	294	294	22	22	44	394	394	787
AM	3	0	1	1	3	5	2	0	32	3	1	1	2	42	9	52
Midday	2	3	6	6	9	8	1	1	26	26	4	4	8	42	42	84
PM	0	4	3	3	10	5	0	2	9	20	2	2	4	21	33	55
SAT	0	0	3	3	11	10	0	0	11	11	2	2	4	25	23	49
TruckTrips	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In & Out**	**In**	**Out**	**In & Out**
Daily	21	21	19	19	8	8	63	63	63	63	15	15	30	170	170	339
AM	1	1	1	1	0	0	3	3	3	3	1	1	2	9	9	17
Midday	1	1	1	1	0	0	2	2	2	2	1	1	2	7	7	15
PM	0	0	0	0	0	0	2	2	2	2	0	0	0	3	3	7
SAT	1	1	1	1	0	0	2	2	2	2	1	1	2	7	7	15
Vehicle Trips	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In & Out**	**In**	**Out**	**In & Out**
Daily	531	531	112	112	167	167	528	528	1007	1007	84	84	168	2317	2317	4635
AM	116	6	4	4	10	15	226	3	107	12	3	3	6	463	39	502
Midday	61	94	18	18	25	21	7	7	87	87	14	14	28	194	224	418
PM	7	133	9	9	27	14	2	225	31	67	7	7	14	73	446	519
SAT	9	7	10	10	31	26	36	36	39	39	7	7	14	123	116	238

1- Vehicular Trip Generation Projections due to New Developments

Table A.13: Blondell Avenue (near Fink Avenue)

Blondell Commons, Bronx

Modal Split, Trip generation, Temporal Distribution Assumptions

Mode Split	
Auto	Drive Alone+Carpool
Taxi	
Bus	Bus, Trolleybus+Streetcar, Trolleycar
Subway	
Walk	
Other	Railroad+Ferryboat+Motorcycle+Bicycle+Other Means+Worked at Home
Trip Generation	
Land Use Daily Person Trip Rate	Daily Trip per Unit x Number of Units (A)
Mode Split	Means of Transportation (B)
Vehicle Occupancy	Average Number of Persons per Vehicle (C)
Peak hour Temporal Distribution Rate	Peak Hour Distribution of Daily Trips (D)
Peak hour In/Out Split	Percent Split of Trips Entering/Exiting Land Use During Peak Hour (E)
Person Trips	Daily Trip per Unit x Number of Units (A)
Vehicle Trips	((((A x B)/C) x D) x E)
Land Use Daily Truck Trip Rate	Daily Trip per Unit x Number of Units (F)
Peak Hour Temporal Distribution Rate	Peak Hour Distribution of Daily Trips (G)
Peak Hour In/Out Split	Percent Split of Trips Entering/Exiting Land Use During Peak Hour (H)
Truck Trips	((F x G) x H)

Land Use	**Residential**		**Office**		**Retail**	
	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday
Daily Trips	8.075	7.678	18	1.6	82.56	82.56
Per Unit	D.U.		1000 sf		1000 sf	
Size	128.0		65.521		22.809	
Person Trips						
Peak Hour Demand						
AM Temporal Distribution	0.091		0.12		0.03	
Midday Temporal Distribution	0.047		0.15		0.19	
PM Temporal Distribution	0.107		0.14		0.10	
SAT MD	0.082		0.15		0.10	
Peak hour In/Out Split	**In**	**Out**	**In**	**Out**	**In**	**Out**
Daily	0.50	0.50	0.50	0.50	0.50	0.50
AM	0.15	0.85	0.96	0.04	0.50	0.50
Midday	0.50	0.50	0.39	0.61	0.50	0.50
PM	0.70	0.30	0.05	0.95	0.50	0.50
SAT MD	0.50	0.50	0.60	0.40	0.50	0.50
Mode Split	**ALL**		**ALL**		**ALL**	
Auto	0.355		0.422		0.03	
Taxi	0.000		0.022		0.02	
Bus	0.152		0.073		0.10	
Subway	0.319		0.275		0.05	
Walk	0.121		0.116		0.80	
Other	0.053		0.092		0.00	
	1.000		1.000		1.00	
Vehicle Occupancy						
Auto	1.55		1.37		1.60	
Taxi	1.40		1.40		1.20	

Truck Trips Generation Characteristics (Source: EISs, US Government, et al)

Land Use	**Residential**		**Office**		**Retail**	
	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday
Truck Trips	0.07	0.01	0.15	0.01	0.45	0.02
per unit	D.U.		1000 sf		1000 sf	
Truck Demand						
Peak Hour Demand						
AM	0.12		0.10		0.10	
Midday	0.09		0.11		0.08	
PM	0.01		0.01		0.05	
SAT MD	0.09		0.11		0.11	
Truck Trips						
Peak Hour In/Out Split	**In**	**Out**	**In**	**Out**	**In**	**Out**
AM	0.50	0.50	0.50	0.50	0.50	0.50
Midday	0.50	0.50	0.50	0.50	0.50	0.50
PM	0.50	0.50	0.50	0.50	0.50	0.50
SAT	0.50	0.50	0.50	0.50	0.50	0.50

Blondell Commons, Bronx

Vehicle Trip Calculations

NET TOTAL TRIPS
25% Linked Trips

Land Use	Residential		Office		Retail		0.75*(PROPOSED)			TOTAL		
Auto Trips	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In & Out**	**In**	**Out**	**In & Out**
Daily	118	118	182	182	18	18	13	13	26	313	313	626
AM	3	18	41	2	1	1	0	0	0	44	20	64
Midday	6	6	21	33	3	3	3	3	6	30	42	72
PM	18	8	2	47	2	2	1	1	2	21	56	77
SAT	9	9	3	2	2	2	1	1	2	13	12	25
Taxi Trips	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In & Out**	**In**	**Out**	**In & Out**
Daily	0	0	9	9	16	16	12	12	24	21	21	43
AM	0	0	2	0	0	0	0	0	0	2	0	2
Midday	0	0	1	2	3	3	2	2	4	3	4	7
PM	0	0	0	2	2	2	1	1	2	1	3	5
SAT	0	0	0	0	1	1	1	1	2	1	1	2
TruckTrips	**In**	**SAT**	**Out**	**SAT**	**In**	**SAT**	**Out**	**SAT**	**In**	**SAT**	**Out**	**SAT**	**In**	**Out**	**In & Out**	**In**	**Out**	**In & Out**
Daily	9	1	9	1	10	1	10	1	10	0	10	0	8	8	16	27	27	54
AM	1		1		0		0		0		0		0	0	0	1	1	2
Midday	0		0		1		1		0		0		0	0	0	1	1	2
PM	0		0		0		0		0		0		0	0	0	0	0	0
SAT	0		0		0		0		0		0		0	0	0	0	0	0
Vehicle Trips	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**	**In & Out**	**In**	**Out**	**In & Out**
Daily	127	127	210	210	59	59	44	44	88	381	381	763
AM	4	19	46	2	2	2	2	2	4	52	23	75
Midday	6	6	24	37	10	10	7	7	14	37	50	87
PM	18	8	3	52	5	5	4	4	8	25	64	88
SAT	9	9	3	2	5	5	4	4	8	17	15	32

Table A.14: Existing and Future Conditions Level of Service (1 of 4)

Intersection	Approach	Existing AM			Near Future AM			Existing Midday			Near Future Midday		
		v/c	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	0.10	10.2	B	0.13	10.4	B	0.12	10.4	B	0.19	10.9	B
	Westbound T	0.32	12.0	B	0.35	12.3	B	0.18	10.8	B	0.25	11.4	B
	Northbound L	0.12	20.7	C	0.13	20.7	C	0.08	20.3	C	0.08	20.3	C
		Intersection Delay: 13.2		**LOS: B**	**Intersection Delay: 13.2**		**LOS: B**	**Intersection Delay: 12.2**		**LOS: B**	**Intersection Delay: 12.2**		**LOS: B**
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	0.07	16.8	B	0.11	17.1	B	0.08	16.8	B	0.15	17.5	B
	Westbound L	0.26	12.1	B	0.32	13.1	B	0.18	11.2	B	0.35	13.6	B
	Wesbound T	0.29	11.8	B	0.29	11.8	B	0.15	10.6	B	0.15	10.6	B
	Southbound LTR	0.25	22.1	C	0.32	22.9	C	0.27	22.3	C	0.45	24.7	C
		Intersection Delay: 14.6		**LOS: B**	**Intersection Delay: 15.5**		**LOS: B**	**Intersection Delay: 15.7**		**LOS: B**	**Intersection Delay: 17.9**		**LOS: B**
Lafayette Av. and Brush Av.	Wesbound LR	0.25	25.8	C	0.25	25.8	C	0.22	25.5	C	0.22	25.5	C
	Westbound R	0.48	28.4	C	0.48	28.4	C	0.33	26.3	C	0.33	26.3	C
	Northbound TR	0.20	9.1	A	0.28	9.8	A	0.16	8.7	A	0.16	8.7	A
	Southbound LT	0.21	9.4	A	0.31	10.5	B	0.20	9.2	A	0.20	9.2	A
		Intersection Delay: 20.6		**LOS: C**	**Intersection Delay: 19.5**		**LOS: B**	**Intersection Delay: 17.6**		**LOS: B**	**Intersection Delay: 17.6**		**LOS: B**
Bruckner Blvd and Brush Av.	Eastbound LTR	0.90	38.1	D	0.94	42.2	D	0.72	23.9	C	0.80	26.7	C
	Westbound L	0.07	41.4	D	0.07	44.0	D	0.08	27.5	C	0.08	32.1	C
	Westbound TR	0.93	35.4	D	0.93	35.4	D	0.75	18.5	B	0.75	18.5	B
	Northbound L	0.75	42.9	D	0.82	48.4	D	0.78	53.5	D	1.07	109.0	F
	Northbound LTR	0.69	39.3	D	0.77	43.6	D	0.77	52.4	D	1.16	138.3	F
	Southbound LTR	0.02	23.6	C	0.02	23.6	C	0.01	30.2	C	0.01	30.2	C
		Intersection Delay: 37.5		**LOS: D**	**Intersection Delay: 40.3**		**LOS: D**	**Intersection Delay: 26.2**		**LOS: C**	**Intersection Delay: 42.6**		**LOS: D**
E Tremont Av. and Westchester Av.	Eastbound LTR	0.37	24.4	C	0.38	24.5	C	0.45	21.1	C	0.48	21.4	C
	Westbound LT	0.41	24.9	C	0.41	24.9	C	0.29	18.9	B	0.29	18.9	B
	Northbound LT	0.45	21.6	C	0.50	22.8	C	0.41	16.2	B	0.43	16.5	B
	Southbound LTR	0.33	19.0	C	0.33	19.0	B	0.28	14.0	B	0.30	14.2	B
		Intersection Delay: 22.5		**LOS: C**	**Intersection Delay: 22.7**		**LOS: C**	**Intersection Delay: 17.7**		**LOS: B**	**Intersection Delay: 17.9**		**LOS: B**
Williamsbridge Rd. and Eastchester Rd.	Eastbound LTR	0.57	21.0	C	0.67	23.5	C	0.49	19.6	B	0.51	19.9	B
	Westbound LTR	0.39	17.7	B	0.41	18.1	B	0.40	18.0	B	0.40	18.0	B
	Northbound LTR	0.74	28.6	C	0.77	29.8	B	0.61	23.3	C	0.81	34.2	C
	Southbound DfL							0.61	27.4	C			
	Southbound TR							0.60	22.8	C			
	Southbound LTR	0.54	20.3	C	0.58	21.2	C				0.65	22.6	C
		Intersection Delay: 21.8		**LOS: C**	**Intersection Delay: 23.1**		**LOS: C**	**Intersection Delay: 21.4**		**LOS: C**	**Intersection Delay: 23.4**		**LOS: C**

Table A.14: Existing and Future Conditions Level of Service (2 of 4)

