FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

VOLUME 2 OF 2

PREPARED FOR
CANON, U.S.A, INC.

FOR

CANON, U.S.A., INC.
TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

PREPARED BY

CAMERON ENGINEERING & ASSOCIATES, LLP

JUNE 2009

APPENDIX G

TRAFFIC STUDY

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TRAFFIC IMPACT ANALYSIS

FOR

CANON U.S.A., INC.

PROPOSED CANON AMERICAS HEADQUARTERS

TAX MAP # 0400-254-1-4,9 & 0400-254-2,4,49
LIE SOUTH SERVICE ROAD & OLD WALT WHITMAN ROAD
MELVILLE, TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK 11747

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INTRODUCTION

Atlantic Traffic & Design Engineers, Inc. (ATDE) has prepared this Analysis to examine the future traffic conditions associated with the proposed Canon Americas Headquarters. This revised document addresses the comments received in the December 10, 2008 review letter issued by Greenman-Pedersen, Inc. (GPI).

The subject site is located at the southwest corner of the Long Island Expressway (LIE) South Service Road/Old Walt Whitman Road intersection in Melville, which is part of the Town of Huntington. The subject site previously operated as a farm with access provided via one (1) uncontrolled curb cut along Old Walt Whitman Road with a roadside parking area commonly occupied by a temporary food vendor. The proposed application includes the removal of the existing farm and associated uses to allow for the phased construction of a 900,000-square-foot office complex to serve as the new headquarters for Canon U.S.A., Inc. Primary access along the LIE South Service Road is proposed via one (1) right-turn ingress/right-turn egress unsignalized driveway that would allow entrance and exit at the site during specific time periods and would at the remaining times be closed. This access point is proposed to be located west of the Exit 49S off-ramp from the Long Island Expressway to address the NYSDOT's weaving concerns. Access would also be provided via two (2) full-movement driveways and one (1) right turn ingress only driveway along southbound Old Walt Whitman Road. The central driveway along Old Walt Whitman Road is proposed to be signalized and would serve as the office complex's main access point. The southerly proposed driveway along Old Walt Whitman Road would be primarily utilized by truck deliveries and employees and the northerly access point would accommodate inbound traffic during peak arrival periods. No access would be provided along the Long Island Expressway South Service Road between the Exit 49S off-ramp and Old Walt Whitman Road.

This study identifies the changes in traffic movements along the adjacent roadway network, which are expected to occur as a result of the proposed full build-out of the Canon development, and identifies the overall impacts of the proposed office complex on the adjacent street system during the future "build" traffic generation scenario. In addition, this study addresses on-site traffic operations such as parking and circulation.

STUDY METHODOLOGY

The Traffic Impact Analysis prepared for this project serves as the basis for this report and the recommendations and conclusions contained within. This report is based on the recommended guidelines and practices of the Institute of Transportation Engineers (ITE) and in accordance with the NYSDOT's standards. The report summarizes in detail the following information:

- A review of the existing roadway and traffic conditions in the vicinity of the site including roadway geometry, traffic volumes and operations, and intersection capacities;
- A detailed review of the existing traffic volumes and travel patterns on the roadway network surrounding the site and a determination of the existing peak hour volumes during each of the time periods studied;
- A 6.5% seasonal adjustment factor in accordance with comments issued by the Town of Huntington's traffic consultant to conservatively account for seasonal fluctuations in traffic volume;
- Calculations of the projected ambient background traffic growth on the existing roadways;
- Inclusion of other area developments proposed or currently being built in the future volumes;
- A Highway Capacity Analysis of the existing roadway capacities and future capacities considering the development of the site under future build conditions, utilizing both Highway Capacity Software Plus (HCS+) and Synchro 6 Software;
- An analysis of proposed driveway configuration and overall site layout in regards to access and internal circulation;
- Conclusions and recommendations based on our Traffic Engineering Analysis of the existing roadway network and future conditions considering the traffic characteristics of the proposed development.
- Technical Appendix – Including, but not limited to, descriptions of Level of Service; various tables; supporting information; graphical representations of the following: site location, peak hour volumes during each time period and condition studied; and a representation of the site generated traffic volume and direction of travel.

EXISTING CONDITIONS

The subject property is located at the southwest corner of the Long Island Expressway (LIE) South Service Road/Old Walt Whitman Road intersection in Melville, which is part of the Town of Huntington. The property has approximately 2,500 feet of frontage along eastbound LIE South Service Road and approximately 1,200 feet of frontage along southbound Old Walt Whitman Road. Figure 1 of the Technical Appendix provides an overview of the surrounding roadway network. Land uses in the Melville area are primarily residential dwellings, retail stores, and commercial office buildings. Melville is home to several corporate entities such as the Bank of America, Nikon, NEC, and Revlon.

A farm previously operated on the subject property with access provided via one (1) uncontrolled curb cut along southbound Old Walt Whitman Road. A Federal Express shipping operation and regional office building is located across from the subject property with access provided via three (3) curb cuts along northbound Old Walt Whitman Road. A residential complex known as Millennium Hills is located immediately south of the subject site, and access is provided via Paumonauk Hills Court.

EXISTING ROADWAY CONDITIONS

The LIE, also known as Interstate 495, is under the jurisdiction of the New York State Department of Transportation (NYSDOT) and has a general east/west orientation providing three (3) standard travel lanes, one (1) high-occupancy vehicle (HOV) lane, and a full-width shoulder in each direction of travel. The posted speed limit is 55 miles per hour and the pavement and striping are in fair condition near the subject property. The LIE provides mobility to NYS Route 110, Route 135 and Route 231, as well as many other north-south arterials on Long Island. The exit 49S off-ramp, which is located along the subject site's frontage, connects the LIE to the LIE South Service Road.

The LIE South Service Road, also known as Route 906A, is under the jurisdiction of NYSDOT. The LIE South Service Road has a general east/west orientation, provides two (2) eastbound travel lanes with separate turn lanes at key intersections, and shoulders are provided along both sides of

the roadway. The posted speed limit in the vicinity of the site is 40 miles per hour and the pavement and lane striping are in fair condition. The roadway provides mobility to many local roads and Suffolk County Routes as well as to the LIE and NYS Route 110.

The LIE North Service Road, also known as Route 906B, is under the jurisdiction of NYSDOT. In the vicinity of the subject property, the LIE North Service Road has a general east/west orientation and provides two (2) westbound travel lanes with separate turn lanes at key intersections. Shoulders are provided along each side of the roadway, the posted speed limit is 40 miles per hour in the vicinity of the site and the pavement and lane striping are in fair condition. The LIE North Service Road provides mobility to many local roads and Suffolk County Routes as well as to the LIE and NYS Route 110.

Old Walt Whitman Road is a local road under Town of Huntington jurisdiction with a general north/south orientation, and the roadway provides one (1) lane and a shoulder in each direction of travel. The posted speed limit is 30 miles per hour in the vicinity of the site, and the pavement and striping are in fair condition. Along the subject site's frontage, sidewalks and on-street parking are not provided.

NYS Route 110 is under the jurisdiction of NYSDOT and has a general north/south orientation. This principal arterial experiences significant traffic volumes during most periods of a typical weekday. The traffic volumes are serviced by three (3) travel lanes and a shoulder in each direction of travel with a posted speed limit of 45 and 55 miles per hour in the vicinity of the site. The pavement and lane striping are in fair condition with sidewalks and on-street parking provided in certain areas.

Round Swamp Road is a local road under the Town of Huntington jurisdiction with a general north/south orientation, and provides two (2) lanes of travel and a shoulder in each direction. The posted speed limit is 30 miles per hour in the vicinity of the site. The pavement and striping are in fair condition with sidewalks provided along portions of both sides of the roadway.

Old Country Road is a local roadway under Town of Huntington jurisdiction with a general east/west orientation and traffic volumes are serviced by one (1) travel lane and a paved shoulder in each direction. The pavement and striping are in fair condition, and the posted speed limit is 30 and

35 miles per hour in the vicinity of the site with sidewalks provided along portions of the northerly side of the roadway.

Sweet Hollow Road is a local roadway under Town of Huntington jurisdiction with a general north/south orientation, however, at its intersection with Old Walt Whitman Road, Sweet Hollow Road has an east/west orientation. Sweet Hollow Road provides one (1) lane and a shoulder in each direction of travel, and the posted speed limit is 30 miles per hour in the vicinity of the site. The pavement and striping are in fair condition and sidewalks are not provided along either side of the roadway. Sweet Hollow Road reaches its southerly terminus at its intersection with Old Walt Whitman Road, at which point its name becomes Pinelawn Road.

Pinelawn Road, also known as C.R. 3, is under Suffolk County jurisdiction and has a general north/south orientation along its length with an east/west orientation at its intersection with NYS Route 110. Pinelawn Road provides two (2) lanes and a shoulder in each direction of travel, and sidewalks are provided along portions of both sides of the roadway. The pavement and striping are in fair condition with certain areas in need of repair or rehabilitation.

Pineridge Street is a local roadway under Town of Huntington jurisdiction with a general east/west orientation providing one (1) travel lane in each direction of travel with a posted speed limit of 30 miles per hour in the site vicinity. The pavement and striping are in fair condition and sidewalks are not provided along either side of the roadway, however, on-street parking is provided along both sides of the roadway. Pineridge Street reaches its easterly terminus at its intersection with Old Walt Whitman Road, and primarily provides access to residential properties south of the subject site.

Northgate Circle is a private roadway with a general east/west orientation and provides one (1) lane in each direction of travel to and from a gated residential complex. Northgate Circle reaches its easterly terminus at its intersection with Old Walt Whitman Road, at which point it becomes Baylis Road.

Baylis Road is a local roadway under Town of Huntington jurisdiction with a general east/west orientation, and provides one (1) lane and a shoulder in each direction of travel. To the west of its intersection with NYS Route 110, Baylis Road provides two (2) lanes and a shoulder in each

direction of travel. The posted speed limit is 30 miles per hour in the vicinity of the site and the pavement and striping are in fair condition. Sidewalks are provided along portions of both sides of the roadway, which reaches its westerly terminus at Old Walt Whitman Road.

Duryea Road is a local roadway under Town of Huntington jurisdiction with a general east/west orientation providing access to residential and commercial/office developments. Duryea Road provides one (1) lane and a shoulder in each direction of travel with sidewalks provided along portions of both sides of the roadway. The posted speed limit is 30 miles per hour in the vicinity of the site, and the pavement and striping are in fair condition. Duryea Road reaches its westerly terminus at its intersection with NYS Route 110, at which point it continues as Old Walt Whitman Road.

Cottontail Road is a local roadway under Town of Huntington jurisdiction with a general east/west orientation. The roadway provides one (1) lane in each direction of travel, and the posted speed limit is 30 miles per hour in the vicinity of the site. Shoulders, on-street parking and sidewalks are not provided along either side of the roadway. Cottontail Road primarily provides access to residential properties north of the LIE, and the roadway reaches its easterly terminus at its intersection with Old Walt Whitman Road.

Park Drive is a local roadway under Town of Huntington jurisdiction with a general east/west orientation. The roadway provides one (1) lane in each direction of travel, and the posted speed limit is 30 miles per hour in the vicinity of the site. The pavement is in fair condition and sidewalks are provided along both sides of the roadway. Park Drive primarily provides access to residential and commercial developments, and the roadway reaches its easterly terminus at its intersection with Old Walt Whitman Road.

Old Walt Whitman Road and LIE South Service Road

The LIE South Service Road intersects with Old Walt Whitman Road to form a four-leg signalized intersection. The intersection is controlled by a three-phase traffic signal. The LIE South Service Road forms the eastbound approach to the intersection and Old Walt Whitman Road forms the northbound and southbound approaches to the intersection. The eastbound LIE South Service Road provides one (1) shared left-turn/through lane, one (1) exclusive through lane and one (1)

channelized right-turn lane with yield control. The northbound Old Walt Whitman Road approach provides one (1) exclusive through lane and one (1) exclusive right-turn lane. The southbound Old Walt Whitman Road approach provides one (1) exclusive left-turn lane and one (1) exclusive through lane, and crosswalks are not provided at any approach to the intersection.

Old Walt Whitman Road and LIE North Service Road

Old Walt Whitman Road intersects the LIE North Service Road to form a four-leg signalized intersection, controlled by a three-phase traffic signal. Old Walt Whitman Road forms the northbound and southbound approaches to the intersection and the LIE North Service Road forms the westbound approach to the intersection. The westbound LIE approach provides one (1) shared left-turn/through lane, one (1) exclusive through lane and one (1) channelized right-turn lane. The northbound Old Walt Whitman Road approach provides one (1) exclusive left-turn lane and one (1) exclusive through lane. The southbound Old Walt Whitman Road approach provides one (1) exclusive through lane and one (1) exclusive right-turn lane, and crosswalks are not provided at any approach to the intersection.

Old Walt Whitman Road and Sweet Hollow Road/Pinelawn Road (C.R. 3)

Old Walt Whitman Road intersects Sweet Hollow Road and Pinelawn Road to form a four-leg signalized intersection. The intersection is controlled by a two-phase traffic signal. Old Walt Whitman Road forms the northbound and southbound approaches to the intersection, Sweet Hollow Road forms the eastbound approach to the intersection and Pinelawn Road forms the westbound approach to the intersection. The eastbound Sweet Hollow Road approach provides one (1) lane to accommodate all turning movements. The westbound Pinelawn Road approach provides one (1) exclusive left-turn lane, one (1) exclusive through lane and one (1) exclusive right-turn lane. The northbound and southbound Old Walt Whitman Road approaches each provide one (1) lane to accommodate all turning movements, and crosswalks are not provided at any approach to the intersection.

Old Walt Whitman Road and Pineridge Street

Old Walt Whitman Road intersects Pineridge Street to form a three-leg signalized intersection. The intersection is controlled by a two-phase traffic signal. Pineridge Street forms the eastbound

approach to the intersection and Old Walt Whitman Road forms the northbound and southbound approaches. Each approach provides one (1) lane to accommodate all turning moving movements, and crosswalks are not provided on any of the approaches.

Old Walt Whitman Road and Northgate Circle/Baylis Road

Old Walt Whitman Road intersects Northgate Circle and Baylis Road to form a four-leg signalized intersection. The intersection is controlled by a two-phase traffic signal. Northgate Circle forms the eastbound approach to the intersection, Baylis Road forms the westbound approach and Old Walt Whitman Road forms the northbound and southbound approaches. The eastbound Northgate Circle approach provides one (1) exclusive left-turn lane and one (1) shared through/right-turn lane. The westbound Baylis Road approach provides one (1) shared left-turn/through lane and one (1) exclusive right-turn lane. The northbound Old Walt Whitman Road approach provides one (1) lane to accommodate all turning movements and the southbound approach provides one (1) shared left-turn/through lane and one (1) exclusive right-turn lane. Field observations indicate that the southbound Old Walt Whitman Road approach operates as one (1) exclusive left-turn lane and one (1) shared through/right-turn lane due to the high southbound left-turn movement demand. Crosswalks are not provided at any approach to the intersection.

NYS Route 110 and Old Walt Whitman Road/Duryea Road

NYS Route 110 intersects Old Walt Whitman Road and Duryea Road to form a four-leg signalized intersection. The intersection is controlled by a three-phase traffic signal. Old Walt Whitman Road forms the eastbound approach to the intersection, Duryea Road forms the westbound approach and NYS Route 110 forms the northbound and southbound approaches. The eastbound Old Walt Whitman Road approach provides one (1) shared left-turn/through lane and one (1) channelized right-turn lane. The westbound Duryea Road approach provides one (1) shared left-turn/through lane and one (1) exclusive right-turn lane. The northbound NYS Route 110 approach provides two (2) exclusive left-turn lanes, three (3) exclusive through lanes and one (1) exclusive right-turn lane. The southbound NYS Route 110 approach provides one (1) exclusive left-turn lane, three (3) exclusive through lanes and one (1) exclusive right-turn lane, and crosswalks are not provided at any approach to the intersection.

NYS Route 110 and LIE South Service Road

NYS Route 110 intersects the LIE South Service Road to form a four-leg signalized intersection. The intersection is controlled by a three-phase traffic signal. The LIE South Service Road forms the eastbound approach to the intersection and NYS Route 110 forms the northbound and southbound approaches. The eastbound LIE South Service Road provides one (1) shared left-turn/through lane, one (1) exclusive through lane and two (2) exclusive right-turn lanes. The northbound NYS Route 110 approach provides three (3) exclusive through lanes and one (1) exclusive right-turn lane, and the southbound NYS Route 110 approach provides one (1) exclusive left-turn lane and three (3) exclusive through lanes. Crosswalks are not provided at any approach to the intersection. The on-ramp to travel east along the LIE is located approximately 140 feet north of the intersection.

NYS Route 110 and LIE North Service Road

NYS Route 110 intersects the LIE North Service Road to form a four-leg signalized intersection. The intersection is controlled by a three-phase traffic signal. The LIE North Service Road forms the westbound approach to the intersection and NYS Route 110 forms the northbound and southbound approaches. The westbound LIE North Service Road provides one (1) shared left-turn/through lane, one (1) exclusive through lane and one (1) exclusive right-turn lane. The northbound NYS Route 110 approach provides one (1) exclusive left-turn lane and three (3) exclusive through lanes. The southbound NYS Route 110 approach provides two (2) exclusive through lanes and one (1) exclusive right-turn lane. The on-ramp to travel west along the LIE is located approximately 80 feet south of the intersection, and crosswalks are not provided at any approach to the intersection.

NYS Route 110 and Old Country Road

NYS Route 110 intersects Old Country Road to form a four-leg signalized intersection. The intersection is controlled by a four-phase traffic signal. Old Country Road forms the eastbound and westbound approaches to the intersection and NYS Route 110 forms the northbound and southbound approaches to the intersection. The eastbound Old Country Road approach provides one (1) exclusive left-turn lane, one (1) exclusive through lane and one (1) channelized right-turn lane. The westbound Old Country Road approach provides one (1) exclusive left-turn lane, one (1)

shared left-turn/through lane, one (1) exclusive through lane and one (1) channelized right-turn lane. Each NYS Route 110 approach provides one (1) exclusive left-turn lane, two (2) exclusive through lanes and one (1) exclusive right-turn lane, and crosswalks are not provided at any approach to the intersection.

Old Walt Whitman Road and Old Country Road

Old Walt Whitman Road intersects Old Country Road to form a four-leg unsignalized intersection. Old Country Road forms the eastbound and westbound approaches to the intersection and Old Walt Whitman Road forms the northbound and southbound approaches. The intersection is STOP-controlled on the northbound and southbound Old Walt Whitman Road approaches. The eastbound Old Country approach provides one (1) lane to accommodate all turning movements and the westbound approach provides one (1) left-turn lane and one (1) shared through/right-turn lane. Each Old Walt Whitman Road approach provides one (1) lane to accommodate all turning movements. Crosswalks are not provided at any approach to the intersection. This intersection is situated approximately 200 feet to the west of the NYS Route 110 and Old Country Road signalized intersection.

Round Swamp Road and LIE South Service Road

Round Swamp Road intersects the LIE South Service Road to form a four-leg signalized intersection. The intersection is controlled by a three-phase traffic signal. The LIE South Service Road forms the eastbound approach to the intersection and Round Swamp Road forms the northbound and southbound approaches. The eastbound LIE South Service Road approach provides one (1) exclusive left-turn lane, one (1) shared left-turn/through lane, one (1) exclusive through lane and one (1) exclusive right-turn lane. The northbound Round Swamp Road approach provides two (2) exclusive through lanes and one (1) exclusive right-turn lane. The southbound Round Swamp Road approach provides one (1) exclusive left-turn lane and two (2) exclusive through lanes. Crosswalks are provided at the northerly, easterly and westerly sides of the intersection.

Round Swamp Road and LIE North Service Road

Round Swamp Road intersects the LIE North Service Road to form a four-leg signalized

intersection. The intersection is controlled by a three-phase traffic signal. The LIE North Service Road forms the westbound approach to the intersection and Round Swamp Road forms the northbound and southbound approaches. The westbound LIE North Service Road approach provides two (2) exclusive left-turn lanes, one (1) exclusive through lane and one (1) shared through/right-turn lane. The northbound Round Swamp Road approach provides one (1) exclusive left-turn lane and two (2) exclusive through lanes. The southbound Round Swamp Road approach provides (2) exclusive through lanes and one (1) exclusive right-turn lane. A crosswalk is present at the southerly side of the intersection.

Old Walt Whitman Road and Cottontail Road

Old Walt Whitman Road intersects Cottontail Road to form a three-leg unsignalized intersection. Cottontail Road forms the eastbound approach to the intersection and Old Walt Whitman Road approach forms the northbound and southbound approaches. The intersection is STOP-controlled at the Cottontail Road approach. The eastbound Cottontail Road approach provides one (1) lane to accommodate all turning movements. The northbound Old Walt Whitman Road approach provides one (1) exclusive left-turn lane and one (1) exclusive through lane. The southbound Old Walt Whitman Road approach provides one (1) shared right-turn/through lane and one (1) exclusive through lane, and crosswalks are not provided at any approach to the intersection.

Old Walt Whitman Road & Park Drive

Old Walt Whitman Road intersects Park Drive to form a three-leg unsignalized intersection that is STOP-controlled at the eastbound Park Drive approach. The eastbound Park Drive approach provides one (1) lane to accommodate all turning movements the northbound Old Walt Whitman Road approach provides one (1) shared left-turn/through lane and the southbound Old Walt Whitman Road approach provides one (1) exclusive through lane and one (1) exclusive right-turn lane. Crosswalks are not provided at any approach to the intersection. This intersection will be signalized as part of the Town of Huntington's proposed improvements for the Old Walt Whitman Road corridor (see **Future Roadway Improvements** section of this document for additional information).

EXISTING TRAFFIC VOLUMES

Manual turning movement counts were collected by Atlantic Traffic & Design Engineers, Inc., during the typical weekday morning and evening time periods to evaluate the existing traffic conditions and identify the specific hours when traffic activity on the adjacent roadways is at a maximum and could be potentially impacted by the proposed development. The counts were collected on Thursday, January 31, 2008 from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. The time periods included in this study were identified based on the traffic engineering standards provided by the Institute of Transportation Engineers (ITE) and our knowledge of the traffic characteristics associated with office developments. The following intersections were surveyed:

- Old Walt Whitman Road and Old Country Road
- Old Walt Whitman Road and Sweet Hollow Road/Pinelawn Road (C.R. 3)
- Old Walt Whitman Road and Cottontail Road
- Old Walt Whitman Road and the LIE North Service Road
- Old Walt Whitman Road and the LIE South Service Road
- Old Walt Whitman Road and the existing FedEx Driveways
- Old Walt Whitman Road and Pineridge Street
- Old Walt Whitman Road and Northgate Circle/Baylis Road
- NYS Route 110 and Old Walt Whitman Road/Duryea Road
- NYS Route 110 and Old Country Road
- NYS Route 110 and LIE North Service Road
- NYS Route 110 and LIE South Service Road
- Round Swamp Road and LIE South Service Road

Spot counts were conducted on the LIE Exit 49S off-ramp to confirm traffic conditions during the peak times. The spot counts were collected on Thursday, June 26, 2008 from 8:00 a.m. to 9:00 a.m. and from 5:00 p.m. to 6:00 p.m.

To address the NYSDOT's comments, counts were also conducted at the Round Swamp Road intersection with the LIE North Service Road. The spot counts were collected on Tuesday, October 28, 2008 from 5:00 p.m. to 6:00 p.m. and on Wednesday, October 29, 2008 from 8:00 a.m. to 9:00 a.m. and incorporated into the overall traffic volume network. Please note that these counts were

utilized for the purpose of evaluating the signal coordination between the LIE North and South Service Roads in the Build with Mitigation condition only.

In addition, traffic count data was obtained from the Town of Huntington for the intersection of Old Walt Whitman Road and Park Drive. The data was collected in November 2003, and therefore a growth rate of 1.0% was applied and compounded over 5 years to generate 2008 traffic volumes.

The results of the traffic count program indicate that there is a distinct hour during the weekday mornings and weekday evenings when traffic experiences its highest levels. The weekday morning peak hour was found to occur from 8:00 a.m. to 9:00 a.m., and the weekday evening peak hour was found to occur from 5:00 p.m. to 6:00 p.m. Figures 2 and 3 of the Technical Appendix depict the 2008 existing "as-counted" traffic volumes during the weekday morning and evening peak hours, respectively. It should be noted that the Round Swamp Road and LIE North Service Road intersection volumes are not depicted on the appended Figures. However, the volumes utilized in the Round Swamp Road and LIE North Service Road analysis can be found in the Technical Appendix of this report.

To provide a conservative analysis, certain intersections were balanced with each other by carrying the larger through volume between each intersection. In addition, a 6.5% seasonal adjustment factor was applied to the existing "as-counted" traffic volumes since January is typically a below average month for traffic activity, as suggested by GPI. Note that the 6.5% seasonal adjustment factor was also applied to the November 2003 Park Drive/Old Walt Whitman Road count data. The resulting 2008 existing "balanced" traffic volumes include the 6.5% adjustment factor and are shown on appended Figures 4 and 5.

EXISTING TRAFFIC ANALYSIS

Level of Service and Volume-Capacity analyses were conducted for the study intersections using Synchro 6 Software and Highway Capacity Software Plus (HCS+).[1] The Synchro and HCS+ analyses were performed to gauge the operational state of traffic activity, and to identify any areas of excessive delay or congestion.

