Final Report

Route 110 BRT Study

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Town of Babylon

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Introduction

The Route 110 corridor is Suffolk County's "High-Tech Main Street" and pre-eminent employment and commercial corridor. It is the commercial heart of the county and employs 135,000 people—almost 20% of the county's workforce. Real estate brokers and others consider this corridor to be the premier commercial downtown on Long Island; it has a large number of high-quality office buildings in Melville and Farmingdale that command premium rents. This corridor has name recognition—just as Park Avenue in Manhattan does.

Route 110 traffic. Buses today are affected by heavy traffic, and travel times suffer.

Yet, in some cases, Route 110 is also a victim of its own success.

Growth along Route 110 during the past decades has led to increases in traffic along Route 110, and the form of development—centered on easy automobile access—makes it difficult to provide other mobility options.

The Route 110 BRT Study was commissioned by the Town of Babylon, in partnership with the Town of Huntington and the MTA Long Island Rail Road (LIRR) to address these issues, specifically:

- How can we continue the economic vitality of Route 110?
- How can we continue to make Route 110 a desirable place to work, shop, study, live, and visit?
- How can we accommodate future growth along Route 110 without exacerbating current traffic conditions?
- How can we foster future development along Route 110 in a "smarter and greener" and environmentally sustainable manner?

In today's highly competitive global arena, the Route 110 corridor must compete with other business centers in the tri-state area and jobs as well as nationally and internationally for jobs.

Route 110 has name recognition. It is home to a variety of Class A office buildings and high-tech research facilities.

STUDY GOALS & OBJECTIVES

Bus rapid transit (BRT) along the Route 110 corridor would provide an important link for work and non-work trips destined both to and from New York City, and would provide mobility along the corridor. The Route 110 BRT would also be a critical connecting link between the North Shore and the South Shore; thus, the success of a Route 110 BRT system would be closely tied to other planned public transit improvements in Babylon, Suffolk County, Nassau County, and New York City, as well as activity centers/generators both along and outside of the corridor.

The Route 110 BRT Study was guided by the study goals listed below, which led to the corresponding study objectives.

BUS RAPID TRANSIT (BRT)

Existing bus transit service along Route 110 is provided by Suffolk County Transit's Route S1, which is Suffolk County Transit's busiest bus route. It is also largely a low-profile bus service, stopping frequently along Route 110 to serve closely spaced bus stops. While more bus stops equal shorter walking distances to/from a bus stop, bus speeds are reduced and travel times increase. Most ridership models indicate that as travel times increase, ridership drops.

BRT is a term applied to public transportation systems using a series of systematic, integrated improvements to provide faster, more efficient service than an ordinary bus line. This premium service generally consists of nine major elements (see sidebar on the following page). The goal of BRT systems is to approach the service quality of light rail transit while still enjoying the cost savings and flexibility of bus transit.

Study Goals and Objectives

- **Facilitate the growth of an effective, economical, environmentally sensitive transportation system.**
  - **Evaluate benefits of BRT on Route 110.**
- **Improve transit mobility for Suffolk County residents, visitors, and employees along the corridor.**
  - **Determine whether BRT on Route 110 is feasible.**
  - **Coordinate with existing transit services (Suffolk County Transit, Long Island Bus, HART, and LIRR).**
- **Encourage job creation and retention along Route 110.**
  - **Develop BRT for multiple markets.**
- **Reduce dependence on automobile use.**
  - **Transform Route 110 into a more pedestrian- and transit-friendly corridor**
  - **Help foster transit-supportive land uses along Route 110.**

WHY BRT FOR ROUTE 110?

Multiple factors make BRT a good concept for this corridor:

- **BRT is cost competitive.** Earlier studies for the Route 110 corridor proposed monorails, light rail transit, and underground transportation systems. These systems, while captivating the public's imagination, require significant capital investments. As such, they are less likely to qualify for federal funding because projects considered for Federal Transit Administration (FTA) New Starts funding must pass stringent cost-effectiveness tests. It is difficult for expensive transit systems to obtain federal funding in lower-density suburban settings such as Route 110. On the other hand, BRT can be highly cost competitive because it uses existing investments in roadways. BRT can also be improved incrementally to match corresponding demand.
- **Capacity improvements.** The perception is that traffic is getting worse. According to *Route 110 Traffic Conditions Past, Present and Future*, prepared in 2007 by Farmingdale State College, from 1989 to 2002 traffic increased on Route 110 (south of the Northern State Parkway) by about 1% per year. Interestingly, from 2002 to 2006, traffic volumes decreased by about 2% per year. Regardless, public perception is that, despite actual traffic decreases, traffic is increasing on Route 110. BRT can help provide new transportation capacity in a clearly congested corridor and help absorb new traffic growth.
- **The need for mobility choice.** Though gas prices have fallen from their peak of fall 2008, recent fluctuations in gasoline prices are reminders of how much our economy is dependent on low-cost petroleum for mobility. Economists forecast that current gas price dips are temporary, and the long-term

Elements of Bus Rapid Transit (BRT)

Vehicles. BRT vehicles could offer premium seating and amenities as well as time-saving benefits such as low-floor boarding to reduce dwell times and to provide ease of access.

Stations. BRT stations feature weather protection, seating, and customer information to guide travelers. Stations that are more elaborate stations could feature artwork.

Operations. BRT services operate limited-stop service to provide additional time savings.

Traffic Priority. A variety of strategies is available to keep BRT vehicles and local buses moving quickly. These could include exclusive bus lanes, traffic signal priority, and queue jumpers.

Customer Information. Electronic message signs at BRT stations count down the minutes until the next BRT vehicle arrives.

Station Access. Stations are linked to connecting transit services, sidewalks, bicycle lanes/paths, and/or park & ride lots.

Transit-Oriented Development (TOD). BRT can foster and attract land-use changes, which, over time, can make an area more transit-friendly and less "automobile-centric."

Fare Collection. Shifting fare collection from the bus to the BRT station permits customers to board the BRT vehicle via all doors, reducing bus dwell times.

Branding. Branding ties the various components into a cohesive whole, and distinguishes the service from local S1 bus service.

trend is towards higher gas prices. Investing in BRT can help provide mobility choice and reduce reliance upon automobile travel and imported oil.

- **There needs to be a strong transportation component for Transit Oriented Development (TOD).** The Town of Babylon has been a forceful advocate for "Smart Growth" concepts and for TOD. For TOD to truly take root along Route 110, there needs to be a transportation spine or series of nodes to anchor growth, requiring a robust transportation system—not just a repainted or re-branded bus service—that clearly demonstrates sufficient transportation investment that encourages developers to build smartly around transit nodes. In addition, BRT planning must be coordinated with effective land-use planning, policies and zoning that encourages transit friendly land uses. Transportation solutions alone cannot resolve what is a joint transportation and land use issue—both halves of the issue must be resolved. Thus, this report examines areas of future opportunity and the potential for TOD.

Existing Conditions

STUDY AREA

The Route 110 BRT Study consists of a primary study area and a secondary study area.

The primary study area—where the project is most focused—extends from the intersection of Pinelawn Road and Route 110 in the north, to just south of the LIRR Babylon Branch and Route 110 in the south.

Near the LIRR Main Line, the study area also includes:

- Airport Plaza shopping center.
- New Highway/Republic Road from the LIRR Main Line in the south to Ruland Road in the north.
- Ruland Road from Route 110 to the west to Republic Road to the east.
- Conklin Street from Route 110 to the west to Wellwood Avenue to the east.
- Wellwood Avenue/Pinelawn from Conklin Street to the south to Route 110 to the north.

This study area encompasses one active LIRR station at Amityville and one proposed new (or reopened) LIRR station at Republic Airport.[1]

The secondary study area is a wider study area. It comprises the following three corridors:

- Route 110 from Pinelawn Road to the Walt Whitman Mall, anchoring the north end of the study corridor with a regional shopping center. This mall serves as an informal transportation center for three bus operators: Suffolk County Transit, Huntington Area Rapid Transit (HART), and MTA Long Island Bus.

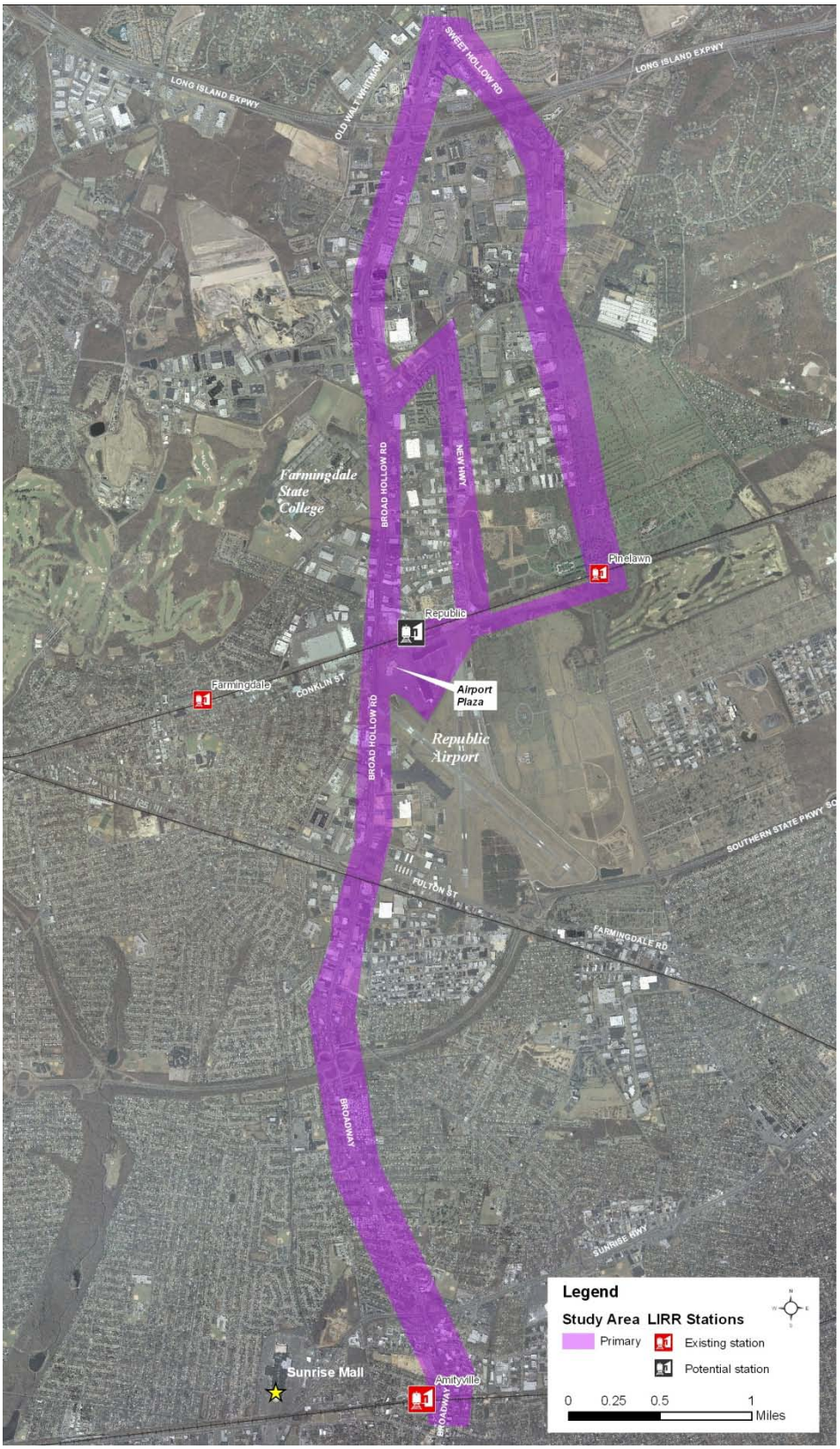
The north end of the study area is anchored by the Walt Whitman Mall, an important shopping, employment. and transit destination, where onward connections to Suffolk County Transit, MTA Long Island Bus, and HART bus services are available.

- Along Conklin Street from Route 110 to the LIRR Farmingdale Station. This station could serve as an interim connection into the Route 110 primary study area until a new station at Republic Airport opens.
- A westward corridor from Amityville Station to Sunrise Mall, another major traffic generator and transit hub at the south end of the study corridor.

The secondary study area works in concert with the primary study area to provide linkages to major employment and recreational destinations, and regional transportation nodes, and to capture more trip origins.

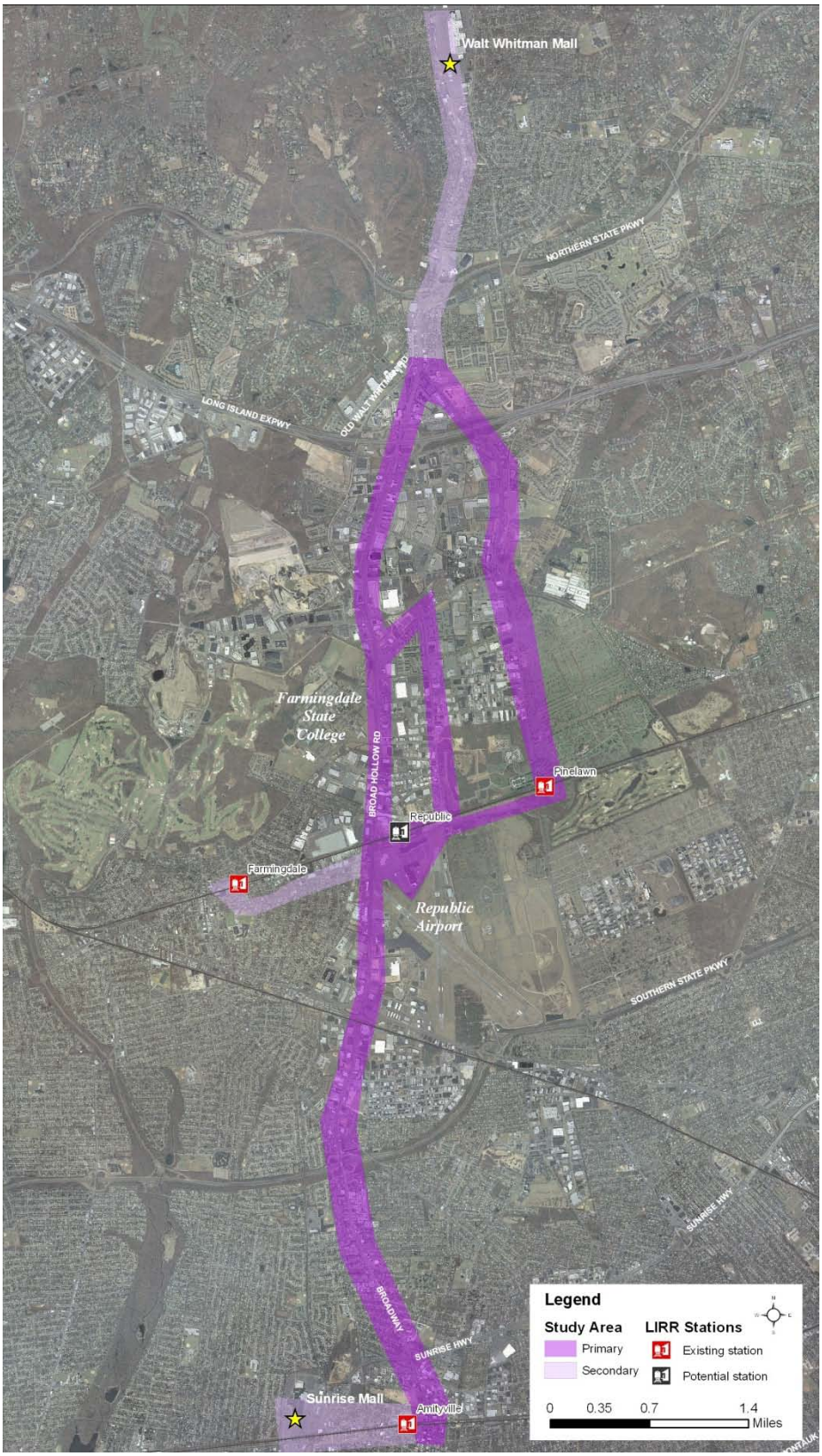
[1] Pinelawn Station is within the study area boundaries but is a limited service station.

FIGURE 1: PRIMARY STUDY AREA



[6] route 110 BRT study

FIGURE 2: SECONDARY STUDY AREA



TRANSIT SERVICES

THE LONG ISLAND RAIL ROAD

The Route 110 corridor is crossed by three branches of the LIRR:

- The heavily used Babylon Branch along the South Shore has an important station at Amityville.
- The Main Line (also shown as the Ronkonkoma Branch in LIRR timetables) is served by a station at Farmingdale. The former Republic Station was located just east of Route 110, and has been closed since 1986, when the Fairchild Republic aircraft plant closed.
- The Central Branch connects the Main Line (between Bethpage and Farmingdale) and Babylon Branch and parallels Route 109. Currently, there are no stations on this branch.

During the weekday-morning peak-commute period, about 850 LIRR customers board at Amityville Station and about 2,000 LIRR customers board at Farmingdale Station. During the same peak commute period, about 280 customers exit the train at Amityville Station and over 500 customers exit the train at Farmingdale Station. Table 1 shows average and peak weekday boarding figures.

BUS ROUTES

A substantial number of bus lines operate on or cross Route 110. The "S" routes are operated by Suffolk County Transit. The "N" routes are Nassau County routes operated by MTA Long Island Bus. The "H" routes are operated by the Town of Huntington which calls its operation HART (Huntington Area Rapid Transit).

S1: This route serves the length of the Route 110 corridor, from Halesite to the Amityville LIRR station, and is the only Suffolk County Transit bus route served by hybrid buses.

S20: This route connects the Babylon LIRR station with Sunrise Mall in Massapequa Park. It operates along Oak Street at the southern end of the Route 110 corridor.

S23: This route connects Walt Whitman Mall in South Huntington with both the Wyandanch and Babylon LIRR stations. It also serves Five Towns College and the affiliated Dix Hills Performing Arts Center. It serves Deer Park and North Babylon.

S29: This route connects Walt Whitman Mall with Deer Park, North Babylon, and Babylon and continues past the Babylon LIRR station to Great South Bay Shopping Center.

S31: This route connects northwest Babylon with the Copiague LIRR station and operates on Route 110 between Allen Boulevard and Smith Street. It also serves Pinelawn, Farmingdale, and Melville.

TABLE 1: LIRR STATION PASSENGER COUNTS

		Westbound					Eastbound				
		AM Peak		Average Weekday			AM Peak		Average Weekday		
Station	Total	On	Off	On	Off	TOTAL	On	Off	On	Off	TOTAL
Amityville	3,085	797	53	1,210	166	1,376	39	224	420	1,289	1,709
Farmingdale	4,625	1,477	215	2,432	320	2,752	319	314	689	1,184	1,873

Source: 2006 LIRR Origin and Destination Study

Suffolk County Transit's route S-1 currently provides intermodal connections to the LIRR at Amityville Station.

S54: This route operates from Walt Whitman Mall east on Jericho Turnpike and then onto Veterans Memorial Highway (NYS Route 454) to the Patchogue LIRR station. It serves both New York State and Suffolk County government offices in Hauppauge.

S110 "Suffolk Clipper": This route operates from several park & ride lots located along the Long Island Expressway (LIE) from central Suffolk County to various major businesses along and off the Route 110 corridor. Some trips also serve Hauppauge Industrial Park.

N70: This is one of three services operating along Hempstead Turnpike from the Hempstead Transit Center to eastern Nassau County, and one of two services operating on Route 110. From Conklin Street, N70 operates on Route 110 as far north as Smith Street, passing the former Republic LIRR station. It terminates on Pinelawn Road, north of Smith Street.

N72: This is a second of the three services from Hempstead Turnpike operating on the Route 110 corridor from Conklin Street south to Route 109, where it continues to the Babylon LIRR station.

N79: This route travels west on Jericho Turnpike from Walt Whitman Mall to Woodbury Road, Manetto Hill Road, and Old Country Road. It serves the communities of Plainview, Hicksville, and Mineola, including the LIRR stations at Hicksville and Mineola and Roosevelt Field Shopping Center.

N95: The N95 began as an experiment some years ago but was discontinued (due to budget cuts) as of June 27, 2010. The route connected the existing Farmingdale LIRR station with the Route 110 corridor but did not operate on Route 110 (except between north and south service roads of the LIE).

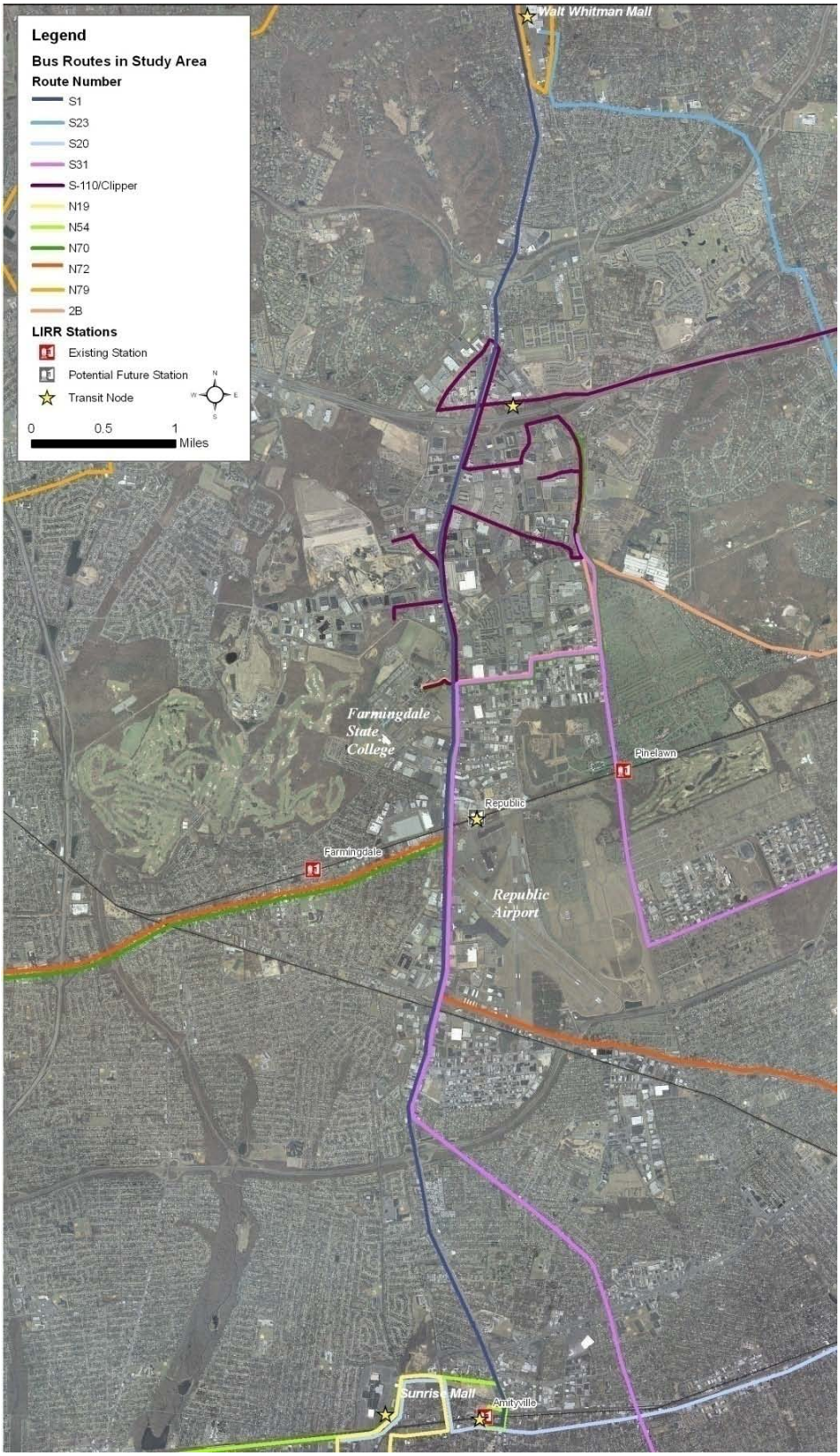
The above listing and brief descriptions of bus services do not imply that these services are comparable. For example, the S31 operates a single trip in each direction during each weekday peak period. By contrast, the S1 operates every 30 minutes throughout the day and every 15 minutes during morning and evening peak periods.

Ridership for services that operate along Route 110 are shown in Table 2. Combined ridership for the portion of the S1 and S31 services that operate in the study area is approximately 1,850 boardings per weekday.

Transit Nodes

There are several important transit nodes in the Route 110 corridor that have a concentration of transit or alternative modes. These are shown in Table 3.

FIGURE 3: TRANSIT SERVICE IN STUDY AREA



Republic Airport

Not to be ignored in any discussion of transportation in the Route 110 corridor is Republic Airport. It is a general aviation airport, currently owned and operated by NYSDOT as part of the Region 10 office.

Table 2: Average Weekday Bus Boardings

	Total Boardings	Total Boardings in Study Area
S1	2,853	1,842
S20	272	50
S23	474	81
S29	346	41
S31	23	11
N70	1,530	Not known
N72	2,890	Not known
N95	210	Not known

Source: Suffolk County Transit, October 2007; MTA/Long Island Bus

(Note: ridership data was not available for all routes.)

Table 3: Transit Nodes in Study Area

Node	Served by
Huntington LIRR Station	LIRR; S1; H9; Commuter Red (express); Commuter Blue (express)
Walt Whitman Mall	S1; S23; S29; S54; N79; H4
Route 110/LIE Park & Ride	Carpoolers; Vanpoolers
Republic Station	Former LIRR station; general aviation airport
Amityville LIRR Station	LIRR; S1; S1A; S20; S33; N54
Sunrise Mall	S20; S33; N54; N19

LAND USE AND ZONING

The design of a BRT system, particularly regarding the location of stations, is strongly influenced by land use and zoning, which help to characterize an area and its potential to accommodate/attract ridership.

The Route 110 corridor contains a varied pattern of uses; certain sections exhibit characteristics that would host a successful station and others do not. In order to assist in the BRT design and location of stations, a detailed evaluation of land use and zoning along the Route 110 corridor was conducted, including a preliminary evaluation of areas that are future "areas of opportunity."

For land use study purposes, the Route 110 corridor runs just north of the LIE in the Town of Huntington to the Amityville LIRR station in the Village of Amityville and consists of Route 110 and an approximate ¼-mile corridor on either side.

Land Use

Land use information was based on a combination of field surveys, a review of local and regional planning documents (including the Town of Huntington's Comprehensive Plan Update: Horizons 2020 and Suffolk County's 2006 Report of the Route 110 Office-Industrial Corridor), and the use of aerial photographs and Geographic Information System (GIS) data.

To ascertain land use patterns along Route 110, GIS information was obtained, including land use, from the individual municipalities and, in some cases, from Suffolk County. This layer was then superimposed upon the latest (2007) aerials of the corridor, which were obtained from the New York State GIS Clearinghouse. In most cases, the land use matched the aerial; however, in a few instances there was a discrepancy, which was noted for further investigation. This base map was updated utilizing information obtained from field visits in August, November, and December 2009. The land

use maps (Figure 4 and Figure 5) are the result of the confluence of the various sources of land use information.

Although land use varies widely along the Route 110 corridor, Route 110 itself is predominantly mixed commercial (including office, retail, and service) and industrial (mostly light industrial and storage/warehouse). A detailed description of land use along the corridor is included in the appendix.

Zoning

As with land use, zoning information was identified through a review of local and regional planning documents and GIS data. (GIS information was obtained from the individual municipalities and Suffolk County.) This was superimposed upon aerials of the community and reviewed for inconsistencies. The zoning maps (Figure 6 and Figure 7) are the result of that review. The following is a description of zoning along the corridor, based upon the zoning map.

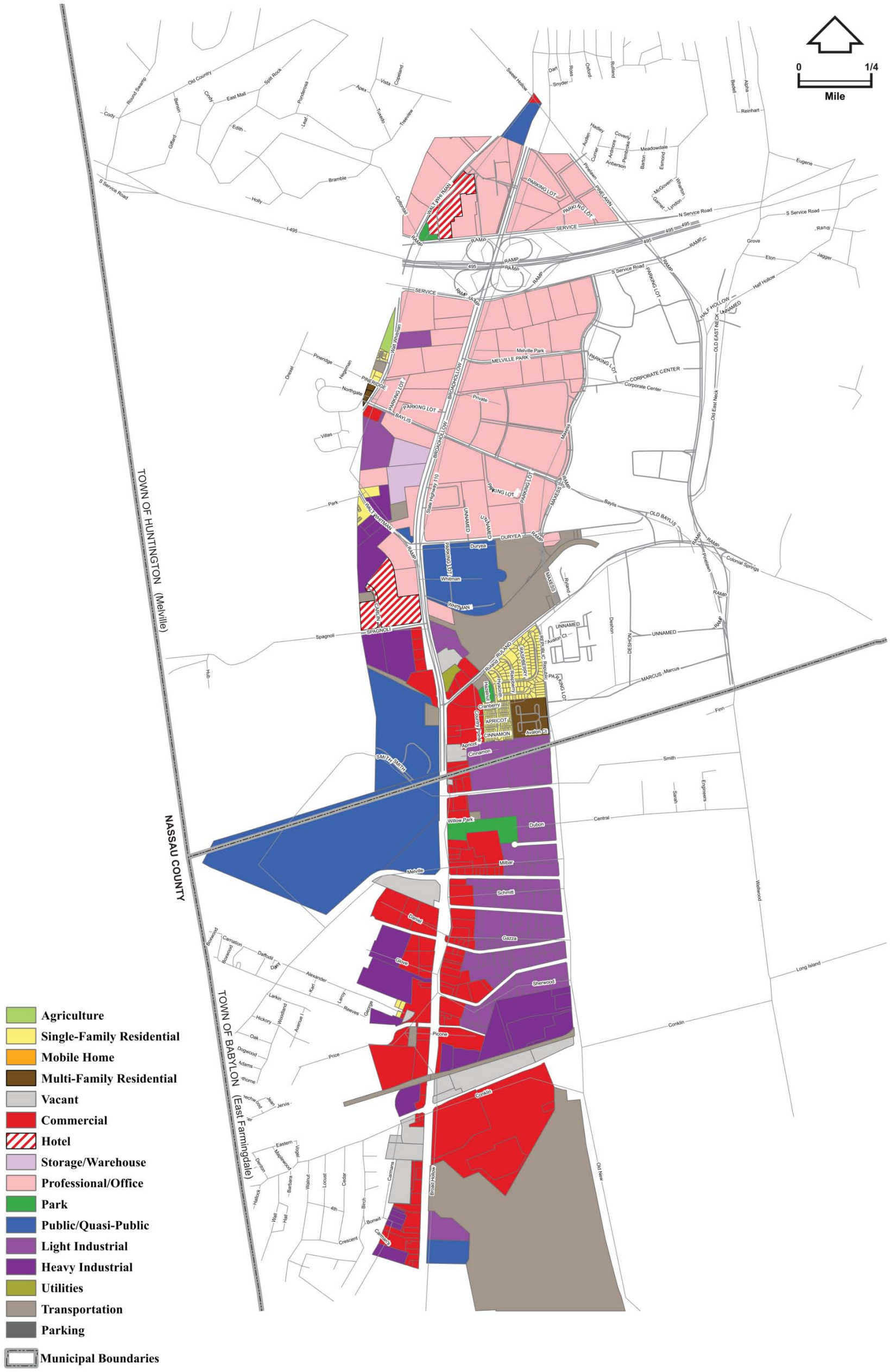
There are 26 different zoning districts within the Route 110 corridor. The Route 110 frontage is primarily zoned industrial and commercial, with residential zoning primarily beginning off the Route 110 corridor. A detailed description of zoning along the corridor is included in the appendix.

Non-Conforming Uses

Non-conforming uses are existing uses that are inappropriate in a zoning sense, since the use is not consistent with zoning for a particular site. In order to identify those uses that do not conform to existing zoning, land use and zoning were evaluated together.

The majority of study area uses appear to conform to existing zoning, especially in the Melville, North Amityville, and Village of Amityville areas. In contrast, most of the zoning along Route 110 in the East Farmingdale portion of the Route 110 corridor is limited to the Light Industrial (G) zoning district, rendering the gasoline service stations and any residential along that portion of Route 110 non-conforming. Further, the two residentially zoned parcels within the East Farmingdale area—Republic Airport and Farmingdale State College—are not residential uses; however, both parcels are not subject to zoning under their current ownership.

FIGURE 4: EXISTING LAND USE (NORTH)



SOURCES: Town of Babylon GIS; Town of Huntington GIS;
Compiled and Prepared by Saccardi & Schiff, Inc.

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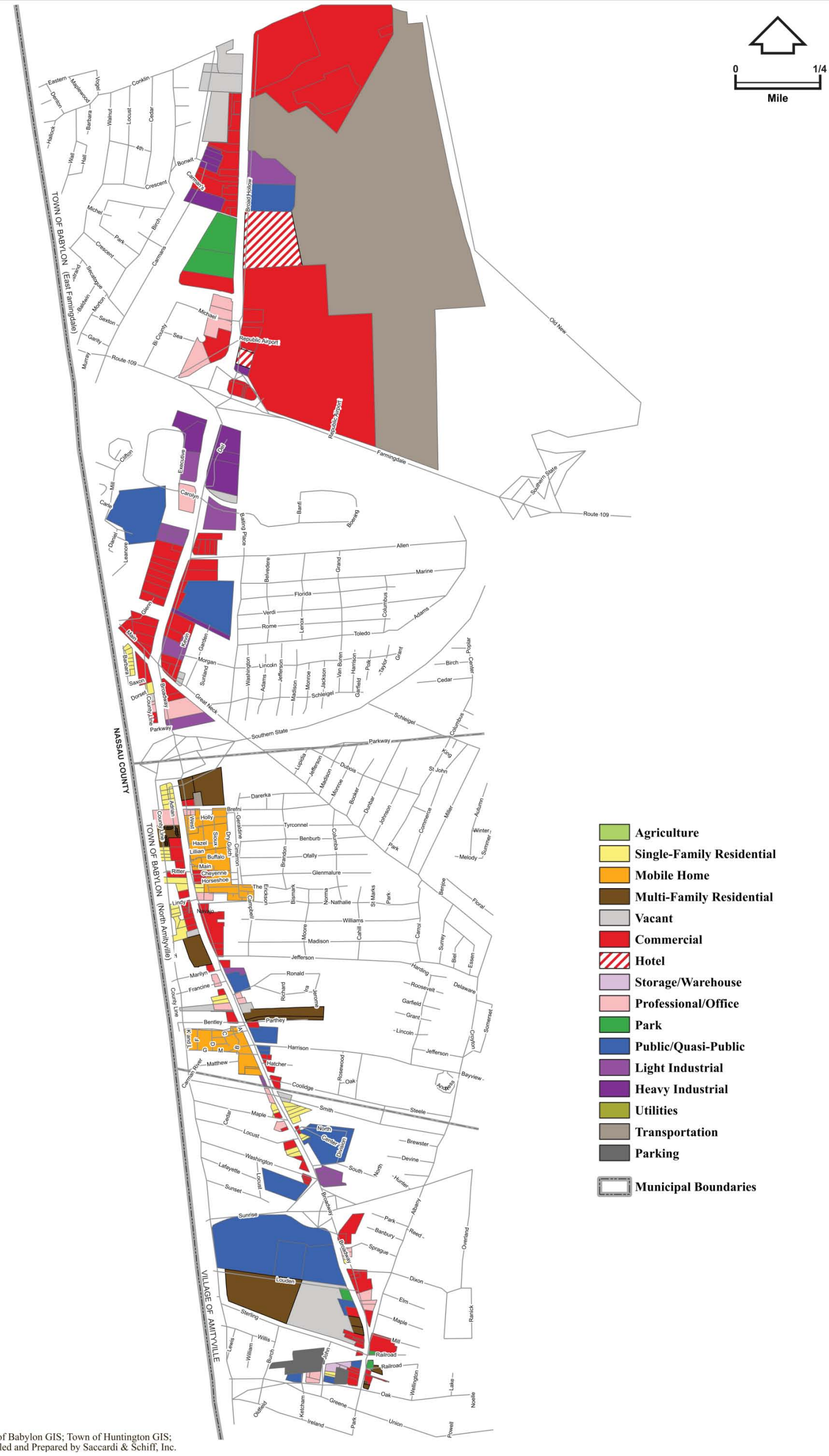
FIGURE 5: EXISTING LAND USE (SOUTH)



SOURCES: Town of Babylon GIS; Town of Huntington GIS; Compiled and Prepared by Saccardi & Schiff, Inc.

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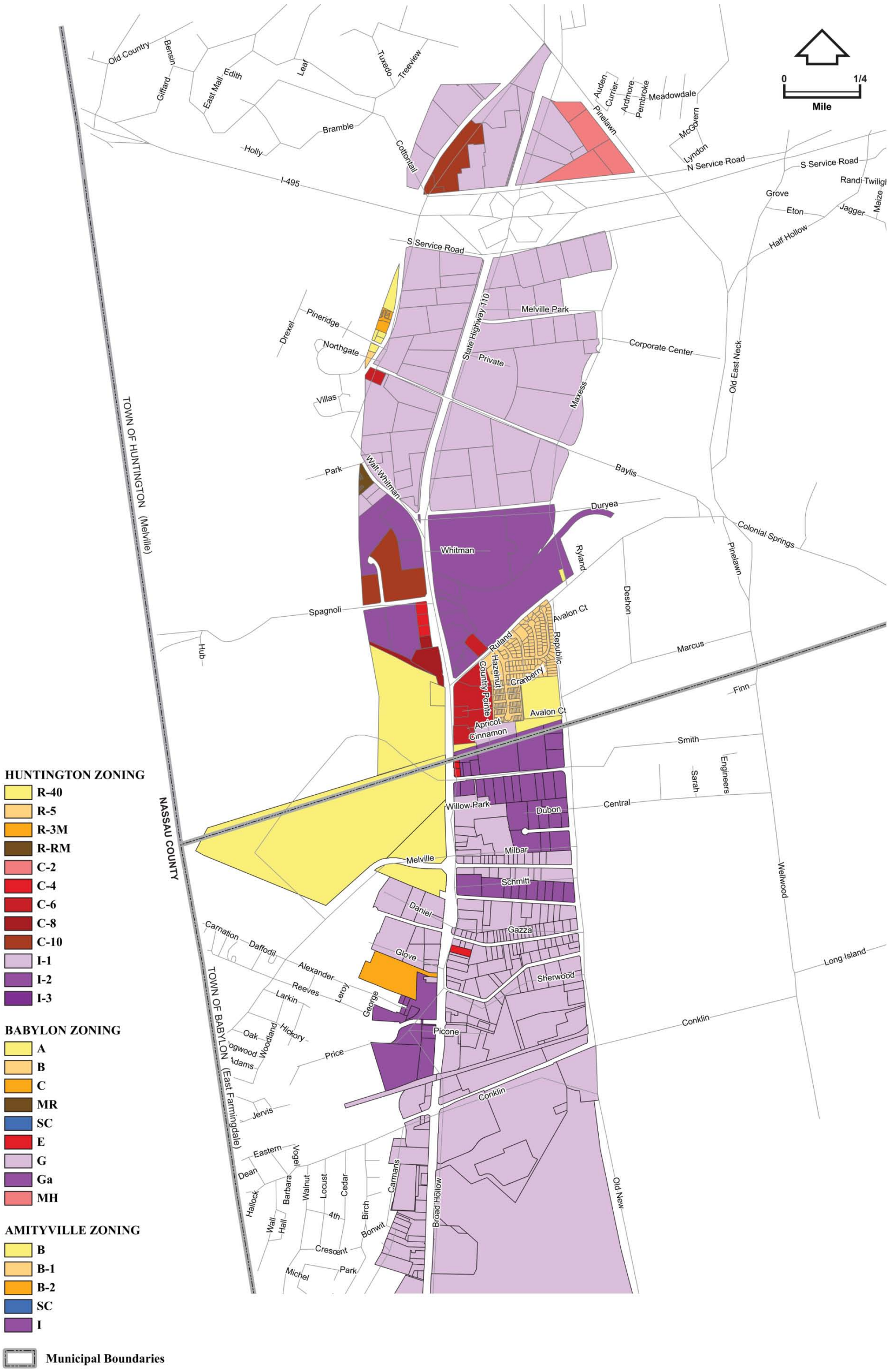
FIGURE 6: EXISTING ZONING (NORTH)



SOURCES: Town of Babylon GIS; Town of Huntington GIS;
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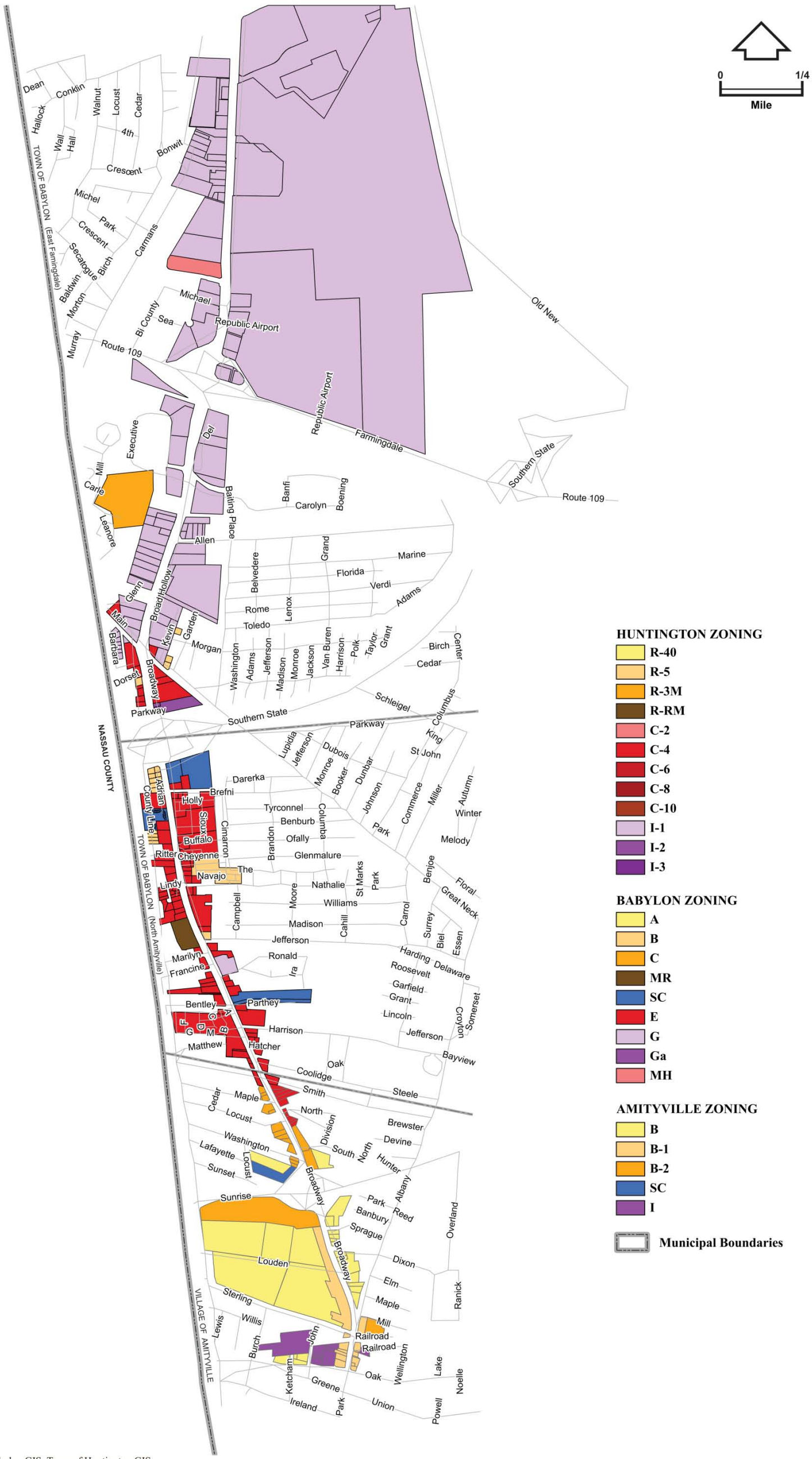
FIGURE 7: EXISTING ZONING (SOUTH)



SOURCES: Town of Babylon GIS; Town of Huntington GIS;
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ANALYSIS

ROADWAYS – WHERE DOES IT MAKE SENSE TO ROUTE BRT?

Conceptual BRT exclusive lane and station

The first step in assessing BRT in the Route 110 study area was to evaluate the potential roadways on which BRT could operate. There are several potential roadway alignments within the primary study area that were considered candidates for a BRT service.

To help determine which candidate roadways should be selected, the consulting team evaluated each according to the following criteria:

- **Ability of roadway to host BRT lanes and/or queue jumpers at intersections, which would allow transit vehicles to bypass stopped traffic**. This criterion measures whether the candidate roadway can reasonably host dedicated BRT lanes or queue jumper (either by expanding the roadway or by converting a parking lane or shoulder). Roadway alignments that could not reasonably host such improvements were rated poorly.
- **Ability of roadways to host other BRT elements.** In addition to the BRT lanes and queue jumpers mentioned above, there are other BRT elements such as traffic priority signal treatments, BRT station shelters, pedestrian access to BRT stations (i.e., sidewalks), etc. that should be considered. This rating measured the ability of the candidate roadway alignment to host these other BRT elements.
- **Land uses adjacent both sides of the candidate roadway alignment.** The most promising arterial BRT alignments tend to occur on roadways that encourage pedestrian access, are reasonably transit friendly. and have contributing activity (see next two criteria) that helps creates BRT ridership. A roadway alignment abutted by substantial land uses that does not create BRT ridership (such as a major cemetery or nature preserve) will not rate well because expected ridership will be poor.
- **Presence of weekday activity centers (and major traffic generators) along the roadway alignment.** Key to future BRT ridership, the presence of activity centers along the candidate roadway alignments is critical. Activity centers may include major employers (i.e., Fortune 500 businesses, employers located within Huntington Quadrangle) and government offices.
- **Presence of seven-day-per-week activity centers (and major traffic generators) along the roadway alignment.** Similar to the criteria above, these are activity centers that generate potential BRT ridership seven days per week during off-peak times. Such activity centers include shopping centers (i.e., Airport Plaza), entertainment venues, universities, transportation centers, hospitals, and major employers operating seven days per week.
- **Presence of existing public transportation services.** The presence of current public transit services can serve as an indicator for existing transit demand, while the absence of existing transit service could help indicate the lack of potential demand.

- **Ability to connect with existing and proposed public transportation services.** The Route 110 BRT service(s) should provide good and integrated connections to other bus and rail transit providers. The candidate roadway alignments should enable such connections to be provided.
- **Ability to support future TOD.** A key objective of the Route 110 BRT Study is to foster TOD along the prospective service areas. Each roadway alignment will be evaluated for its potential ability to host new TOD on "soft sites."

Each potential roadway alignment was evaluated for suitability, with each alignment rated "Good," "Fair" and "Poor." The results of the evaluation are shown in Table 4.

(It should be noted that the initial ratings tended to rely more upon qualitative measures to quickly winnow prospective roadway alignments either to the recommended roadway alignments or to a short list of roadway alignments for more detailed evaluation.)

Based on the evaluation, and perhaps not surprisingly, Route 110 itself provides the greatest opportunity for BRT services in the study area.

TABLE 4: ROADWAY EVALUATION MATRIX

Primary Study Area Roadway segment	Criteria							
	Ability to host BRT lanes & queue jumpers	Ability to host other BRT elements?	Adjacent property uses	Presence of weekday activity centers	Presence of 7 day per week activity centers	Presence of public transit services	Ability to connect existing & proposed transit services	Ability to support future TOD
Route 110 from Oak Street to Conklin Street	●	●	●	●	●	●	●	●
Route 110 from Conklin Street to Pinelawn Road	●	●	●	●	●	●	●	●
Conklin Street from Route 110 to New Highway	◑	●	●	●	●	●	●	●
Conklin Street from New Highway to Wellwood Avenue	○	◑	○	○	○	○	◑	○
New Highway/ Republic Road from Conklin Street to Ruland Road	○	●	◑	◑	○	○	○	◑
Ruland Road from Route 110 to Republic Road	◑	●	◑	◑	◑	◑	◑	●
Welland Avenue from Conklin Street to Ruland Road	○	○	○	◑	○	○	◑	○
Pinelawn Road from Ruland Road to Route 110	◑	◑	◑	◑	○	◑	◑	●

BRT ROUTING ALTERNATIVES

A key challenge in planning BRT service to serve the Route 110 study area is that major destinations (i.e., employment centers, universities, institutional, shopping, cultural, entertainment venues, etc.) are dispersed across a wide area of predominantly low-density land uses. These same land uses that encourage automobile mobility and travel—wide, multi-lane roadways and acres of surface parking lots—inhibit convenient transit service in two ways:

- BRT vehicles must either stay on Route 110 to provide direct service along that corridor, or venture off Route 110 to serve destinations that are considered too far to walk. If BRT vehicles venture off Route 110, BRT vehicle travel time is lengthened, and this reduces the attractiveness of the proposed BRT service. Furthermore, virtually all ridership models indicate that as travel time increases, potential transit ridership drops. Conversely, as travel time is reduced, ridership is potentially increased.
- Even if buses venture off Route 110 to serve "off line" destinations, customers are often confronted with a considerable walking distance to the front door of their destination. By contrast, motorists are often able to park closer to their final destination. During inclement weather, lengthy walking distances can be uncomfortable and serve as a disincentive for using transit.

In addition, there are several potential markets that would need to be served by BRT within the study area:

- **LIRR customers commuting from New York City and Nassau County to employment centers.** These customers need prompt, reliable BRT connections from train to bus in the morning and the reverse in the afternoon. BRT stations must overcome lengthy walking distances and be conveniently located as close to the front doors of employment centers as possible.
- **Non-work trips** (i.e., college trips, leisure and entertainment trips) from LIRR stations to Route 110 destinations. Some non-work trips are discretionary, and can be more challenging in terms of attracting customers as traffic and congestion may be less than during peak periods. BRT service must be competitive with auto travel times and operate throughout the day and evening to provide sufficient span of service.
- **Peak direction trips from Route 110** catchment areas to LIRR stations for connecting rail services to New York City.
- **Peak direction trips to Route 110** destinations from LIRR stations east of Route 110.
- **Off-peak trips from Route 110 catchment** areas to LIRR stations for connecting rail services to New York City.
- **Induced customer trips along Route 110** generated by new TOD along Route 110.
- **Through customers along Route 110** using Route 110 as a shortcut between the different LIRR branches (i.e., Main Line to South Shore LIRR services) or between towns.

Four alternative BRT concepts were developed to address the above concerns and to satisfy the project's goals and objectives. These alternatives, designated Operating Concepts 1–4, are presented in the following figures. All of the alternatives extend from Sunrise Mall in the south to Walt Whitman Mall in the north and share a common program of BRT improvements along Route 110 including new buses, BRT stations, limited-stop service, exclusive bus lanes and queue jumpers, and transit-signal priority treatments. Under Concepts 2 and 4, BRT connections would be

provided initially to Farmingdale LIRR Station, and ultimately to a reopened Republic LIRR Station.

In addition to providing greater intra-county mobility, the Route 110 BRT service would also perform a critical function in transporting peak, reverse-peak and off-peak LIRR customers to the primary study area. A reopened Republic LIRR Station would need an effective and coordinated connecting transit service to allow railroad customers to make that "last mile" connection to the myriad employment, educational and entertainment uses within the primary study area and along the Route 110 corridor.

Route 110 BRT would provide timed connections to both incoming customers from LIRR trains, as well as provide onward connections to LIRR trains. A LIRR transportation hub at the reopened Republic LIRR Station would transform the role of the Route 110 BRT service from not only an important county service, but also to a key regional link to Suffolk County's "High Tech Main Street."