Intersection	Approach	Existing AM			Near Future AM			Existing Midday			Near Future Midday		
		v/c	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*
Waters Pl. and Eastchester Rd.	Westbound L	0.92	60.4	E	0.95	65.1	E	0.58	28.2	C	0.67	31.0	C
	Westbound R	0.41	18.2	B	0.42	18.4	B	0.33	15.9	B	0.41	16.9	B
	Northbound TR	0.65	22.0	C	0.76	25.3	C	0.61	22.4	C	0.67	23.7	C
	Southbound DefL	0.62	27.2	C	0.92	54.9	D	0.80	42.8	D	0.97	70.6	E
	Southbound T	0.33	8.6	A	0.33	8.6	A	0.64	17.8	B	0.64	17.8	B
		Intersection Delay: 26.7		**LOS: C**	**Intersection Delay: 32.9**		**LOS: C**	**Intersection Delay: 23.8**		**LOS: C**	**Intersection Delay: 28.7**		**LOS: C**
Morris Park Av. and Eastchester Rd.	Eastbound L	0.50	32.5	C	0.53	33.7	C	0.44	31.0	C	0.44	31.0	C
	Eastbound LTR	0.38	29.2	C	0.40	29.8	C	0.32	28.2	C	0.32	28.2	C
	Eastbound R	0.63	36.2	D	0.63	36.2	D	0.64	36.6	D	0.67	37.9	D
	Westbound LTR	0.10	24.7	C	0.10	24.7	C	0.07	24.3	C	0.07	24.3	C
	Northbound L	0.80	57.6	E	0.81	58.7	E	0.64	46.1	D	0.69	49.0	D
	Northbound TR	0.31	12.3	B	0.32	12.4	B	0.34	12.5	B	0.40	13.1	B
	Southbound LTR	1.00	62.4	E	1.10	90.8	F	0.81	36.6	D	0.85	39.7	D
		Intersection Delay: 42.0		**LOS: D**	**Intersection Delay: 54.5**		**LOS: D**	**Intersection Delay: 29.3**		**LOS: C**	**Intersection Delay: 30.2**		**LOS: C**
Waters Pl. and Marconi St.	Eastbound L	0.82	34.6	C	1.38	208.4	F	0.29	10.2	B	0.39	11.8	B
	Eastbound LT	0.33	9.6	A	0.44	11.0	B	0.35	9.7	A	0.40	10.2	B
	Westbound T	0.37	9.8	A	0.37	9.8	A	0.21	8.5	A	0.21	8.5	A
	Westbound R	0.76	19.4	B	1.07	67.2	E	0.20	8.7	A	0.32	9.9	A
	Southbound L	0.23	25.5	C	0.27	26.1	C	0.46	29.3	C	0.65	34.5	C
	Southbound R	0.44	29.2	C	0.49	30.3	C	0.56	32.3	C	0.87	51.0	D
		Intersection Delay: 17.4		**LOS: B**	**Intersection Delay: 59.9**		**LOS: E**	**Intersection Delay: 15.0**		**LOS: B**	**Intersection Delay: 20.6**		**LOS: C**
Blondell Av. and Westchester Av.	Eastbound LT	0.45	26.2	C	0.46	26.3	C	0.39	15.6	B	0.42	16.0	B
	Westbound TR	0.46	25.7	C	0.48	26.1	C	0.45	16.0	B	0.49	16.6	B
	Northbound LT	0.27	18.3	B	0.29	18.6	B	0.29	18.9	B	0.30	19.0	B
		Intersection Delay: 23.7		**LOS: C**	**Intersection Delay: 23.9**		**LOS: C**	**Intersection Delay: 16.6**		**LOS: B**	**Intersection Delay: 17.0**		**LOS: B**
Waters Pl. and Westchester Av.	Eastbound LT	0.42	18.1	B	0.43	18.2	B	0.55	20.0+	C	0.59	20.7	C
	Northbound LT	0.34	17.2	B	0.42	18.3	B	0.28	16.4	B	0.32	16.9	B
	Southbound LT	0.27	16.3	B	0.28	16.5	B	0.31	16.8	B	0.32	17.0	B
		Intersection Delay: 17.4		**LOS: B**	**Intersection Delay: 17.8**		**LOS: B**	**Intersection Delay: 18.4**		**LOS: B**	**Intersection Delay: 18.9**		**LOS: B**
Ericson Pl./Middletown Rd. and Westchester Av.	Eastbound DfL	0.76	36.7	D	0.81	42.3	D	0.71	32.5	C	0.75	36.2	D
	Eastbound TR	0.68	26.9	C	0.68	27.0	C	0.64	25.6	C	0.65	25.7	C
	Westbound LT	0.38	27.5	C	0.45	28.5	C	0.32	26.8	C	0.36	27.3	C
	Northbound LTR (Erics	0.83	48.5	D	0.85	49.9	D	0.63	39.5	D	0.64	39.7	D
	Northbound LTR (Midc	0.97	71.3	E	1.02	84.6	F	0.58	36.9	D	0.60	37.5	D
		Intersection Delay: 40.9		**LOS: D**	**Intersection Delay: 45.8**		**LOS: D**	**Intersection Delay: 29.7**		**LOS: C**	**Intersection Delay: 30.9**		**LOS: C**
E. Tremont Av.and Ericson Pl.	Eastbound LT	0.40	14.4	B	0.41	14.6	B	0.39	14.3	B	0.41	14.5	B
	Westbound T	0.78	36.5	D	0.82	38.7	D	0.54	30.0	C	0.57	30.2	C
	Northbound LTR	0.73	33.0	C	0.73	33.0	C	0.45	26.9	C	0.45	26.9	C
		Intersection Delay: 29.4		**LOS: C**	**Intersection Delay: 30.2**		**LOS: C**	**Intersection Delay: 23.2**		**LOS: C**	**Intersection Delay: 23.4**		**LOS: C**

Table A.14: Existing and Future Conditions Level of Service (3 of 4)

Intersection	Approach	Existing PM			Future PM			Existing Saturday Midday			Future Saturday Midday		
		v/c	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	0.14	10.5	B	0.22	11.1	B	0.21	11.0	B	0.29	11.7	B
	Westbound T	0.19	10.9	B	0.25	11.3	B	0.27	11.6	B	0.35	12.4	B
	Northbound L	0.07	20.2	C	0.07	20.2	C	0.06	20.1	C	0.06	20.1	C
		Intersection Delay: 12.0		**LOS: B**	**Intersection Delay: 12.1**		**LOS: B**	**Intersection Delay: 12.1**		**LOS: B**	**Intersection Delay: 12.6**		**LOS: B**
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	0.07	16.8	B	0.16	17.6	B	0.06	16.7	B	0.15	17.5	B
	Westbound L	0.19	11.4	B	0.53	17.4	B	0.19	11.3	B	0.40	14.4	B
	Wesbound T	0.16	10.6	B	0.16	10.6	B	0.17	10.7	B	0.17	10.7	B
	Southbound LTR	0.33	22.9	C	0.47	24.9	C	0.35	23.2	C	0.56	26.6	C
		Intersection Delay: 16.5		**LOS: B**	**Intersection Delay: 18.9**		**LOS: B**	**Intersection Delay: 16.5**		**LOS: B**	**Intersection Delay: 19.2**		**LOS: B**
Lafayette Av. and Brush Av.	Wesbound LR	0.13	24.1	C	0.13	24.1	C	0.22	25.5	C	0.22	25.5	C
	Westbound R	0.24	25.1	C	0.24	25.1	C	0.42	27.8	C	0.42	27.8	C
	Northbound TR	0.23	9.3	A	0.48	12.1	B	0.14	8.5	A	0.39	10.9	B
	Southbound LT	0.31	10.4	B	0.70	21.4	C	0.24	9.6	A	0.67	19.3	B
		Intersection Delay: 15.3		**LOS: B**	**Intersection Delay: 17.9**		**LOS: B**	**Intersection Delay: 19.2**		**LOS: B**	**Intersection Delay: 18.8**		**LOS: B**
Bruckner Blvd and Brush Av.	Eastbound LTR	1.07	66.7	E	1.12	88.3	F	0.93	35.1	D	1.04	58.6	E
	Westbound L	0.10	45.7	D	0.10	45.7	D	0.11	37.7	D	0.11	45.5	D
	Wesbound TR	0.88	22.7	C	0.88	22.7	C	0.87	24.1	C	0.87	24.1	C
	Northbound L	0.73	49.9	D	1.07	108.0	E	1.07	104.5	F	1.33	203.4	F
	Northbound LTR	0.79	53.5	D	1.19	151.6	F	1.02	87.2	F	1.34	206.3	F
	Southbound LTR	0.01	30.2	C	0.01	30.2	C	0.01	27.4	C	0.01	27.4	C
		Intersection Delay: 48.6		**LOS: D**	**Intersection Delay: 72.1**		**LOS: E**	**Intersection Delay: 42.5**		**LOS: D**	**Intersection Delay: 79.0**		**LOS: E**
E Tremont Av. and Westchester Av.	Eastbound LTR	0.58	28.3	C	0.61	28.9	C	0.46	21.1	C	0.48	21.4	C
	Westbound LT	0.30	23.3	C	0.33	23.7	C	0.35	19.6	B	0.35	19.6	B
	Northbound LT	0.55	24.0	C	0.55	24.0	C	0.39	16.0	B	0.40	16.1	B
	Southbound LTR	0.27	18.3	B	0.27	18.3	B	0.25	13.7	B	0.26	13.8	B
		Intersection Delay: 24.1		**LOS: C**	**Intersection Delay: 24.4**		**LOS: C**	**Intersection Delay: 18.0**		**LOS: B**	**Intersection Delay: 18.1**		**LOS: B**
Williamsbridge Rd. and Eastchester Rd.	Eastbound LTR	0.49	19.2	B	0.50	19.4	B	0.46	19.0	B	0.48	19.3	B
	Westbound LTR	0.37	17.5	B	0.37	17.5	B	0.43	18.4	B	0.43	18.4	B
	Northbound LTR	0.66	25.2	C	0.92	50.0	D	0.61	23.9	C	0.68	26.3	C
	Southbound DfL	0.66	28.9	C									
	Southbound LTR				0.76	25.6	C	0.45	18.7	B	0.49	19.4	B
	Southbound TR	0.69	25.4	C									
		Intersection Delay: 22.4		**LOS: C**	**Intersection Delay: 26.8**		**LOS: C**	**Intersection Delay: 19.8**		**LOS: B**	**Intersection Delay: 20.5**		**LOS: C**

Table A.14: Existing and Future Conditions Level of Service (4 of 4)