It should be noted that this revised Synchro analysis incorporates a comprehensive network consisting of the following intersections:

- Old Walt Whitman Road and Old Country Road
- Old Walt Whitman Road and Sweet Hollow Road/Pinelawn Road (C.R. 3)
- Old Walt Whitman Road and Cottontail Road
- Old Walt Whitman Road and the LIE North Service Road
- Old Walt Whitman Road and the LIE South Service Road
- Old Walt Whitman Road and the existing FedEx Driveways
- Old Walt Whitman Road and Pineridge Street
- Old Walt Whitman Road and Northgate Circle/Baylis Road
- NYS Route 110 and LIE North Service Road
- NYS Route 110 and LIE South Service Road
- Round Swamp Road and LIE South Service Road
- Round Swamp Road and LIE North Service Road

This comprehensive Synchro network was created to analyze the operating conditions, the vehicle queuing, and the coordination of traffic signals at the above locations.

Several factors are used in the Highway Capacity Analysis to model the actual conditions found in the field. The peak hour factors are calculated based on the turning movement counts and are applied to the hourly volume at each approach to generate the peak fifteen-minute volume within the peak hour. The input volumes are then adjusted to reflect the critical fifteen-minute demand over the course of the peak hour, otherwise known as the peak flow rate. The percentage of heavy vehicles on the roadway network was also incorporated into the highway capacity analysis, based on

[1] See Technical Appendix for Level of Service/ Volume-Capacity descriptions

the traffic volume data collected in the field. The width of each intersection approach lane was field measured and incorporated into the highway capacity analysis as well.

Each of the study signalized intersections were field timed on several occasions during each of the time periods studied. The "as-built" Traffic Signal Plans and timing directives were also obtained from the NYSDOT and compared to the observed field timings.

In addition, in order to create a Synchro network model that accurately represented existing field conditions, video footage of each study intersection was recorded on Wednesday, August 20, 2008 during the evening peak period and Thursday, August 21, 2008 during the morning peak period. This footage was analyzed in order to appropriately calibrate the traffic operations within the Synchro model.

- Signalized Intersections:

  The following table provides the existing Levels of Service experienced at each of the signalized intersections included in this study that were analyzed utilizing HCS+ software. The signalized intersections are listed along with their overall Level of Service.

ANALYSIS UTILIZING HCS+ SOFTWARE (HCM METHODOLOGY)

Intersection	Existing LOS	
	AM	PM
NYS Route 110 and Old Walt Whitman/Duryea Road	D	E
NYS Route 110 and Old Country Road	E	F

Notes:

1. During the weekday morning peak hour, the westbound Duryea Road right-turn movement at its intersection with NYS Route 110 operates at a Level of Service "F". The westbound left-turn/through movement at the Duryea Road approach to NYS Route 110 currently experiences capacity constraints and operates at a Level of Service "F" during the weekday evening peak hour.
2. The eastbound and westbound Old Country Road approaches at its intersection with NYS Route 110 currently experience operational constraints and operates at Level of Service "F" during both peak hours.

The table below provides the existing Levels of Service experienced at each of the signalized study intersections that were analyzed utilizing Synchro methodology, as requested by NYSDOT and the Town of Huntington. The signalized intersections are listed along with their corresponding overall Level of Service.

ANALYSIS UTILIZING SYNCHRO SOFTWARE (SYNCHRO METHODOLOGY)

Intersection	Existing LOS	
	AM	PM
Old Walt Whitman Road and Sweet Hollow Road/Pinelawn Road (C.R. 3)	B	B
Old Walt Whitman Road and LIE North Service Road	C	E
Old Walt Whitman Road and LIE South Service Road	D	C
Old Walt Whitman Road and Pineridge Street	A	A
Old Walt Whitman Road and Northgate Circle/Baylis Road	F	C
NYS Route 110 and LIE North Service Road	D	C
NYS Route 110 and LIE South Service Road	C	E
Round Swamp Road and LIE South Service Road	C	C

Notes:

1. The southbound approach at the LIE North Service Road/Old Walt Whitman Road intersection currently experiences capacity constraints and operates at a Level of Service "F" during the weekday evening peak hour.
2. The northbound through movement at the Old Walt Whitman Road approach to the LIE South Service Road currently experiences capacity constraints and operates at a Level of Service "F" during the weekday morning peak hour.
3. The southbound left-turn/through movement at the Old Walt Whitman Road and Northgate Circle/Baylis Road intersection currently experiences capacity constraints and operates at Level of Service "F" during the weekday morning peak hour.
4. The southbound left-turn movement at the LIE South Service Road/NYS Route 110 intersection currently experiences capacity constraints and operates at a Level of Service "F" during the weekday morning peak hour.

5. During the weekday evening peak hour, the eastbound left-turn/through movement and the southbound left-turn movement at the LIE South Service Road/NYS Route 110 intersection both experience capacity constraints and operate at Levels of Service "F."

The individual movement delays and associated Levels of Service for each signalized intersection are shown in the Technical Appendix in Tables A through K.

- Unsignalized Intersection Capacity Analysis:

  The following list provides the Level of Service of the critical intersection approach utilizing HCS+ software. Note that HCS+ does not provide an overall Level of Service for unsignalized intersections.

ANALYSIS UTILIZING HCS + SOFTWARE (HCM METHODOLOGY)

Intersection	Existing LOS	
	AM	PM
Old Walt Whitman Road and Old Country Road	F	F

Notes:

1. The northbound and southbound Old Walt Whitman Road approaches to Old Country Road currently operate at a Level of Service "F" during the weekday morning peak hour. During the weekday evening peak hour, the southbound Old Walt Whitman Road approach currently experiences capacity constraints and operates at Level of Service "F".

2. A Synchro/SimTraffic analysis was conducted to simulate the interaction between the NYS Route 110-Old Country Road and Old Walt Whitman Road-Old Country Road intersections. The results of the simulation model indicate that extensive queuing occurs at the eastbound approach of the NYS Route 110-Old Country Road intersection. This queuing extends past the Old Walt Whitman Road-Old Country Road intersection. Extensive queuing is also prevalent during the peak hours at the northbound Old Walt Whitman approach to Old Country Road.

3. The existing site driveway is generally inactive, and thus an analysis was not conducted.

The following table provides the existing Level of Service of the critical intersection approach for each of the unsignalized study intersections analyzed using Synchro software, as requested by the Town of Huntington. The unsignalized intersections were also analyzed in Synchro using HCM

methodology. Please note, HCM does not provide an overall Level of Service for unsignalized intersections.

ANALYSIS UTILIZING SYNCHRO SOFTWARE (HCM METHODOLOGY)

Intersection	Existing LOS	
	AM	PM
Old Walt Whitman Road and Cottontail Road	D	C
Old Walt Whitman Road and Existing FedEx Driveway North	D	D
Old Walt Whitman Road and Existing FedEx Driveway South	D	F
Old Walt Whitman Road and Park Drive	C	D

Notes:

1. Although the FedEx complex provides three driveways along Old Walt Whitman Road, one of the driveways was closed during the data collection program, and thus was not included in this analysis.
2. During the weekday morning peak hour, the critical westbound approach to the intersection of Old Walt Whitman Road and the existing FedEx Driveway South currently experiences capacity constraints and operates at a Level of Service "F".

The individual approach delays and associated Levels of Service are contained within the Technical Appendix, in Tables L through O.

FUTURE CONDITIONS

In this section of the analysis, the traffic volumes are projected two years into the future utilizing local information on background traffic growth and research on projects that may influence traffic in the surrounding area prior to the opening of the proposed office development. This step in the analysis is known as the no-build condition.

FUTURE "BASE" TRAFFIC VOLUMES

It is recognized that traffic routinely fluctuates along various state and county roadways, as well as local streets and varies not only day-to-day, but also on a monthly and yearly basis. It is anticipated that the proposed development would be completed within two years. As a result, the background traffic growth within this timeframe is expected to be minimal. However, in accordance with generally accepted industry standards, the existing "balanced" traffic volumes were increased by a growth rate of 1.0% for two years. This ambient growth rate was obtained from the NYSDOT, specifically for the Town of Huntington, and was applied directly to the existing traffic volumes to generate the 2010 future "base" traffic volumes, which take into account potential traffic growth peripheral to the subject site. The 2010 future "base" traffic volumes are depicted on Figures 6 and 7 for the weekday morning and evening peak hours.

FUTURE ROADWAY IMPROVEMENTS

The Melville area would likely experience significant changes to its transportation roadway network over the next 2 to 4 years. Based on this Firm's research and continued due diligence with the NYSDOT and the Town of Huntington, two roadway improvement projects are planned for the NYS Route 110 and Old Walt Whitman Road corridors. These projects are identified herein because they would introduce significant changes to the surrounding transportation network in an overall attempt to improve mobility throughout the Melville area. Both projects are expected to have positive effects on the Canon development project, and would comprise, in part, the off-site mitigation package identified in this report.

Roadway Improvements for Old Walt Whitman Road from NYS Route 110 to Old Country Road, NYSDOT PIN 0758.58

The Town of Huntington, with financial administration from the NYSDOT, would be initiating this project to upgrade Old Walt Whitman Road. Construction is scheduled to begin in 2009, based

on information provided by the Town engineering staff. In general, the project would improve the road surface and pavement markings, replace and add traffic signal infrastructure, improve pedestrian facilities (sidewalks and ramps), and, at some intersections, improve vehicular capacity through the installation of turn bays and channelized right-turn lanes. New pavement markings would delineate a center two-way left-turn lane and new shoulder lines within the general limits of the existing pavement width.

Our office has obtained the approved design plans from the Town and incorporated the key elements of the project into the future capacity analysis herein. Any frontage improvements identified in this assessment would be directly coordinated with the Town's project.

Northern State Parkway and LIE Interchange Improvements Project at NYS Route 110, NYSDOT PIN 0516.41

The NYSDOT has proposed a series of roadway improvements that would upgrade the NYS Route 110 corridor and its junctions with Old Country Road, the Northern State Parkway and the LIE. Based on information obtained from the NYSDOT's project management staff, the improvement project would be phased in two parts: Phase 1, which extends northerly from the LIE to the Nikon Driveway, is scheduled for construction 2009-2011; Phase 2, which extends northerly from the Nikon Driveway to Arrowwood Lane (incorporating the Northern State Parkway interchange), is scheduled for construction 2010-2012. In general, the project would add one northbound and one southbound travel lane on NYS Route 110, beginning at Arrowwood Lane and meeting the existing 6-lane section just south of the LIE. Consequently, other major improvements are proposed, including a full bridge replacement at the Northern State Parkway, reconfiguration and signalization of the Old Walt Whitman Road-Old Country Road intersection, and miscellaneous capacity upgrades to the LIE Service Roads and other key intersections within the project limits.

Our office has obtained the approved design plans and design report from the NYSDOT, and incorporated the key elements of the project into the future capacity analysis. Any off-site improvements identified would be coordinated with the NYSDOT's project during the permit review process.

For additional information pertaining to how these projects relate to the future traffic conditions and proposed mitigation package, please refer to **Recommended Mitigation Measures** section of this document.

OTHER PLANNED DEVELOPMENT

Based on our research with the New York State Department of Transportation and the Town of Huntington, a 103,000-square-foot Rubie's Costume Company office complex, consisting of 91,800 square feet of office space, an 8,000-square-foot restaurant, and a 3,200-square-foot bank, is proposed to be constructed at the southwest corner of the NYS Route 110-LIE South Service Road intersection. Traffic volumes associated with the Rubie's Costume Company office building were obtained from the Traffic Impact Study last revised November 2006 prepared by RMS Engineering. The traffic volumes attributed to this other planned development are illustrated in Figures 8 and 9 of the Technical Appendix.

FUTURE "NO-BUILD" TRAFFIC VOLUMES

The volumes from the other area development were added to the 2010 future "base" traffic volumes to develop the 2010 future "No-Build" traffic volumes. Figures 10 and 11 of the Technical Appendix depict the 2010 future "No-Build" traffic volumes for the study peak hours.

TRAFFIC CHARACTERISTICS OF THE PROPOSED DEVELOPMENT

ITE TRIP GENERATION

The volume of trips generated by the proposed development was determined by using standard calculations compiled by the Institute of Transportation Engineers (ITE) in its 7th edition of *Trip Generation,* 2003. The trip generation was calculated as Land Use 710, "General Office Building", for the proposed 900,000-square-foot development. The Trip Generation for the proposed development is summarized in the table below:

	Weekday Morning Peak Hour	Weekday Evening Peak Hour
Entering	1,224	225
Exiting	171	1,116
Total	**1,395**	**1,341**

TRIP DISTRIBUTION

The site-generated traffic attributed to the proposed office development has been assigned to the roadway network based on current employee zip code data derived from the Lake Success Canon office complex and a reasonable assumption of modification to that traffic assignment as a result of the future relocation to Melville. Please refer to the appended Zip Code Data Distribution Graphics for a detailed representation of the trip distribution calculations. Note that the provided calculations also depict the number of employees originating from each region. Figures 12 and 13 of the Technical Appendix depict the traffic distribution based on the zip code data. Our analysis of the data indicates that of the Long Island employee base, 75% reside in Nassau County and 25% reside in Suffolk County. Based on the population density of Nassau County, it is expected that the majority of traffic associated with the proposed office complex in Melville would still be drawn from Nassau County. However, with the relocation to Melville, it is anticipated that the Nassau County employee base would reduce by 25% in the future to account for employee relocations and new hires, therefore reflecting a more balanced distribution of traffic. As a result, the assignment of site-generated traffic has been modified at the LIE North Service Road and the LIE South Service Road to account for this presumed change in employee base.

The resulting traffic distribution utilized for this study is shown in Figures 14 and 15 of the Technical Appendix. This assignment of the future site-generated traffic to the adjacent roadway

network is based on this distribution and shown in Figures 16 through 21 for the weekday morning and weekday evening peak hours. Note, at the proposed LIE South Service Road site driveway, vehicles would only be able to enter the site during the morning peak period and exit during the evening peak period. Please note that no additional consideration was given for mass transportation or ride-share specific to this office development. To lessen the impact of Canon's trip generation on the peak hour of the adjacent roadway network, Canon has committed to implementing the following staggered arrival-departure hours program:

- 8:00 a.m. – 4:00 p.m.
- 8:30 a.m. – 4:30 p.m.
- 9:00 a.m. – 5:00 p.m.
- 9:30 a.m. – 5:30 p.m.

As a result, it would be expected that the trip generation of the proposed office building would be spread throughout the morning and evening periods and therefore the analysis contained herein which superimposes all of the site generated traffic onto the single busiest hour during the morning and evening peak periods would represent a "worst-case" scenario.

FUTURE "BUILD" TRAFFIC VOLUMES

The 2010 future "Build" traffic volumes were established by surcharging the site-generated traffic volumes onto the 2010 future "No-Build" traffic volumes. The resulting 2010 future "Build" traffic volumes are shown on Figures 22 and 23.

FUTURE "BUILD" TRAFFIC ANALYSIS

Level of Service and Volume-Capacity analyses were conducted under the future "No-Build" and "Build" conditions. The factors identified in the "Existing Traffic Analysis" section apply accordingly. The signalized intersections were analyzed under future conditions using the same traffic signal cycle lengths as in the existing conditions. In addition, the proposed Old Walt Whitman Road site driveways were included in the comprehensive Synchro network analysis.

Note that the following "No-Build" and "Build" analyses only incorporate the Town of Huntington's proposed roadway improvements along Old Walt Whitman Road. The complete

analysis results are provided in the Technical Appendix.

- Signalized Intersections:

  The following list provides the future "No-Build" and "Build" Levels of Service at each of the signalized intersections included in this study that were analyzed utilizing HCS+ software. The signalized intersections are listed along with their overall Level of Service.

ANALYSIS UTILIZING HCS+ SOFTWARE (HCM METHODOLOGY)

Intersection	No-Build/Build LOS	
	AM	PM
NYS Route 110 and Old Walt Whitman/Duryea Road	D/E	E/E
NYS Route 110 and Old Country Road	E/E	F/F

Notes:

1. The northbound NYS Route 110 left-turn movement at its intersection with Old Walt Whitman Road/Duryea Road would degrade to Level of Service "F" during the weekday morning and weekday evening peak hours. The westbound Duryea Road right-turn movement would continue to operate at the "No-Build" Level of Service "F" during the weekday morning peak hour. The westbound left-turn/through movement along Duryea Road, as well as the southbound NYS Route 110 through movement would continue to operate at the "No-Build" Level of Service "F" during the weekday evening peak hour.

2. The eastbound Old Country Road approach to NYS Route 110 would continue to operate at the "No-Build" Level of Service "F" during the weekday morning and weekday evening peak hours. The westbound Old Country Road exclusive left-turn movement would continue to operate at the "No-Build" Level of Service "F", the westbound Old Country Road left-turn/through/right-turn movement would degrade to a Level of Service "F" and the southbound NYS Route 110 right-turn movement would degrade to an acceptable Level of Service "B" during the weekday morning peak hour. The westbound Old Country Road approach and the northbound NYS Route 110 through movement would continue to operate at the "No-Build" Level of Service "F" during the weekday evening peak hour.

The following list provides the future "No-Build" and "Build" Levels of Service at each of the

signalized intersections included in this study that were analyzed utilizing Synchro methodology in Synchro software. The signalized intersections are listed along with their corresponding overall Level of Service.

ANALYSIS UTILIZING SYNCHRO SOFTWARE (SYNCHRO METHODOLOGY)

Intersection	No-Build/Build LOS	
	AM	PM
Old Walt Whitman Road and Sweet Hollow Road/Pinelawn Road (C.R. 3)	B/B	A/B
Old Walt Whitman Road and LIE North Service Road	C/D	E/F
Old Walt Whitman Road and LIE South Service Road	C/D	C/E
Old Walt Whitman Road and Pineridge Street	A/A	A/B
Old Walt Whitman Road and Northgate Circle/Baylis Road	B/D	A/B
NYS Route 110 and LIE North Service Road	D/E	C/D
NYS Route 110 and LIE South Service Road	C/C	F/F
Round Swamp Road and LIE South Service Road	C/D	C/C
Old Walt Whitman Road and Park Drive	A/A	A/A
Proposed Canon Main Site Driveway/Existing FedEx Driveway South & Old Walt Whitman Road	-/B	-/F

Notes:

1. Under the "Build" condition during both peak hours, each approach at the Old Walt Whitman/Sweet Hollow Road intersection would operate at "No-Build" Levels of Service.

2. At the LIE North Service Road/Old Walt Whitman intersection, the northbound left-turn movement to the intersection would degrade to a Level of Service "F," the southbound through movement would degrade to a Level of Service "E," and the southbound right-turn movement would degrade to a Level of Service "C" during the weekday morning peak hour. During the weekday evening peak hour, the westbound left-turn/through movement would degrade to a Level of Service "E" and the northbound left-turn movement at the LIE North Service Road/Old Walt Whitman intersection would degrade to a Level of Service "F".

3. During the weekday morning peak hour, the northbound Old Walt Whitman Road approach to the LIE South Service Road would degrade to a Level of Service "E" while the southbound approach would degrade to a Level of Service "B." During the weekday evening peak hour, the eastbound approach would degrade to a Level of Service "E" and the

northbound approach would also degrade to a Level of Service "E."

4. At the intersection of Pineridge Street and Old Walt Whitman Road, the southbound through/right-turn movement would degrade to a Level of Service "B" during the weekday evening peak hour.

5. The southbound approach at the intersection of Old Walt Whitman Road and Northgate Circle/Baylis Road would degrade to a Level of Service "E" during the morning peak hour. During the weekday evening peak hour, the southbound approach would degrade to a Level of Service "B".

6. The westbound LIE North Service Road left-turn/through movement at its intersection with NYS Route 110 would degrade to Level of Service "F" during the weekend morning peak hour. During the weekday evening peak hour, the westbound LIE North Service Road left-turn/through movement would degrade to a Level of Service "F", the westbound right-turn movement would degrade to a Level of Service 'C", and the northbound left-turn movement would improve to a Level of Service "C".

7. During the morning peak hour, the southbound left-turn movement to the intersection of LIE South Service Road and NYS Route 110 will continue to operate at a "No-Build" Level of Service "F". During the evening peak hour, the eastbound left-turn/through movement as well as the southbound left-turn movement at the intersection would also continue to operate at "No-Build" Levels of Service "F".

8. At the intersection of Round Swamp Road and LIE South Service Road, the eastbound left-turn/through movement would degrade to a Level of Service "F" and the northbound right-turn movement would degrade to a Level of Service "D" during the weekday morning peak hour. During the weekday evening peak hour the eastbound left-turn/through movement would degrade to a Level of Service "D".

9. Each movement at the intersection of Old Walt Whitman and Park Drive would continue to operate at "No-Build" Levels of Service during both peak hours.

10. A signalized access point is included under the development proposal at the intersection to be formed by Old Walt Whitman Road, the existing southerly FedEx driveway, and Canon's main driveway. The "Build" condition incorporates one (1) additional southbound through

lane and one (1) additional southbound right-turn bay on Old Walt Whitman Road. The additional southbound through lane would extend along the site's Old Walt Whitman Road frontage. The additional pavement width would meet the presently widened section of road just south of the Canon site at Paumonauk Hills Court and be configured as a southbound right-turn lane for the adjacent residential complex. To the north, the additional pavement width would meet the expanded southbound approach at the Old Walt Whitman-LIE South Service Road intersection, discussed further in the **Recommended Mitigation Measures** section. Under "Build" conditions, this intersection will operate at an overall Level of Service "B" during the morning peak hour and an overall Level of Service "F" during the evening peak hour.

The individual movement delays and associated Levels of Service for each intersection are shown in the Technical Appendix in Tables A through K, as well as Table M.

- Unsignalized Intersection Capacity Analysis:

The following list provides the "No-Build" and "Build" Levels of Service at the unsignalized intersections included in this study utilizing HCS+ software. The unsignalized intersections are listed along with the Level of Service of their critical approach. Similar to analyses conducted for the signalized intersections, the following unsignalized analyses only incorporate the Town's proposed roadway improvements along Old Walt Whitman Road.

ANALSIS UTILIZING HCS + SOFTWARE (HCM METHODOLOGY)

Intersection	No-Build/Build LOS	
	AM	PM
Old Walt Whitman Road and Old Country Road	F/F	F/F
Proposed Site Driveway & LIE South Service Road	-/-	-/D

Notes:

The following points identify persisting capacity constraints or changes in Level of Service under the future conditions:

1. The "No-Build" and "Build" scenarios incorporate the Town's improvement to configure the northbound Old Walt Whitman Road approach to one (1) shared left-turn/through lane and one (1) exclusive right-turn lane. The northbound Old Walt Whitman Road approach

to its intersection with Old Country Road would continue to operate at the "No-Build" Level of Service "F" and the westbound Old Country Road left-turn/through movement would degrade to a Level of Service "B" during the weekday morning peak hour. The southbound Old Walt Whitman Road approach would continue to operate at the "No-Build" Level of Service "F" during the weekday morning and weekday evening peak hours.

2. The proposed right-turn ingress/egress-only Canon site driveway along the LIE South Service Road is expected to operate with a Level of Service "D" during the weekday evening peak hour with a calculated 95th percentile queue length of approximately five (5) vehicles, which can be entirely accommodated on the site without impeding the on-site circulation. Note that a Level of Service is not provided during the weekday morning peak hour since egress movements are restricted at this driveway during that time and, as such, no conflicting traffic movements would be present at the site driveway.

The following list provides the future "No-Build" and "Build" Level of Service of the critical intersection approach for each of the unsignalized intersections included in this study that were analyzed utilizing Synchro software. At the request of the Town, these intersections were analyzed in Synchro using HCM methodology.

ANALYSIS UTILIZING SYNCHRO SOFTWARE (HCM METHODOLOGY)

Intersection	No Build/Build LOS	
	AM	PM
Old Walt Whitman Road and Cottontail Road	D/F	C/C
Old Walt Whitman Road and Existing FedEx Driveway North	D/B	D/B
Old Walt Whitman Road and Existing FedEx Driveway South	E/-	F/-
Proposed Canon South Driveway & Old Walt Whitman Road	-/F	-/F

Notes:

1. The eastbound approach at the Cottontail Road/Old Walt Whitman Road intersection would degrade to a Level of Service "F" during the morning peak hour.

2. The critical westbound approach at the intersection formed by the FedEx northerly driveway

and Old Walt Whitman Road would improve to operate at Level of Service "B" during both the weekday morning and weekday evening peak hours. Under the development proposal, the northerly FedEx driveway would be configured to operate as a right-turn egress-only driveway, which is expected to improve the Level of Service at this intersection.

3. During the weekday evening peak hour, the critical westbound approach at the existing FedEx Driveway South/Old Walt Whitman Road intersection would continue to operate at a Level of Service "F."

4. The critical eastbound approach at the proposed southerly site driveway along Old Walt Whitman Road is expected to operate at Level of Service "F" during both the weekday morning and weekday evening peak hours.

The individual unsignalized intersection approach delays and associated Levels of Service are contained within the Technical Appendix in Tables L through R.

RECOMMENDED MITIGATION MEASURES

In order to address existing roadway network constraints as well as the anticipated impact associated with the proposed Canon Americas Headquarters, a series of mitigation measures within the surrounding roadway network have been identified. As recommended by GPI, a "No-Build" condition that includes the Town of Huntington and NYSDOT proposed roadway improvements was incorporated into this analysis. The mitigation package maintains the calculated base "No-Build" traffic condition at the intersections under review by introducing capacity upgrades, and, in some areas, incorporating the NYSDOT and Town of Huntington's improvement projects as discussed earlier. These agencies have proposed improvements that are extensive in scope and aim to address the area-wide transportation welfare. It is recommended that the mitigation measures proposed herein, all of which are beyond the required scope of mitigation measures required by the NYSDOT's Route 110 project and the Town of Huntington's Old Walt Whitman Road project, be completed in conjunction with these area-wide improvements in an effort to minimize construction phasing and scheduling efforts.