The reopening of Republic Station would be just one component in a larger plan tied to the LIRR East Side Access Project—which will provide first-time-ever LIRR access to the Grand Central Terminal area, where a majority of Midtown Manhattan's office space is concentrated. Other corresponding proposed LIRR improvements—essential to fully realize the value of the East Side Access Project—includes a second track from Farmingdale to Ronkonkoma, a third track from Floral Park to Hicksville and train storage yard expansions (to accommodate the new trains required). The new tracks are needed to increase peak-period service capacity, because the existing lack of track capacity is a primary reason for the current, relative lack of reverse-peak LIRR service in both the AM and PM periods to Route 110.

These improvements will further enhance the value and marketability of the proposed Republic LIRR Station TOD, which in turn will further contribute potential customers to both the Republic LIRR Station and to the Route 110 BRT service—creating a symbiotic relationship and the opportunity to further transform Route 110 into a more transit-friendly environment.

The following alternative concepts would address the dispersed nature of Route 110 corridor development in different ways, including the use of connecting circulator mini-buses and diversions from Route 110 as described in the following sections and illustrated in Figure 8 through Figure 11:

- **Concept 1** would serve Route 110 destinations but would not provide a connection to destinations located off Route 110. It would offer improved transit service at a lower cost than the other alternatives but would not serve all employment locations.
- **Concept 2** would provide Route 110 BRT service with route diversions to circulate through adjacent office parks. It would provide a one-seat ride to major destinations off Route 110 but at the expense of lower-service frequency on the individual sub-routes.
- **Concept 3** would provide Route 110 BRT service with coordinated connecting shuttle-bus loops off Route 110 BRT stations; thus, it would provide front-door service to minimize walking distances, but would require customers to transfer between BRT buses and shuttles.
- **Concept 4** would provide coordinated connecting shuttle-bus loops (similar to Concept 3) from transit centers located at Farmingdale or Republic LIRR Stations and at Sweet Hollow Road. It would provide access to more destinations but would require customers to transfer between services.

To resolve the above challenges and to serve these different markets, several BRT operations planning concepts were considered.

FIGURE 8: OPERATING CONCEPT 1

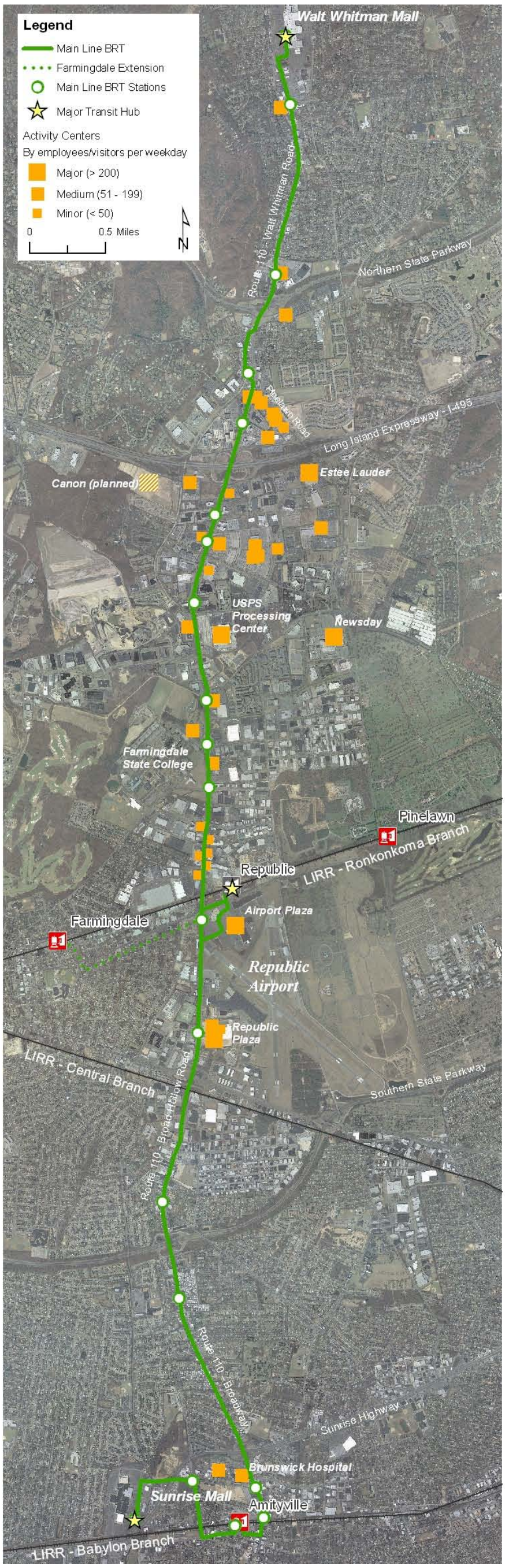

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FIGURE 9: OPERATING CONCEPT 2

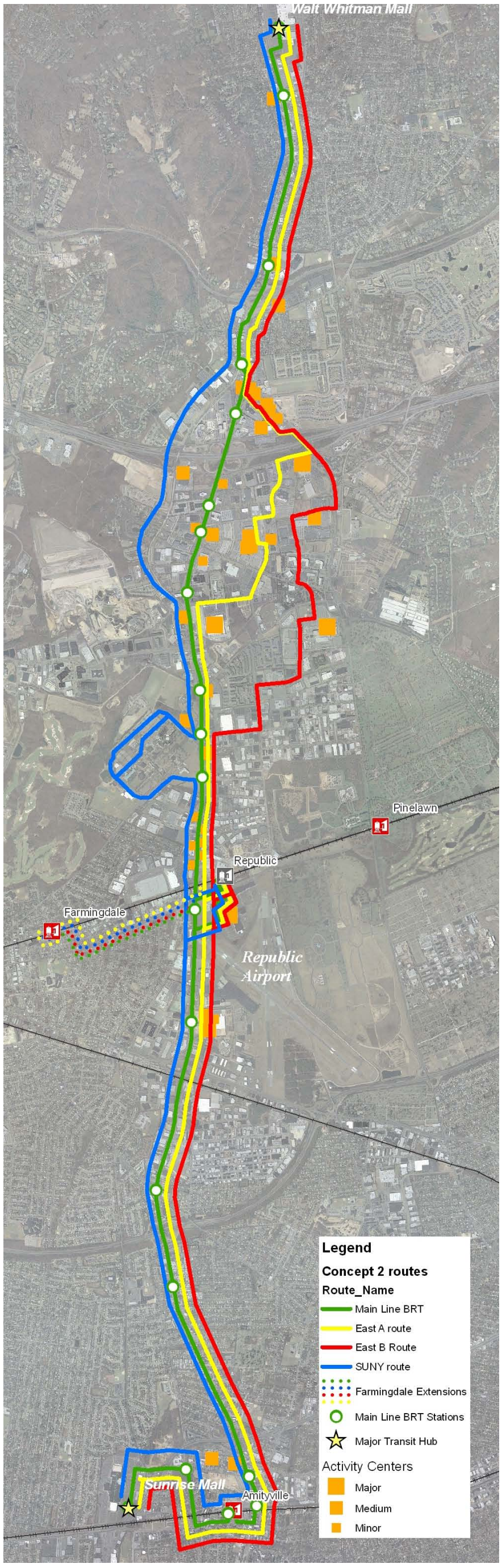

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FIGURE 10: OPERATING CONCEPT 3

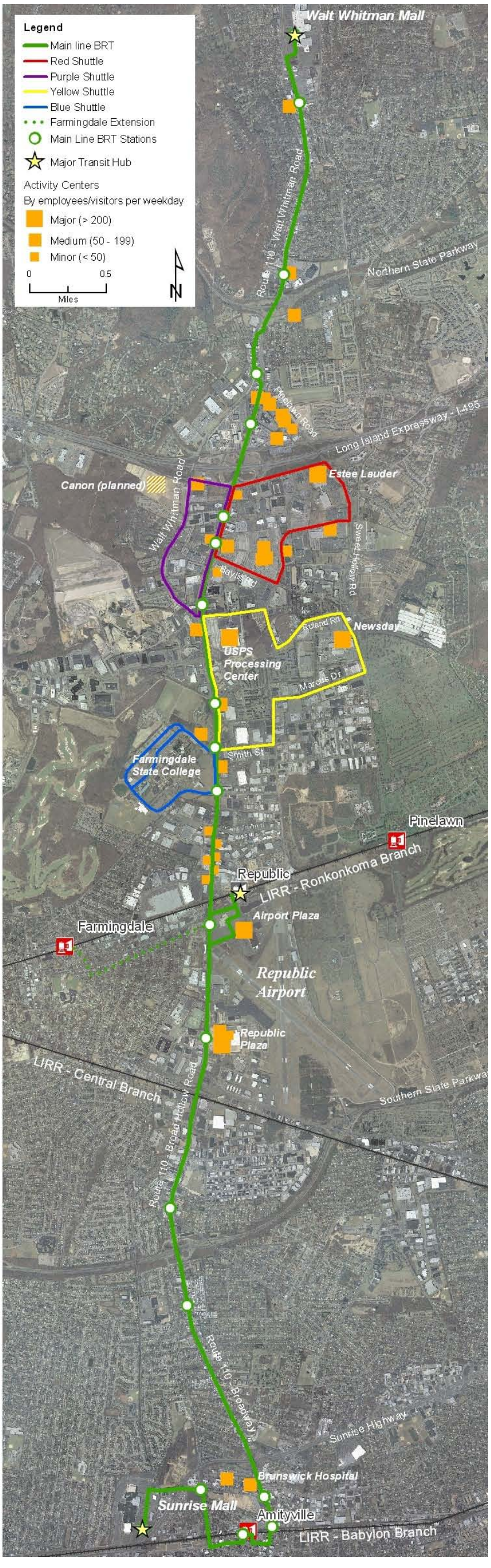

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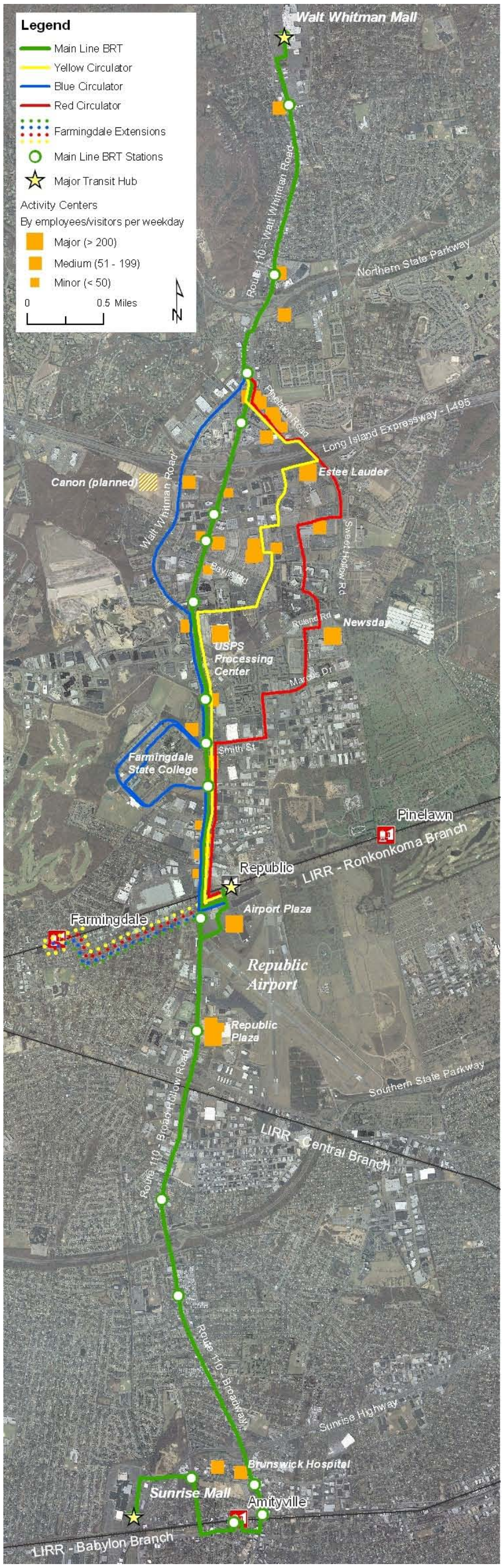
FIGURE 11: OPERATING CONCEPT 4



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EVALUATION OF BRT ROUTING CONCEPTS

Concept 1: Main Line BRT Service Only

"Main Line" BRT service refers to BRT service that would remain primarily along Route 110 only and would not venture off that road within the primary study area. Today, local bus "Main Line" bus service is provided by Suffolk County Transit's S1 bus route.

To capture as much ridership analysis as possible, the Main Line BRT service was anchored at two regional shopping centers: Sunrise Mall at the south end of the service corridor, and Walt Whitman Mall at the north end of the service corridor. Both shopping malls simultaneously serve as major entertainment, shopping, employment, and transit centers where onward connections could be made to other bus routes.

Advantages: This concept would supplement the local S1 bus with limited stop BRT service along Route 110, providing speedier service. For customers going to destinations served by both BRT and the S1, there would be more frequent transit service.

Disadvantage: Customers going to destinations off Route 110 could have a long walk, or if beyond walking distance, no direct transit service.

Concept 2: Main Line BRT Service that Splits Off Route 110 and Circulates within Office Parks

Like a rope frayed in the middle, this service concept envisions Main Line BRT operating between Sunrise Mall and Walt Whitman Mall. To serve the various employment centers that are located east and west of Route 110, there are multiple BRT route variations, such that one BRT route would remain entirely on Route 110, a second route would split off Route 110 at a reopened Republic LIRR Station to serve New Highway, a third route would split off Route 110 at Republic LIRR Station to serve Wellwood Avenue, a fourth route would split off Route 110 to serve Farmingdale State College and Walt Whitman Road—and the like. At the northern end, near Pinelawn Road and Route 110, these various routes would rejoin to operate via Route 110 to the Walt Whitman Mall.

Advantages: This concept would provide a one-seat ride from along the northern and southern portions of the service corridor to destinations in the middle of the corridor. Customers would need only board the correct BRT vehicle serving their desired destination. Because of multiple overlapping BRT routes in the northern and southern portion of the service corridor, BRT service could be very frequent.

Disadvantage: This concept would be the most capital and service intensive as it would involve multiple overlapping BRT routes. This alternative would require a larger fleet of BRT vehicles and bus drivers compared to the other alternatives, which would translate into higher capital cost as well as operating and maintenance costs.

Concept 3: Main Line BRT Service with Coordinated/Connecting Shuttle Bus Loops Off Main Line Stations

This concept would combine the directness of the Main Line BRT service with timed, shuttle-bus connections at major BRT stations between a reopened Republic LIRR Station and Pinelawn Road. Shuttle buses or vans would be timed to meet arriving BRT vehicles and would offer connections placed as close as possible to minimize connecting distances. These shuttle bus loops would be limited in route length in order to provide service to specific off-line destinations without incurring lengthy travel times that could reduce their reliability. These shuttle loops would provide "front door" service to major employers along the route, or could stop upon request.

Disadvantage: This concept would require customers to transfer between services, which could inhibit ridership. Ridership models typically consider a change of vehicles as a disincentive, which tends to reduce potential ridership; however, actual experience has shown that when convenient and reliable transfers are offered, they can help overcome some of this "transfer penalty." Unlike Concept 2, Main Line BRT vehicle needs would be reduced, as there would be less overlapping Main Line BRT service. This would be somewhat offset by the need to procure and operate several connecting vans, although such vans would be less expensive than Main Line BRT vehicles.

Concept 4: Main Line BRT service with Coordinated/Connecting Shuttle Bus Loops from Gateway Transit Terminals

This concept is a variation of Concept 3, in that the loop shuttles would be lengthened and extended to originate from two transit gateways: a southern gateway at a reopened Republic LIRR Station and a new northern gateway transit center proposed at Route 110 and Sweet Hollow Road (or vicinity). Three or four circulator BRT shuttle routes would provide connections from both transit gateways, as well as from select Route 110 BRT stations to serve different sections of the service area to the east and west of Route 110.

An unusual feature of this service would be that some shuttles could be routed via parking lots located at the rear of employment centers. BRT stations could be located in the parking lot, not on the street in front of the major employment centers. BRT stations located at the rear of the building (where many motorists enter the building) could offer a more inviting place to wait for the BRT shuttle—away from fast-moving street traffic—while offering a shorter walk to the building.

In some instances, if agreement could be reached to build short (typically less than 30 feet) sections of connecting busways, several parking lots could be linked, which would allow BRT shuttles to travel in a more direct path between major employment centers, than if the shuttles had to return to the street. Circulator routes routed to specific office parks could provide an opportunity for corporate partnership, such as branding and sponsorship.

Advantages: The advantage of extending the circulator shuttles to serve two transit centers located in the middle of the Route 110 service corridor (but at the south and north ends of the major employment centers) is that customers traveling from the south of the proposed Republic LIRR Station could transfer to an array of shuttle services there and customers traveling from the north of Pinelawn Road could transfer to shuttle services at Sweet Hollow Road. Both transit gateways are anchors that could serve as transportation focal points and provide connections to other transit services. They could also offer car rental or car sharing, bike station parking, and serve as a TOD focal point.

For customers arriving by train traveling to destinations between the proposed Republic LIRR Station and Sweet Hollow Road, connecting BRT shuttles could meet incoming LIRR trains and provide a convenient connection direct to various destinations.

Unlike Concept 2, Main Line BRT vehicles would be limited to Route 110, where ridership demand is greatest. This combination of Main Line BRT vehicles and smaller, less costly circulator vehicles would reduce capital and operating costs. As in Concept 3, circulator routes routed to specific office parks could provide an opportunity for corporate partnership.

Disadvantage: As with Concept 3, this concept would require some customers to transfer between services, which could inhibit ridership; however, arriving/departing LIRR customers would not need to transfer vehicles. They would have a one-seat ride to/from major destinations between the

proposed Republic LIRR Station and Sweet Hollow Road.

As above, ridership models typically consider a change of vehicles as a disincentive, which tends to reduce potential ridership; however, actual experience has shown that when convenient and reliable transfers are offered, they can help overcome some of this "transfer penalty."

Qualitative criteria for each concept included information on costs. Capital costs for implementing BRT would depend on each concept and range from $34 million to $37 million. Annual operating costs would range from $2.8 million to $6.5 million. (Note: Capital cost estimates include vehicles and other BRT elements, but do not include landscaping or streetscape improvements. Detailed cost estimates are provided in the appendix.)

The concepts were also rated qualitatively based on the travel experience for different potential trips. Table 5 shows the complete evaluation matrix for the four concepts.

As the ratings show, the concepts vary in quality depending on the type of trip being made. For trips involving destinations off Route 110, such as to the Newsday complex, Concepts 2, 3, and 4 rate better than Concept 1, which would not provide service to employers off Route 110.

The concepts also vary in terms of frequency between destinations. Concept 1 would provide good frequency to destinations on Route 110, but poor frequency to destinations off Route 110. Concept 2 would provide poor frequency to all destinations because not all of the BRT routes would serve the entire corridor. Concepts 3 and 4 would provide good frequency to all destinations due to the small circulator routes tailored to off Route 110 destinations. Total vehicle and walk time would be good for all but Concept 1, which would require a great deal of walking to off-Route 110 destinations; however, Concepts 3 and 4 would require a transfer to access off Route 110 destinations compared to Concept 2.

COMMON ELEMENTS OF A BRT SOLUTION

All of the BRT operating concepts described would share a common set of prioritized transit service along the Route 110 corridor—that is, they all would feature the same elements along Route 110 itself, including:

- **Attractive, stylish vehicles.** This is where customers would spend the greatest amount of time; however, BRT vehicles are more than about looks. While well-designed, stylish vehicles could help capture the public's imagination in a way that a typical bus might not, BRT vehicles would offer time-saving benefits such as low-floor boarding to reduce dwell times and to provide ease of access. In keeping with the high-tech nature of Route 110, Wi-Fi internet access would be proposed, as well as a variety of onboard seating concepts. The intent would be to transform the experience of taking transit, by providing useful amenities to attract the "transit choice" customer who has access to a car.
- **BRT stations.** Similar to LRT stations, this would be the gateway for BRT service. Proposed Route 110 BRT stations would offer a welcoming place to wait for the next BRT vehicle. Each BRT station would feature customer information to guide their travels (e.g., maps, schedules, and "how to ride" guides). Stations that are more elaborate could feature artwork. Where possible, BRT stations would tie in with adjacent land uses for seamless connections to the community, although this would be a long-term effort as land use changes do not always occur quickly.

TABLE 5: ROUTE 110 BRT CONCEPTS EVALUATION MATRIX

	Concept 1	Concept 2	Concept 3	Concept 4
Total Route Miles	12	52	23	28
Number of Stations/Stops	20	41	37	41
Access/Total Travel Time				
Republic Station to Huntington Quadrangle (eastern entrance)	◑	●	●	●
Amityville to Farmingdale State College	◑	●	●	●
Walt Whitman Mall to Newsday	○	●	●	●
Estee Lauder to Ruby Tuesday (Route 110, just north of Daniel)	○	●	●	●
Frequency				
Republic Station to Huntington Quadrangle (eastern entrance)	●	○	●	●
Amityville to Farmingdale State College	◑	○	●	●
Walt Whitman Mall to Newsday	○	○	●	●
Estee Lauder to Red Robin (Route 110)	○	○	●	●
In-vehicle travel time (as a proportion of total travel time)				
Republic Station to Huntington Quadrangle (eastern entrance)	◑	●	●	●
Amityville to Farmingdale State College	◑	●	●	●
Walt Whitman Mall to Newsday	NA	●	●	●
Estee Lauder to Red Robin (Route 110)	NA	●	●	●
Number of transfers				
Republic Station to Huntington Quadrangle (eastern entrance)	●	●	◑	◑
Amityville to Farmingdale State College	●	●	◑	◑
Walt Whitman Mall to Newsday	NA	●	◑	◑
Estee Lauder to Red Robin (Route 110)	NA	●	◑	◑
Capital Cost (including vehicles)	$34.96M	$36.85M	$37.00M	$37.30M
Annual Operating Cost	$2.8M	$3.0M	$3.9M	$4.3M

● = Good ◑ = Fair ○ = Poor

BRT station in Toronto, Ontario

- **Traffic priority.** BRT and buses are efficient vehicles for transporting large numbers of passengers. Each fully loaded bus removes about 40 cars from the road; thus, BRT vehicles and local buses would be given priority over other vehicles carrying fewer passengers. The following strategies are proposed to keep BRT vehicles and local S1 buses moving quickly:
  - *Bus lanes.* Significant portions of Route 110 have shoulders and parking lanes that could be readily converted to become curbside bus lanes. No existing traffic lanes would be converted.
  - *Queue jumpers.* Where bus lanes would not fit due to narrowness of the roadway, bus queue jumpers at traffic signals could provide the next best type of BRT and local bus priority. Queue jumpers would allow both BRT and local buses to bypass waiting cars at intersections, such that they would be first in line once a signal turns green.
  - *Traffic signal priority.* Traffic signal priority is a high-tech method of allowing buses to move faster through signalized intersections. The approaching bus triggers ("tells") the traffic light to either stay "green" a bit longer to allow the bus to clear the intersection, or if the light is already "red," to speed up and change to "green" sooner. The intent is to reduce the amount of time a BRT vehicle or bus must wait for traffic signals to turn green.
- **Real-time passenger information.** The Route 110 BRT service would provide real-time, electronic message signs at BRT stations that would count down the minutes until the next BRT vehicle arrives. This information could be provided via the Internet to handheld mobile devices.

Human factors studies have shown that knowing a buses arrival reduces customer anxiety and stress, and also reduces the perception of waiting times. Real-time message signs have been deployed effectively nationally, and enable customers to make better use of their time by allowing them to more accurately "time" their arrival to the BRT station. In cold or inclement weather, a customer could use real-time BRT arrival information to minimize their waiting time outdoors.

- **Station access.** BRT stations are proposed at key origins and destinations, but a BRT station is of limited value if potential customers are not able to get to it. It is important that BRT stations be well-located and easily accessible by a variety of modes. The Route 110 BRT stations would be linked whenever possible to connecting transit services, and as appropriate to sidewalks, bicycle lanes/paths and/or park & ride lots.
- **Transit-Oriented Development.** A key feature of the Route 110 BRT study is to not only just consider transit improvements, but to also propose how land uses along the Route 110 study corridor could be made to become more transit-friendly and less "automobile-centric."

  By considering both new mobility improvements and land uses that support, rather than discourage transit use, the full potential for BRT can be unleashed and dependency upon automobile use as the sole means of access reduced. Transit-friendly land uses also foster walkability and greater bicycle use as well. A further discussion of transit-friendly land uses is provided later in this report. Figure 12 shows how TOD might look on the Route 110 corridor.
- **Fare Collection.** As transit ridership increases on a specific bus route, travel time tends to slow. One factor is the need to collect fares, which often requires customers to board single file via a front door farebox. Collecting fares can amount to 20% of the scheduled trip time. It is recommended that off-bus, pre-paid fare collection be deployed to speed fare collection. With fare collection shifted off the bus to the BRT stations, customers would board the BRT vehicle via all doors, and bus dwell times would be vastly reduced at busy BRT stations. Roving enforcement agents would perform periodic checks to encourage fare payment.
- **Branding.** Branding would be an important BRT element, serving as an important marketing tool. Developing and implementing a Route 110 BRT branding strategy for BRT achieves several objectives:
  - It raises the profile of the bus service. This helps to overcome the "invisibility" of transit services discussed at the beginning of this report.
  - A branding strategy informs customers that although they are riding a bus, it is a different type of service that requires different interaction, such as the need to pre-pay one's fare before boarding, that the service will make fewer and limited stops, etc.
  - Branding distinguishes BRT as a high-quality service in order to attract new riders who may not have otherwise considered transit. It can help attract the "transit choice" customer—the customer who is not transit dependent and has access to an automobile.
  - Branding represents tangible service improvements that can help encourage transit-friendly land uses, such as TOD.

FIGURE 12: VISUALIZATION OF TOD

Current "before" view of Route 110.

"After" potential BRT, streetscape and TOD improvements.

Combined, these BRT components would form a complete package of service improvements for the Route 110 corridor. While it is highly desirable that all elements would be implemented concurrently, there would be flexibility to phase in certain components as funding became available.

In addition to sharing the elements above, all concepts assume that current S1 local bus would continue to operate in the corridor, providing local service to destinations not served by the more widely spaced "limited-stop" BRT stations.

TRANSIT PRIORITY TREATMENTS FOR ROUTE 110

All four concepts developed for BRT service in the Route 110 area assume that a "Main Line" or trunk line service would operate on Route 110 itself. Key to making this trunk line successful would be the use of priority treatments.

The ability of Route 110 to host a dedicated transit lane is based on the available width and use of the existing roadway lanes and the presence of parking. Figure 13 shows the widths of the shoulders (if present) along Route 110 as well as the existing parking regulations.

Examining the width of existing roadways and parking regulations together reveals whether a portion of the corridor would be easily converted to a dedicated transit lane, whether some re-striping of lanes could be needed, or whether there would be an existing shoulder or parking lane (see Figure 14). In most cases, parking would be removed only from Route 110 if adjacent off-street parking were readily available.

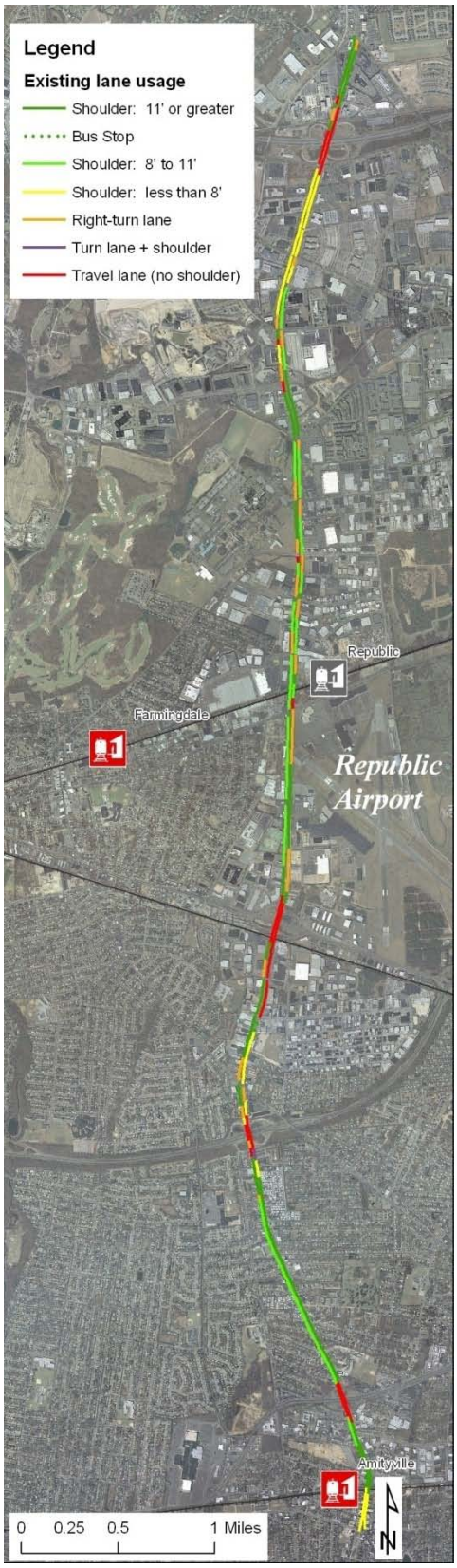
Figure 15 shows the results if BRT were implemented in a shoulder-running dedicated transit lane. This roadway cross-section shows an existing shoulder converted to a BRT lane, with sidewalks widened to accommodate a BRT shelter and platform area. A pavement evaluation would need to be conducted to confirm the ability of buses to operate on the shoulders. At a minimum, concrete bus pads would be required at BRT stations to prevent pavement wear, and additional improvements could be necessary. The bus lane would be enhanced by using traffic-signal priority treatments and queue jump lanes at intersections.

Implementing new BRT transit priority treatments along Route 110 could offer substantial and tangible improvements to both BRT customers and Suffolk County Transit's route S1 bus customers, since S1 buses could also take advantage of the proposed bus lanes, queue jumpers, and traffic-signal priority treatments. This would help reduce trip times for both services, making service more "productive" and helping control operating costs.

SIMULATION OF TRANSIT PRIORITY TREATMENTS PROPOSED ALONG ROUTE 110

To test whether the proposed bus/BRT priority treatments – including a bus lane and traffic signal priority (TSP) – would affect roadway motorists, a computerized simulation was performed. The simulation estimated travel time, travel time delay, vehicle speeds, queuing, and intersection delays with and without transit priority treatments (the "Build" and "No-Build" scenarios). The simulation was performed on a 2-mile segment of Route 110—from Bethpage-Spagnoli Road to Conklin Street—which included six intersections. The future year used for the "Build" condition was 2015.

FIGURE 13: EXISTING ROADWAY CONDITIONS



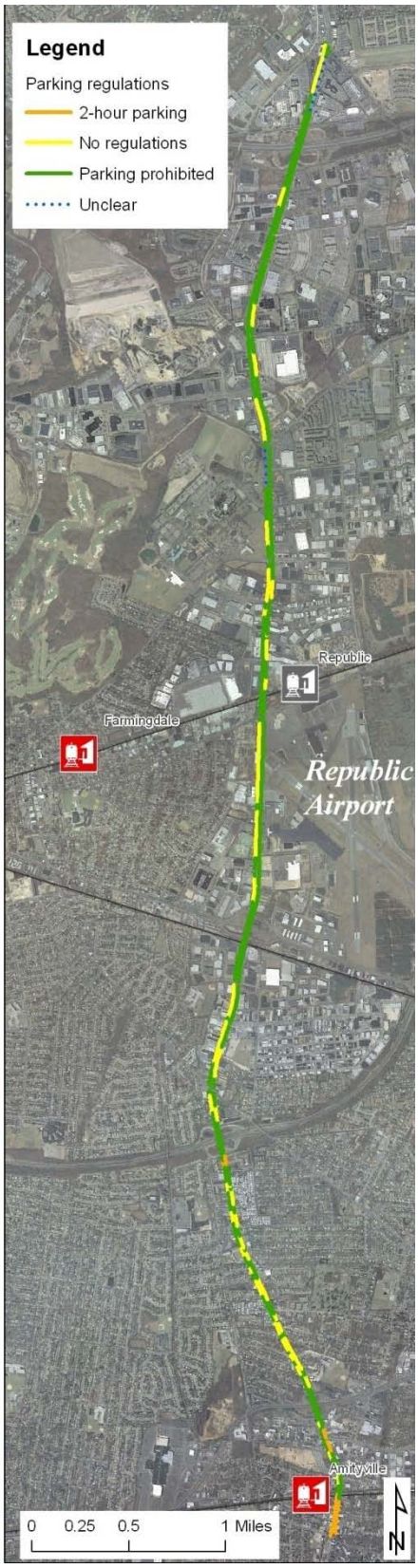


FIGURE 14: BRT TREATMENTS – POTENTIAL

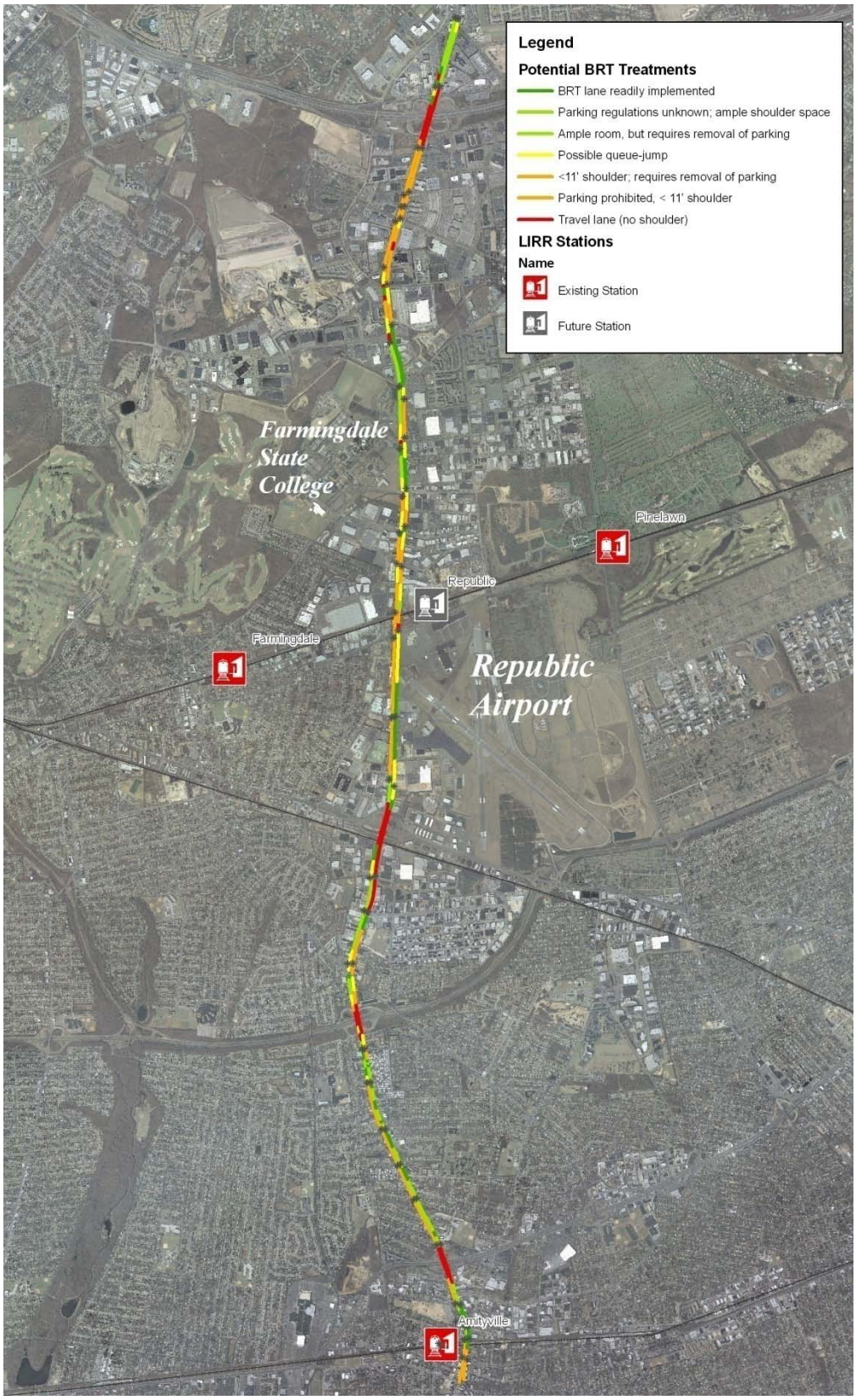
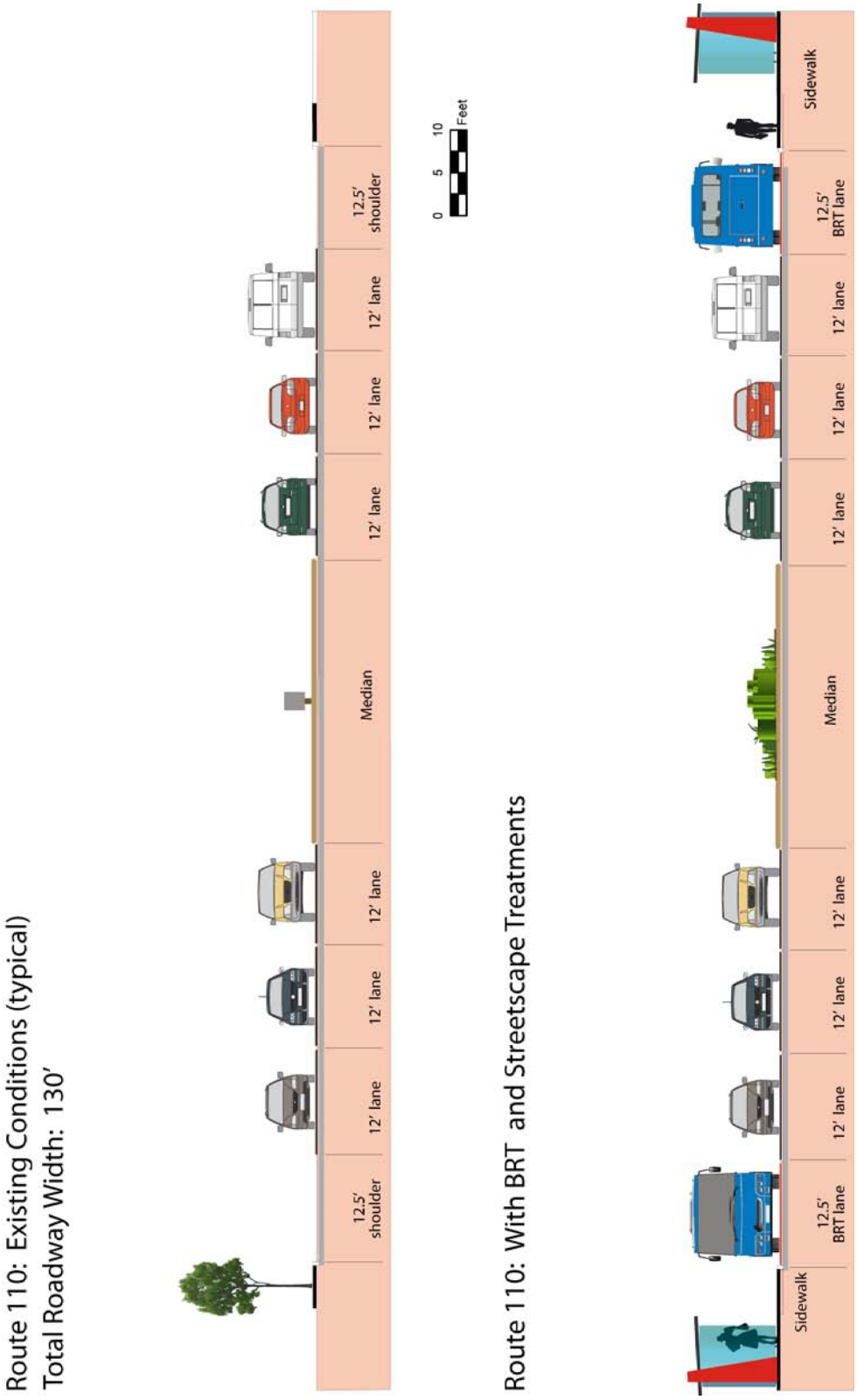


FIGURE 15: ROADWAY SECTION



A summary of the results of the simulation is presented in this section. The complete analysis, including information on data collection and methodology, is included as an appendix to this report.

Average Travel Times

Travel time is calculated by finding the average time needed for a vehicle to travel the length of the analysis sub-corridor. The average travel times by vehicle class are shown in Table 6. These estimates show the following:

- Travel times for cars and trucks are essentially unchanged.
- Bus travel times are significantly reduced—from 526 seconds to 328 seconds (a 37.6% travel time reduction).

Table 7 shows the average travel times of all modes by direction.

- Travel times in both directions are slightly reduced—from 257 seconds to 246 seconds (4.3%) for northbound travel, and from 299 seconds to 293 seconds (2%) for southbound travel.

Travel Time Delay

Travel time delay is the volume-weighted average of waiting and dwell time for all vehicles traversing the 2-mile section of Route 110 between Conklin Street and Bethpage-Spagnoli Road. The results are shown in Table 8.

- In the northbound direction, travel time delay is reduced by 8% (from 121.5 to 111.3 seconds)
- In the southbound direction, travel time delay is reduced by 3.8% (from 162.5 to 156.2 seconds).

Travel Speed

Average travel speed is the average speed of vehicles traveling through the corridor. Table 9 shows the average travel speed by class as well as by network speed.

- The average travel speed of buses significantly improves—from 13.67 MPH to 21.13 MPH (a 54.6% increase).
- Cars experience a slight decrease in speed—from 21.11 MPH to 20.64 MPH—caused by delays incurred on the side streets. Trucks experience a similarly slight decrease in speed.

Table 10 shows travel speed by direction for all vehicles on Route 110. The first column shows average speed of vehicles traveling through the corridor, and the second column shows the speed at which 85% of the traffic travels.

- Average speed in the northbound direction increases 1.3 MPH—from 28 MPH to 29.3 MPH.
- In the southbound direction, there is a slight increase in average speed—from 24 MPH to 24.6 MPH—and a 0.5 MPH increase in 85th percentile speed.

Vehicular Queue Lengths

With traffic signal prioritization enabled along Route 110, the major approaches were allocated additional "green" signal time to improve bus operations, and this section evaluates the effect of this on vehicle queuing. Vehicular queuing essentially measures the number of vehicles backed up at a given intersection. Table 11 summarizes information on queue length with and without transit priority treatments. Percentage change in vehicle queue lengths is shown in Table 11

Each approach of the six intersections under study was evaluated. In general, the major approaches on Route 110 experience fewer delays and, thus, have lower vehicular queue lengths; however, side streets approaches have longer queue lengths because shorter "green" signal time is allocated in these directions.

Some important observations are explained further:

- Smith Street experiences the least improvement in queue lengths (2.6% decrease), while Bethpage-Spagnoli experiences the greatest improvement in queuing (31.3% decrease).
- Even in today's conditions, side streets experience significant delays and queuing, and therefore even a small reduction in "green" signal time has effects. With TSP in place, vehicle queue lengths increase by as little as 2.47% (Smith Eastbound) to as much as 55.6% (Conklin Street Westbound).
- Intersections at Smith Street, Milbar Boulevard, and Conklin Street experience considerable changes in queue lengths, possibly due to their intersection geometry. These are four-legged intersections, with two minor approaches. When TSP is enabled, there is a compounding negative effect. Before BRT is implemented, further study is recommended to examine ways to reduce these potential negative effects.

Based on this preliminary examination, sufficient capacity exists to permit small changes to signal timing for priority treatment. These transit treatments would have little negative impact on the overall network while offering a significant benefit to the transit system. While there was little negative impact to non–bus users in the travel time in the corridor, buses could experience significant travel time reduction of over 37%. A savings in bus travel time would benefit bus riders and would make bus transit more cost-efficient and productive.

While some side streets did experience much longer queue lengths, the levels of service did not degrade significantly. It must be noted that this study did not investigate any roadway or signal timing adjustments beyond what is currently employed in the field and as such, it is likely that improvement recommendations to geometry and signal system coordination changes would overcome the degradations. Potential treatments that could be applied to mitigate negative impacts to roadway traffic would include optimizing signals, adjusting parameters for traffic signal prioritization, and customizing solutions for individual intersections.

This preliminary evaluation of the proposed system has shown the viability of transit priority treatments in the Route 110 corridor; future study should consider the entire corridor over several study periods of the day so the full impacts and benefits can be fully evaluated and understood.

TABLE 6: AVERAGE TRAVEL TIMES BY CLASS

Vehicle Type	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD w/ TSP (2015)
	Average Travel Time (Sec)	Average Travel Time (Sec)	Average Travel Time (Sec)
Auto	177	181	185
Bus	503	526	328
Heavy Vehicles	211	218	222

TABLE 7: AVERAGE TRAVEL TIMES BY DIRECTION

Direction	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD w/ TSP (2015)
	Average Travel Time (Sec)	Average Travel Time (Sec)	Average Travel Time (Sec)
Route 110 Northbound	253	257	246
Route 110 Southbound	284	299	293

TABLE 8: TRAVEL TIME DELAY BY DIRECTION

Direction	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD w/ TSP (2015)
	Average Travel Time Delay (Sec)	Average Travel Time Delay (Sec)	Average Travel Time Delay (Sec)
Route 110 Northbound	117.5	121.5	111.3
Route 110 Southbound	147.3	162.5	156.2

TABLE 9: TRAVEL SPEED BY CLASS

Vehicle Type	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD CONDITION w/ TSP (2015)
	Speed (MPH)	Speed (MPH)	Speed (MPH)
Auto	21.65	21.11	20.64
Bus	14.32	13.67	21.13
Heavy Vehicles	20.04	19.45	18.95
Network Speed	21.51	20.96	20.52

TABLE 10: TRAVEL SPEED BY DIRECTION

Direction	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD CONDITION w/ TSP (2015)
	Average Speed (MPH)	Average Speed (MPH)	Average Speed (MPH)
Route 110 Northbound	28.5	28	29.3
Route 110 Southbound	25.3	24	24.6

TABLE 11: VEHICULAR QUEUE LENGTHS

Intersection Name	EXISTING CONDITION (2009)				NO BUILD CONDITION (2015)				BUILD CONDITION w/ TSP (2015)			
	Average Number of Queued Vehicles by Approach				Average Number of Queued Vehicles by Approach				Average Number of Queued Vehicles by Approach			
	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound
Route 110 @ Bethpage -Spag Road	6.61	7.25	7.42		6.64	7.70	7.50		6.67	5.29	8.47	
Route 110 @ Ruland Road	1.55	5.11		6.91	1.61	5.54		7.03	0.91	5.31		6.92
Route 110 @ Smith Street	2.58	9.62	4.52	6.18	2.57	11.00	4.42	6.33	2.50	8.05	4.53	7.40
Route 110 @ Milbar Boulevard	4.49	13.09	3.72	12.20	4.66	13.79	3.80	13.12	3.46	12.01	5.05	18.00
Route 110 @ Daniel Street	2.88	5.68	10.02	6.30	2.98	6.32	10.33	6.88	2.68	4.48	10.87	7.47
Route 110 @ Conklin Street (Rt 24)	7.03	11.76	14.22	6.20	7.27	12.04	14.92	6.52	6.11	13.52	16.54	10.14
TOTAL QUEUED VEHICLES	26.69	64.87	47.32	44.70	25.73	56.39	40.97	39.88	22.34	48.65	45.46	49.94

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TOD Tie-In

POTENTIAL TRANSIT ORIENTED DEVELOPMENT SITES

To fully capture the benefits of a new Route 110 BRT service, the consulting team proposes encouraging transit supportive land uses along the study area, particularly at BRT proposed stations. Transit supportive land uses, such as TOD can help focus higher-density, more pedestrian-friendly development around BRT stations. This in turn feeds potential new customers to BRT, with BRT providing new mobility and access to these sites.

Although the land use patterns along the Route 110 corridor are relatively well established, with a lack of significant parcels of vacant land, the corridor is dynamic, in that it continues to evolve and change, as evidenced by the various development projects planned for the corridor in the near future. There is also potential for other parcels, including vacant and/or underutilized parcels, to be developed or redeveloped in the future.

This section contains a preliminary discussion of "Future Opportunity Areas," which are those parcels or areas that are:

- Vacant.
- Underutilized based on zoning potential.
- Characterized by uses that have the potential for redevelopment due to market conditions.
- Located at key points or locations along the Route 110 corridor.
- Owned by local, state, or federal governments.

This discussion is included not only to aid in visioning and designing a potential BRT system, but also to indicate that there are issues and opportunities in the corridor regardless of the implementation of the BRT system. The discussion that follows evaluates the potential for change, without consideration of the potential impact of BRT stations or the BRT system.

As with the description of existing land use and zoning, the discussion focuses on those parcels or areas that are within a ¼ mile of Route 110. Each of the areas is presented in Figure 16 and Figure 17 and discussed below.

Area 1: Walt Whitman Road/ Pinelawn Road Intersection

Around and north of the intersection of Walt Whitman Road/Pinelawn Road/Route 110 are a number of lower-density uses, including a gas station and other automobile-oriented uses. All of these parcels could be redeveloped due to their strategic location and current uses.

Area 2: LIE to Duryea Road Frontage

The office development along Route 110 from the LIE south to Duryea Road is characterized by large grassed setbacks. These setbacks are large enough to potentially add development closer to the Route 110 frontage.

Area 3: Vacant Parcels at Ruland Road

Just to the north of the intersection of Ruland Road and Route 110 is a former restaurant that is currently vacant, as well as an adjacent undeveloped parcel. Both parcels could be developed due to their vacancy status and proximity to Ruland Road.

Area 4: Vacant Parcels at Town of Huntington/Town of Babylon Border

There is a vacant parcel on the east side of Route 110 at the Town of Huntington/Town of Babylon border in the Costco shopping center. Its vacant status makes it a potential candidate for redevelopment.

Area 5: Farmingdale State College Frontage

Farmingdale State College/Broad Hollow Bioscience Park contains undeveloped frontage along the west side of Route 110 (and straddles the border between Huntington and Babylon). In addition, south of Farmingdale State College and Melville Road is an undeveloped parcel. Although the topography and environmental conditions on these parcels could present limitations, potential remains for development, since they are undeveloped and are strategically located at Melville Road.

Area 6: Potential Re-Opened Republic LIRR Station

Beginning in the mid-1960s, when Governor Rockefeller announced a concept of a transportation center at Republic Airport, various agencies have developed concepts and plans for development at Republic Airport.[2, 3]

Low ridership numbers and the closing of the Fairchild Republic aircraft plant contributed to LIRR's decision to close the station in 1986 as part of the electrification of the Main Line to eliminate stops and reduce trip times. The station, which was located between the Ronkonkoma Branch of the LIRR ROW and Conklin Street, along with other buildings and uses related to the airport, have been removed, leaving a number of vacant parcels along Conklin Street. Due partially to recent development in the area, the LIRR has noted the potential for re-opening the station. If reopened, the station would have to be entirely re-built with high-level platforms to meet Americans with Disabilities Act (ADA) requirements, because all LIRR trains require high-level platforms.

The number of vacant parcels, their location along Conklin Street and adjacent to Airport Plaza, and the potential for an LIRR station, present an excellent opportunity for redevelopment of the area as a TOD/ transportation hub. Reopening the Republic LIRR Station as a transportation hub would contribute significantly to the success of a TOD strategy along the Route 110 corridor by bringing a critical mass of transit customers through the area who could reach further destinations by transferring to the BRT. In turn, the TOD strategy and associated transit improvements would contribute to reduce reliance on the automobile and enhance air quality, making the Route 110 corridor an attractive location for environmentally friendly, high-tech firms seeking to offer quality jobs in a business-friendly environment. The Republic TOD would thus be critical to the success of a BRT and to the future of job growth on the corridor. As part of a long-term growth strategy for the Route 110 corridor, BRT would enhance current transit ridership options and initial development adjacent to the Republic LIRR Station would further contribute to transit demand. Over time, an increased demand for transit would justify re-opening the station. The station, in turn, would encourage greater transit demand along the corridor.