Intersection	Approach	Existing PM			Future PM			Existing Saturday Midday			Future Saturday Midday		
		v/c	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*
Waters Pl. and Eastchester Rd.	Westbound L	0.92	57.9	E	1.14	121.1	F	0.41	24.6	C	0.46	25.5	C
	Westbound R	0.44	18.6	B	0.52	19.8	B	0.23	14.8	B	0.25	15.1	B
	Northbound TR	0.57	20.4	C	0.61	21.1	C	0.50	20.5	C	0.54	21.1	C
	Southbound DefL	0.61	24.6	C	0.65	27.4	C	0.43	20.6	C	0.50	23.7	C
	Southbound T	0.35	8.7	A	0.35	8.7	A	0.29	11.9	B	0.29	11.9	B
		Intersection Delay: 25.6		**LOS: C**	**Intersection Delay: 40.4**		**LOS: D**	**Intersection Delay: 18.8**		**LOS: B**	**Intersection Delay: 19.7**		**LOS: B**
Morris Park Av. and Eastchester Rd.	Eastbound L	0.73	43.5	D	0.73	43.5	D	0.39	29.8	C	0.39	29.8	C
	Eastbound LTR	0.50	32.6	C	0.50	32.6	C	0.27	27.2	C	0.27	27.2	C
	Eastbound R	0.54	33.1	C	0.55	33.3	C	0.51	32.0	C	0.52	32.4	C
	Westbound LTR	0.16	25.4	C	0.16	25.4	C	0.10	24.6	C	0.10	24.6	C
	Northbound L	0.91	72.2	E	1.01	95.4	F	0.65	46.7	D	0.71	50.2	D
	Northbound TR	0.51	14.5	B	0.55	15.2	B	0.30	12.1	B	0.32	12.3	B
	Southbound LTR	0.92	47.3	D	0.94	50.6	D	0.63	30.1	C	0.65	30.6	C
		Intersection Delay: 35.5		**LOS: D**	**Intersection Delay: 38.9**		**LOS: D**	**Intersection Delay: 26.4**		**LOS: C**	**Intersection Delay: 27.0**		**LOS: C**
Waters Pl. and Marconi St.	Eastbound L	0.22	9.5	A	0.27	10.2	B	0.07	7.9	A	0.15	8.6	A
	Eastbound LT	0.36	9.8	A	0.38	10.0-	A	0.26	8.9	A	0.29	9.1	A
	Westbound T	0.28	9.0	A	0.28	9.0	A	0.25	8.7	A	0.25	8.7	A
	Westbound R	0.10	7.9	A	0.16	8.3	A	0.00	7.2	A	0.14	8.2	A
	Southbound L	0.81	42.8	D	1.18	133.4	F	0.21	25.1	C	0.33	26.9	C
	Southbound R	0.97	66.6	E	1.65	333.2	F	0.20	25.2	C	0.35	27.5	C
		Intersection Delay: 26.6		**LOS: C**	**Intersection Delay: 121.3**		**LOS: F**	**Intersection Delay: 11.4**		**LOS: B**	**Intersection Delay: 12.7**		**LOS: B**
Blondell Av. and Westchester Av.	Eastbound LT	0.36	19.6	B	0.37	19.7	B	0.26	14.0	B	0.27	14.1	B
	Westbound TR	0.30	18.7	B	0.33	19.1	B	0.27	13.9	B	0.28	14.1	B
	Northbound LT	0.16	21.5	C	0.16	21.6	C	0.17	17.6	B	0.19	17.8	B
		Intersection Delay: 19.6		**LOS: B**	**Intersection Delay: 19.8**		**LOS: B**	**Intersection Delay: 14.7**		**LOS: B**	**Intersection Delay: 14.9**		**LOS: B**
Waters Pl. and Westchester Av.	Eastbound LT	0.76	25.1	C	0.86	29.5	C	0.51	19.3	B	0.54	19.8	B
	Northbound LT	0.33	16.9	B	0.34	17.0	B	0.34	17.1	B	0.35	17.2	B
	Southbound LT	0.26	16.3	B	0.27	16.3	B						
	Southbound DfL							0.36	19.2	B	0.36	19.3	B
	Southbound T							0.30	17.0	B	0.31	17.2	B
		Intersection Delay: 21.6		**LOS: C**	**Intersection Delay: 24.5**		**LOS: C**	**Intersection Delay: 18.3**		**LOS: B**	**Intersection Delay: 18.6**		**LOS: B**
Ericson Pl./Middletown Rd. and Westchester Av.	Eastbound DfL	0.98	64.3	E	1.04	79.8	E	0.86	45.0	D	0.90	51.4	D
	Eastbound TR	0.83	34.6	C	0.84	35.2	D	0.86	37.0	D	0.87	37.7	D
	Westbound LT	0.32	26.7	C	0.32	26.8	C	0.37	27.4	C	0.40	27.7	C
	Northbound LTR (Erics	0.68	40.8	D	0.68	40.8	D	0.62	38.9	D	0.62	39.2	D
	Northbound LTR (Midc	0.59	37.2	D	0.59	37.3	D	0.75	44.0	D	0.78	46.4	D
		Intersection Delay: 42.9		**LOS: D**	**Intersection Delay: 47.9**		**LOS: D**	**Intersection Delay: 38.4**		**LOS: D**	**Intersection Delay: 40.7**		**LOS: D**
E. Tremont Av.and Ericson Pl.	Eastbound LT	0.65	18.4	B	0.68	19.1	B	0.39	14.2	B	0.41	14.4	B
	Westbound T	0.50	29.3	C	0.52	29.6	C	0.60	31.1	C	0.63	31.8	C
	Northbound LTR	0.50	27.7	C	0.50	27.8	C	0.41	26.4	C	0.41	26.4	C
		Intersection Delay: 23.5		**LOS: C**	**Intersection Delay: 22.9**		**LOS: C**	**Intersection Delay: 23.4**		**LOS: C**	**Intersection Delay: 23.9**		**LOS: C**

Table A.15: Level of Service with Recommendations (1of 4)

Locations Identified with Deficiencies in LOS

Intersection	Approach	Existing AM			Near Future AM			Recommendations		
		v/c	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*
Waters Place and Eastchester Road	Westbound L	0.92	60.4	E	0.95	65.1	E	0.87	50.5	D
	Westbound R	0.41	18.2	B	0.42	18.4	B	0.38	15.4	B
	Northbound TR	0.65	22.0	C	0.76	25.3	C	0.85	32.5	C
	Southbound DefL	0.62	27.2	C	0.92	54.9	D	0.91	54.5	D
	Southbound T	0.33	8.6	A	0.33	8.6	A	0.35	9.6	A
		Intersection Delay: 26.7		**LOS: C**	**Intersection Delay: 32.9**		**LOS: C**	**Intersection Delay: 32.9**		**LOS: C**
Morris Park Avenue and Eastchester Road	Eastbound L	0.50	32.5	C	0.53	33.7	C	0.70	48.4	D
	Eastbound LTR	0.38	29.2	C	0.40	29.8	C	0.71	47.4	D
	Eastbound R	0.63	36.2	D	0.63	36.2	D	0.68	45.3	D
	Westbound LTR	0.10	24.7	C	0.10	24.7	C	0.16	30.2	C
	Northbound L	0.80	57.6	E	0.81	58.7	E	0.76	52.3	D
	Northbound TR	0.31	12.3	B	0.32	12.4	B	0.29	9.1	A
	Southbound LTR	1.00	62.4	E	1.10	90.8	F	0.93	42.5	D
		Intersection Delay: 42.0		**LOS: D**	**Intersection Delay: 54.5**		**LOS: D**	**Intersection Delay: 36.4**		**LOS: D**
Waters Place and Marconi Street	Eastbound L	0.82	34.6	C	1.38	208.4	F	1.04	73.4	E
	Eastbound LT	0.33	9.6	A	0.44	11.0	B	EB-T 0.18	6.6	A
	Westbound T	0.37	9.8	A	0.37	9.8	A	0.63	26.5	C
	Westbound R	0.76	19.4	B	1.07	67.2	E	0.86	42.9	D
	Southbound L	0.23	25.5	C	0.27	26.1	C	0.32	29.9	C
	Southbound R	0.44	29.2	C	0.49	30.3	C	0.27	12.2	B
		Intersection Delay: 17.4		**LOS: B**	**Intersection Delay: 59.9**		**LOS: E**	**Intersection Delay: 36.5**		**LOS: D**
Ericson Place/Middletown Road and Westchester Avenue	Eastbound DfL	0.76	36.7	D	0.81	42.3	D	0.81	42.3	D
	Eastbound TR	0.68	26.9	C	0.68	27.0	C	0.68	27.0	C
	Westbound LT	0.38	27.5	C	0.45	28.5	C	0.45	28.5	C
	Northbound LTR (Ericson	0.83	48.5	D	0.85	49.9	D	0.85	49.9	D
	Northbound LTR (Middle	0.97	71.3	E	1.02	84.6	F	0.54	33.5	C
		Intersection Delay: 40.9		**LOS: D**	**Intersection Delay: 45.8**		**LOS: D**	**Intersection Delay: 32.4**		**LOS: C**

Table A.15: Level of Service with Recommendations (2 of 4)
Locations Identified with Deficiencies in LOS

Intersection	Approach	Existing Midday			Near Future Midday			Recommendations		
		v/c	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*
Bruckner Boulevard and Brush Avenue	Eastbound LTR	0.72	23.9	C	0.80	26.7	C	0.80	26.7	C
	Westbound L	0.08	27.5	C	0.08	32.1	C	0.08	32.1	C
	Westbound TR	0.75	18.5	B	0.75	18.5	B	0.75	18.5	B
	Northbound L	0.78	53.5	D	1.07	109.0	F	0.94	67.6	E
	Northbound LTR	0.77	52.4	D	1.16	138.3	F	0.79	52.9	D
	Southbound LTR	0.01	30.2	C	0.01	30.2	C	0.01	30.2	C
		Intersection Delay: 26.2		**LOS: C**	**Intersection Delay: 42.6**		**LOS: D**	**Intersection Delay: 30.7**		**LOS: C**
Waters Place and Eastchester Road	Westbound L	0.58	28.2	C	0.67	31.0	C	0.69	32.7	C
	Westbound R	0.33	15.9	B	0.41	16.9	B	0.36	13.5	B
	Northbound TR	0.61	22.4	C	0.67	23.7	C	0.77	30.4	C
	Southbound DefL	0.80	42.8	D	0.97	70.6	E	0.80	42.0	D
	Southbound T	0.64	17.8	B	0.64	17.8	B	0.63	16.9	B
		Intersection Delay: 23.8		**LOS: C**	**Intersection Delay: 28.7**		**LOS: C**	**Intersection Delay: 26.4**		**LOS: C**
Waters Place and Marconi Street	Eastbound L	0.29	10.2	B	0.39	11.8	B	0.69	73.4	C
	Eastbound LT	0.35	9.7	A	0.40	10.2	B	EB-T 0.29	6.6	B
	Westbound T	0.21	8.5	A	0.21	8.5	A	0.36	26.5	C
	Westbound R	0.20	8.7	A	0.32	9.9	A	0.55	42.9	C
	Southbound L	0.46	29.3	C	0.65	34.5	C	0.47	29.9	C
	Southbound R	0.56	32.3	C	0.87	51.0	D	0.63	12.2	C
		Intersection Delay: 15.0		**LOS: B**	**Intersection Delay: 20.6**		**LOS: C**	**Intersection Delay: 23.0**		**LOS: C**

Table A.15: Level of Service with Recommendations (3 of 4)