The following mitigation package includes improvements to the area-wide transportation network that would be required to address Canon's traffic impact on the noted intersections. These

modifications are regionalized improvements and are not necessarily required for the efficient ingress to and egress from the site itself. As such, the funding and implementation mechanisms for these improvements are expected to be derived from public entities that may view them as significant benefits to the traveling public, in addition to just Canon's employees and visitors. Based on continued discussions and consultations with the Town of Huntington and the NYSDOT, the widening improvements along the North and South Service Road will be the subject of an *Infrastructure Improvement Plan* that will detail the source of funding and the timing of construction. Final site plan approval shall be subject to the acceptance of this Plan. Furthermore, the Applicant will provide a $1.3 million Development Impact Fee to the Town for traffic improvements along the Walt Whitman Road corridor benefitting the existing travel public as well as Canon's site generated traffic. Meetings have been conducted, and will continue to be conducted under the leadership of the Town of Huntington, to fashion sources of funds to implement these off-site mitigation recommendations. These improvements are described in detail below and comprise the "Build with Mitigation" scenario.

The appended Conceptual Roadway Improvement Plans have been prepared by this office to depict the frontage improvements associated with the Canon project and their connection to the adjacent corridor improvements proposed by the Town of Huntington and the NYSDOT. Additionally, a table containing the various proposed mitigation measures and associated timeframes has been prepared to summarize the planned improvement programs. Please refer to the Technical Appendix of this document for detailed information.

Signalized Intersections

NYS Route 110 and Old Walt Whitman Road/Duryea Road

Signal timing modifications are recommended during the weekday morning peak hour. Although the overall intersection delay would degrade to a Level of Service "E" with the implementation of the timing modifications, each "Build" condition Level of Service movement would be consistent with each "No-Build" condition Level of Service movement during the weekday morning peak hour. Signal timing modifications are not recommended during the weekday evening peak hour "Build" condition. Although the northbound NYS Route 110 left-turn movement would degrade to a Level of Service "F" with the addition of the Canon site traffic, only a 0.50-second change in overall intersection delay is calculated between the "No-Build" the "Build"

weekday evening peak hour scenarios, which is not deemed to be a significant degradation. Note that NYSDOT's proposed roadway improvements do not include this intersection.

NYS Route 110 and Old Country Road

The NYSDOT's planned improvements to the NYS Route 110-Old Country Road intersection were incorporated into the "Build with Mitigation" analysis. The modifications include the addition of one (1) exclusive through lane along the northbound and southbound NYS Route 110 approaches. In addition, the NYSDOT project proposes the extension of Old Walt Whitman Road, which is located immediately west of this intersection. This extension would connect Old Walt Whitman Road to southbound NYS Route 110, and was also incorporated into this analysis. It should be noted that all of the traffic currently making a right-turn movement from southbound NYS Route 110 to westbound Old Country Road would execute this turn at the Old Walt Whitman Road extension. Therefore, the traffic volumes have been modified accordingly in the "No-Build" with Town and NYSDOT improvements and the "Build with Mitigation" analyses. It is expected that the proposed roadway modifications, as well as signal timing changes would improve the "Build" condition such that the intersection would perform with similar overall delay than in the "No-Build" condition. The Old Country Road westbound left-turn/through/right-turn movement would degrade to a Level of Service "F" under the weekday morning peak hour "Build" condition. However, the overall intersection delay increases by only 0.50 seconds and 1.0 second during the weekday morning and the weekday evening peak hours, respectively, when compared to the "No-Build" with Town and NYSDOT improvements condition. Further, the overall intersection would continue to operate at the "No-Build" Level of Service during both peak hours.

The following table presents a comparison of the overall Levels of Service at the signalized intersections under the "No-Build" with Town and NYSDOT roadway improvements and "Build with Mitigation" scenarios utilizing HCS+ software.

ANALYSIS UTILIZING HCS+ SOFTWARE (HCM METHODOLOGY)

Intersection	No-Build With Town & NYSDOT/Build with Mitigation	
	AM	PM
NYS Route 110 and Old Walt Whitman/Duryea Road	D/E	E/E
NYS Route 110 and Old Country Road	E/E	F/F

The following sub-section presents the "No-Build" with Town and NYSDOT improvements and the "Build with Mitigation" scenarios for the intersections analyzed using Synchro Software.

Old Walt Whitman Road and Sweet Hollow Road/Pinelawn Road (C.R. 3)

Signal timing modifications are proposed at the Old Walt Whitman Road-Sweet Hollow Road/Pinelawn Road intersection. As a result of the signal timing improvements, each approach to the intersection is expected to operate at "No-Build" with Town and NYSDOT improvements Levels of Service during both peak hours. Please note, during the evening peak hour, the overall intersection degrades to a Level of Service "B" due to a slight increase in delay of 0.2 seconds.

Old Walt Whitman Road and LIE North Service Road

Similar to the LIE South Service Road, the NYSDOT's improvement project proposes an additional through lane at the westbound approach to the NYS Route 110-LIE North Service Road intersection. The full build-out of the proposed development would require widening along the LIE North Service Road. The recommended roadway improvements are depicted on the appended Conceptual Roadway Improvement Plans, Sheets 5 and 6 of 7, as well as the appended LIE North Service Road Detail (Sheet 1 of 2). The widening would meet the westerly extent of NYSDOT's proposed improvements at the Route 110-LIE North Service Road intersection. The "Build with Mitigation" analysis includes an additional westbound through lane on the LIE North Service Road to complement the NYSDOT's improvement project and address capacity constraints at the intersection. It is recommended that the northbound Old Walt Whitman Road approach at LIE North Service Road be reconfigured to provide two (2) exclusive left-turn lanes and one (1) exclusive through lane. The recommended mitigation, along with signal timing modifications and the new westbound through lane proposed under the NYSDOT project, would allow the overall intersection to operate at the "No-Build" with Town and NYSDOT improvements Level of Service "C" during the weekday morning peak hour. It should be noted that the northbound approach would improve to a Level of Service "B" and that there is a slight decrease in overall intersection delay of 0.8 seconds when analyzed under the "Build with Mitigation" scenario. During the evening peak hour, the overall intersection is expected to improve from a "No-Build" with Town and NYSDOT improvements Level of Service "E" to a "Build with Mitigation" Level of Service "D" with a decrease in overall intersection delay of 21.1 seconds. It should be noted that the westbound

approach would improve to a Level of Service "D" and the southbound approach would improve to a Level of Service "E".

Old Walt Whitman Road and LIE South Service Road

The NYSDOT's improvement project proposes an additional through lane at the eastbound approach to the NYS Route 110-LIE South Service Road intersection. This action would require widening along the LIE South Service Road, which has been conceptually designed by this firm as depicted on the appended Conceptual Roadway Improvement Plans, Sheets 3 and 7 of 7. The widening would meet the westerly extent of NYSDOT's proposed improvements at the Route 110-LIE South Service Road intersection. The "Build with Mitigation" analysis includes an additional eastbound through lane on the LIE South Service Road to complement the NYSDOT's improvement project and address capacity constraints at the intersection. In addition, it is recommended that the southbound Old Walt Whitman Road approach be reconfigured to provide one (1) exclusive left-turn lane and two (2) exclusive through lanes. This recommended mitigation, along with signal timing modifications, would improve the overall intersection from a Level of Service "C" in the "No-Build" with Town and NYSDOT improvements condition to Level of Service "B" in the "Build with Mitigation" condition, during the morning peak hour, with a decrease in overall intersection delay of 16.2 seconds. It should be noted that the eastbound approach would improve from a "No-Build" with Town and NYSDOT improvements Level of Service "D" to a "Build with Mitigation" Level of Service "B" and the northbound approach would improve from a Level of Service "D" to a Level of Service "C". During the evening peak hour, the overall intersection would operate at the "No-Build" with Town and NYSDOT improvements Level of Service "C" with a slight decrease in delay of 1.0 seconds. It should be noted that the eastbound left-turn/through movement improves from a "No-Build" with Town and NYSDOT improvements Level of Service "D" to a "Build with Mitigation" Level of Service "C."

Old Walt Whitman Road and Pineridge Street

During the morning peak hour, the eastbound approach would degrade slightly to a Level of Service "C" with the implementation of signal timing modifications. Although a degradation would be anticipated, the overall intersection would continue to operate at the "No-Build" with Town and NYSDOT improvements Level of Service "A" with a slight increase in delay of only 1.7 seconds. During the evening peak hour, the overall intersection is expected to degrade to a Level of Service

"B". Please note that although a degradation would occur, a Level of Service "B" is still highly acceptable per traffic engineering design standards.

Old Walt Whitman Road and Northgate Circle/Baylis Road

Signal timing modifications are recommended at the Old Walt Whitman Road intersection with Northgate Circle/Baylis Road. The eastbound and westbound approaches to the intersection would degrade to a Level of Service "D" and a Level of Service "C", respectively, while the southbound approach would improve to a Level of Service "A" during the weekday morning peak hour. Although a degradation along certain approaches would be anticipated, the overall intersection would improve to operate at an overall Level of Service "A" with a slight decrease in delay of 1.8 seconds. During the evening peak hour, the eastbound and westbound approaches to the intersection would degrade to a Level of Service "C" and a Level of Service "B", respectively, while the southbound approach would improve to a Level of Service "A". However, it should also be noted that the overall intersection would improve to operate at an overall Level of Service "A" with a slight decrease in overall intersection delay of 5.4 seconds.

NYS Route 110 and LIE North Service Road

The NYSDOT's project, which involves an additional LIE North Service Road through lane, was also incorporated in the "Build with Mitigation" analysis at this intersection. An additional through lane along the LIE North Service Road would alleviate capacity constraints on the westbound approach of this intersection. During the weekday morning peak hour, with the proposed signal timing modifications, the overall intersection would improve from the "No-Build" with Town and NYSDOT improvements Level of Service "C" to a "Build with Mitigation" Level of Service "B" due to a decrease in delay of 2.4 seconds. It should be noted that the northbound approach is expected to improve to a Level of Service "A." During the weekday evening peak hour, the overall intersection would operate at the "No-Build" with Town and NYSDOT improvements Level of Service "B" with a slight decrease in delay of 1.6 seconds. Please note, each approach is expected to continue to operate at "No-Build" with town and NYSDOT improvements Levels of Service.

NYS Route 110 and LIE South Service Road

The roadway improvements associated with the NYSDOT's project have been incorporated in the "Build with Mitigation" analysis at this intersection. The NYSDOT project involves the

addition of one (1) through lane along the LIE South Service Road. With the additional through lane along with signal timing modifications, the overall intersection is calculated to operate at an acceptable Level of Service "C" during the morning peak hour. Please note that the eastbound approach is calculated to operate at a Level of Service "D" while the southbound approach is calculated to improve to a Level of Service "A." During the weekday evening peak hour, the overall intersection is calculated to operate at a Level of Service "D" due to an increase in delay of 18.9 seconds. The northbound approach to the intersection is calculated to operate at a Level of Service "D", the eastbound approach to the intersection is calculated to operate at a Level of Service "E", and the southbound approach to the intersection is calculated to operate at a Level of Service "C".

Round Swamp Road and LIE South Service Road

Signal timing modifications are proposed at the Round Swamp Road and LIE South Service Road intersection. As it is understood that the subject intersection is coordinated with the adjacent intersection of Round Swamp Road and LIE North Service Road, the Round Swamp Road/LIE North Service Road intersection was included in the "Build with Mitigation" Synchro analyses. Integration of the intersection into the network model was done to determine the affects of the proposed signal timing modifications at Round Swamp Road/LIE South Service Road on the roadway network, particularly the segment of Round Swamp Road located between the two subject intersections as the segment has limited storage capacity. With the proposed signal timing modifications, it was determined that adequate capacity would be available along both directions of the roadway segment and that a gridlocked condition would not occur during either peak period studied. In addition, it was determined that the overall intersection is expected to degrade from a "No-Build" with Town and NYSDOT improvements Level of Service "C" to a Level of Service "D" during the weekday morning peak hour. Please note that although a degradation would occur, a Level of Service "D" is an acceptable Level of Service per traffic engineering design standards. During the weekday evening peak hour, the overall intersection is expected to operate at a "No-Build" with Town and NYSDOT improvements Level of Service "C". In addition, each approach to the intersection is expected to operate at "No-Build" with Town and NYSDOT improvements Levels of Service or better. Please note, the eastbound approach to the intersection is expected to improve to a Level of Service "C".

Round Swamp Road and LIE North Service Road

As the intersection of Round Swamp Road and LIE North Service Road is coordinated with the intersection of Round Swamp Road and LIE South Service Road, signal timing modifications are also proposed at the Round Swamp Road/LIE North Service Road intersection. The signal timings were modified in relation to the proposed signal timing changes at the Round Swamp Road/LIE South Service Road intersection in order to provide more efficient vehicular progression along the Round Swamp Road corridor. With the proposed signal timing changes, each approach to the intersection is calculated to operate at Level of Service "D" or better during both peak periods.

Park Drive and Old Walt Whitman Road

Signal timing modifications are proposed at the intersection of Park Drive and Old Walt Whitman Road. With the signal timing changes, each approach to the intersection is expected to operate at "No-Build" with Town and NYSDOT improvements Levels of Service during both the weekday morning and weekday evening peak hours with one exception. During the weekday evening peak hour, the eastbound approach is expected to degrade to a Level of Service "C." However, it should be noted that the overall intersection is expected to continue to operate at the "No-Build" with Town and NYSDOT improvements at Level of Service "A."

Canon Main Driveway and Old Walt Whitman Road

A signalized access point would be constructed as part of the development proposal at the Old Walt Whitman Road intersection formed by the existing southerly FedEx driveway and Canon's proposed main driveway. The "Build with Mitigation" condition incorporates one (1) additional southbound through lane and one (1) additional southbound right-turn bay on Old Walt Whitman Road. The additional southbound through lane would extend along the site's Old Walt Whitman Road frontage and taper just north of the southerly Canon site driveway. To the north, the additional pavement width would meet the expanded southbound approach at the Old Walt Whitman-LIE South Service Road intersection, discussed further in the mitigation section on Page 32. Under "Build with Mitigation" conditions, this intersection will operate at an overall Level of Service "B" during the morning peak hour and an overall Level of Service "D" during the evening peak hour.

The following list respectively provides the future "No-Build" with Town and NYSDOT improvements and the "Build with Mitigation" Levels of Service at each of the signalized

intersections analyzed in Synchro. The signalized intersections are listed along with their overall Level of Service.

ANALYSIS UTILIZING SYNCHRO SOFTWARE (SYNCHRO METHODOLOGY)

Intersection	No-Build with Town & NYSDOT/Build with Mitigation	
	AM	PM
Old Walt Whitman Road and Sweet Hollow Road/Pinelawn Road (C.R. 3)	B/B	A/B
Old Walt Whitman Road and LIE North Service Road	C/C	E/D
Old Walt Whitman Road and LIE South Service Road	C/B	C/C
Old Walt Whitman Road and Pineridge Street	A/A	A/B
Old Walt Whitman Road and Northgate Circle/Baylis Road	B/A	B/A
NYS Route 110 and LIE North Service Road	C/B	B/B
NYS Route 110 and LIE South Service Road	B/C	C/D
Round Swamp Road and LIE South Service Road	C/D	C/C
Round Swamp Road and LIE North Service Road	-/D	-/C
Old Walt Whitman Road and Park Drive	A/A	A/A
Proposed Canon Main Site Driveway/Existing FedEx Driveway South & Old Walt Whitman Road	-/B	-/D

Old Walt Whitman Road – Coordinated Traffic Signal Network

As noted by the Town of Huntington and Greenman-Pedersen, Inc., the Town's Consultant, the existing traffic signals on Old Walt Whitman Road at Pineridge Street and Northgate Circle/Baylis Road would be replaced as part of the planned corridor improvement project. Together with the proposed traffic signal to be installed at Park Drive under the same improvement project, the Town may consider implementing a coordinated traffic signal network to improve throughput and vehicle progression within the corridor. The addition of a new traffic signal at Canon's main access point would result in four (4) signalized intersections on Old Walt Whitman Road between the LIE South Service Road and NYS Route 110. In an effort to provide the Town with a recommendation for an optimized network to serve the traveling public as well as the future Canon office complex, our office has developed a preliminary Coordinated Traffic Signal Network Plan under the "Build with Mitigation" scenario utilizing the Synchro Signal Coordination Methodology. Coordination means

that there is a predictable time relationship between the operation of each signal relative to the operations of each of the other signals located within the specific system or zone. The above-mentioned intersections were segregated from the remainder of the Synchro network and optimized during the weekday morning and evening peak hours. Please note that while the existing traffic signals at the LIE North and South Service Roads are in close proximity to the four under consideration here, they are part of NYSDOT's INFORM system and would not be fully integrated into a Town-maintained network. However, at the request of the NYSDOT, the proposed signalized intersection formed by Canon's Main Site Driveway and Old Walt Whitman Road would be interconnected to the signalized intersection of LIE South Service Road and Old Walt Whitman Road. The phasing the proposed traffic signal at the driveway would be linked to the existing traffic signal at the LIE South Service Road in an effort to alleviate queuing and delay along northbound Old Walt Whitman Road. As such, the Synchro network under the "Build with Mitigation" scenario was analyzed such that the intersection of the Canon Main Site Driveway and Old Walt Whitman Road, along with the adjacent intersections of Pineridge Street and Baylis Road/Northgate Circle and Park Drive, would all have identical cycle lengths to that of the LIE South Service Road and Old Walt Whitman Road intersection during each peak hours. Specifically, these aforementioned intersections would have cycle lengths of 100 seconds during the morning peak hour and 90 seconds during the evening peak hour. Offsets in relation to the LIE South Service Road and Old Walt Whitman Road intersection were then calculated at each of the traffic signals south of Canon, during both peak hours in order to link the two networks and develop a coordinated network along Old Walt Whitman Road that would minimize northbound queuing and delay.

The table below summarizes the recommended cycle length and offset parameters for each traffic signal on Old Walt Whitman Road between the LIE South Service Road and NYS Route 110. Please note that the design of this network should be adjusted based on further consultations with the Town of Huntington and its traffic consultant as the Reference Phase/Offset Settings may require adjustment based on the Town's implementation plan and the types of controller units typically utilized by the Town of Huntington. The following parameters, as well as all other traffic signal timing parameters, are provided in the appended Synchro output sheets.

Intersection	Cycle Length (sec.) AM/PM	Offset (sec.) AM/PM
Canon/FedEx	100/90	76/11
Pineridge Street	100/90	94/75
Northgate Circle/Baylis Road	100/90	0/0
Park Drive*	50/90	3/0

*Half and double cycle lengths can function in coordinated traffic signal networks

Unsignalized Intersections

Old Walt Whitman Road and Old Country Road

The proposed NYSDOT modifications at this intersection involve the installation of a traffic signal. The traffic signal would be installed to operate in coordination with the NYS Route 110 and Old Country Road signal. The installation of a traffic signal at this intersection would improve the delays at the northbound and southbound approaches to the intersection. Note that this mitigation analysis incorporates the anticipated re-routing of traffic volumes based on the NYSDOT Planned extension of Old Walt Whitman Road to meet NYS Route 110 just south of the Northern State Parkway. The intersection would continue to operate at the "No-Build" Levels of Service with the build out of the Canon Development when compared to the "No-Build" condition incorporating the Town and NYSDOT improvements with the exception of the Old Walt Whitman Road southbound left-turn/through movement which would degrade to a Level of Service "C" during the weekday morning peak hour. In addition, the proposed signal timing modifications in the Build with Mitigation scenarios would decrease the overall intersection delay by 2.2 seconds and 10.4 seconds during the weekday morning and weekday evening peak hours, respectively.

The following table presents the overall Levels of Service at the unsignalized intersection under the "No-Build" with Town and NYSDOT improvements and the "Build with Mitigation" scenarios utilizing HCS+ software.

ANAYLSIS UTILIZING HCS + SOFTWARE (HCM METHODOLOGY)

Intersection	No-Build with Town & DOT /Build with Mitigation	
	AM	PM
Old Walt Whitman Road and Old Country Road	D/D	F/F

The following presents the "No-Build" with Town and NYSDOT improvements and the "Build with Mitigation" scenarios for the unsignalized intersections which were analyzed using Synchro software. At the request of the Town of Huntington, these intersections were analyzed in Synchro using HCM methodology.

Old Walt Whitman Road and Cottontail Road

Under the "Build with Mitigation" scenario, the critical approach at the intersection of Old Walt Whitman Road and Cottontail Road would operate at a Level of Service "E" during the morning peak hour due to an increase in delay of 4.8 seconds. During the weekday evening peak hour, the approach would continue to operate at "No-Build" Levels of Service with the build out of the Canon Development when compared to the "No-Build" condition incorporating the Town and NYSDOT improvements.

Old Walt Whitman Road and Existing FedEx North Driveway

Under the current development proposal, the northerly FedEx driveway would be configured to operate as a right-turn egress-only driveway, which is expected to improve the Level of Service for the critical approach at this intersection. Specifically, the westbound approach to the intersection is calculated to improve to a Level of Service "B" during both peak periods.

Proposed Canon South Driveway and Old Walt Whitman Road

One of the proposed "Build with Mitigation" improvements includes one (1) additional southbound through lane on Old Walt Whitman Road. The additional southbound through lane would extend along the site's Old Walt Whitman Road frontage but would taper just north of the southerly Canon site driveway. As such, the overall Level of Service at the proposed Canon South Driveway intersection is calculated to operate at a Level of Service "F" during both peak periods

under the "Build with Mitigation" scenario. Please note that the Level of Service "F" translates to a 95th percentile queue length of two (2) vehicles during the weekday morning peak hour and eight (8) vehicles during the weekday evening peak hour, which can be entirely accommodated on site without affecting on-site circulation. It can also be observed in the Synchro simulation that adequate gaps in traffic are provided along Old Walt Whitman Road to accommodate the vehicles queued at the Canon South Driveway.

The following table presents the Level of Service of the critical intersection approach for each of the unsignalized intersections under the "No-Build" with Town and NYSDOT improvements and the "Build with Mitigation" scenarios analyzed using Synchro software. Note, at the request of the Town of Huntington, these intersections were analyzed in Synchro using HCM methodology.

ANALYSIS UTILIZING SYNCHRO SOFTWARE (HCM METHODOLOGY)

Intersection	No-Build with Town & DOT /Build with Mitigation	
	AM	PM
Old Walt Whitman Road and Cottontail Road	D/E	C/C
Old Walt Whitman Road and Existing FedEx Driveway North	D/B	D/B
Old Walt Whitman Road and Existing FedEx Driveway South	E/-	F/-
Proposed Canon South Driveway & Old Walt Whitman Road	-/F	-/F

Prior to the Planning Board granting final site plan approval of the project; the applicant, the Town of Huntington and the New York State Department of Transportation shall agree to an Infrastructure Implementation Plan that will detail the source of funding and the timing for the construction of the infrastructure improvements detailed above. Final Site Plan Approval shall be subject to the acceptance of the Infrastructure Implementation Plan by the Town of Huntington and the New York State Department of Transportation.

The Applicant and the Town of Huntington shall work cooperatively to obtain grant financing or public monies for public infrastructure improvements in the project area.

ON-SITE CIRCULATION ANALYSIS

An on-site circulation analysis was completed utilizing the Highway Capacity Software (HCS+) and Synchro 6 Software. Four (4) locations were studied along Canon's Main Access Aisle based on the comments received in the October 7, 2008 review letter from GPI. The complete analysis results are provided in the Technical Appendix.

The following list provides the future "Build" Levels of Service at each of the unsignalized intersections included in this on-site circulation analysis which utilized HCS+ Software. The unsignalized intersections are listed along with the Level of Service of their critical approach.

ANALYSIS UTILIZING HCS + SOFTWARE (HCM METHODOLOGY)

Intersection	Build LOS	
	AM	PM
Main Access Aisle & Westerly North Parking Garage Driveway	A	B
Main Access Aisle & Easterly North Parking Garage Driveway	A	B
Main Access Aisle & Southerly Access Aisle	B	E

The proposed on-site circulation aisles analyzed with HCS+ Software would operate at a Level of Service "B" or better during the weekday morning peak hour and at a Level of Service "E" or better during the weekday evening peak hour. The Level of Service "E" expected at the Main Access Aisle intersection with the Southerly Access Aisle translates to a 95th percentile queue length of approximately four (4) vehicles which would be accommodated along the Main Access Aisle without obstructing mobility to the adjacent parking lot areas.

A capacity analysis for the Canon Main Site Driveway intersection with the Main Access Aisle has also been conducted. Note that as this intersection is STOP-controlled at three (3) approaches and cannot be modeled in HCS+ Software or analyzed using HCM methodology in Synchro software, the analysis was conducted utilizing Synchro methodology in Synchro Software. The complete results of the analysis can be found in the Technical Appendix of this report.

The following Table provides the future "Build with Mitigation" ICU Level of Service for the unsignalized study intersection.

ANALYSIS UTILIZING SYNCHRO SOFTWARE (SYNCHRO METHODOLOGY)

Intersection	Build with Mitigation LOS	
	AM	PM
Canon Main Site Driveway and Main Access Aisle	A	B

The proposed Canon Main Site Driveway intersection with the Main Access Aisle would operate at an ICU Level of Service "A" during the weekday morning peak hour and an ICU Level of Service "B" during the weekday evening peak hour.

WEAVING ANALYSIS

A Weaving Analysis was previously conducted utilizing the Highway Capacity Software Plus (HCS+) software. Two (2) locations along the LIE South Service Road were studied based on a request made by the NYSDOT during the April 1, 2008 Pre-Application Meeting. The two weaving areas studied were (1) LIE eastbound Exit 48 (Round Swamp Road) off-ramp and (2) LIE eastbound Exit 49S (Old Walt Whitman Road) off-ramp. The results of this Weaving Analysis were presented in our April 21, 2008 Traffic Impact Analysis.