Area 7: Vacant Parcels South of Conklin Street

A number of parcels on the west side of Route 110, south of Conklin Street are currently utilized for outdoor storage and contain a pond classified as Class C by the New York State Department of Environmental Conservation (NYSDEC). Although the environmental conditions on these parcels present limitations to potential development, the area has potential due to its underutilization, and because it is located immediately adjacent to the Conklin Street/Route 110 intersection and any potential development associated with a re-opened Republic LIRR station (see above, Area 6).

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[2] Long Island Republic Airport Historical Society; http://sites.google.com/site/lirepublicairporths/home, accessed January 20, 2010.

[3] A Review of Selected Growth and Development Areas, Suffolk County, New York. Suffolk County Department of Planning, August 2006.

Figure 16: Potential TOD Sites (North)

SOURCES: Town of Babylon GIS; Town of Huntington GIS;
Compiled and Prepared by Saccardi & Schiff, Inc.

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FIGURE 17: POTENTIAL TOD SITES (SOUTH)

0
1/4
Mile
TOWN OF BABYLON (East Farmingdale)
TOWN OF BABYLON (North Amityville)
NASSAU COUNTY
VILLAGE OF AMITYVILLE
Republic Airport
Farmingdale
Southern State
Route 109
Broad Hollow
Old New
Carman's
Great Neck
Parkway
Schleigel
Columbus
Allen
Marine
Florida
Verdi
Rome
Toledo
Adams
Morgan
Main
Broadway
Jefferson
Harrison
Hatcher
Matthew
Coolidge
Smith
Steele
Louden
Sterling
Oak
Greene
Union
Ireland
Park
Sprague
Banbury
Reed
Dixon
Elm
Maple
Mill
Railroad
Brewster
Devine
Hunter
Albany
Overland
Ranick
Powell
Noelle
Lake
Wellington
Burch
Willis
Lewis
William
Oldfield
Ketcham
Carman River
Bayview
Andrews
Roosevelt
Garfield
Grant
Lincoln
Croydon
Somerset
Delaware
Harding
Surrey
Biel
Essen
Carroll
Caihill
Moore
Madison
Jefferson
Williams
Nathalie
St Marks
Park
Bernice
Floral
Norma
Bismark
Brandon
Columbia
Glenmalure
Ofally
Benburb
Tyrconnel
Darerka
Brefni
Geraldine
Cimarron
Dry Gulch
Buffalo
Main
Cheyenne
Horseshoe
Navajo
Holly
West
Hazel
Lillian
Ritter
Lindy
Marilyn
Francine
Ronald
Richard
Ira
Laurel
Bentley
Parthey
Kandi
County Line
Adrian
Melody
Winter
Summer
Autumn
Miller
Commerce
Johnson
Dunbar
Booker
Dubois
Monroe
Madison
Jefferson
Lundia
St John
King
Columbus
Schleigel
Jackson
Van Buren
Harrison
Polk
Taylor
Grant
Garfield
Monroe
Madison
Jefferson
Lincoln
Washington
Adams
Belvedere
Grand
Leroux
Columbus
Birch
Cedar
Center
Poplar
Schleigel
Southern State
Parkway
Great Neck
Sunland
Garden
Keen
Main
Barbara
Saxon
Dorset
County Line
Broadway
Parkway
Sunset
Lafayette
Washington
Locust
Cedar
Maple
North
Center
Division
South
North
Brewster
Devine
Hunter
Sunset
Sunrise
Park
Banbury
Reed
Sprague
Dixon
Elm
Maple
Mill
Railroad
Railroad
Oak
Greene
Union
Louden
Sterling
Willis
Lewis
William
Burch
John
Oldfield
Ketcham
Ireland
Park
Powell
Noelle
Lake
Wellington
Ranick
Overland
Albany
Hunter
Brewster
Devine

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Area 8: Former Golf Driving Range

Just to the north of Michael Road on the west side of Route 110 is the Skydrive Golf Center, an approximately 13-acre, vacant golf driving range. As one of the few large vacant parcels in the Route 110 corridor, it is a likely location for development.

Area 9: Great Neck Road

The area in and around the intersection of Great Neck Road and Route 110 contains a mix of automobile-oriented uses, such as gasoline stations and car washes, along with storage facilities, large-format retail, and some strip commercial. The recent construction of the Ace Hardware store suggests that there is interest in this area could be developed further, especially given its location at an important intersection, with residential uses to the east and west. In addition, the presence of the Southern State Parkway immediately to the south allows for excellent vehicular access, not only locally, but regionally as well.

Area 10: Former Department of Motor Vehicles

Approximately 600 feet south of the Southern State Parkway, on the west side of Route 110, is a former New York State Department of Motor Vehicles (DMV) building that is currently vacant. Although relatively small, it is likely to be redeveloped or re-occupied due to the vacancy status of the building.

Area 11: Mobile Home Parks

In the North Amityville/Village of Amityville section of the Route 110 corridor are two mobile home parks:

- Frontier Mobile Home Park, on the east side of Route 110, south of Brefni Street.
- Gildersleeve Mobile Home Park, on the west side of Route 110, between Bentley Street and West Smith Street.

These uses, while residential in nature, are different from the other residential uses in this section of the Route 110 corridor (or the corridor as a whole) and could be subject to development pressure. To that end, the mobile home parks can be considered underutilized properties, especially given the commercial zoning of the parcel.

Area 12: Vacant Parcels at Ronald Drive

Just to the north of the Polo Club residential development on the east side of Route 110 is an undeveloped wooded area. Its vacant status makes it a candidate for development in the future.

Area 13: Vacant Parcels at Smith Street

At the southeastern corner of the intersection of Smith Street and Route 110 is an undeveloped parcel. Due to its vacant status and location at an intersection, this property could be developed.

Area 14: Former Brunswick Hospital

South of Sunrise Highway, near the intersection of Louden Avenue and Route 110, on the west side of Route 110, is the former Brunswick Hospital, which now stands empty. South of this, along Louden Avenue is a large parking area. Finally, to the east of the parking area, along Route 110, is an undeveloped open space. The area immediately adjacent to the west of these properties has been redeveloped over the past few years with townhouses and other residential development. This combination of factors indicates that this is an area that is likely to see development.

Area 15: Surface Parking at Amityville LIRR Station

Surrounding the Amityville LIRR station are a number of surface parking lots, some of which relate to the station itself, and others which do not. Given the land use pattern and density of development of the Village of Amityville in this area and the presence of the LIRR station as a

major activity center, development of the parking lots and surrounding buildings to include more dense, mixed uses is likely, especially as a rail TOD. However, any plan to redevelop commuter parking lots must include a train station parking replacement strategy.

In addition to the areas listed above, there are other smaller underutilized areas and other vacant and/or underutilized parcels just outside of the study area whose use or intensity could be expected to change. These parcels are primarily within residential areas, so it could be anticipated that, based on demand, additional residential opportunities could be provided on such parcels.

Funding for Transit

Implementation of BRT in the Route 110 corridor would require identification of both initial funding for construction and long-term funding for operations and maintenance. Potential sources of funding for BRT could include public funding from federal, state, and local sources, and could also involve private funding.

FEDERAL FUNDING

Federal funding available through capital and operating grant programs is summarized in Table 12.

As shown in the table, the FTA 5309 Capital Funding program provides several pathways to funding. Two of the 5309 programs could provide a means of funding a full implementation of BRT on Route 110: Small Starts and Very Small Starts. Both programs provide a streamlined application and qualification process but differ in the limit of the cost of capital improvements allowed. Small Starts projects are those with capital cost up to $250 million; Very Small Starts projects have total capital costs under $50 million.

Both grant programs have a specific set of criteria; in the case of bus projects, the programs require:

- Substantial transit stations.
- Signal priority/signal pre-emption.
- Low-floor/level-boarding vehicles.
- Specially branded service.
- Frequent service, with service every 10 minutes in the peak hours and every 15 minutes in the off-peak.
- BRT service for at least 14 hours per weekday.

A key difference between the two programs (other than the limits in capital costs) is that Very Small Starts projects qualify for an automatic "medium" rating in the project justification category if they meet all criteria **and** have existing corridor ridership of at least 3,000 riders per weekday. The Route 110 corridor currently has just fewer than 3,000 riders per weekday, so is a "borderline" case.

Of the federal programs listed, the Small Starts funding program is the most appropriate for the Route 110 corridor. The Small Starts process would allow the Town of Babylon to describe efforts at economic development and land use transformation (such as TOD) that create a more compelling case for potential transit development than a simple snapshot of existing ridership levels will create. In addition, the Town could attempt to achieve higher ratings than the Very Small Starts process permits.

PRIVATE FUNDING

With an abundance of major employers located and clustered within the Route 110 corridor, there is an opportunity for major employers to help construct and operate the BRT service.

Major employers could assist in a variety of ways, including:

- Direct developer contribution towards capital costs and operating costs.
- Constructing or funding BRT stations or BRT circulator shuttle stations that serve their property.
- Directly operating the BRT circulator shuttles that connect to the "Main Line" Route 110 BRT service. Silicon Valley firms in California are heavily involved in this type of operation—either by providing financial assistance or by contracting for shuttle services to serve both their employees and the public.

- Sponsoring naming rights and branding of the BRT service. In Cleveland, several major health care providers have joined together to brand the Euclid Avenue BRT service as the "Health Line."
- Employers could also help promote transit use by allowing transit providers space to set up brochure rack displays, by subsidizing transit passes for employees or providing a "cash out" benefit. A "cash out" benefit provides a monthly stipend to each employee to spend as they wish—whether for a parking pass (converting formerly free parking to paid parking) or for a transit pass. If employees walk or bicycle to work, they can use the benefit to pay for walking shoes or bicycle maintenance.

There are many ways in which employers, shopping centers, institutions, hotels, and business large and small along Route 110 can directly and indirectly support the success of a new BRT service. The abovementioned concepts are only a small sample.

TABLE 12: FEDERAL FUNDING PROGRAMS

Grant Program	Capital?	Operating and Maintenance?	Notes
Section 5307 Urbanized Area Formula Program	Yes 20% match	No	
Section 5308 Capital			
Clean Fuels	Yes 20% match		Designed to assist transit operators reduce emission pollutants from transit buses, enhance attainment of air quality standards in urban areas and accelerate the introduction of advanced clean fuel transit buses in non-attainment areas only
Section 5309			
New Starts	Yes 20% match	No	
Bus & Bus Facilities	Yes 20% match	No	Buses and related equipment
Section 5310 Elderly and Disabled	Yes 20% local match	No	Vehicle purchases only for elderly or disabled services only
Section 5315 Job Access and Reverse Commute Program (JARC)	Yes 20% local match	Yes 50% local match	Designed to assist welfare recipients and low income individuals get to work
Section 5317 New Freedom Program	Yes 20% local match	Yes 50% local match	For services for individuals with disabilities
Surface Transportation Program	Yes 20% local match	No	Transit capital projects, and intracity and intercity bus terminals and facilities
Transportation Enhancement Program	Yes 20% local match	No	Not directly for transit, but bike/pedestrian facilities and landscaping

Conclusions/Next Steps

CONCLUSIONS

The purpose of this study was to examine the feasibility and benefits of implementing a program of BRT improvements along the Route 110 study corridor. An ancillary goal was to identify opportunities for TOD within the study area.

The study confirmed that (1) significant transit demand exists within the Route 110 corridor; (2) the available right-of-way is capable of accommodating transit priority treatments; and (3) strong activity centers to support BRT are located throughout the study area.

In addition, the study identified a number of promising TOD opportunity areas with the potential to transform the corridor from an auto-oriented roadway into an area capable of supporting multiple modes of transportation.

The proposed BRT service would operate in coordination with Suffolk County Transit's local S1 bus service along the Route 110 corridor to provide a combination of "local" and "limited stop" service.

Four alternative BRT concepts were developed to satisfy the study's goals of improving mobility, enhancing livability, and supporting development around transit. The relative benefits of each of these alternatives were assessed and described.

Implementation of any of the alternative Route 110 BRT concepts, in conjunction with transit supportive development programs and policies, could transform Route 110 into a more transit- and pedestrian-friendly environment, while promoting economic development and enhancing the quality of life for residents and visitors.

NEXT STEPS

In order to implement one of the BRT concepts described in this report, the Town of Babylon must advance the project from conceptual design to project development consistent with the requirements of FTA's New Starts process.

This process would involve preparing transit/BRT ridership estimates, development of preliminary design plans, detailed BRT operating plans, assessment of potential environmental and community issues, public outreach, and preparation of refined capital and operational cost estimates.

The first step in this process would be completion of an Alternatives Analysis (AA), which would:

- Evaluate competing modal alternatives to understand their ridership and cost impacts.
- Refine alternative(s) through an Environmental Assessment (EA) process.
- Select a Locally Preferred Alternative (LPA) from the above.

Once the AA is complete, and approved by FTA, the project would enter project development and, if further approved and funded, construction.

Appendix 1 – Capital Cost Estimates

Tables

Table 1: Capital Cost Estimate – Concept 1 1
Table 2: Capital Cost Estimate – Concept 2 2
Table 3: Capital Cost Estimate – Concept 3 3
Table 4: Capital Cost Estimate – Concept 4 4

TABLE 1: CAPITAL COST ESTIMATE – CONCEPT 1

		Unit cost	Number	Corridor cost
Main Line BRT Elements				
Standard BRT Station		$ 334,000	40	$ 13,360,000
Component costs:				
Right-of-way	@ $10/sq. ft	$ 3,000		
Temp. Const. Easement	@ $4/sq. ft	$ 4,000		
Standard shelter		$ 205,000		
Ticket vending machine		$ 100,000		
Dynamic Message Signage		$ 12,000		
Curbway	Build to 14"	$ 10,000		
Artistic BRT Station		$ 441,000	0	$ -
Component costs:				
Right-of-way	@ $10/sq. ft	$ 3,000		
Temp. Const. Easement	@ $4/sq. ft	$ 4,000		
Artistic Shelter		$ 312,000		
Ticket vending machine		$ 100,000		
Dynamic Message Signage		$ 12,000		
Curbway	Build to 14"	$ 10,000		
Traffic Signal Priority	per mile	$ 12,750	12	$ 153,000
Transit lane striping	per mile	$ 2,400	12	$ 28,800
Transit lane signage	per sign	$ 150	96	$ 14,400
Queue bypass w/ farside stop pullout				
Major arterial	per queue jump	$ 300,000	6	$ 1,800,000
Curb Extension				
Downtown	per extension	$ 40,000	4	$ 500,000
Circulator Elements				
Circulator Shelters		$ 15,000	0	$ -
Capital subtotal				**$ 15,856,200**
Planning & Env. Clearance			15%	**$ 2,378,430**
Final Design & Permitting			15%	**$ 2,378,430**
Construction management			10%	**$ 1,585,620**
Contingency			25%	**$ 3,964,050**
Vehicles (BRT-style)	per vehicle	$ 800,000	11	$ 8,800,000
Total cost (including vehicles)				**$ 34,962,730**
Cost per mile (including vehicles)				**$ 2,913,561**
Total cost (NOT including vehicles)				**$ 26,162,730**
Cost per mile (NOT including vehicles)				**$ 2,180,228**

TABLE 2: CAPITAL COST ESTIMATE – CONCEPT 2

		Unit cost	Number	Corridor cost
Main Line BRT Elements				
Standard BRT Station		$ 334,000	40	$ 13,360,000
Component costs:				
Right-of-way	@ $10/sq. ft	$ 3,000		
Temp. Const. Easement	@ $4/sq. ft	$ 4,000		
Standard shelter		$ 205,000		
Ticket vending machine		$ 100,000		
Dynamic Message Signage		$ 12,000		
Curbway	Build to 14"	$ 10,000		
Artistic BRT Station		$ 441,000	0	$ -
Component costs:				
Right-of-way	@ $10/sq. ft	$ 3,000		
Temp. Const. Easement	@ $4/sq. ft	$ 4,000		
Artistic Shelter		$ 312,000		
Ticket vending machine		$ 100,000		
Dynamic Message Signage		$ 12,000		
Curbway	Build to 14"	$ 10,000		
Traffic Signal Priority	per mile	$ 12,750	12	$ 153,000
Transit lane striping	per mile	$ 2,400	12	$ 28,800
Transit lane signage	per sign	$ 150	96	$ 14,400
Queue bypass w/ farside stop pullout				
Major arterial	per queue jump	$ 300,000	6	$ 1,800,000
Curb Extension				
Downtown	per extension	$ 40,000	4	$ 500,000
Circulator Elements				
Circulator Shelters		$ 15,000	44	$ 660,000
Capital subtotal				**$ 16,516,200**
Planning & Env. Clearance			15%	**$ 2,477,430**
Final Design & Permitting			15%	**$ 2,477,430**
Construction management			10%	**$ 1,651,620**
Contingency			25%	**$ 4,129,050**
Vehicles (BRT style)	per vehicle	$ 800,000	12	$ 9,600,000
Vehicles (Circulators)	per vehicle	$ 100,000	0	$ -
Total cost (including vehicles)				**$ 36,851,730**
Cost per mile (including vehicles)				**$ 708,687**
Total cost (NOT including vehicles)				**$ 27,251,730**
Cost per mile (NOT including vehicles)				**$ 524,072**

TABLE 3: CAPITAL COST ESTIMATE – CONCEPT 3

		Unit cost	Number	Corridor cost
Main Line BRT Elements				
Standard BRT Station		$ 334,000	40	$ 13,360,000
Component costs:				
Right-of-way	@ $10/sq. ft	$ 3,000		
Temp. Const. Easement	@ $4/sq. ft	$ 4,000		
Standard shelter		$ 205,000		
Ticket vending machine		$ 100,000		
Dynamic Message Signage		$ 12,000		
Curbway	Build to 14"	$ 10,000		
Artistic BRT Station		$ 441,000		$ -
Component costs:				
Right-of-way	@ $10/sq. ft	$ 3,000		
Temp. Const. Easement	@ $4/sq. ft	$ 4,000		
Artistic Shelter		$ 312,000		
Ticket vending machine		$ 100,000		
Dynamic Message Signage		$ 12,000		
Curbway	Build to 14"	$ 10,000		
Traffic Signal Priority	per mile	$ 12,750	12	$ 153,000
Transit lane striping	per mile	$ 2,400	12	$ 28,800
Transit lane signage	per sign	$ 150	96	$ 14,400
Queue bypass w/ farside stop pullout				
Major arterial	per queue jump	$ 300,000	6	$ 1,800,000
Curb Extension				
Downtown	per extension	$ 40,000	4	$ 500,000
Circulator Elements				
Circulator Shelters		$ 15,000	34	$ 510,000
Capital subtotal				**$ 16,366,200**
Planning & Env. Clearance			15%	**$ 2,454,930**
Final Design & Permitting			15%	**$ 2,454,930**
Construction management			10%	**$ 1,636,620**
Contingency			25%	**$ 4,091,550**
Vehicles (BRT style)	per vehicle	$ 800,000	11	$ 8,800,000
Vehicles (Circulators)	per vehicle	$ 100,000	12	$ 1,200,000
Total cost (including vehicles)				**$ 37,004,230**
Cost per mile (including vehicles)				**$ 1,608,880**
Total cost (NOT including vehicles)				**$ 27,004,230**
Cost per mile (NOT including vehicles)				**$ 1,174,097**

TABLE 4: CAPITAL COST ESTIMATE – CONCEPT 4

		Unit cost	Number	Corridor cost
Standard BRT Station		$ 334,000	40	$ 13,360,000
Component costs:				
Right-of-way	@ $10/sq. ft	$ 3,000		
Temp. Const. Easement	@ $4/sq. ft	$ 4,000		
Standard shelter		$ 205,000		
Ticket vending machine		$ 100,000		
Dynamic Message Signage		$ 12,000		
Curbway	Build to 14"	$ 10,000		
Artistic BRT Station		$ 441,000		$ -
Component costs:				
Right-of-way	@ $10/sq. ft	$ 3,000		
Temp. Const. Easement	@ $4/sq. ft	$ 4,000		
Artistic Shelter		$ 312,000		
Ticket vending machine		$ 100,000		
Dynamic Message Signage		$ 12,000		
Curbway	Build to 14"	$ 10,000		
Traffic Signal Priority	per mile	$ 12,750	12	$ 153,000
Transit lane striping	per mile	$ 2,400	12	$ 28,800
Transit lane signage	per sign	$ 150	96	$ 14,400
Queue bypass w/ farside stop pullout				
Major arterial	per queue jump	$ 300,000	6	$ 1,800,000
Curb Extension				
Downtown	per extension	$ 40,000	4	$ 500,000
Circulator Elements				
Circulator Shelters		$ 15,000	42	$ 630,000
Capital subtotal				**$ 16,486,200**
Planning & Env. Clearance			15%	**$ 2,472,930**
Final Design & Permitting			15%	**$ 2,472,930**
Construction management			10%	**$ 1,648,620**
Contingency			25%	**$ 4,121,550**
Vehicles (BRT style)	per vehicle	$ 800,000	11	$ 8,800,000
Vehicles (Circulators)	per vehicle	$ 100,000	13	$ 1,300,000
Total cost (including vehicles)				**$ 37,302,230**
Cost per mile (including vehicles)				**$ 1,332,223**
Total cost (NOT including vehicles)				**$ 27,202,230**
Cost per mile (NOT including vehicles)				**$ 971,508**

Appendix 2 – Operating Cost Estimates

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TABLE 1: OPERATING COST ESTIMATE – CONCEPT 1

	One-way Bus Trip Length (miles)	Service span (hours)	Number of peak hours	Peak headway (minutes)	Off-peak headway (minutes)	Number of trips in peak	Number of trips off-peak	Total trips per day	Total mileage	Cost per mile	Total cost (daily)	Total cost (annually)
Main Line BRT												
Weekday												
BRT service	12.0	14	6.00	10	15	72	64	136	1,632	$ 5.38	$ 8,778	$ 2,238,426
Saturday												
BRT service	12.0	14	14.00	20	20	84	-	84	1,008	$ 5.38	$ 5,422	$ 298,199
Sunday												
BRT service	12.0	14	14.00	20	20	84	-	84	1,008	$ 5.38	$ 5,422	$ 298,199

TABLE 2: OPERATING COST ESTIMATE – CONCEPT 2

	One-way Bus Trip Length (miles)	Service span (hours)	Number of peak hours	Peak headway (minutes)	Off-peak headway (minutes)	Number of trips in peak	Number of trips off-peak	Total trips per day	Total mileage	Cost per mile	Total cost (daily)	Total cost (annually)
Main Line BRT												
Weekday												
BRT service	12.0	14	6.00	20	60	36	16	52	624	$ 5.38	$ 3,356	$ 855,869
Saturday												
BRT service	12.0	14	14.00	20	20	84	-	84	1,008	$ 5.38	$ 5,422	$ 298,199
Sunday												
BRT service	12.0	14	14.00	20	20	84	-	84	1,008	$ 5.38	$ 5,422	$ 298,199
SUNY Route												
Weekday												
BRT Service	14.08	14	6.00	60	60	12	16	28	394	$ 5.38	$ 2,121	$ 540,733
East A BRT												
Weekday												
BRT Service	12.51	14	6.00	60	60	12	16	28	350	$ 5.38	$ 1,884	$ 480,439
East B BRT												
Weekday												
BRT Service	12.77	14	6.00	60	60	12	16	28	358	$ 5.38	$ 1,923	$ 490,424
											Total operating costs	$2,963,862

TABLE 3: OPERATING COST ESTIMATE – CONCEPT 3

	One-way Bus Trip Length (miles)	Service span (hours)	Number of peak hours	Peak headway (minutes)	Off-peak headway (minutes)	Number of trips in peak	Number of trips off-peak	Total trips per day	Total mileage	Cost per mile	Total cost (daily)	Total cost (annually)
Main Line BRT												
Weekday												
BRT service	12.0	14	6.00	10	15	72	64	136	1,632	$ 5.38	$ 8,778	$2,238,426
Saturday												
BRT service	12.0	14	14.00	20	20	84	-	84	1,008	$ 5.38	$ 5,422	$ 298,199
Sunday												
BRT service	12.0	14	14.00	20	20	84	-	84	1,008	$ 5.38	$ 5,422	$ 298,199
SUNY Shuttle												
Weekday												
BRT Service	2.34	14	6.00	10	15	36	32	68	159	$ 5.38	$ 856	$ 218,247
NE Shuttle												
Weekday												
BRT Service	2.71	14	6.00	10	15	36	32	68	184	$ 5.38	$ 991	$ 252,756
SE Shuttle												
Weekday												
BRT Service	3.76	14	6.00	10	15	36	32	68	256	$ 5.38	$ 1,375	$ 350,687
NW Shuttle												
Weekday												
BRT Service	2.19	14	6.00	10	15	36	32	68	149	$ 5.38	$ 801	$ 204,256
											Total operating costs	$3,860,769

TABLE 4: OPERATING COST ESTIMATE – CONCEPT 4

	One-way Bus Trip Length (miles)	Service span (hours)	Number of peak hours	Peak headway (minutes)	Off-peak headway (minutes)	Number of trips in peak	Number of trips off-peak	Total trips per day	Total mileage	Cost per mile	Total cost (daily)	Total cost (annually)
Main Line BRT												
Weekday												
BRT service	12.0	14	6.00	10	15	72	64	136	1,632	$ 5.38	$ 8,778	$2,238,426
Saturday												
BRT service	12.0	14	14.00	20	20	84	-	84	1,008	$ 5.38	$ 5,422	$ 298,199
Sunday												
BRT service	12.0	14	14.00	20	20	84	-	84	1,008	$ 5.38	$ 5,422	$ 298,199
Maxess Circulator												
Weekday												
BRT Service	4.58	14	6.00	10	15	36	32	68	311	$ 5.38	$ 1,675	$ 427,166
SUNY Circulator												
Weekday												
BRT Service	6.32	14	6.00	10	15	36	32	68	430	$ 5.38	$ 2,312	$ 589,452
Sweet Hollow												
Weekday												
BRT Service	4.90	14	6.00	10	15	36	32	68	333	$ 5.38	$ 1,792	$ 457,012
											Total operating costs	$4,308,454

Appendix 3 – Land Use Analysis and Evaluation

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The design of a bus rapid transit (BRT) system, particularly with regard to the location of stations, is strongly influenced by land use and zoning, which help to characterize an area and its potential to accommodate/attract ridership. The Route 110 corridor contains a varied pattern of uses; certain sections exhibit characteristics that would permit a successful station, while other sections do not. In order to assist in the BRT design and location of stations, Saccardi & Schiff, Inc. conducted a detailed evaluation of land use and zoning along the Route 110 corridor, including a preliminary evaluation of areas that can be considered future opportunity areas. For the purposes of this memorandum, the Route 110 corridor runs just north of the Long Island Expressway (LIE) in the Town of Huntington to the Amityville Long Island Rail Road (LIRR) station in the Village of Amityville and consists of Route 110 and an approximate ¼-mile corridor on either side.

LAND USE

METHODOLOGY

Land use information is based on existing conditions that were identified from a combination of field surveys, a review of local and regional planning documents (including the Town of Huntington's *Comprehensive Plan Update: Horizons 2020* and Suffolk County's 2006 *Report of the Route 110 Office-Industrial Corridor*), and the use of aerial photographs and Geographic Information System (GIS) data. In order to ascertain the land use patterns along Route 110, Saccardi & Schiff obtained GIS information, including land use, from the individual municipalities and, in some cases, from Suffolk County. This layer was then superimposed upon the latest (2007) aerials of the corridor, obtained from the New York State GIS Clearinghouse. In most cases, the land use matched the aerial. However, in a few instances there was a discrepancy, which was noted for further investigation. This base map was updated utilizing information obtained from field visits in August, November, and December 2009. The land use maps (***Figures 1a*** and ***1b, Generalized Existing Land Use***) attached as part of this memorandum are the result of the confluence of the various sources of land use information.

DESCRIPTION OF LAND USES ALONG THE ROUTE 110 CORRIDOR

Although there is a wide variety of land uses along the Route 110 corridor, Route 110 itself is predominantly mixed commercial (including office, retail, and service) and industrial (mostly light industrial and storage/warehouse). The following is a description of land uses along the corridor, by municipality.

TOWN OF HUNTINGTON – MELVILLE AREA

The northern end of the Route 110 corridor is located within the Melville area of the Town of Huntington, which is characterized in Horizons 2020 as "…a suburban, automobile-oriented commercial destination that is poorly designed for pedestrians[1]." Route 110 (Broad Hollow Road) in the northern portion of this area from the intersection of Walt Whitman Road and Pinelawn Road to Baylis Road, is dominated by large suburban office buildings that contain the headquarters for several large companies, including Nikon and Capital One. Further off of Route 110 in this northern area are industrial and warehouse uses, as well as a hotel (i.e., Hilton Long Island/Huntington) and some lower density residential uses.

South of Baylis Road to the Town of Huntington/Town of Babylon border, the Route 110 corridor contains a mix of large office (i.e., Huntington Quadrangle), storage/warehouse, hotel (i.e., Extended Stay America), industrial, retail, utility, and quasi-public uses. A United States Post Office distribution center is located on

[1] Horizons 2020: Huntington Comprehensive Plan Update, Town of Huntington.

the east side of Route 110 (Mid-Island Processing and Distribution Center) and a portion of the Farmingdale State College campus is on the west side of Route 110 (including the Broad Hollow Science Park). There are also a number of residential uses just off of the Route 110 corridor, including several subdivisions and senior developments along Walt Whitman Road (e.g., Millennium Hills, Northgate at Melville, and the Vistas at West Hills) and Ruland Road (e.g., Avalon Court and Avalon Court North). There are also a few vacant parcels in this portion of the Melville area.

TOWN OF BABYLON – EAST FARMINGDALE AREA

Just to the south of Melville is the East Farmingdale area of the Town of Babylon, which runs from the Town of Huntington/Town of Babylon border south to the Southern State Parkway. This portion of the Route 110 corridor exhibits a number of differing land use patterns.

The portion of East Farmingdale between the Town of Huntington and Town of Babylon border and the Ronkonkoma Branch of the LIRR contains retail uses along Route 110, with light and heavier industrial uses in the adjacent parcels. The retail uses are primarily national-chain large-format stores or shopping strips. Two prominent uses also occur in this section of the Route 110 corridor: 1) A portion of the Farmingdale State College campus is located off of the west side Route 110, north of Melville Road, and 2) Adventureland, an amusement park, occurs on the east side of Route 110, between Smith Street and Milbar Boulevard. Farmingdale State College is currently in the midst of a five-year $100 million campus improvement and expansion program that included the construction of a new four-story dormitory.

The portion of East Farmingdale from the Ronkonkoma Branch of the LIRR to Route 109 contains a different mix of uses and a number of vacant parcels. Nestled between the Ronkonkoma Branch of the LIRR right-of-way and Conklin Street, east of Route 110, are a number of parcels that are currently vacant that were related to the former Republic Airport LIRR station and Fairchild Aircraft. South of Conklin Street along the east side of Route 110 is Airport Plaza and other shopping centers (i.e., Republic Plaza), a multiplex movie theater, two hotels (e.g., Courtyard by Marriott, TownPlace Suites), offices/light industrial uses (i.e., Telephonics, Inc.), the SUNY-Farmingdale Aerospace Education Center, Molloy College, and Republic Airport. Note that Republic Airport (New York State Department of Transportation and the Republic Airport Commission) is currently conducting a vision planning process that will work with the adjacent residential communities "…to develop a shared vision of the airport and create a guide for the airport's future[2]." The west side of Route 110 contains smaller retail and office uses, some industrial, and the Skydrive Golf Center, a former golf driving range that is currently vacant.

From Route 109 to the Southern State Parkway the land use pattern shifts to a mix of light industrial and manufacturing, storage, and medium- to smaller-scale commercial uses, including smaller offices and automobile-oriented uses (e.g., gasoline station, car wash), especially between Great Neck Road and the Southern State Parkway. In this portion of the Route 110 corridor, single-family residential uses abut the aforementioned uses.

TOWN OF BABYLON – NORTH AMITYVILLE AND VILLAGE OF AMITYVILLE AREAS

The southern end of the Route 110 corridor is located in the North Amityville and Village of Amityville areas, running from the Southern State Parkway south to Sunrise Highway and eventually the Amityville LIRR station. This portion of the

[2] Republic Airport; http://www.republicairport.net/vision-planning.htm, accessed January 20, 2010.

Route 110 corridor contains mostly smaller parcels and uses on more of a neighborhood-scale.

Between the Southern State Parkway and Sunrise Highway, the mix of land uses along Route 110 (Broadway) includes single-family homes, multiple-family apartments/developments, two mobile home parks, a motel (i.e., Sayonara Motor Inn), strip commercial, and some light industrial uses. North and south of Sunrise Highway are two large institutional uses: 1) the Edmund W Miles Middle School north of Sunrise Highway on the east side of Route 110, and 2) the now vacant Brunswick Hospital and associated building and parking areas.

Further to the south are smaller commercial and multiple-family uses typical of a village setting, as well as a few small greenspaces/parks near the intersection of Route 110 and Railroad Avenue. The areas in and around the Amityville LIRR station contain some surface parking, as well as office and light industrial uses and buildings.

ZONING

METHODOLOGY

As with land use, zoning information is based on existing conditions that were identified from a review of local and regional planning documents and GIS data. Zoning was one of the pieces of GIS information obtained from the individual municipalities and Suffolk County. This was superimposed upon aerials of the community and reviewed for inconsistencies. The zoning maps (***Figures 2a*** and ***2b***) attached as part of this memorandum are the result of that review. Following is a description of zoning along the corridor, based on the zoning map.

DESCRIPTION OF ZONING ALONG THE ROUTE 110 CORRIDOR

There are 26 different zoning districts within the Route 110 corridor (presented in ***Table 1***). The Route 110 frontage is primarily zoned industrial and commercial, with residential zoning primarily beginning off of the Route 110 corridor. The following is a detailed description of zoning along the corridor, by municipality.

TOWN OF HUNTINGTON – MELVILLE AREA

The majority of the parcels in the Melville portion of the Route 110 corridor are zoned light industrial (Light Industry: I-1, I-2). Closer to the Town of Huntington/Town of Babylon border are business (Neighborhood Business: C-4; General Business: C-6; General Business A: C-8) and residential (Residence: R-10, R-10, R-RM) districts.

TOWN OF BABYLON – EAST FARMINGDALE AREA

The East Farmingdale portion of the Route 110 corridor is zoned primarily as Light Industrial (G). Republic Airport and Farmingdale State College are zoned as residential (A)

TOWN OF BABYLON – NORTH AMITYVILLE AND VILLAGE OF AMITYVILLE AREAS

The North Amityville portion of the corridor, from the Southern State Parkway until approximately Smith Street, consists mostly of Business (E) zoning, with some residentially-zoned parcels: Residential (B), Multiple-Family Residential (MR), and Senior Citizens Housing (SC).

The Village of Amityville portion of the Route 110 corridor, from approximately Smith Street southward, consists of mostly of Business (B, B-1, B-2) zoning, with some industrial (I), as well as an area of Senior Citizens (SC) zoning.

DESCRIPTION OF EXISTING ZONING DISTRICTS IN THE CORRIDOR

Table 1 presents the relevant characteristics of each of the zoning districts described above.

TABLE 1: EXISTING ZONING DISTRICTS WITHIN ¼-MILE OF ROUTE 110

Zone	District Name	Type	MF Allowed?	Min. Lot Size	Max. Building Coverage	Stories	Height
TOWN OF HUNTINGTON							
R-40	Residence	Res.	N	1 acre	--	2	35
R-5	Residence	Res.	N (2-Family)	5,000/10,000	--	2	35
R-3M	Garden Apartment Special	Res.	Y	15,000	--	3	45
R-RM	Retirement Community	Res.	Y (Senior)	10 acres	25%	2	35
C-2	Single-Purpose Office Building	Com.	N	3 acres	25%	2	30
C-4	Neighborhood Business	Com.	N	5,000	40%	2	35
C-6	General Business	Com.	Y (mixed-use)	--		3	45
C-8	General Business A	Com.	N	5,000	50%	2	35
C-10	Planned Motel	Com.	Y	3 acres	25%	2	35
I-1	Light Industry	Ind.	N	6 acres	30%	--	45
I-2	Light Industry	Ind.	N	3 acres	33 1/3%	--	45
I-3	Light Industry	Ind.	N	1 acre	40%	--	45
TOWN OF BABYLON							
A	Residence	Res.	N	12,500	15%	2 ½	30
B	Residence	Res.	N	10,000	20%	2 ½	30
C	Residence	Res.	N	7,500	30%	2 ½	30
MR	Multiple Residence	Res.	Y	2 acres	--	2 ½	--
SC	Senior Citizens Multiple Use	Res.	N	2 acres	--	2 ½	--
E	Neighborhood Business	Com.	N	10,000	60%	3	35
G	Light Industrial	Ind.	N	15,000	40%	--	35
Ga	Light Industrial	Ind.	N	40,000	45%	--	35
MH	Planned Motel-Hotel	Hotel	N	3 acres	--	3	35
VILLAGE OF AMITYVILLE[1]							
B	Residence	Res.	N	7,500	32%	2 ½	35
B-1	Retail Business	Mix	N	--	60%	4	40
B-2	General Business	Mix	N	--	60%	4	40
SC	Senior Citizen Residence	Res.	Y	1.75 acres	20%	2 ½	--
I	Industrial	Ind.	N	12,500	40%	--	40

SOURCES: Town of Huntington Zoning Code; Town of Babylon Zoning Code; Village of Amityville Zoning Code. Compiled by Saccardi & Schiff, Inc.

NOTE: [1]The Village of Amityville Zoning Code is currently being revised; this table reflects the most recent adopted version.

NON-CONFORMING USES

METHODOLOGY

Non-conforming uses are existing uses that are inappropriate in a zoning sense, since the use is not consistent with zoning for a particular site. In order to identify those uses that do not conform to existing zoning, land use and zoning were evaluated together.

DESCRIPTION OF NON-CONFORMING USES ALONG THE ROUTE 110 CORRIDOR

The majority of study area uses appear to conform to existing zoning, especially in the Melville, North Amityville, and Village of Amityville areas. In contrast, most of the zoning along Route 110 in the East Farmingdale portion of the Route 110 corridor is limited to the Light Industrial (G) zoning district, rendering the gasoline service stations and any residential along that portion of Route 110 non-conforming. Further, the two residentially-zoned parcels within the East Farmingdale area – Republic Airport and Farmingdale State College – are not residential uses. However, both parcels are not subject to zoning under their current ownership.

OBSERVATIONS, INCLUDING FUTURE OPPORTUNITY AREAS

Although the land use patterns along the Route 110 corridor are relatively well-established, lacking an abundance of significant parcels of vacant land, the corridor is dynamic, in that it continues to evolve and change. This is evidenced by the various development projects planned for the corridor in the near future. There is also potential for other parcels, including vacant and/or underutilized parcels, to be developed or redeveloped in the future.

This memorandum contains a preliminary discussion of "Future Opportunity Areas." Future Opportunity Areas are those parcels or areas that are:

- Vacant;
- Underutilized based on zoning potential;
- Characterized by uses that have the potential for redevelopment due to market conditions;
- Located at key points or locations along the Route 110 corridor; and/or,
- Owned by local, state, or federal governments.

This discussion is included not only to aid in visioning and designing a potential BRT system, but also to indicate that there are issues and opportunities in the corridor regardless of the implementation of the BRT system. The discussion that follows evaluates the potential for change, without consideration of the potential impact of BRT stations or the BRT system.

As with the description of existing land use and zoning, the discussion focuses on those parcels or areas that are within a ¼-mile of Route 110. Each of the areas is presented in ***Figures 3a*** and ***3b,*** listed in ***Table 2***, and discussed below.

AREA 1: WALT WHITMAN ROAD/PINELAWN ROAD INTERSECTION

Around and north of the intersection of Walt Whitman Road/Pinelawn Road/Route 110 are a number of lower density uses, including a gas station and other automobile-oriented uses. All of these parcels could be redeveloped due to their strategic location and current uses.

AREA 2: LIE TO DURYEA ROAD FRONTAGE

The office development along Route 110 from the LIE south to Duryea Road is characterized by large grassed setbacks. These setbacks are large enough that there is a potential opportunity for additional development closer to the Route 110 frontage.

Table 2: Future Opportunity Areas

Area Number*	Location
1	Walt Whitman Road/Pinelawn Road Intersection
2	LIE to Duryea Road Frontage
3	Vacant Parcels at Ruland Road
4	Vacant Parcels at Town of Hempstead/Town of Babylon Border
5	Farmingdale State College Frontage
6	Potential Re-Opened Republic Airport LIRR Station
7	Vacant Parcels South of Conklin Street
8	Former Golf Driving Range
9	Great Neck Road
10	Former Department of Motor Vehicles
11	Trailer Parks
12	Vacant Parcels at Ronald Drive
13	Vacant Parcels at Smith Street
14	Former Brunswick Hospital
15	Surface Parking at Amityville LIRR Station

* See Figure 3

Area 3: Vacant Parcels at Ruland Road

Just to the north of the intersection of Ruland Road and Route 110 is a former restaurant that is currently vacant, as well as an adjacent undeveloped parcel. Both parcels have the potential for development due to their vacancy status and proximity to Ruland Road.

Area 4: Vacant Parcels at Town of Hempstead/Town of Babylon Border

There is a vacant parcel on the east side of Route 110 at the Town of Huntington/Town of Babylon border in the Costco shopping center. Due to its vacancy status it is a potential candidate for development.

Area 5: Farmingdale State College Frontage

Farmingdale State College/Broad Hollow Bioscience Park contains undeveloped frontage along the west side of Route 110, a portion of which is in the Town of Huntington and a portion of which is in the Town of Babylon. In addition, south of Farmingdale State College and Melville Road is an undeveloped parcel. Although the topography and environmental conditions on these parcels present limitations, there remains potential for development, since they are undeveloped and are strategically located at Melville Road.

Area 6: Potential Re-Opened Republic Airport LIRR Station

Beginning in the mid-1960s, when Governor Rockefeller announced a concept of a transportation center at Republic Airport, various agencies have developed concepts and plans for development at Republic Airport[3,4]. In 1986 the Republic Airport LIRR station, which was used by employees of the Airport, was closed by the LIRR as part of the electrification of the Ronkonkoma Branch to eliminate stops and reduce trip times. The station, which was located between the Ronkonkoma Branch of the LIRR right-of-way and Conklin Street, along with other buildings and uses related to the Airport, have been removed, leaving a number of vacant parcels along Conklin Street. Due partially to recent development in the area, the LIRR has noted the potential for re-opening the station. The number of vacant parcels, their location along Conklin Street and adjacent to Airport Plaza, and the potential for a LIRR station, present an opportunity for development of the area as a TOD/transportation hub.

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[3] Long Island Republic Airport Historical Society; http://sites.google.com/site/lirepublicairporths/home, accessed January 20, 2010.

[4] A Review of Selected Growth and Development Areas, Suffolk County, New York – August 2006, Suffolk County Department of Planning.

Area 7: Vacant Parcels South of Conklin Street

A number of parcels on the west side of Route 110, south of Conklin Street are currently utilized for outdoor storage and contain a pond classified as Class C by the New York State Department of Environmental Conservation (NYSDEC). Although the environmental conditions on these parcels present limitations to potential development, the area has potential, not just because of its underutilization, but also due to its location immediately adjacent to the Conklin Street/Route 110 intersection and any potential development associated with a re-opened Republic Airport LIRR station (see above, Area 6).

Area 8: Former Golf Driving Range

Just to the north of Michael Road on the west side of Route 110 is the Skydrive Golf Center, an approximately 13-acre vacant golf driving range. As one of the few large vacant parcels in the Route 110 corridor, it is a likely location for development.

Area 9: Great Neck Road

The area in and around the intersection of Great Neck Road and Route 110 contains a mix of automobile-oriented uses, such as gasoline stations and car washes, along with storage facilities, large-format retail, and some strip commercial. The recent construction of the Ace Hardware store suggests that there is interest in this area could be developed further, especially given its location at an important intersection, with residential uses to the east and west. In addition, the presence of the Southern State Parkway immediately to the south allows for excellent vehicular access, not only locally, but regionally as well.

Area 10: Former Department of Motor Vehicles

Approximately 600 feet south of the Southern State Parkway, on the west side of Route 110, is a former New York State Department of Motor Vehicles (DMV) building that is currently vacant. Although relatively small in size, it is likely to be redeveloped or re-occupied due to the vacancy status of the building.

Area 11: Mobile Home Parks

In the North Amityville/Village of Amityville section of the Route 110 corridor are two mobile home parks:

- Frontier Mobile Home Park, on the east side of Route 110, south of Brefni Street.
- Gildersleeve Mobile Home Park, on the west side of Route 110, between Bentley Street and West Smith Street.

These uses, while residential in nature, are different than the other residential uses in this section of the Route 110 corridor (or the corridor as a whole) and could be subject to development pressure. To that end, the mobile home parks can be considered underutilized properties, especially given the commercial zoning of the parcels.

Area 12: Vacant Parcels at Ronald Drive

Just to the north of the Polo Club residential development on the east side of Route 110 is an undeveloped wooded area. Its vacancy status makes it a candidate for development in the future.

Area 13: Vacant Parcels at Smith Street

At the southeastern corner of the intersection of Smith Street and Route 110 is an undeveloped parcel. Due to its vacancy status and location at an intersection, this property could be developed.

Area 14: Former Brunswick Hospital

South of Sunrise Highway, near the intersection of Louden Avenue and Route 110, on the west side of Route 110, is the former Brunswick Hospital, which now stands empty. South of this, along

Louden Avenue is a large parking area. Finally, to the east of the parking area, along Route 110, is an undeveloped open space. The area immediately adjacent to the west of these properties has been redeveloped over the past few years with townhouses and other residential development. This combination of factors indicates that this is an area that is likely to see development.

Area 15: Surface Parking at Amityville LIRR Station

Surrounding the Amityville LIRR station are a number of surface parking lots, some of which relate to the station itself, and others which do not. Given the land use pattern and density of development of the Village of Amityville in this area and the presence of the LIRR station as a major activity center, development of the parking lots and surrounding buildings to include more dense, mixed uses is likely, especially as a rail TOD. In addition to the areas listed above, there are other smaller underutilized areas and other vacant and/or underutilized parcels just outside of the study area whose use or intensity could be expected to change. These parcels are primarily within residential areas, so it could be anticipated that, based on demand, additional residential opportunities could be provided on such parcels.

CONCLUSIONS

An integral part of any comprehensive study is an understanding of the existing conditions and any issues that may result from those conditions. This technical memorandum has served to describe the existing land use and zoning conditions along Route 110 and to highlight some of the resultant issues and opportunities in the Route 110 corridor.