Locations Identified with Deficiencies in LOS

Intersection	Approach	Existing PM			Future PM			Recommendations		
		v/c	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*
Bruckner Boulevard and Brush Avenue	Eastbound LTR	1.07	66.7	E	1.12	88.3	F	1.04	56.0	E
	Westbound L	0.10	45.7	D	0.10	45.7	D	0.10	45.6	D
	Wesbound TR	0.88	22.7	C	0.88	22.7	C	0.96	33.2	C
	Northbound L	0.73	49.9	D	1.07	108.0	E	1.02	86.3	F
	Northbound LTR	0.79	53.5	D	1.19	151.6	F	0.61	42.8	D
	Southbound LTR	0.01	30.2	C	0.01	30.2	C	0.01	30.2	C
		Intersection Delay: 48.6		**LOS: D**	**Intersection Delay: 72.1**		**LOS: E**	**Intersection Delay: 50.5**		**LOS: D**
Waters Place and Eastchester Road	Westbound L	0.92	57.9	E	1.14	121.1	F	0.88	44.7	D
	Westbound R	0.44	18.6	B	0.52	19.8	B	0.43	14.3	B
	Northbound TR	0.57	20.4	C	0.61	21.1	C	0.74	29.3	C
	Southbound DefL	0.61	24.6	C	0.65	27.4	C	0.74	37.7	D
	Southbound T	0.35	8.7	A	0.35	8.7	A	0.40	12.8	B
		Intersection Delay: 25.6		**LOS: C**	**Intersection Delay: 40.4**		**LOS: D**	**Intersection Delay: 27.9**		**LOS: C**
Morris Park Avenue and Eastchester Road	Eastbound L	0.73	43.5	D	0.73	43.5	D	0.79	50.9	D
	Eastbound LTR	0.50	32.6	C	0.50	32.6	C	0.55	35.7	D
	Eastbound R	0.54	33.1	C	0.55	33.3	C	0.60	36.9	D
	Westbound LTR	0.16	25.4	C	0.16	25.4	C	0.18	27.1	C
	Northbound L	0.91	72.2	E	1.01	95.4	F	0.89	65.7	E
	Northbound TR	0.51	14.5	B	0.55	15.2	B	0.53	13.8	B
	Southbound LTR	0.92	47.3	D	0.94	50.6	D	0.94	49.6	D
		Intersection Delay: 35.5		**LOS: D**	**Intersection Delay: 38.9**		**LOS: D**	**Intersection Delay: 36.3**		**LOS: D**
Waters Place and Marconi Street	Eastbound L	0.22	9.5	A	0.27	10.2	B	0.41	22.9	C
	Eastbound LT	0.36	9.8	A	0.38	10.0-	A	EB-T 0.33	14.6	B
	Westbound T	0.28	9.0	A	0.28	9.0	A	0.47	23.8	C
	Westbound R	0.10	7.9	A	0.16	8.3	A	0.21	21.1	C
	Southbound L	0.81	42.8	D	1.18	133.4	F	0.77	31.7	C
	Southbound R	0.97	66.6	E	1.65	333.2	F	0.74	22.1	C
		Intersection Delay: 26.6		**LOS: C**	**Intersection Delay: 121.3**		**LOS: F**	**Intersection Delay: 22.8**		**LOS: C**
Ericson Place/Middletown Road and Westchester Avenue	Eastbound DfL	0.98	64.3	E	1.04	79.8	E	0.86	41.1	D
	Eastbound TR	0.83	34.6	C	0.84	35.2	D	0.77	28.3	C
	Westbound LT	0.32	26.7	C	0.32	26.8	C	0.28	24.1	C
	Northbound LTR (Ericsor	0.68	40.8	D	0.68	40.8	D	0.62	38.9	D
	Northbound LTR (Middle	0.59	37.2	D	0.59	37.3	D	0.59	37.3	D
		Intersection Delay: 42.9		**LOS: D**	**Intersection Delay: 47.9**		**LOS: D**	**Intersection Delay: 33.5**		**LOS: C**

Table A.15: Level of Service with Recommendations (4 of 4)

Locations Identified with Deficiencies in LOS

Intersection	Approach	Existing Saturday Midday			Future Saturday Midday			Recommendations		
		v/c	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*	*v/c*	*Delay*	*LOS*
Bruckner Boulevard and Brush Avenue	Eastbound LTR	0.93	35.1	D	1.04	58.6	E	0.98	42.6	D
	Westbound L	0.11	37.7	D	0.11	45.5	D	0.11	41.9	D
	Wesbound TR	0.87	24.1	C	0.87	24.1	C	0.94	32.3	C
	Northbound L	1.07	104.5	F	1.33	203.4	F	1.05	85.1	F
	Northbound LTR	1.02	87.2	F	1.34	206.3	F	0.85	52.9	D
	Southbound LTR	0.01	27.4	C	0.01	27.4	C	0.01	25.4	C
		Intersection Delay: 42.5		**LOS: D**	**Intersection Delay: 79.0**		**LOS: E**	**Intersection Delay: 46.1**		**LOS: D**
Waters Place and Marconi Street	Eastbound L	0.07	7.9	A	0.15	8.6	A	0.25	73.4	B
	Eastbound LT	0.26	8.9	A	0.29	9.1	A	EB-T 0.29	6.6	B
	Westbound T	0.25	8.7	A	0.25	8.7	A	0.41	26.5	C
	Westbound R	0.00	7.2	A	0.14	8.2	A	0.24	42.9	C
	Southbound L	0.21	25.1	C	0.33	26.9	C	0.24	29.9	B
	Southbound R	0.20	25.2	C	0.35	27.5	C	0.25	12.2	B
		Intersection Delay: 11.4		**LOS: B**	**Intersection Delay: 12.7**		**LOS: B**	**Intersection Delay: 18.8**		**LOS: B**

3- Signal Timing for Recommendations

Table A.16: Recommendations: Signal Timimg

	Signal Timing for Recommendations
AM	
Waters Pl/Eastchester Rd.	WB - 25 sec green, 5 sec yellow+AR NB/SB - 36 sec green, 5 sec yellow+AR SB/WB-right - 14 sec green, 5 sec yellow+AR
Morris Park Av/Eastchester Rd.	EB/WB - 19 sec green, 5 sec yellow+AR NB(TR)/SB - 33 sec green, 5 sec yellow+AR NB - 16 sec green, 12 sec yellow+AR
Waters Place/Marconi St.	EB/WB - 32 sec green, 5 sec yellow+AR EB/WB-R/SB-R - 21 sec green, 5 sec yellow+AR SB/WB-R - 22 sec green, 5 sec yellow+AR
Ericson Place/Middletown Rd./ /Westchester Av.	Ericson Pl. - 17 sec green, 5 sec yellow+AR Middletown Rd. - 20 green, 5 sec yellow+AR NB - 6 sec green, 5 sec yellow+AR NB/SB - 25 sec green, 5 sec yellow+AR
MD	
Bruckner Blvd/Brush Av.	EB/WB – 62 sec green, 5 sec yellow+AR WB – 8 sec green, 5 sec yellow+AR NB/SB – 35 sec green, 5 sec yellow+AR
Waters Pl/Eastchester Rd.	WB – 30 sec green, 5 sec yellow+AR NB/SB – 33 sec green, 5 sec yellow+AR SB – 12 sec green, 5 sec yellow+AR
Waters Pl/Marconi St.	EB/WB – 32 sec green, 5 sec yellow+AR EB/WB-R/SB-R – 7 sec green, 5 sec yellow+AR SB/WB-R – 36 sec green, 5 sec yellow+AR

Signal Timing for Recommendations (continuing)

PM

Bruckner Blvd/Brush Av.	EB/WB – 65 sec green, 5 sec yellow+AR WB – 5 sec green, 5 sec yellow+AR NB/SB – 35 sec green, 5 sec yellow+AR
Waters Pl/Eastchester Rd.	WB - 30 sec green, 5 sec yellow+AR NB/SB - 33 sec green, 5 sec yellow+AR SB/WB-right - 12 sec green, 5 sec yellow+AR
Morris Park Av/Eastchester Rd.	EB/WB - 25 sec green, 5 sec yellow+AR NB(TR)/SB - 28 sec green, 5 sec yellow+AR NB - 15 sec green, 12 sec yellow+AR
Waters Place/Marconi St.	EB/WB - 32 sec green, 5 sec yellow+AR EB/WB-R/SB-R - 7 sec green, 5 sec yellow+AR SB/WB-R - 36 sec green, 5 sec yellow+AR
Ericson Place/Middletown Rd./ Westchester Av.	Ericson Pl. - 16 sec green, 5 sec yellow+AR Middletown Rd. - 20 green, 5 sec yellow+AR NB - 13 sec green, 5 sec yellow+AR NB/SB - 20 sec green, 6 sec yellow+AR

SAT

Bruckner Blvd/Brush Av.	EB/WB – 59 sec green, 5 sec yellow+AR WB – 8 sec green, 5 sec yellow+AR NB/SB – 38 sec green, 5 sec yellow+AR
Waters Pl/Marconi St.	EB/WB – 37 sec green, 5 sec yellow+AR EB/WB-R/SB-R – 12 sec green, 5 sec yellow+AR SB/WB-R – 26 sec green, 5 sec yellow+AR

4- Data Comparison

Table A.17: Existing Conditions

AM Existing							
Intersection	**Approach**	**DCP**		**DOT**		**Phil Habib**	
		Volumes	***LOS***	***Volumes***	***LOS***	***Volumes***	***LOS***
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	134	B	210	A	190	B
	Westbound T	509	B	590	B	492	B
	Northbound L	133	C	110	C	120	C
			LOS: B		**LOS: B**		
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	75	B	135	B	106	B
	Westbound L	170	B	180	A	136	B
	Wesbound T	480	B	520	A	476	B
	Southbound LTR	65-140-16	C	75-155-70	C	84-231-85	C
			LOS: B		**LOS: B**		
Lafayette Av. and Brush Av.	Wesbound LR	18	C	40	A	35	A
	Westbound R	440	C	550	A	524	B
	Northbound TR	114-43	A	180	C	154-40	B
	Southbound LT	74-59	A	185	C	76-102	B
			LOS: C		**LOS: B**		
Bruckner Blvd and Brush Av.	Eastbound LTR	1-1736-180	D	0-1710-240	E	5-2000-178	D
	Westbound L	15	D	20	B	20	D
	Westbound TR	1488-7	D	1875-5	D	1815-5	D
	Northbound L	555	D	675	E	614	F
	Northbound LTR	12_78	D	5_75	E	0-95	C
	Southbound LTR	2_16_1	C	5_5_55	C	0-5-5	C
			LOS: D		**LOS: E**		

MD Existing							
Intersection	**Approach**	**DCP**		**DOT**		**Phil Habib**	
		Volumes	***LOS***	***Volumes***	***LOS***	***Volumes***	***LOS***
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	167	B	170	B	172	B
	Westbound T	264	B	355	B	302	B
	Northbound L	83	C	90	C	165	C
			LOS: B		**LOS: B**		
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	96	B	80	B	112	B
	Westbound L	118	B	205	A	146	B
	Wesbound T	239	B	240	A	321	A
	Southbound LTR	70-159-22	C	90-205-15	C	60-121-10	B
			LOS: B		**LOS: B**		
Lafayette Av. and Brush Av.	Wesbound LR	32	C	35	A	30	A
	Westbound R	273	C	220	A	299	B
	Northbound TR	106-46	A	140	B	124-65	B
	Southbound LT	89-53	A	155	B	72-81	B
			LOS: B		**LOS: B**		
Bruckner Blvd and Brush Av.	Eastbound LTR	14-1561-217	C	0-1500-225	D	15-1410-202	B
	Westbound L	18	C	35	B	15	B
	Westbound TR	1416-4	B	1250-0	B	1470-5	B
	Northbound L	453	D	400	E	484	F
	Northbound LTR	6_90	D	5_100	E	30-115	C
	Southbound LTR	0_0_6	C	10_5_20	C	10_5_5	C
			LOS: C		**LOS: D**		

PM Existing							
Intersection	Approach	DCP		DOT		Phil Habib	
		Volumes	*LOS*	*Volumes*	*LOS*	*Volumes*	*LOS*
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	204	B	235	B	190	B
	Westbound T	294	B	370	B	318	B
	Northbound L	77	C	90	C	90	C
			LOS: B		**LOS: B**		
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	96	B	125	B	108	B
	Westbound L	122	B	135	A	121	B
	Wesbound T	251	B	325	A	287	A
	Southbound LTR	114-195-19	C	110-200-10	C	82-261-25	C
			LOS: B		**LOS: B**		
Lafayette Av. and Brush Av.	Wesbound LR	10	C	10	A	21	A
	Westbound R	227	C	325	A	290	A
	Northbound TR	144-80	A	170	B	213-35	B
	Southbound LT	148-45	B	175	C	98-53	B
			LOS: B		**LOS: B**		
Bruckner Blvd and Brush Av.	Eastbound LTR	10-2328-246	E	0-1660-270	E	25-2230-190	D
	Westbound L	22	D	5	A	15	C
	Westbound TR	1795-2	C	1240-0	B	1900-5	C
	Northbound L	416	D	425	E	510	F
	Northbound LTR	3-112	D	5_110	E	5-145	C
	Southbound LTR	0_0_5	C	5_0_25	C	5_5_10	C
			LOS: D		**LOS: D**		