During the June 5, 2008 meeting with the NYSDOT, a request was made to conduct an analysis of the two weaving segments utilizing a different analysis tool. As a result, we have since conducted a Synchro/SimTraffic analysis demonstrating the peak hour operating conditions of the weaving segments under four (4) scenarios: Existing, No Build, Build, and Build with Mitigation. The attached Synchro/SimTraffic compact disc contains video simulations of the two weaving areas under each scenario. Please note that the video simulations provide a qualitative assessment of the off-ramps and weaving conditions rather than a quantitative, LOS-based analysis as calculated by HCS+. It was noted during the meeting and in our original Traffic Impact Analysis that the HCS+ software, which can provide quantitative results for weaving segments, is limited in its ability to accurately assess weaving conditions, specifically when the weave condition depends of queuing conditions at closely spaced intersections. As a result, the video simulations attempt to demonstrate the effect of the downstream signalized intersections (Round Swamp Road and Old Walt Whitman Road) in real time as the project advances from the Existing condition towards the Build with Mitigation condition.

It is important to note that the relocation of the office complex's driveway to a point west of the Exit 49S off-ramp is expected to improve potential weaving conditions along the site frontage west of Old Walt Whitman Road. Furthermore, based on the video simulations, we do not anticipate that the redistribution of site-generated traffic, as noted within the distribution section of this document, would have an adverse effect on the Exit 48 weaving area.

The introduction of Canon's site traffic to these locations would be adequately served within the weaving segments identified above. The juxtaposition of the morning and evening split of site traffic

and the adjacent peak roadway volumes demonstrates that Canon's peak arrival and departure times do not coincide with the peak periods of adjacent roadway activity. In general, the LIE South Service Road traffic volumes at Exit 48 are higher in the evening when Canon's additional traffic is projected to be comparatively low. Similarly, the LIE South Service Road traffic volumes are significantly higher in the morning when Canon's site-generated traffic is also projected to be comparatively low. In this manner, the anticipated site-generated volumes can be introduced into the surrounding roadway network in a safe and efficient manner as proposed within the site access management program.

CORPORATE TRIP REDUCTION INITIATIVES

In an effort to reduce the number of daily employee trips and to meet Leadership in Energy and Environmental Design (LEED) requirements, Canon U.S.A., Inc. has approved the following Employee Trip Reduction Initiatives for the new corporate headquarters:

- Commuter Choice Program
  - On December 10, 2008 Canon launched a Commuter Choice Fair in coordination with Long Island Transportation Management. Employees signed up for car-pools and incentives are being offered to employees who take mass transit or car pool to Canon's Long Island offices.
  - As part of the Commuter Choice Program, Canon implemented a "guaranteed ride program" to ensure a ride home for car-poolers in a time of emergency.
  - Canon is investigating employees paying for transit benefits with pre-tax dollars.
  - Provide incentives to carpool.
  - Encourage public transit and vanpools.
  - Evaluate a shuttle service between the train stations and Canon.
  - Provide reserved parking for both hybrid and electric vehicles and electric power sources/ outlets for recharging.
- Encourage use of bicycles by providing 40 bicycle spaces.
- Implementation of the following employee staggered arrival-departure program to minimize the concentration of site-generated traffic on the adjacent roadway network during peak hours:
  - 8:00 a.m. to 4:00 p.m.
  - 8:30 a.m. to 4:30 p.m.
  - 9:00 a.m. to 5:00 p.m.
  - 9:30 a.m. to 5:30 p.m.

The number of employees assigned to each pair of arrivals and departures would be determined as the corporate operation in Melville solidifies. These assignments will be based in part on where Canon's employees reside at the time the new office complex opens. The anticipated changes in the employee zip code distribution, as noted in the Trip Distribution section of this document, would be expected to affect the breakdown of the employee base in to the staggered arrival/departure program.

- Extend the time period that the departure gates are open as a result of the staggered arrivals/departures program so as to promote the progression of outbound traffic. Presently, the departure gate at the Lake Success facility is open from 5:00 p.m. to 5:30 p.m. only.

- Provide a bus stop for the MTA Long Island Bus line N95 along the Old Whitman Road site frontage.

Canon is also considering the following initiatives to further reduce employee traffic:

- Provide shuttle buses to and from the nearby Long Island Rail Road stations.

- Provide incentives for not using parking spaces.

An additional discussion on some of the above initiatives is provided in the following section, "Site Access and Circulation." Please note that in order to provide conservative analyses, credit for these employee trip reduction initiatives has not been applied to the traffic analyses provided herein. We recognize that these initiatives would help reduce daily traffic to and from the site, and in that regard the traffic analysis overestimates the peak hour projections of traffic impact on the surrounding roadways.

SITE ACCESS AND CIRCULATION

A review has been made of the Site Plan for the proposed Canon Americas Headquarters prepared by Bohler Engineering and HOK Architects. Based on the proposed site layout, our office has provided a summary of the key on-site elements as they relate to traffic. The following items address site access, on-site circulation, and parking supply:

ACCESS

- Primary access along LIE South Service Road is proposed via one (1) right-turn ingress/right-turn egress unsignalized access point that would be subject to entering and exiting restrictions based on the time of day. This access point is proposed to be located west of the Exit 49S off-ramp from the Long Island Expressway to address NYSDOT concerns. No form of access is provided along the Long Island Expressway South Service Road between the Exit 49S off-ramp and Old Walt Whitman Road. Access would also be provided via two (2) full-movement driveways and one (1) right-turn ingress only driveway along southbound Old Walt Whitman Road. The central driveway along Old Walt Whitman Road is proposed to be signalized and would serve as the office complex's main access point. The southerly proposed driveway along Old Walt Whitman Road would be primarily utilized by truck deliveries and employees and the northerly access point would accommodate inbound traffic during peak arrival periods.

- Based on "A Toolbox for Alleviating Traffic Congestion and Enhancing Mobility" published by the ITE, a reversible lane system is one of the most efficient methods of increasing rush-period capacity on a roadway. Once a reversible system is deemed necessary and feasible, the method of designating lanes to be reversed and the direction of flow must be selected. The following methods are proposed to accomplish a reversible system for the Canon internal roadway system:

- permanent and variable message signs advising motorists of the changes in traffic regulations and the hours they are in effect

- barrier gates, roll-out gates and other physical barriers, such as traffic cones, as needed

These recommendations are also contained within the National Cooperate Highway Research Program "Convertible Roadways and Lanes, Synthesis 340" document.

- As the travel section parallel to the LIE South Service Road would be utilized reversibly (AM inbound, PM outbound), it is recommended that Figure 3B-6 of the Federal Manual of Uniform Traffic Control Devices (MUTCD) be consulted in the design of the necessary pavement markings and signage provisions along this on-site roadway. The lane lines should consist of broken double yellow lines to delineate the edge of each lane as needed, as shown in the above-mentioned figure. A meeting was held on November 24, 2008 with members of the Town's Traffic Safety Department at which time appropriate signage and travel patterns were discussed and agreed upon.

- The internal layout of the site access facilities would assist in balancing the external distribution of traffic to the adjacent roadway network. The driveway location along the LIE South Service Road would be designed to provide adequate separation distance from the Exit 49S off-ramp to minimize weaving conflicts along the site frontage. Employees looking to access the site from the LIE South Service Road would need to use Exit 48 (Round Swamp Road) as the driveway is proposed to be located west of the Exit 49S off-ramp.

- Each access point would be equipped with a guard booth and electronic remote access (similar to the E-Z Pass system). These checkpoints would be located far enough into the site to minimize the potential for queuing issues on the public roadways.

- A public bus stop for the MTA Long Island Bus Route 95 is proposed along the site's Old Walt Whitman Road frontage. This would afford employees and staff the ability to choose an alternative means of transportation, which in turn works to reduce the number of trips made to and from the complex via personal auto. This bus stop must be evaluated and approved by the MTA Long Island Bus Company.

- A circular drop-off area would be provided in front of the main building entrance to facilitate visitors, deliveries and visiting corporate dignitaries.

PARKING

- The office building would be served by two (2) parking garages, one each on the north

and south sides of the property. The opportunity for employee access on both the LIE South Service Road and Old Walt Whitman Road would distribute traffic effectively to both parking garages.

- This circular area would also provide two bus stops to be utilized by Canon shuttle buses to/from the nearby Long Island Rail Road (LIRR) stations at Farmingdale and Huntington. This area would be flanked by a visitor parking area providing approximately 200 parking stalls.

DELIVERIES

- Primary delivery truck access would be provided at the south end of the site on Old Walt Whitman Road, and the delivery area would be situated away from the employee parking areas and visitor drop-off points. The on-site security team would be able to re-route any unauthorized trucks or other vehicles off the site through controlled access points.

- Based on delivery information obtained from Canon's Lake Success complex, the large majority of deliveries to the future Melville site are expected to take place during the middle of the day when traffic along the adjacent roadway network is below peak traffic volume levels. As such, delivery activity would generally not impede peak hour vehicular traffic flow on-site and along the adjacent roadway network.

CONCLUSIONS

This report was prepared to examine the potential traffic impact of the proposed Canon Americas Headquarters. The HCS+ and Synchro Software Highway Capacity Analyses for the future conditions demonstrate that the traffic impacts generated by the proposed development would be mitigated to acceptable operating conditions within the noted study area once the recommended signal timing mitigation measures and roadway improvements are implemented as noted herein, which implementation will coordinate with Canon's phased developments.

The mitigation package presented consists of a three-fold approach, incorporating improvements from the NYSDOT's NYS Route 110 corridor project, the Town of Huntington's Old Walt Whitman Road corridor project and the proposed widening of the LIE North and South Service Roads and Old Walt Whitman Road. Together, these improvements would provide a significant transportation benefit to the Melville area. The proposed improvements, and the NYSDOT's and Town's area-wide infrastructure upgrades must be coordinated to achieve a streamlined implementation for the traveling public. Based on continued discussions and consultations with the Town of Huntington and the NYSDOT, the widening improvements along the North and South Service Road will be the subject of an *Infrastructure Improvement Plan* that will detail the source of funding and the timing of construction. Final site plan approval shall be subject to the acceptance of this Plan. Furthermore, the Applicant will provide a $1.3 million Development Impact Fee to the Town for traffic improvements along the Walt Whitman Road corridor benefitting the existing travel public as well as Canon's site generated traffic.

Canon has committed to a staggered arrival/departure program whereby each employee of the Melville facility would be assigned to one of four pairs of staggered arrival and departure times. The Corporate Trip Reduction Initiatives is anticipated to reduce peak hour site-generated traffic within the surrounding roadway network, although no quantitative credit for this has been factored in this conservative Traffic Impact Analysis.

Once these improvements have been completed, the surrounding roadway network is expected to operate under parameters that are more conducive to traffic flows on these public facilities. The mitigation package as noted above would create the necessary capacity to process the traffic volumes associated with the proposed Canon Americas Headquarters.

TECHNICAL APPENDIX

ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

LEVEL OF SERVICE DESCRIPTIONS

LEVEL OF SERVICE ANALYSIS

While traffic volumes provide a measure of activity on the area roadway system, it is also important to evaluate how well that system can accommodate those volumes -- i.e., a comparison of peak traffic volumes with available roadway capacity. By definition, capacity represents the maximum number of vehicles which can be accommodated given the constraints of roadway geometry, environment, traffic characteristics, and controls. Intersections are usually the critical point in any road network since it is at such points that conflicts exist between through, crossing, and turning traffic, and where congestion is most likely to occur.

UNSIGNALIZED INTERSECTIONS

An unsignalized (i.e., "YIELD" or "STOP" sign controlled) driveway or side street along a through route is seldom critical from an overall capacity standpoint, however, it may be of great significance to the capacity of the minor cross-route, and it may influence the quality of traffic flow on both. In analyzing unsignalized intersections, it is assumed that both the through movements and right turn movements on the major street approaches are unimpeded and have the right-of-way over the minor street approaches and left turns from the major street. All other turning movements in the intersection cross, merge with, or are otherwise impeded by the major street movements.

The concept in determining traffic delays at an unsignalized intersection is to process these impeded movements in a sequential manner. For each impeded movement, all conflicting flows are summed, and an initial critical 'gap' in traffic is determined with a "follow-up" gap determined for subsequent vehicles waiting in a queue. Based upon the number of available gaps in the passing traffic stream, the potential capacity of that movement can be calculated.

However, since operation at capacity is usually unsatisfactory to most drivers, a descriptive mechanism (Level of Service) has been developed which describes traffic operations as a function of average total delay. Unsignalized Levels of Service range from 'A' (delays less than 10 seconds) to 'F' (delays greater than 50 seconds). Table I summarizes the relationship between capacity and Level of Service for unsignalized intersections as defined by the Transportation Research Board Highway Capacity Manual 2000.

LEVEL OF SERVICE AND EXPECTED DELAY FOR UNSIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	AVERAGE TOTAL DELAY (SEC./VEH.)
A	≤10
B	>10 and ≤ 15
C	>15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Transportation Research Board, Highway Capacity Manual, HCM2000, 2000, by the Transportation Research Board, Washington, D.C.

SIGNALIZED INTERSECTIONS

At signalized intersections, numerous other factors regulate the various approach capacities, including width of approach, number of lanes, signal "green time", turning percentages, truck volumes, etc. As with unsignalized intersections, operation at capacity is far from satisfactory since substantial delays or reduced operating speeds are likely. Therefore, a similar description mechanism has been developed (also called Level of Service) which indicates, on the basis of average delay per vehicle, the relative smoothness of intersection operation on a scale of 'A' (indicating average delays of 10 seconds or less) to 'F' (indicating average delays greater than 80 seconds). The various levels of signalized intersections are summarized in Table II. Again, the acceptable limit of delay for most motorists is Level of Service 'E'.

Delays cannot be related to overall roadway capacity in a simple one-to-one fashion. It is possible to have delays in the Level of Service 'F' range, without exceeding the physical roadway capacity. Such delays can exist if one or more of the following conditions exist:

- long signal cycle lengths (the time of complete a full sequence of signal phases);
- the particular traffic movement experiences a long red time; or,
- a progressive movement for a particular lane group is poor.

LEVEL OF SERVICE
FOR SIGNALIZED INTERSECTIONS

LEVEL OF SERVICE	DESCRIPTION	AVERAGE TOTAL DELAY
A	Progression is very favorable; many vehicles do not stop at all; short cycle length contributes to low delay values.	≤10
B	Generally occurs with good progression and/or short cycle length; more vehicles stop than with Level of Service A, causing higher levels of delay.	>10 and ≤ 20
C	Fair progression and/or longer cycle length; the number of vehicles stopping is significant at this level, though many vehicles still pass through the intersection without stopping.	>20 and ≤ 35
D	Longer delays may result from unfavorable progression, long cycle length, or high volume/capacity ratios; many vehicles stop and the proportion of vehicles not stopping declines; individual cycle failures are noticeable	> 35 and ≤ 55
E	These high delay values generally indicate poor progression, long cycle length, and high volume/capacity ratios; individual cycle failures are frequent.	> 55 and ≤ 80
F	Considered unacceptable to most drivers; often occurs with over-saturation (i.e. arrival flow rates exceed capacity), high volume/capacity ratios, and many individual cycle failures. Capacity is not necessarily exceeded under this Level of Service.	> 80

Transportation Research Board, Highway Capacity Manual, HCM2000, 2000, published by the Transportation Research Board, Washington, D.C.

ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

LEVEL OF SERVICE TABLES

Atlantic Traffic
& DESIGN ENGINEERS, PC

Job Title Proposed Canon Corporate Center
Job No AN08003
Date December 2, 2008

LOS Signalized Intersection Comparison: Old Walt Whitman Road & Sweet Hollow Road/Pinelawn Road (CR 3)

Table A

SYNCHRO

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-LTR	16.0	0.60	B	17.5	0.39	B	17.5	0.39	B	17.5	0.39	B	17.8	0.39	B
	LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	R	-	-	-	4.1	0.21	A	4.1	0.21	A	4.1	0.21	A	4.2	0.22	A
	WB-L	51.5	0.86	D	28.1	0.66	C	28.1	0.66	C	28.1	0.66	C	29.0	0.67	C
	T	18.6	0.47	B	19.2	0.49	B	19.2	0.49	B	19.2	0.49	B	19.6	0.50	B
	R	4.1	0.29	A	4.0	0.29	A	4.0	0.29	A	4.0	0.29	A	4.0	0.29	A
	NB-LTR	7.8	0.31	A	-	-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	8.8	0.13	A	8.8	0.13	A	10.8	0.20	B	10.6	0.20	B
	T	-	-	-	8.4	0.18	A	8.4	0.18	A	8.4	0.19	A	8.4	0.19	A
	R	-	-	-	2.4	0.10	A	2.4	0.10	A	2.4	0.10	A	2.4	0.10	A
	SB-LTR	14.7	0.67	B	-	-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	8.5	0.16	A	8.5	0.16	A	8.6	0.16	A	8.5	0.16	A
	T	-	-	-	13.6	0.60	B	13.6	0.60	B	18.8	0.76	B	18.4	0.76	B
	R	-	-	-	3.0	0.06	A	3.0	0.06	A	3.0	0.06	A	2.9	0.06	A
	OVERALL	17.8	-	B	13.6	-	B	13.6	-	B	15.3	-	B	15.3	-	B

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-LTR	13.7	0.27	B	15.7	0.26	B	15.7	0.26	B	15.7	0.26	B	16.6	0.27	B
	LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	R	-	-	-	5.6	0.07	-	5.6	0.07	-	5.6	0.07	A	5.9	0.07	A
	WB-L	17.8	0.34	B	17.3	0.32	B	17.3	0.32	B	17.3	0.32	B	18.3	0.34	B
	T	16.3	0.33	B	16.6	0.35	B	16.6	0.35	B	16.6	0.35	B	17.6	0.36	B
	R	4.3	0.19	A	4.2	0.19	A	4.2	0.19	A	4.2	0.19	A	4.4	0.20	A
	NB-LTR	14.5	0.70	B	-	-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	8.6	0.18	A	8.6	0.18	A	8.7	0.19	A	8.1	0.18	A
	T	-	-	-	9.7	0.34	A	9.7	0.34	A	10.2	0.39	B	9.5	0.37	A
	R	-	-	-	3.7	0.29	A	3.7	0.29	A	4.3	0.29	A	3.9	0.28	A
	SB-LTR	8.8	0.30	A	-	-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	8.4	0.13	A	8.4	0.13	A	8.6	0.15	A	8.0	0.14	A
	T	-	-	-	8.4	0.18	A	8.4	0.18	A	8.7	0.22	A	8.1	0.21	A
	R	-	-	-	3.2	0.04	A	3.2	0.04	A	3.2	0.04	A	3.0	0.04	A
	OVERALL	13.3	-	B	10.0	-	A	10.0	-	A	10.2	-	B	10.2	-	B

Atlantic Traffic

Job Title Proposed Canon Corporate Center
Job No AN08003
Date December 2, 2008

LOS Signalized Intersection Comparison: Old Walt Whitman Road & Long Island Expressway North Service Road

Table B

SYNCHRO

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	WB-T	11.8	0.79	B	12.0	0.81	B	17.7	0.81	B	19.4	0.99	B	32.6	0.90	C
	R	0.0	0.09	A	0.0	0.09	A	0.1	0.09	A	0.0	0.09	A	0.1	0.09	A
	NB-L	29.8	0.60	C	30.1	0.56	C	30.1	0.56	C	82.5	1.05	F	33.2	0.62	C
	T	44.9	0.98	D	47.5	0.97	D	47.5	0.97	D	46.5	0.98	D	13.8	0.76	B
	SB-T	36.0	0.70	D	33.9	0.67	C	33.9	0.67	C	70.4	0.99	E	34.3	0.72	C
	R	15.0	0.38	B	16.0	0.40	B	16.0	0.40	B	21.8	0.43	C	20.8	0.33	C
	OVERALL	24.4	-	C	25.0	-	C	27.4	-	C	38.1	-	D	26.6	-	C

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	WB-T	50.3	0.97	D	53.5	0.99	D	61.9	0.99	E	63.9	1.03	E	47.8	0.99	D
	R	0.0	0.05	A	0.0	0.05	A	0.1	0.05	A	0.0	0.05	A	0.1	0.05	A
	NB-L	10.9	0.66	B	10.3	0.61	B	10.3	0.61	B	169.4	1.33	F	49.5	1.02	D
	T	5.2	0.29	A	4.8	0.29	A	4.8	0.29	A	5.1	0.33	A	7.5	0.29	A
	SB-T	65.1	0.81	E	60.5	0.77	E	60.5	0.77	E	69.2	0.86	E	28.1	0.50	C
	R	151.4	1.23	F	178.5	1.29	F	178.5	1.29	F	335.3	1.65	F	76.4	1.02	E
	OVERALL	57.6	-	E	63.4	-	E	66.9	-	E	127.9	-	F	45.8	-	D

Atlantic Traffic
& ENGINEERING INC.

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

LOS Signalized Intersection Comparison: Old Walt Whitman Road & Long Island Expressway South Service Road

Table C

SYNCHRO

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-LT	39.7	1.00	D	54.2	1.05	D	54.2	1.05	D	54.2	1.05	D	28.6	0.83	C
	R	1.9	0.62	A	2.0	0.64	A	2.0	0.64	A	3.0	0.73	A	3.0	0.73	A
	NB-T	125.2	1.14	F	-	-	-	-	-	-	-	-	-	-	-	-
	R	29.5	0.21	C	-	-	-	-	-	-	-	-	-	-	-	-
	TR	-	-	-	39.9	0.78	D	39.9	0.78	D	71.6	1.01	E	23.0	0.67	C
	SB-L	10.2	0.31	B	8.7	0.29	A	8.6	0.29	A	15.9	0.33	B	16.0	0.28	B
	T	8.3	0.54	A	9.9	0.61	A	9.9	0.61	A	15.5	0.74	B	15.9	0.58	B
	OVERALL	35.8	-	D	34.6	-	C	34.6	-	C	37.3	-	D	18.4	-	B

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-LT	37.3	0.89	D	40.9	0.93	D	40.9	0.93	D	107.1	1.15	F	34.4	0.92	C
	R	1.0	0.46	A	1.0	0.47	A	1.0	0.47	A	1.3	0.54	A	1.3	0.54	A
	NB-T	41.2	0.8	D	-	-	-	-	-	-	-	-	-	-	-	-
	R	24.4	0.21	C	-	-	-	-	-	-	-	-	-	-	-	-
	TR	-	-	-	28.5	0.54	C	28.5	0.54	C	59.3	1	E	29.9	0.93	C
	SB-L	7.9	0.32	A	4.8	0.27	A	4.8	0.27	A	23.3	0.51	C	26.7	0.47	C
	T	2.3	0.23	A	2.4	0.26	A	2.4	0.26	A	3.6	0.19	A	4.1	0.18	A
	OVERALL	25.7	-	C	25.2	-	C	25.2	-	C	62.6	-	E	24.2	-	C

Atlantic Traffic

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

LOS Signalized Intersection Comparison: Old Walt Whitman Road & Pineridge Street

Table D

SYNCHRO

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-LR	15.3	0.14	B	14.9	0.13	B	14.9	0.13	B	14.9	0.13	B	25.3	0.12	C
	NB-LT	3.5	0.35	A	-	-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	4.5	0.07	A	4.5	0.07	A	4.5	0.07	A	2.8	0.04	A
	T	-	-	-	2.9	0.30	A	2.9	0.30	A	4.0	0.46	A	4.5	0.51	A
	SB-TR	8.1	0.64	A	7.4	0.65	A	7.4	0.65	A	8.2	0.68	A	9.7	0.76	A
	OVERALL	6.9	-	A	6.2	-	A	6.2	-	A	6.7	-	A	7.9	-	A

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-LR	10.1	0.12	B	17.5	0.16	B	17.5	0.16	B	17.5	0.16	B	31.9	0.25	C
	NB-LT	8.5	0.61	A	-	-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	6.0	0.16	A	6.0	0.16	A	6.0	0.16	A	12.5	0.27	B
	T	-	-	-	3.5	0.40	A	3.5	0.40	A	3.7	0.43	A	3.4	0.42	A
	SB-TR	7.9	0.65	A	8.0	0.67	A	8.0	0.67	A	18.7	0.87	B	25.2	0.86	C
	OVERALL	8.4	-	A	6.5	-	A	6.5	-	A	13.6	-	B	18.0	-	B

Atlantic Traffic

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

LOS Signalized Intersection Comparison: Old Walt Whitman Road & Northgate Circle/Baylis Road

Table E

SYNCHRO

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-L	21.0	0.09	C	21.7	0.11	C	21.7	0.11	C	21.7	0.11	C	53.1	0.32	D
	TR	15.1	0.13	B	15.1	0.13	B	15.1	0.13	B	15.1	0.13	B	27.8	0.21	C
	WB-L	23.9	0.28	C	23.8	0.26	C	23.8	0.26	C	23.8	0.26	C	48.2	0.42	D
	TR	7.5	0.45	A	7.5	0.44	A	7.5	0.44	A	7.5	0.44	A	12.9	0.56	B
	NB-LTR	6.4	0.43	A	-	-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	4.0	0.03	A	4.0	0.03	A	4.0	0.04	A	1.5	0.02	A
	TR	-	-	-	5.2	0.35	A	5.2	0.35	A	8.7	0.62	A	4.7	0.52	A
	SB-L	-	-	-	17.8	0.74	B	17.8	0.74	B	213.2	1.39	F	19.4	0.86	B
	LT	158.8	1.26	F	-	-	-	-	-	-	-	-	-	-	-	-
	T	-	-	-	10.6	0.62	B	10.1	0.62	B	12.1	0.66	B	2.2	0.56	A
	R	3.0	0.01	A	2.0	0.01	A	2.0	0.01	A	2.0	0.01	A	0.0	0.01	A
	OVERALL	100.6	-	F	11.3	-	B	11.1	-	B	47.3	-	D	9.3	-	A