FIGURES 1A: GENERALIZED EXISTING LAND USE NORTH

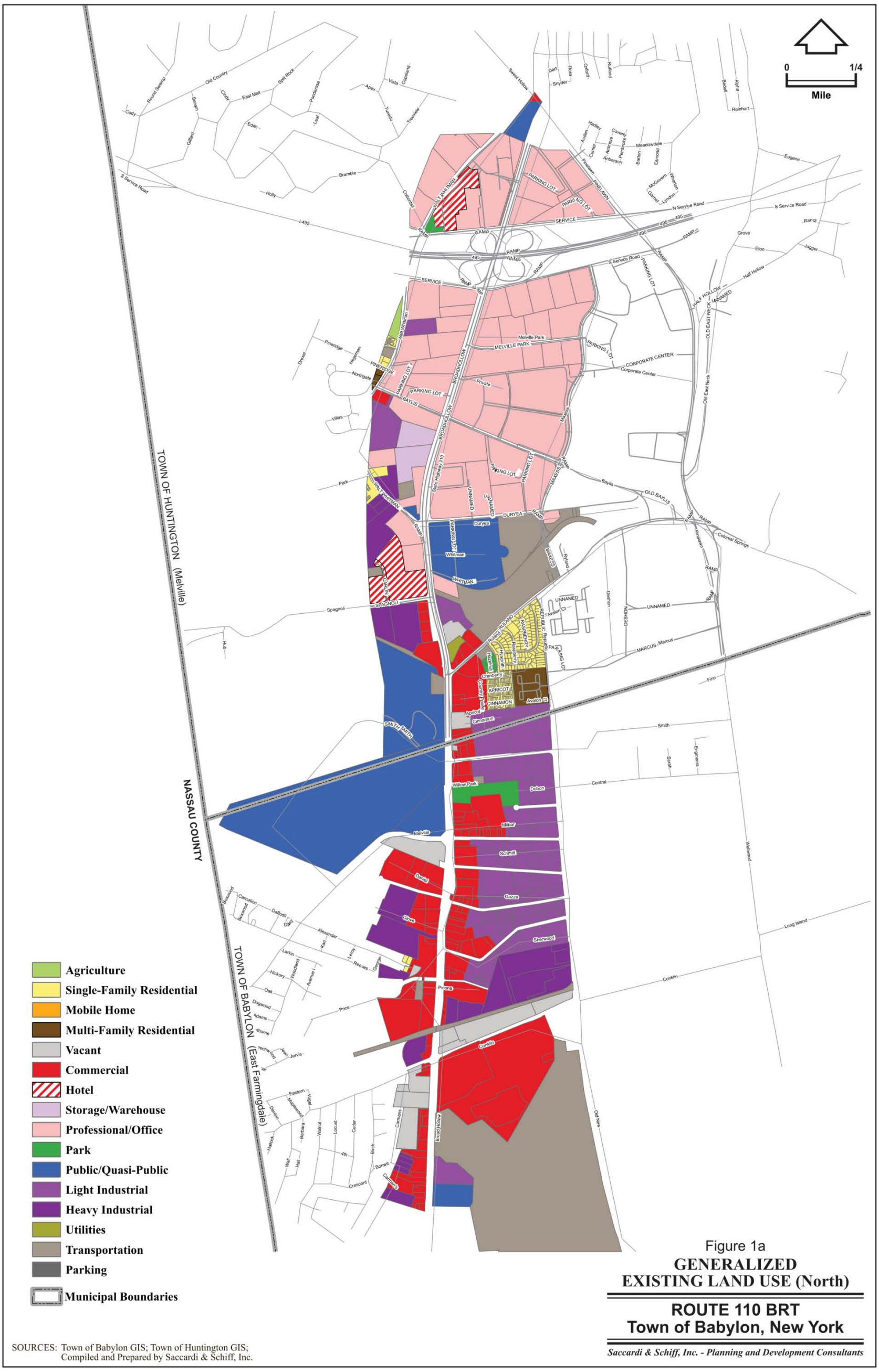

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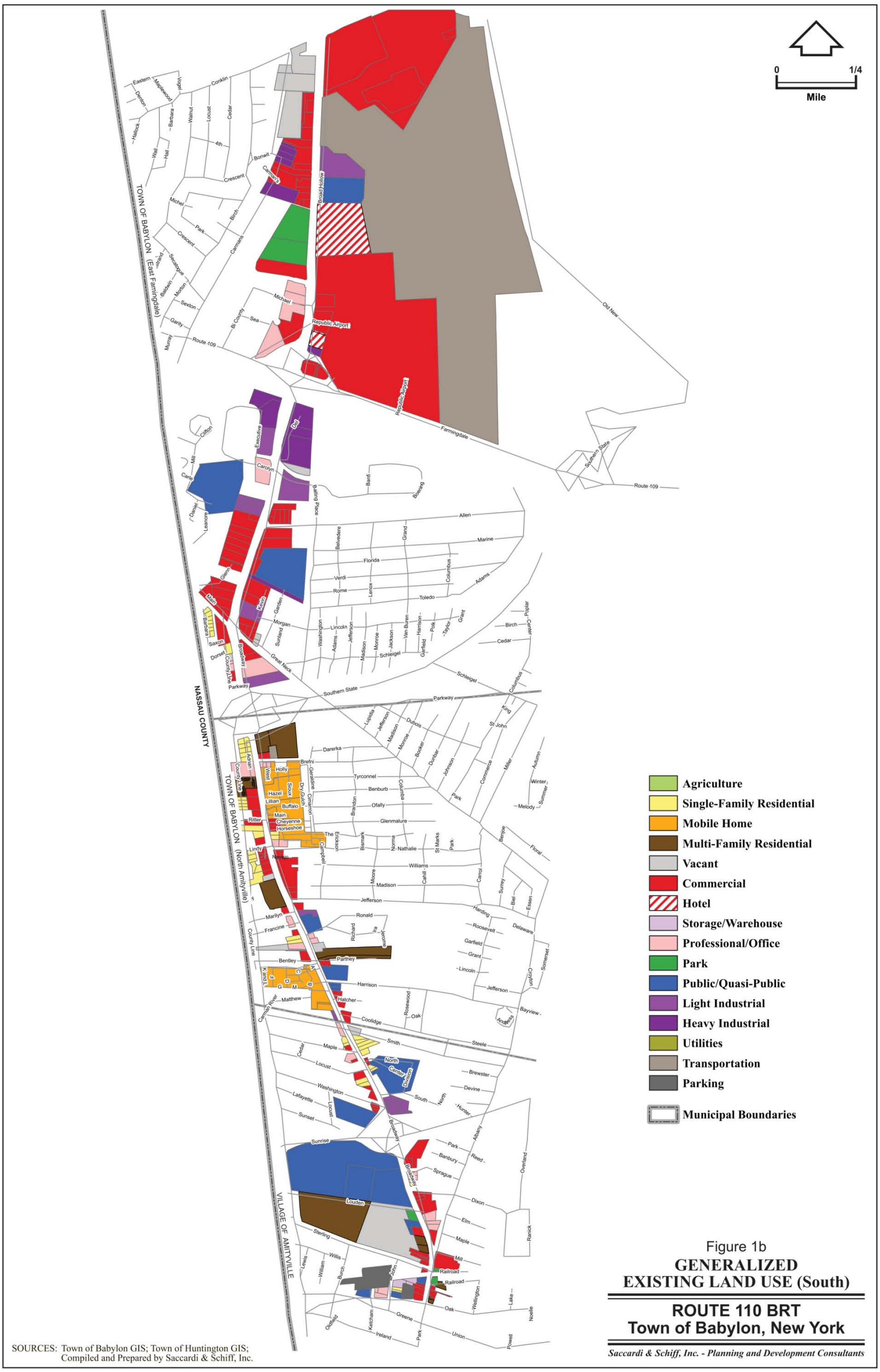
FIGURE 1B: GENERALIZED EXISTING LAND USE SOUTH



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FIGURES 2A: EXISTING ZONING NORTH

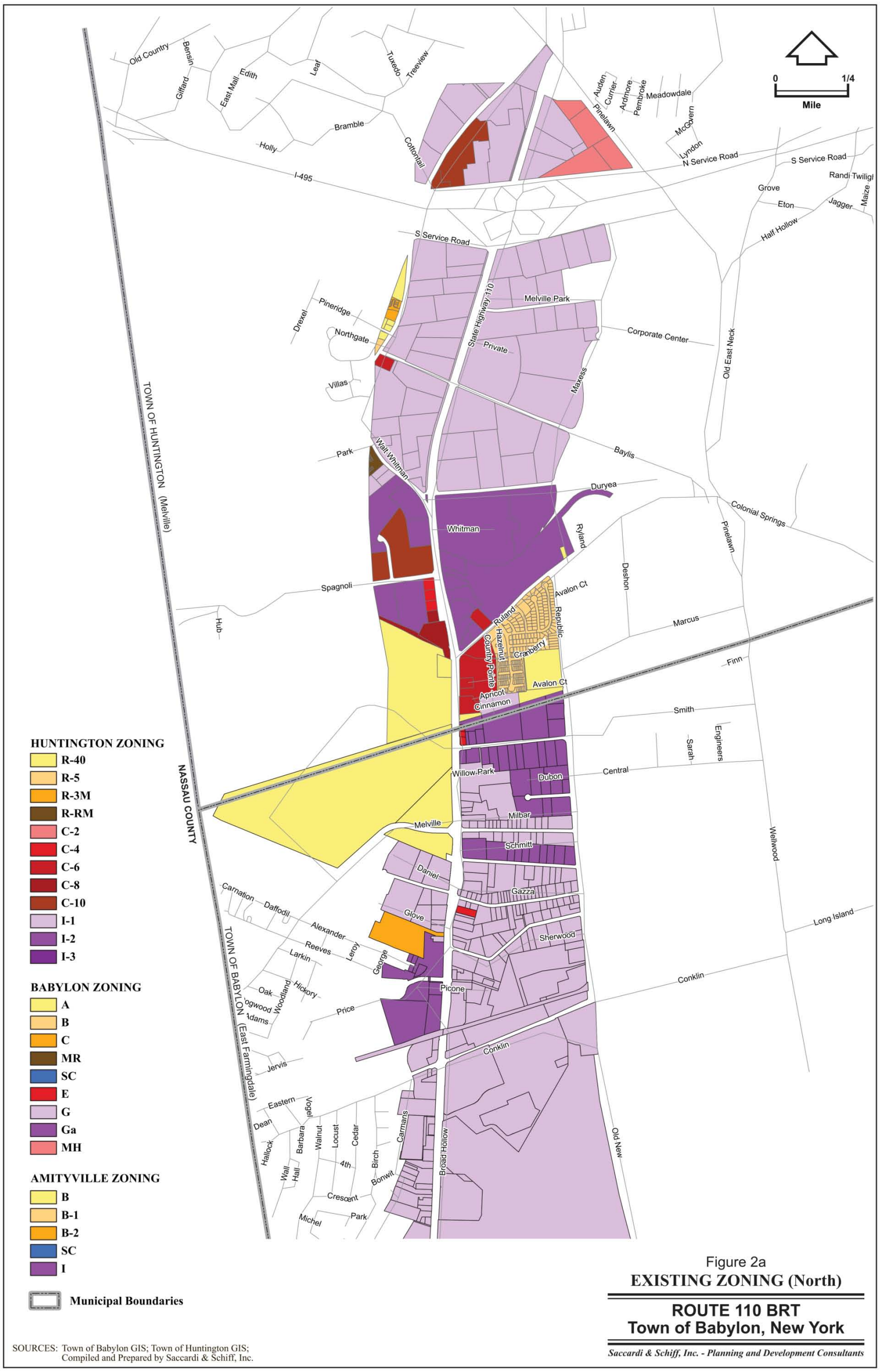

Figure 2a
EXISTING ZONING (North)

ROUTE 110 BRT
Town of Babylon, New York

Saccardi & Schiff, Inc. - Planning and Development Consultants

SOURCES: Town of Babylon GIS; Town of Huntington GIS;
Compiled and Prepared by Saccardi & Schiff, Inc.

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FIGURE 2B: EXISTING ZONING SOUTH

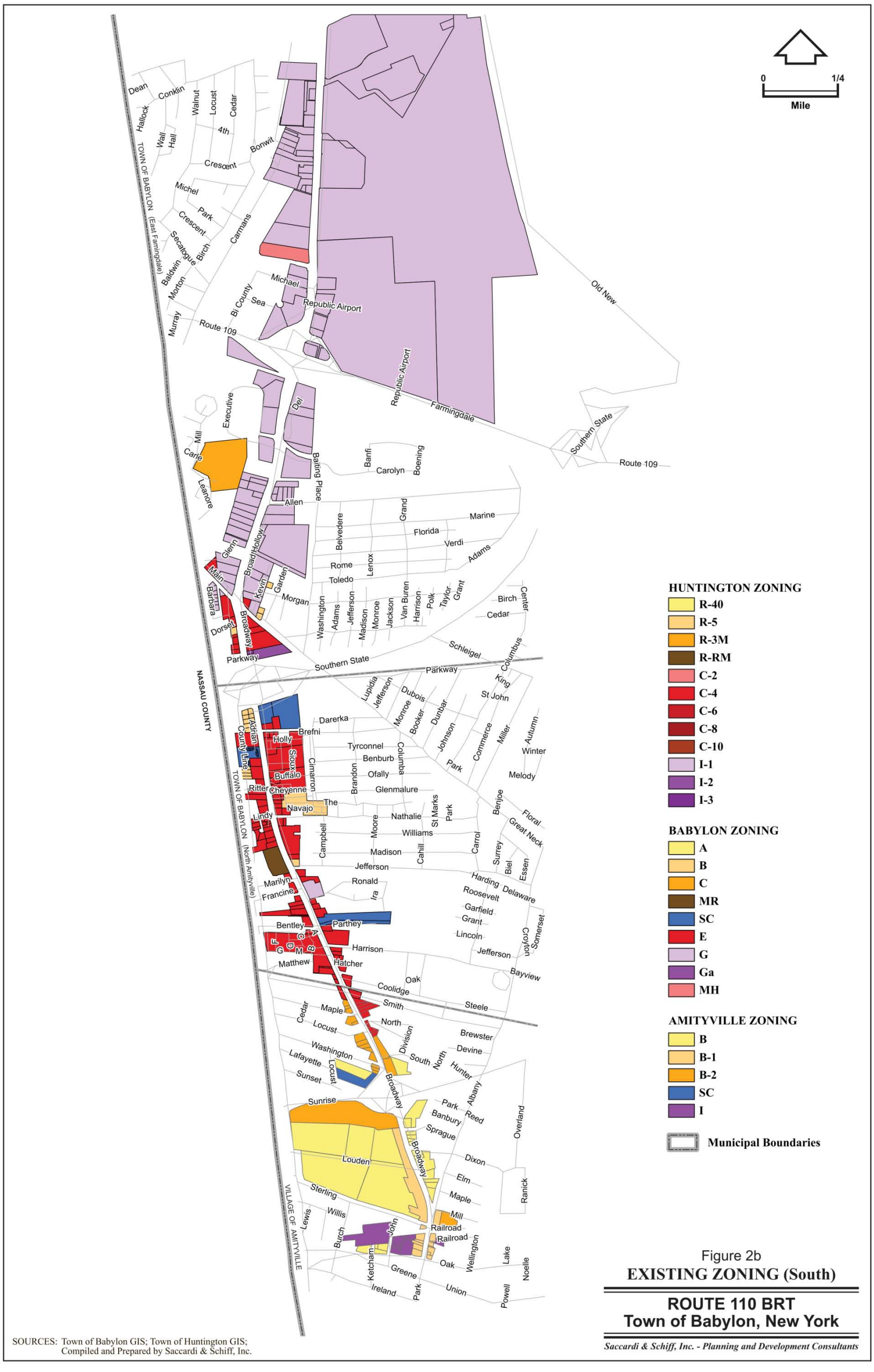

Figure 2b
EXISTING ZONING (South)

ROUTE 110 BRT
Town of Babylon, New York

Saccardi & Schiff, Inc. - Planning and Development Consultants

SOURCES: Town of Babylon GIS; Town of Huntington GIS;
Compiled and Prepared by Saccardi & Schiff, Inc.

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FIGURES 3A: AREAS SUBJECT TO CHANGE NORTH

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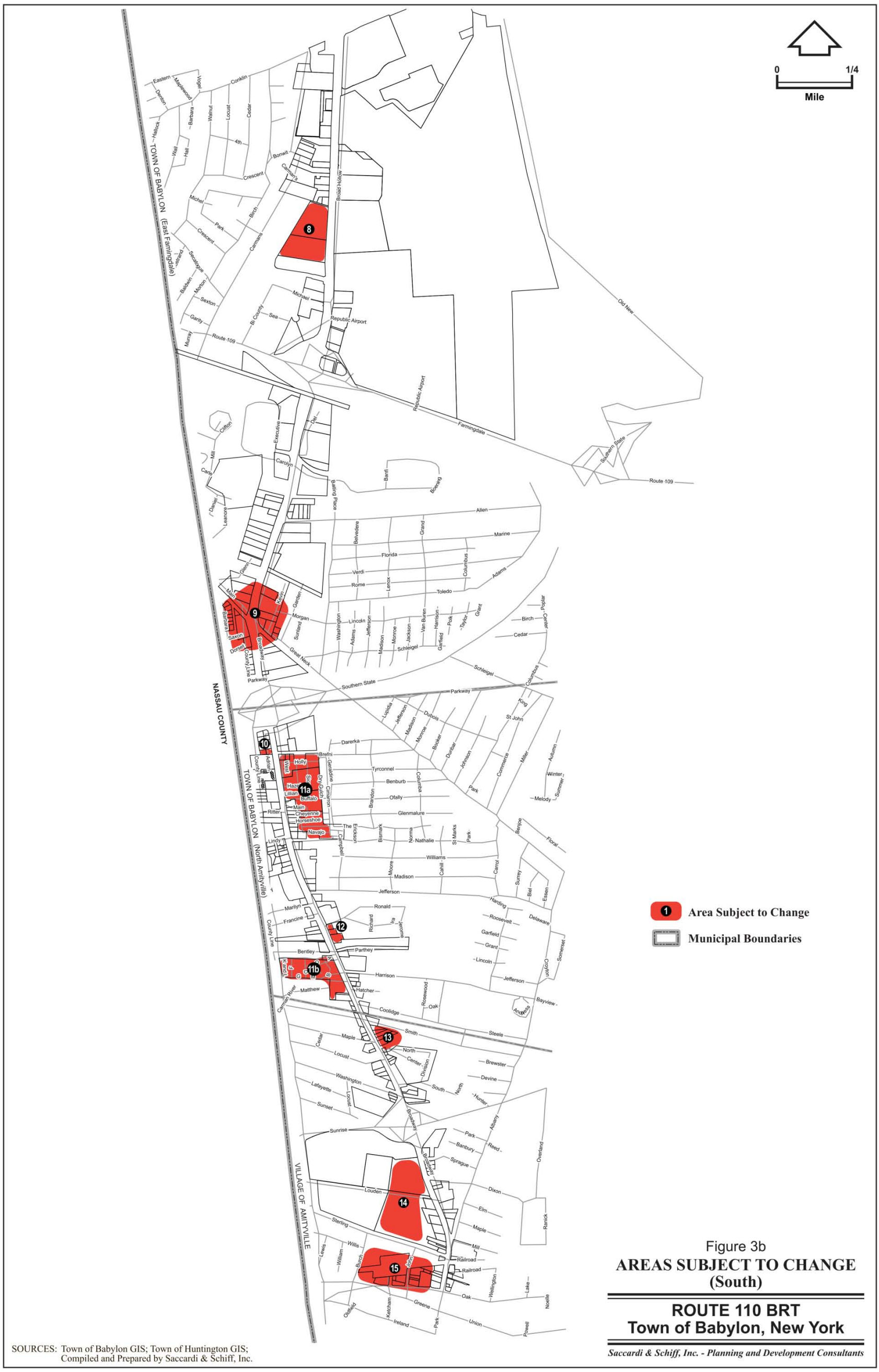
FIGURE 3B: AREAS SUBJECT TO CHANGE SOUTH



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Appendix 4 – Sub-corridor Traffic Analysis

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INTRODUCTION

One strategy under consideration for the Route 110 BRT Study is Transit Signal Priority (TSP) system for buses along this corridor. Transit Signal Priority (TSP) is recognized as an emerging technology that is capable of enhancing traditional transit services or BRT systems. TSP is defined as "an operational strategy that facilitates the movement of in-service transit vehicles, through traffic-signal controlled intersections." TSP is deployed to:

- Improve transit operations and service quality
- Improve person mobility
- Reduce traffic congestion
- Improve intersection operation (delays, speed, etc), specially during peak weekday commuter hours.
- Promote/encourage transit use

The TSP system uses on-vehicle sensors to detect an approaching bus and modify normal signal timing at intersections to allow the transit vehicle to pass through without stopping, thereby reducing traffic delays. The concept behind TSP is to provide buses the ability to move through the corridor more quickly by extending the duration of green signal at the signalized intersections that are located within the design path. It should have little impact on general traffic and is an inexpensive way to make a bus more competitive and attractive mode of travel.

ANALYSIS SUB-CORRIDOR

In order to determine the feasibility of implementing the BRT-TSP system on the entire Route 110 corridor, a sub-area assessment was conducted for this study. Typical to any large scale projects, it was assumed that if the BRT/TSP system is evaluated to operate effectively within this sub-area, it would operate effectively within the entire study area that is depicted in Figure 1. Thus, the sub-area evaluation included an assessment of traffic operations at the following 6-key intersections within the overall project area of Route 110 corridor.

- Route 110 and Bethpage-Spagnoli Road
- Route 110 and Ruland Road
- Route 110 and Smith Street
- Route 110 and Melville Road/Milbar Boulevard
- Route 110 and Daniel Street/Gazza Boulevard
- Route 110 and Conklin Street (Rt. 24)

The studied sub-area and the key intersections noted above were carefully selected after various field visits, review of various planning documents provided by the Town of Babylon for proposed developments within the project study area, discussion with the Town officials and the review of entire study area land use. It was determined that the Route 110 corridor, between Bethpage-Spagnoli Road and Conklin Street shows significant traffic operation challenges under the existing condition. Thus, if the BRT/TSP system is found feasible to be implemented on this segment of Route 110 corridor, it should be viable within the overall project area.

TRAFFIC DATA

The traffic data compilation effort for this project also included a data collection program that involved obtaining available data from different agencies as well as collecting new data for this project. Table 1 shows the data that was collected by the project team and was used in conducting traffic assessment. The count data is presented in the Traffic Appendix.

FIGURE 1: PROJECT STUDY AREA MAP

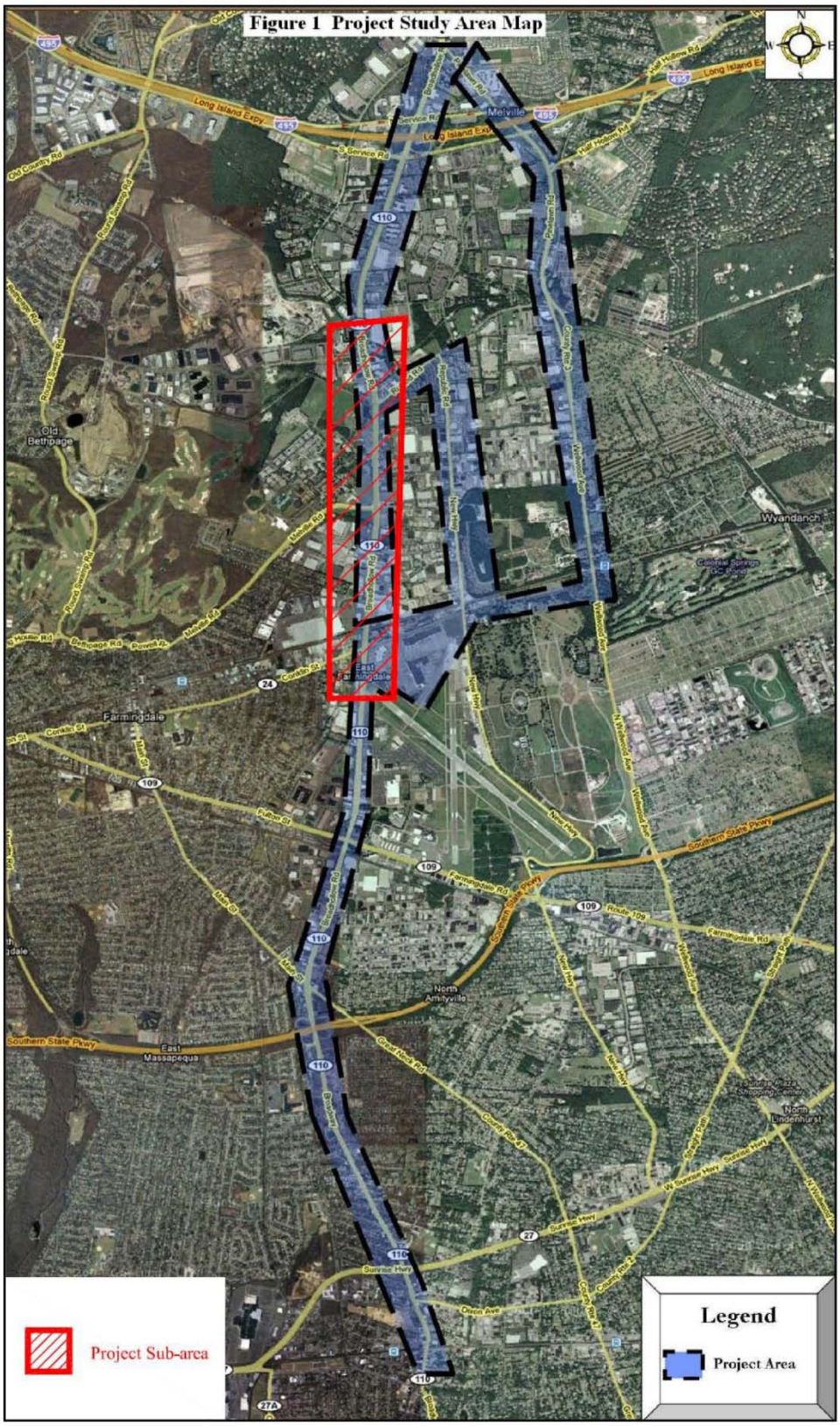


TABLE 1: TRAFFIC DATA COLLECTION PROGRAM

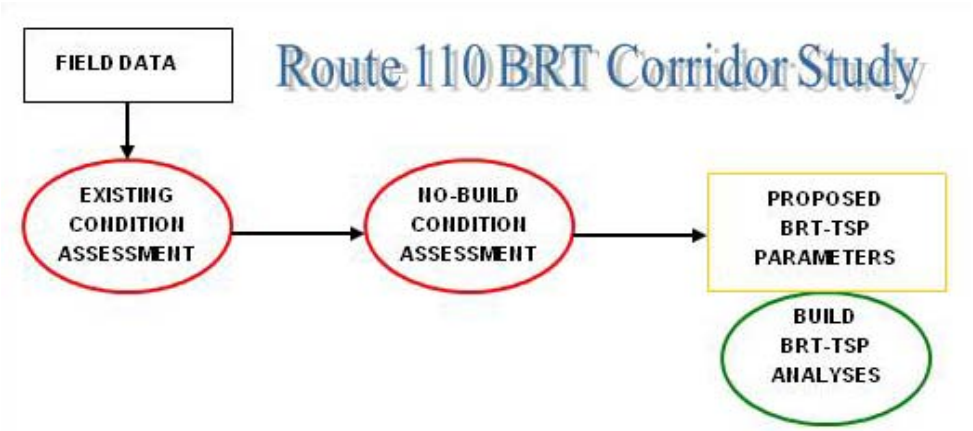
Data	Source
Aerial photographs	Google, supplemented by physical inventory
Physical inventory	Field trips by GPI
Signal phasing and timing	Obtained from NYSDOT, field verified by GPI
Turning movement counts	Provided by Town of Babylon, Count date Nov. 2009
Photo inventory	PB and GPI
Transit Data-Bus routes and schedules	Nassau & Suffolk Transit
Passenger On and Off counts	Nassau & Suffolk Transit, PB
Bus stop placement	PB, GPI
Bus dwell times	Nassau & Suffolk Transit, PB

METHODOLOGY

This traffic analysis was conducted utilizing Vissim© the microsimulation traffic modeling software for this project. Vissim© is an excellent analytical tool for assessing traffic operations. The key features of this tool are its flexibility and ability to represent a variety of traffic operating conditions including realistic assessments of restricted bus only lanes BRT-TSP operations. It is also capable of producing a wide range of Measures of Effectiveness (MOEs) including total network delays and overall travel time, approach delays, bus travel time and travel speed, etc, that are the key indicators in assessing traffic related impacts associated with the study and evaluation to traffic operations. Vissim© also provides visualization of the MOE results.

This methodology was applied in a three-step process illustrated and listed below:

- **Existing Condition (2009) Assessment:** The Project Team conducted the microsimulation traffic analysis at 6-key intersections. The use of Vissim© software enabled us to evaluate traffic impacts along the studied corridor under the existing conditions without the BRT-TSP application. The existing condition analysis helped us in determining the present day traffic operating conditions and constraints at key locations along the studied corridor. This analysis was conducted for the PM peak traffic hour which represents the maximum traffic activity within the corridor. The initial un-calibrated traffic analysis results were compared to the various field visits and visual observations and the existing network was calibrated to represent the realistic existing traffic operating condition at the studied intersection in terms of vehicle queues and intersection delays.



- **No-Build Condition (2015) Assessment:** The No-Build Condition analysis typically quantifies traffic operations that are expected to occur whether or not the proposed action (in this case BRT-TSP) is implemented. Using the background traffic growth projections of 1.1% per year, provided by the Town of Babylon, the existing 2009 traffic volume was projected to the 2015 No-Build Conditions. Similarly a conservative bus ridership of 4% per year was assumed to obtain the anticipated 2015 bus ridership. These assumptions were the bases of conducting microsimulation traffic analysis for the 2015 No-Build Condition.
- **Build Condition (2015) With BRT/TSP Assessment:** The Build Condition analysis included the development of BRT-TSP strategies that are anticipated to be implemented on Route 110 corridor under the proposed condition. The No-Build Condition 2015 traffic model that was prepared earlier was modified by introducing the BRT-TSP strategies to represent the 2015 Build Condition scenario that will result due the implementation of this bus priority project.

This methodology and the associated 3-step process enabled us to study the behavior of traffic operation realistically in order to compare traffic impacts between various scenarios. Thus, for the proposed BRT-TSP scenario, if the anticipated MOEs did not deteriorate the general vehicular traffic operations and significantly improve the bus operations when compared to the corresponding no-build conditions the implementation would be considered feasible and a full scale study is warranted for its design and implementation.

TRAFFIC ANALYSIS

The microsimulation assessment included detailed analyses of existing, no-build and build with BRT-TSP Control options. Once the base network was established in Vissim© to represent existing (field) conditions for the PM peak hour, alternate scenarios were developed and evaluated by comparing select Measures of Effectiveness (MOE's). The analysis results of these scenarios were compared to determine traffic operational impacts and/or improvements associated with the inclusion of BRT-TSP operations along Route 110 corridor within the study sub-area.

This section outlines the procedure used to create the simulation scenarios. The analysis results and the significance of the results are discussed in the following sections of this report.

The following basic MOE's were evaluated for this sub-area model:

- Average Travel Times (Auto, Bus, Truck)
- Travel Time Delay
- Travel Speed (Auto, Bus, Truck)
- Vehicular Queue Lengths
- Intersection Approach Delays

1. Existing and No-Build Traffic Operating Conditions

As indicated earlier, the microsimulation assessment was conducted for the PM peak hour to represent peak traffic operating conditions on Route 110 corridor during a typical weekday. This traffic analyses were conducted for the 6-key intersections along Route 110 corridor for which the traffic counts were collected in the Fall of 2009. The data reduction process revealed that the PM peak hour is between 4:45 PM and 5:45 PM. Figure 2 depicts the peak PM hour traffic volume network which was used as the bases of this assessment.

Table 1 shows the data used to develop the existing and no-build traffic networks. The following elements were modeled in Vissim©

- Roadway geometry – intersection geometry, lane width, lane use restrictions, parking restrictions, and stop line position.
- Buses – time of entry to network (according to bus schedules), stops made, and route number.
- Bus stops – position, whether a bay or curb-side stop, and the average bus dwell time.
- Signals – PM peak hour timing and phasing.
- Non-bus traffic volume, vehicle class, and vehicle turning movements.
- Bus, auto, and truck occupancy.

2. BRT-TSP Traffic Operating Conditions (Application of Transit Signal Priority)

BRT with TSP is to be employed on the northbound and southbound direction of Route 110. As indicated earlier, Transit Signal Priority (TSP) systems use sensors to detect approaching transit vehicles and alter signal timings to improve transit performance. TSP expedites the buses through an intersection by providing an early green indication and/or by extending the green phase. In order to maintain coordination, this additional green time is taken from the side street green, while retaining the existing cycle length at each intersection. There are restrictions on the amount of time that can be taken from the side street. Thus, the TSP designed for the Route 110 sub-study area includes the following considerations:

- The BRT will utilize the shoulders (where available on Route 110) as a bus only lane. At intersections this bus-only shoulder lane would also be shared by the right turning vehicles. At other locations where shoulders are not available the BRT will share roadway with general traffic.
- All BRT bus stops would be located on the far side of the applicable intersections. See Figure 3 for proposed bus stop locations.
- The bus headway for BRT buses would be 10 minutes during the PM peak hour in both directions. The S1 bus service will also be continued; however, these buses like the BRT buses will be installed with the TSP technology and will utilize the shoulder lane for their daily commute.
- At two of the sub-study area "T" intersections, depending upon the direction of travel, the shoulder bus lane will be allowed to have an all green phase (free flow), since turning movements will not conflict with the shoulder bus lane operations. These intersection are:
  - Route 110 at Bethpage-Spagnoli Road: The northbound BRT shoulder lane will have all green phase or no signal.
  - Route 110 at Ruland Road: The southbound BRT shoulder lane will have all green phase or no signal.

    A median barrier or a physical separator could also be constructed at these intersections to separate the free flow or all green bus shoulder lane from other lanes.
- The TSP logic is designed for a bus detection zone length of 500 feet (distance measured from stop line of the approach).
- Bus travel time array from check-in detector to stop bar was set to 8 seconds. For this planning level study the estimate for bus travel time from detection zone to the stop bar for TSP applications are based on the average speed and various Vissim© trial. The signal controller uses this value to decide if it should place an extended green call, no call or an early green call, once the bus is detected on the approaches of Route 110.

The impact on side street traffic is to be minimized.

RESULTS

The results extracted from the Vissim© simulation output files are discussed in the following sections for the No-Build 2015 and Build 2015 (BRT-TSP) scenarios. The MOE's results evaluated in this assessment are based on the average of ten microsimulation analysis runs (for each scenario) of the PM peak hour. The backup data is presented in the Traffic Appendix.

Existing 2009 Condition results are also presented for reference.

1. Average Travel Times

The average travel times for the PM peak period are shown in Tables 2 and 3 below. Travel time is calculated by finding the average time per vehicle needed to transverse the section of Route 110 between Conklin Street and Bethpage-Spagnoli Road. The length of the segment is 10,556 feet (approximately 2 miles). The average travel time, including waiting or dwell times) is determined as the time a vehicle crosses the first cross section to crossing the second cross section. The first cross section is at about 700 feet prior to the Conklin Street intersection, and the second cross section is at 700 feet beyond Bethpage-Spagnoli Road intersection.

Table 2 shows the average travel times by class: Following observations can be made:

- Travel times of non-bus modes (auto and heavy vehicles) were essentially maintained, while bus travel times were significantly reduced.
- This reduction is from 526 seconds to 328 seconds (37.6%).

Table 3 shows the average travel times by direction.

- Travel times of both northbound and southbound directions were slightly reduced, from 257 seconds to 246 seconds (4.3%) for Northbound, and from 299 seconds to 293 seconds (2%) for Southbound.

2. Travel Time Delay

Travel time delay is the volume-weighted average of waiting and dwell time of vehicles traversing the 2-mile section of Route 110 between Conklin Street and Bethpage-Spagnoli Road. The results are shown in Table 4 below.

- In the northbound direction, there is an 8% reduction (from 121.5 to 111.3 seconds) in travel time delay
- In the southbound direction, there is a 3.8% reduction (from 162.5 to 156.2 seconds)

3. Travel Speed

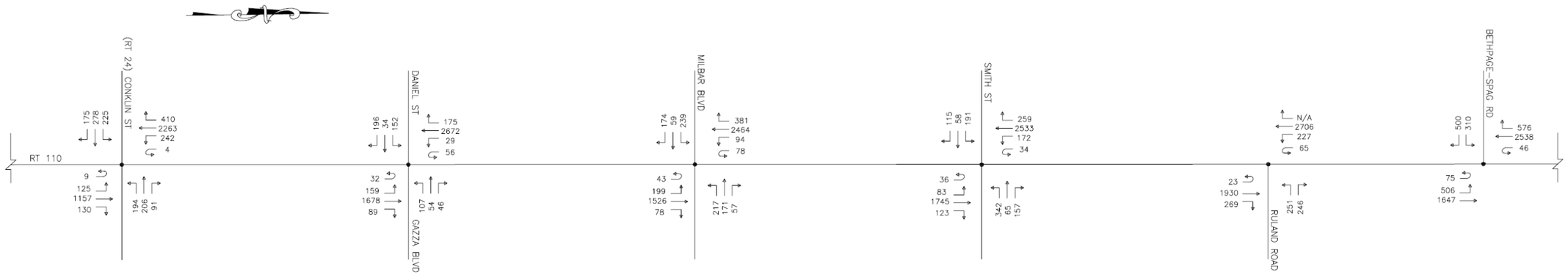
Table 5 shows the average travel speed by class as well as network speed. Average travel speed is the average speed of vehicles completing their routing paths within the network.

- For auto, there is a slight decrease in speed, from 21.11 mph to 20.64 mph. This is due to additional delay incurred by vehicles on the side streets.
- For bus, the average travel speed is significantly improved, from 13.67 mph to 21.13 mph (54.6%)
- For heavy vehicles, there is slight decrease in speed, similar to the case of auto.
- The overall network average speed is slightly reduced from 20.96 mph to 20.52 mph (2%), due to the much larger number of non-bus vehicles in the network.

Table 6 shows travel speed by direction. The table shows average speed, which is the measure of average speed of the vehicles that complete the travel time 2-mile section of Route 110 between Conklin Street and Bethpage-Spagnoli Road.

- In the northbound direction, there is an increase of 1.3 mph in average speed, from 28 mph to 29.3 mph.

FIGURE 2: EXISTING (2009) CONDITIONS : PEAK HOUR (PM) TRAFFIC CONDITIONS (4:45 PM–5:45 PM)



NOTE:

1. THIS NETWORK HAS BEEN BALANCED. HOWEVER, TRAFFIC VOLUMES MAY NOT ALWAYS EXACTLY BALANCE DUE TO THE PRESENCE OF DRIVEWAYS, PARKING AREAS AND ROADWAYS BETWEEN INTERSECTIONS LOCATED WITHIN THE PROJECT STUDY NETWORK.

TOWN OF BABYLON
BUS RAPID TRANSIT FEASIBILITY STUDY
ROUTE 110

EXISTING CONDITION (2009)
PM PEAK HOUR TRAFFIC VOLUMES
4:45 PM – 5:45 PM

GPI
GREENMAN-PEDERSEN, INC.
Engineers, Planners,
Construction Engineers & Inspectors

FIGURE NO. 2

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FIGURE 3: PROPOSED BRT-TSP BUS STOP LOCATION MAP

4. Vehicular Queue Lengths

Queue measurement is defined in Vissim© for vehicles traveling at speed between 3.1 mph and 6.2 mph, with max headway of 65.6 feet, and max length of 1640.4 feet. Data obtained from the microsimulation Analyzer Reports was divided by 25 feet (average length of a vehicle) to obtain the queue lengths in vehicle-unit, as shown in Table 7.

Each approach of the six intersections under study was evaluated. In general, the major approaches, northbound and southbound, experience fewer delay and thus, has lower vehicular queue lengths. Whereas, the side streets approaches have longer queue lengths due to shorter green time allocation. With TSP enabled along Route 110, the major approaches were allocated additional green time to improve the bus operations.

Some important observations are explained further here:

- The range of decrease in queue lengths on major approaches is from 2.6% (Smith Street Northbound) to 31.3% (Bethpage-Spagnoli Road Southbound).
- The range of increase in queue lengths on minor approaches is from 2.47% (Smith Eastbound) to 55.6% (Conklin Street Westbound). It should be noted that minor approaches are already experienced significant delays in the Existing 2009 Condition. A small reduction in green time allocation would have exponential effect on the operations of these approaches, as illustrated by the results in Table 8.
- Intersections of Smith Street, Milbar Boulevard, and Conklin Street experience considerable changes in queue lengths, possibly due to their intersection geometry. These are the four-legged intersections, with two minor approaches. When TSP is enabled, there is a compounding negative effect.

5. Intersection Approach Delays

Table 9 is a compilation of vehicle delays, person delays and stop delays for each of the six intersections in the study, and categorized by vehicle class. Vehicle delay is the average delay per vehicle, measured in seconds. Delay is calculated as the difference in travel time that actually occurred and the free-flow travel time in optimal condition. Person delay is the average delay per person, measured in seconds. Each non-bus vehicle is assumed to have occupancy of 1.2 persons, and each bus has occupancy of 10 persons. These assumptions are based on vehicular and transit data provided by PB, and the Towns of Babylon. Stop (or stopped) delay is the average time a vehicle spent in a complete stop position, measured in seconds.

Table 10 is a summation of delays from Table 9. It is clear from this table that non-bus vehicles experience slightly higher delays in exchange for significant decrease in bus delays.

- Reduction in bus delays is halved in some cases
- Increase in non-bus delays is mostly within 10%
- The intersection of Ruland Road is an anomaly, where buses experienced higher delay and auto experience fewer delays. This could be due to additional bus traffic on Ruland Road. Currently, there is only one near-sided bus stop for S1 bus line at this intersection. However, in the Build Condition, there is an additional BRT stop at the far-side of the intersection. (The directive was to assume all far-sided BRT stops and retain all existing bus stops).

Table 2 - Average Travel Times by Class

Vehicle Type	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD w/ TSP (2015)
	Average Travel Time (Sec)	Average Travel Time (Sec)	Average Travel Time (Sec)
Auto	177	181	185
Bus	503	526	328
Heavy Vehicles	211	218	222

Table 3 - Average Travel Times by Direction

Direction	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD w/ TSP (2015)
	Average Travel Time (Sec)	Average Travel Time (Sec)	Average Travel Time (Sec)
Route 110 Northbound	253	257	246
Route 110 Southbound	284	299	293

Table 4 - Travel Time Delay by Direction

Direction	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD w/ TSP (2015)
	Average Travel Time Delay (Sec)	Average Travel Time Delay (Sec)	Average Travel Time Delay (Sec)
Route 110 Northbound	117.5	121.5	111.3
Route 110 Southbound	147.3	162.5	156.2

TABLE 5 - TRAVEL SPEED BY CLASS

Vehicle Type	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD CONDITION w/ TSP (2015)
	Speed (MPH)	Speed (MPH)	Speed (MPH)
Auto	21.65	21.11	20.64
Bus	14.32	13.67	21.13
Heavy Vehicles	20.04	19.45	18.95
Network Speed	21.51	20.96	20.52

TABLE 6 - TRAVEL SPEED BY DIRECTION

Direction	EXISTING CONDITION (2009)	NO-BUILD CONDITION (2015)	BUILD CONDITION w/ TSP (2015)
	Average Speed (MPH)	Average Speed (MPH)	Average Speed (MPH)
Route 110 Northbound	28.5	28	29.3
Route 110 Southbound	25.3	24	24.6

TABLE 7 - VEHICULAR QUEUE LENGTHS

Intersection Name	EXISTING CONDITION (2009)				NO BUILD CONDITION (2015)				BUILD CONDITION w/ TSP (2015)			
	Average Number of Queued Vehicles by Approach				Average Number of Queued Vehicles by Approach				Average Number of Queued Vehicles by Approach			
	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound	Eastbound	Westbound
Route 110 @ Bethpage -Spag Road	6.61	7.25	7.42		6.64	7.70	7.50		6.67	5.29	8.47	
Route 110 @ Ruland Road	1.55	5.11		6.91	1.61	5.54		7.03	0.91	5.31		6.92
Route 110 @ Smith Street	2.58	9.62	4.52	6.18	2.57	11.00	4.42	6.33	2.50	8.05	4.53	7.40
Route 110 @ Milbar Boulevard	4.49	13.09	3.72	12.20	4.66	13.79	3.80	13.12	3.46	12.01	5.05	18.00
Route 110 @ Daniel Street	2.88	5.68	10.02	6.30	2.98	6.32	10.33	6.88	2.68	4.48	10.87	7.47
Route 110 @ Conklin Street (Rt 24)	7.03	11.76	14.22	6.20	7.27	12.04	14.92	6.52	6.11	13.52	16.54	10.14
TOTAL QUEUED VEHICLES	26.69	64.87	47.32	44.70	25.73	56.39	40.97	39.88	22.34	48.65	45.46	49.94

TABLE 8 -PERCENTAGE OF CHANGE IN QUEUE LENGTHS BY APPROACH

Intersection Name	BUILD CONDITION w/ TSP (2015)			
	Percentage of Change by Approach			
	Northbound	Southbound	Eastbound	Westbound
Route 110 @ Bethpage -Spag Road	0.48%	-31.27%	12.96%	
Route 110 @ Ruland Road	-43.60%	-4.19%		-1.51%
Route 110 @ Smith Street	-2.57%	-26.84%	2.44%	16.84%
Route 110 @ Milbar Boulevard	-25.67%	-12.92%	32.95%	37.20%
Route 110 @ Daniel Street	-9.93%	-29.18%	5.21%	8.60%
Route 110 @ Conklin Street (Rt 24)	-15.93%	12.29%	10.86%	55.58%
TOTAL QUEUED VEHICLES	-13.16%	-13.72%	10.96%	25.22%

TABLE 9 - INTERSECTION DELAYS BY CLASS

Intersection Name	Delay Type (Sec)	EXISTING CONDITION (2009)			NO-BUILD CONDITION (2015)			BUILD CONDITION w/ TSP (2015)		
		Vehicle Classification			Vehicle Classification			Vehicle Classification		
		Auto	Bus	Heavy Vehicles	Auto	Bus	Heavy Vehicles	Auto	Bus	Heavy Vehicles
Route 110 @ Bethpage -Spag Road	Vehicle Delay	27.00	24.08	32.18	27.20	26.04	33.96	28.49	10.34	36.68
	Person Delay	32.40	240.78	38.61	32.64	260.44	40.75	34.19	103.36	44.02
	Stop Delay	19.24	10.18	22.42	19.30	12.21	23.55	20.52	3.29	26.10
Route 110 @ Ruland Road	Vehicle Delay	14.35	6.41	15.14	15.39	8.27	16.06	15.21	12.72	16.75
	Person Delay	17.21	64.11	18.17	18.47	82.74	19.27	18.25	127.18	20.10
	Stop Delay	9.84	0.07	9.78	10.27	0.97	9.87	10.13	3.28	10.35
Route 110 @ Smith Street	Vehicle Delay	27.68	56.62	30.82	28.78	59.75	30.46	30.85	17.11	34.83
	Person Delay	33.22	566.15	36.99	34.54	597.49	36.55	37.02	171.06	41.79
	Stop Delay	20.47	42.33	20.78	21.17	45.88	20.23	22.87	9.45	23.92
Route 110 @ Milbar Boulevard	Vehicle Delay	37.57	41.88	41.40	38.85	47.60	42.07	42.23	23.92	46.67
	Person Delay	45.08	418.81	49.68	46.62	475.98	50.48	50.38	239.18	56.00
	Stop Delay	27.26	24.37	27.91	28.20	28.01	28.54	30.06	8.16	30.66
Route 110 @ Daniel Street	Vehicle Delay	21.63	11.64	14.73	22.58	13.00	16.75	23.16	5.40	16.46
	Person Delay	25.96	116.36	17.67	27.10	129.99	20.10	27.80	54.02	19.75
	Stop Delay	15.65	3.56	8.16	16.45	4.23	9.94	17.10	0.09	9.69
Route 110 @ Conklin Street (Rt 24)	Vehicle Delay	41.59	69.96	29.02	42.69	69.44	31.42	45.66	10.23	32.39
	Person Delay	49.91	699.64	34.82	51.22	694.35	37.71	54.79	102.29	38.87
	Stop Delay	33.37	51.27	21.19	34.27	51.07	22.91	36.83	2.01	23.60

TABLE 10 - NETWORK DELAYS BY CLASS

Delay Type (Sec)	EXISTING CONDITION (2009)			NO-BUILD CONDITION (2015)			BUILD CONDITION w/ TSP (2015)		
	Vehicle Classification			Vehicle Classification			Vehicle Classification		
	Auto	Bus	Heavy Vehicles	Auto	Bus	Heavy Vehicles	Auto	Bus	Heavy Vehicles
Vehicle Delay	169.82	210.59	163.29	175.49	224.10	170.72	185.60	79.72	183.78
Person Delay	203.78	2,105.85	195.94	210.59	2,240.99	204.86	222.43	797.09	220.53
Stop Delay	125.83	131.78	110.24	129.66	142.37	115.04	137.51	26.28	124.32

TABLE 11 - PERCENTAGE OF CHANGE IN DELAYS

Intersection Name	Delay Type (Sec)	BUILD CONDITION w/ TSP (2015)		
		Percentage of Change		
		Auto	Bus	Heavy Vehicles
Route 110 @ Bethpage -Spag Road	Vehicle Delay	4.74%	-60.29%	8.01%
	Person Delay	4.75%	-60.31%	8.02%
	Stop Delay	6.32%	-73.05%	10.83%
Route 110 @ Ruland Road	Vehicle Delay	-1.17%	53.81%	4.30%
	Person Delay	-1.19%	53.71%	4.31%
	Stop Delay	-1.36%	238.14%	4.86%
Route 110 @ Smith Street	Vehicle Delay	7.19%	-71.36%	14.35%
	Person Delay	7.18%	-71.37%	14.34%
	Stop Delay	8.03%	-79.40%	18.24%
Route 110 @ Milbar Boulevard	Vehicle Delay	8.70%	-49.75%	10.93%
	Person Delay	8.07%	-49.75%	10.94%
	Stop Delay	6.60%	-70.87%	7.43%
Route 110 @ Daniel Street	Vehicle Delay	2.57%	-58.46%	-1.73%
	Person Delay	2.58%	-58.44%	-1.74%
	Stop Delay	3.95%	-97.87%	-2.52%
Route 110 @ Conklin Street (Rt 24)	Vehicle Delay	6.96%	-85.27%	3.09%
	Person Delay	6.97%	-85.27%	3.08%
	Stop Delay	7.47%	-96.06%	3.01%

CONCLUSIONS

This preliminary examination of deploying a BRT system along the Route 110 corridor with an application of Transit Signal Priority technology was conducted to explore the viability of such a system in terms of traffic operations and general traffic impacts within the travel network. It is generally a concern by the public that a TSP system that essentially provides greater green time and priority treatment for a bus lane has a detrimental effect on the adjacent travel lanes and cross streets. The goal of this limited study was to illustrate that sufficient capacity exists to permit small changes to signal timing for priority treatment to have little negative impact to the network but offer a definite benefit to the transit system.

Using sophisticated traffic simulation modeling tools to aid in the evaluation of the BRT-TSP concept, a sub-area analysis was conducted of the much larger study limits. It was determined that the Route 110 corridor, between Bethpage-Spagnoli Road and Conklin Street shows significant traffic operation challenges under the existing condition. Thus, if the BRT/TSP system is found feasible to be implemented on this segment of Route 110 corridor, it should be viable within the overall project area.

Three scenarios were studied (Existing condition, No-build scenario w/out BRT-TSP and Build with BRT-TSP) and the results compared to ascertain how well the system would operate and whether significant negative impacts would be generated by BRT-TSP implementation. The modeling package chosen for the evaluation outputs several measures of effectiveness (MOE's). Such measurements include:

- Average Travel Times (Auto, Bus, Truck)
- Travel Time Delay
- Travel Speed (Auto, Bus, Truck)
- Vehicular Queue Lengths
- Intersection Approach Delays

To summarize, the results computed proved rather positive and indicated that for the sub-area studied, implementation of such a BRT system with TSP application would not have a detrimental effect on traffic operations and will offer the transit user a substantial benefit.

While there was little change or impact to non – bus users in the travel time in the corridor, buses may experience significant travel time reduction of over 37%. This was partially achieved by a better than 50% increase in bus speed. On the negative side some side streets did experience much longer queue lengths, however, the levels of service did not degrade that much. The westbound approach at Conklin Street experienced the largest change however, it must be noted that this study did not investigate any roadway or signal timing adjustments beyond what is currently employed in the field and as such, it is likely that improvement recommendations to geometry and signal system coordination changes would overcome the degradations.

Lastly, this preliminary evaluation of the proposed system has shown that implementation of a BRT-TSP is very viable and should the concept start to move forward much greater in-depth study and evaluation would be warranted on the entire corridor over several study periods of the day so the full impacts and benefits can be fully derived and understood.