SAT Existing							
Intersection	Approach	DCP		DOT		Phil Habib	
		Volumes	*LOS*	*Volumes*	*LOS*	*Volumes*	*LOS*
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	290	B	175	B	210	B
	Westbound T	410	B	340	B	367	B
	Northbound L	67	C	75	C	70	C
			LOS: B		**LOS: B**		
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	75	B	60	B	79	B
	Westbound L	126	B	120	A	95	B
	Wesbound T	267	B	295	A	342	A
	Southbound LTR	147-154-24	C	115-160-15	C	130-206-15	C
			LOS: B		**LOS: B**		
Lafayette Av. and Brush Av.	Wesbound LR	15	C	20	A	25	A
	Westbound R	329	C	290	A	330	A
	Northbound TR	97-31	A	55	B	80-19	B
	Southbound LT	116-33	A	135	B	75-60	B
			LOS: B		**LOS: A**		
Bruckner Blvd and Brush Av.	Eastbound LTR	14-1937-305	D	0-1775-280	E	45-1300-204	B
	Westbound L	24	D	30	B	35	B
	Westbound TR	1724	C	1460	B	1420-5	B
	Northbound L	763	F	410	E	508	F
	Northbound LTR	1-138	F	5_140	D	20-135	C
	Southbound LTR	0_0_9	C	5_5_30	C	5_10_25	C
			LOS: D		**LOS: D**		

5- Data Comparison

Table A.18: Future Conditions

AM Future							
Intersection	**Approach**	**DCP**		**DOT**		**Phil Habib**	
		Volumes	***LOS***	***Volumes***	***LOS***	***Volumes***	***LOS***
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	170	B	259	A	226	B
	Westbound T	546	B	685	B	529	B
	Northbound L	133	C	153	C	120	C
			LOS: B		**LOS: B**		
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	111	B	175	C	142	B
	Westbound L	207	B	238	B	173	B
	Wesbound T	480	B	574	A	476	B
	Southbound LTR	65-200-16	C	76-201-71	C	84-291-85	C
			LOS: B		**LOS: B**		
Lafayette Av. and Brush Av.	Wesbound LR	18	C	59	A	35	A
	Westbound R	440	C	586	B	526	B
	Northbound TR	181-43	A	248	C	222-40	B
	Southbound LT	100-85	B	265	C	102-129	B
			LOS: C		**LOS: C**		
Bruckner Blvd and Brush Av.	Eastbound LTR	1-1759-232	D	98-1736-299	F	5-2033-231	E
	Westbound L	15	D	48	F	20	D
	Westbound TR	1488-7	D	1920-33	C	1824-5	D
	Northbound L	607	D	718	D	670	F
	Northbound LTR	12_93	D	33_109	C	0-110	C
	Southbound LTR	2_16_1	C	0_0_97	F	0-5-5	C
			LOS: D		**LOS: D**		

MD Future							
Intersection	**Approach**	**DCP**		**DOT**		**Phil Habib**	
		Volumes	***LOS***	***Volumes***	***LOS***	***Volumes***	***LOS***
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	257	B	313	A	262	B
	Westbound T	365	B	526	B	403	B
	Northbound L	83	C	187	C	165	C
			LOS: B		**LOS: B**		
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	186	B	222	C	202	B
	Westbound L	219	B	350	C	247	B
	Wesbound T	239	B	363	A	321	A
	Southbound LTR	70-319-22	C	91-340-15	C	60-281-10	C
			LOS: B		**LOS: C**		
Lafayette Av. and Brush Av.	Wesbound LR	32	C	83	A	30	A
	Westbound R	273	C	295	A	301	A
	Northbound TR	354-46	B	383	D	373-65	C
	Southbound LT	159-123	B	365	E	142-152	B
			LOS: B		**LOS: D**		
Bruckner Blvd and Brush Av.	Eastbound LTR	14-1621-357	C	252-1523-370	E	15-1477-344	C
	Westbound L	18	C	106	F	15	B
	Westbound TR	1416-4	B	1330-72	C	1477-5	B
	Northbound L	623	F	527	D	656	F
	Northbound LTR	6_168	F	77_222	E	30-194	D
	Southbound LTR	0_0_6	C	0_0_173	F	10_5_5	C
			LOS: D		**LOS: D**		

PM Future							
Intersection	Approach	DCP		DOT		Phil Habib	
		Volumes	*LOS*	*Volumes*	*LOS*	*Volumes*	*LOS*
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	320	B	385	A	306	B
	Westbound T	384	B	534	B	408	B
	Northbound L	77	C	183	C	90	C
			LOS: B		**LOS: B**		
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	212	B	274	C	224	B
	Westbound L	312	B	273	B	211	B
	Wesbound T	251	B	444	A	287	A
	Southbound LTR	114-336-19	C	112-335-10	C	82-402-25	C
			LOS: B		**LOS: B**		
Lafayette Av. and Brush Av.	Wesbound LR	10	C	56	A	21	A
	Westbound R	227	C	399	A	291	A
	Northbound TR	407-80	B	424	E	477-35	D
	Southbound LT	209-106	C	382	E	159-115	B
			LOS: B		**LOS: D**		
Bruckner Blvd and Brush Av.	Eastbound LTR	10-2381-411	F	242-1685-410	F	25-2294-313	F
	Westbound L	22	D	73	E	15	C
	Westbound TR	1795-2	C	1323-69	C	1910-5	C
	Northbound L	609	F	557	D	705	F
	Northbound LTR	3-182	F	74_237	E	5-216	D
	Southbound LTR	0_0_5	C	0_0_185	F	5_5_10	C
			LOS: E		**LOS: E**		

SAT Future							
Intersection	Approach	DCP		DOT		Phil Habib	
		Volumes	*LOS*	*Volumes*	*LOS*	*Volumes*	*LOS*
Lafayette Av. and Hutchinson N Service Rd.	Eastbound T	401	B	381	A	321	B
	Westbound T	530	B	584	B	487	B
	Northbound L	67	C	214	C	70	C
			LOS: B		**LOS: B**		
Lafayette Av. and Hutchinson S. Service Rd.	Eastbound T	186	B	264	C	190	B
	Westbound L	246	B	326	C	215	B
	Wesbound T	267	B	472	A	342	A
	Southbound LTR	147-343-24	C	117-353-15	C	131-395-15	C
			LOS: B		**LOS: B**		
Lafayette Av. and Brush Av.	Wesbound LR	15	C	89	A	25	A
	Westbound R	329	C	398	A	332	A
	Northbound TR	355-31	B	404	D	338-19	C
	Southbound LT	199-116	B	439	F	157-143	C
			LOS: B		**LOS: D**		
Bruckner Blvd and Brush Av.	Eastbound LTR	14-2008-470	E	364-1802-489	F	45-1378-370	C
	Westbound L	24	D	133	F	35	B
	Westbound TR	1724-0	C	1570-109	B	1427-5	B
	Northbound L	944	F	590	D	692	F
	Northbound LTR	1-212	F	109_316	F	20-210	D
	Southbound LTR	0_0_9	C	0_0_252	F	5_10_25	C
			LOS: E		**LOS: F**		