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-L	21.2	0.10	C	22.3	0.13	C	18.8	0.09	B	22.3	0.13	C	44.8	0.30	D
	TR	14.5	0.08	B	14.5	0.08	B	12.4	0.05	B	14.5	0.08	B	23.6	0.13	C
	WB-L	22.9	0.22	C	22.7	0.19	C	19.0	0.12	B	22.7	0.19	C	41.6	0.33	D
	TR	7.4	0.46	A	7.9	0.47	A	5.5	0.36	A	7.9	0.47	A	13.9	0.61	B
	NB-LTR	5.0	0.33	A	-	-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	4.0	0.03	A	6.8	0.03	A	5.8	0.08	A	2.8	0.04	A
	TR	-	-	-	5.5	0.38	A	9.6	0.44	A	6.0	0.43	A	3.3	0.36	A
	SB-L	-	-	-	8.5	0.44	A	14.1	0.51	B	10.0	0.49	A	2.0	0.38	A
	LT	31.8	0.90	C	-	-	-	-	-	-	-	-	-	-	-	-
	T	-	-	-	8.5	0.53	A	15.0	0.62	B	17.4	0.76	B	4.5	0.64	A
	R	2.5	0.02	A	1.9	0.02	A	2.9	0.02	A	2.0	0.02	A	0.1	0.02	A
	OVERALL	20.2	-	C	8.2	-	A	12.0	-	B	12.5	-	B	6.6	-	A

Atlantic Traffic

LOS Signalized Intersection Comparison: Route 110 & Old Walt Whitman Road/Duryea Road

Table F

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

HCS

Time Period	Mvmnt.	2008 Existing Mvmnt. Delay (sec/veh)	2008 Existing Mvmnt. V/C	2008 Existing Mvmnt. LOS	2010 No-Build Mvmnt. Delay (sec/veh)	2010 No-Build Mvmnt. V/C	2010 No-Build Mvmnt. LOS	2010 Build Mvmnt. Delay (sec/veh)	2010 Build Mvmnt. V/C	2010 Build Mvmnt. LOS	2010 Build w/Mitigation Mvmnt. Delay (sec/veh)	2010 Build w/Mitigation Mvmnt. V/C	2010 Build w/Mitigation Mvmnt. LOS
Weekday Morning Peak Hour	EB-LT	52.7	0.31	D	52.8	0.31	D	52.8	0.31	D	53.1	0.32	D
	WB-LT	54.9	0.44	D	55.1	0.46	E	55.1	0.46	E	55.4	0.46	E
	R	126.5	1.05	F	132.5	1.07	F	132.5	1.07	F	136.2	1.08	F
	NB-L	57.0	0.59	E	59.2	0.67	E	128.4	1.10	F	79.7	0.95	E
	T	52.2	0.97	D	56.7	0.99	E	56.7	0.99	E	79.8	1.06	E
	R	27.5	0.45	C	27.7	0.46	C	27.7	0.46	C	31.1	0.50	C
	SB-L	51.9	0.25	D	52.0	0.26	D	52.0	0.26	D	47.7	0.22	D
	T	37.4	0.82	D	38.6	0.84	D	38.6	0.84	D	45.8	0.90	D
	R	22.0	0.08	C	22.1	0.08	C	22.1	0.08	C	24.8	0.09	C
	OVERALL	50.3	-	D	53.1	-	D	62.0	-	E	67.2	-	E

Time Period	Mvmnt.	2008 Existing Mvmnt. Delay (sec/veh)	2008 Existing Mvmnt. V/C	2008 Existing Mvmnt. LOS	2010 No-Build Mvmnt. Delay (sec/veh)	2010 No-Build Mvmnt. V/C	2010 No-Build Mvmnt. LOS	2010 Build Mvmnt. Delay (sec/veh)	2010 Build Mvmnt. V/C	2010 Build Mvmnt. LOS
Weekday Evening Peak Hour	EB-LT	48.1	0.29	D	48.3	0.30	D	48.3	0.30	D
	WB-LT	132.5	1.07	F	142.7	1.10	F	142.7	1.10	F
	R	47.3	0.24	D	47.4	0.25	D	47.4	0.25	D
	NB-L	74.3	0.59	E	76.8	0.66	E	86.0	0.80	F
	T	37.4	0.81	D	38.3	0.83	D	38.3	0.83	D
	R	23.0	0.19	C	23.1	0.19	C	23.1	0.19	C
	SB-L	69.8	0.25	E	69.9	0.26	E	69.9	0.26	E
	T	74.6	1.05	E	94.7	1.10	F	94.7	1.10	F
	R	21.4	0.06	C	21.5	0.06	C	21.5	0.06	C
	OVERALL	61.8	-	E	72.4	-	E	72.9	-	E

*The NYSDOT Project does not propose improvements at this intersection.

Atlantic Traffic

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

LOS Signalized Intersection Comparison: Route 110 & Long Island Expressway North Service Road

Table G

SYNCHRO

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	WB-LT	48	0.98	D	53.1	1.00	D	-	-	-	119.4	1.19	F	-	-	-
	L	-	-	-	-	-	-	19	0.33	B	-	-	-	19.3	0.29	B
	T	-	-	-	-	-	-	20.2	0.53	C	-	-	-	22.3	0.57	C
	R	10.5	0.18	B	11.1	0.18	B	11.0	0.17	B	11.3	0.18	B	12.4	0.15	B
	NB-L	51.4	0.90	D	53.4	0.92	D	25.2	0.49	C	53.1	0.92	D	11.8	0.56	B
	T	18.7	0.51	B	18.8	0.53	B	17.9	0.49	B	18.7	0.53	B	1.4	0.53	A
	SB-T	49.1	0.99	D	60.6	1.03	E	24.7	0.72	C	60.6	1.03	E	31.8	0.74	C
	R	13.3	0.26	B	13.7	0.26	B	13.9	0.27	B	17.7	0.35	B	22.5	0.37	C
	OVERALL	37.8	-	D	43.1	-	D	20.7	-	C	64.5	-	E	18.3	-	B

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	WB-LT	72.1	1.02	E	78.1	1.04	E	-	-	-	90.4	1.08	F	-	-	-
	L	-	-	-	-	-	-	36.1	0.53	D	-	-	-	31.7	0.57	C
	T	-	-	-	-	-	-	32.5	0.48	C	-	-	-	28.7	0.58	C
	R	17.4	0.18	B	18.8	0.18	B	18.7	0.17	B	21.5	0.18	C	18.5	0.19	B
	NB-L	36.8	0.84	D	36.3	0.85	D	10.0	0.41	A	27.9	0.85	C	10.8	0.32	B
	T	3.3	0.51	A	3.7	0.53	A	3.5	0.50	A	3.9	0.58	A	3.4	0.58	A
	SB-T	35.3	0.89	D	38.1	0.92	D	24.1	0.64	C	38.1	0.92	D	23.0	0.71	C
	R	14.8	0.32	B	15.2	0.32	B	15.0	0.33	B	16.0	0.34	B	12.9	0.36	B
	OVERALL	32.0	-	C	34.3	-	C	18.3	-	B	36.4	-	D	16.7	-	B

Atlantic Traffic

Job Title Proposed Canon Corporate Center
Job No AN08003
Date December 2, 2008

LOS Signalized Intersection Comparison: Route 110 & Long Island Expressway South Service Road

Table H

SYNCHRO

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-LT	18.4	0.79	B	22.0	0.84	C	15.1	0.55	B	25.0	0.89	C	28.6	0.75	C
	R	18.7	0.78	B	21.3	0.80	C	21.2	0.80	C	21.8	0.80	C	68.2	1.04	E
	NB-T	28.4	0.86	C	29.4	0.88	C	25.9	0.82	C	29.4	0.88	C	29.8	0.80	C
	R	20.9	0.58	C	21.6	0.60	C	21.6	0.60	C	22.1	0.60	C	21.9	0.57	C
	SB-L	233	1.42	F	243.0	1.45	F	25.6	0.70	C	242.8	1.45	F	14.0	0.44	B
	T	9.7	0.83	A	12.1	0.88	B	11.2	0.82	B	12.0	0.88	B	6.5	0.70	A
	OVERALL	30.7	-	C	32.9	-	C	18.1	-	B	33.3	-	C	24.3	-	C

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-LT	166.6	1.30	F	259.1	1.51	F	47.4	0.98	D	429.3	1.90	F	67.9	1.09	E
	R	19.9	0.31	B	22.7	0.31	C	22.7	0.31	C	23.3	0.31	C	11.5	0.26	B
	NB-T	28.0	0.81	C	28.7	0.83	C	26.4	0.77	C	28.7	0.83	C	47.4	1.00	D
	R	31.8	0.77	C	32.8	0.79	C	32.8	0.79	C	33.0	0.79	C	52.4	0.95	D
	SB-L	427.2	1.87	F	443.5	1.90	F	57.4	0.92	E	443.4	1.90	F	66.7	0.98	E
	T	7.4	0.77	A	7.9	0.80	A	7.9	0.74	A	7.9	0.80	A	24.8	0.92	C
	OVERALL	71.9	-	E	95.5	-	F	27.1	-	C	148.0	-	F	46.0	-	D

Atlantic Traffic

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

LOS Signalized Intersection Comparison: Route 110 & Old Country Road

Table I

HCS

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-L	99.3	0.88	F	103.8	0.90	F	103.8	0.90	F	112.6	0.94	F	112.6	0.94	F
	T	235.1	1.30	F	245.9	1.33	F	245.9	1.33	F	245.9	1.33	F	245.9	1.33	F
	WB-L	248.9	1.37	F	262.4	1.41	F	262.4	1.41	F	262.4	1.41	F	262.4	1.41	F
	LTR	91.9	0.97	F	78.9	0.91	E	77.7	0.90	E	82.6	0.93	F	82.6	0.93	F
	NB-L	24.2	0.13	C	25.1	0.16	C	23.2	0.09	C	25.2	0.16	C	23.3	0.09	C
	T	28.9	0.51	C	29.2	0.53	C	26.4	0.37	C	29.5	0.54	C	26.6	0.38	C
	R	8.2	0.14	A	8.5	0.17	A	8.5	0.17	A	8.5	0.18	A	8.5	0.18	A
	SB-L	18.8	0.49	B	19.3	0.52	B	17.3	0.48	B	19.7	0.53	B	17.5	0.49	B
	T	29.7	0.62	C	31.6	0.85	C	22.1	0.60	C	33.0	0.87	C	22.4	0.61	C
	R	8.5	0.43	A	8.6	0.44	A	-	-	-	10.2	0.56	B	-	-	-
	OVERALL	67.5	-	E	67.9	-	E	70.8	-	E	67.3	-	E	71.3	-	E

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-L	157.0	1.14	F	165.2	1.17	F	165.2	1.17	F	209.0	1.28	F	188.8	1.23	F
	T	148.5	1.12	F	156.2	1.14	F	156.2	1.14	F	156.2	1.14	F	140.5	1.10	F
	WB-L	507.9	1.91	F	526.4	1.95	F	526.4	1.95	F	526.4	1.95	F	526.4	1.95	F
	LTR	466.2	1.84	F	483.3	1.88	F	483.3	1.88	F	489.7	1.89	F	489.7	1.89	F
	NB-L	23.7	0.06	C	23.8	0.06	C	23.8	0.07	C	23.8	0.06	C	24.4	0.07	C
	T	71.0	1.03	E	84.2	1.07	F	35.8	0.75	D	114.2	1.14	F	38.9	0.81	D
	R	18.9	0.39	B	19.0	0.40	B	19.0	0.40	B	19.2	0.41	B	19.7	0.42	B
	SB-L	54.2	0.71	D	55.6	0.73	E	52.4	0.73	D	55.6	0.73	E	52.8	0.73	D
	T	17.2	0.52	B	17.6	0.54	B	15.2	0.38	B	17.7	0.55	B	15.7	0.39	B
	R	2.3	0.17	A	2.3	0.17	A	-	-	-	2.4	0.20	A	-	-	-
	OVERALL	113.6	-	F	121.0	-	F	109.0	-	F	133.8	-	F	110.0	-	F

Atlantic Traffic

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

LOS Signalized Intersection Comparison: Round Swamp Road & Long Island Expressway South Service Road

Table J

SYNCHRO

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-L	24.8	0.44	C	25.0	0.45	C	25.0	0.45	C	25.0	0.45	C	24.1	0.37	C
	LT	27.8	0.70	C	28.2	0.71	C	28.2	0.71	C	116.5	1.18	F	51.8	0.98	D
	R	27.7	0.55	C	28.0	0.56	C	28.0	0.56	C	28.0	0.56	C	26.3	0.47	C
	NB-T	23.4	0.57	C	23.7	0.59	C	23.7	0.59	C	23.7	0.59	C	28.1	0.57	C
	R	30.0	0.79	C	32.3	0.81	C	32.3	0.81	C	52.4	0.95	D	62.5	0.97	E
	SB-L	22.6	0.77	C	24.3	0.79	C	24.3	0.79	C	24.3	0.79	C	52.0	0.93	D
	T	12.4	0.58	B	12.6	0.59	B	12.6	0.59	B	12.6	0.59	B	11.4	0.64	B
	OVERALL	22.1	-	C	22.8	-	C	22.8	-	C	51.2	-	D	36.3	-	D

Time Period	Mvmnt.	2008 Existing			2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-L	40.7	0.84	D	42.1	0.85	D	42.1	0.85	D	49.0	0.91	D	39.4	0.85	D
	LT	33.5	0.85	C	34.8	0.87	C	34.8	0.87	C	39.7	0.92	D	32.3	0.85	C
	R	28.6	0.62	C	28.9	0.63	C	28.9	0.63	C	28.9	0.63	C	26.0	0.59	C
	NB-T	24.4	0.69	C	24.9	0.71	C	24.9	0.71	C	24.9	0.71	C	21.1	0.64	C
	R	21.9	0.80	C	23.7	0.82	C	23.7	0.82	C	26.1	0.84	C	40.3	0.92	D
	SB-L	14.1	0.49	B	14.3	0.49	B	14.3	0.49	B	14.3	0.49	B	28.4	0.65	C
	T	12.1	0.52	B	12.2	0.53	B	12.2	0.53	B	12.2	0.53	B	13.8	0.55	B
	OVERALL	25.0	-	C	25.8	-	C	25.8	-	C	28.3	-	C	27.3	-	C

Atlantic Traffic

LOS Signalized Intersection Comparison: Round Swamp Road & Long Island Expressway North Service Road — **Table K**

Job Title Proposed Canon Corporate Center
Job No AN08003
Date December 2, 2008

SYNCHRO

Time Period	Mvmnt.	2010 Build w/Mitigation Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	WB-L	32.1	0.64	C
	TR	62.1	1.01	E
	NB-L	17.3	0.60	B
	T	2.5	0.22	A
	SB-T	18.9	0.47	B
	R	53.4	0.98	D
	OVERALL	38.1	-	D

Time Period	Mvmnt.	2010 Build w/Mitigation Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	WB-L	21.4	0.48	C
	TR	49.5	0.99	D
	NB-L	28.5	0.84	C
	T	16.3	0.57	B
	SB-T	33.2	0.66	C
	R	8.0	0.19	A
	OVERALL	31.0	-	C

Atlantic Traffic

Job Title: Proposed Cannon Corporate Center
Job No: AN08003
Date: December 2, 2008

LOS Unsignalized Intersections Comparison: Old Walt Whitman Road & Cottontail Road and Old Walt Whitman Road & Existing Fedex Driveway North — **Table L**

Old Walt Whitman Road & Cottontail Road
SYNCHRO

		2008 Existing		2010 No-Build		2010 No-Build w/Mitigation		2010 Build		2010 Build w/Mitigation	
Time Period	Approach	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS
AM Peak Hour	OVERALL	31.5	D	33.9	D	33.9	D	57.1	F	16.7	E
PM Peak Hour	OVERALL	20.4	C	21.6	C	21.6	C	23.4	C	22.8	C

Old Walt Whitman Road & Existing Fedex Driveway North
SYNCHRO

		2008 Existing		2010 No-Build		2010 No-Build w/Mitigation		2010 Build		2010 Build w/Mitigation	
Time Period	Approach	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS
AM Peak Hour	OVERALL	26.4	D	34.7	D	27.4	D	10.4	B	10.4	B
PM Peak Hour	OVERALL	28.5	D	33.2	D	33.2	D	15.0	B	15.0	B

Atlantic Traffic

Job Title Proposed Canon Corporate Center
Job No AN08003
Date December 2, 2008

LOS Unsignalized Intersection Comparison: Old Walt Whitman Road & Existing Fedex Driveway South/Proposed Site Driveway

Table M

Old Walt Whitman Road & Existing Fedex Driveway South/Proposed Site Driveway

SYNCHRO

		2008 Existing		2010 No-Build		2010 No-Build w/Town & DOT	
Time Period	Approach	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS	Approach Delay (sec/veh)	Approach LOS
AM Peak Hour	OVERALL	31.9	D	36.1	E	36.1	E
PM Peak Hour	OVERALL	55.1	F	56.9	F	56.6	F

* = Approach operating with no capacity for the expected demand.

SYNCHRO

		2010 Build (Signalized)			2010 Build (Signalized) w/Mitigation		
Time Period	Mvmnt.	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-LT	37.2	0.53	D	33.9	0.44	C
	R	10.5	0.08	B	9.9	0.07	A
	WB-LTR	19.6	0.04	B	19.8	0.02	B
	NB-L	14.8	0.54	B	22.6	0.55	C
	TR	9.9	0.47	A	19.0	0.45	B
	SB-L	4.8	0.02	A	6.5	0.01	A
	T	15.6	0.66	B	13.8	0.72	B
	R	2.1	0.15	A	2.1	0.16	A
	OVERALL	14.9	-	B	16.2	-	B

		2010 Build (Signalized)			2010 Build (Signalized) w/Mitigation		
Time Period	Mvmnt.	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-LT	581.1	2.22	F	100.0	1.12	F
	R	10.6	0.42	B	5.8	0.25	A
	WB-LTR	26.7	0.16	C	11.9	0.09	B
	NB-L	5.2	0.07	A	13.1	0.17	B
	TR	12.1	0.59	B	59.3	1.01	E
	SB-L	4.8	0.02	A	18.4	0.11	B
	T	9.7	0.42	A	28.9	0.67	C
	R	1.8	0.19	A	7.2	0.26	A
	OVERALL	153.8	-	F	50.6	-	D

Atlantic Traffic
& DESIGN ORGANIZATION, INC.

Job Title Proposed Canon Corporate Center
Job No AN08003
Date December 2, 2008

LOS Unsignalized Intersection Comparison: Old Walt Whitman Road & Old Country Road

Table N

HCS

Time Period	Approach	2008 Existing Approach Delay (sec/veh)	2008 Existing Approach LOS	2010 No-Build Approach Delay (sec/veh)	2010 No-Build Approach LOS	2010 Build Approach Delay (sec/veh)	2010 Build Approach LOS
AM Peak Hour	Northbound	81 6	F	38 4	E	103 5	F
	Southbound	208 3	F	230 7	F	604 2	F
	Eastbound	7 7	A	7 8	A	7 8	A
	Westbound	9 7	A	9 8	A	11 1	B
PM Peak Hour	Northbound	28 2	D	20 9	C	23 5	C
	Southbound	55 6	F	61 1	F	84 4	F
	Eastbound	7 6	A	7 6	A	7 6	A
	Westbound	8 7	A	8 8	A	8 9	A

Time Period	Mvmnt.	2010 No-Build w/Town & DOT (Signalized) Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	2010 Build w/Mitigation (Signalized) Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-LTR	172 8	1 14	F	172 8	1 14	F
	WB-L	67 8	0 75	E	71 7	0 79	E
	TR	54 4	0 34	D	54 4	0 34	D
	NB-LT	15 0	0 05	B	15 1	0 06	B
	R	17 0	0 25	B	17 1	0 25	B
	SB-LT	18 7	0 38	B	21 1	0 52	C
	R	6 3	0 14	A	6 3	0 14	A
	OVERALL	54 9	-	D	52 7	-	D

Time Period	Mvmnt.	2010 No-Build w/Town & DOT (Signalized) Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	2010 Build w/Mitigation (Signalized) Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-LTR	226 9	1 33	F	207 3	1 28	F
	WB-L	75 6	0 59	E	76 7	0 61	E
	TR	84 1	0 70	F	84 1	0 70	F
	NB-LT	11 9	0 03	B	12 3	0 03	B
	R	15 7	0 41	B	16 7	0 45	B
	SB-LT	12 3	0 09	B	12 9	0 12	B
	R	2 1	0 08	A	2 1	0 08	A
	OVERALL	99 3	-	F	88 9	-	F

Atlantic Traffic
ENGINEERS, PC

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

LOS Signalized Intersection Comparison: Old Walt Whitman Road & Park Drive

Table O

SYNCHRO

Time Period	Mvmnt.	2008 Existing		2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Approach Delay (sec/veh)	Approach LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Morning Peak Hour	EB-LR	16.7	C	16.3	0.15	B	16.3	0.15	B	16.3	0.15	B	13.2	0.08	B
	NB-L	-	-	1.9	0.18	A	1.9	0.18	A	2.1	0.19	A	3.0	0.22	A
	T	-	-	1.2	0.21	A	1.2	0.21	A	1.7	0.37	A	2.1	0.37	A
	SB-TR	-	-	2.0	0.43	A	2.0	0.43	A	2.2	0.46	A	1.9	0.46	A
	OVERALL	-	-	1.7	-	A	2.0	-	A	2.2	-	A	2.1	-	A

Time Period	Mvmnt.	2008 Existing		2010 No-Build			2010 No-Build w/Town & DOT			2010 Build			2010 Build w/Mitigation		
		Approach Delay (sec/veh)	Approach LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS	Mvmnt. Delay (sec/veh)	Mvmnt. V/C	Mvmnt. LOS
Weekday Evening Peak Hour	EB-LR	21.7	D	19.3	0.59	B	19.3	0.59	B	19.3	0.59	B	29.3	0.62	C
	NB-L	-	-	2.4	0.04	A	2.4	0.04	A	2.9	0.07	A	4.1	0.07	A
	T	-	-	3.3	0.30	A	3.3	0.30	A	3.5	0.34	A	4.1	0.32	A
	SB-TR	-	-	4.8	0.50	A	4.8	0.50	A	8.2	0.72	A	8.4	0.68	A
	OVERALL	-	-	6.3	-	A	6.3	-	A	8.0	-	A	9.4	-	A

Atlantic Traffic & DESIGN ENGINEERS, INC

LOS Unsignalized Intersections Comparison: Proposed Site Driveways

Table P

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

Right-Turn Ingress/Egress Only Site Driveway & LIE S. Service Road

HCS

		2010 Build	
Time Period	**Approach**	**Approach Delay** (sec/veh)	**Approach LOS**
PM Peak Hour	Northbound	25.2	D
	Southbound	-	-
	Eastbound	-	-
	Westbound	-	-

*right-turn egress movements are restricted during the AM Peak Hour

Canon South Driveway & Old Walt Whitman Road

SYNCHRO

		2010 Build		2010 Build w/Mitigation	
Time Period	**Approach**	**Approach Delay** (sec/veh)	**Approach LOS**	**Approach Delay** (sec/veh)	**Approach LOS**
AM Peak Hour	-	134.5	F	94.8	F
PM Peak Hour	-	89.1	F	139.2	F

Atlantic Traffic & DESIGN ENGINEERS, INC.