Appendix 5 – Traffic Data Tables

TRAFFIC APPENDIX 5

- TURNING MOVEMENT COUNTS (PM PEAK)
- INTERSECTION SIGNAL TIMINGS
- BUS DATA
- VISSIM RESULTS
  - EXISTING CONDITION (2009)
  - NO-BUILD CONDITION (2015)
  - PROPOSED BUILD CONDITION WITH BRT-TSP OPERSTIONS (2015)
  - LOS SUMMARY

- TURNING MOVEMENT COUNTS (PM PEAK)

TURNING MOVEMENT COUNTS

NYS Route 110 @ Bethpage-Spagnoli Road PM Weekday

11/17/2009	Eastbound			Westbound			Northbound				Southbound					
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total	
4:00 PM	103	0	157	0	0	0	19	100	407	0	14	0	484	67	1351	
4:15 PM	95	0	105	0	0	0	12	82	407	0	3	0	478	64	1246	
4:30 PM	71	0	132	0	0	0	16	125	440	0	8	0	576	100	1468	*Hourly Total*
4:45 PM	50	0	83	0	0	0	10	161	406	0	3	0	556	86	1355	5420
5:00 PM	96	0	152	0	0	0	18	113	448	0	4	0	731	154	1716	5785
5:15 PM	84	0	125	0	0	0	16	120	361	0	32	0	534	205	1477	6016
5:30 PM	80	0	140	0	0	0	31	112	432	0	7	0	717	131	1650	6198
5:45 PM	68	0	99	0	0	0	15	107	428	0	4	0	621	84	1426	6269

Peak Hour Totals	Eastbound			Westbound			Northbound				Southbound				
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total
5:00 PM	96	0	152	0	0	0	18	113	448	0	4	0	731	154	1716
5:15 PM	84	0	125	0	0	0	16	120	361	0	32	0	534	205	1477
5:30 PM	80	0	140	0	0	0	31	112	432	0	7	0	717	131	1650
5:45 PM	68	0	99	0	0	0	15	107	428	0	4	0	621	84	1426
TOTALS	328	0	516	0	0	0	80	452	1669	0	47	0	2603	574	6269
% HEAVY	14%	0%	16%	0%	0%	0%	5%	11%	9%	0%	0%	0%	9%	13%	
% of MVMNTS	39%	0%	61%	0%	0%	0%	4%	21%	76%	0%	1%	0%	81%	18%	
Movement PHF	0.85						0.95				0.91				

TURNING MOVEMENT COUNTS

NYS Route 110 @ Ruland Road PM Weekday

11/17/2009	Eastbound			Westbound			Northbound				Southbound					
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total	
4:00 PM	0	0	0	58	0	38	11	0	428	76	8	192	473	0	1284	
4:15 PM	0	0	0	44	0	53	6	0	496	69	10	94	497	0	1269	
4:30 PM	0	0	0	63	0	47	6	0	564	89	12	95	656	0	1532	*Hourly Total*
4:45 PM	0	0	0	64	0	67	6	0	569	73	18	75	524	0	1396	5481
5:00 PM	0	0	0	64	0	54	6	0	488	76	16	77	735	0	1516	5713
5:15 PM	0	0	0	43	0	58	5	0	386	66	14	39	649	0	1260	5704
5:30 PM	0	0	0	80	0	67	6	0	487	54	17	36	798	0	1545	5717
5:45 PM	0	0	0	82	0	64	5	0	427	64	24	41	676	0	1383	5704

Peak Hour Totals	Eastbound			Westbound			Northbound				Southbound				
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total
4:45 PM	0	0	0	64	0	67	6	0	569	73	18	75	524	0	1396
5:00 PM	0	0	0	64	0	54	6	0	488	76	16	77	735	0	1516
5:15 PM	0	0	0	43	0	58	5	0	386	66	14	39	649	0	1260
5:30 PM	0	0	0	80	0	67	6	0	487	54	17	36	798	0	1545
TOTALS	0	0	0	251	0	246	23	0	1930	269	65	227	2706	0	5717
% HEAVY	0%	0%	0%	5%	0%	6%	9%	0%	8%	4%	3%	8%	7%	0%	
% of MVMNTS	0%	0%	0%	51%	0%	49%	1%	0%	87%	12%	2%	8%	90%	0%	
Movement PHF				0.85			0.86				0.88				

TURNING MOVEMENT COUNTS

NYS Route 110 @ Smith Street & SUNY Farmingdale Road PM Weekday

11/18/2009	Eastbound			Westbound			Northbound				Southbound					
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total	
4:00 PM	38	15	15	74	5	47	9	9	418	28	4	26	521	20	1229	
4:15 PM	56	16	36	31	7	25	6	19	382	35	4	35	541	34	1227	
4:30 PM	62	16	55	107	16	64	3	12	400	35	7	31	569	28	1405	*Hourly Total*
4:45 PM	93	32	60	62	10	36	10	21	399	38	6	44	611	22	1444	5305
5:00 PM	34	13	13	113	12	36	9	20	488	36	9	50	680	49	1562	5638
5:15 PM	33	8	21	63	18	44	8	16	476	17	7	32	653	84	1480	5891
5:30 PM	31	5	21	104	25	41	9	26	382	32	12	46	589	104	1427	5913
5:45 PM	25	6	12	57	26	40	3	19	359	37	15	34	651	109	1393	5862

Peak Hour Totals	Eastbound			Westbound			Northbound				Southbound				
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total
4:45 PM	93	32	60	62	10	36	10	21	399	38	6	44	611	22	1444
5:00 PM	34	13	13	113	12	36	9	20	488	36	9	50	680	49	1562
5:15 PM	33	8	21	63	18	44	8	16	476	17	7	32	653	84	1480
5:30 PM	31	5	21	104	25	41	9	26	382	32	12	46	589	104	1427
TOTALS	191	58	115	342	65	157	36	83	1745	123	34	172	2533	259	5913
% HEAVY	3%	3%	2%	11%	6%	5%	8%	7%	7%	5%	15%	10%	7%	2%	
% of MVMNTS	52%	16%	32%	61%	12%	28%	2%	4%	88%	6%	1%	6%	84%	9%	
Movement PHF	0.49			0.83			0.90				0.95				

TURNING MOVEMENT COUNTS

NYS Route 110 @ Milbar Blvd. & Melville Road PM Weekday

11/16/2009	Eastbound			Westbound			Northbound				Southbound					
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total	
4:00 PM	64	17	58	29	47	8	18	35	360	42	17	18	473	22	1208	
4:15 PM	50	17	44	38	30	17	11	32	331	26	21	14	437	34	1102	
4:30 PM	65	17	58	44	31	27	16	38	317	20	18	19	525	66	1261	*Hourly Total*
4:45 PM	93	27	76	29	30	14	8	23	335	26	27	27	517	91	1323	4894
5:00 PM	44	10	40	57	41	15	15	59	414	28	26	28	562	109	1448	5134
5:15 PM	41	5	27	63	44	11	9	52	416	14	7	15	629	90	1423	5455
5:30 PM	61	17	31	68	56	17	11	65	361	10	18	24	487	91	1317	5511
5:45 PM	41	12	33	43	43	11	13	95	318	15	23	22	476	75	1220	5408

Peak Hour Totals	Eastbound			Westbound			Northbound				Southbound				
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total
4:45 PM	93	27	76	29	30	14	8	23	335	26	27	27	517	91	1323
5:00 PM	44	10	40	57	41	15	15	59	414	28	26	28	562	109	1448
5:15 PM	41	5	27	63	44	11	9	52	416	14	7	15	629	90	1423
5:30 PM	61	17	31	68	56	17	11	65	361	10	18	24	487	91	1317
TOTALS	239	59	174	217	171	57	43	199	1526	78	78	94	2195	381	5511
% HEAVY	3%	3%	1%	17%	2%	14%	7%	3%	8%	8%	6%	19%	8%	1%	
% of MVMNTS	51%	13%	37%	49%	38%	13%	2%	11%	83%	4%	3%	3%	80%	14%	
Movement PHF	0.60			0.79			0.89				0.93				

TURNING MOVEMENT COUNTS

NYS Route 110 @ Gazza Boulevard & Daniel Street PM Weekday

11/20/2009	Eastbound			Westbound			Northbound				Southbound					
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total	
4:00 PM	41	11	44	42	6	7	10	36	405	29	3	10	549	32	1225	
4:15 PM	34	10	34	20	5	9	8	46	392	23	11	11	528	53	1184	
4:30 PM	33	11	39	27	7	10	7	34	376	22	13	7	603	49	1238	*Hourly Total*
4:45 PM	40	11	41	31	16	14	6	39	407	21	20	7	596	42	1291	4938
5:00 PM	50	9	58	40	8	12	8	47	493	30	10	9	657	37	1468	5181
5:15 PM	34	5	43	24	17	7	12	35	397	16	14	3	721	53	1381	5378
5:30 PM	28	9	54	12	13	13	6	38	381	22	12	10	698	43	1339	5479
5:45 PM	42	10	49	17	12	9	5	35	365	16	8	18	585	57	1228	5416

Peak Hour Totals	Eastbound			Westbound			Northbound				Southbound				
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total
4:45 PM	40	11	41	31	16	14	6	39	407	21	20	7	596	42	1291
5:00 PM	50	9	58	40	8	12	8	47	493	30	10	9	657	37	1468
5:15 PM	34	5	43	24	17	7	12	35	397	16	14	3	721	53	1381
5:30 PM	28	9	54	12	13	13	6	38	381	22	12	10	698	43	1339
TOTALS	152	34	196	107	54	46	32	159	1678	89	56	29	2672	175	5479
% HEAVY	1%	0%	2%	4%	0%	13%	3%	1%	8%	2%	4%	14%	7%	1%	
% of MVMNTS	40%	9%	51%	52%	26%	22%	2%	8%	86%	5%	2%	1%	91%	6%	
Movement PHF	0.82			0.85			0.85				0.93				

TURNING MOVEMENT COUNTS

NYS Route 110 @ Conklin Street PM Weekday

1/14/2009	Eastbound			Westbound			Northbound				Southbound					
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total	
4:00 PM	53	71	26	38	79	28	0	26	293	21	7	41	499	87	1269	
4:15 PM	61	72	51	64	65	36	0	30	257	28	1	60	409	59	1193	
4:30 PM	50	53	41	52	62	34	1	32	349	27	5	49	516	114	1385	*Hourly Total*
4:45 PM	53	67	62	38	50	23	0	22	282	22	0	42	518	101	1280	5127
5:00 PM	54	61	39	42	43	18	4	28	272	39	3	58	527	105	1293	5151
5:15 PM	48	65	28	65	47	25	0	33	264	32	1	59	545	97	1309	5267
5:30 PM	70	85	46	49	66	25	5	42	339	37	0	83	673	107	1627	5509
5:45 PM	55	85	32	39	43	21	0	27	275	23	1	72	567	70	1310	5539

Peak Hour Totals	Eastbound			Westbound			Northbound				Southbound				
Starting Time	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Vehicle Total
5:00 PM	54	61	39	42	43	18	4	28	272	39	3	58	527	105	1293
5:15 PM	48	65	28	65	47	25	0	33	264	32	1	59	545	97	1309
5:30 PM	70	85	46	49	66	25	5	42	339	37	0	83	673	107	1627
5:45 PM	55	85	32	39	43	21	0	27	275	23	1	72	567	70	1310
TOTALS	227	296	145	195	199	89	9	130	1150	131	5	272	2312	379	5539
% HEAVY	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
% of MVMNTS	34%	44%	22%	40%	41%	18%	1%	9%	81%	9%	0%	9%	78%	13%	
Movement PHF	0.83			0.86			0.84				0.86				

- INTERSECTION SIGNAL TIMINGS

INTERSECTION: 07b0207.82 Rt 110 @Bethpage /Spa

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **265**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **7/28/2008 11:11**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	2	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	3	<C/0+0+2>
Area Address	86	<C/0+0+3>
QuicNet Channel	0	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E)>
Red Revert	5.0	<F/1+0+F>
All Red Start	8.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers ---> / Phase Names --->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	0	5	0	0	0	0	0
1	Ped FDW	0	0	20	0	0	0	0	0
2	Min Green	5	10	8	0	5	10	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	1.0	3.0	0.2	2.0	1.0	0.2	0.2
6	Max Gap	2.0	1.0	3.0	0.2	2.0	1.0	0.2	0.2
7	Min Gap	2.0	1.0	3.0	0.2	2.0	1.0	0.2	0.2
8	Max Limit	39	40	36	0	39	40	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	EV Min Ped FDW	0	0	20	0	0	0	0	0
C	Cond Serv Check	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.0	4.0	4.0	0.0	3.0	4.0	0.0	0.0
F	Red Clear	2.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	50	0	0	0	0.0
Phase 2	50	0	0	0	0.0
Phase 3	50	0	0	0	0.0
Phase 4	50	0	0	0	0.0
Phase 5	50	0	0	0	0.0
Phase 6	50	0	0	0	0.0
Phase 7	50	0	0	0	0.0
Phase 8	50	0	0	0	0.0
Max Initial					
Alternate Walk					
Alternate FDW					
Alternate Initial					
Alternate Extension					

Alternate Timing <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	0

Preempt Timing

Row		F
0	Permit	123_56__
1	Red Lock	_23__6__
2	Yellow Lock	_2___6__
3	Min Recall	_____
4	Ped Recall	_____
5		
6	Rest In Walk	_____
7	Red Rest	_____
8	Dual Entry	_____
9	Max Recall	_2___6__
A	Soft Recall	_____
B	Max 2	_____
C	Cond. Service	_____
D	Man Cntrl Calls	_____
E	Yellow Start	_2___6__
F	First Phases	_2___6__

Phase Functions <C+0+F=1>

Row	Column Numbers --->	Plan 1	2	3	4	5	6	7	8	9
	Plan Name --->									
0	Cycle Length	145	155	170	0	0	0	0	0	0
1	Phase 1 - ForceOff	59	80	66	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	31	37	40	0	0	0	0	0	0
4	Phase 4 - ForceOff	0	0	0	0	0	0	0	0	0
5	Phase 5 - ForceOff	59	80	66	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	0	0	0	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset 1	1	96	116	0	0	0	0	0	0
B	Offset 2	0	0	0	0	0	0	0	0	0
C	Offset 3	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	17	23	26	0	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

Coordination - Bank 1 <C+0+C=1>

(Coord Extra Bit 1 = Programmed WALK Time for Sync Phases)

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync		4
Plan 5 - Sync		5
Plan 6 - Sync		6
Plan 7 - Sync		7
Plan 8 - Sync		8
Plan 9 - Sync		9
NEMA Sync		A
NEMA Hold		B
		C
		D
Coord Extra	1	E
		F

Sync Phases <C+0+C=1>

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	17	23	26	0	0	0	0	0	0
2	Perm 2 - End	48	69	55	0	0	0	0	0	0
3	Perm 3 - Start	48	69	55	0	0	0	0	0	0
4	Perm 3 - End	135	145	160	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	123 56	123 56	123 56						
B	Perm 1 Ped Phase	3	3	3						
C	Perm 2 Veh Phase	12 56	12 56	12 56						
D	Perm 2 Ped Phase	3	3	3						
E	Perm 3 Veh Phase	2 6	2 6	2 6						
F	Perm 3 Ped Phase	3	3	3						

Coordination - Bank 2 <C+0+C=2>

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	2 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
External Lag		A
		B
		C
		D
		E
		F

Lag Phases <C+0+C=1>

Row	Time	Plan	Offset	Day of Week
0	00 : 00	E	A	1234567
1	06 : 00	2	A	1234567
2	09 : 30	1	A	1234567
3	15 : 00	3	A	1234567
4	19 : 00	1	A	1234567
5	22 : 00	E	A	1234567
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

INTERSECTION: 07b0207.9 Rt 110 @ Ruland Rd

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **266**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **7/28/2008 11:11**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	3	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	3	<C/0+0+2>
Area Address	87	<C/0+0+3>
QuicNet Channel	0	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E)>
Red Revert	5.0	<F/1+0+F>
All Red Start	8.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers ---> / Phase Names --->	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	0	7	0	0	0	0	0
1	Ped FDW	0	0	15	0	0	0	0	0
2	Min Green	5	10	5	0	5	10	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	1.0	3.0	0.2	2.0	1.0	0.2	0.2
6	Max Gap	2.0	1.0	3.0	0.2	2.0	1.0	0.2	0.2
7	Min Gap	2.0	1.0	3.0	0.2	2.0	1.0	0.2	0.2
8	Max Limit	46	50	37	0	46	50	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	EV Min Ped FDW	0	0	15	0	0	0	0	0
C	Cond Serv Check	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.0	4.0	3.0	0.0	3.0	4.0	0.0	0.0
F	Red Clear	2.0	2.0	2.0	0.0	2.0	2.0	0.0	0.0

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	50	0	0	0	0.0
Phase 2	50	0	0	0	0.0
Phase 3	50	0	0	0	0.0
Phase 4	50	0	0	0	0.0
Phase 5	50	0	0	0	0.0
Phase 6	50	0	0	0	0.0
Phase 7	50	0	0	0	0.0
Phase 8	50	0	0	0	0.0
Max Initial					
Alternate Walk					
Alternate FDW					
Alternate Initial					
Alternate Extension					

Alternate Timing <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	0

Preempt Timing

Row		F
0	Permit	123_56__
1	Red Lock	_2___6__
2	Yellow Lock	_2___6__
3	Min Recall	_____
4	Ped Recall	_____
5		
6	Rest In Walk	_____
7	Red Rest	_____
8	Dual Entry	_____
9	Max Recall	_2___6__
A	Soft Recall	_____
B	Max 2	_____
C	Cond. Service	_____
D	Man Cntrl Calls	_____
E	Yellow Start	_2___6__
F	First Phases	_2___6__

Phase Functions <C+0+F=1>

Row	Column Numbers --->	Plan 1	2	3	4	5	6	7	8	9
	Plan Name --->									
0	Cycle Length	145	155	170	0	0	0	0	0	0
1	Phase 1 - ForceOff	70	57	90	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	37	32	41	0	0	0	0	0	0
4	Phase 4 - ForceOff	0	0	0	0	0	0	0	0	0
5	Phase 5 - ForceOff	70	57	90	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	0	0	0	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset 1	28	85	160	0	0	0	0	0	0
B	Offset 2	0	0	0	0	0	0	0	0	0
C	Offset 3	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	26	21	30	0	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

Coordination - Bank 1 <C+0+C=1>

(Coord Extra Bit 1 = Programmed WALK Time for Sync Phases)

Row		E
0		
1	Plan 1 - Sync	2 6
2	Plan 2 - Sync	2 6
3	Plan 3 - Sync	2 6
4	Plan 4 - Sync	
5	Plan 5 - Sync	
6	Plan 6 - Sync	
7	Plan 7 - Sync	
8	Plan 8 - Sync	
9	Plan 9 - Sync	
A	NEMA Sync	
B	NEMA Hold	
C		
D		
E	Coord Extra	1
F		

Sync Phases <C+0+C=1>

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	26	21	30	0	0	0	0	0	0
2	Perm 2 - End	59	46	79	0	0	0	0	0	0
3	Perm 3 - Start	59	46	79	0	0	0	0	0	0
4	Perm 3 - End	135	145	160	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	123 56	123 56	123 56						
B	Perm 1 Ped Phase	3	3	3						
C	Perm 2 Veh Phase	12 56	12 56	12 56						
D	Perm 2 Ped Phase	3	3	3						
E	Perm 3 Veh Phase	2 6	2 6	2 6						
F	Perm 3 Ped Phase	3	3	3						

Coordination - Bank 2 <C+0+C=2>

Row		F
0	Free Lag	2 4 6 8
1	Plan 1 - Lag	2 4 6 8
2	Plan 2 - Lag	2 4 6 8
3	Plan 3 - Lag	2 4 6 8
4	Plan 4 - Lag	2 4 6 8
5	Plan 5 - Lag	2 4 6 8
6	Plan 6 - Lag	2 4 6 8
7	Plan 7 - Lag	2 4 6 8
8	Plan 8 - Lag	2 4 6 8
9	Plan 9 - Lag	2 4 6 8
A	External Lag	
B		
C		
D		
E		
F		

Lag Phases <C+0+C=1>

Row	Time	Plan	Offset	Day of Week
0	00 : 00	E	A	1234567
1	06 : 00	2	A	1234567
2	09 : 30	1	A	1234567
3	15 : 00	3	A	1234567
4	19 : 00	1	A	1234567
5	22 : 00	E	A	1234567
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

INTERSECTION: 07b0208.19 Rt 110 @Smith St/SUNY

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **267**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **7/28/2008 11:11**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	4	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	3	<C/0+0+2>
Area Address	88	<C/0+0+3>
QuicNet Channel	0	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E)>
Red Revert	5.0	<F/1+0+F>
All Red Start	8.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	0	0	0	0	0	0	7
1	Ped FDW	0	0	0	0	0	0	0	15
2	Min Green	3	10	0	3	0	10	5	6
3	Type 3 Disconnect	0	0	0	0	3	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	1.0	0.0	2.0	0.2	1.0	3.0	3.0
6	Max Gap	2.0	1.0	0.0	2.0	0.2	1.0	3.0	3.0
7	Min Gap	2.0	1.0	0.0	2.0	0.2	1.0	3.0	3.0
8	Max Limit	27	50	0	37	21	50	36	36
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	EV Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Check	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.0	4.0	0.0	3.0	0.3	4.0	4.0	4.0
F	Red Clear	2.0	2.0	0.0	2.0	0.2	2.0	2.0	2.0

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	50	0	0	0	0.0
Phase 2	50	0	0	0	0.0
Phase 3	50	0	0	0	0.0
Phase 4	50	0	0	0	0.0
Phase 5	50	0	0	0	0.0
Phase 6	50	0	0	0	0.0
Phase 7	50	0	0	0	0.0
Phase 8	50	0	0	0	0.0
Max Initial					
Alternate Walk					
Alternate FDW					
Alternate Initial					
Alternate Extension					

Alternate Timing <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	0

Preempt Timing

Row		F
0	Permit	12_4_678
1	Red Lock	12_4_6__
2	Yellow Lock	12_4_6__
3	Min Recall	__4___
4	Ped Recall	_____
5		
6	Rest In Walk	_____
7	Red Rest	_____
8	Dual Entry	_____
9	Max Recall	_2___6__
A	Soft Recall	_____
B	Max 2	_____
C	Cond. Service	_____
D	Man Cntrl Calls	_____
E	Yellow Start	_2___6__
F	First Phases	_2___6__

Phase Functions <C+0+F=1>

Row	Column Numbers --->	Plan 1	2	3	4	5	6	7	8	9
	Plan Name --->									
0	Cycle Length	145	155	170	0	0	0	0	0	0
1	Phase 1 - ForceOff	95	82	111	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	0
4	Phase 4 - ForceOff	26	18	18	0	0	0	0	0	0
5	Phase 5 - ForceOff	0	0	0	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	42	34	52	0	0	0	0	0	0
8	Phase 8 - ForceOff	70	62	80	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset 1	4	28	156	0	0	0	0	0	0
B	Offset 2	0	0	0	0	0	0	0	0	0
C	Offset 3	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	9	9	9	0	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

Coordination - Bank 1 <C+0+C=1>

(Coord Extra Bit 1 = Programmed WALK Time for Sync Phases)

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync		4
Plan 5 - Sync		5
Plan 6 - Sync		6
Plan 7 - Sync		7
Plan 8 - Sync		8
Plan 9 - Sync		9
NEMA Sync		A
NEMA Hold		B
		C
		D
Coord Extra		E
		F

Sync Phases <C+0+C=1>

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	8	8	8	0	0	0	0	0	0
2	Perm 2 - End	31	23	41	0	0	0	0	0	0
3	Perm 3 - Start	31	23	41	0	0	0	0	0	0
4	Perm 3 - End	54	46	64	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	12 4 678	12 4 678	12 4 678						
B	Perm 1 Ped Phase	8	8	8						
C	Perm 2 Veh Phase	12 678	12 678	12 678						
D	Perm 2 Ped Phase	8	8	8						
E	Perm 3 Veh Phase	12 6 8	12 6 8	12 6 8						
F	Perm 3 Ped Phase	8	8	8						

Coordination - Bank 2 <C+0+C=2>

	F	Row
Free Lag	23 6 8	0
Plan 1 - Lag	23 6 8	1
Plan 2 - Lag	23 6 8	2
Plan 3 - Lag	23 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
External Lag		A
		B
		C
		D
		E
		F

Lag Phases <C+0+C=1>

Row	Time	Plan	Offset	Day of Week
0	00 : 00	E	A	1234567
1	06 : 00	2	A	1234567
2	09 : 30	1	A	1234567
3	15 : 00	3	A	1234567
4	19 : 00	1	A	1234567
5	22 : 00	E	A	1234567
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

INTERSECTION: 07b0208.21 Rt 110 @Melville/Milb

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **268**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **7/28/2008 11:11**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	5	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	3	<C/0+0+2>
Area Address	89	<C/0+0+3>
QuicNet Channel	0	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E)>
Red Revert	5.0	<F/1+0+F>
All Red Start	8.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	0	0	0	0	0	0	0
1	Ped FDW	0	0	0	0	0	0	0	0
2	Min Green	5	10	0	0	5	10	5	5
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	1.0	0.2	0.2	2.0	1.0	3.0	3.0
6	Max Gap	2.0	1.0	0.2	0.2	2.0	1.0	3.0	3.0
7	Min Gap	2.0	1.0	0.2	0.2	2.0	1.0	3.0	3.0
8	Max Limit	28	30	0	0	28	30	31	31
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	EV Min Ped FDW	0	0	0	0	0	0	0	0
C	Cond Serv Check	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.0	5.0	0.0	0.0	3.0	5.0	3.8	3.8
F	Red Clear	2.0	2.0	0.0	0.0	2.0	2.0	3.9	3.9

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	50	0	0	0	0.0
Phase 2	50	0	0	0	0.0
Phase 3	50	0	0	0	0.0
Phase 4	50	0	0	0	0.0
Phase 5	50	0	0	0	0.0
Phase 6	50	0	0	0	0.0
Phase 7	50	0	0	0	0.0
Phase 8	50	0	0	0	0.0
Max Initial					
Alternate Walk					
Alternate FDW					
Alternate Initial					
Alternate Extension					

Alternate Timing <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	0

Preempt Timing

Row		F	
0	Permit	12__5678	0
1	Red Lock	12__56__	1
2	Yellow Lock	12__56__	2
3	Min Recall	_____	3
4	Ped Recall	_____	4
5			5
6	Rest In Walk	_____	6
7	Red Rest	_____	7
8	Dual Entry	_____	8
9	Max Recall	_2___6__	9
A	Soft Recall	_____	A
B	Max 2	_____	B
C	Cond. Service	_____	C
D	Man Cntrl Calls	_____	D
E	Yellow Start	_2___6__	E
F	First Phases	_2___6__	F

Phase Functions <C+0+F=1>

Row	Column Numbers ---->	Plan 1	2	3	4	5	6	7	8	9
	Plan Name ---->									
0	Cycle Length	145	155	170	0	0	0	0	0	0
1	Phase 1 - ForceOff	81	73	85	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	0
4	Phase 4 - ForceOff	0	0	0	0	0	0	0	0	0
5	Phase 5 - ForceOff	81	73	85	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	24	17	36	0	0	0	0	0	0
8	Phase 8 - ForceOff	47	54	58	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset 1	126	12	169	0	0	0	0	0	0
B	Offset 2	0	0	0	0	0	0	0	0	0
C	Offset 3	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	12	8	24	0	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

Coordination - Bank 1 <C+0+C=1>

(Coord Extra Bit 1 = Programmed WALK Time for Sync Phases)

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync		4
Plan 5 - Sync		5
Plan 6 - Sync		6
Plan 7 - Sync		7
Plan 8 - Sync		8
Plan 9 - Sync		9
NEMA Sync		A
NEMA Hold		B
		C
		D
Coord Extra		E
		F

Sync Phases <C+0+C=1>

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	12	8	24	0	0	0	0	0	0
2	Perm 2 - End	35	42	46	0	0	0	0	0	0
3	Perm 3 - Start	35	42	46	0	0	0	0	0	0
4	Perm 3 - End	69	61	73	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	12 5678	12 5678	12 5678						
B	Perm 1 Ped Phase									
C	Perm 2 Veh Phase	12 56 8	12 56 8	12 56 8						
D	Perm 2 Ped Phase									
E	Perm 3 Veh Phase	12 56	12 56	12 56						
F	Perm 3 Ped Phase									

Coordination - Bank 2 <C+0+C=2>

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	2 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
External Lag		A
		B
		C
		D
		E
		F

Lag Phases <C+0+C=1>

Row	Time	Plan	Offset	Day of Week
0	00 : 00	E	A	1234567
1	06 : 00	2	A	1234567
2	09 : 30	1	A	1234567
3	15 : 00	3	A	1234567
4	19 : 00	1	A	1234567
5	22 : 00	E	A	1234567
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

INTERSECTION: 07b0208.22 Rt 110 @ Gaza/Daniel

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **269**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **7/28/2008 11:11**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	6	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	3	<C/0+0+2>
Area Address	90	<C/0+0+3>
QuicNet Channel	0	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E)>
Red Revert	5.0	<F/1+0+F>
All Red Start	8.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers ---->	Phase 1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	0	7	0	0	0	0	0
1	Ped FDW	0	0	15	0	0	0	0	0
2	Min Green	5	10	5	0	5	10	5	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	1.0	3.0	0.2	2.0	1.0	3.0	0.2
6	Max Gap	2.0	1.0	3.0	0.2	2.0	1.0	3.0	0.2
7	Min Gap	2.0	1.0	3.0	0.2	2.0	1.0	3.0	0.2
8	Max Limit	25	40	36	0	25	40	36	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	EV Min Ped FDW	0	0	15	0	0	0	0	0
C	Cond Serv Check	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	3.0	5.0	2.9	0.0	3.0	5.0	2.9	0.0
F	Red Clear	2.0	1.9	6.2	0.0	2.0	1.9	6.2	0.0

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	50	0	0	0	0.0
Phase 2	50	0	0	0	0.0
Phase 3	50	0	0	0	0.0
Phase 4	50	0	0	0	0.0
Phase 5	50	0	0	0	0.0
Phase 6	50	0	0	0	0.0
Phase 7	50	0	0	0	0.0
Phase 8	50	0	0	0	0.0
Max Initial					
Alternate Walk					
Alternate FDW					
Alternate Initial					
Alternate Extension					

Alternate Timing <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	0

Preempt Timing

Row	F	
0	Permit	123_567_
1	Red Lock	_23_56__
2	Yellow Lock	_23_56__
3	Min Recall	_____
4	Ped Recall	_____
5		
6	Rest In Walk	_____
7	Red Rest	_____
8	Dual Entry	__3___7_
9	Max Recall	_2___6__
A	Soft Recall	_____
B	Max 2	_____
C	Cond. Service	_____
D	Man Cntrl Calls	_____
E	Yellow Start	_2___6__
F	First Phases	_2___6__

Phase Functions <C+0+F=1>

Row	Column Numbers --->	Plan 1	2	3	4	5	6	7	8	9
	Plan Name ---->									
0	Cycle Length	145	155	170	0	0	0	0	0	0
1	Phase 1 - ForceOff	66	46	64	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	34	29	41	0	0	0	0	0	0
4	Phase 4 - ForceOff	0	0	0	0	0	0	0	0	0
5	Phase 5 - ForceOff	66	46	64	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	34	29	41	0	0	0	0	0	0
8	Phase 8 - ForceOff	0	0	0	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset 1	0	28	41	0	0	0	0	0	0
B	Offset 2	0	0	0	0	0	0	0	0	0
C	Offset 3	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	22	17	29	0	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

Coordination - Bank 1 <C+0+C=1>

(Coord Extra Bit 1 = Programmed WALK Time for Sync Phases)

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync		4
Plan 5 - Sync		5
Plan 6 - Sync		6
Plan 7 - Sync		7
Plan 8 - Sync		8
Plan 9 - Sync		9
NEMA Sync		A
NEMA Hold		B
		C
		D
Coord Extra	1	E
		F

Sync Phases <C+0+C=1>

Row										
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	22	17	29	0	0	0	0	0	0
2	Perm 2 - End	54	34	52	0	0	0	0	0	0
3	Perm 3 - Start	54	34	52	0	0	0	0	0	0
4	Perm 3 - End	135	145	160	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	123_567	123_567	123_567						
B	Perm 1 Ped Phase	3	3	3						
C	Perm 2 Veh Phase	12 56	12 56	12 56						
D	Perm 2 Ped Phase	3	3	3						
E	Perm 3 Veh Phase	2 6	2 6	2 6						
F	Perm 3 Ped Phase	3	3	3						

Coordination - Bank 2 <C+0+C=2>

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	2 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
External Lag		A
		B
		C
		D
		E
		F

Lag Phases <C+0+C=1>

Row	Time	Plan	Offset	Day of Week
0	00 : 00	E	A	1234567
1	06 : 00	2	A	1234567
2	09 : 30	1	A	1234567
3	15 : 00	3	A	1234567
4	19 : 00	1	A	1234567
5	22 : 00	E	A	1234567
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=1> <C+0+E=27>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

INTERSECTION: 07b0110 Rt110@Rt24Conklin

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **566**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **7/28/2008 11:12**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Drop Number	8	<C/0+0+0>
Zone Number	1	<C/0+0+1>
Area Number	3	<C/0+0+2>
Area Address	134	<C/0+0+3>
QuicNet Channel	0	(QuicNet)

Communication Addresses

Manual Plan		<C/0+A+1>
Manual Offset		<C/0+B+1>

Manual Selection

Flash Start	0	<F/1+0+E)>
Red Revert	5.0	<F/1+0+F>
All Red Start	8.0	<F/1+C+0>

Start / Revert Times

Exclusive Walk	0	<F/1+0+0>
Exclusive FDW	0	<F/1+0+1>
All Red Clear	0.0	<F/1+0+2>

Exclusive Ped Phase
(Outputs specified in Assignable Outputs at E/127+A+E & F)

Row	Column Numbers ---->	Phase 1	2	3	4	5	6	7	8
	Phase Names ---->								
0	Ped Walk	0	7	7	0	0	0	0	0
1	Ped FDW	0	15	20	0	0	0	0	0
2	Min Green	5	10	5	8	5	10	0	0
3	Type 3 Disconnect	0	0	0	0	0	0	0	0
4	Added per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Veh Extension	2.0	1.0	3.0	3.0	4.0	1.0	0.2	0.2
6	Max Gap	2.0	1.0	3.0	3.0	4.0	1.0	0.2	0.2
7	Min Gap	2.0	1.0	3.0	3.0	4.0	1.0	0.2	0.2
8	Max Limit	28	40	37	22	28	40	0	0
9	Max Limit 2	0	0	0	0	0	0	0	0
A	Adv. / Delay Walk	0	0	0	0	0	0	0	0
B	EV Min Ped FDW	0	15	20	0	0	0	0	0
C	Cond Serv Check	0	0	0	0	0	0	0	0
D	Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	Yellow Change	4.0	4.0	4.0	4.0	4.0	4.0	0.0	0.0
F	Red Clear	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0

Phase Timing - Bank 1 <C+0+F=1>

	9	A	B	C	D
	---	---	---	---	---
Phase 1	20	0	0	0	0.0
Phase 2	20	0	0	0	0.0
Phase 3	20	0	0	0	0.0
Phase 4	20	0	0	0	0.0
Phase 5	20	0	0	0	0.0
Phase 6	20	0	0	0	0.0
Phase 7	20	0	0	0	0.0
Phase 8	20	0	0	0	0.0
Max Initial					
Alternate Walk					
Alternate FDW					
Alternate Initial					
Alternate Extension					

Alternate Timing <C+0+F=1>

	E
RR-1 Delay	0
RR-1 Clear	0
EV-A Delay	0
EV-A Clear	0
EV-B Delay	0
EV-B Clear	0
EV-C Delay	0
EV-C Clear	0
EV-D Delay	0
EV-D Clear	0
RR-2 Delay	0
RR-2 Clear	0

Preempt Timing

Row		F
0	Permit	123456__
1	Red Lock	12_456__
2	Yellow Lock	_2___6__
3	Min Recall	_____
4	Ped Recall	_____
5		
6	Rest In Walk	_____
7	Red Rest	_____
8	Dual Entry	_____
9	Max Recall	_2___6__
A	Soft Recall	_____
B	Max 2	_____
C	Cond. Service	_____
D	Man Cntrl Calls	_____
E	Yellow Start	_2___6__
F	First Phases	_2___6__

Phase Functions <C+0+F=1>

Row	Column Numbers --->	Plan 1	2	3	4	5	6	7	8	9
	Plan Name --->									
0	Cycle Length	145	155	170	0	0	0	0	0	0
1	Phase 1 - ForceOff	88	75	87	0	0	0	0	0	0
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0
3	Phase 3 - ForceOff	41	27	29	0	0	0	0	0	0
4	Phase 4 - ForceOff	67	53	55	0	0	0	0	0	0
5	Phase 5 - ForceOff	88	75	87	0	0	0	0	0	0
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	0
8	Phase 8 - ForceOff	0	0	0	0	0	0	0	0	0
9	Ring Offset	0	0	0	0	0	0	0	0	0
A	Offset 1	17	115	53	0	0	0	0	0	0
B	Offset 2	0	0	0	0	0	0	0	0	0
C	Offset 3	0	0	0	0	0	0	0	0	0
D	Perm 1 - End	27	13	15	0	0	0	0	0	0
E	Hold Release	255	255	255	255	255	255	255	255	255
F	Zone Offset	0	0	0	0	0	0	0	0	0

Coordination - Bank 1 <C+0+C=1>

(Coord Extra Bit 1 = Programmed WALK Time for Sync Phases)

Row		E
0		
1	Plan 1 - Sync	2 6
2	Plan 2 - Sync	2 6
3	Plan 3 - Sync	2 6
4	Plan 4 - Sync	
5	Plan 5 - Sync	
6	Plan 6 - Sync	
7	Plan 7 - Sync	
8	Plan 8 - Sync	
9	Plan 9 - Sync	
A	NEMA Sync	
B	NEMA Hold	
C		
D		
E	Coord Extra	1
F		

Sync Phases <C+0+C=1>

Row		1	2	3	4	5	6	7	8	9
0	Ped Adjustment	0	0	0	0	0	0	0	0	0
1	Perm 2 - Start	27	13	15	0	0	0	0	0	0
2	Perm 2 - End	53	39	41	0	0	0	0	0	0
3	Perm 3 - Start	53	39	41	0	0	0	0	0	0
4	Perm 3 - End	77	64	76	0	0	0	0	0	0
5	Reservice Time	0	0	0	0	0	0	0	0	0
6	Reservice Phases									
7										
8	Pretimed Phases									
9	Max Recall									
A	Perm 1 Veh Phase	123456	123456	123456						
B	Perm 1 Ped Phase	23	23	23						
C	Perm 2 Veh Phase	12 456	12 456	12 456						
D	Perm 2 Ped Phase	23	23	23						
E	Perm 3 Veh Phase	12 56	12 56	12 56						
F	Perm 3 Ped Phase	23	23	23						

Coordination - Bank 2 <C+0+C=2>

Row		F
0	Free Lag	2 4 6 8
1	Plan 1 - Lag	2 4 6 8
2	Plan 2 - Lag	2 4 6 8
3	Plan 3 - Lag	2 4 6 8
4	Plan 4 - Lag	2 4 6 8
5	Plan 5 - Lag	2 4 6 8
6	Plan 6 - Lag	2 4 6 8
7	Plan 7 - Lag	2 4 6 8
8	Plan 8 - Lag	2 4 6 8
9	Plan 9 - Lag	2 4 6 8
A	External Lag	
B		
C		
D		
E		
F		

Lag Phases <C+0+C=1>

Row	Time	Plan	Offset	Day of Week
0	00 : 00	E	A	1234567
1	06 : 00	2	A	1234567
2	09 : 30	1	A	1234567
3	15 : 00	3	A	1234567
4	19 : 00	1	A	1234567
5	22 : 00	E	A	1234567
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.1>
(Bank 1)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function <C+0+7=1> <C+0+E=27>

Day	Year	Month	Holiday Type
10	02	6	2
11	02	6	2
12	02	6	2
13	02	6	2
14	02	6	2
15	02	6	2
16	02	6	2
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

Holiday Dates <C+0+8=1.1>
(Bank 1)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.1>
(Bank 1)

T.O.D. Functions
0 =
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination <C+0+9=0.2>
(Bank 2)

Time	Funct.	Day of Week	Column 4 Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

Holiday TOD Function <C+0+7=2> <C+0+E=28>

Day	Year	Month	Holiday Type
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	
00	00	0	

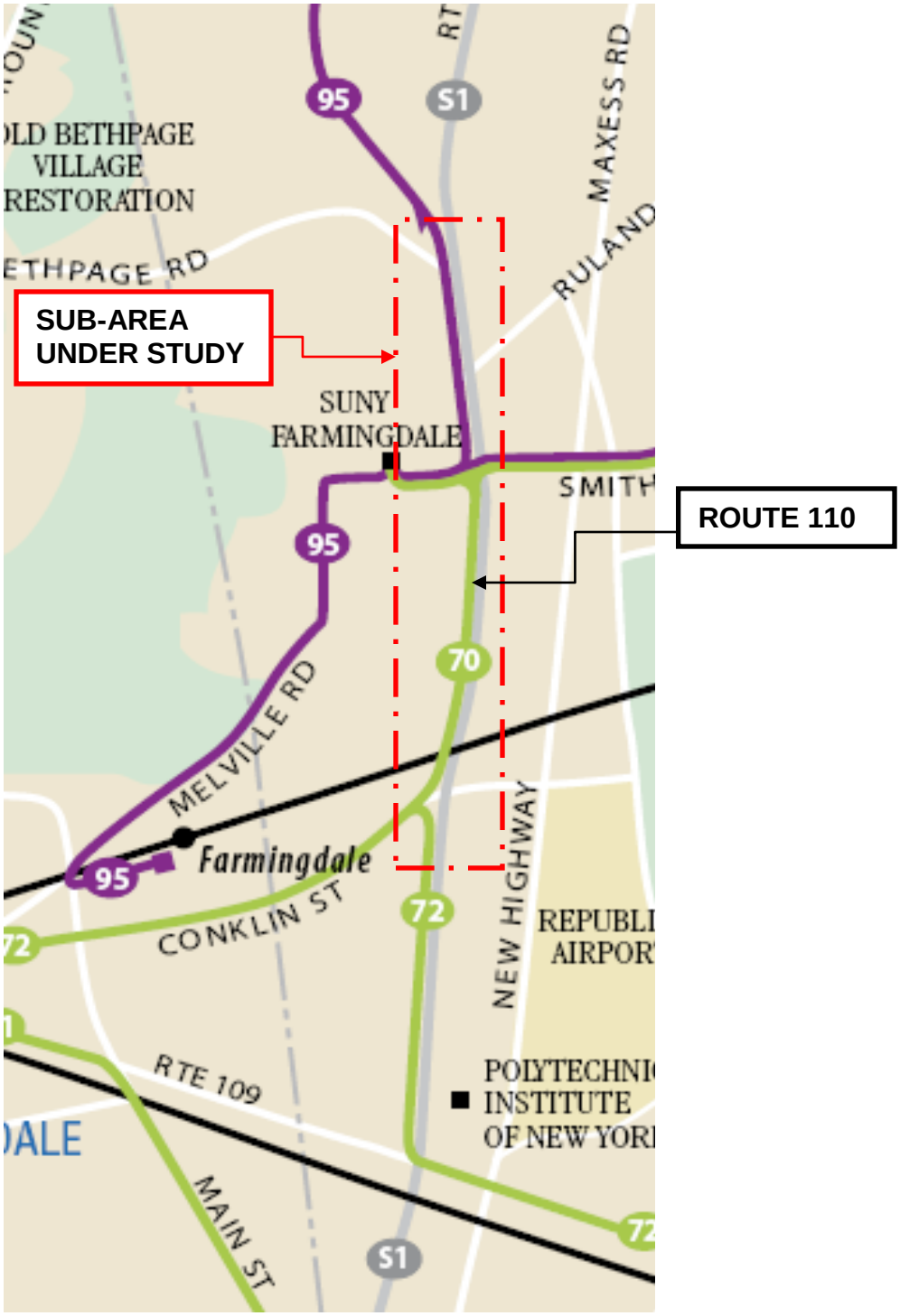
Holiday Dates <C+0+8=1.2>
(Bank 2)

Time	Plan	Offset	Holiday Type
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday Events <C+0+9=1.2>
(Bank 2)

- BUS DATA

EXISTING BUS ROUTE MAP - ROUTE 110



Buses on Route 110
S1, N70/72, N95

Suffolk Transit Bus Information

Questions, Suggestions, Complaints?
Call Suffolk County Transit Information Service
631.852.5200
Monday to Friday 8:00am to 4:30pm

SCAT Paratransit Service

Paratransit Bus Service is available to ADA eligible passengers. To register or for more information, call Office of Handicapped Services at 631.853.8337.

Large Print Bus Schedules

To obtain a large print copy of this or other Suffolk Transit bus schedules, call 631.852.5200 or visit www.sct-bus.org

Additional Transportation Services

HART	631.427.8287
MTA LONG ISLAND BUS	516.228.4000
LONG ISLAND RAIL ROAD	
In Suffolk County	631.231.5477
In Nassau County	516.822.5477
In New York City	718.217.5477
LI Transportation Mgmt., Inc.	631.777.7722

www.sct-bus.org

Suffolk County Transit Fares & Information

Regular fare $1.50
Student fare $1.00
Between 14 to 22 years old. High School/College ID required.
Children under 5 years old FREE
Limit 3 children when accompanied by adult.
Senior, Person with Disabilities and Medicare Card Holders 50 cents
Personal Care Attendant FREE
When traveling to assist passenger with disabilities.
Transfer 25 cents
Available on request when paying fare.
Good for two (2) connecting buses.
Valid for two (2) hours from time received.
Not valid for return trip.
Special restrictions may apply, see transfer.

Passengers Please

- Have exact fare ready; Driver cannot handle money.
- Passengers must deposit their own fare.
- Arrive earlier than scheduled departure time.
- Tell driver your destination.
- SCT Drivers announce Major Bus Stop locations.
- Smoking, drinking, eating and playing of radios is prohibited on buses.

Reduced Fare for Seniors, Persons with Disabilities and Medicare Card Holders

Persons with valid, municipally issued cards identifying them as at least 60 years old or having a mental or physical disability may ride for the reduced, one-way fare. A valid Medicare Card is also accepted as ID.

Persons must display their ID card to the driver when paying the fare to ride at the reduced rate.

For ID information:

Seniors ID call	631.853.8200
Disability ID call	631.853.8333
Hearing Impaired TTY	631.853.5658

Suffolk Transit Service: Monday – Saturday

No service Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving or Christmas Day.

Persons with Disabilities

Upon request, drivers will assist wheelchair passengers while boarding and leaving lift and with use of securement device. Use of wheelchair lifts also available to passengers using walkers, canes, braces or who are otherwise mobility-impaired. Person traveling with respirator or portable oxygen supply are permitted to ride ST buses. Service animals to accompany disabled passengers are also permitted.

SUFFOLK COUNTY TRANSIT

Effective January 2009

SCHEDULE

S1

Amityville Railroad to Halesite

Serving

Amityville Railroad
Brunswick Hospital
North Amityville
East Farmingdale
SUNY Farmingdale
Melville
South Huntington
Walt Whitman Mall
Huntington
Halesite

S1 Northbound Weekday Service — Amityville to Halesite

Amityville Railroad	North Amityville NYS 110 Ritter Ave.	East Farmingdale NYS 110 Allen Blvd.	East Farmingdale NYS 110 Conklin St.	SUNY Farmingdale	Melville Huntington Quadrangle	South Huntington Melville Mall	South Huntington Walt Whitman Mall	Huntington Station NYS 110 11th St.	Huntington Railroad	Huntington Station Big H Shopping Ctr.	Huntington NYS 110 Main St.	Halesite Fire Dept.
5:40	5:45	5:48	5:53	6:00	6:07	6:13	6:25	6:30	6:35	6:40	6:45	6:50
*6:00	6:05	6:10	6:13	6:19	6:25	6:30	6:40	6:45	6:50	6:55	7:00	7:05
6:15	6:20	6:23	6:28	6:35	6:42	6:48	7:00	7:05	7:10	7:15	7:20	7:25
*6:30	6:35	6:38	6:43	6:50	6:57	7:03	7:15	7:20	7:25	7:30	7:35	7:40
6:45	6:50	6:53	6:58	7:05	7:12	7:18	7:30	7:35	7:40	7:45	7:50	7:55
*7:00	7:05	7:08	7:13	7:20	7:27	7:33	7:45	7:50	7:55	8:00	8:05	8:10
7:15	7:20	7:23	7:28	7:35	7:42	7:48	8:00	8:05	8:10	8:15	8:20	8:25
*7:30	7:35	7:38	7:43	7:50	7:57	8:03	8:15	8:20	8:25	8:30	8:35	8:40
7:45	7:50	7:53	7:58	8:05	8:12	8:18	8:30	8:35	8:40	8:45	8:50	8:55
8:15	8:20	8:23	8:28	8:35	8:42	8:48	9:00	9:05	9:10	9:15	9:20	9:25
8:45	8:50	8:53	8:58	9:05	9:12	9:18	9:30	9:35	9:40	9:45	9:50	9:55
9:15	9:20	9:23	9:28	9:35	9:42	9:48	10:00	10:05	10:10	10:15	10:20	10:25
9:45	9:50	9:53	9:58	10:05	10:12	10:18	10:30	10:35	10:40	10:45	10:50	10:55
10:15	10:20	10:23	10:28	10:35	10:42	10:48	11:00	11:05	11:10	11:15	11:20	11:25
10:45	10:50	10:53	10:58	11:05	11:12	11:18	11:30	11:35	11:40	11:45	11:50	11:55
11:15	11:20	11:23	11:28	11:35	11:42	11:48	**12:00**	**12:05**	**12:10**	**12:15**	**12:20**	**12:25**
11:45	11:50	11:53	11:58	**12:05**	**12:12**	**12:18**	**12:30**	**12:35**	**12:40**	**12:45**	**12:50**	**12:55**
12:15	**12:20**	**12:23**	**12:28**	**12:35**	**12:42**	**12:48**	**1:00**	**1:05**	**1:10**	**1:15**	**1:20**	**1:25**
12:45	**12:50**	**12:53**	**12:58**	**1:05**	**1:12**	**1:18**	**1:30**	**1:35**	**1:40**	**1:45**	**1:50**	**1:55**
1:15	**1:20**	**1:23**	**1:28**	**1:35**	**1:42**	**1:48**	**2:00**	**2:05**	**2:10**	**2:15**	**2:20**	**2:25**
1:45	**1:50**	**1:53**	**1:58**	**2:05**	**2:12**	**2:18**	**2:30**	**2:35**	**2:40**	**2:45**	**2:50**	**2:55**
2:15	**2:20**	**2:23**	**2:28**	**2:35**	**2:42**	**2:48**	**3:00**	**3:05**	**3:10**	**3:15**	**3:20**	**3:25**
2:45	**2:50**	**2:53**	**2:58**	**3:05**	**3:12**	**3:18**	**3:30**	**3:35**	**3:40**	**3:45**	**3:50**	**3:55**
3:15	**3:20**	**3:23**	**3:28**	**3:35**	**3:42**	**3:48**	**4:00**	**4:05**	**4:10**	**4:15**	**4:20**	**4:25**
***3:30**	**3:35**	**3:38**	**3:43**	**3:50**	**3:57**	**4:03**	**4:15**	**4:20**	**4:25**	**4:30**	**4:35**	**4:40**
3:45	**3:50**	**3:53**	**3:58**	**4:05**	**4:12**	**4:18**	**4:30**	**4:35**	**4:40**	**4:45**	**4:50**	**4:55**
***4:00**	**4:05**	**4:08**	**4:13**	**4:20**	**4:27**	**4:33**	**4:45**	**4:50**	**4:55**	**5:00**	**5:05**	**5:10**
4:15	**4:20**	**4:23**	**4:28**	**4:35**	**4:42**	**4:48**	**5:00**	**5:05**	**5:10**	**5:15**	**5:20**	**5:25**
***4:30**	**4:35**	**4:38**	**4:43**	**4:50**	**4:57**	**5:03**	**5:15**	**5:20**	**5:25**	**5:30**	**5:35**	**5:40**
4:45	**4:50**	**4:53**	**4:58**	**5:05**	**5:12**	**5:18**	**5:30**	**5:35**	**5:40**	**5:45**	**5:50**	**5:55**
5:15	**5:20**	**5:23**	**5:28**	**5:35**	**5:42**	**5:48**	**6:00**	**6:05**	**6:10**	**6:15**	**6:20**	**6:25**
***5:30**	**5:35**	**5:38**	**5:43**	**5:50**	**5:57**	**6:03**	**6:15**	**6:20**	**6:25**	**6:30**	**6:35**	**6:40**
5:45	**5:50**	**5:53**	**5:58**	**6:05**	**6:12**	**6:18**	**6:30**	**6:35**	**6:40**	**6:45**	**6:50**	**6:55**
6:15	**6:20**	**6:23**	**6:28**	**6:35**	**6:42**	**6:48**	**7:00**	**7:05**	**7:10**	**7:15**	**7:20**	**7:25**
6:45	**6:50**	**6:53**	**6:58**	**7:05**	**7:12**	**7:18**	**7:30**	**7:35**	**7:40**	**7:45**	**7:50**	**7:55**
7:45	**7:50**	**7:53**	**7:58**	**8:05**	**8:12**	**8:18**	**8:30**	**8:35**	**8:40**	**8:45**	**8:50**	**8:55**
8:45	**8:50**	**8:53**	**8:58**	**9:05**	**9:12**	**9:18**	**9:30**	**9:35**	**9:40**	**9:45**	**9:50**	**9:55**

S1 service available Monday thru Saturday only.

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AM–LIGHTFACE **PM–BOLDFACE**

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Where to Board For your safety, please wait for the bus at a designated bus stop.