6- Traffic Volume Diagrams: 2013 Existing Volumes

Existing AM Peak Hour Traffic Volumes

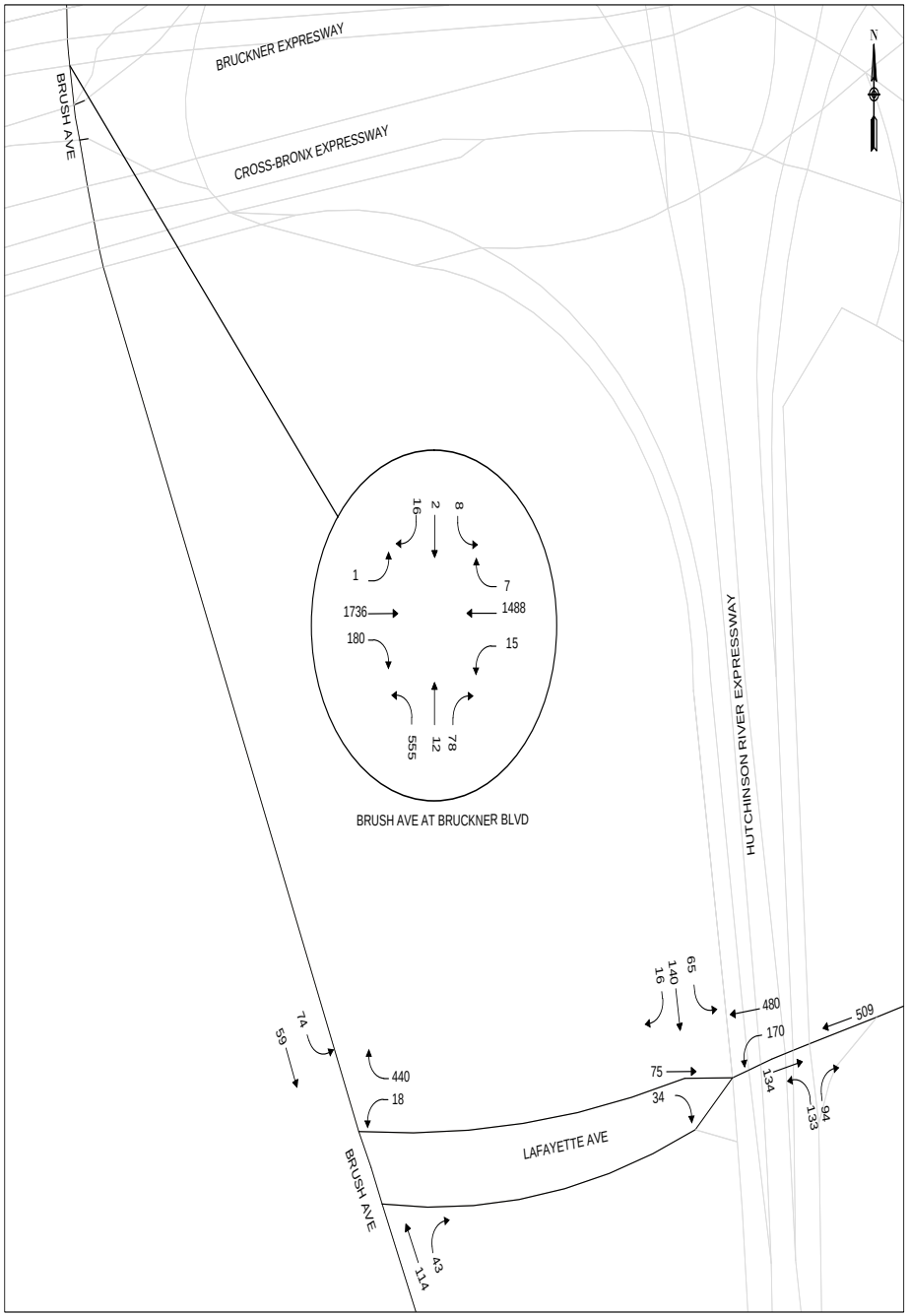
North Study Area

NYC Department of City Planning, Transportation Division

Existing AM Peak Hour Traffic Volumes

North Study Area

NYC Department of City Planning, Transportation Division



Existing AM Peak Hour Traffic Volumes

South Study Area

NYC Department of City Planning, Transportation Division

Existing Midday Traffic Volumes

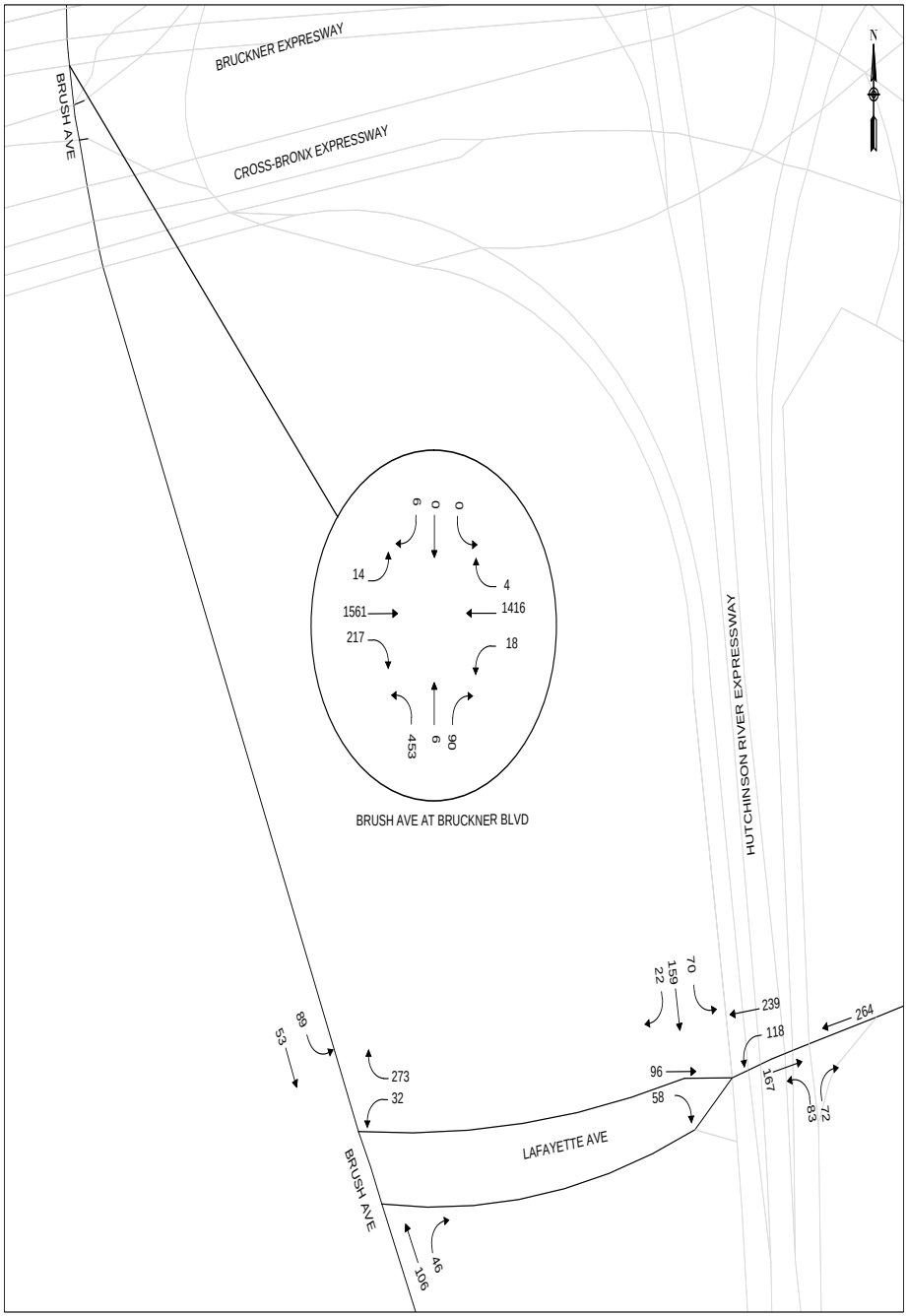
NYC Department of City Planning, Transportation Division

North Study Area

Existing Midday Traffic Volumes

NYC Department of City Planning, Transportation Division

North Study Area



Existing Midday Traffic Volumes

South Study Area

NYC Department of City Planning, Transportation Division

Existing PM Peak Hour Traffic Volumes

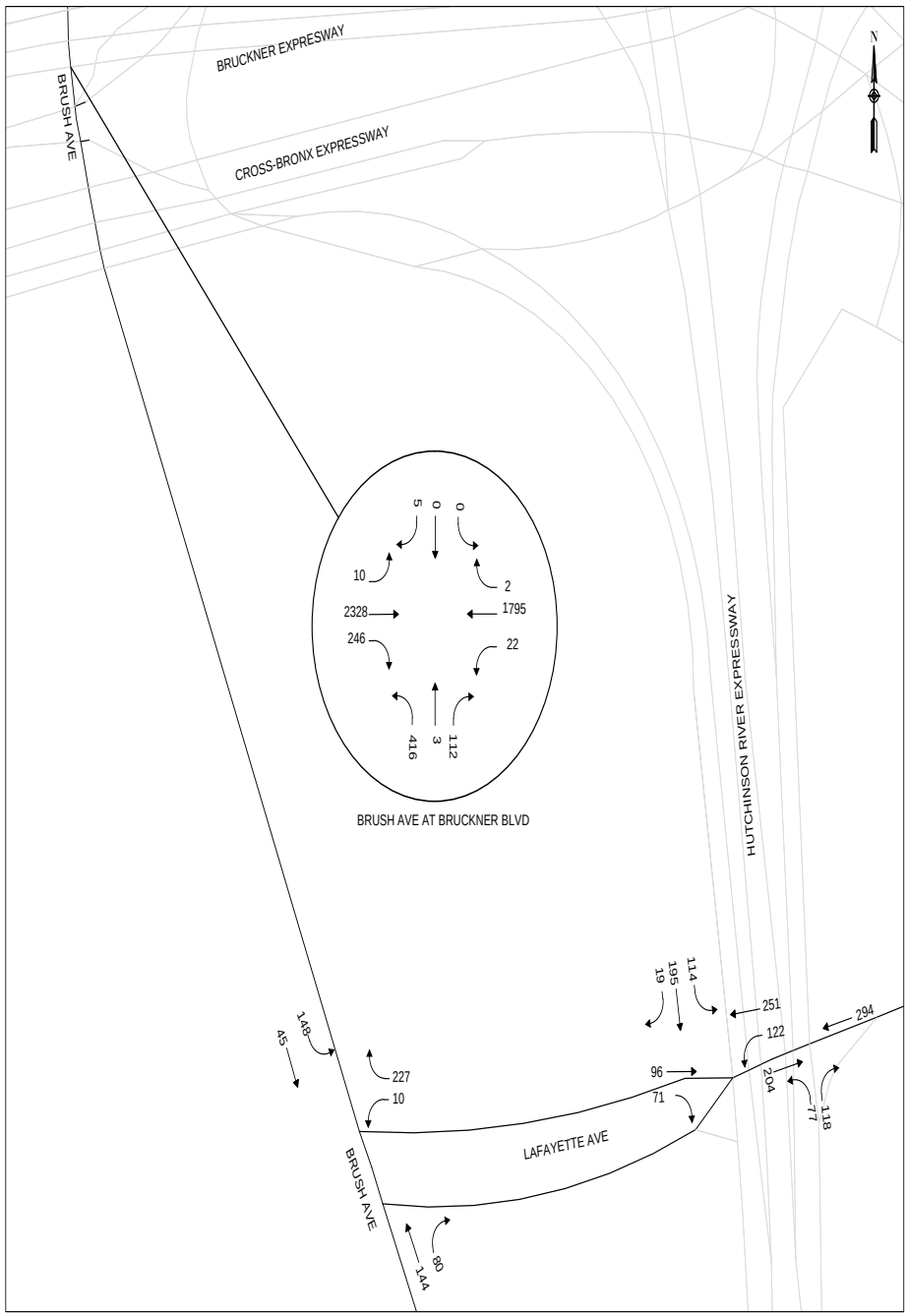
North Study Area

NYC Department of City Planning, Transportation Division

Existing PM Peak Hour Traffic Volumes

North Study Area

NYC Department of City Planning, Transportation Division



Existing PM Peak Hour Traffic Volumes

South Study Area

NYC Department of City Planning, Transportation Division

Existing Saturday Midday Traffic Volumes

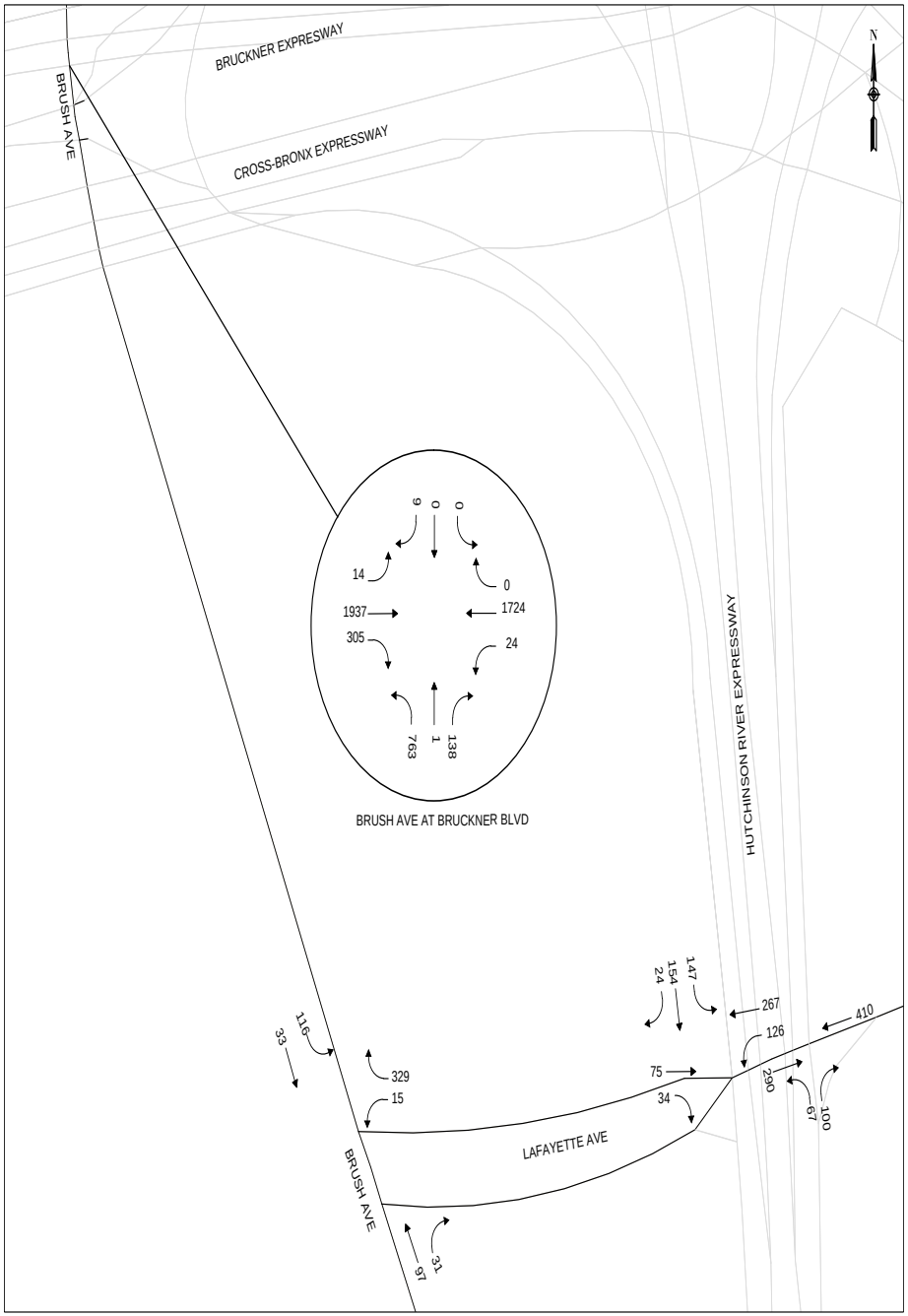
NYC Department of City Planning, Transportation Division