LOS Unsignalized Intersections Comparison: On-Site Circulation

Table Q

Job Title: Proposed Canon Corporate Center
Job No. AN08003
Date: December 2, 2008

Main Access Aisle & Westerly North Parking Garage Driveway

HCS

		2010 Build	
Time Period	**Approach**	**Approach Delay** (sec/veh)	**Approach LOS**
AM Peak Hour	Northbound	9.9	A
	Southbound	-	-
	Eastbound	-	-
	Westbound	8.7	A
PM Peak Hour	Northbound	12.1	B
	Southbound	---	---
	Eastbound	---	---
	Westbound	7.3	A

*movements to travel westbound past this intersection are restricted during the AM Peak Hour

Main Access Aisle & Easterly North Parking Garage Driveway

HCS

		2010 Build	
Time Period	**Approach**	**Approach Delay** (sec/veh)	**Approach LOS**
AM Peak Hour	Northbound	9.2	A
	Southbound	-	-
	Eastbound	8.1	A
	Westbound	-	-
PM Peak Hour	Northbound	12.9	B
	Southbound	---	---
	Eastbound	---	---
	Westbound	7.6	A

Atlantic Traffic
& DESIGN ENGINEERS, INC

Table R

Job Title: Proposed Canon Corporate Center
Job No: AN08003
Date: December 2, 2008

Main Access Aisle & Main Site Driveway Aisle

Synchro

Time Period	Approach	2010 Build w/Mitigation	
		Intersection Capacity Utilization	ICU LOS
AM Peak Hour	-	51.7%	A
PM Peak Hour	-	60.8%	B

Main Access Aisle & Southerly Access Aisle

HCS

Time Period	Approach	2010 Build	
		Approach Delay (sec/veh)	Approach LOS
AM Peak Hour	Northbound	-	-
	Southbound	14.5	B
	Eastbound	7.6	A
	Westbound	-	-
PM Peak Hour	Northbound	-	-
	Southbound	39.7	E
	Eastbound	8.5	A
	Westbound	-	-

ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

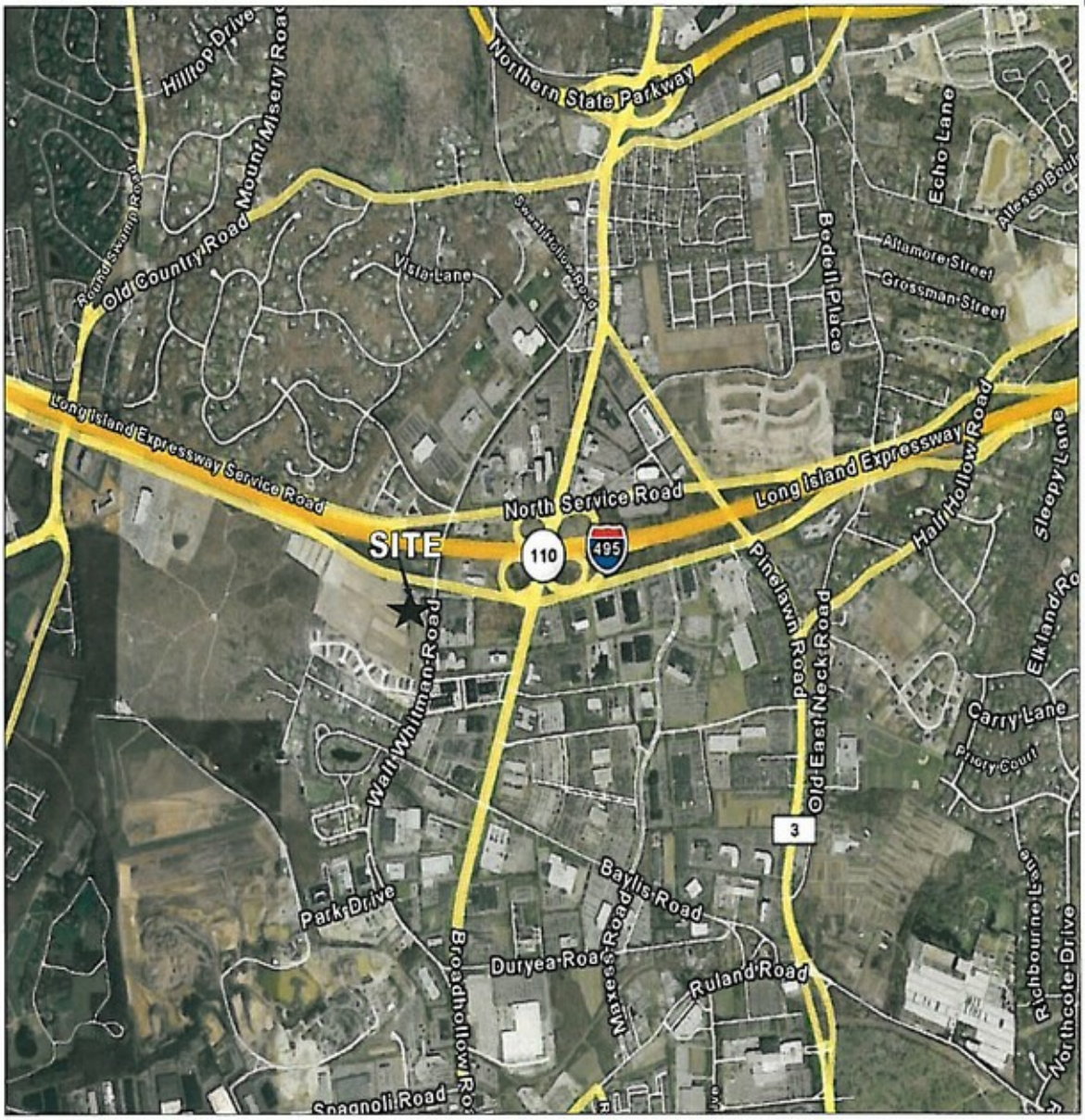
FIGURES

ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE LOCATION MAP

Figure 1

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

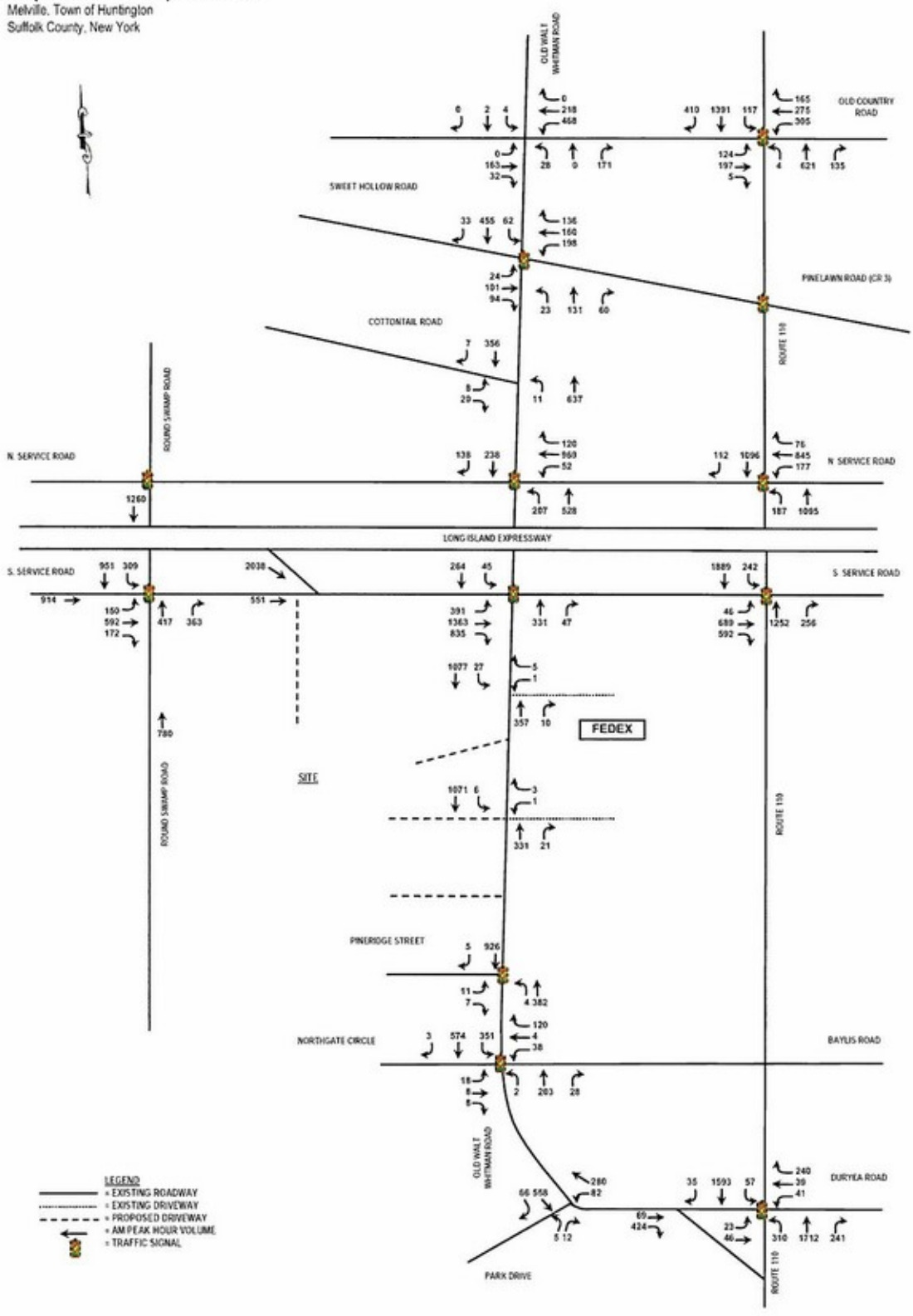


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

EXISTING "AS-COUNTED" TRAFFIC VOLUMES - MORNING PEAK HOUR

Figure 2

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

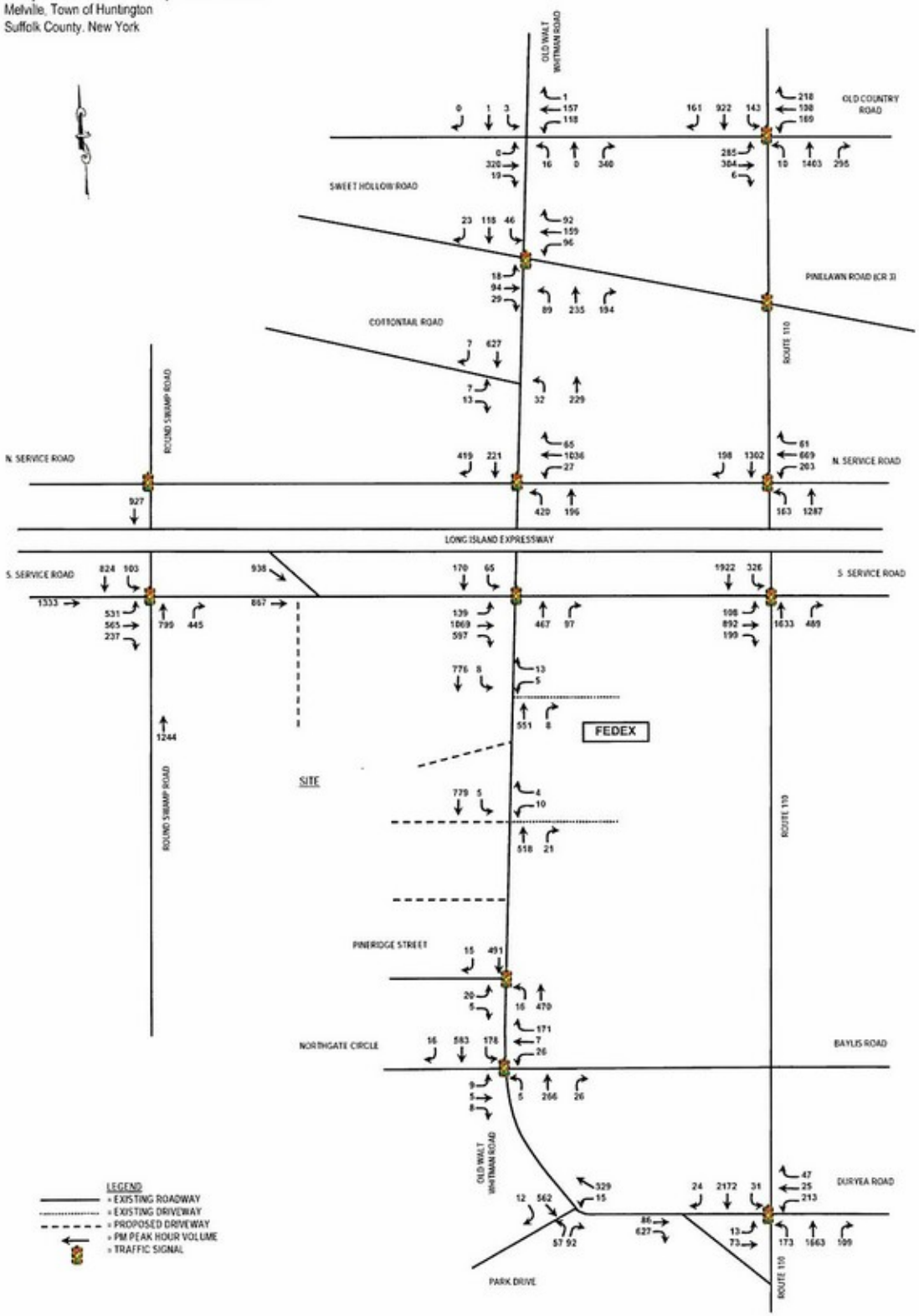


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

EXISTING "AS-COUNTED" TRAFFIC VOLUMES - EVENING PEAK HOUR

Figure 3

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

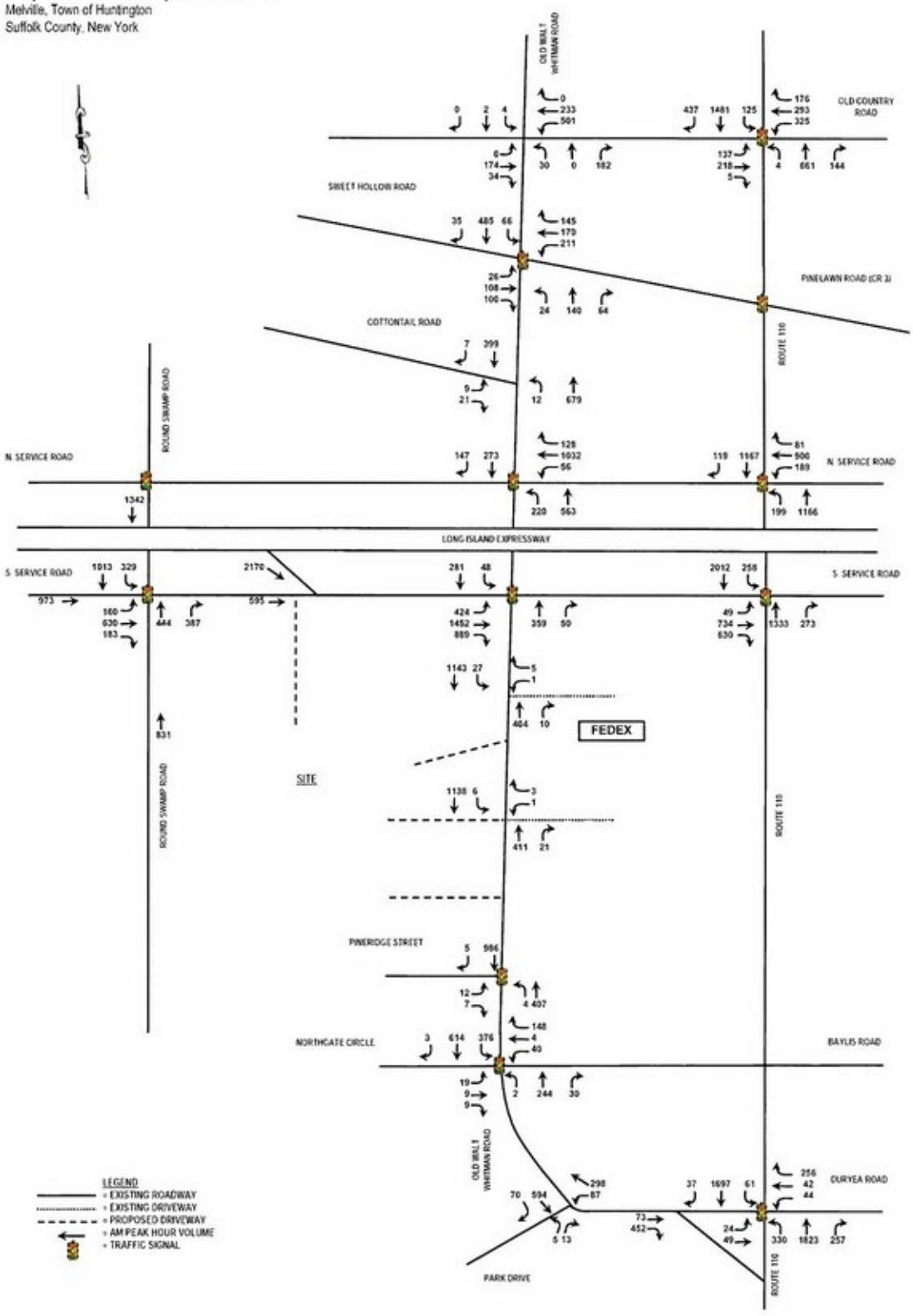


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

EXISTING "BALANCED" TRAFFIC VOLUMES - MORNING PEAK HOUR

Figure 4

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

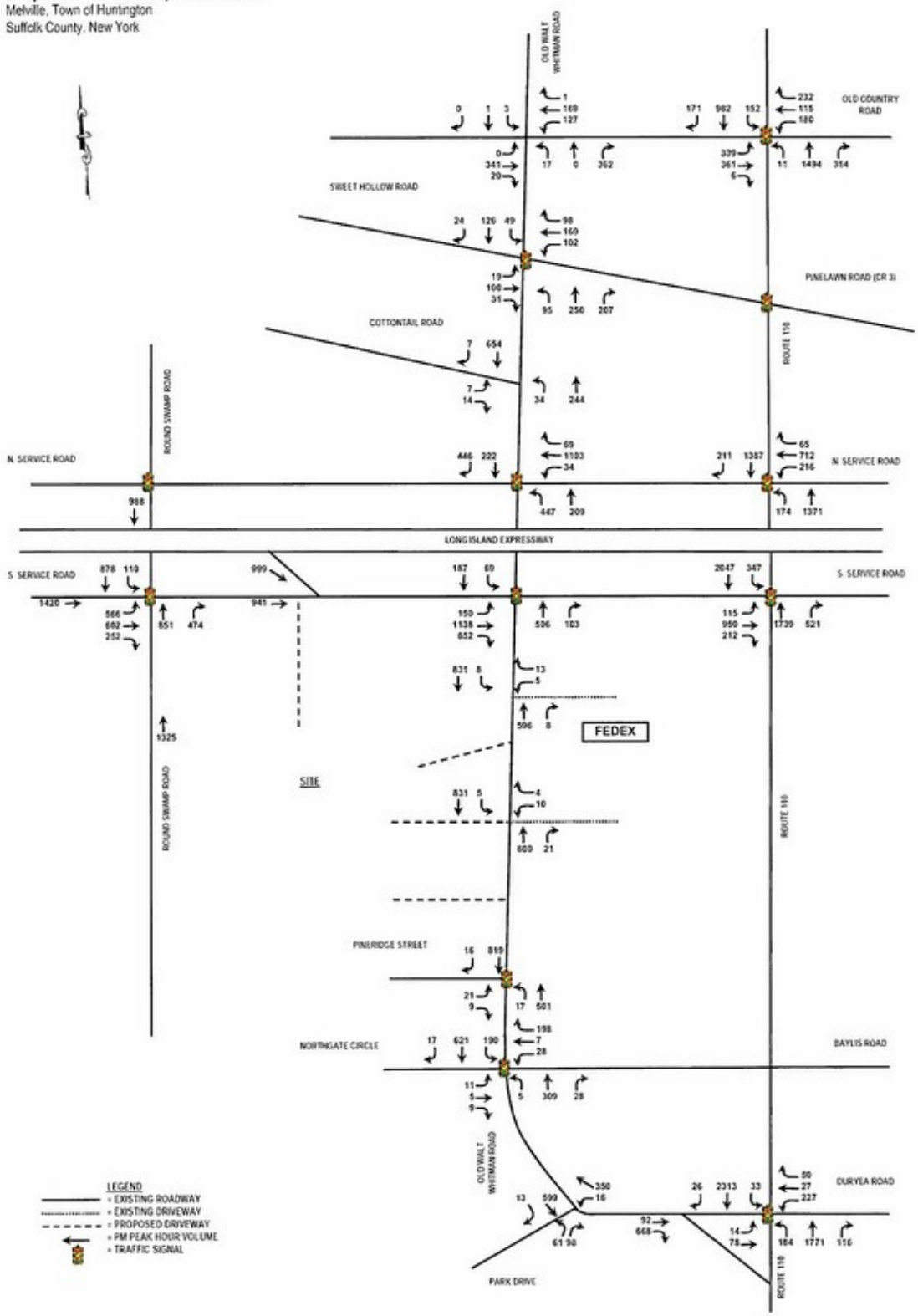


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

EXISTING "BALANCED" TRAFFIC VOLUMES - EVENING PEAK HOUR

Figure 5

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

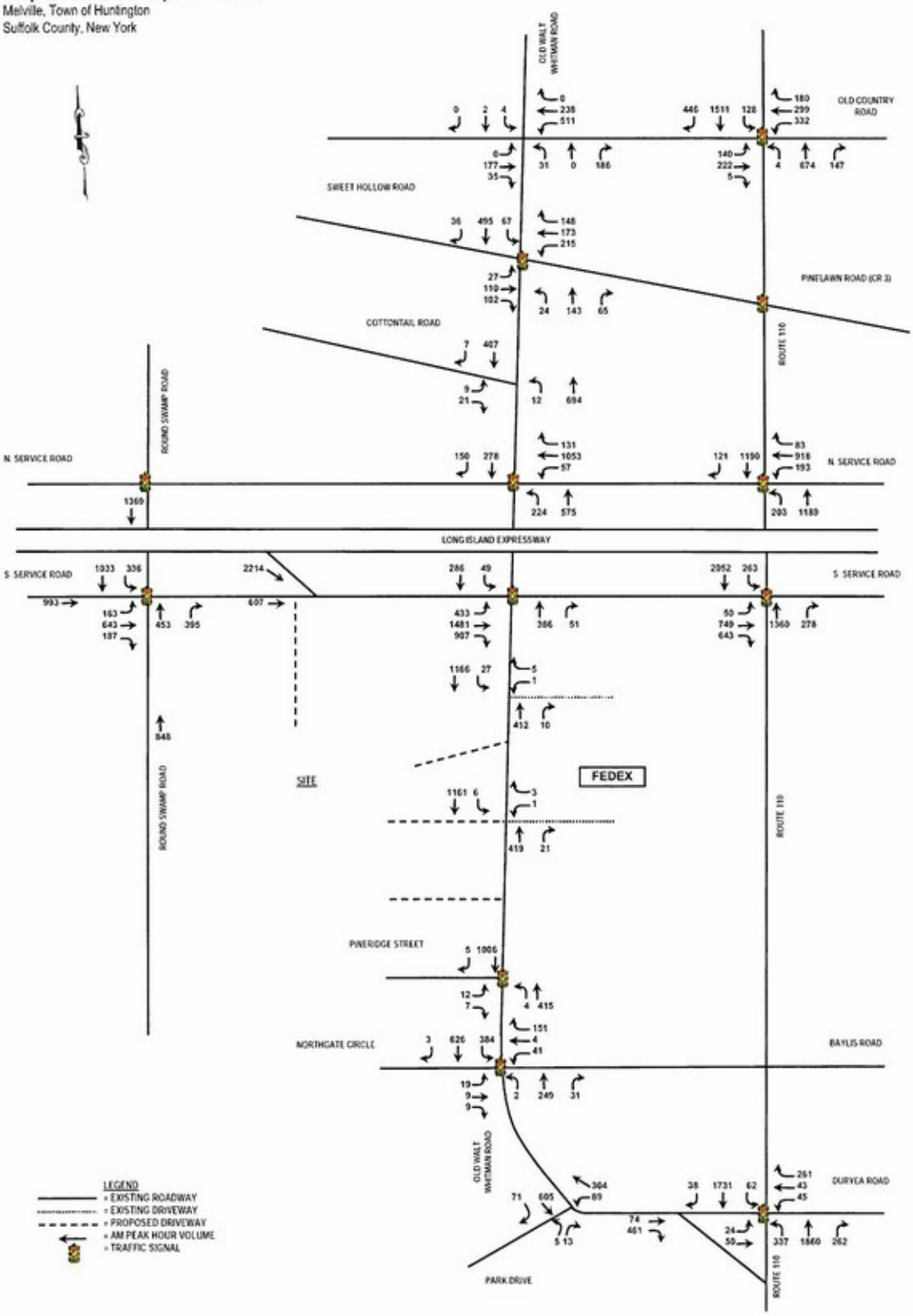


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

FUTURE "BASE" TRAFFIC VOLUMES - MORNING PEAK HOUR

Figure 6

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

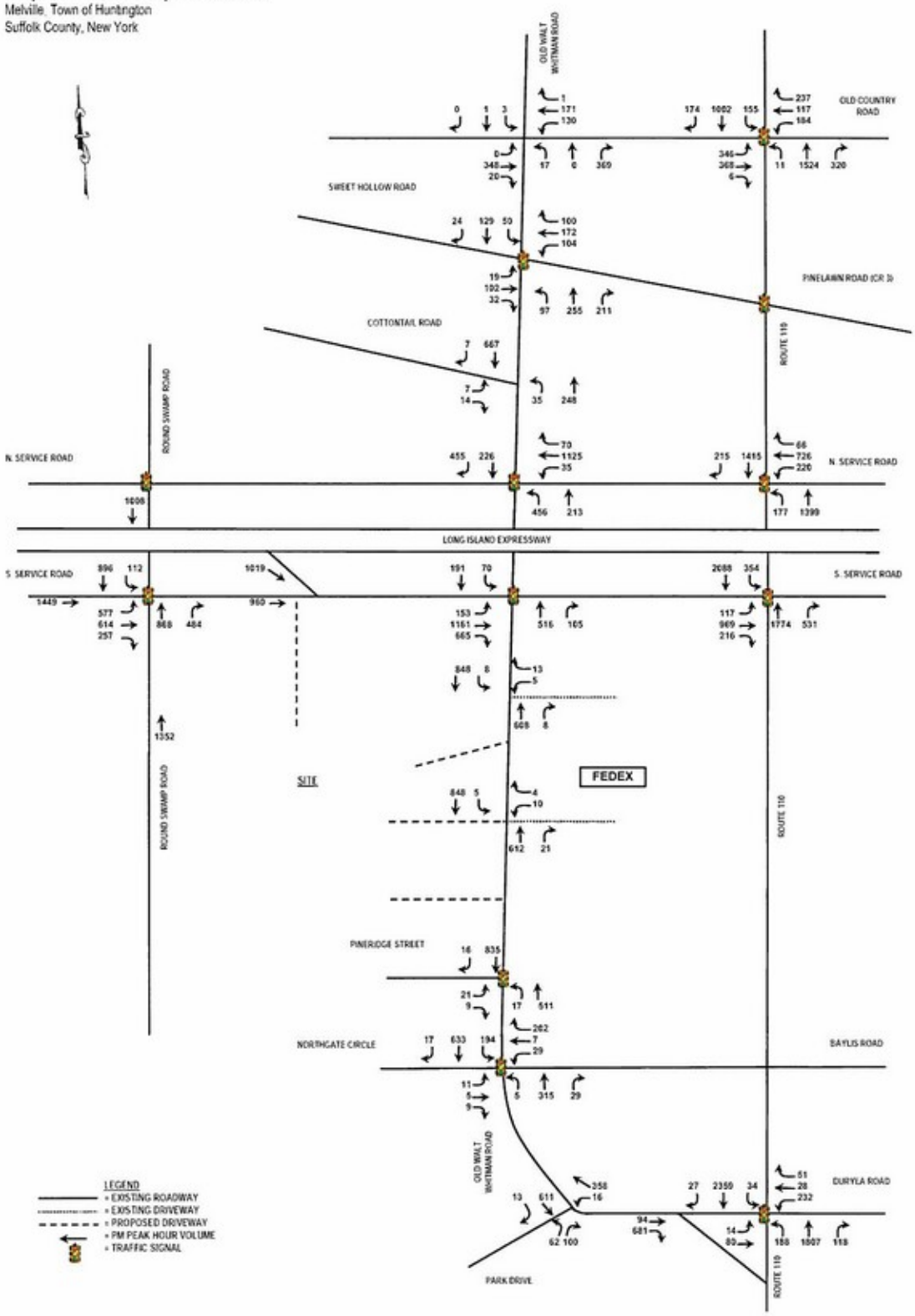


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

FUTURE "BASE" TRAFFIC VOLUMES - EVENING PEAK HOUR

Figure 7

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

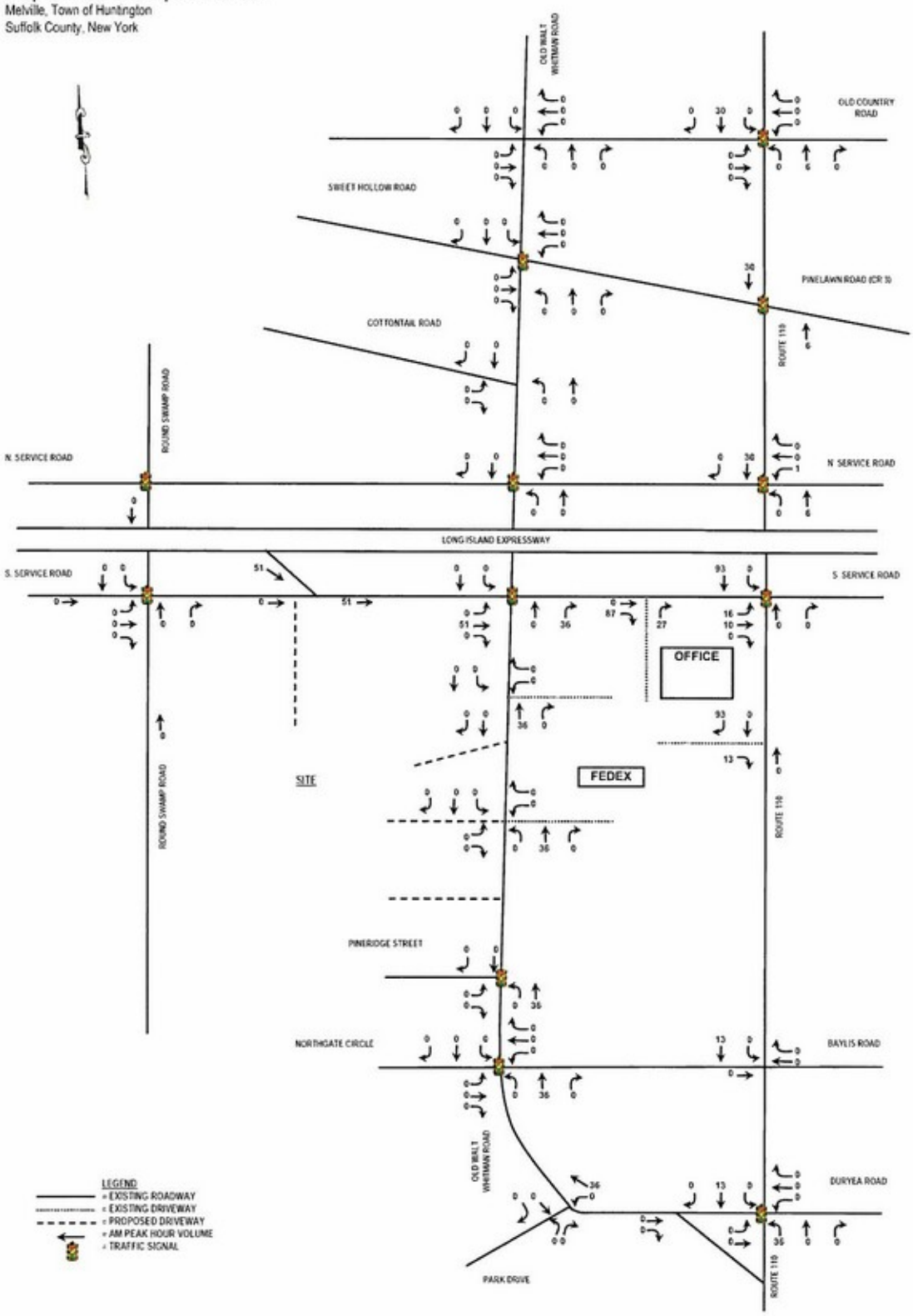


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

OTHER AREA DEVELOPMENT SITE TRAFFIC - MORNING PEAK HOUR

Figure 8

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

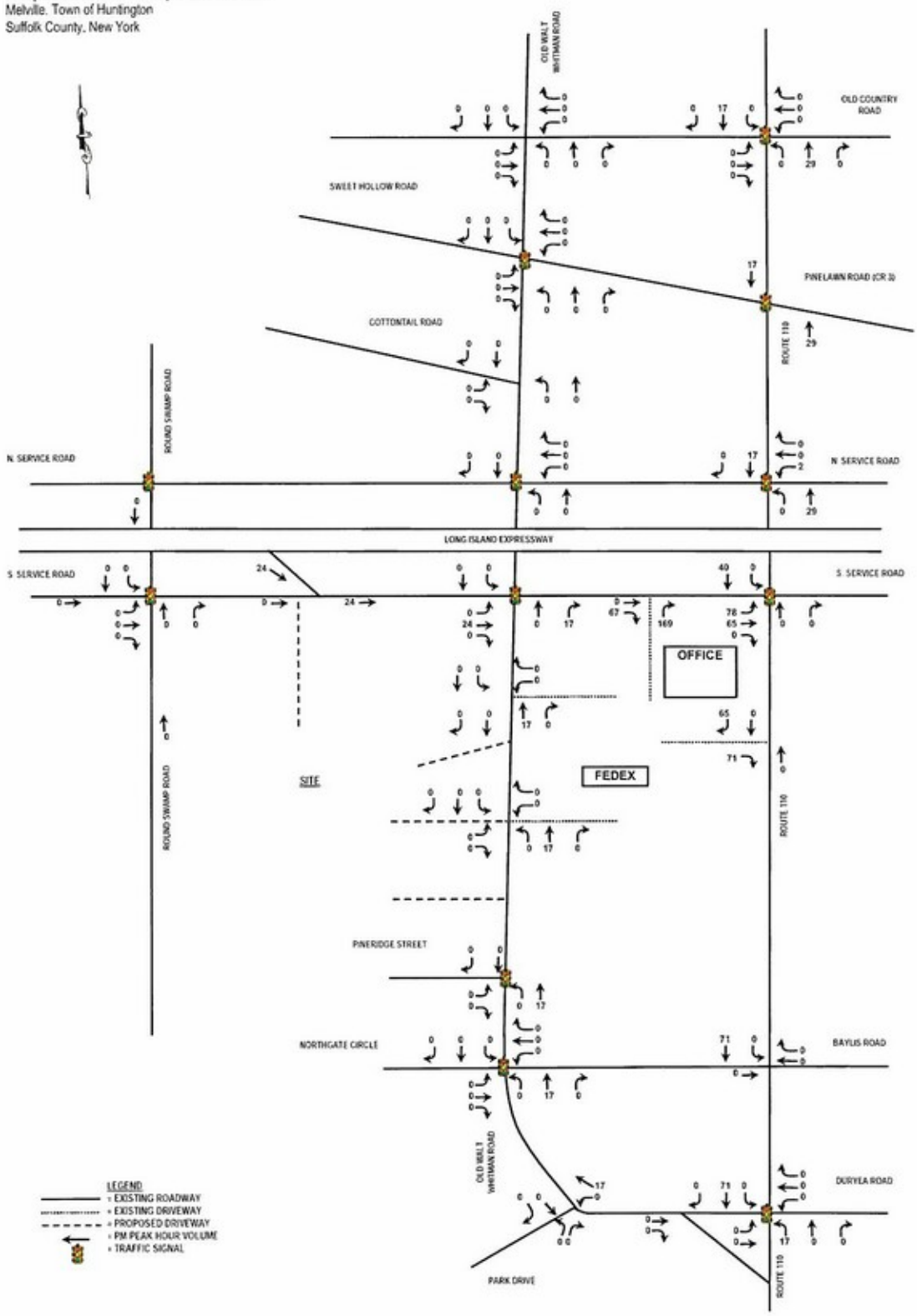


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

OTHER AREA DEVELOPMENT SITE TRAFFIC - EVENING PEAK HOUR

Figure 9

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

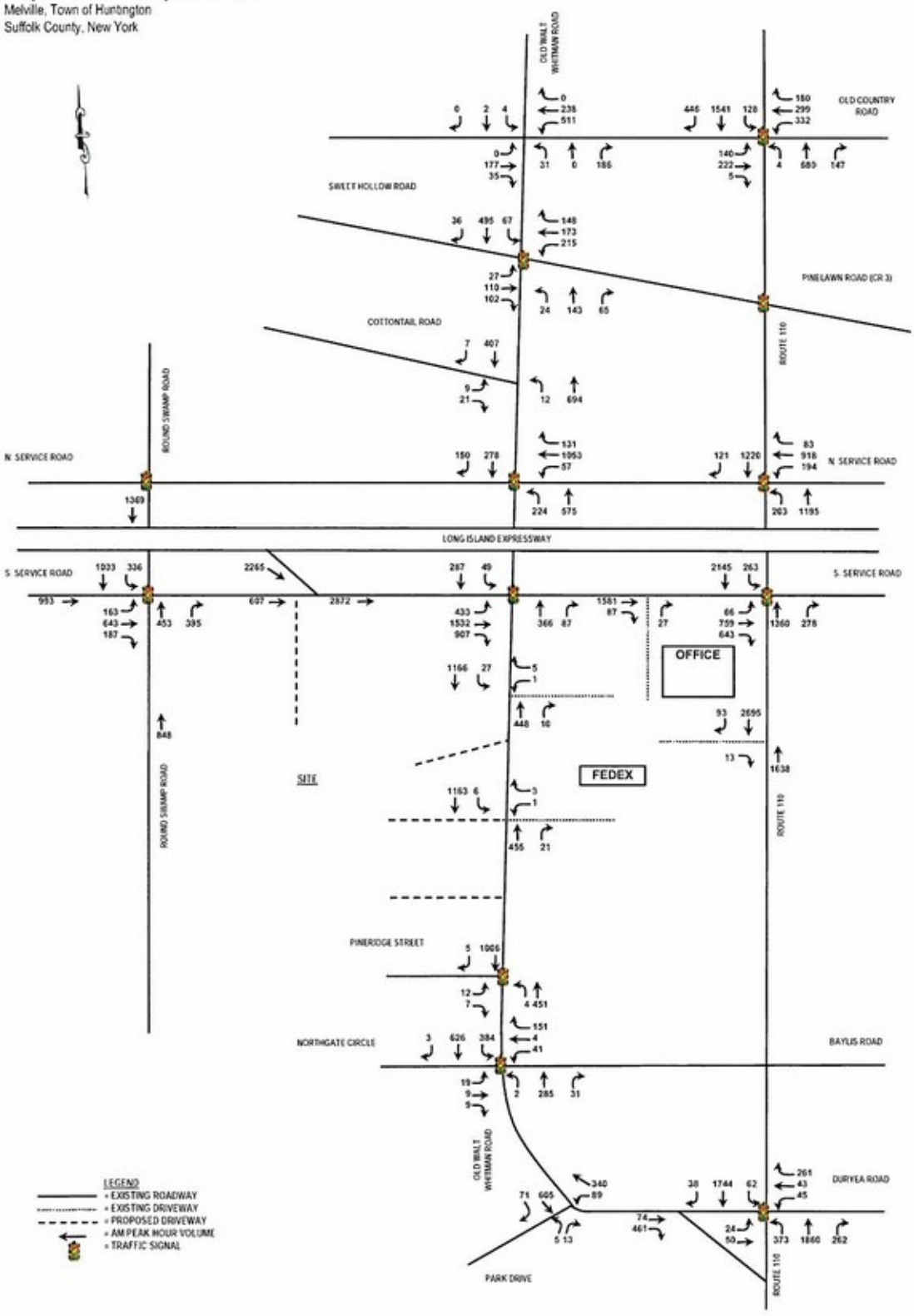


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

FUTURE "NO-BUILD" TRAFFIC VOLUMES - MORNING PEAK HOUR

Figure 10

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

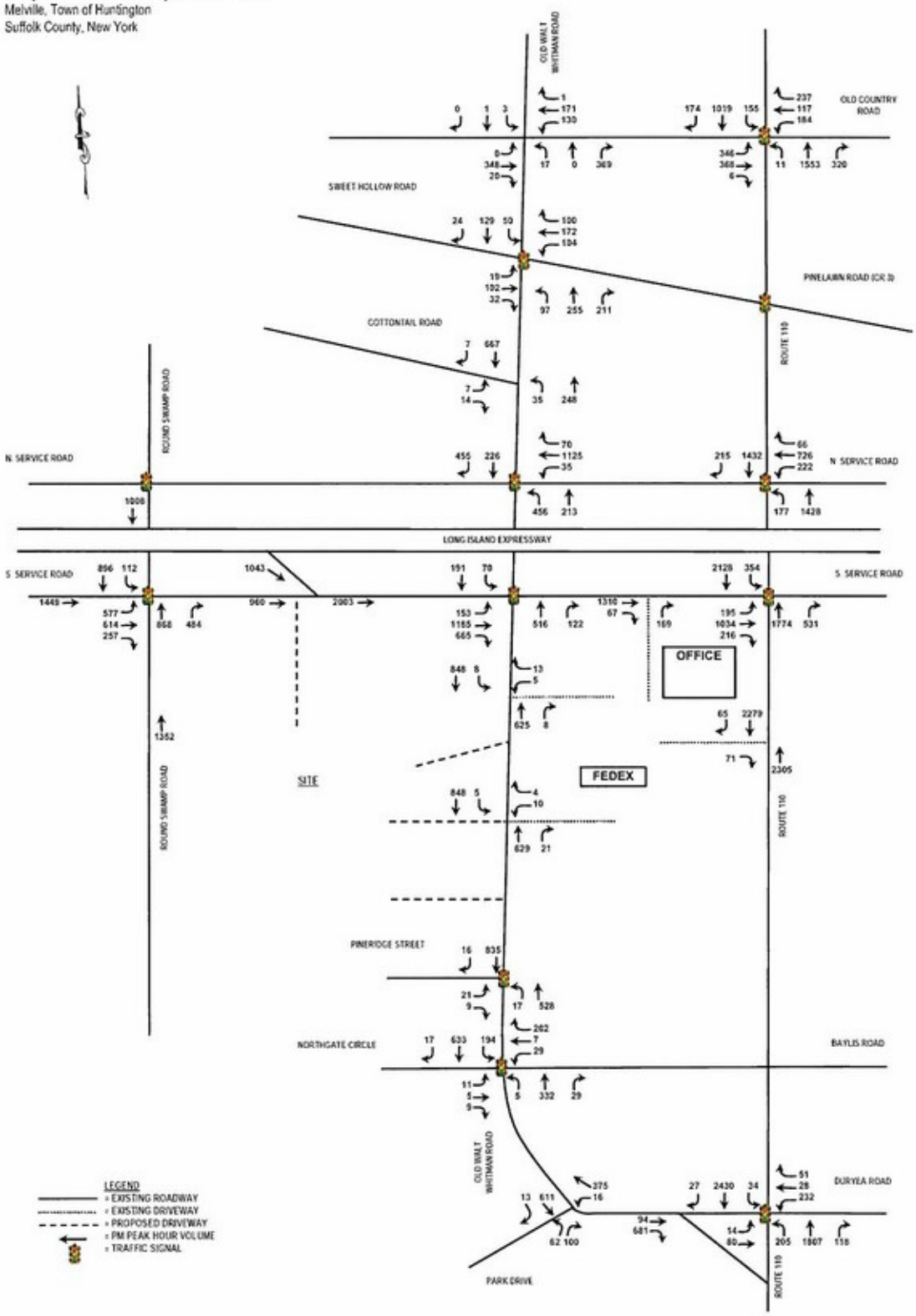


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

FUTURE "NO-BUILD" TRAFFIC VOLUMES - EVENING PEAK HOUR

Figure 11

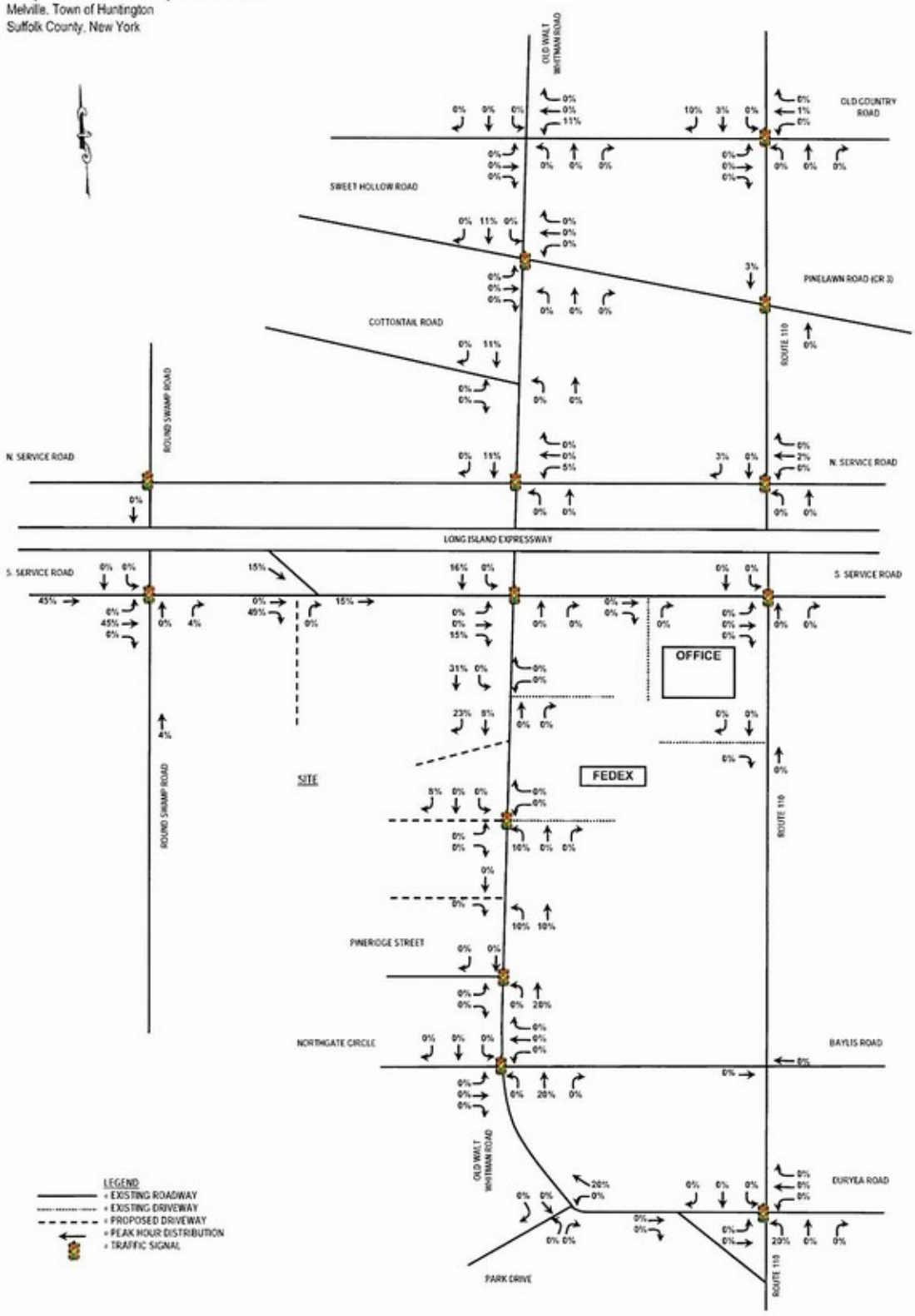
Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York



ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE GENERATED TRAFFIC ARRIVAL DISTRIBUTION BASED ON ZIP CODE DATA Figure 12

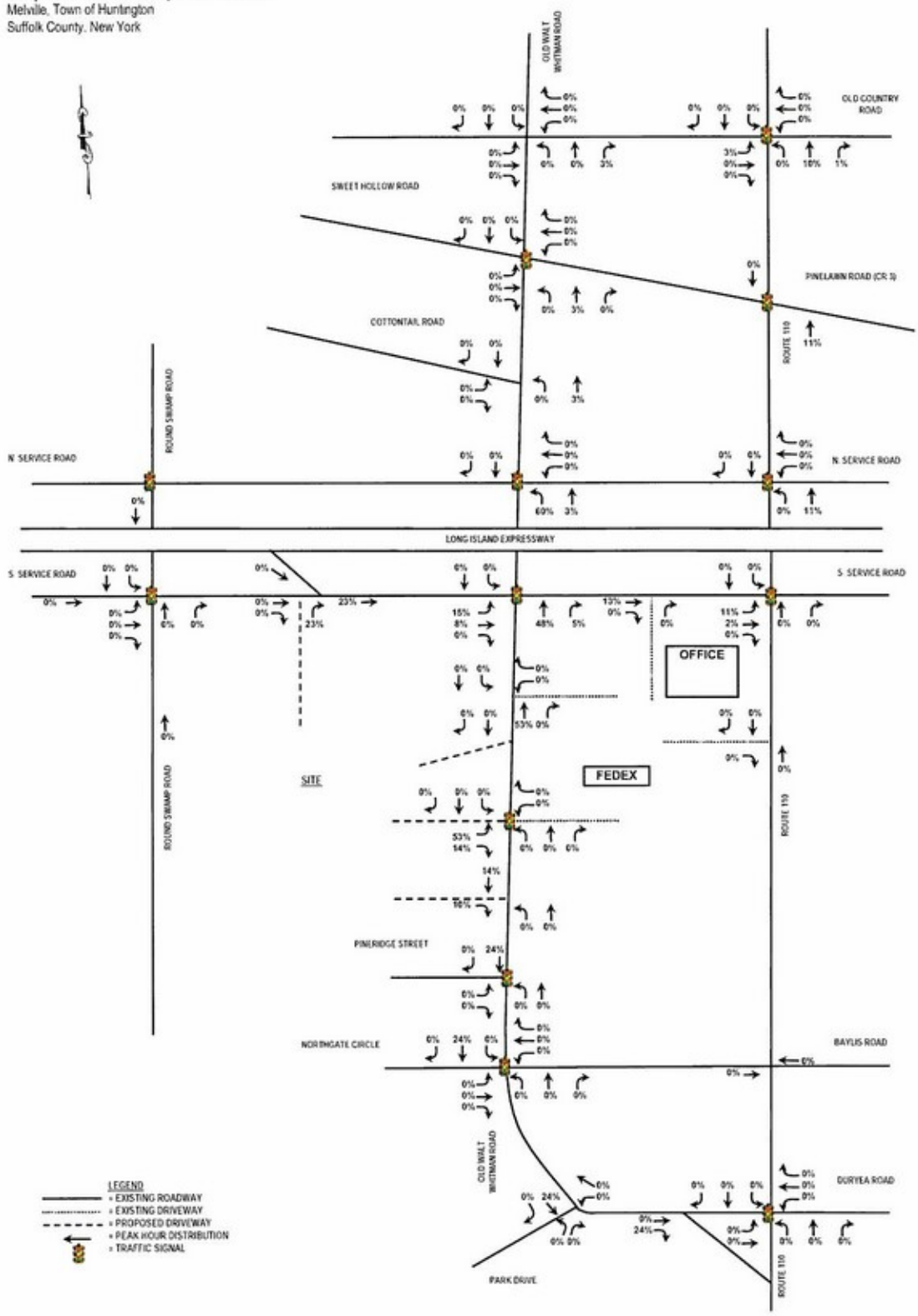
Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York



ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE GENERATED TRAFFIC DEPARTURE DISTRIBUTION BASED ON ZIP CODE DATA Figure 13