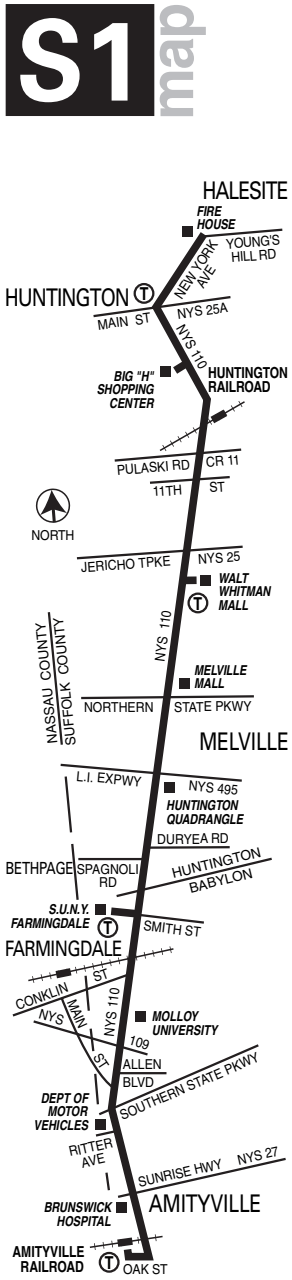
S1 Connecting Bus Service

Route No.	Location
S20, S33, 1A, N54	Amityville
S23, S29, S54, H4, N79	Walt Whitman Mall
H6	Huntington
H9	Huntington, Walt Whitman Mall
N70, N72	East Farmingdale
2B	SUNY Farmingdale
Farmingdale Shuttle (N95)	SUNY Farmingdale

Long Island Rail Road

Amityville – Babylon Branch

Huntington – Port Jefferson Branch



S1 Southbound Weekday Service — Halesite to Amityville

Halesite Fire Dept.	Huntington NYS 110 Main St.	Huntington Station Big H Shopping Ctr.	Huntington Railroad	Huntington Station NYS 110 11th St.	South Huntington Walt Whitman Mall	South Huntington Melville Mall	Melville Huntington Quadrangle	SUNY Farmingdale	East Farmingdale NYS 110 Conklin St.	East Farmingdale NYS 110 Allen Blvd.	North Amityville NYS 110 Ritter Ave.	Amityville Railroad
—	—	—	—	—	—	—	—	—	—	—	6:30	6:35
6:00	6:05	—	6:10	6:15	6:25	6:30	6:35	6:40	6:45	6:50	6:55	7:00
6:30	6:35	—	6:45	6:50	7:00	7:04	7:09	7:14	7:18	7:22	7:25	7:30
6:50	6:55	—	7:00	7:05	7:15	7:22	7:28	7:35	7:42	7:47	7:50	7:55
*7:15	7:20	—	7:25	7:30	7:40	7:45	7:51	7:57	8:02	8:07	8:10	8:15
7:30	7:35	7:40	7:45	7:50	8:00	8:05	8:11	8:17	8:22	8:27	8:30	8:35
*7:45	7:50	7:55	8:00	8:05	8:15	8:20	8:26	8:32	8:37	8:42	8:45	8:50
8:00	8:05	8:10	8:15	8:20	8:30	8:35	8:41	8:47	8:52	8:57	9:00	9:05
*8:15	8:20	8:25	8:30	8:35	8:45	8:50	8:56	9:02	9:07	9:12	9:15	9:20
8:30	8:35	8:40	8:45	8:50	9:00	9:05	9:11	9:17	9:22	9:27	9:30	9:35
9:00	9:05	9:10	9:15	9:20	9:30	9:35	9:41	9:47	9:52	9:57	10:00	10:05
9:30	9:35	9:40	9:45	9:50	10:00	10:05	10:11	10:17	10:22	10:27	10:30	10:35
10:00	10:05	10:10	10:15	10:20	10:30	10:35	10:41	10:47	10:52	10:57	11:00	11:05
10:30	10:35	10:40	10:45	10:50	11:00	11:05	11:11	11:17	11:22	11:27	11:30	11:35
11:00	11:05	11:10	11:15	11:20	11:30	11:35	11:41	11:47	11:52	11:57	**12:00**	**12:05**
11:30	11:35	11:40	11:45	11:50	**12:00**	**12:05**	**12:11**	**12:17**	**12:22**	**12:27**	**12:30**	**12:35**
12:00	**12:05**	**12:10**	**12:15**	**12:20**	**12:30**	**12:35**	**12:41**	**12:47**	**12:52**	**12:57**	**1:00**	**1:05**
12:30	**12:35**	**12:40**	**12:45**	**12:50**	**1:00**	**1:05**	**1:11**	**1:17**	**1:22**	**1:27**	**1:30**	**1:35**
1:00	**1:05**	**1:10**	**1:15**	**1:20**	**1:30**	**1:35**	**1:41**	**1:47**	**1:52**	**1:57**	**2:00**	**2:05**
1:30	**1:35**	**1:40**	**1:45**	**1:50**	**2:00**	**2:05**	**2:11**	**2:17**	**2:22**	**2:27**	**2:30**	**2:35**
2:00	**2:05**	**2:10**	**2:15**	**2:20**	**2:30**	**2:35**	**2:41**	**2:47**	**2:52**	**2:57**	**3:00**	**3:05**
2:30	**2:35**	**2:40**	**2:45**	**2:50**	**3:00**	**3:05**	**3:11**	**3:17**	**3:22**	**3:27**	**3:30**	**3:35**
3:00	**3:05**	**3:10**	**3:15**	**3:20**	**3:30**	**3:35**	**3:41**	**3:47**	**3:52**	**3:57**	**4:00**	**4:05**
***3:15**	**3:20**	**3:25**	**3:30**	**3:35**	**3:45**	**3:50**	**3:56**	**4:02**	**4:07**	**4:12**	**4:15**	**4:20**
3:30	**3:35**	**3:40**	**3:45**	**3:50**	**4:00**	**4:05**	**4:11**	**4:17**	**4:22**	**4:27**	**4:30**	**4:35**
***3:45**	**3:50**	**3:55**	**4:00**	**4:05**	**4:15**	**4:20**	**4:26**	**4:32**	**4:37**	**4:42**	**4:45**	**4:50**
4:00	**4:05**	**4:10**	**4:15**	**4:20**	**4:30**	**4:35**	**4:41**	**4:47**	**4:52**	**4:57**	**5:00**	**5:05**
***4:15**	**4:20**	**4:25**	**4:30**	**4:35**	**4:45**	**4:50**	**4:56**	**5:02**	**5:07**	**5:12**	**5:15**	**5:20**
4:30	**4:35**	**4:40**	**4:45**	**4:50**	**5:00**	**5:05**	**5:11**	**5:17**	**5:22**	**5:27**	**5:30**	**5:35**
***4:45**	**4:50**	**4:55**	**5:00**	**5:05**	**5:15**	**5:20**	**5:26**	**5:32**	**5:37**	**5:42**	**5:45**	**5:50**
5:00	**5:05**	**5:10**	**5:15**	**5:20**	**5:30**	**5:35**	**5:41**	**5:47**	**5:52**	**5:57**	**6:00**	**6:05**
***5:15**	**5:20**	**5:25**	**5:30**	**5:35**	**5:45**	**5:50**	**5:56**	**6:02**	**6:07**	**6:12**	**6:15**	**6:20**
5:30	**5:35**	**5:40**	**5:45**	**5:50**	**6:00**	**6:05**	**6:11**	**6:17**	**6:22**	**6:27**	**6:30**	**6:35**
6:00	**6:05**	**6:10**	**6:15**	**6:20**	**6:30**	**6:35**	**6:41**	**6:47**	**6:52**	**6:57**	**7:00**	**7:05**
6:30	**6:35**	**6:40**	**6:45**	**6:50**	**7:00**	**7:05**	**7:11**	**7:17**	**7:22**	**7:27**	**7:30**	**7:35**
7:00	**7:05**	**7:10**	**7:15**	**7:20**	**7:30**	**7:35**	**7:41**	**7:47**	**7:52**	**7:57**	**8:00**	**8:05**
7:30	**7:35**	**7:40**	**7:45**	**7:50**	**8:00**	**8:05**	**8:11**	**8:17**	**8:22**	**8:27**	**8:30**	**8:35**
8:00	**8:05**	**8:10**	**8:15**	**8:20**	**8:30**	**8:35**	**8:41**	**8:47**	**8:52**	**8:57**	**9:00**	**9:05**
9:00	**9:05**	**9:10**	**9:15**	**9:20**	**9:30**	**9:35**	**9:41**	**9:47**	**9:52**	**9:57**	**10:00**	**10:05**

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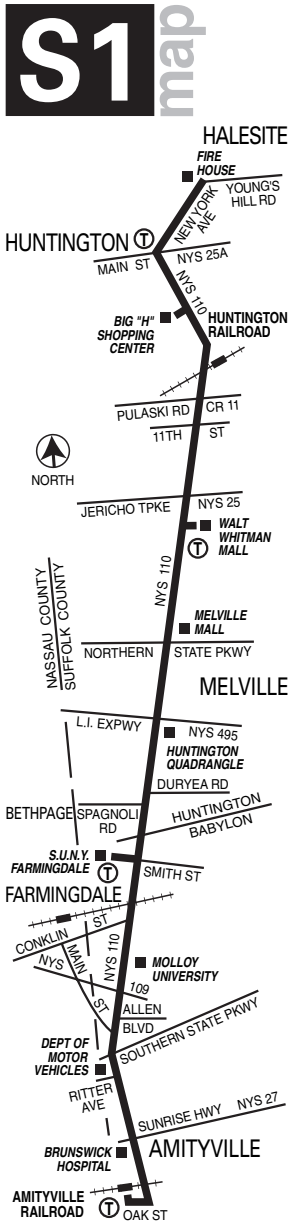
S1 Connecting Bus Service

Route No.	Location
S20, S33, 1A, N54	Amityville
S23, S29, S54, H4, H9, N79	Walt Whitman Mall
H6, H9	Huntington
N70, N72	East Farmingdale
2B, Farmingdale Shuttle (N95)	SUNY Farmingdale



LEGEND

Bus Route

Long Island Rail Road

Amityville – Babylon Branch

Huntington – Port Jefferson Branch

S1 Northbound Saturday Service — Amityville to Halesite

Amityville Railroad	North Amityville NYS 110 Ritter Ave.	East Farmingdale NYS 110 Allen Blvd.	East Farmingdale NYS 110 Conklin St.	SUNY Farmingdale	Melville Huntington Quadrangle	South Huntington Melville Mall	South Huntington Walt Whitman Mall	Huntington Station NYS 110 11th St.	Huntington Railroad	Huntington Station Big H Shopping Ctr.	Huntington NYS 110 Main St.	Halesite Fire Dept.
7:15	7:20	7:23	7:28	7:35	7:42	7:47	8:00	8:05	8:10	8:15	8:20	8:25
8:15	8:20	8:23	8:28	8:35	8:42	8:47	9:00	9:05	9:10	9:15	9:20	9:25
9:15	9:20	9:23	9:28	9:35	9:42	9:47	10:00	10:05	10:10	10:15	10:20	10:25
10:15	10:20	10:23	10:28	10:35	10:42	10:47	11:00	11:05	11:10	11:15	11:20	11:25
11:15	11:20	11:23	11:28	11:35	11:42	11:47	**12:00**	**12:05**	**12:10**	**12:15**	**12:20**	**12:25**
12:15	**12:20**	**12:23**	**12:28**	**12:35**	**12:42**	**12:47**	**1:00**	**1:05**	**1:10**	**1:15**	**1:20**	**1:25**
1:15	**1:20**	**1:23**	**1:28**	**1:35**	**1:42**	**1:47**	**2:00**	**2:05**	**2:10**	**2:15**	**2:20**	**2:25**
2:15	**2:20**	**2:23**	**2:28**	**2:35**	**2:42**	**2:47**	**3:00**	**3:05**	**3:10**	**3:15**	**3:20**	**3:25**
3:15	**3:20**	**3:23**	**3:28**	**3:35**	**3:42**	**3:47**	**4:00**	**4:05**	**4:10**	**4:15**	**4:20**	**4:25**
4:15	**4:20**	**4:23**	**4:28**	**4:35**	**4:42**	**4:47**	**5:00**	**5:05**	**5:10**	**5:15**	**5:20**	**5:25**
5:15	**5:20**	**5:23**	**5:28**	**5:35**	**5:42**	**5:47**	**6:00**	**6:05**	**6:10**	**6:15**	**6:20**	**6:25**
6:15	**6:20**	**6:23**	**6:28**	**6:35**	**6:42**	**6:47**	**7:00**	**7:05**	**7:10**	**7:15**	**7:20**	**7:25**

S1 Southbound Saturday Service — Halesite to Amityville

Halesite Fire Dept.	Huntington NYS 110 Main St.	Huntington Station Big H Shopping Ctr.	Huntington Railroad	Huntington Station NYS 110 11th St.	South Huntington Walt Whitman Mall	South Huntington Melville Mall	Melville Huntington Quadrangle	SUNY Farmingdale	East Farmingdale NYS 110 Conklin St.	East Farmingdale NYS 110 Allen Blvd.	North Amityville NYS 110 Ritter Ave.	Amityville Railroad
7:30	7:35	7:40	7:45	7:50	8:00	8:12	8:18	8:25	8:30	8:35	8:40	8:45
8:30	8:35	8:40	8:45	8:50	9:00	9:12	9:18	9:25	9:30	9:35	9:40	9:45
9:30	9:35	9:40	9:45	9:50	10:00	10:12	10:18	10:25	10:30	10:35	10:40	10:45
10:30	10:35	10:40	10:45	10:50	11:00	11:12	11:18	11:25	11:30	11:35	11:40	11:45
11:30	11:35	11:40	11:45	11:50	**12:00**	**12:12**	**12:18**	**12:25**	**12:30**	**12:35**	**12:40**	**12:45**
12:30	**12:35**	**12:40**	**12:45**	**12:50**	**1:00**	**1:12**	**1:18**	**1:25**	**1:30**	**1:35**	**1:40**	**1:45**
1:30	**1:35**	**1:40**	**1:45**	**1:50**	**2:00**	**2:12**	**2:18**	**2:25**	**2:30**	**2:35**	**2:40**	**2:45**
2:30	**2:35**	**2:40**	**2:45**	**2:50**	**3:00**	**3:12**	**3:18**	**3:25**	**3:30**	**3:35**	**3:40**	**3:45**
3:30	**3:35**	**3:40**	**3:45**	**3:50**	**4:00**	**4:12**	**4:18**	**4:25**	**4:30**	**4:35**	**4:40**	**4:45**
4:30	**4:35**	**4:40**	**4:45**	**4:50**	**5:00**	**5:12**	**5:18**	**5:25**	**5:30**	**5:35**	**5:40**	**5:45**
5:30	**5:35**	**5:40**	**5:45**	**5:50**	**6:00**	**6:12**	**6:18**	**6:25**	**6:30**	**6:35**	**6:40**	**6:45**
6:30	**6:35**	**6:40**	**6:45**	**6:50**	**7:00**	**7:12**	**7:18**	**7:25**	**7:30**	**7:35**	**7:40**	**7:45**

S1 service available Monday thru Saturday only.

AM–LIGHTFACE **PM–BOLDFACE**

Schedules subject to change without notice.

Suffolk County cannot assume responsibility for inconvenience, expense or damage resulting from timetable errors, delayed buses or failure to make connections.

Where to Board For your safety, please wait for the bus at a designated bus stop.

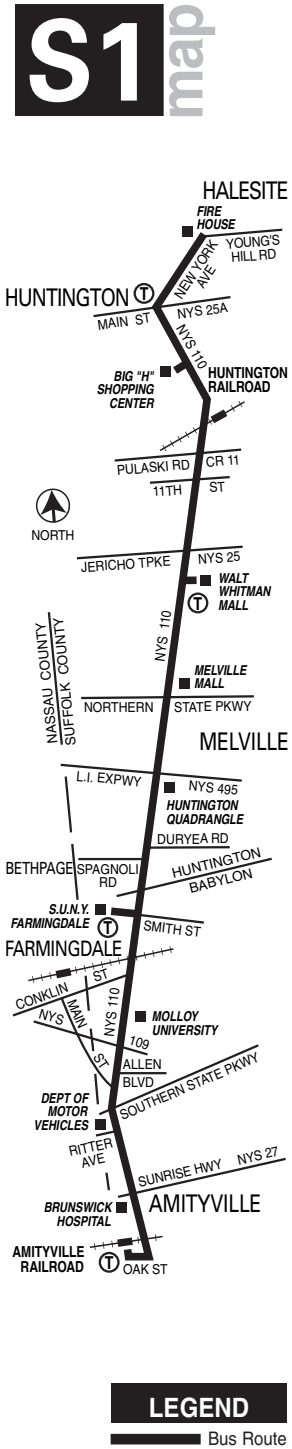
S1 Connecting Bus Service

Route No.	Location
S20, S33, 1A, N54	Amityville
S23, S29, S54	Walt Whitman Mall
H4, N79	Walt Whitman Mall
2B	SUNY Farmingdale
H6	Huntington
H9	Huntington, Walt Whitman Mall
N70, N72	East Farmingdale
Farmingdale Shuttle (N95)	SUNY Farmingdale

Long Island Rail Road

Amityville – Babylon Branch

Huntington – Port Jefferson Branch



N70/N71/N72 Weekday Schedule

To Babylon via Hempstead Tpke

	HEMPSTEAD Transit Center	HEMPSTEAD (Holstra) Hempstead Tpk/Calif Av	EAST MEADOW Hempstead Tpk/NU Medical Ctr	LEVITTOWN Hempstead Tpk/Division Av	LEVITTOWN Hempstead Tpk/Wantagh Av	PLAINEDGE Hempstead Tpk/Stewart Av	FARMINGDALE Main St/Route 109	MASSAPEQUA PARK Sunrise Mall	FARMINGDALE Conklin St/Main St	FARMINGDALE Conklin St/Route 110	FARMINGDALE SUNY at Farmingdale	MELVILLE Newsday/Pinelawn Rd	WEST BABYLON Route 109/Straight Path	BABYLON LIRR Station
72	5:04	5:10	5:16	5:20	5:25	5:28	-	-	5:33	5:36	-	-	5:45	5:54
71	5:27	5:34	5:41	5:45	5:51	5:54	-	-	-	-	-	-	-	-
72	5:30	5:37	5:44	5:48	5:54	5:57	-	-	6:03	6:06	-	-	6:15	6:24
72	5:45	5:52	6:00	6:04	6:10	6:13	-	-	6:19	6:22	-	-	-	-
72	5:50	5:57	6:04	6:08	6:14	6:17	-	-	6:23	6:26	-	-	6:35	6:44
71	5:57	6:04	6:12	6:16	6:22	6:25	-	-	-	-	-	-	-	-
70	6:07	6:14	6:22	6:26	6:32	6:35	-	-	6:41	6:44	6:50	6:57	-	-
71	6:17	6:24	6:32	6:36	6:42	6:45	-	-	-	-	-	-	-	-
72	6:19	6:26	6:34	6:38	6:44	6:47	-	-	6:53	6:56	-	-	7:05	7:14
72	6:30	6:37	6:45	6:49	6:55	6:58	-	-	7:04	7:07	-	-	-	-
70	6:36	6:43	6:51	6:55	7:01	7:04	-	-	7:10	7:13	7:19	7:26	-	-
71	6:44	6:51	6:59	7:03	7:09	7:12	7:19	7:33	-	-	-	-	-	-
72	6:50	6:58	7:07	7:12	7:18	7:21	-	-	7:27	7:30	-	-	7:40	7:50
70	6:53	7:01	7:10	7:15	7:21	7:24	-	-	7:30	7:33	7:39	7:46	-	-
72	7:01	7:09	7:18	7:23	7:29	7:32	-	-	7:38	7:41	-	-	-	-
70	7:06	7:14	7:23	7:28	7:34	7:37	-	-	7:43	7:46	7:52	7:59	-	-
70	7:15	7:23	7:32	7:37	7:43	7:46	-	-	7:52	7:55	8:01	8:08	-	-
72	7:25	7:33	7:42	7:47	7:53	7:56	-	-	8:02	8:05	-	-	8:15	8:25
70	7:36	7:44	7:53	7:58	8:04	8:07	-	-	8:13	8:16	8:22	8:29	-	-
71	7:50	7:58	8:07	8:12	8:18	8:21	8:28	8:42	-	-	-	-	-	-
72	7:59	8:07	8:16	8:21	8:27	8:30	-	-	8:36	8:39	-	-	8:49	8:59
70	8:09	8:17	8:26	8:31	8:37	8:40	-	-	8:46	8:49	8:55	9:02	-	-
72	8:20	8:28	8:37	8:42	8:48	8:51	-	-	8:57	9:00	-	-	-	-
72	8:27	8:35	8:44	8:49	8:55	8:58	-	-	9:04	9:07	-	-	9:17	9:27
70	8:40	8:48	8:57	9:02	9:08	9:11	-	-	9:17	9:20	9:26	9:33	-	-
71	8:50	8:58	9:07	9:12	9:18	9:21	9:28	9:42	-	-	-	-	-	-
72	9:00	9:08	9:16	9:20	9:26	9:29	-	-	9:35	9:38	-	-	9:47	9:56
70	9:12	9:20	9:28	9:32	9:38	9:41	-	-	9:47	9:50	9:56	10:03	-	-
72	9:24	9:32	9:40	9:44	9:50	9:53	-	-	9:59	10:02	-	-	10:11	10:20
70	9:36	9:44	9:52	9:56	10:02	10:05	-	-	10:11	10:14	10:20	10:27	-	-
71	9:48	9:56	10:04	10:08	10:14	10:17	10:24	10:38	-	-	-	-	-	-
72	10:00	10:08	10:16	10:20	10:26	10:29	-	-	10:35	10:38	-	-	10:47	10:56
70	10:15	10:23	10:31	10:35	10:41	10:44	-	-	10:50	10:53	10:59	11:06	-	-
72	10:30	10:38	10:46	10:50	10:56	10:59	-	-	11:05	11:08	-	-	11:17	11:26
71	10:45	10:53	11:01	11:05	11:11	11:14	11:21	11:35	-	-	-	-	-	-
72	11:00	11:08	11:16	11:20	11:26	11:29	-	-	11:35	11:38	-	-	11:47	11:56
70	11:15	11:23	11:31	11:35	11:41	11:44	-	-	11:50	11:53	11:59	12:06	-	-
72	11:30	11:38	11:46	11:50	11:56	11:59	-	-	12:05	12:08	-	-	12:17	12:26
71	11:45	11:53	12:01	12:05	12:11	12:14	12:21	12:35	-	-	-	-	-	-
72	**12:00**	**12:08**	**12:16**	**12:20**	**12:26**	**12:29**	-	-	**12:35**	**12:38**	-	-	**12:47**	**12:56**
70	**12:15**	**12:23**	**12:31**	**12:35**	**12:41**	**12:44**	-	-	**12:50**	**12:53**	**12:59**	**1:06**	-	-
72	**12:30**	**12:38**	**12:46**	**12:50**	**12:56**	**12:59**	-	-	**1:05**	**1:08**	-	-	**1:17**	**1:26**
71	**12:45**	**12:53**	**1:01**	**1:05**	**1:11**	**1:14**	**1:21**	**1:35**	-	-	-	-	-	-
72	**1:00**	**1:08**	**1:16**	**1:20**	**1:26**	**1:29**	-	-	**1:35**	**1:38**	-	-	**1:47**	**1:56**
70	**1:12**	**1:20**	**1:28**	**1:32**	**1:38**	**1:41**	-	-	**1:47**	**1:50**	**1:56**	**2:03**	-	-
72	**1:24**	**1:32**	**1:40**	**1:44**	**1:50**	**1:53**	-	-	**1:59**	**2:02**	-	-	**2:11**	**2:20**
71	**1:37**	**1:45**	**1:53**	**1:57**	**2:03**	**2:06**	**2:13**	**2:27**	-	-	-	-	-	-
72	**1:50**	**1:58**	**2:06**	**2:10**	**2:16**	**2:19**	-	-	**2:25**	**2:28**	-	-	**2:37**	**2:46**
70	**2:02**	**2:10**	**2:20**	**2:25**	**2:32**	**2:35**	-	-	**2:41**	**2:44**	**2:50**	**2:57**	-	-
72	**2:13**	**2:21**	**2:31**	**2:36**	**2:43**	**2:46**	-	-	**2:52**	**2:55**	-	-	**3:05**	**3:15**
70	**2:26**	**2:34**	**2:44**	**2:49**	**2:56**	**2:59**	-	-	**3:05**	**3:08**	**3:14**	**3:21**	-	-
71	**2:36**	**2:44**	**2:54**	**2:59**	**3:06**	**3:09**	**3:16**	**3:30**	-	-	-	-	-	-
72	**2:45**	**2:53**	**3:03**	**3:08**	**3:15**	**3:18**	-	-	**3:24**	**3:27**	-	-	**3:37**	**3:47**
72	**2:53**	**3:01**	**3:11**	**3:16**	**3:23**	**3:26**	-	-	**3:32**	**3:35**	-	-	-	-
70	**3:03**	**3:11**	**3:21**	**3:26**	**3:33**	**3:36**	-	-	**3:42**	**3:45**	**3:51**	**3:58**	-	-
72	**3:14**	**3:22**	**3:32**	**3:37**	**3:44**	**3:47**	-	-	**3:53**	**3:56**	-	-	**4:06**	**4:16**
70	**3:26**	**3:34**	**3:44**	**3:49**	**3:56**	**3:59**	-	-	**4:05**	**4:08**	**4:14**	**4:21**	-	-
71	**3:38**	**3:46**	**3:56**	**4:01**	**4:08**	**4:11**	**4:18**	**4:32**	-	-	-	-	-	-
72	**3:46**	**3:54**	**4:04**	**4:09**	**4:16**	**4:19**	-	-	**4:25**	**4:28**	-	-	**4:38**	**4:48**
72	**3:54**	**4:02**	**4:12**	**4:17**	**4:24**	**4:27**	-	-	**4:33**	**4:36**	-	-	-	-
70	**4:04**	**4:12**	**4:22**	**4:27**	**4:34**	**4:37**	-	-	**4:43**	**4:46**	**4:52**	**4:59**	-	-
72	**4:14**	**4:22**	**4:32**	**4:37**	**4:44**	**4:47**	-	-	**4:53**	**4:56**	-	-	**5:06**	**5:16**
70	**4:26**	**4:34**	**4:44**	**4:49**	**4:56**	**4:59**	-	-	**5:05**	**5:08**	**5:14**	**5:21**	-	-
72	**4:38**	**4:46**	**4:56**	**5:01**	**5:08**	**5:11**	-	-	**5:17**	**5:20**	-	-	-	-
71	**4:49**	**4:57**	**5:07**	**5:12**	**5:19**	**5:22**	**5:29**	**5:43**	-	-	-	-	-	-
72	**5:00**	**5:08**	**5:18**	**5:23**	**5:30**	**5:33**	-	-	**5:39**	**5:42**	-	-	**5:52**	**6:02**
70	**5:15**	**5:23**	**5:32**	**5:37**	**5:43**	**5:46**	-	-	**5:52**	**5:55**	**6:01**	**6:08**	-	-
72	**5:30**	**5:38**	**5:46**	**5:50**	**5:56**	**5:59**	-	-	**6:05**	**6:08**	-	-	**6:17**	**6:26**
71	**5:45**	**5:53**	**6:01**	**6:05**	**6:11**	**6:14**	**6:21**	**6:35**	-	-	-	-	-	-
72	**6:00**	**6:08**	**6:16**	**6:20**	**6:26**	**6:29**	-	-	**6:35**	**6:38**	-	-	**6:47**	**6:56**
70	**6:15**	**6:23**	**6:31**	**6:35**	**6:41**	**6:44**	-	-	**6:50**	**6:53**	**6:59**	**7:06**	-	-
72	**6:30**	**6:38**	**6:46**	**6:50**	**6:56**	**6:59**	-	-	**7:05**	**7:08**	-	-	**7:17**	**7:26**
71	**6:45**	**6:53**	**7:01**	**7:05**	**7:11**	**7:14**	**7:21**	**7:35**	-	-	-	-	-	-
72	**7:00**	**7:08**	**7:16**	**7:20**	**7:26**	**7:29**	-	-	**7:35**	**7:38**	-	-	**7:47**	**7:56**
70	**7:20**	**7:28**	**7:36**	**7:40**	**7:46**	**7:49**	-	-	**7:55**	**7:58**	**8:04**	**8:11**	-	-
71	**7:45**	**7:53**	**8:01**	**8:05**	**8:11**	**8:14**	**8:21**	**8:35**	-	-	-	-	-	-
72	**8:08**	**8:16**	**8:24**	**8:28**	**8:34**	**8:37**	-	-	**8:43**	**8:46**	-	-	**8:55**	**9:04**
71	**8:45**	**8:53**	**8:59**	**9:03**	**9:08**	**9:11**	**9:16**	**9:28**	-	-	-	-	-	-
72	**9:40**	**9:48**	**9:54**	**9:58**	**10:03**	**10:06**	-	-	**10:12**	**10:15**	-	-	-	-
72	**10:15**	**10:23**	**10:29**	**10:33**	**10:38**	**10:41**	-	-	**10:47**	**10:50**	-	-	-	-
72	**11:02**	**11:10**	**11:16**	**11:20**	**11:25**	**11:28**	-	-	**11:34**	**11:37**	-	-	-	-

N70/N71/N72 TO BABYLON

WEEKDAY

Boldface denotes PM hours.
All service is wheelchair accessible.

To Hempstead via Hempstead Tpke

N70/N71/N72 TO HEMPSTEAD

WEEKDAY

	BABYLON LIRR Station	WEST BABYLON Route 109/Straight Path	MELVILLE Newsday/Pinelawn Rd	FARMINGDALE SUNY at Farmingdale	FARMINGDALE Conklin St/Route 110	FARMINGDALE Conklin St/Main St	MASSAPEQUA PARK Sunrise Mall	FARMINGDALE Main St/Route 109	PLAINEDGE Hempstead Tpk/Stewart Av	LEVITTOWN Hempstead Tpk/Wantagh Av	LEVITTOWN Hempstead Tpk/Division Av	EAST MEADOW Hempstead Tpk/NU Medical Ctr	HEMPSTEAD (Hofstra) Hempstead Tpk/Calif Av	HEMPSTEAD Transit Center
72	-	-	-	-	5:11	5:14	-	-	5:20	5:23	5:28	5:32	5:38	5:46
72	-	-	-	-	5:37	5:40	-	-	5:46	5:49	5:54	5:58	6:04	6:12
71	-	-	-	-	-	-	-	-	6:05	6:08	6:13	6:17	6:23	6:31
72	6:00	6:09	-	-	6:18	6:21	-	-	6:27	6:30	6:36	6:40	6:48	6:56
72	-	-	-	-	6:34	6:37	-	-	6:43	6:46	6:52	6:56	7:04	7:12
71	-	-	-	-	-	-	-	-	7:02	7:05	7:11	7:15	7:23	7:31
72	6:41	6:51	-	-	7:03	7:06	-	-	7:12	7:15	7:21	7:26	7:35	7:43
72	6:55	7:05	-	-	7:17	7:20	-	-	7:26	7:29	7:35	7:40	7:49	7:57
72	-	-	-	-	7:29	7:32	-	-	7:38	7:41	7:47	7:52	8:01	8:09
70	-	-	7:25	7:31	7:38	7:41	-	-	7:47	7:50	7:56	8:01	8:10	8:18
72	-	-	-	-	7:49	7:52	-	-	7:58	8:01	8:07	8:11	8:19	8:27
72	7:32	7:41	-	-	7:52	7:55	-	-	8:01	8:04	8:10	8:15	8:24	8:32
70	-	-	7:47	7:53	8:00	8:03	-	-	8:09	8:12	8:18	8:23	8:32	8:40
71	-	-	-	-	-	-	7:56	8:10	8:17	8:20	8:26	8:31	8:40	8:48
70	-	-	8:06	8:12	8:19	8:22	-	-	8:28	8:31	8:37	8:42	8:51	8:59
72	8:06	8:15	-	-	8:26	8:29	-	-	8:35	8:38	8:44	8:49	8:58	9:06
70	-	-	8:23	8:29	8:36	8:39	-	-	8:45	8:48	8:54	8:59	9:08	9:16
72	8:30	8:39	-	-	8:48	8:51	-	-	8:57	9:00	9:06	9:11	9:20	9:28
70	-	-	8:47	8:53	9:00	9:03	-	-	9:09	9:12	9:18	9:22	9:30	9:38
72	-	-	-	-	9:08	9:11	-	-	9:17	9:20	9:26	9:30	9:38	9:46
71	-	-	-	-	-	-	9:00	9:14	9:21	9:24	9:30	9:34	9:42	9:50
72	9:08	9:17	-	-	9:26	9:29	-	-	9:35	9:38	9:44	9:48	9:56	10:04
70	-	-	9:24	9:30	9:37	9:40	-	-	9:46	9:49	9:55	9:59	10:07	10:15
72	9:32	9:41	-	-	9:50	9:53	-	-	9:59	10:02	10:08	10:12	10:20	10:28
70	-	-	9:47	9:53	10:00	10:03	-	-	10:09	10:12	10:18	10:22	10:30	10:38
71	-	-	-	-	-	-	10:00	10:14	10:21	10:24	10:30	10:34	10:42	10:50
72	10:06	10:15	-	-	10:24	10:27	-	-	10:33	10:36	10:42	10:46	10:54	11:02
70	-	-	10:23	10:29	10:36	10:39	-	-	10:45	10:48	10:54	10:58	11:06	11:14
72	10:30	10:39	-	-	10:48	10:51	-	-	10:57	11:00	11:06	11:10	11:18	11:26
70	-	-	10:47	10:53	11:00	11:03	-	-	11:09	11:12	11:18	11:22	11:30	11:38
71	-	-	-	-	-	-	11:00	11:14	11:21	11:24	11:30	11:34	11:42	11:50
72	11:06	11:15	-	-	11:24	11:27	-	-	11:33	11:36	11:42	11:46	11:54	12:02
70	-	-	11:26	11:32	11:39	11:42	-	-	11:48	11:51	11:57	12:01	12:09	12:17
72	11:36	11:45	-	-	11:54	11:57	-	-	12:03	12:06	12:12	12:16	12:24	12:32
71	-	-	-	-	-	-	11:57	12:11	12:18	12:21	12:27	12:31	12:39	12:47
72	12:06	12:15	-	-	12:24	12:27	-	-	12:33	12:36	12:42	12:46	12:54	1:02
70	-	-	12:26	12:32	12:39	12:42	-	-	12:48	12:51	12:57	1:01	1:09	1:17
72	12:36	12:45	-	-	12:54	12:57	-	-	1:03	1:06	1:12	1:16	1:24	1:32
71	-	-	-	-	-	-	12:57	1:11	1:18	1:21	1:27	1:31	1:39	1:47
72	1:06	1:15	-	-	1:24	1:27	-	-	1:33	1:36	1:42	1:47	1:56	2:04
70	-	-	1:26	1:32	1:39	1:42	-	-	1:48	1:51	1:57	2:02	2:11	2:19
72	1:36	1:45	-	-	1:54	1:57	-	-	2:03	2:06	2:12	2:17	2:26	2:34
71	-	-	-	-	-	-	1:57	2:11	2:18	2:21	2:27	2:32	2:41	2:49
72	2:06	2:15	-	-	2:24	2:27	-	-	2:33	2:36	2:42	2:47	2:56	3:04
70	-	-	2:26	2:32	2:39	2:42	-	-	2:48	2:51	2:57	3:02	3:11	3:19
72	2:35	2:44	-	-	2:53	2:56	-	-	3:02	3:05	3:11	3:16	3:25	3:33
71	-	-	-	-	-	-	2:54	3:08	3:15	3:18	3:24	3:29	3:38	3:46
72	2:58	3:07	-	-	3:18	3:21	-	-	3:27	3:30	3:37	3:42	3:52	4:00
70	-	-	3:14	3:20	3:29	3:32	-	-	3:38	3:41	3:48	3:53	4:03	4:11
72	-	-	-	-	3:42	3:45	-	-	3:51	3:54	4:00	4:04	4:12	4:20
72	3:25	3:34	-	-	3:45	3:48	-	-	3:54	3:57	4:04	4:09	4:19	4:27
70	-	-	3:41	3:47	3:56	3:59	-	-	4:05	4:08	4:15	4:20	4:30	4:38
71	-	-	-	-	-	-	3:54	4:08	4:15	4:18	4:25	4:30	4:40	4:48
72	-	-	-	-	4:17	4:21	-	-	4:27	4:30	4:37	4:42	4:52	5:00
72	3:57	4:06	-	-	4:19	4:23	-	-	4:29	4:32	4:39	4:44	4:54	5:02
70	-	-	4:13	4:19	4:28	4:31	-	-	4:37	4:40	4:47	4:52	5:02	5:10
72	-	-	-	-	4:45	4:49	-	-	4:55	4:58	5:05	5:10	5:20	5:28
72	4:26	4:35	-	-	4:48	4:52	-	-	4:58	5:01	5:08	5:13	5:23	5:31
70	-	-	4:41	4:47	4:54	4:58	-	-	5:04	5:07	5:14	5:19	5:29	5:37
71	-	-	-	-	-	-	4:57	5:11	5:18	5:21	5:28	5:33	5:43	5:51
70	-	-	5:00	5:06	5:13	5:17	-	-	5:23	5:26	5:33	5:38	5:48	5:56
72	4:57	5:06	-	-	5:19	5:23	-	-	5:29	5:32	5:39	5:44	5:54	6:02
70	-	-	5:18	5:24	5:31	5:35	-	-	5:41	5:44	5:51	5:56	6:06	6:14
72	-	-	-	-	5:44	5:48	-	-	5:54	5:57	6:04	6:09	6:19	6:27
72	5:26	5:35	-	-	5:46	5:50	-	-	5:56	5:59	6:06	6:11	6:21	6:29
70	-	-	5:44	5:50	5:57	6:01	-	-	6:07	6:10	6:17	6:22	6:32	6:40
71	-	-	-	-	-	-	6:02	6:16	6:23	6:26	6:32	6:37	6:46	6:54
72	6:10	6:19	-	-	6:28	6:31	-	-	6:37	6:40	6:46	6:50	6:58	7:06
70	-	-	6:26	6:32	6:39	6:42	-	-	6:48	6:51	6:57	7:01	7:09	7:17
72	6:36	6:45	-	-	6:54	6:57	-	-	7:03	7:06	7:12	7:16	7:24	7:32
71	-	-	-	-	-	-	6:57	7:11	7:18	7:21	7:27	7:31	7:39	7:47
72	7:05	7:14	-	-	7:23	7:26	-	-	7:32	7:35	7:41	7:45	7:53	8:01
70	-	-	7:26	7:32	7:39	7:42	-	-	7:48	7:51	7:57	8:01	8:09	8:17
72	7:36	7:45	-	-	7:54	7:57	-	-	8:03	8:06	8:12	8:16	8:24	8:32
71	-	-	-	-	-	-	8:01	8:15	8:22	8:25	8:31	8:35	8:43	8:51
72	8:15	8:24	-	-	8:33	8:36	-	-	8:42	8:45	8:51	8:55	9:03	9:11
70	-	-	8:44	8:50	8:57	9:00	-	-	9:06	9:09	9:15	9:19	9:27	9:35
71	-	-	-	-	-	-	9:01	9:15	9:22	9:25	9:31	9:35	9:43	9:51
72	9:11	9:20	-	-	9:29	9:32	-	-	9:38	9:41	9:47	9:51	9:59	10:07
71	-	-	-	-	-	-	9:45	9:58	10:04	10:07	10:12	10:16	10:22	10:30
72	-	-	-	-	10:22	10:25	-	-	10:31	10:34	10:39	10:43	10:49	10:57
72	-	-	-	-	10:57	11:00	-	-	11:06	11:09	11:14	11:18	11:24	11:32
72	-	-	-	-	11:45	11:48	-	-	11:54	11:57	12:02	12:06	12:12	12:20

Boldface denotes PM hours.
All service is wheelchair accessib

Buying MetroCard
Buy or refill a regular Pay-Per-Rid

N95 Weekday Schedule

To Melville & Farmingdale State College

N95 TO MELVILLE — WEEKDAY

1 FARMINGDALE LIRR Station	2 FARMINGDALE State College	3 MELVILLE Rte 110/Pinelawn Rd.	4 MELVILLE Pinelawn Rd./Newsday
7:10	7:16	7:27	7:41
8:05	8:11	8:22	8:36
8:44	8:50	9:01	9:15
9:19	9:25	9:35	9:48
10:19	10:25	10:35	10:48
11:19	11:25	11:35	11:48
12:19	**12:25**	**12:35**	**12:48**
1:19	**1:25**	**1:35**	**1:48**
2:05	**2:11**	**-**	**2:17**
2:45	**2:51**	**3:01**	**3:14**
3:40	**3:46**	**3:57**	**4:11**
4:12	**4:18**	**4:29**	**4:43**
5:20	**5:26**	**5:37**	**5:51**
6:50	**6:56**	**7:06**	**7:19**

Boldface denotes PM hours.
All service is wheelchair accessible.

To Farmingdale LIRR

N95 TO FARMINGDALE — WEEKDAY

4 MELVILLE Pinelawn Rd./Newsday	2 FARMINGDALE State College	1 FARMINGDALE LIRR Station
7:41	7:48	7:55
8:36	8:43	8:50
9:15	9:22	9:29
9:48	9:55	10:02
10:48	10:55	11:02
11:48	11:55	12:02
12:48	**12:55**	**1:02**
1:48	**1:55**	**2:02**
2:17	**2:24**	**2:31**
3:16	**3:23**	**3:30**
4:11	**4:18**	**4:25**
4:43	**4:50**	**4:57**
5:51	**5:58**	**6:05**
7:19	**7:26**	**7:33**

Boldface denotes PM hours.
All service is wheelchair accessible.

10/2007

Suffolk County Transit

S1 Amityville RR Halesite - Northbound

All Valid Weekday Trips

Sort Stop		ID	Board	Alight	Trips		Loading Load	Capacity	%
1	AMITYVILLE RAILROAD STATIO	76	166	0.0	37		166	1282	13
2	OAK ST/BROADWAY AVE	77	78	1	37		243	1282	19
3	BROADWAY/STERLING PL	1040	54	2	37		295	1282	23
4	BROADWAY/MILL ST	1039	27	4	37		318	1282	25
5	BROADWAY/LOUDEN AVE	1038	34	6	37		346	1282	27
6	Broadway (NYS110)/Washington	1037	17	6	37		357	1282	28
7	BROADWAY/SMITH ST	1036	18	11	37		364	1282	28
8	BROADWAY/BENTLEY RD	1035	22	3	37		383	1282	30
9	BROADWAY/JEFFERSON AVE	1034	30	23	37		390	1282	30
10	NYS Rte. 110/RITTER AVE	1033	41	27	37		404	1282	32
11	BROADWAY/BREFNI ST	1032	25	17	37		412	1282	32
12	BROAD HOLLOW RD/GREAT N	1031	27	12	37		427	1282	33
13	NYS Rte. 110/ALLEN BLVD	1030	32	24	37		435	1282	34
14	BROAD HOLLOW RD/EXECUTIV	1029	7	21	37		421	1282	33
15	901 BROAD HOLLOW RD	1028	15	33	37		403	1282	31
16	815 BROAD HOLLOW RD	1027	9	16	37		396	1282	31
17	BROAD HOLLOW RD/CONKLIN	1026	38	38	37		396	1282	31
18	BROAD HOLLOW RD/SHERWO	1025	11	18	37		389	1282	30
19	BROAD HOLLOW RD/GAZZA BL	1024	27	36	37		380	1282	30
20	BROAD HOLLOW RD/MILBAR B	1023	7	7	37		380	1282	30
21	SUNY FARMINGDALE (HOTON	313	46	18	37		408	1282	32
22	BROAD HOLLOW RD/SMITH ST	1022	49	12	37		445	1282	35
23	BROAD HOLLOW RD/RULAND	1021	13	20	37		438	1282	34
24	BROAD HOLLOW RD/SPAGNOL	1020	17	19	37		436	1282	34
25	BROAD HOLLOW RD/WALT WHI	1019	11	13	37		434	1282	34
26	BROAD HOLLOW RD/BAYLIS R	1018	9	20	37		423	1282	33
27	HUNTINGTON QUADRANGLE	1017	30	39	37		414	1282	32
28	BROAD HOLLOW RD/MELVILLE	1016	16	11	37		419	1282	33
29	BROAD HOLLOW RD/S SERVIC	1015	7	15	37		411	1282	32
30	BROAD HOLLOW RD/N SERVIC	1014	12	22	37		401	1282	31
31	BROAD HOLLOW RD/PINELAW	1013	20	16	37		405	1282	32
32	BROAD HOLLOW RD/OLD COU	1012	9	14	37		400	1282	31
33	MELLVILLE MALL/WaltWhitman	1011	27	41	37		386	1282	30
34	WALT WHITMAN RD/DAVIS ST	1010	10	6	37		390	1282	30
35	WALT WHITMAN RD/AMITYVILL	1009	10	8	37		392	1282	31
36	WALT WHITMAN RD/LYONS ST	1008	9	7	37		394	1282	31
37	WALT WHITMAN/SCHWAB RD	1007	3	14	37		383	1282	30
38	350 WALT WHITMAN RD	1006	10	11	37		382	1282	30
39	283 WALT WHITMAN RD	1005	4	3	37		383	1282	30
40	WALT WHITMAN MALL	1004	204	107	37		480	1282	37
41	WALT WHITMAN RD/DETROIT P	1003	5	10	37		475	1282	37
42	WALT WHITMAN RD/BOSTON P	1002	15	4	37		486	1282	38
43	NEW YORK AVE/E 20ST ST	1001	22	19	37		489	1282	38
44	NEW YORK AVE/W 18TH ST	1000	12	29	37		472	1282	37
45	NEW YORK AVE/W HILLS RD	999	4	17	37		459	1282	36
46	NEW YORK AVE/W 12TH ST	998	13	27	37		445	1282	35
47	NYS Rte. 110/W 11TH ST	997	34	59	37		420	1282	33
48	NEW YORK AVE/W 9TH ST	996	35	58	37		397	1282	31
49	NEW YORK AVE/DEPOT RD	995	30	53	37		374	1282	29
50	HUNTINGTON RAILROAD STATI	994	55	79	37		350	1282	27
51	NEW YORK AVE/LOWNDES AV	993	20	31	37		339	1282	26
52	BIG H SHOPPING CENTER	992	27	83	37		283	1282	22
53	NEW YORK AVE/JACOBSON ST	991	3	21	37		265	1282	21
54	NEW YORK AVE/GRANDVIEW S	990	0.0	19	37		246	1282	19
55	NEW YORK AVE/HIGHST	989	0.0	30	37		216	1282	17
56	NYS Rte. 110/Main St	988	8	89	37		135	1282	11
57	NEW YORK AVE/UNION PL	987	2	18	37		119	1282	9
58	NEW YORK AVE/PRIME AVE	986	0.0	32	37		87	1282	7
59	NEW YORK AVE/MILL LA	985	0.0	10	37		77	1282	6
60	50 NEW YORK AVE	984	0.0	6	37		71	1282	6
61	NEW YORK AVE/MILL DAM RD	983	0.0	4	37		67	1282	5
62	NEW YORK AVE/KETEWOMOK	982	0.0	22	37		45	1282	4
63	HALESITE FIRE DEPT.	981	0.0	45	37		0	1282	0.0
All 63 Stops			1486	1486					
			27	24					

Suffolk County Transit

S1 Amityville RR Halesite - Southbound

All Valid Weekday Trips

Sort Stop		ID	Board	Alight	Trips		Loading Load	Capacity	%
1	HALESITE FIRE DEPT.	981	8	0.0	38		8	1318	1%
2	NEW YORK AVE/KETEWOMOK	982	25	0.0	38		33	1318	3%
3	NEW YORK AVE/MILL DAM RD	983	15	0.0	38		48	1318	4%
4	NEW YORK AVE/MILL LA	985	26	0.0	38		74	1318	6%
5	NEW YORK AVE/PRIME AVE	986	41	0.0	38		115	1318	9%
6	NEW YORK AVE/UNION PL	987	16	1	38		130	1318	10%
7	NYS Rte. 110/Main St	988	73	2	38		201	1318	15%
8	NEW YORK AVE/HIGHST	989	53	3	38		251	1318	19%
9	NEW YORK AVE/GRANDVIEW S	990	4	2	38		253	1318	19%
10	BIG H SHOPPING CENTER	992	58	25	34		286	1174	24%
11	NEW YORK AVE/LOWNDES AV	993	35	9	38		312	1318	24%
12	HUNTINGTON RAILROAD STATI	994	96	46	38		362	1318	27%
13	NEW YORK AVE/DEPOT RD	995	54	23	38		393	1318	30%
14	NEW YORK AVE/W 9TH ST	996	72	28	38		437	1318	33%
15	NYS Rte. 110/W 11TH ST	997	67	25	38		479	1318	36%
16	NEW YORK AVE/W 12TH ST	998	24	19	38		484	1318	37%
17	NEW YORK AVE/W HILLS RD	999	32	16	38		500	1318	38%
18	NEW YORK AVE/W 18TH ST	1000	7	18	38		489	1318	37%
19	NEW YORK AVE/E 20ST ST	1001	12	17	38		484	1318	37%
20	WALT WHITMAN RD/BOSTON P	1002	6	11	38		479	1318	36%
21	WALT WHITMAN RD/DETROIT P	1003	2	3	38		478	1318	36%
22	WALT WHITMAN MALL	1004	158	208	38		428	1318	32%
23	283 WALT WHITMAN RD	1005	3	6	38		425	1318	32%
24	WALT WHITMAN/SCHWAB RD	1007	1	6	38		420	1318	32%
25	WALT WHITMAN RD/AMITYVILL	1009	1	5	38		416	1318	32%
26	WALT WHITMAN RD/LYONS ST	1008	6	8	38		414	1318	31%
27	WALT WHITMAN RD/DAVIS ST	1010	3	13	38		404	1318	31%
28	MELLVILLE MALL/WaltWhitman	1011	16	28	38		392	1318	30%
29	BROAD HOLLOW RD/OLD COU	1012	11	19	38		384	1318	29%
31	BROAD HOLLOW RD/PINELAW	1013	24	27	38		381	1318	29%
32	BROAD HOLLOW RD/N SERVIC	1014	25	12	38		394	1318	30%
33	BROAD HOLLOW RD/S SERVIC	1015	12	8	38		398	1318	30%
34	BROAD HOLLOW RD/MELVILLE	1016	16	10	38		404	1318	31%
35	HUNTINGTON QUADRANGLE	1017	45	24	38		425	1318	32%
36	BROAD HOLLOW RD/BAYLIS R	1018	20	10	38		435	1318	33%
37	BROAD HOLLOW RD/WALT WHI	1019	20	10	38		445	1318	34%
38	BROAD HOLLOW RD/SPAGNOL	1020	12	13	38		444	1318	34%
39	BROAD HOLLOW RD/RULAND	1021	4	2	38		446	1318	34%
40	SUNY FARMINGDALE (HOTON	313	27	41	38		432	1318	33%
41	BROAD HOLLOW RD/SMITH ST	1022	17	36	38		413	1318	31%
42	BROAD HOLLOW RD/GAZZA BL	1024	13	31	38		395	1318	30%
43	BROAD HOLLOW RD/SHERWO	1025	7	7	38		395	1318	30%
44	1600 BROAD HOLLOW RD	1312	7	11	38		391	1318	30%
45	BROAD HOLLOW RD/CONKLIN	1026	42	51	38		382	1318	29%
46	815 BROAD HOLLOW RD	1027	25	11	38		396	1318	30%
47	901 BROAD HOLLOW RD	1028	10	28	38		378	1318	29%
48	BROAD HOLLOW RD/EXECUTIV	1029	9	14	38		373	1318	28%
49	NYS Rte. 110/ALLEN BLVD	1030	14	28	38		359	1318	27%
50	BROAD HOLLOW RD/GREAT N	1031	6	11	38		354	1318	27%
51	BROADWAY/BREFNI ST	1032	10	25	38		339	1318	26%
52	NYS Rte. 110/RITTER AVE	1033	33	44	39		328	1354	24%
53	BROADWAY/JEFFERSON AVE	1034	19	37	39		310	1354	23%
54	BROADWAY/BENTLEY RD	1035	12	12	39		310	1354	23%
55	BROADWAY/SMITH ST	1036	6	22	39		294	1354	22%
56	Broadway (NYS110)/Washington	1037	1	26	39		269	1354	20%
57	BROADWAY/LOUDEN AVE	1038	1	43	39		227	1354	17%
58	BROADWAY/MILL ST	1039	3	19	39		211	1354	16%
59	BROADWAY/STERLING PL	1040	1	28	39		184	1354	14%
60	OAK ST/BROADWAY AVE	77	1	35	39		150	1354	11%
61	AMITYVILLE RAILROAD STATIO	76	0.0	150	39		0	1354	0%
All 61 Stops			1367	1367					
			23	23					

- VISSIM RESULTS

- EXISTING CONDITION (2009)