North Study Area

Existing Saturday Midday Traffic Volumes

NYC Department of City Planning, Transportation Division

North Study Area



Existing Saturday Midday Traffic Volumes

NYC Department of City Planning, Transportation Division

South Study Area

6- Traffic Volume Diagrams:
Near Future Volumes

Near Future AM Peak Hour Traffic Volumes

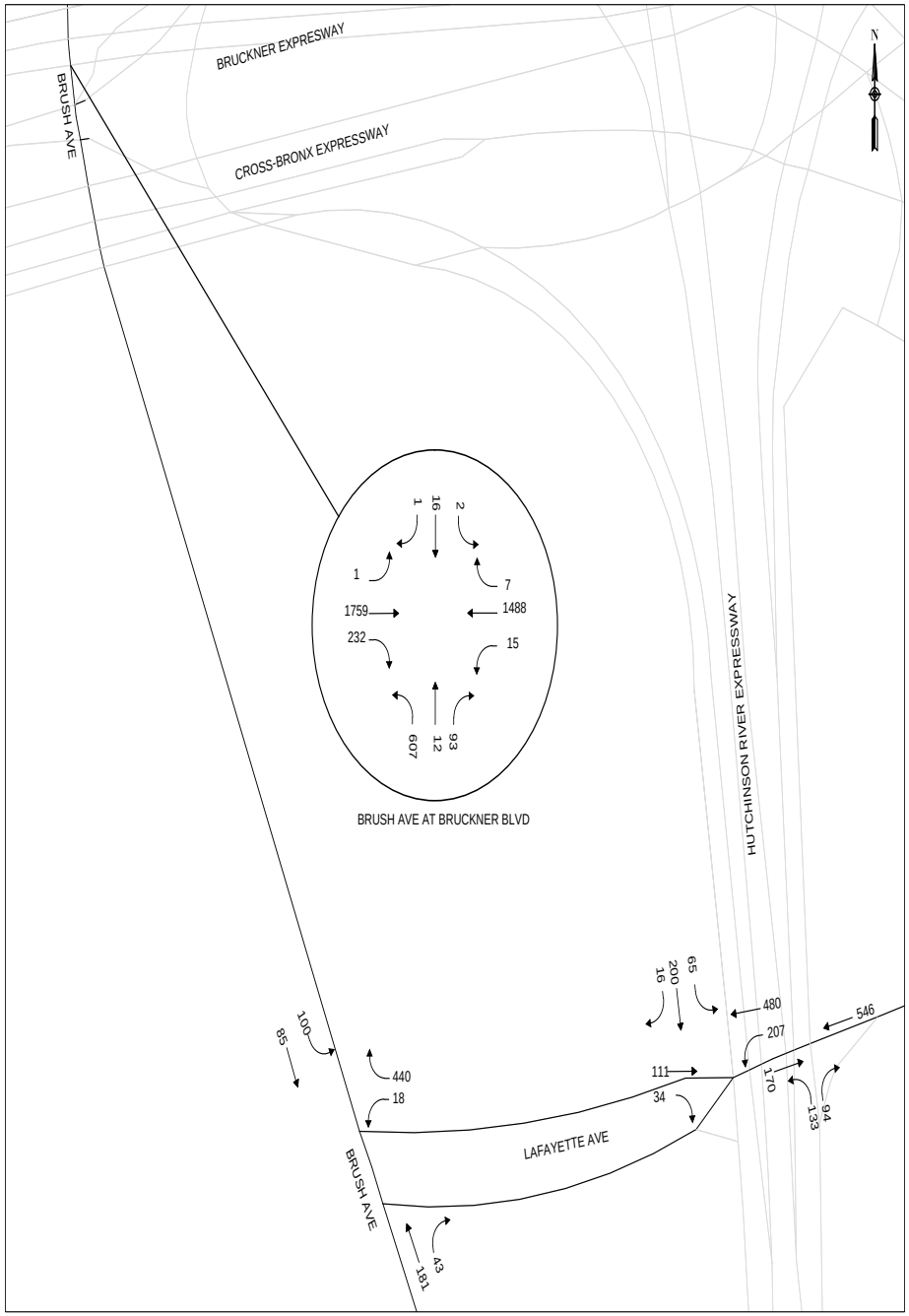
NYC Department of City Planning, Transportation Division

North Study Area

Near Future AM Peak Hour Traffic Volumes

North Study Area

NYC Department of City Planning, Transportation Division



Near Future AM Peak Hour Traffic Volumes

South Study Area

NYC Department of City Planning, Transportation Division

Near Future Midday Traffic Volumes

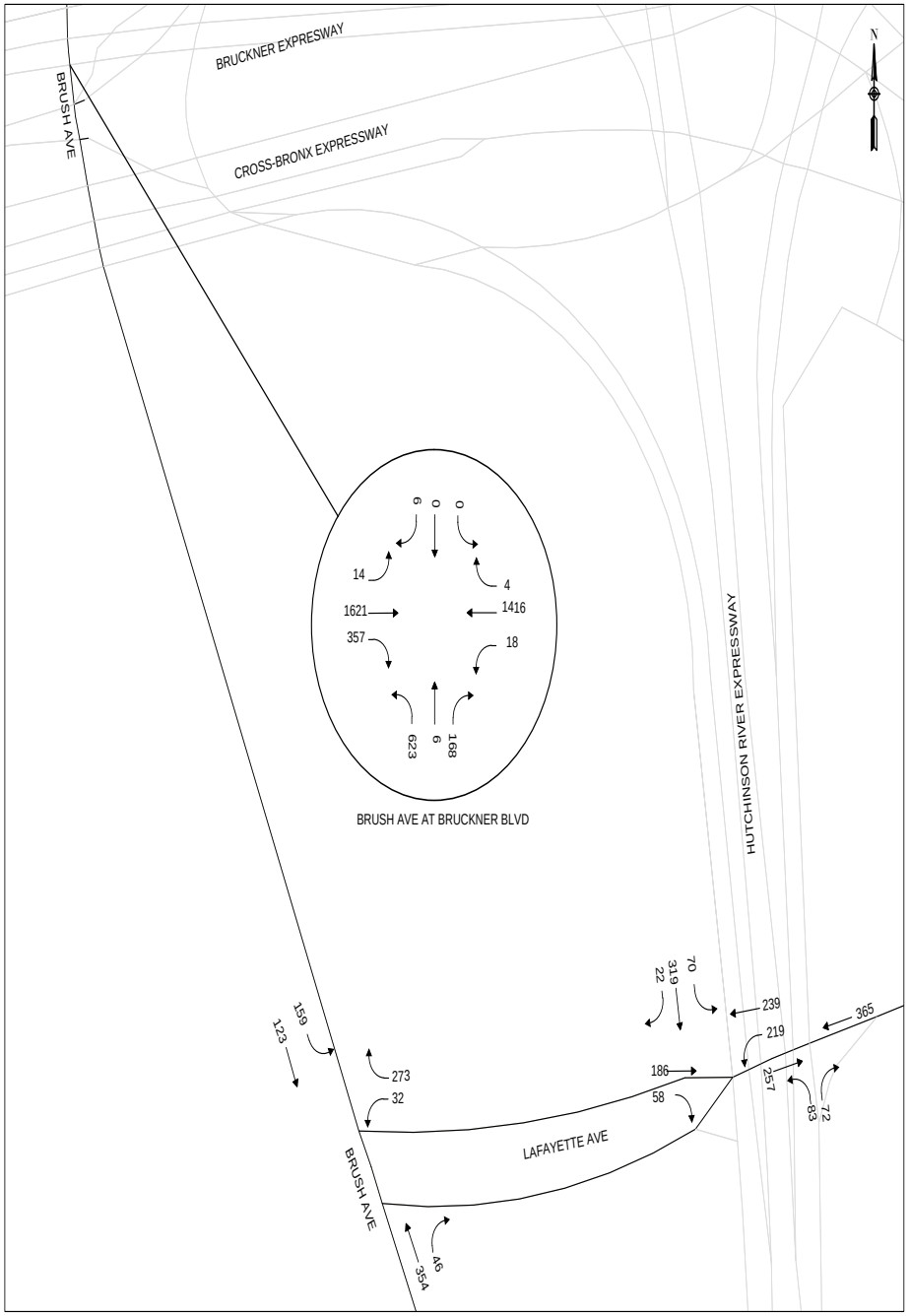
NYC Department of City Planning, Transportation Division