Network Performance

Vehicle Class	Number of Vehicles	Total			Avg Speed(mi/h)	Per Vehicle		
		Travel Time(h)	Distance(mi)	Delay(h)		Avg Delay (s)	Avg Number of Stops	Avg Stop Delay (s)
Run 1(1)								
Car (10)	10976	538.14	11577.73	322.49	21.51	105.77	2	66.38
HGV (20)	756	44.62	881.81	25.29	19.76	120.4	3	64.87
Bus (30)	14	1.91	27.72	1.22	14.55	312.85	8	149
Total	11746	584.66	12487.26	348.99	21.36	106.96	3	66.38
Run 2(2)								
Car (10)	11135	535.77	11801.65	315.9	22.03	102.13	2	64.18
HGV (20)	733	41.63	856.1	22.71	20.56	111.51	2	61.24
Bus (30)	14	1.91	28.14	1.24	14.71	318.4	7	151.15
Total	11882	579.31	12685.89	339.85	21.9	102.97	2	64.1
Run 3(3)								
Car (10)	11225	538.01	11841.41	317.42	22.01	101.8	2	64.1
HGV (20)	730	42.26	847.03	23.58	20.04	116.27	2	63.83
Bus (30)	14	1.99	27.77	1.31	13.97	338.05	8	180.67
Total	11969	582.27	12716.22	342.32	21.84	102.96	2	64.22
Run 4(4)								
Car (10)	11217	549.65	11876.88	328.47	21.61	105.42	2	66.76
HGV (20)	727	42.61	845.74	24	19.85	118.85	2	65.32
Bus (30)	14	1.86	27.77	1.23	14.91	315.01	7	145.66
Total	11958	594.12	12750.39	353.69	21.46	106.48	2	66.76
Run 5(5)								
Car (10)	11275	545.79	11974.64	322.76	21.94	103.06	2	65.8
HGV (20)	715	40.4	826.91	22.28	20.47	112.18	2	61.98
Bus (30)	14	1.87	28.19	1.19	15.04	304.88	7	148.17
Total	12004	588.06	12829.74	346.23	21.82	103.83	2	65.67
Run 6(6)								
Car (10)	11090	548.98	11860.8	328.03	21.6	106.49	2	67.65
HGV (20)	732	42.95	863.91	23.95	20.12	117.78	2	63.58
Bus (30)	14	1.96	28.04	1.23	14.33	315.97	8	161.74
Total	11836	593.89	12752.74	353.21	21.47	107.43	2	67.51
Run 7(7)								
Car (10)	11058	532.52	11823.1	312.76	22.2	101.82	2	64.12
HGV (20)	755	43.49	880.45	24.23	20.25	115.52	2	64.29
Bus (30)	14	1.97	27.92	1.27	14.2	325.92	8	160.87
Total	11827	577.97	12731.47	338.25	22.03	102.96	2	64.25
Run 8(8)								
Car (10)	11134	531.41	11701.49	313.49	22.02	101.36	2	65.46
HGV (20)	724	40.9	858.26	22.21	20.98	110.43	2	61.09
Bus (30)	14	1.93	28.01	1.19	14.5	306.55	7	151.62
Total	11872	574.24	12587.76	336.89	21.92	102.16	2	65.29
Run 9(9)								
Car (10)	11097	559.91	11820.31	339.56	21.11	110.16	2	69.32
HGV (20)	732	44.22	879.54	24.73	19.89	121.64	2	63.17
Bus (30)	14	2.29	28.12	1.63	12.3	419.39	9	243.88
Total	11843	606.42	12727.96	365.92	20.99	111.23	2	69.14
Run 10(10)								
Car (10)	11190	587.38	12002.73	363.81	20.43	117.04	3	70.78
HGV (20)	745	47.89	885.86	28.46	18.5	137.52	3	70.61
Bus (30)	14	1.88	27.71	1.16	14.73	297.93	8	134.49
Total	11949	637.15	12916.3	393.42	20.27	118.53	3	70.84

Delay

Intersection	Approach	Movement	From Link	To Link	Run 1 Delay(s)	Run 1 Volume	Run 2 Delay(s)	Run 2 Volume	Run 3 Delay(s)	Run 3 Volume	Run 4 Delay(s)	Run 4 Volume	Run 5 Delay(s)	Run 5 Volume	Run 6 Delay(s)	Run 6 Volume	Run 7 Delay(s)	Run 7 Volume	Run 8 Delay(s)	Run 8 Volume	Run 9 Delay(s)	Run 9 Volume	Run 10 Delay(s)	Run 10 Volume	LOS	Average(s)
Bethpage	NB	U-turn Marke	11	9	52.3	46	58.1	80	53.6	65	54.6	85	58.3	59	57	48	58.5	67	62.5	68	53.8	51	58.1	64	D	56.9
		Left 2	11	5	53.1	406	55.4	422	57.1	385	58.2	429	61.3	433	54.1	462	56.6	418	60	447	64.1	427	59	429	D	57.9
		Through	11	10005	11.3	1350	10.5	1391	11.4	1385	9.3	1398	12.3	1415	11.4	1408	11.3	1405	10.9	1362	11.2	1436	11.5	1410	B	11.1
		Total			21.8	1802	22.5	1893	22.5	1835	22.3	1912	24.8	1907	22.8	1918	23	1890	24.5	1877	24.1	1914	23.8	1903	B	23.2
	EB	Left 2	8	4	63.9	369	66.5	376	61.7	392	59.2	374	58.9	393	65	379	64.1	377	62.2	397	64.1	399	64.2	372	F	62.9
		Right 2	8	10009	64.1	599	64.7	614	62.6	607	69	607	64.6	622	71.9	609	67.6	610	64.8	578	70.9	626	68.7	607	F	66.9
		Total			64	968	65.4	990	62.2	999	65.3	981	62.4	1015	69.3	988	66.3	987	63.7	975	68.3	1025	67	979	F	65.4
	SB	U-turn Marke	2	4	76.4	75	89.5	52	87.4	55	69.7	58	84	70	86.9	61	80.5	67	80.1	64	76.1	62	73.7	52	F	80.3
		Through	2	9	17.9	3092	19.7	3176	17.8	3195	19.7	3172	18.6	3188	19.1	3147	19.7	3179	19.9	3168	18.8	3116	19.6	3235	B	19.1
		Right 2	2	5	17.5	737	16.9	688	17.1	705	16.5	707	15.8	695	18.3	711	17	717	18.2	716	18.4	713	16.9	697	B	17.3
		Total			18.9	3904	20.1	3916	18.6	3955	19.9	3937	19.3	3953	20	3919	20.2	3963	20.6	3948	19.6	3891	19.8	3984	B	19.7
	Total				26.2	6674	27.4	6799	26.1	6789	27.1	6830	27.2	6875	27.9	6825	27.6	6840	27.9	6800	28.2	6830	27.6	6866	**C**	**27.3**
Ruland	NB	U-turn Marke	21	9	48.5	18	64.2	22	68.7	23	69.9	15	62	26	73.7	18	67.2	21	74.9	12	58.4	14	77.8	21	F	66.4
		Through	21	100	13.7	1468	13.4	1479	13.1	1487	13.4	1570	14.4	1524	12.4	1567	13.5	1525	13	1496	14.6	1567	14.5	1566	B	13.6
		Right 1	21	18	2.5	188	3.3	221	2.8	204	3.8	208	3.5	213	3.2	229	3	219	3.4	217	4.4	215	3.4	234	A	3.3
		Total			12.8	1674	12.8	1722	12.6	1714	12.8	1793	13.8	1763	11.8	1814	12.8	1765	12.2	1725	13.7	1796	13.8	1821	B	12.9
	SB	U-turn Marke	17	100	61.8	66	59.9	81	70	86	54	87	54.5	71	55.8	65	65	67	63.9	71	66.6	67	63.6	71	F	61.5
		Left 3	17	18	62.5	246	62.2	275	64.6	279	61.6	301	59.7	294	59	306	58.6	278	61.5	270	55	252	65.2	267	F	61
		Through	17	9	4.7	3219	4.1	3289	5.4	3290	4.2	3268	4.9	3296	4.3	3229	4.4	3267	3.8	3250	4.8	3245	7.3	3355	A	4.8
		Total			9.8	3531	9.7	3645	11.4	3655	10.1	3656	10.3	3661	9.9	3600	9.7	3612	9.3	3591	9.5	3564	12.6	3693	B	10.2
	SWB	Left 1	20	9	62.5	297	69.3	275	68	285	67.7	280	68.5	266	71.4	277	64.9	284	74.2	277	69.1	274	67.7	307	F	68.3
		Right 3	20	100	21	297	16.2	350	20.9	286	18.3	278	19.1	337	20.6	307	20.7	325	20.7	322	15.6	297	20.7	300	B	19.4
		Total			41.8	594	39.6	625	44.4	571	43.1	558	40.9	603	44.7	584	41.3	609	45.4	599	41.3	571	44.5	607	D	42.7
Total					13.9	5799	13.7	5992	14.9	5940	14	6007	14.4	6027	13.9	5998	13.8	5986	13.8	5915	13.8	5931	16.1	6121	**B**	**14.2**
Smith St	NB	U-turn Marke	40	9	49	27	56.1	24	61.3	25	51.9	33	65.8	28	54.3	25	66.5	25	57.3	25	55.3	30	48.3	26	D	56.4
		Left 2	40	10054	56.8	79	58.3	54	58.8	78	54.6	59	58.8	85	60.5	72	55.9	77	51.7	64	67.8	59	61.2	58	D	58.3
		Through	40	100	5.9	1329	6.2	1366	7.2	1344	7.1	1411	6.4	1388	6.3	1435	5	1394	7.3	1362	5.4	1398	8.4	1450	B	6.5
		Right 2	40	10055	1.3	93	1	86	2.3	76	1	87	2.4	101	1.7	106	1.9	115	1.7	98	1.9	103	0.9	87	A	1.6
		Total			9	1528	8.5	1530	10.5	1523	9.5	1590	10	1602	9.1	1638	8.2	1611	9.6	1549	8.4	1590	10.5	1621	B	9.3
	EB	Left 2	33	100	110.4	231	100.4	225	116.4	223	84.6	264	102.4	227	90.5	236	122.6	223	112.3	241	173.8	256	87.7	246	F	110.2
		Through	33	10050	85.7	74	81.9	87	98.3	95	86.8	76	86.1	72	72	63	88.2	48	94	81	140.9	72	83	63	F	92.1
		Right 2	33	31	2.5	137	2.3	153	2.1	157	2.2	137	2.4	158	2.8	158	3.7	154	5.2	136	18.1	134	3.1	122	A	4.3
		Total			72.8	442	64.7	465	75	475	61.3	477	65.3	457	57.6	457	75.6	425	77.3	458	123.5	462	63.1	431	F	73.7
	SB	U-turn Marke	28	100	82.7	35	73.2	40	88.9	45	94.7	36	86.4	35	95.9	26	105	38	87	33	88.9	39	90.6	48	F	89.1
		Left 2	28	10046	95.4	195	84	189	98.3	234	87.3	190	98.8	226	91.5	195	97.2	202	82.3	209	80.4	176	89.3	232	F	90.8
		Through	28	9	24.8	2917	17.3	2955	21	2993	22.9	2973	18.2	2984	21.6	2920	17.5	2993	18.3	2941	21.9	2977	31.3	3054	B	21.5
		Right 2	28	10032	1.5	293	1.4	345	2	292	1.4	331	1.6	302	1.5	358	1.7	293	1.4	320	1.9	274	2.1	312	A	1.6
		Total			27.4	3440	20	3529	25.4	3564	25.1	3530	22.6	3547	24	3499	21.7	3526	21.2	3503	24	3466	33.3	3646	B	24.5
	WB	Left 2	38	9	70.3	412	74.3	402	72.2	451	69	455	69	435	70.6	430	71.9	408	67.6	423	71.1	400	72.9	453	F	70.9
		Through	38	10045	78.4	83	69	99	72.9	75	63.8	76	79.8	78	72.2	78	71.9	76	71.2	87	74.7	82	63.4	73	F	71.8
		Right 2	38	100	1.5	194	1.4	194	2.1	211	1.6	187	1.6	203	2.1	231	1.3	214	1.3	204	1.5	213	1.9	211	A	1.6
		Total			51.9	689	53.2	695	52.2	737	50.9	718	51.1	716	49.4	739	50.3	698	49.1	714	50.2	695	51.6	737	D	51
Total					28.8	6099	24.2	6219	28.7	6299	26.8	6315	25.7	6322	25.5	6333	25.1	6260	25.6	6224	30.3	6213	31.6	6435	**C**	**27.3**
Milbar	NB	U-turn Marke	56	9	86.1	36	79.1	34	85.1	32	88.4	28	78.6	36	86	36	92.7	27	90.3	27	71	20	74	36	F	83.1
		Left 2	56	10079	83.3	137	75.3	145	73.6	155	82.3	155	77.3	135	78.3	152	78	137	73.5	150	83.5	141	75.4	150	F	78
		Through	56	100	21.7	1086	24.3	1108	21.7	1088	22.4	1140	19.5	1165	23.2	1196	23.1	1147	22.5	1114	22.7	1138	20.8	1156	B	22.2
		Right 2	56	10069	2.3	68	1.6	47	1.9	59	1.2	53	2.3	60	2.1	39	1.5	47	1.1	55	1.4	63	1.4	49	A	1.7
		Total			28.8	1327	30.4	1334	28.4	1334	29.7	1376	25.9	1396	30.1	1423	29.3	1358	28.7	1346	28.7	1362	27.4	1391	C	28.7
	EB	Left 2	49	100	75	292	76.2	291	82.2	290	78	305	77.7	266	79.8	294	79.5	308	83.3	290	80.7	315	78.3	329	F	79.1
		Through	49	10077	84.1	76	74.8	81	72.3	87	73.9	75	79.5	79	79.4	86	71.8	67	70.4	76	79	72	74.3	86	F	76
		Right 1	49	52	1.1	220	1.3	209	1.5	212	1.3	229	1.6	219	1.3	228	1.1	213	1.1	214	1.4	228	1.4	193	A	1.3
		Total			48.5	588	49.1	581	51.7	589	48.7	609	48.4	564	50.3	608	50.2	588	51.3	580	51.1	615	53.3	608	D	50.3
	SB	U-turn Marke	45	100	89.7	89	88.6	94	86.9	89	79.5	105	95.8	100	82	87	87.7	107	85.4	92	91.8	97	73.3	79	F	86.3
		Left 2	45	10073	87.9	125	90.6	114	81.6	98	85.7	99	86.1	114	83	98	84.2	99	87	112	86.3	103	93.2	113	F	86.7
		Through	45	9	32.7	2810	30.6	2863	26.2	2873	28	2834	26.7	2856	30.7	2820	28.5	2882	28.2	2796	30.6	2863	34.1	2916	C	29.6
		Right 1	45	10058	7.4	445	7.1	436	6	478	5.8	483	5.2	460	7.1	466	6.2	446	6.3	443	7.8	420	8.8	479	B	6.8
		Total			32.9	3469	31.2	3507	26.5	3538	28.1	3521	27.8	3530	30.3	3471	29	3534	28.8	3443	31.2	3483	33.4	3587	C	29.9
	WB	Left 2	55	9	91.2	251	89.9	255	85.7	251	98.5	288	76.5	283	91.2	288	90.4	279	89.6	265	92.9	283	79.9	234	F	88.7
		Through	55	10071	83.2	208	80.6	218	80.1	206	95.2	201	76.5	189	88.4	203	88.2	215	86.6	202	88.3	206	81.5	208	F	84.9
		Right 2	55	100	60.9	81	66.5	63	55.6	66	78.2	73	55.4	80	70.8	69	81.5	73	78.4	63	74.5	63	63.4	71	F	68.2
		Total			83.6	540	83.4	536	79.7	523	94.7	562	73.4	552	87.7	560	88.4	567	87.1	530	89.1	552	78.3	513	F	84.6
Total					38.2	5924	37.5	5958	34.1	5984	36.7	6068	33.4	6042	37.6	6062	36.7	6047	36.2	5899	38	6012	37.8	6099	**D**	**36.6**
Gazza	NB	Left 2	72	67	72.9	107	61.1	105	63	92	64.3	97	74.1	113	65.6	96	68.7	108	66.9	82	68.4	112	73.4	108	F	68.1
		Through	72	100	15.6	1116	14	1136	15.9	1122	17	1142	17.7	1180	15.2	1212	14.9	1153	15.4	1168	16.4	1181	16.7	1183	B	15.9
		Right 2	72	66	16.4	72	14	50	18.2	55	19.5	59	17.1	62	19.9	49	15.3	56	15.1	65	10.4	60	12.6	65	B	15.8
		Total			20.4	1295	17.8	1291	19.4	1269	20.6	1298	22.4	1355	18.9	1357	19.3	1317	18.6	1315	20.4	1353	21	1356	B	19.9
	EB	Left 2	69	100	67.6	172	76.6	180	71.1	206	71.1	183	72	197	70.2	204	75.4	177	74.9	182	65.7	183	83.2	187	F	72.7
		Through	69	66	74.9	34	60.8	39	63.5	33	55.6	45	68.8	41	48.5	40	61.5	46	59.5	38	64.6	56	58.8	49	F	61.4
		Right 2	69	10094	62.3	258	58.1	255	62.9	246	64.1	228	63.2	219	59.4	252	64.6	252	67.8	253	61.6	247	63.7	265	F	62.7
		Total			65.2	464	65.3	474	66.4	485	66.1	456	67.5	457	63	496	68.3	475	69.9	473	63.5	486	70.5	501	F	66.6
	SB	U-turn Marke	61	100	94.7	58	95.6	58	97.1	55	110.1	64	108	58	101.8	54	100.5	70	101.1	59	102.8	38	103.3	58	F	101.5
		Left 2	61	66	98.8	28	105.7	37	105.7	30	106.9	32	109.7	32	91.2	24	110.4	21	106.8	25	103.8	29	106.8	39	F	104.8
		Through	61	9	7.9	3006	8.7	3063	7.3	3083	8.6	3050	7.9	3067	7.3	3065	8.5	3091	7	2987	8.4	3107	7.9	3066	B	7.9
		Right 1	61	10176	11.6	3	14.3	3	11.8	3	11.8	3	17	4	8.1	3	14.2	5	11.2	3	8.7	3	11.5	3	B	12.3
		Right 2	61	67	9.2	212	9.7	192	8.9	188	10.5	208	10.8	217	9.1	212	10	198	8.4	205	12.2	207	9.6	205	B	9.9
		Total			10.3	3307	11.3	3353	9.7	3359	11.6	3357	10.8	3378	9.5	3358	11.1	3385	9.5	3279	10.5	3384	10.8	3371	B	10.5
	WB	Left 1	65	10087	75.5	114	89.3	142	82.6	138	74.2	115	80.4	133	93.4	122	78.7	105	72.5	127	91.3	136	119.6	131	F	86.2
		Through	65	67	66.6	65	57.9	67	59.5	67	68.5	75	62.5	54	60.2	60	59.7	70	59.3	75	67.7	70	65.9	58	F	62.8
		Right 2	65	100	51.1	64	68.9	62	58.7	59	59.4	68	58.1	61	74.5	61	62.1	55	68.5	56	76.4	49	62.8	52	F	63.7
		Total			66.7	243	76.9	271	71.4	264	68.6	258	71	248	80.5	243	68.9	230	67.8	258	82	255	94.4	241	F	74.8
	NWB	Left 2	10098	10098	71.2	22	71.8	18	72.7	22	65.1	25	70	25	62.4	21	60.5	20	55.8	21	65.1	17	66.6	20	F	66.2
	Total				71.2	22	71.8	18	72.7	22	65.1	25	70	25	62.4	21	60.5	20	55.8	21	65.1	17	66.6	20	F	66.2
Total					20.4	5331	21.1	5407	20.3	5399	21.3	5394	21.4	5463	20	5475	20.7	5427	20.1	5346	21.1	5495	22.6	5489	**C**	**20.9**
Conklins	NB	U-turn Marke	91	90	94.4	7	56.6	14	70.2	18	56.8	12	76.4	12	102.7	5	53.7	11	70	13	80	15	76.3	11	F	70.9
		Left 2	91	77	73.3	133	75.7	155	79.9	142	70.2	152	76.9	162	84.5	146	69.8	161	81.3	141	76	155	74.9	135	F	76.2
		Through	91	73	26.4	1432	23.9	1408	25	1445	27.1	1455	25.4	1500	23.9	1473	26.6	1429	25.6	1435	25.6	1442	26	1505	C	25.6
		Right 1	91	10129	28.2	161	17.9	189	24.9	161	24.6	161	22.7	174	23.6	169	24.2	145	22.1	144	23.1	173	21.2	164	B	23.2
		Total			30.4	1733	28.1	1766	29.9	1766	30.8	1780	30	1848	29	1793	30.6	1746	30.2	1733	30.2	1785	29.5	1815	C	29.9
	EB	Left 2	79	73	128.6	276	113.6	260	110.4	249	129.1	276	139.2	277	150.8	275	103.2	283	131.1	241	130.9	281	138.6	273	F	127.7
		Through	79	85	119.3	373	116.2	345	106.4	350	140.6	348	135.9	337	152.7	312	97.3	308	137.8	345	126.8	330	139.9	348	F	127.3
		Right 2	79	10131	31.1	207	25.1	220	24	238	37.3	213	39.3	227	59.4	169	15.9	226	42	220	37.9	202	44.5	194	C	34.8
		Total			101	856	91.1	825	84.2	837	110.5	837	110.9	841	131.2	756	76.8	817	109.6	806	106.1	813	116.8	815	F	103.6
	SB	U-turn Marke	84	73	94.3	4	100.4	7	84.9	5	63.6	8	52.5	2	55.1	2	86.4	2	82.7	7	77.8	5	111.2	2	F	81.6
		Left 2	84	85	87.7	255	79.8	215	83.6	245	84.2	255	80.1	255	87.5	251	90.4	279	85.3	226	84.9	254	83.3	230	F	84.8
		Through	84	90	18.5	2638	20.8	2757	20.4	2698	20	2663	21.6	2691	21.2	2665	20.7	2673	19.2	2666	20.5	2697	22.6	2737	B	20.5
		Right 2	84	77	21.1	427	22	455	23.8	467	19.5	460	21.2	451	20.5	444	21.3	458	19.5	428	21.8	446	20.5	447	B	21.1
		Total			24.2	3324	24.8	3434	25.5	3415	24.9	3386	26	3399	26.1	3362	26.5	3412	23.9	3327	25.6	3402	26.5	3416	C	25.4
	WB	Left 2	88	10132	98	31	95	24	90.9	24	91.9	21	105.7	32	93.6	19	85.8	16	101.4	23	100.4	23	100.3	36	F	97.2
		Through	88	77	77.8	258	89.6	248	88.2	271	85.9	228	88.4	235	71.5	257	72.9	245	82.6	246	82.2	242	84.8	226	F	82.3
		Total			80	289	90.1	272	88.4	295	86.4	249	90.5	267	73	276	73.7	261	84.2	269	83.8	265	86.9	262	F	83.7
Total					39.1	6202	37.2	6297	37.5	6313	40.5	6252	41.1	6355	41.9	6187	36.2	6236	39.6	6135	39.8	6265	41.5	6308	**D**	**39.4**
NETWORK TOTAL					28	36029	27	36672	27.1	36724	27.9	36866	27.4	37084	28	36880	26.9	36796	27.4	36319	28.8	36746	29.7	37318	**C**	**27.8**

Queue Lengths

Intersection	Approach	Movement	From Link	Storage	95% Queues per Run 1	2	3	4	5	6	7	8	9	10	Max	95%	Median	Average	Standard Deviation
					100	107	114	121	128	135	142	149	156	163					
Bethpage	NB	U-turn Marke	11	0	175.8	210	189.6	198.5	210.2	198.4	191.4	217.9	215.4	214.2	395.3	202.3	57.1	71.6	68.3
		Left 2	11	0	175.8	210	189.6	198.5	210.2	198.4	191.4	217.9	215.4	214.2	395.3	202.3	57.1	71.6	68.3
		Through	100	0	128	128.5	142	122.8	145.9	133.8	147.2	128	136.6	145	337.8	132.5	0	22.1	47
	EB	Left 2	8	0	193.2	215.5	184.3	179.1	175.1	182.6	192.1	208.8	188.9	184.3	413.3	188	62.4	73.4	66.3
		Right 2	6	0	254.3	257.3	254	267.7	260	288.7	296	244.8	310.3	280.8	431.7	274.6	103.5	112.2	91.5
	SB	U-turn Marke	2	0	83.1	102	61.3	65.6	99.9	81.5	80	101.6	82.1	68.3	170.7	82.1	17.2	22	28.4
		Through	1	0	384.9	424.5	414.5	451	407.5	385.6	448.8	453.3	400.5	439.8	777.3	423.3	0	106.7	150.5
		Right 2	3	0	276.2	248.3	266.9	236	213.8	259.5	247.4	255.4	274.2	258.3	527	254.2	0	52.5	89.5
Ruland	NB	U-turn Marke	21	0	22	21.4	37	22.8	42	21.8	23.5	22.3	22.5	22.2	108.5	22.6	0	5.3	11.5
		Through	100	0	137	141.2	131.8	155.1	152.9	132.2	138.9	133.9	154.6	145.9	248.2	138.2	0	32.7	51
		Right 1	22	0	0	0	0	0	0	0	0	0	0	0	92.6	0	0	0.8	5.3
	SB	U-turn Marke	17	0	150.3	151.9	181.4	167.6	150.7	162.9	143.4	145	125.7	167.4	242.8	152.8	43.3	58	53.3
		Left 3	17	0	150.3	151.9	181.4	167.6	150.7	162.9	143.4	145	125.7	167.4	242.8	152.8	43.3	58	53.3
		Through	14	0	87.1	81.6	100.9	78.6	85	84.8	82.2	65.4	93	108	509.6	85.5	0	11.7	33.8
	SWB	Left 1	20	0	220.6	253.7	235.7	234.2	221.1	236.3	231.1	249.4	249	290.1	429.8	239.8	78.8	89.3	79.1
		Right 3	20	0	214.5	247.6	229.6	228.1	215	230.2	224.9	243.3	242.9	284	423.7	233.6	72.7	83.4	78.7
Smith St	NB	U-turn Marke	40	0	102.8	105.4	107	85.5	123.5	108.8	125	103.9	89.9	84.6	232.2	106.2	0	25	37.7
		Left 2	40	0	102.8	105.4	107	85.5	123.5	108.8	125	103.9	89.9	84.6	232.2	106.2	0	25	37.7
		Through	100	0	83.1	86.5	105	104.2	87.6	83	72.5	91.1	80	108.5	271.8	87.5	0	14.4	31.8
		Right 2	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB	Left 2	34	0	181.8	189.8	194.2	175.1	172.6	151.4	215.4	214.3	563	151.3	618.9	202.4	42.6	67.7	78.3
		Through	34	0	154.8	153.1	173.3	146.3	123.1	130.8	186.1	174.9	563	124.3	618.9	173.3	19.1	45.3	72.6
		Right 2	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	28	0	142.4	143.3	157.6	142.9	165.3	149.7	158	131.6	141.3	175.8	272.1	150.3	58.9	61.3	50.5
		Left 2	28	0	142.4	143.3	157.6	142.9	165.3	149.7	158	131.6	141.3	175.8	272.1	150.3	58.9	61.3	50.5
		Through	9	0	455.9	313.9	488.2	418.4	302.6	381.8	342.8	353.4	507.5	1150.4	1673.3	468.2	0	118	193.3
		Right 2	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	Left 2	38	0	253.8	236.9	273.4	274.7	234.6	250.6	216.6	257.9	226.4	262.6	539.1	251.8	62.9	86	85.8
		Through	38	0	190.4	205.5	229.9	197.6	208.5	195.6	197.9	206.5	209.8	196.1	440.7	206	43	68.4	70.2
		Right 2	120	0	0	0	0	0	0	0	0	0	0	0	43.8	0	0	0	0.5
Milbar	NB	U-turn Marke	56	0	104.5	85.2	84.9	87.7	87.2	101.1	82.7	100.5	84.6	87.3	178.6	87.2	38.7	36.5	30.4
		Left 2	56	0	104.5	85.2	84.9	87.7	87.2	101.1	82.7	100.5	84.6	87.3	178.6	87.2	38.7	36.5	30.4
		Through	100	0	153.4	177.7	166.9	165.5	170.3	189.1	172.3	175	177.5	169.8	306.4	172.1	0	39.2	61.8
		Right 2	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB	Left 2	49	0	152.8	153	164.6	171.1	148.5	152.7	163.7	170.4	156.7	190.4	367	165.5	41.4	56.2	54.7
		Through	51	0	130	130.9	134.4	153	123.3	126.7	128.8	132.1	132.1	154	367	130.6	18.8	36.7	46.5
		Right 1	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	45	0	269.9	226.1	193.6	242.2	237.4	210.5	236.6	211.3	252.5	212.9	397.5	232.4	63.7	81.2	77.8
		Left 2	45	0	269.9	226.1	193.6	242.2	237.4	210.5	236.6	211.3	252.5	212.9	397.5	232.4	63.6	81.2	77.8
		Through	9	0	1287.4	580.1	490.8	441.9	432	711.3	496.1	442.8	682.8	578.3	1543.5	588.5	63.4	164.9	230.3
		Right 1	10058	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	Left 2	55	0	412.1	381	321.3	414	385	415.1	419.3	410.2	415.1	357.8	443.3	410.5	97.8	129.1	126.4
		Through	54	0	413.6	330.1	350.7	402.4	356.5	387.9	412.9	404.9	408.5	350.9	441.4	402.4	86.4	117.8	117.6
		Right 2	10072	0	357.1	252.2	275.7	332.1	270	316.3	396.7	357.2	297.2	291	530.2	315.9	0	58	102.9
Gazza	NB	Left 2	72	0	133.5	118.9	128.3	129.7	157.2	116.7	152.4	107.5	131.1	155.1	261.9	133.5	23.9	39.6	45.9
		Through	100	0	133.2	127.6	133.6	149.8	153.7	132.3	129.8	138.6	155.2	148.8	309.7	135.2	0	29.1	49.5
		Right 2	71	0	38.8	19.6	20.8	38.3	18.9	19.5	19.9	20.7	18.8	20.2	89	20.5	0	3.4	10.1
	EB	Left 2	69	0	211.9	235	260.2	225.5	270	275.5	240.9	268.7	218.2	278.9	293.9	255.4	40.8	64	75
		Through	70	0	277.6	259.1	270.3	263.8	278.7	275.6	272.4	275.6	275.2	280.2	304.5	275.2	63.6	93.3	92.1
		Right 2	70	0	277.6	259.1	270.3	263.8	278.7	275.6	272.4	275.6	275.2	280.2	304.5	275.2	63.6	93.3	92.1
	SB	U-turn Marke	61	0	143.5	143.9	109.7	163.4	126.3	125.3	131.6	150.9	100.7	121.4	226.9	129.7	37.1	41.8	43.4
		Left 2	61	0	143.5	143.9	109.7	163.4	126.3	125.3	131.6	150.9	100.7	121.4	226.9	129.7	37.1	41.8	43.4
		Through	9	0	143.2	175.6	126.7	151.7	136.3	121.6	146.6	100.4	150	141.8	674	142	0	27.3	56.5
		Right 1	9	0	143.2	175.6	126.7	151.7	136.3	121.6	146.6	100.4	150	141.8	674	142	0	27.3	56.5
		Right 2	62	0	19.1	36.6	18.4	37.5	39.9	19.6	20.3	17.5	41.2	18.5	151.6	20.3	0	3.7	12.2
	WB	Left 1	65	0	107.1	172.4	150	105.7	154.9	167.2	111.3	119.4	255.7	239.8	322.3	163.7	38.6	48.1	56.7
		Through	64	0	125.3	128.2	106.5	133.3	106.6	146.9	120.7	123.3	120.6	66.7	324.4	125.3	19.5	34.8	46
		Right 2	64	0	125.3	128.2	106.5	133.3	106.6	146.9	120.7	123.3	120.6	66.7	324.4	125.3	19.5	34.8	46
	NWB	Left 2	10098	0	133.6	119	128.4	129.8	157.3	116.8	152.5	107.6	131.2	155.2	262	133.6	24	39.7	46
Conklins	NB	U-turn Marke	91	0	130.1	152.5	150.8	173	173.4	147.8	132.7	147.7	157.2	146.8	304.1	152.1	41.2	53.2	51.6
		Left 2	91	0	130.1	152.5	150.8	173	173.4	147.8	132.7	147.7	157.2	146.8	304.1	152.1	41.2	53.2	51.6
		Through	73	0	211	205.3	208	215.6	216.6	200.7	216.9	216.3	208.1	218.8	374	211.1	0	54.7	74.5
		Right 1	92	0	89.2	63.7	81.8	79.9	81.5	80.3	65	63.5	83.2	69.3	219.3	80	0	14.7	28.7
	EB	Left 2	79	0	493.1	493.5	489.3	497	500	500.5	485.6	497.3	495.9	498.9	515.9	496.8	105.1	179.4	179.3
		Through	82	0	487	488.6	485.1	494.7	493.4	496.8	480.6	493	489.3	492.9	507.4	492.1	101.4	176.1	178.5
		Right 2	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	84	0	280.7	233.8	286	318.3	294.3	313.2	319.7	296.6	277.3	261.4	563	290.5	84.2	103.5	99.4
		Left 2	84	0	280.7	233.8	286	318.3	294.3	313.2	319.7	296.6	277.3	261.4	563	290.5	84.2	103.5	99.4
		Through	10132	0	238.9	296.5	259.6	266.1	289.4	290.3	260.1	258.6	263.6	308.5	675.2	274.1	0	44.8	96
		Right 2	83	0	235	202.5	223	170.9	184.5	177.9	180.3	177.6	167.9	200.7	431.4	190.4	0	42.2	68.5
	WB	Left 2	88	0	211.3	354.5	313.8	364.6	305.6	196.2	260	306.1	264.1	281.5	510.4	288.1	82.9	99.2	95.2
		Through	86	0	145.7	149.8	149.6	129.8	109.5	109.1	124	161.4	146.8	123.4	506.5	132.3	44.1	55.9	50.2

Travel Times

Name	TravelTime Section	Distance(ft)	Run																				Travel Time
			1		2		3		4		5		6		7		8		9		10		
			Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	**Average(s)**
RT110 NB	1	10555.7	253	346	252.2	367	254.8	372	252.7	347	252.2	374	248.5	400	253.6	353	251.3	369	252.6	383	254.4	390	252.5
RT110 SB	2	10555.6	288.7	1177	281.9	1201	276.9	1217	278.5	1104	274.9	1182	284.9	1118	276.5	1199	268.3	1195	293.8	1204	317.6	1189	284.2

Travel Time Delay

Name	TravelTime Section	From Link	To Link	Run																				Travel Time
				1		2		3		4		5		6		7		8		9		10		
				Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Average(s)
RT110 SB	2	90	1	151.7	1177	144.5	1201	139.9	1217	141.2	1104	138.7	1182	148.1	1118	140.4	1199	131.8	1195	156.3	1204	180.5	1189	147.3
RT110 NB	1	4	0	117.3	346	117.8	367	119.6	372	118.5	347	116.9	374	113.4	400	119.3	353	116.1	369	118.4	383	118.6	390	117.5

- NO-BUILD CONDITION (2015)

Network Performance

Vehicle Class	Number of Vehicles	Total			Avg Speed(mi/h)	Per Vehicle		
		Travel Time(h)	Distance(mi)	Delay(h)		Avg Delay (s)	Avg Number of Stops	Avg Stop Delay (s)
Run 1(1)								
Car (10)	11095	548.96	11668.95	331.66	21.26	107.61	2	67.35
HGV (20)	763	47.07	930.12	26.59	19.76	125.43	2	67.46
Bus (30)	14	2.01	27.7	1.3	13.76	335	8	161.58
Total	11872	598.05	12626.77	359.54	21.11	109.03	2	67.47
Run 2(2)								
Car (10)	11236	548.62	11903.76	326.82	21.7	104.71	2	66.44
HGV (20)	745	43.44	877.72	24.02	20.2	116.05	2	62.84
Bus (30)	14	2.11	28.11	1.43	13.32	367	8	186.99
Total	11995	594.17	12809.59	352.26	21.56	105.72	2	66.35
Run 3(3)								
Car (10)	11342	562.06	11993.52	338.7	21.34	107.51	2	66.27
HGV (20)	741	42.82	834.47	24.42	19.49	118.63	2	63.59
Bus (30)	14	2.01	27.73	1.32	13.81	340.4	8	163.24
Total	12097	606.88	12855.72	364.44	21.18	108.46	2	66.22
Run 4(4)								
Car (10)	11329	570.56	11957.32	347.83	20.96	110.53	2	69.53
HGV (20)	733	44.87	858.86	26.09	19.14	128.14	2	69.68
Bus (30)	14	2	27.73	1.35	13.88	347.55	7	167.09
Total	12076	617.43	12843.9	375.27	20.8	111.87	2	69.65
Run 5(5)								
Car (10)	11374	571.32	12071.89	346.46	21.13	109.66	2	68.8
HGV (20)	723	42.06	826.47	23.83	19.65	118.68	2	64.06
Bus (30)	14	2.11	28.16	1.41	13.36	361.41	8	189.29
Total	12111	615.49	12926.52	371.7	21	110.49	2	68.66
Run 6(6)								
Car (10)	11179	556.87	11955.37	334.45	21.47	107.7	2	68.24
HGV (20)	742	44.29	876.08	25.06	19.78	121.59	2	65.71
Bus (30)	14	2.05	28.1	1.3	13.72	334.48	7	176.71
Total	11935	603.21	12859.56	360.81	21.32	108.83	2	68.21
Run 7(7)								
Car (10)	11192	552.93	11947.32	330.73	21.61	106.38	2	66.5
HGV (20)	761	45.5	909.25	25.62	19.98	121.18	2	66.07
Bus (30)	14	2	27.97	1.3	13.96	333.57	8	164.69
Total	11967	600.44	12884.55	357.64	21.46	107.59	2	66.59
Run 8(8)								
Car (10)	11247	544.1	11841.08	323.48	21.76	103.54	2	65.67
HGV (20)	728	41.42	842.68	23.03	20.35	113.87	2	62.43
Bus (30)	14	2.04	28.05	1.29	13.78	332.99	7	178.62
Total	11989	587.56	12711.81	347.8	21.63	104.44	2	65.6
Run 9(9)								
Car (10)	11211	565.19	11973.46	341.94	21.18	109.8	2	69.22
HGV (20)	741	45.09	892.16	25.42	19.79	123.49	2	66.08
Bus (30)	14	2.16	28.16	1.5	13.02	385.64	8	215.16
Total	11966	612.44	12893.78	368.85	21.05	110.97	2	69.2
Run 10(10)								
Car (10)	11305	647.65	12084.13	422.71	18.66	134.61	4	78.28
HGV (20)	757	54.29	887.26	34.87	16.34	165.82	5	81.12
Bus (30)	14	1.96	27.69	1.23	14.13	315.36	9	133.75
Total	12076	703.9	12999.08	458.8	18.47	136.77	4	78.53

Delay

Intersection	Approach	Movement	From Link	To Link	Run 1 Delay(s)	Run 1 Volume	Run 2 Delay(s)	Run 2 Volume	Run 3 Delay(s)	Run 3 Volume	Run 4 Delay(s)	Run 4 Volume	Run 5 Delay(s)	Run 5 Volume	Run 6 Delay(s)	Run 6 Volume	Run 7 Delay(s)	Run 7 Volume	Run 8 Delay(s)	Run 8 Volume	Run 9 Delay(s)	Run 9 Volume	Run 10 Delay(s)	Run 10 Volume	LOS	Average(s)
Bethpage	NB	U-turn Marke	11	9	51.3	47	67.9	80	59.1	67	58.6	86	62.8	59	55.5	49	59.4	66	57.4	68	64.6	51	50.1	66		59
		Left 2	11	5	55.4	412	60.6	429	57.5	387	56.9	434	57.2	437	50.8	463	57.6	425	53.6	449	61	430	55.1	430		56.5
		Through	11	10005	11.6	1364	10.8	1396	11.9	1407	11.3	1409	11.9	1432	12.6	1420	11.5	1432	10.8	1377	10.9	1451	11.6	1434		11.5
		Total			22.5	1823	24.4	1905	23.1	1861	23.7	1929	23.7	1928	22.8	1932	23.3	1923	22.6	1894	23.5	1932	22.6	1930		**23.2**
	EB	Left 2	8	4	63.4	373	66.5	379	60.8	396	60.3	382	58.8	396	64.5	381	64.4	380	61.6	400	63.7	401	63.5	376		62.7
		Right 2	8	10009	64	607	64.1	622	61.9	615	69.3	614	63.4	630	73.5	619	67	616	64	584	70	634	68.8	616		66.6
		Total			63.8	980	65	1001	61.5	1011	65.8	996	61.6	1026	70.1	1000	66	996	63	984	67.6	1035	66.8	992		**65.1**
	SB	U-turn Marke	2	4	81.9	76	79.8	52	76.2	55	83.8	58	69.6	70	86	62	72.1	68	78	65	78.3	62	90.3	52		79.3
		Through	2	9	18.8	3126	19.7	3205	19.3	3235	20.3	3183	19.5	3201	20.1	3187	19.7	3212	21.1	3202	18.5	3154	21.3	3273		19.8
		Right 2	2	5	17.7	746	16.4	695	16.3	707	18.4	714	17.9	704	17.2	719	16.7	727	17.6	728	17.9	719	18.4	701		17.4
		Total			19.8	3948	19.9	3952	19.6	3997	20.9	3955	20.1	3975	20.6	3968	20	4007	21.4	3995	19.3	3935	21.7	4026		**20.3**
	Total				26.9	6751	27.7	6858	26.7	6869	28.2	6880	27.2	6929	28.4	6900	27.5	6926	27.7	6873	27.7	6902	28.4	6948	C	**27.7**
Ruland	NB	U-turn Marke	21	9	66.8	18	61.6	23	73.7	24	65.8	15	68.4	26	62.6	18	67.8	21	60	12	61.5	14	65.8	21		66
		Through	21	100	13.6	1491	14.4	1506	12	1500	15.1	1589	15	1537	12.3	1572	12.9	1545	14.6	1516	12.8	1581	14.9	1588		13.8
		Right 1	21	18	2.7	190	4.1	227	2.4	207	4.1	210	4.8	214	4.2	234	3.5	221	3.6	220	4.6	216	3.9	235		3.8
		Total			12.9	1699	13.7	1756	11.7	1731	14.2	1814	14.6	1777	11.8	1824	12.4	1787	13.5	1748	12.2	1811	14.1	1844		**13.1**
	SB	U-turn Marke	17	100	65.4	66	68.1	80	67.7	86	56.6	89	69.4	71	59.4	67	55.7	67	60.5	73	53.9	69	75.2	75		63.3
		Left 3	17	18	68.6	251	62.4	279	65.7	282	62.6	306	68.6	296	61.5	307	63.3	280	56.1	271	63.1	258	72	268		64.3
		Through	17	9	4.5	3250	4.2	3319	5.2	3331	4.5	3286	5	3321	4.6	3264	5.3	3314	3.6	3295	4.7	3278	18.6	3398		6.1
		Total			10.1	3567	10	3678	11.3	3699	10.6	3681	11.3	3688	10.4	3638	10.7	3661	8.7	3639	9.8	3605	23.6	3741		**11.7**
	SWB	Left 1	20	9	63.3	299	69.6	279	65.9	283	66.2	287	72.3	270	68.3	289	68.2	286	69.7	281	62.7	281	77.2	307		68.4
		Right 3	20	100	17.8	299	16.8	349	23.5	288	17.7	282	19.9	338	16.5	309	20	329	20.1	328	16.9	299	26.1	301		19.5
		Total			40.6	598	40.3	628	44.5	571	42.2	569	43.2	608	41.5	598	42.4	615	43	609	39.1	580	51.9	608		**42.9**
	Total				14	5864	14.2	6062	14.6	6001	14.6	6064	15.5	6073	13.9	6060	14.4	6063	13.6	5996	13.4	5996	23.5	6193	B	**15.2**
Smith St	NB	U-turn Marke	40	9	41	28	56.7	24	57.2	25	54.4	34	62.1	27	53.4	25	57	25	63.3	25	66.5	29	64.4	25		57.5
		Left 2	40	10054	56.9	80	62.1	55	62.3	79	58.7	61	63.1	86	53.4	73	57.5	78	49.1	66	62.6	59	55.1	60		58.1
		Through	40	100	6.9	1354	5.6	1403	7.8	1367	7.3	1418	6.7	1395	5.5	1438	6	1412	6.3	1375	5.1	1422	9.1	1462		6.7
		Right 2	40	10055	2.5	95	1.4	85	1.6	79	1.9	87	1.2	99	1.2	106	2.1	117	1.4	99	1.1	104	3.2	89		1.7
		Total			9.8	1557	8.1	1567	11.1	1550	10	1600	10.3	1607	8.1	1642	9	1632	8.7	1565	8	1614	11.3	1636		**9.5**
	EB	Left 2	33	100	98.3	231	114.9	225	94.8	230	81.2	272	92	230	107.3	238	126.3	228	109.3	244	156.5	254	92.9	247		107.3
		Through	33	10050	82.5	75	80.2	86	81.8	96	78.1	82	75.2	72	93.5	63	96.4	48	90.8	82	134.9	72	74.1	65		88
		Right 2	33	31	2.6	139	4	155	2.6	161	4.2	139	2.9	159	3.1	162	5.1	157	2.6	137	17.7	134	3.2	122		4.7
		Total			65.7	445	71.6	466	61.8	487	59	493	58.6	461	69	463	79	433	74.5	463	112.7	460	64.9	434		**71.5**
	SB	U-turn Marke	28	100	93	37	87.5	41	84.7	45	96.5	37	89.6	38	97.6	26	108.2	40	83.9	33	109	38	88.9	48		93.6
		Left 2	28	10046	94.2	204	86.3	197	86.2	236	88.4	190	95.3	231	92.4	197	95.9	205	77.5	214	92.9	179	89.6	233		89.8
		Through	28	9	21.6	2987	16.9	2996	24.8	3025	25.4	2973	21.1	3001	22.1	2959	18.6	3037	18.7	2958	21.5	3055	42.7	3075		23.4
		Right 2	28	10032	1.4	295	1.4	349	1.8	295	1.5	337	1.4	306	1.6	365	1.5	295	1.6	323	1.6	276	2.4	316		1.6
		Total			24.9	3523	20	3583	27.7	3601	27.3	3537	24.9	3576	24.4	3547	22.6	3577	21.3	3528	24.5	3548	42.8	3672		**26.1**
	WB	Left 2	38	9	75.2	417	73.9	402	70	456	69.8	462	68.5	440	68.3	436	71.3	415	69.2	430	72.1	402	75.7	455		71.4
		Through	38	10045	71	84	67.8	99	65.1	75	65	77	82	78	77	78	72.5	77	80	87	75.5	83	68	74		72.4
		Right 2	38	100	1.2	197	1.4	197	2.1	211	1.6	189	2.2	207	1.7	233	1.5	217	1.4	206	1.7	214	1.7	213		1.7
		Total			53.8	698	52.6	698	50.2	742	51.6	728	51	725	48.4	747	50.1	709	51.2	723	51	699	53.7	742		**51.3**
	Total				27.3	6223	24.5	6314	28.9	6380	28.2	6358	26.6	6369	26.2	6399	26	6351	25.5	6279	29.6	6321	37.6	6484	C	**28.1**
Milbar	NB	U-turn Marke	56	9	98.6	34	80.1	31	77.5	32	75.9	28	76.6	37	70.3	36	74.5	28	88.1	25	69.4	21	72.3	36		78.4
		Left 2	56	10079	92.4	140	87.2	146	76.5	155	80.9	157	82.5	137	76.5	153	83.4	136	76.9	154	75.8	144	83.3	151		81.4
		Through	56	100	22.4	1100	23.5	1127	20.9	1102	23	1134	23	1175	23.3	1199	23	1159	22.2	1133	22.7	1146	22.4	1168		22.7
		Right 2	56	10069	0.9	68	1.4	49	1.7	57	1.7	53	2	59	1.7	39	1.6	49	1	55	1.9	62	2.7	50		1.7
		Total			30.5	1342	30.9	1353	27.8	1346	29.9	1372	29.3	1408	29.6	1427	29.3	1372	28.7	1367	28	1373	29.5	1405		**29.4**
	EB	Left 2	49	100	82.1	295	73.2	295	83.1	300	82.5	309	77.7	272	80.3	294	78.2	313	84.1	295	79.5	316	83.9	331		80.5
		Through	49	10077	74.9	77	81.8	83	70.4	87	71	76	74.9	80	74.1	86	68.4	67	76.8	77	69.9	72	66.6	86		73
		Right 1	49	52	1.7	221	1.3	210	1.4	214	1.4	233	1.5	223	1.5	231	1.7	215	1	216	1.6	234	1.5	197		1.5
		Total			51.2	593	48.7	588	52.2	601	50.5	618	47.8	575	49.6	611	49.5	595	52.6	588	49.1	622	55	614		**50.6**
	SB	U-turn Marke	45	100	83.8	91	89.2	94	92.5	91	85	106	89.4	100	94	87	77.7	109	81.8	93	87	101	84.9	78		86.4
		Left 2	45	10073	92.1	127	83.9	115	80.3	99	77.5	102	82.7	116	88.4	104	87.7	99	82.8	113	82.7	105	77.1	115		83.6
		Through	45	9	33.8	2832	28.1	2884	29.1	2917	32.2	2837	34.4	2867	29.3	2837	31.1	2929	28.5	2804	29.5	2913	39.1	2891		31.5
		Right 1	45	10058	7.3	449	5.5	438	6.2	484	7	484	6.6	460	5.8	473	6.2	449	7	444	6.3	426	9.8	478		6.8
		Total			33.8	3499	28.7	3531	29	3591	31.6	3529	33.9	3543	29.5	3501	31	3586	28.9	3454	29.9	3545	37.4	3562		**31.4**
	WB	Left 2	55	9	91	252	95.3	256	84	254	106.2	291	75.8	288	99	292	116.1	282	92.4	269	90.9	286	79.7	234		93.4
		Through	55	10071	89	210	89.5	219	77.1	207	106.9	205	77.9	192	92.2	206	112.9	220	97.3	204	81	208	80.9	209		90.6
		Right 2	55	100	67.4	82	75.6	63	58.4	66	84.8	74	55.1	80	74	70	93	73	80.9	63	51.4	65	78.3	71		71.8
		Total			86.7	544	90.6	538	78.1	527	103.7	570	73.6	560	93.5	568	111.9	575	92.9	536	82.6	559	80	514		**89.6**
	Total				39.6	5978	36.7	6010	35.3	6065	39.9	6089	37.8	6086	37.5	6107	40	6128	37	5945	36.3	6099	40.9	6095	D	**38.1**
Gazza	NB	Left 2	72	67	73.5	107	69.3	106	64.2	98	65.5	100	75.3	114	69	96	67.7	110	62.9	82	72.2	117	80.6	108		70.4
		Through	72	100	16.4	1132	15.8	1151	16.7	1125	16.9	1150	16.1	1183	16	1212	15.2	1165	16.3	1179	15.4	1192	16.4	1200		16.1
		Right 2	72	66	10.6	73	17.5	50	9.3	55	13.1	60	17.7	62	14.8	49	17	56	17	65	15.9	60	12.8	65		14.5
		Total			20.7	1312	20.2	1307	20	1278	20.4	1310	21.1	1359	19.7	1357	19.6	1331	19.2	1326	20.3	1369	21.3	1373		**20.3**
	EB	Left 2	69	100	71.3	174	71.3	182	69.2	210	77.9	184	70.2	198	72.2	206	75.2	178	80.8	184	68.1	184	82.7	189		73.8
		Through	69	66	65.1	34	64.1	39	58.7	33	55.8	46	74.3	42	60.3	40	60.4	47	53.6	38	56.6	57	54.8	49		60.1
		Right 2	69	10094	62.7	261	62.2	258	63.9	247	65.9	229	68.5	222	62	255	61.5	254	68	259	64.7	249	67.7	266		64.7
		Total			66.1	469	65.8	479	65.8	490	69.7	459	69.8	462	66.1	501	66.5	479	71.8	481	65	490	72.1	504		**67.8**
	SB	U-turn Marke	61	100	99.6	61	102.3	60	106.2	56	110.1	67	98.5	58	104.7	55	103.6	70	106.8	59	105.8	38	91.5	59		102.9
		Left 2	61	66	107.8	29	101.1	37	110.3	30	102.5	33	104.1	33	106.8	26	107.2	21	100	26	101.3	28	99.6	39		103.8
		Through	61	9	7.4	3025	7.7	3086	8.1	3123	8.8	3062	9	3086	8.2	3089	8.8	3122	8.5	3007	9.4	3158	8.1	3043		8.4
		Right 1	61	10176	9.4	4	10	3	21.3	3	10	3	16.2	4	29.4	3	9.6	4	14.6	3	16.1	3	11.8	3		14.6
		Right 2	61	67	11	213	11.7	190	10.8	194	9.4	214	10.8	222	9.4	215	12.4	201	10.7	205	12.2	209	11.5	204		11
		Total			10.2	3332	10.6	3376	10.8	3406	11.8	3379	11.6	3403	10.6	3388	11.6	3418	11.1	3300	11.4	3436	10.8	3348		**11.1**
	WB	Left 1	65	10087	80.9	115	114.1	145	88.3	138	82.2	115	81.9	134	99.5	122	81.1	107	75.5	129	148.9	139	119.4	134		98.4
		Through	65	67	65.8	66	63.9	69	64.5	67	68.5	75	61.3	55	60.4	61	57.9	71	56.7	76	78.5	70	62.6	59		64.1
		Right 2	65	100	55.6	64	70.4	63	60.3	60	59.9	68	59.9	61	76.2	61	53.4	56	76.6	56	89.1	49	66.7	53		66.3
		Total			70.2	245	91.7	277	75.9	265	72.3	258	72	250	83.9	244	67.4	234	70.3	261	118.4	258	94.4	246		**81.9**
	NWB	Left 2	10098	10098	61.4	22	66.4	18	72.7	22	70.9	26	69.3	25	56.8	21	64.9	20	70.7	21	79.1	17	76.7	21		68.8
		Total			61.4	22	66.4	18	72.7	22	70.9	26	69.3	25	56.8	21	64.9	20	70.7	21	79.1	17	76.7	21		**68.8**
	Total				20.6	5380	22	5457	21.3	5461	21.9	5432	21.8	5499	21.3	5511	20.9	5482	21.6	5389	23.5	5570	23	5492	C	**21.8**
Conklins	NB	U-turn Marke	91	90	67.9	7	61.3	15	60.5	18	115.1	12	75	12	114.1	5	75	11	56.2	14	71.2	15	63.6	11		72.6
		Left 2	91	77	78.2	136	71.8	156	79	143	77.7	152	76.3	160	80.6	147	83.8	162	73.7	142	73.7	154	82.7	136		77.7
		Through	91	73	27.1	1447	23.8	1427	26.5	1459	27.8	1475	25.4	1517	24.6	1489	27.3	1446	25.6	1454	25.9	1459	24.9	1523		25.9
		Right 1	91	10129	27.2	160	19.9	194	26.7	162	21.8	164	22.2	174	19.6	172	19.3	146	28.3	146	24.1	176	23.8	165		23.2
		Total			31.2	1750	27.9	1792	31.1	1782	32	1803	29.8	1863	28.9	1813	32.1	1765	30	1756	30.2	1804	29.3	1835		**30.2**
	EB	Left 2	79	73	130.1	276	120.8	258	118	249	135.4	275	141.7	277	154.5	258	99.1	294	132	241	131.6	281	140.3	273		130.1
		Through	79	85	125	376	122.4	340	115.8	351	142.4	347	137.8	337	158	303	97.6	314	138.2	346	128	330	140.1	348		130.4
		Right 2	79	10131	34	208	29.4	217	29.7	238	42.8	213	42.6	227	59.6	165	14.7	230	41.6	220	38.7	202	44.3	194		36.9
		Total			104.6	860	97.1	815	92	838	114.7	835	113.4	841	134.4	726	75.4	838	110	807	107.1	813	117.4	815		**106.2**
	SB	U-turn Marke	84	73	104.7	4	105.2	7	93.2	5	94.2	8	72.7	2	86.2	2	77.6	3	71.7	6	79.3	6	89.3	3		89.1
		Left 2	84	85	84.6	256	83.8	212	84.9	250	81.2	256	88.3	256	89.8	258	89.5	285	82.3	230	84.3	255	83.2	230		85.3
		Through	84	90	22.7	2665	24.9	2780	20.9	2707	21.5	2670	23	2722	21.2	2704	22.8	2682	19.6	2703	22.5	2749	21.1	2746		22
		Right 2	84	77	23.4	430	23	458	21.5	478	21.3	462	23.1	457	19.9	450	21.7	456	22.1	433	20.9	455	19.7	447		21.7
		Total			27.6	3355	28.4	3457	25.7	3440	26.1	3396	27.9	3437	26.3	3414	28.3	3426	24.3	3372	26.9	3465	25.1	3426		**26.7**
	WB	Left 2	88	10132	90.9	23	105.4	31	106.5	33	95.5	28	102.8	31	91.8	15	79.1	26	98.6	17	107.1	21	108.7	25		99.2
		Through	88	77	78.1	264	95.4	250	102.8	273	84.3	231	92.3	238	72.3	259	73.9	248	76.9	248	84.8	244	88.5	229		85
		Total			79.1	287	96.5	281	103.2	306	85.5	259	93.5	269	73.4	274	74.4	274	78.3	265	86.6	265	90.5	254		**86.3**
	Total				41.6	6252	40.1	6345	39.7	6366	42	6293	42.4	6410	41.7	6227	37.6	6303	39.4	6200	40.6	6347	40.8	6330	D	**40.6**
NETWORK TOTAL					28.6	36448	27.7	37046	28	37142	29.3	37116	28.7	37366	28.3	37204	27.9	37253	27.6	36682	28.7	37235	32.5	37542		28.7

Queue Lengths

Intersection	Approach	Movement	From Link	Storage	95% Queues per Run 1	2	3	4	5	6	7	8	9	10	Max	95%	Median	Average	Standard Deviation
					100	107	114	121	128	135	142	149	156	163					
Bethpage	NB	U-turn Marke	11	0	192	237	190.1	219.8	193.7	199.4	199	206.1	213.2	197.6	388.1	206.3	49	71.5	69
		Left 2	11	0	192	237	190.1	219.8	193.7	199.4	199	206.1	213.2	197.6	388.1	206.3	49	71.5	69
		Through	100	0	145	126.7	152.8	135.4	152.1	149.8	138.2	127.8	134.7	145.9	335.3	142.3	0	23	48.6
	EB	Left 2	8	0	193.9	226.5	186.5	197.3	175.1	200.6	193.7	206.6	182	176.9	492	189.5	62.2	73.8	68.1
		Right 2	6	0	263.6	256.6	257.3	270.1	270.3	309.4	294.3	253.2	298.2	279.3	435	278.5	105.2	113.8	93.2
	SB	U-turn Marke	2	0	103.5	83.3	66.2	87.8	85.1	104.7	82.2	88.4	84.7	82.9	182.8	87.7	16.5	22.1	30.3
		Through	1	0	422.2	436.5	455.7	483.7	440.5	437.2	435.6	461	426.9	463.6	952.7	446.9	0	116.1	161.6
		Right 2	3	0	259.5	235.2	237.2	267.5	242.3	255	250.3	255.1	277	280.6	625.6	255.1	0	54.2	91.7
Ruland	NB	U-turn Marke	21	0	22	40.5	44.2	21.3	41.5	22.1	24.6	23.2	22.2	40.7	89.8	23.2	0	5.4	12
		Through	100	0	155.6	157.3	117.4	151.8	156.1	149.4	137.1	150.7	140	151.7	380.2	147.3	0	33.7	52.5
		Right 1	22	0	0	0	0	0	0	0	0	0	0	0	150.4	0	0	1.1	6.3
	SB	U-turn Marke	17	0	151.3	148.3	188	171.2	163.6	170.8	151.5	163.5	148.5	172.5	254.9	165.3	45.7	61.4	56.2
		Left 3	17	0	151.3	148.3	188	171.2	163.6	170.8	151.5	163.5	148.5	172.5	254.9	165.3	45.7	61.4	56.2
		Through	14	0	81.2	81.2	90.2	81.6	95.2	97.1	103.6	76.5	101.6	340	1181.9	102	0	15.7	54.5
	SWB	Left 1	20	0	221.7	243.6	238.7	233.2	234.6	225	234.1	225.8	223.8	296	422.1	238.1	79.9	90.7	79.1
		Right 3	20	0	215.6	237.5	232.5	227.1	228.4	218.9	228	219.6	217.7	289.8	416	232	73.8	85	78.6
Smith St	NB	U-turn Marke	40	0	106.3	108.8	115.4	87.4	110.8	84.3	105.9	86.9	91.4	87.7	237.1	105.9	0	24.7	36.2
		Left 2	40	0	106.3	108.8	115.4	87.4	110.8	84.3	105.9	86.9	91.4	87.7	237.1	105.9	0	24.7	36.2
		Through	100	0	90.5	80	105.5	107.2	99.8	84.7	88.6	84	80.8	109.9	310.3	91	0	14.8	32.6
		Right 2	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB	Left 2	34	0	171.5	226.4	172.1	178.5	167.8	174.7	228.6	213.5	560.1	169.1	616.8	198.7	42.6	66.8	78.4
		Through	32	0	151	219.4	128.7	135.1	109.6	149.7	165.9	190.1	560.1	122.4	616.8	162.3	19.1	43.7	70.3
		Right 2	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	28	0	149.9	131.9	164.6	146.6	166.9	142.7	175	124.5	130.9	210.5	261.8	150.2	59.5	60.9	50.7
		Left 2	28	0	149.9	131.9	164.6	146.6	166.9	142.7	175	124.5	130.9	210.5	261.8	150.2	59.5	60.9	50.7
		Through	9	0	377.2	321.7	673.5	452	376.6	382.5	364.6	319.6	491.1	1639	1673.9	661.1	22.1	152.6	263.1
		Right 2	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	Left 2	39	0	259.8	237.9	273	285.9	232.2	254.8	231.3	267	221.9	255.3	591.5	253.4	64.2	87.7	86.8
		Through	38	0	193	206.8	226.3	227.2	208.9	213.9	212.3	216.2	194.7	195.6	416.1	209	56.5	70.6	71
		Right 2	120	0	0	0	0	0	0	0	0	0	0	0	36.7	0	0	0	0.5
Milbar	NB	U-turn Marke	56	0	101.9	101.9	87.5	88.9	85	86.5	88.7	102.5	83	87.9	164.6	88.7	39.4	37.8	31
		Left 2	56	0	101.9	101.9	87.5	88.9	85	86.5	88.7	102.5	83	87.9	164.6	88.7	39.4	37.8	31
		Through	100	0	168.9	178.4	163.6	189.4	181.7	191.1	171.6	179.5	187.5	173.2	332	175.7	0	40.8	63.2
		Right 2	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB	Left 2	49	0	160.4	150.6	154.7	173.6	148.6	168.6	165.3	162	168	196.2	301.6	167.9	41.4	57.7	55.8
		Through	51	0	146.8	129.1	131.3	153	125.9	133.1	130.7	131.5	151	147	299.8	135.3	18.7	37.4	47.8
		Right 1	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	45	0	274.1	215.5	233	221	212.5	238.6	243.8	224.8	218	232.3	397.9	231.7	62.2	81.3	78.7
		Left 2	45	0	274.1	215.5	233	221	212.5	238.6	243.8	224.8	218	232.3	397.9	231.7	62.2	81.3	78.7
		Through	9	0	753.8	451.8	511.1	522.9	603.7	574	617.2	523	515.5	1166.4	1531.4	631.8	84.5	182.1	239.5
		Right 1	10058	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	Left 2	55	0	406.5	403.7	331.4	414.5	363.5	409.1	422	411.1	413	328.2	447	412.5	100.6	136.9	132.5
		Through	54	0	413.3	401.4	299.3	416.3	355.1	406.9	421.5	409.8	412.3	394.9	443.5	411.7	91.3	128.8	128.3
		Right 2	10072	0	396.6	293.2	243	403.5	277.3	322	414.9	388.2	277.5	295.2	438.4	361.2	0	62.3	110.1
Gazza	NB	Left 2	72	0	130.9	111.1	127.4	130.8	157.7	129.1	125.8	108.4	137.5	137.9	272	130.9	24.4	41.2	45.4
		Through	100	0	145.6	135.5	133.3	135.4	148.4	152.6	132.9	153.4	142.5	138.8	297.4	138.8	0	30.1	50.7
		Right 2	71	0	19.5	39	19.7	18.8	38.3	19.9	20.2	39.2	19.7	20.5	92.7	20.1	0	3.1	9.8
	EB	Left 2	69	0	208.2	253.4	265.6	267	264.8	269.8	237.7	281	232.1	277.5	296.8	264.6	41.2	67.5	78.1
		Through	70	0	276.9	272.6	269.8	275.6	276.6	276.7	271.9	282.8	277	279.7	301.2	277.6	64	95.4	93.8
		Right 2	70	0	276.9	272.6	269.8	275.6	276.6	276.7	271.9	282.8	277	279.7	301.2	277.6	64	95.4	93.8
	SB	U-turn Marke	61	0	141.1	129.7	151.4	154.2	123.2	103.4	132.7	148.5	121.1	122.5	283.9	129	37.5	43.6	45
		Left 2	61	0	141.1	129.7	151.4	154.2	123.2	103.4	132.7	148.5	121.1	122.5	283.9	129	37.5	43.6	45
		Through	9	0	154.9	123.1	143.6	180.2	237	155.9	161.3	165.3	169.9	153.9	1221.5	164	0	33.1	82.8
		Right 1	9	0	154.9	123.1	143.6	180.2	237	155.9	161.3	165.3	169.9	153.9	1221.5	164	0	33.1	82.8
		Right 2	62	0	37.8	20.7	36.9	19.1	40.2	37.8	39.6	37.1	42.4	37.4	150.4	37.4	0	4.5	14.8
	WB	Left 1	65	0	128.8	237.1	173.7	127.8	147.3	188.6	114.8	110.2	299.6	227.5	319.3	216.3	41	58.9	68.6
		Through	64	0	123.5	143.7	106.3	132.2	122	143.5	125.6	131.5	280.4	87.6	313.7	129.1	19.3	35.9	50.1
		Right 2	64	0	123.5	143.7	106.3	132.2	122	143.5	125.6	131.5	280.4	87.6	313.7	129.1	19.3	35.9	50.1
	NWB	Left 2	10098	0	131	111.2	127.5	131	157.8	129.3	125.9	108.5	137.7	138	272.2	131	24.5	41.2	45.4
Conklins	NB	U-turn Marke	91	0	147.2	168.4	132.7	175.8	164.4	153	169.1	151.6	160.9	151.8	282.1	156.6	41.4	55.3	53.2
		Left 2	91	0	147.2	168.4	132.7	175.8	164.4	153	169.1	151.6	160.9	151.8	282.1	156.6	41.4	55.3	53.2
		Through	73	0	223.8	200.9	213.9	215.4	219.1	205	224.2	219.6	205.5	217.9	372.7	215.3	0	56.3	76.1
		Right 1	92	0	86.8	82.1	87.4	67.2	81.7	65.2	62	84.4	88.5	83.7	233.6	82.1	0	14.8	28.5
	EB	Left 2	81	0	498.8	499.3	495.7	498.1	499.4	499.5	488.8	500	499.1	500.2	514.8	499.1	106.3	189.3	184.6
		Through	82	0	492.8	493.8	492.9	496.4	494	498.5	478.3	498.7	493.4	493.6	508.2	494.6	103.9	183.8	183.3
		Right 2	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	84	0	298.2	233.2	270.2	299.6	263.3	327.3	350.7	249.2	296.5	283	454.4	295.9	83.6	103.7	99.3
		Left 2	84	0	298.2	233.2	270.2	299.6	263.3	327.3	350.7	249.2	296.5	283	454.4	295.9	83.6	103.7	99.3
		Through	10132	0	320.5	362.3	274.8	276.6	303.9	279.2	302.5	266.5	324	302.5	940.5	298.2	0	49.6	105.3
		Right 2	83	0	171.1	243.1	201.7	207.5	213.4	196.9	191.8	173.8	192.1	193.8	400.5	205.9	0	44	72.4
	WB	Left 2	88	0	217	383	500.2	365.8	419.3	196	261.3	280.9	297.3	281.8	518.5	315.9	83.9	105	103.4
		Through	86	0	134.4	154.6	250.7	127.7	110.3	120.5	123.2	165.2	148.5	126.3	509	144.8	44.1	58	56.2

Travel Times

Name	TravelTime Section	Distance(ft)	Run 1		Run 2		Run 3		Run 4		Run 5		Run 6		Run 7		Run 8		Run 9		Run 10		Travel Time
			Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Average(s)
RT110 NB	1	10555.7	254.9	361	256.7	366	258.1	374	260.1	370	260.4	414	254.2	403	256.3	359	252.7	364	254.2	390	258.5	395	256.7
RT110 SB	2	10555.6	296.7	1161	281.9	1236	295.2	1177	296	1164	298.7	1188	286.8	1190	290.7	1185	278	1230	291.7	1217	380.2	1185	299.4

Travel Time Delay

Name	TravelTime Section	Run																				Travel Time
		1		2		3		4		5		6		7		8		9		10		
		Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Average(s)
RT110 SB	2	159.7	1161	144.7	1236	158.3	1177	158.7	1164	162.1	1188	150.5	1190	153.5	1185	141.1	1230	154.2	1217	243.6	1185	162.5
RT110 NB	1	119.6	361	122	366	122.1	374	125.2	370	125	414	118.8	403	121.7	359	117.3	364	119.5	390	123.3	395	121.5

- PROPOSED BUILD CONDITION WITH BRT-TSP OPERSTIONS (2015)

Network Performance

Vehicle Class	Number of Vehicles	Total			Avg Speed(mi/h)	Per Vehicle		
		Travel Time(h)	Distance(mi)	Delay(h)		Avg Delay (s)	Avg Number of Stops	Avg Stop Delay (s)
Run 1(1)								
Car (10)	11059	555.28	11672.95	337.97	21.02	110.02	2	70.74
HGV (20)	760	46.36	893.47	26.73	19.27	126.64	2	70.58
Bus (30)	25	2.28	48.16	1.08	21.11	155.14	5	41.37
Total	11844	603.92	12614.58	365.78	20.89	111.18	2	70.67
Run 2(2)								
Car (10)	11216	577.56	11901.75	355.82	20.61	114.21	2	73.39
HGV (20)	742	44.46	843.29	25.86	18.97	125.49	2	69.7
Bus (30)	25	2.25	48.4	1.11	21.48	159.26	5	39.41
Total	11983	624.27	12793.43	382.79	20.49	115	2	73.09
Run 3(3)								
Car (10)	11296	563.32	11936.31	340.97	21.19	108.66	2	68.52
HGV (20)	741	44.37	856.17	25.53	19.3	124.05	2	67.82
Bus (30)	25	2.12	47.99	0.96	22.68	138.25	5	27.86
Total	12062	609.8	12840.47	367.46	21.06	109.67	2	68.4
Run 4(4)								
Car (10)	11294	579.01	11981.73	355.92	20.69	113.45	2	73.42
HGV (20)	732	44.36	851.94	25.67	19.2	126.24	2	71.18
Bus (30)	25	2.26	48.01	1.11	21.28	159.78	5	43.17
Total	12051	625.63	12881.68	382.7	20.59	114.33	2	73.22
Run 5(5)								
Car (10)	11337	575.07	12024.01	350.93	20.91	111.44	2	71.67
HGV (20)	722	43.06	841.72	24.6	19.55	122.67	2	67.4
Bus (30)	25	2.21	48.12	1.03	21.8	147.87	5	34.88
Total	12084	620.33	12913.84	376.56	20.82	112.18	2	71.34
Run 6(6)								
Car (10)	11179	579.05	12006.18	355.63	20.73	114.52	2	72.68
HGV (20)	742	44.11	818.32	26.18	18.55	127.04	2	70.49
Bus (30)	25	2.31	48.01	1.07	20.8	154.67	5	45.14
Total	11946	625.47	12872.51	382.89	20.58	115.39	2	72.49
Run 7(7)								
Car (10)	11157	597.53	11881.06	376.66	19.88	121.54	3	74
HGV (20)	761	51.07	914.05	31.06	17.9	146.95	4	77.18
Bus (30)	25	2.28	48.36	1.11	21.19	159.15	6	38.59
Total	11943	650.88	12843.47	408.83	19.73	123.23	3	74.13
Run 8(8)								
Car (10)	11247	557.7	11831.09	337.17	21.21	107.92	2	69.68
HGV (20)	728	41.59	843.18	23.22	20.27	114.82	2	63.08
Bus (30)	25	2.43	48.12	1.22	19.78	175.82	5	64.01
Total	12000	601.73	12722.4	361.61	21.14	108.48	2	69.27
Run 9(9)								
Car (10)	11185	577.9	11929.93	355.59	20.64	114.45	2	72.4
HGV (20)	741	46.01	867.72	26.85	18.86	130.45	2	71.12
Bus (30)	25	2.26	48.36	1.1	21.36	158.32	5	44.69
Total	11951	626.18	12846.01	383.54	20.51	115.53	2	72.27
Run 10(10)								
Car (10)	11247	618.07	12077.54	392.99	19.54	125.79	3	78.51
HGV (20)	757	52.3	922.49	32.14	17.64	152.85	3	81.35
Bus (30)	25	2.4	47.71	1.18	19.84	169.93	5	58.1
Total	12029	672.77	13047.74	426.31	19.39	127.58	3	78.64

Delay

Intersection	Approach	Movement	Run 1		Run 2		Run 3		Run 4		Run 5		Run 6		Run 7		Run 8		Run 9		Run 10		LOS	Average(s)
			Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume		
Bethpage	NB	U-turn Marke	44.8	46	72.8	80	52.9	65	68.9	85	62.5	58	57.8	48	61.7	66	63.5	65	54.7	49	53.4	63		60.5
		Left 2	58.4	402	61.4	417	60.7	380	62.6	424	65.1	418	57.3	456	59	412	59.4	441	62.9	417	60.2	419		60.7
		Through	11.3	1369	10.9	1398	11.7	1393	10.8	1403	10.2	1435	12	1424	12.7	1418	12.2	1379	10.1	1447	10.8	1423		11.3
		Total	22.6	1817	24.6	1895	23.3	1838	24.9	1912	23.8	1911	23.9	1928	24.5	1896	25	1885	22.8	1913	23.1	1905		23.8
	EB	Left 2	70.8	372	74.1	379	61.3	396	64.8	382	61.1	398	66.3	382	68.5	380	65	400	68.7	401	67.8	376		66.8
		Right 2	72.4	601	75.2	622	71.1	608	79.9	614	74.1	630	85.8	619	73.9	614	69.4	582	80.9	634	78.1	616		76.1
		Total	71.8	973	74.8	1001	67.2	1004	74.1	996	69.1	1028	78.4	1001	71.8	994	67.6	982	76.2	1035	74.2	992		72.5
	SB	U-turn Marke	134.9	74	80	53	82.3	55	94.1	57	80.2	70	81.7	60	75.5	67	88.8	65	81.6	59	86.3	51		89.5
		Through	18	3141	18.7	3222	18.6	3246	18.7	3220	18.5	3220	18.9	3195	18.4	3220	20	3213	18	3161	19.8	3276		18.8
		Right 2	17.3	746	17.3	695	15.5	712	18	716	18.2	701	18.3	719	17	727	19.6	724	18.5	720	16.3	707		17.6
		Total	20.1	3961	19.3	3970	18.9	4013	19.7	3993	19.5	3991	19.7	3974	19.1	4014	21	4002	19	3940	20	4034		19.6
	Total		28.2	6751	28.9	6866	27.2	6855	29	6901	28	6930	29.4	6903	28.2	6904	28.8	6869	28.7	6888	28.6	6931	C	28.5
Ruland	NB	U-turn Marke	80.9	18	64	22	63.4	24	69.9	15	52.1	26	70.7	18	70.6	21	61.6	12	60.6	14	60.6	21		64.9
		Through	12	1479	12.2	1502	12.5	1497	13.2	1583	12.7	1531	13.4	1570	12.9	1532	13.3	1509	13.3	1577	14.5	1576		13
		Right 1	3.6	190	3.9	223	4.6	205	4.1	209	3.6	214	3.4	233	4.5	219	4.4	220	4	216	3.7	238		4
		Total	11.8	1687	11.8	1747	12.3	1726	12.6	1807	12.2	1771	12.7	1821	12.5	1772	12.5	1741	12.6	1807	13.6	1835		12.5
	SB	U-turn Marke	68.7	66	67	81	59.2	87	61.7	88	64.4	71	57.3	68	58.5	68	61.4	75	64.5	69	72.7	74		63.5
		Left 3	65.4	253	64.3	278	60	284	57.9	306	62	299	62.9	309	62.1	280	61.3	275	61.1	256	67.4	272		62.4
		Through	5.8	3260	5.2	3327	5.4	3311	5.2	3319	6.2	3340	5.7	3280	9.1	3305	5.5	3300	5.9	3285	10.1	3412		6.4
		Total	11.2	3579	11	3686	10.9	3682	10.9	3713	11.8	3710	11.5	3657	14.1	3653	10.9	3650	10.9	3610	15.5	3758		11.9
	SWB	Left 1	63.4	299	71.2	279	65.2	291	65.2	289	65.7	275	68.2	285	65.5	284	68.9	282	71.3	281	70.9	314		67.6
		Right 3	18.2	302	17	351	19.9	283	15.8	280	19.6	341	21.4	310	19	327	18.1	328	19.5	305	19.4	300		18.8
		Total	40.7	601	41	630	42.9	574	40.9	569	40.2	616	43.8	595	40.6	611	41.6	610	44.3	586	45.7	614		42.2
	Total		14.4	5867	14.3	6063	14.4	5982	14.2	6089	14.8	6097	15	6073	16.3	6036	14.5	6001	14.7	6003	17.9	6207	B	15.1
Smith St	NB	U-turn Marke	71.4	28	91	25	64	24	58.5	33	67	28	72.2	25	51.3	24	73.2	25	74.9	30	60.4	26		68.3
		Left 2	65.9	76	73	52	57.2	76	60.7	58	61	84	53.3	70	62.7	79	55.9	63	68.8	56	54.2	55		61
		Through	8.8	1333	8.8	1397	9	1361	9.4	1430	10.2	1384	7	1442	6.6	1408	7.5	1383	6.6	1425	10.4	1458		8.4
		Right 2	7.6	93	7.2	87	5.7	78	8.2	89	9	99	5.7	106	7.5	117	7.9	99	8.8	103	8.8	87		7.7
		Total	12.7	1530	12.2	1561	12.1	1539	12.2	1610	13.8	1595	9.9	1643	10	1628	10.5	1570	10.2	1614	12.6	1626		11.6
	EB	Left 2	105.5	231	127.7	222	110.3	225	85.6	265	105	242	111.5	233	121.6	222	129.1	237	147	247	113.5	243		115.4
		Through	87.3	73	86.1	83	92.4	93	91	76	81.9	71	99.6	60	95.6	45	87.7	79	104.6	69	81.4	62		90.5
		Right 2	1.6	137	1.4	153	1.5	159	3.9	137	1.8	158	1.7	160	2.5	155	1.9	135	3.9	132	2.5	120		2.2
		Total	70.2	441	78	458	70.5	477	63	478	66.9	471	71.1	453	75.1	422	83.8	451	98.3	448	77.5	425		75.3
	SB	U-turn Marke	91	38	86.1	41	87.5	44	98.6	36	89.9	35	108.8	25	98.4	39	87.1	33	90.4	40	88.6	48		91.9
		Left 2	86.3	204	84.8	198	91.5	235	85.8	187	89.1	220	88.3	194	87.2	206	79	214	87.5	178	91	234		87.2
		Through	22.2	2969	20.5	2992	22	3023	22.9	3013	23.3	2965	25.2	2967	29.5	3025	20.9	2965	20.6	3028	31.2	3102		23.9
		Right 2	1.6	294	1.7	349	1.6	295	1.8	338	1.8	306	1.8	366	2	299	1.6	322	1.6	277	1.8	319		1.7
		Total	24.9	3505	23	3580	25.7	3597	25	3574	26.2	3526	26.8	3552	31.3	3569	23.3	3534	23.3	3523	33.2	3703		26.3
	WB	Left 2	99.1	417	82.8	402	74.7	455	77.6	461	86.5	441	87.1	436	77.8	415	68.2	430	101.3	402	94	456		84.7
		Through	92.7	82	71.2	97	72.8	73	67	75	91.3	76	82.3	76	70	75	79.1	85	103.6	81	79.8	72		81
		Right 2	1.4	197	1.5	197	1.3	211	1.5	188	1.3	207	2	233	1.2	217	1	206	1.3	214	1.6	213		1.4
		Total	70.7	696	58.2	696	53.6	739	56.7	724	62.6	724	60	745	53.5	707	50.3	721	70.9	697	66.1	741		60.2
	Total		30.3	6172	28.2	6295	29	6352	28.2	6386	30.3	6316	29.5	6393	31.2	6326	27.5	6276	30.6	6282	34.7	6495	C	29.9
Milbar	NB	U-turn Marke	98.7	34	71.2	34	75.3	31	58.4	27	97.1	36	81.8	37	85	29	82	27	91.1	21	82.4	35		82.6
		Left 2	80.8	140	78.7	144	75.4	152	91.1	153	75.6	137	80.1	152	79	136	82.6	152	72.7	143	76.7	151		79.4
		Through	20.6	1105	21.8	1143	21.2	1098	22.1	1153	21.8	1179	22.4	1208	20.5	1156	22.7	1139	22.7	1158	20.6	1166		21.6
		Right 2	1.7	69	2.5	48	1.5	59	1.7	56	2.7	59	2	39	1	48	1.1	54	1	63	1.7	50		1.7
		Total	27.9	1348	28.3	1369	27.7	1340	29.6	1389	28.1	1411	29.5	1436	27	1369	29.7	1372	27.9	1385	27.5	1402		28.3
	EB	Left 2	102.7	283	132.6	280	102.9	299	118.5	305	83	261	111.7	288	106.1	300	98.1	294	94.3	312	108.3	330		105.9
		Through	87.4	74	92	79	75.1	89	90	77	78.7	79	78.4	87	78.6	67	75.4	78	82.7	71	72.5	88		80.9
		Right 2	1.9	222	3.1	210	2.3	213	1.7	231	2.2	224	2.8	231	1.9	215	1.4	216	2.3	235	2	196		2.2
		Total	62.1	579	79.2	569	63.1	601	70.9	613	50.3	564	65.4	606	64.4	582	59.6	588	58	618	69.2	614		64.3
	SB	U-turn Marke	132.6	90	123.3	95	92.3	89	125.7	104	95.2	101	120.1	89	103.7	108	114.3	92	113.4	95	123.9	77		114.1
		Left 2	140.1	128	121.6	115	94.3	98	127.9	101	96.9	118	115.9	103	107.5	99	111.3	113	118.5	100	126.3	112		116.5
		Through	30.8	2870	30.7	2912	30.5	2936	28.4	2887	28.5	2903	31.6	2888	34.7	2939	27.9	2821	36	2923	32.3	2960		31.2
		Right 2	8.2	448	7.6	438	8.8	478	7.1	485	6.2	463	8.4	470	10.5	451	8.1	444	10.5	424	8.5	487		8.4
		Total	34.5	3536	33.3	3560	30.9	3601	31.2	3577	29.8	3585	33.2	3550	35.7	3597	30.4	3470	37.4	3542	33.9	3636		33
	WB	Left 2	98.9	230	121.2	232	102.1	249	123	268	94.7	277	106.9	284	122.7	272	91.3	270	85	283	108	233		105.1
		Through	101.7	200	115.6	205	90.9	206	124.9	192	97.1	188	98.8	200	122.7	208	96.2	205	80.4	206	106.8	205		103.5
		Right 2	62	78	93.4	55	71.5	66	99.9	68	73.7	80	72.6	68	96.8	73	78.7	63	48.5	63	92.3	70		78.7
		Total	94.3	508	115.8	492	93.8	521	120.7	528	92.4	545	99.7	552	119.3	553	91.7	538	79.1	552	105.4	508		101.1
	Total		40.8	5971	43.3	5990	38.8	6063	42.6	6107	36.9	6105	41.5	6144	44.1	6101	38.6	5968	41.1	6097	41.9	6160	D	40.9
Gazza	NB	Left 2	118.7	108	65.8	107	71.6	95	102.5	99	100.9	111	73.9	98	81	111	75.7	81	82.2	114	91.8	106		86.9
		Through	15.1	1131	13.8	1153	13.1	1121	12.9	1158	13.4	1178	14.7	1212	13.8	1160	14	1174	12.7	1183	13.8	1201		13.7
		Right 2	12.7	73	12.8	50	10.1	53	8.4	60	12.8	63	14.1	52	17.1	58	14.2	64	11.4	61	18.4	67		13.3
		Total	23.5	1312	18	1310	17.4	1269	19.4	1317	20.6	1352	18.9	1362	19.6	1329	17.8	1319	18.5	1358	20	1374		19.4
	EB	Left 2	73.6	174	71.6	182	75.9	210	82.7	184	68.9	198	70.8	206	88.6	178	80.6	184	77.7	184	81.6	189		77
		Through	72.6	34	63.9	39	57.9	33	57.3	46	70	42	60.7	40	71.9	47	53.5	38	66	57	60.6	49		63.6
		Right 2	70.8	261	62.1	258	68.6	247	67.1	229	64.5	222	61.3	255	64.8	254	67.9	259	74	249	66.6	266		66.8
		Total	72	469	65.9	479	71	490	72.4	459	66.9	462	65.2	501	74.3	479	71.6	481	74.5	490	71.6	504		70.5
	SB	U-turn Marke	110.1	59	95.3	59	100.5	55	125.9	65	114.7	58	93.9	54	107.1	70	111.6	61	109.4	39	107	59		107.8
		Left 2	114.4	28	96.3	37	110.3	30	133	34	117.5	33	112.2	25	138.1	21	113	25	109.2	28	110.7	40		114.6
		Through	8.7	3030	9.7	3075	8.3	3132	8.6	3073	7.8	3094	8.3	3089	8.5	3126	6.9	3022	9.6	3150	8.6	3109		8.5
		Right 2	9.3	215	14	189	9.9	194	10.9	212	7.1	223	10	217	11.1	199	10.4	208	11.2	207	10.5	204		10.4
		Total	11.4	3332	12.4	3360	10.8	3411	12.2	3384	10.6	3408	10.5	3385	11.5	3416	9.8	3316	11.6	3424	11.6	3412		11.3
	WB	Left 1	94.8	115	110.7	145	100.5	139	80.3	114	81.7	134	86.4	122	92.6	107	76.7	129	161	138	127.3	135		102.3
		Through	68.1	66	61.9	69	72.7	67	68.6	75	58.9	55	61	61	60.2	71	56.8	76	77.6	70	68.4	59		65.5
		Right 2	61.3	64	68.3	63	65.2	60	59.9	68	59.9	61	76	61	56.2	56	76.8	56	95.8	49	70.3	53		68.3
		Total	78.9	245	88.9	277	85.5	266	71.5	257	71.4	250	77.5	244	74.1	234	70.9	261	125.9	257	101	247		84.7
	NWB	Left 2	111.3	23	85	18	84.3	22	83	27	104.8	25	65.9	22	83.5	20	68.3	21	76.6	17	107	21		87.5
		Total	111.3	23	85	18	84.3	22	83	27	104.8	25	65.9	22	83.5	20	68.3	21	76.6	17	107	21		87.5
	Total		23.1	5381	22.6	5444	21.7	5458	22.2	5444	21	5497	20.7	5514	21.9	5478	20.4	5398	24.3	5546	23.5	5558	C	22.2
Conklins	NB	U-turn Marke	93.3	7	86.1	15	63.9	18	111.7	12	100.2	12	83.1	5	63.9	11	77.7	13	87.5	15	96.4	11		85.2
		Left 2	70.4	134	88.5	154	73.8	145	73.2	151	89	159	75.4	148	69.5	163	88.8	144	80	156	86.9	136		79.6
		Through	24.9	1452	22.1	1436	22.9	1470	24.5	1482	22.7	1526	21.8	1496	23.7	1452	23.1	1462	23.4	1468	22.6	1533		23.2
		Right 1	23.8	162	21.8	193	22.6	159	24.3	165	20.2	174	17.9	171	24.1	147	20.2	144	26.7	174	24.1	164		22.6
		Total	28.5	1755	28.3	1798	27.4	1792	29.1	1810	28.6	1871	26	1820	28.2	1773	28.6	1763	29.1	1813	27.9	1844		28.2
	EB	Left 2	137.7	273	127.8	257	141.4	234	142.6	274	155.4	263	159.1	255	140.7	276	138.4	238	133.6	270	155.4	255		143.2
		Through	138	372	133.2	344	139.3	332	145.2	350	153.8	324	162.9	303	146.7	307	141.7	345	138.6	320	158.1	322		145.4
		Right 2	45.7	206	34	220	42	223	46.9	213	43.2	216	60.6	165	44.4	221	42.5	220	40.6	194	53.2	175		44.8
		Total	115.6	851	104.9	821	112.4	789	119.3	837	124.6	803	138.2	723	116.5	804	113.5	803	112.6	784	132.8	752		118.7
	SB	U-turn Marke	127.5	4	122.3	7	86	5	96.6	8	86.7	2	181.9	2	148.8	2	96.6	7	83.9	6	123.4	3		107.7
		Left 2	101	256	104.8	213	100.3	257	101.8	257	105.6	252	96.7	251	110.1	281	112.8	230	110	255	94.7	227		103.9
		Through	17.5	2683	20.2	2773	19.4	2726	17.9	2691	19.6	2729	19.2	2687	22.9	2665	18	2684	20.3	2726	20.7	2779		19.6
		Right 2	22.8	429	27.9	454	20.1	475	22.2	462	21.2	454	21	442	22.5	459	23.5	427	23.4	444	24.8	446		22.9
		Total	24.6	3372	26.6	3447	25.6	3463	25	3418	26.2	3437	25.3	3382	30.1	3407	25.4	3348	27.5	3431	26.2	3455		26.3
	WB	Left 2	89.5	43	155.2	48	153.9	37	143.4	28	153.2	33	129.9	27	120.7	37	130	43	122.2	31	167.4	45		136.9
		Through	79.5	266	137.9	251	111.4	273	136.3	231	118	237	105.9	260	89.1	248	122.4	248	98.5	244	133.7	227		112.7
		Total	80.9	309	140.7	299	116.5	310	137.1	259	122.3	270	108.2	287	93.2	285	123.5	291	101.2	275	139.3	272		115.8
	Total		40.8	6287	42.5	6365	41.3	6354	43.2	6324	43.4	6381	42.5	6212	43.5	6269	42.3	6205	41.8	6303	44.2	6323	D	42.6
NETWORK TOTAL			29.8	36429	30.1	37023	28.9	37064	30.1	37251	29.3	37326	30	37239	31	37114	28.9	36717	30.4	37119	31.9	37674		30

Queue Lengths

Intersection	Approach	Movement	95% Queues per Run 1 (100)	2 (107)	3 (114)	4 (121)	5 (128)	6 (135)	7 (142)	8 (149)	9 (156)	10 (163)	Max	95%	Median	Average	Standard Deviation
Bethpage	NB	U-turn Marke	195.2	228.2	189.4	236	213.1	225.2	209.2	211.1	196	195.4	406.5	212.7	62.1	77.8	71.5
		Left 2	195.2	228.2	189.4	236	213.1	225.2	209.2	211.1	196	195.4	406.5	212.7	62.1	77.8	71.5
		Through	87.9	85.5	101.5	84.1	84.4	105.1	111.9	110.4	84.8	88.3	287.9	90.4	0	11.2	35.5
	EB	Left 2	220.6	252	185.2	229	184.2	204.2	218.4	209.6	196.7	195.5	540.2	207.8	66.4	79.9	74.5
		Right 2	302.8	317.8	301.1	332.5	333.5	412.4	323.4	288.8	368.1	313.2	559.7	326.4	122.7	131.9	109.4
	SB	U-turn Marke	127.8	99.2	62.8	102.8	65.4	87.8	82	101.4	85.7	84.2	169.1	100.2	17.7	25.7	33.1
		Through	321.5	366.6	352.1	354.9	346.5	351.6	334	369.8	332.5	380.4	914	352.9	0	53.4	120.6
		Right 2	272	241.5	232.3	262.1	245.5	263.8	232	274.4	269	229.2	672.2	254.7	0	53.2	89.5
Ruland	NB	U-turn Marke	23.2	24.6	40.2	22	39.8	23.2	39.5	22.6	23	22.6	92.9	23.3	0	5.3	11.7
		Through	106.7	112.2	105.7	112.2	111.9	111.6	113.6	115.7	112.5	112.7	348.3	111.9	0	16.2	38.5
		Right 1	0	0	0	0	0	0	0	0	0	0	106.2	0	0	1.2	7.4
	SB	U-turn Marke	149.5	168.7	148.5	185.8	155.2	152	162.2	149	144.4	165.1	258.9	157.1	58.5	60.2	54.1
		Left 3	149.5	168.7	148.5	185.8	155.2	152	162.2	149	144.4	165.1	258.9	157.1	58.5	60.2	54.1
		Through	85.7	81.2	84.8	83	104	85.5	127	84.1	100.5	150	776.1	99.4	0	12.3	43.3
	SWB	Left 1	230.9	236	251.8	232.4	239.1	233.8	226.6	211.3	263.9	281.3	395.9	241.1	80.3	89.5	79.2
		Right 3	224.8	229.8	245.6	226.2	233	227.7	220.4	205.2	257.7	275.2	389.7	234.9	74.2	83.6	78.8
Smith St	NB	U-turn Marke	103.3	127.8	113	84.4	109.1	103.2	105.4	88.5	103.7	82.8	224.2	105.6	0	25.6	37.9
		Left 2	103.3	127.8	113	84.4	109.1	103.2	105.4	88.5	103.7	82.8	224.2	105.6	0	25.6	37.9
		Through	79.1	65.9	62.8	80.8	83.2	60.1	42.8	60.4	43.5	85.3	331.4	63.6	0	9.3	30
		Right 2	19.7	17.9	18	19.1	19.6	15.9	19.3	18.8	20	17.9	104.9	18.5	0	2.1	8.7
	EB	Left 2	169.9	215.2	184.4	176.8	196.2	174.9	209.8	192.1	268.7	188.6	622.9	196.2	49.8	68.9	69.8
		Through	154.1	168	173	150	126	148.8	150.3	182.6	238.3	134.3	622.9	170.3	19.2	44.3	61.2
		Right 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	147	145.2	167.3	148.4	189.1	147.7	163.9	129.3	129.1	172.3	291.3	148.2	57.7	59.8	50.9
		Left 2	147	145.2	167.3	148.4	189.1	147.7	163.9	129.3	129.1	172.3	291.3	148.2	57.7	59.8	50.9
		Through	406.8	375.1	315.9	371.8	523.9	458.6	854	396.2	318.2	1005.9	1673.4	469.3	0	81.6	207.9
		Right 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	Left 2	381.5	272.8	278.3	303.5	347.9	312.1	253.5	263.5	363.6	350.7	633.8	313.6	81	104.8	107.5
		Through	268	213	224.5	242.5	235.2	237.6	209.1	207.9	279.4	278.2	431	236.8	60.7	80.1	81
		Right 2	0	0	0	0	0	0	0	0	0	0	32.6	0	0	0	0.6
Milbar	NB	U-turn Marke	88.5	101.7	88.6	86.6	87.9	84.7	84.3	85.6	86.7	102.8	164.8	87.2	38.6	37	30.7
		Left 2	88.5	101.7	88.6	86.6	87.9	84.7	84.3	85.6	86.7	102.8	164.8	87.2	38.6	37	30.7
		Through	104.8	106.1	107.7	110.6	110.2	127.8	107.3	118.9	126.8	109.7	287	110.2	0	12.6	38.4
		Right 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB	Left 2	217.9	271.5	213.6	230.9	154.5	209.5	250.5	179.8	188.1	236.1	471.8	221.3	62.8	78.2	72.9
		Through	216.8	247.2	167.4	174.8	125.3	148.2	232.5	142.4	176.1	192.8	471.8	176.5	19.4	48.1	63.3
		Right 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	389.7	366.5	214.4	335.2	249.9	310.9	294	265	333.3	349.9	611.6	313.8	86.1	111.2	105.9
		Left 2	389.7	366.5	214.4	335.2	249.9	310.9	294	265	333.3	349.9	611.6	313.8	86.1	111.2	105.9
		Through	395.8	359.1	407.5	325.1	369.2	497.8	594.2	362.8	577.3	485	1545.3	427.8	0	77.7	177.5
		Right 2	0	0	0	0	0	0	0	0	0	0	160.6	0	0	0.1	3.9
	WB	Left 2	406.3	419.2	405.5	423	415.7	411.6	421.5	411.1	410.3	404.3	447	415.3	114.4	157.1	142.2
		Through	417.5	419.5	412.7	422	413.2	409.6	424.6	410.6	394.7	415.7	444.7	417.5	106.8	150.8	143.2
		Right 2	407.6	409.7	402.9	412.2	403.4	399.8	414.8	400.8	384.9	405.9	434.9	407.6	97	142.1	142
Gazza	NB	Left 2	243.5	112.7	131.3	198.2	210	139.2	174.8	108.1	147.3	179.6	294.7	166.3	26.8	51.5	57
		Through	108.7	91.2	87.2	88.4	90.9	105.8	92	90	87	90.6	307.3	90.1	0	12.8	34.4
		Right 2	19.3	19.2	19.2	18.3	20.5	20.1	20.5	19.9	20.2	19.8	87.3	19.6	0	2.8	9.1
	EB	Left 2	216.4	253.4	269.6	267	264.8	268.3	271.8	281	267.3	277.5	296.8	270.7	41.7	71.7	82.5
		Through	277.5	272.6	273	279.3	273.8	276.7	276.8	282.8	279.6	277.6	301.2	277.7	66.3	100	96.9
		Right 2	277.5	272.6	273	279.3	273.8	276.7	276.8	282.8	279.6	277.6	301.2	277.7	66.3	100	96.9
	SB	U-turn Marke	146.9	112.7	152.1	209.7	125	104.6	163.2	175.1	107.9	140	279.6	138.3	38.6	45.8	48.4
		Left 2	146.9	112.7	152.1	209.7	125	104.6	163.2	175.1	107.9	140	279.6	138.3	38.6	45.8	48.4
		Through	107.7	126.9	99	112	85.8	107.4	101	81.1	131.1	106.7	988.9	104.7	0	16.1	50.7
		Right 2	20.2	37.4	20.3	38.4	19.6	37.4	20	19.7	21.1	20.8	165.4	21.6	0	4.2	14.4
	WB	Left 1	131.2	234.4	294	108	147.3	155.5	132.1	108.1	307.1	298.4	331	235.2	41.8	61.4	71.4
		Through	125.2	143.7	106.3	133.3	122	143.5	125.6	131.5	297.8	87.6	316.6	131.1	19.5	36.9	51.8
		Right 2	125.2	143.7	106.3	133.3	122	143.5	125.6	131.5	297.8	87.6	316.6	131.1	19.5	36.9	51.8
	NWB	Left 2	243.6	112.9	131.4	198.3	210.1	139.4	174.9	108.3	147.4	179.7	294.8	166.4	26.9	51.6	57
Conklins	NB	U-turn Marke	125.8	173.9	146.8	169.2	208.1	126.6	146.3	170.4	179.1	151.9	360.1	168.2	41.6	56.9	55.4
		Left 2	125.8	173.9	146.8	169.2	208.1	126.6	146.3	170.4	179.1	151.9	360.1	168.2	41.6	56.9	55.4
		Through	165.6	148.7	155	167.8	162.1	157.1	162.4	160.8	160.5	171.7	362.6	161.5	0	24.8	55.8
		Right 1	65.9	82.3	68.6	81.2	62.1	65.8	84.8	64.6	84.1	103.8	236.8	79.7	0	14.2	27.3
	EB	Left 2	498.6	496.5	492.6	502.3	497	500.3	499.4	496.7	498.3	498.5	515.5	498.5	110.5	206.8	191.3
		Through	492.3	493.7	492.3	497.5	491.3	496.4	495	495.1	493.3	495.4	506.9	494.3	109.6	206.7	191.1
		Right 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	U-turn Marke	323.8	294	327.6	320.8	346.3	385.8	522	343.7	353.5	297.8	1016.3	345.4	112.3	133.2	123.4
		Left 2	323.8	294	327.6	320.8	346.3	385.8	522	343.7	353.5	297.8	1016.3	345.4	112.3	133.2	123.4
		Through	197.7	223.3	227.2	209.9	227.8	222.4	287.7	208	230	264.3	1449.2	227.4	0	30.2	88.6
		Right 2	191.4	258	176.5	210.9	166.8	183.8	190.4	193.9	212.8	214.9	374.2	201.6	0	44.7	71.8
	WB	Left 2	227.3	502.6	495.7	504.5	505	503.6	392.7	499.3	396.3	501	518.1	501	127.1	175.5	161.8
		Through	158.7	488.2	234.3	222.8	222.8	191.4	148.6	310.9	194.6	323.5	512.5	243.1	61.3	78.1	90.9

Travel Times

Name	TravelTime Section	Distance(ft)	Run																				Travel Time
			1		2		3		4		5		6		7		8		9		10		
			Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	Travel Time(s)	Volume	**Average(s)**
RT110 NB	1	10555.7	244.4	361	240	372	244.1	359	249.2	362	245	371	246.2	406	244.5	361	247.2	348	243.7	377	251.4	393	245.6
RT110 SB	2	10555.6	280.8	1203	287.6	1216	285.3	1198	280.5	1162	288.2	1196	290.5	1141	326.7	1187	273.5	1171	295.5	1166	318.5	1254	292.9

Build TSP Condition

Travel Time Delay																						
Name	TravelTime Section	Run																				Travel Time
		1		2		3		4		5		6		7		8		9		10		
		Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Delay(s)	Volume	Average(s)
RT110 SB	2	144.1	1203	150.5	1216	148.9	1198	143.9	1162	151.4	1196	154.4	1141	190.2	1187	136.6	1171	158.6	1166	181.8	1254	156.2
RT110 NB	1	110.1	361	107.2	372	110	359	114.4	362	110.2	371	112.2	406	110.5	361	112.1	348	109.8	377	116	393	111.3

➢ LOS SUMMARY

PM PEAK HOUR LEVEL OF SERVICE SUMMARY TABLE

INTERSECTION NAME	LANE GROUP MOVEMENT		EXISTING CONDITION		NO_BUILD 2015		BUILD w/ TSP 2015	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
Route 110 @ Bethpage -Spag Road	NB	LT	23.2	B	23.2	B	23.8	B
	EB	LR	65.4	F	65.1	F	72.5	F
	SB	TR	19.7	B	20.3	B	19.6	B
	OVERALL**		27.3	C	27.7	C	28.5	C
Route 110 @ Ruland Road	NB	TR	12.9	B	13.1	B	12.5	B
	SB	LT	10.2	B	11.7	B	11.9	B
	WB	LR	42.7	D	42.9	D	42.2	D
	OVERALL**		14.2	B	15.2	B	15.1	B
Route 110 @ Smith Street	NB	LTR	9.3	B	9.5	B	11.6	B
	EB	LTR	73.7	F	71.5	F	75.3	F
	SB	LTR	24.5	B	26.1	C	26.3	C
	WB	LTR	51.0	D	51.3	D	60.2	F
	OVERALL**		27.3	C	28.1	C	29.9	C
Route 110 @ Milbar Boulevard	NB	LTR	28.7	C	29.4	C	28.3	C
	EB	LTR	50.3	D	50.6	D	64.3	F
	SB	LTR	29.9	C	31.4	C	33.0	C
	WB	LTR	84.6	F	89.6	F	101.1	F
	OVERALL**		36.6	C	38.1	C	40.9	D
Route 110 @ Daniel-Gazza Street	EB	LTR	19.9	B	20.3	B	19.4	B
	WB	LTR	66.6	F	67.8	F	70.5	F
	NB	LTR	10.5	B	11.1	B	11.3	B
	SB	LTR	74.8	F	81.9	F	84.7	F
	OVERALL**		20.9	B	21.8	B	22.2	B
Route 110 @ Conklin Street (Rt 24)	NB	LTR	29.9	C	30.2	C	28.2	C
	EB	LTR	103.6	F	106.2	F	118.7	F
	SB	LTR	25.4	C	26.7	C	26.3	C
	WB	LTR	83.7	F	86.3	F	115.8	F
	OVERALL**		39.4	C	40.6	D	42.6	D

NOTES:

1. The delays are obtained from Vissim microsimulation software.
2. The LOS designations were derived from the 2000 Highway Capacity Manual.
3. NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
4. LTR = Shared Left Thru and Right, LT Shared Left and Thru, TR = shared Thru and right