North Study Area

Near Future Midday Traffic Volumes

NYC Department of City Planning, Transportation Division

North Study Area



Near Future Midday Traffic Volumes

South Study Area

NYC Department of City Planning, Transportation Division

Near Future PM Peak Hour Traffic Volumes

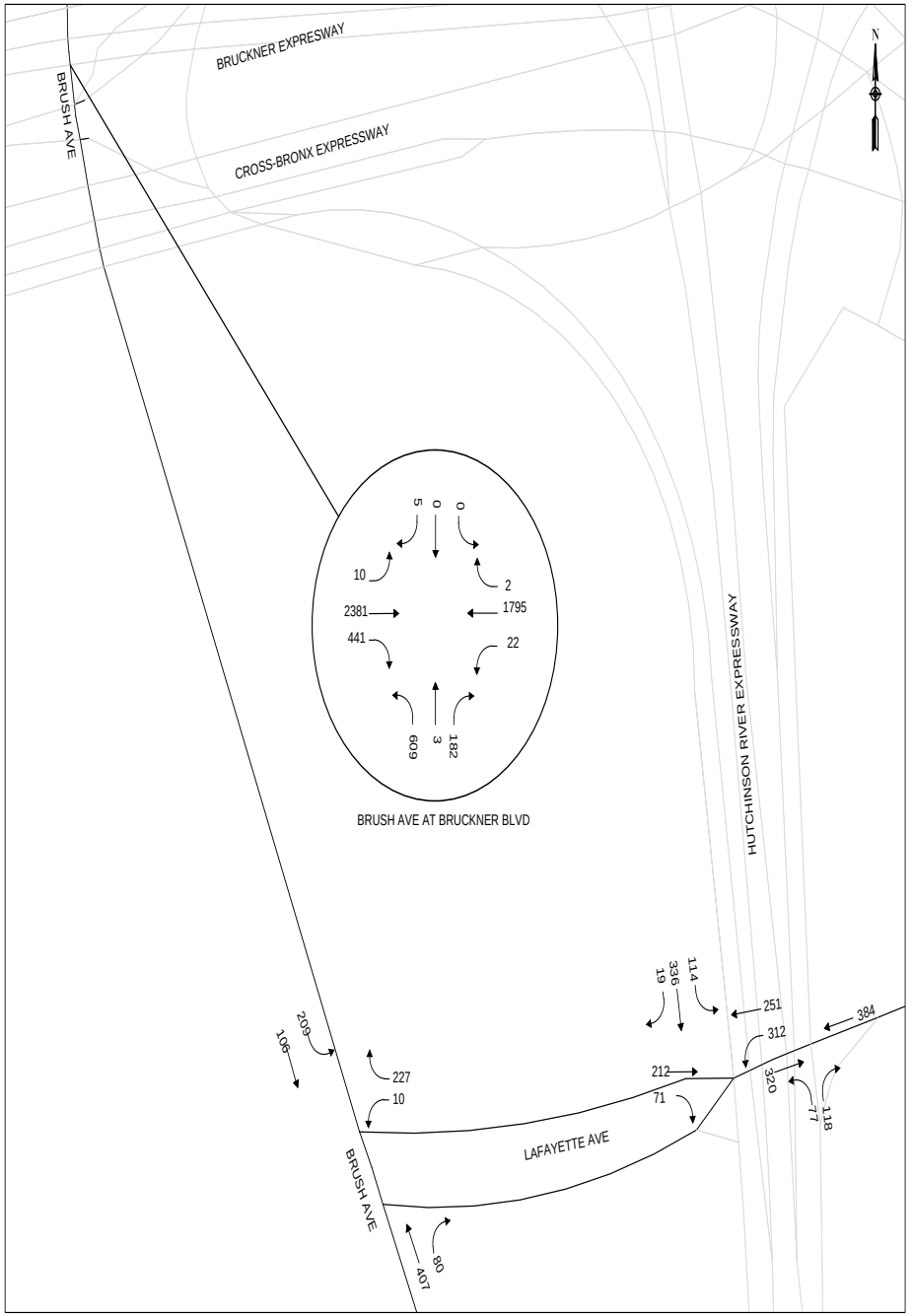
North Study Area

NYC Department of City Planning, Transportation Division

Near Future PM Peak Hour Traffic Volumes

North Study Area

NYC Department of City Planning, Transportation Division



Near Future PM Peak Hour Traffic Volumes

South Study Area

NYC Department of City Planning, Transportation Division

Near Future Saturday Midday Traffic Volumes

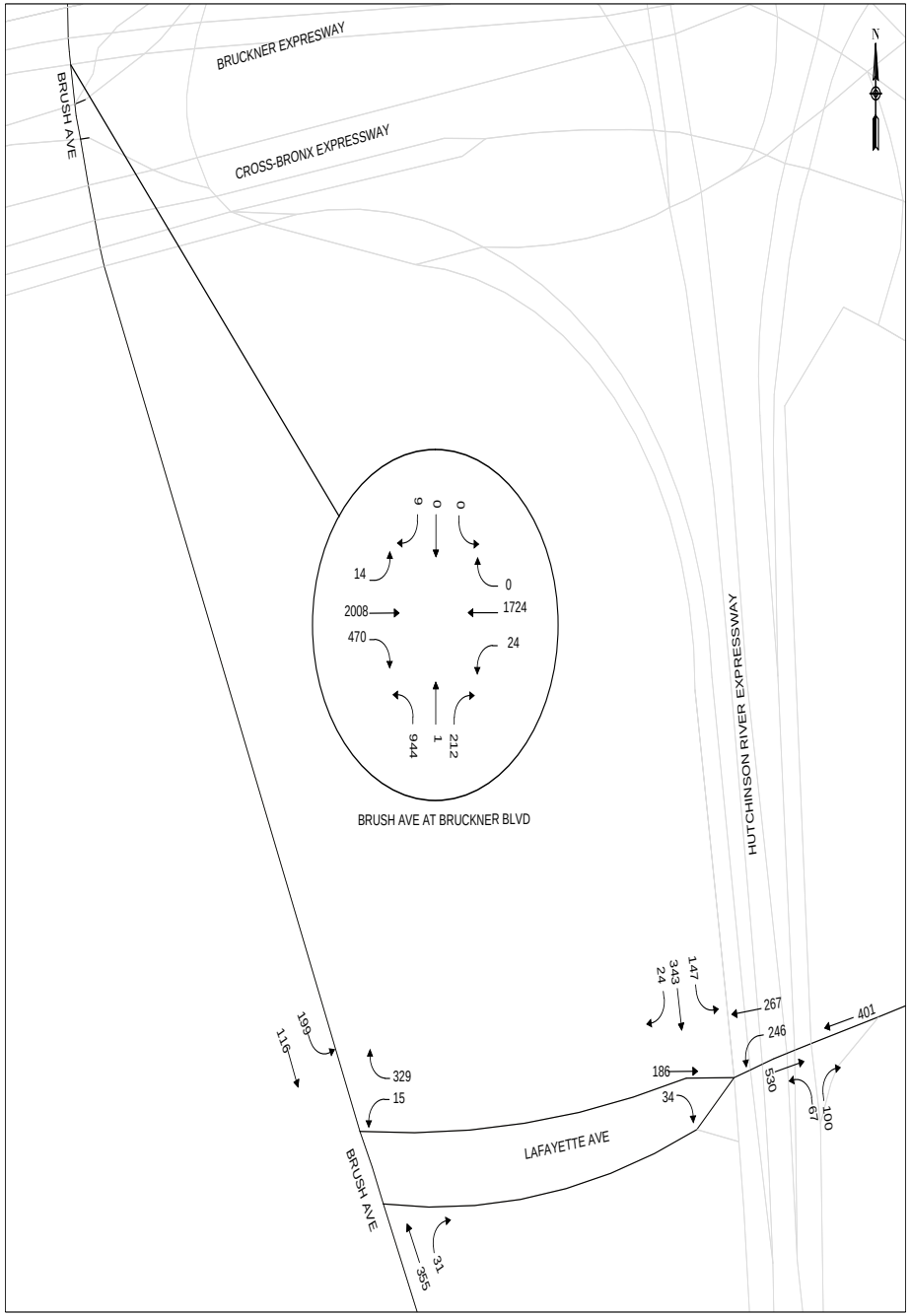
NYC Department of City Planning, Transportation Division

North Study Area

Near Future Saturday Midday Traffic Volumes

NYC Department of City Planning, Transportation Division

North Study Area



Near Future Saturday Midday Traffic Volumes

South Study Area

NYC Department of City Planning, Transportation Division

Appendix G
Literature Review

Literature Review

Document #1:

Bronx Community Board 10's Traffic Management Plan - Francesca Camillo/ Columbia University, Graduate Planning Fellow, Fund for the City of New York, 2012 -2013.

The goal of this plan is to develop an alternative traffic management plan for CB 10 that mitigates the traffic, noise and air pollution that is expected as a result of current and proposed commercial developments occurring along the I-95 corridor between the Whitestone Bridge and Co-op City. The following projects are underway: Construction of Macy's in the Bay Plaza Mall, Redevelopment of the Whitestone Multiplex on Brush Avenue, and the Throgs Neck Shopping Center at Brush and Lafayette Avenues. Additionally, there is the renovation of Ferry Point Park. The focus of this project is on the area where the Throgs Neck Shopping Center and Whitestone Multiplex development are proposed.

Land Use and Population:

The top four land uses of the area are 1-2 family residential (29.8%), open space/recreation (13.6%), multi –family residential (12.9%), institutions (12.7%) and miscellaneous (11.5%). The land use along I-95 corridor and the Hutchinson River Parkway is more economic based since the zoning is primarily non-residential (commercial/office and industrial), except for a small of number of residences between the Throgs Neck Shopping Center and the Industrial Business Zone at the end of Brush Avenue. The population is diverse relative to race and age. As of 2010 there were a total of 52,511 housing units. Data from the Environmental Public Health and Sustainability Tracking Portal, indicates that there is a higher incidence of asthma hospitalizations in the Pelham – Throgs Neck area than for the overall NYC area, especially for children under the age of 4 (124.4 vs. 73.7 – rate per 10,000).

Site Zoning and Impact:

The site of the Throgs Neck Shopping Center is zoned M1-2, has an FAR of 2.0 and requires parking. It allows for light industrial uses and storage facilities, but most retail uses are permitted. The shopping center will contain a Target, a TJ Maxx and other retail uses. The residential uses that are close by are not considered to be traditional and therefore should be evaluated in tandem with the development of the shopping center. Making the neighborhood more

of a "Complete Streets" area should be considered as a possibility. There are a number of community facilities that are close to the shopping center that may be affected by the increase in traffic. They are Crossway Christian Academy, St. Joseph's School for the Deaf, Monsignor Scanlan High School, and PS 10.

Recommendations:

Slip Lane – A slip lane could be added to St. Joseph's Way to efficiently get people from the shopping center to the highway system.

Dedicated Lane – A dedicated lane could be added from the ring road to the Whitestone Bridge. The ring road that traverses the space beneath the Whitestone Bridge will undergo renovation to accommodate the Ferry Point Park project.

Possible Solutions;

Infrastructure Solutions:

The intersection of Bruckner Boulevard and Brush Avenue (generally considered feeder roads) is operating at or over capacity. The Philip Habib Traffic Study suggestion is to increase capacity on Brush Avenue by widening it 6' (3' on each side) and doubling the northbound (left turn) lane from Brush Avenue onto Bruckner Boulevard. The southbound lane would remain untouched. The plan also suggests a slip-on ramp from Bruckner Blvd to I-95 and holistically adjusting the width of Bruckner Boulevard.

Examples of Possible Traffic Calming Solutions:

The IKEA store in Brooklyn serves as a model for creating transit connections. It provides a free shuttle bus and water taxi for shoppers. In addition, the MTA provides two busses that also stop at IKEA. This joint approach shows that both the business uses and the city transportation agency want to address the needs of the local residents. This transit model could be employed to connect the Throgs Neck Shopping Center with the Whitestone Multiplex site.

The Median along Bruckner Blvd and Brush Avenue:

The Allen Street Mall is a viable model, located near the Williamsburg Bridge in lower Manhattan. It serves both pedestrians, bicycle riders and is flanked by multiple lanes of traffic. Using this example the median along Bruckner Blvd and Brush Avenue could be reinvented as a walkable, pedestrian and bike friendly roadway linking the Throgs Neck Shopping Center and the development at the Whitestone Multiplex.

Mitigation Measures:

Adding neckdowns, decreasing lane widths, and changing signal timing are mitigation measures that could ameliorate traffic conditions as they did in Red Hook after IKEA opened. These mitigations may create opportunities for Greenstreets and innovative landscaping, along with programmable areas that provide seating.

Document #2:

Comprehensive Citywide Ferry Study – Appendix B, Site Profiles, EDC, 2010.

This study was initiated at the request of the City Council. The Council wanted a comprehensive evaluation of the potential for ferry transit in the city. It examines the market demand and potential ridership for 40 sites throughout the city.

The site profiles included in this study provides information on demographics, journey-to-work, time and cost competiveness verses existing transit, local demand generators, potential for new developments, and access to parking (if applicable).

The Soundview site, located in the southern portion of the Hutchinson River Corridor study area, is the only appropriate site for consideration for this study.

The following tables, graphics and maps found on pages 65 to 74 in Appendix B, provide the demographics and background information for the Soundview landing site.

1. Document: Ferry Policy and Planning in New York City: Considerations for a Five-Borough Ferry System, EDC.

   Since the release of the Comprehensive Citywide Ferry Study in 2010, the City has undertaken several new ferry services, most notably the East River Ferry pilot program which began in the summer of 2011. The recent success of these new ferry services throughout the city has increased the interest of the public for additional ferry services. The new Citywide Ferry Study which is now in draft form provides a detailed analysis of a possible future five-borough ferry system.

   This policy and planning paper, produced in closed coordination

with the updated study, gives information to both decision-makers and stakeholders about the factors that contribute to establishing new ferry service. This policy and planning paper (which complements the City-wide Ferry Study) is organized into three core topics, as follows:

1. Ferry Planning Best Practices and Lessons Learned

2. Policy Considerations

3. Ferry Expansion: Potential New Markets

Currently, the market in the Bronx does not support the need for multiple ferries because of the lack of residential density near the waterfront, and most ferry routes are not competitive with the travel times of alternate modes. The only location for a ferry landing mentioned in this paper would be Soundview in the eastern Bronx on the upper East River. This location could support parking for Bronx commuters to Manhattan, and also attract riders to the Bronx to visit planned commercial developments in the area.

2. Document: Citywide Ferry Study 2013 (CFS2013) – Preliminary Report, EDC.

The Comprehensive Citywide Ferry Study (CFS2010) that was completed by the Economic Development Corporation in 2010 provided an overview of development potential for passenger ferry transportation throughout New York City. Based on the recommendations of this study the East River Ferry was implemented and is a success. This report CF2013, builds on the work contained in the CFS2010. It is to be used as a planning tool for elected decision makers, private ferry operators, and stakeholders at large, to identify opportunities to fill transit gaps through waterborne transportation. The goals are to identify new ferry service opportunities with an understanding of the economics involved and to develop a planning framework that can be used to assess future ferry service opportunities in New York City. In the main findings of this study, Soundview is mentioned as part of Route 3B. (See the Table of new ferry routes, with their associated costs on page 6.)

Site profiles were used to guide the selection of sites for the first phase of ridership modeling. The site profiles allowed the study to assess some important factors for sites, including ridership potentially proximity to existing transit service, physical limitations of the sites, and limited potential for network connectivity.

Extending Route 3B to include Soundview as a stop creates wider accessibility to the Bronx waterfront which is an important policy consideration. Existing Route 3B as shown in Figure 6.1, serves areas of the Bronx, via Soundview, and Manhattan, via East 90th Street and East 62nd Street. These are points that are not well connected. This route also provides an opportunity for connecting Bronx residents to hospital and other job centers in the Upper East Side.

Considering ridership, operating costs and subsidies, route 3B is the most successful route that incorporates service to the Bronx. It allows the bundling of Soundview service with stops at East 90th Street and East 62nd Street towards Pier 11, with the Upper East Side stops helping to defray per passenger operating costs. At revenue maximizing fares Soundview ridership is close to 250 daily weekday riders, and overall per passenger subsidies approach $10.

The Citywide Ferry Study 2013 concludes that extending service to the Bronx entails challenges due to the distances involved and the generally modest ridership generated. The subsidy levels mentioned in the report are immediately reduced by 40% if Route 3B (which includes service to Soundview) is not included in the service expansion.

PHA Traffic Study, Target Retail Development, December 2011

PHA Tech Memo, Traffic Assessment for Redevelopment of Whitestone Cinema, February 2012

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