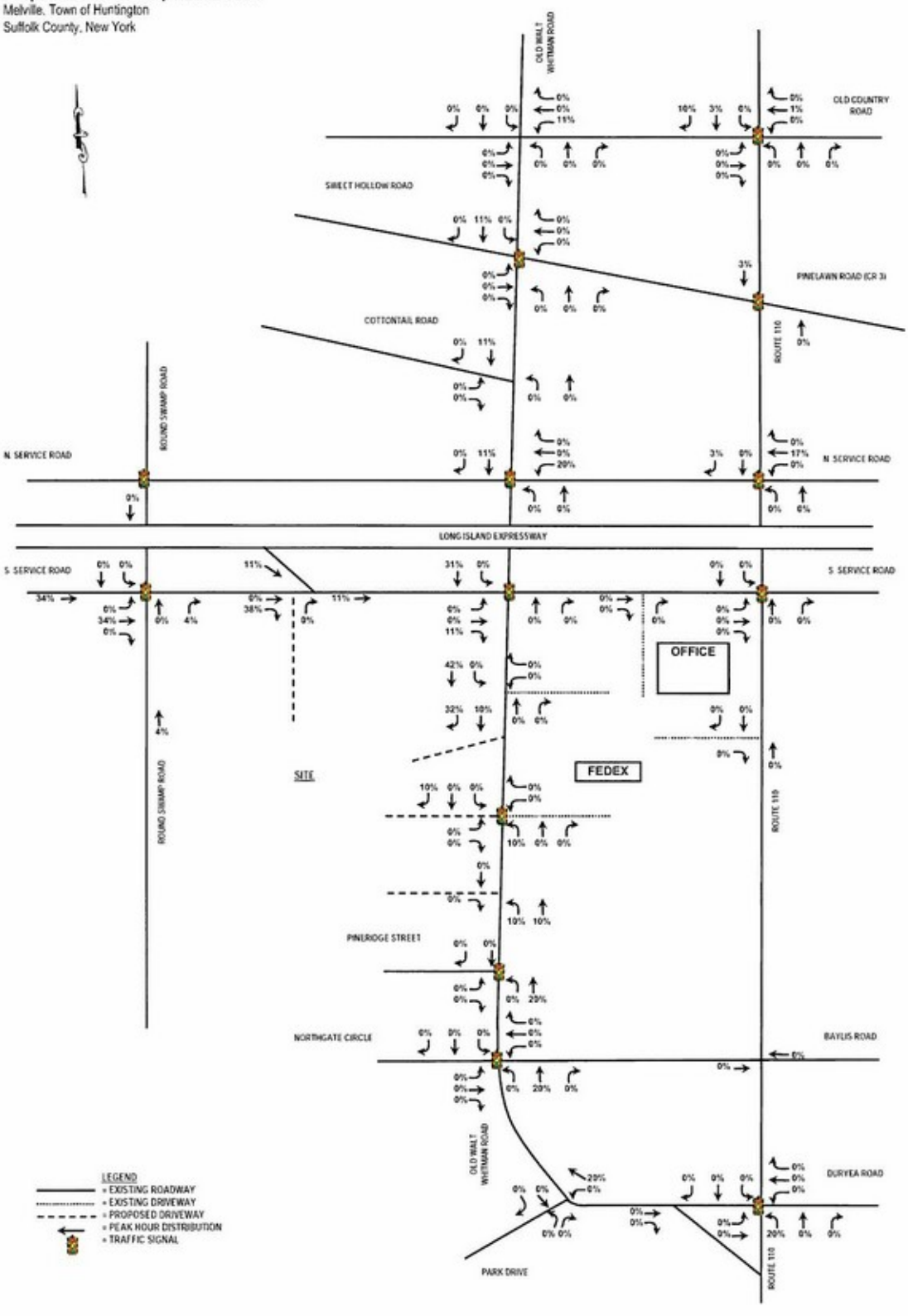
Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York



ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE GENERATED TRAFFIC ARRIVAL DISTRIBUTION BASED ON TRAVEL ROUTES Figure 14

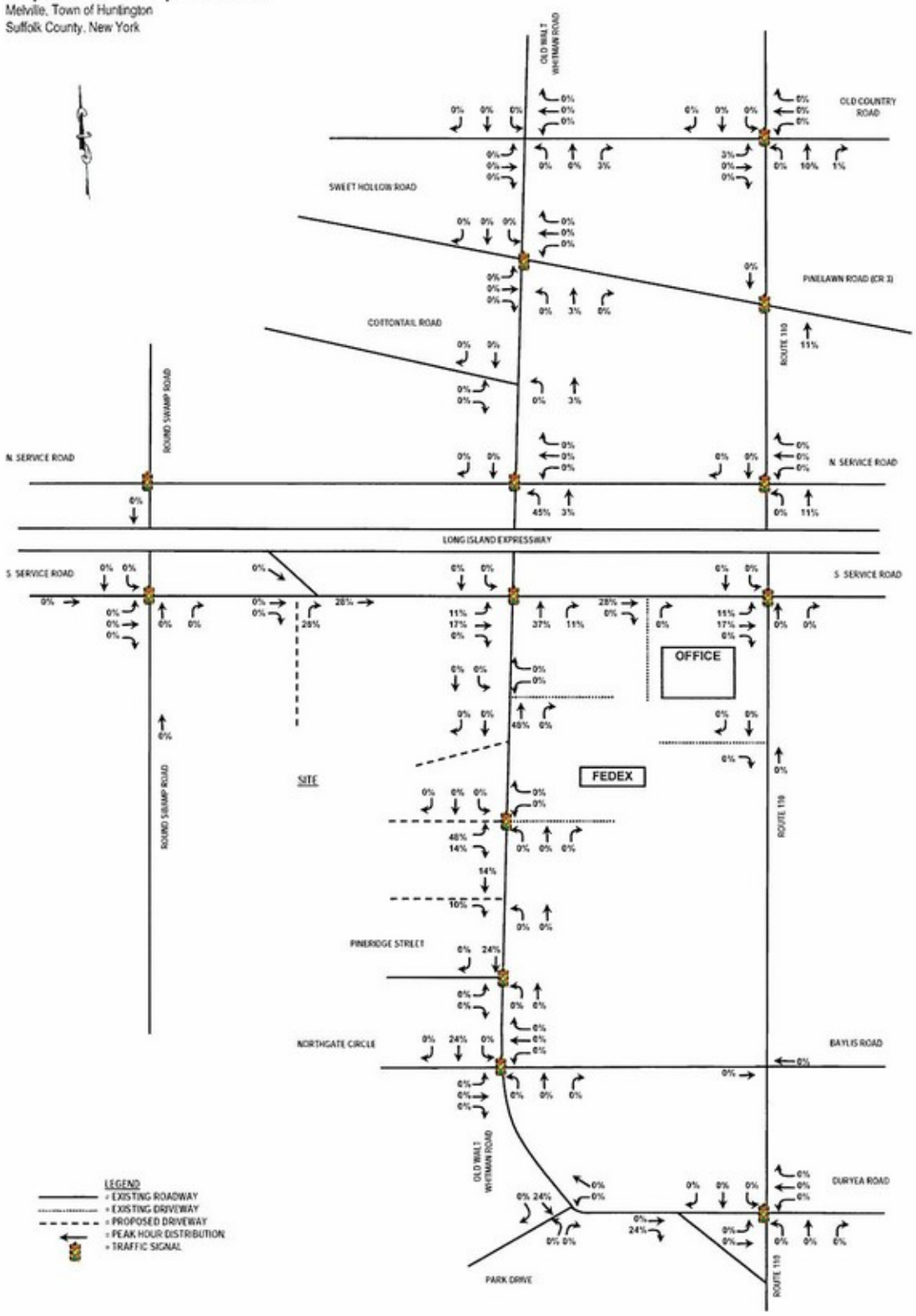
Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York



ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE GENERATED TRAFFIC DEPARTURE DISTRIBUTION BASED ON TRAVEL ROUTES Figure 15

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

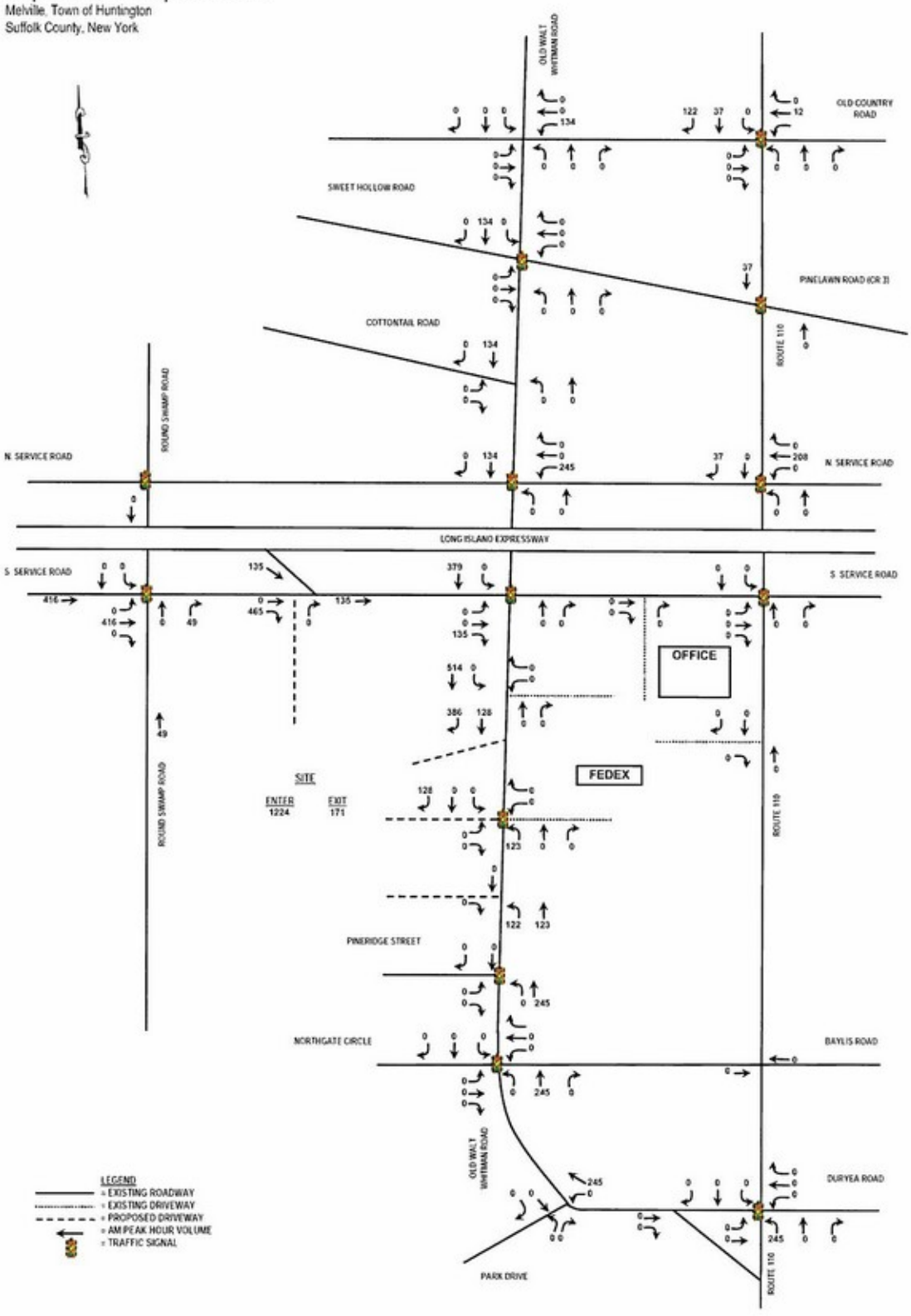


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE GENERATED ARRIVAL TRAFFIC - MORNING PEAK HOUR

Figure 16

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

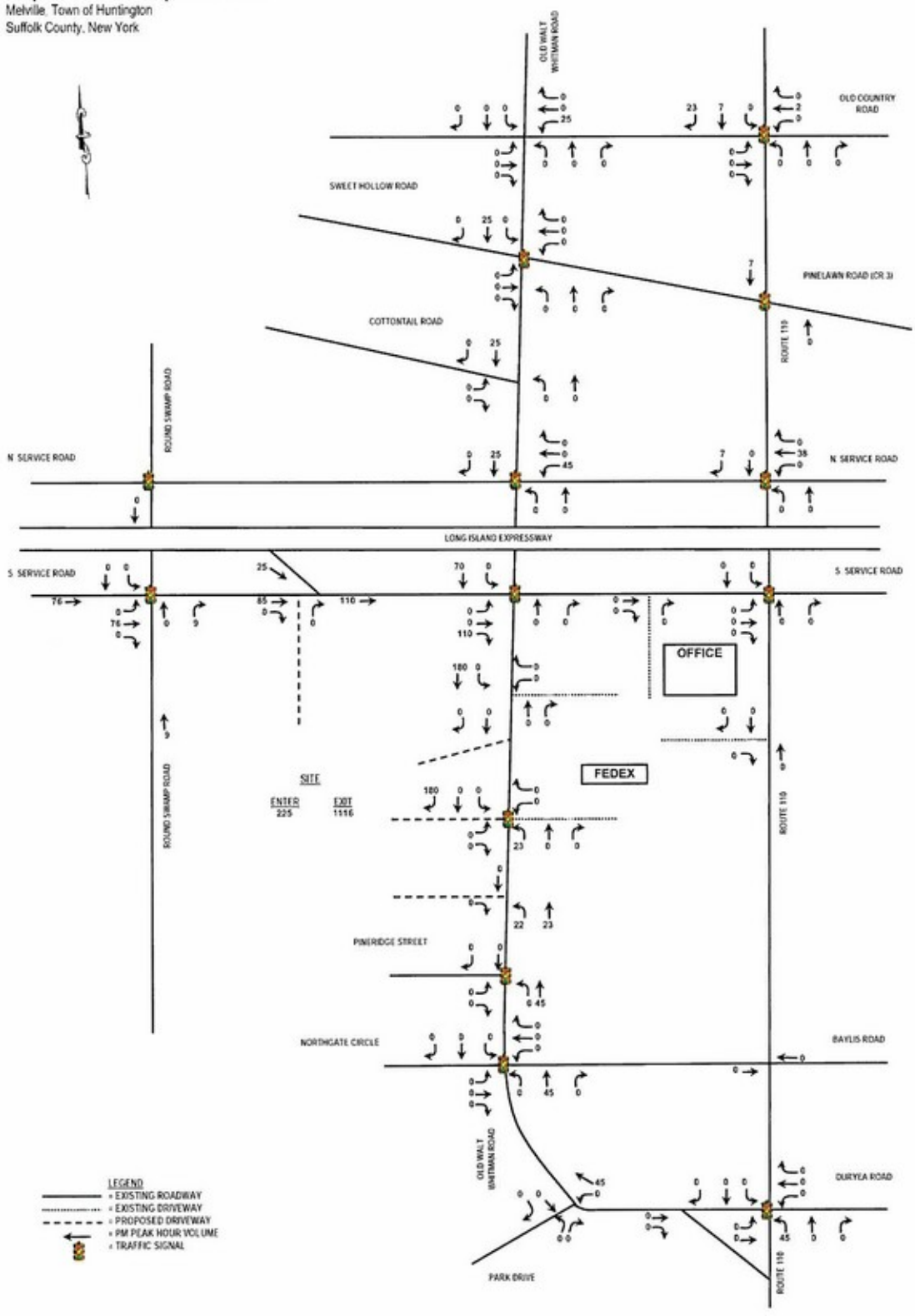


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE GENERATED ARRIVAL TRAFFIC - EVENING PEAK HOUR

Figure 17

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

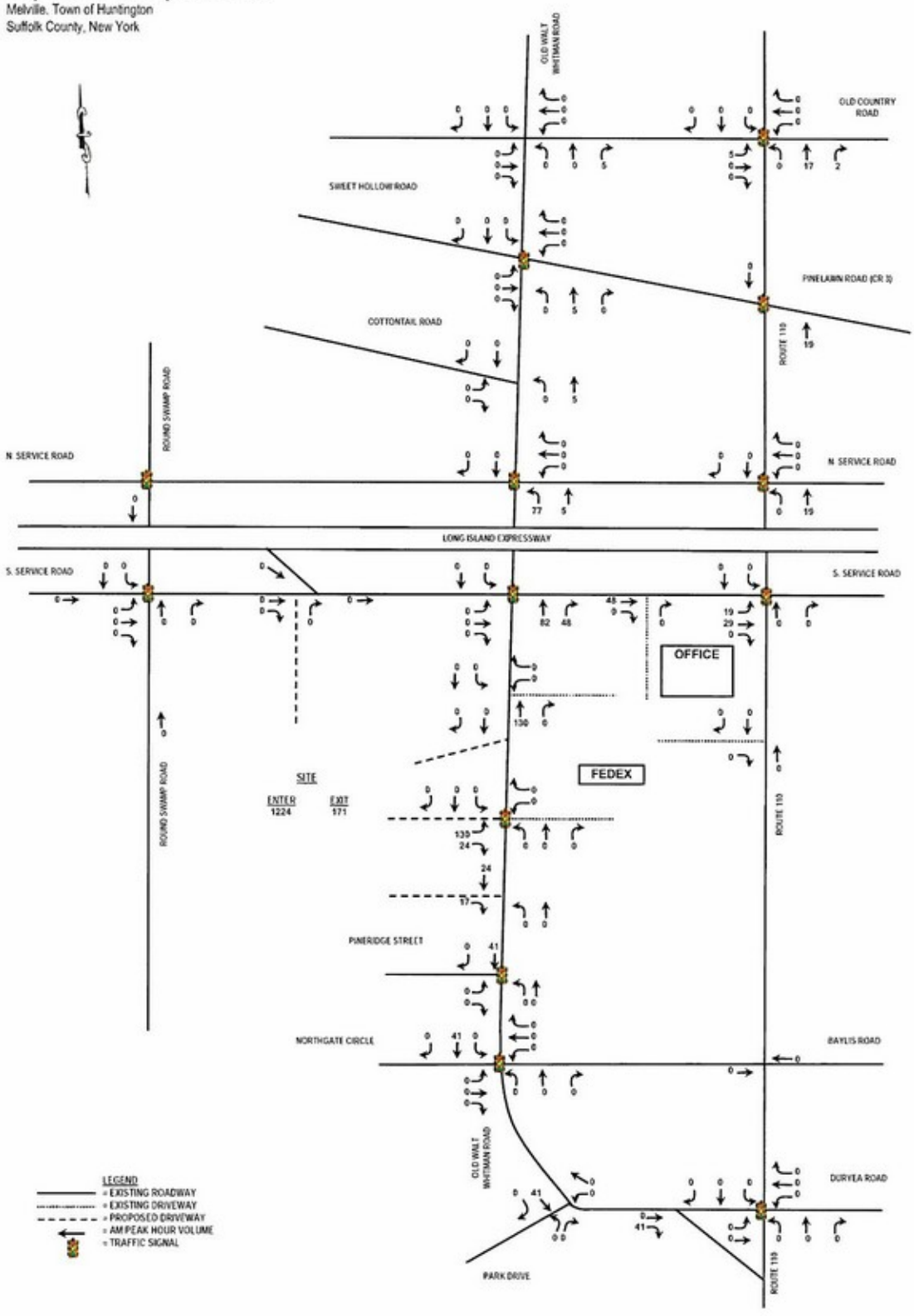


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE GENERATED DEPARTURE TRAFFIC - MORNING PEAK HOUR

Figure 18

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

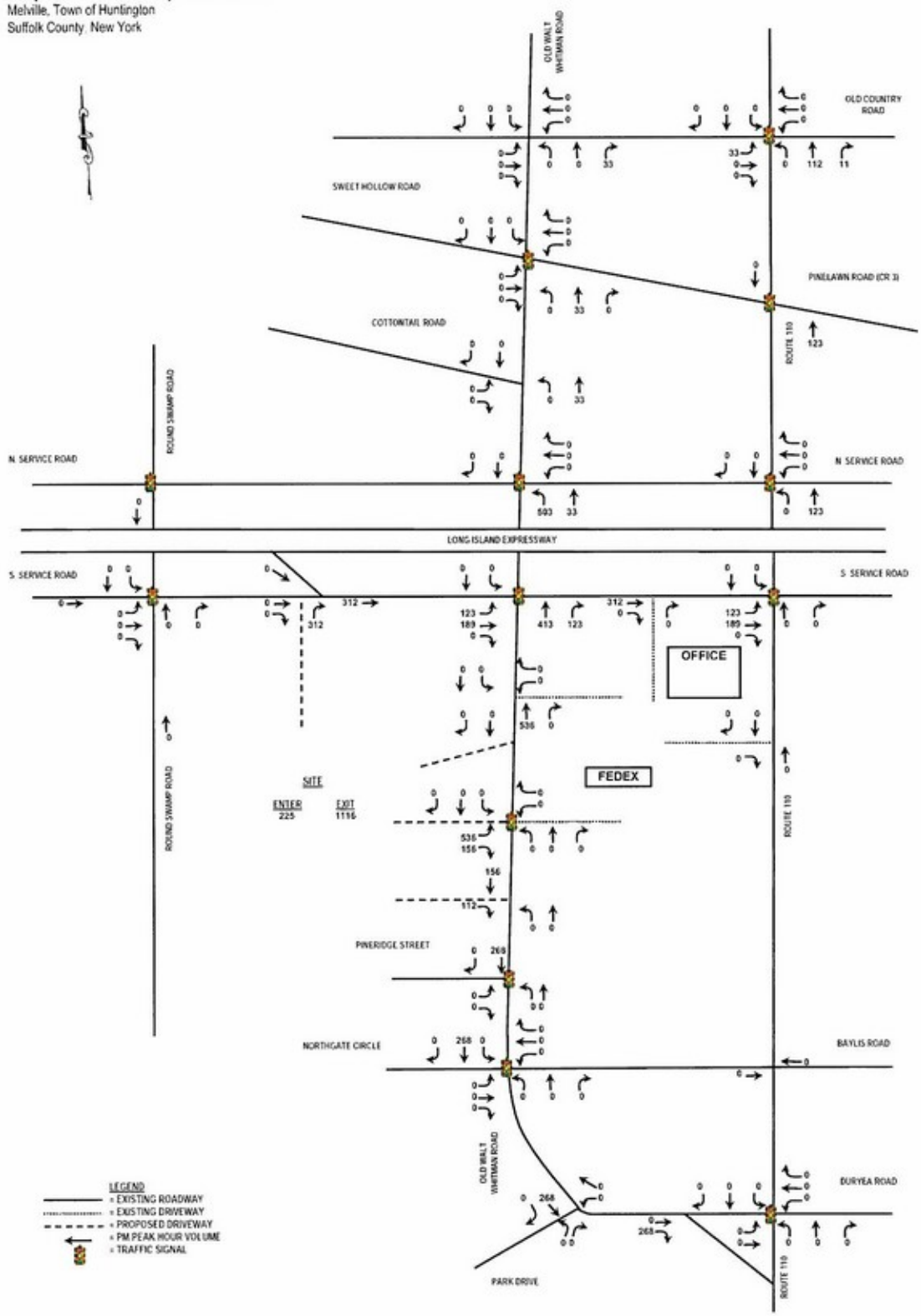


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

SITE GENERATED DEPARTURE TRAFFIC - EVENING PEAK HOUR

Figure 19

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

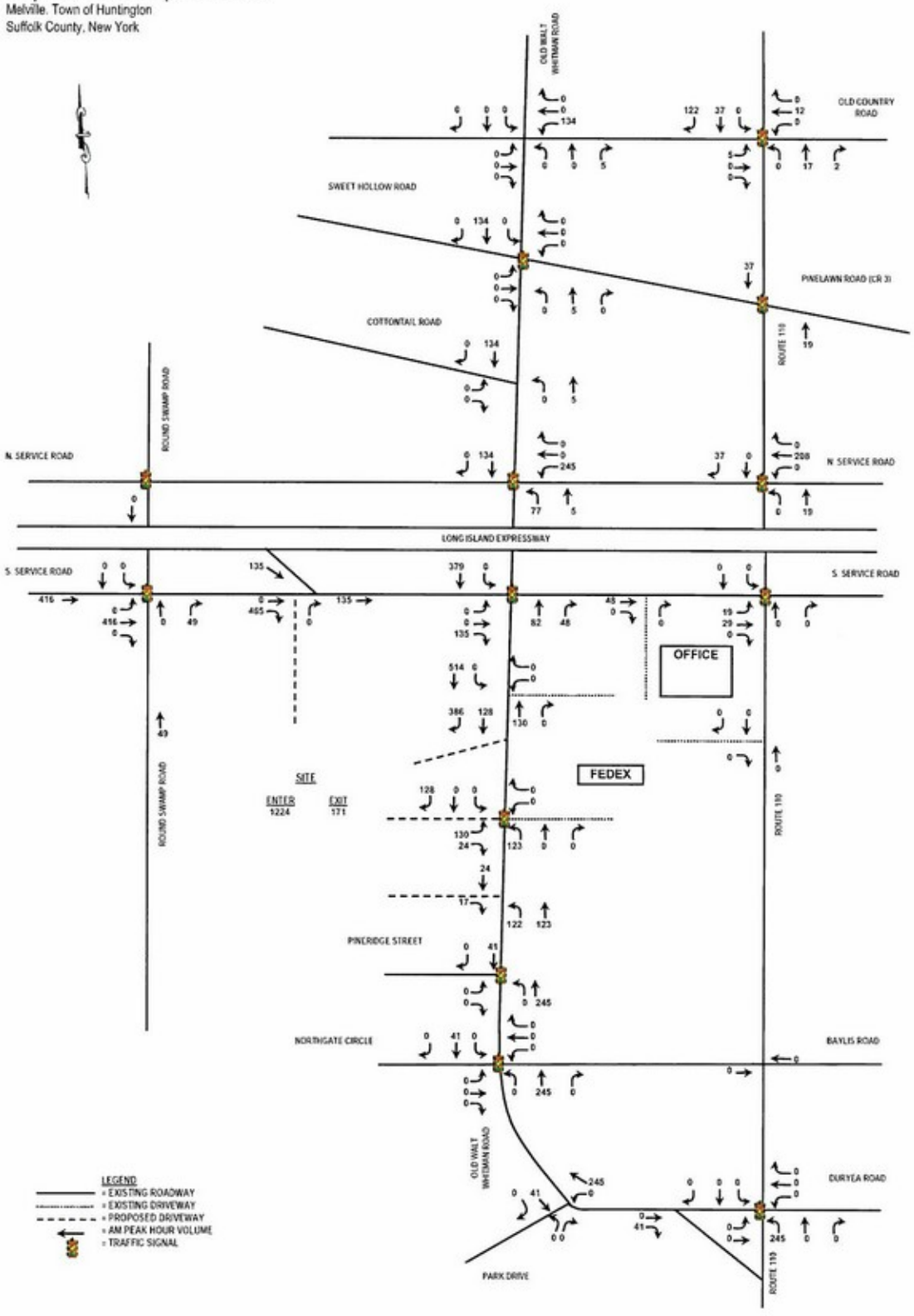


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

TOTAL SITE GENERATED TRAFFIC - MORNING PEAK HOUR

Figure 20

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

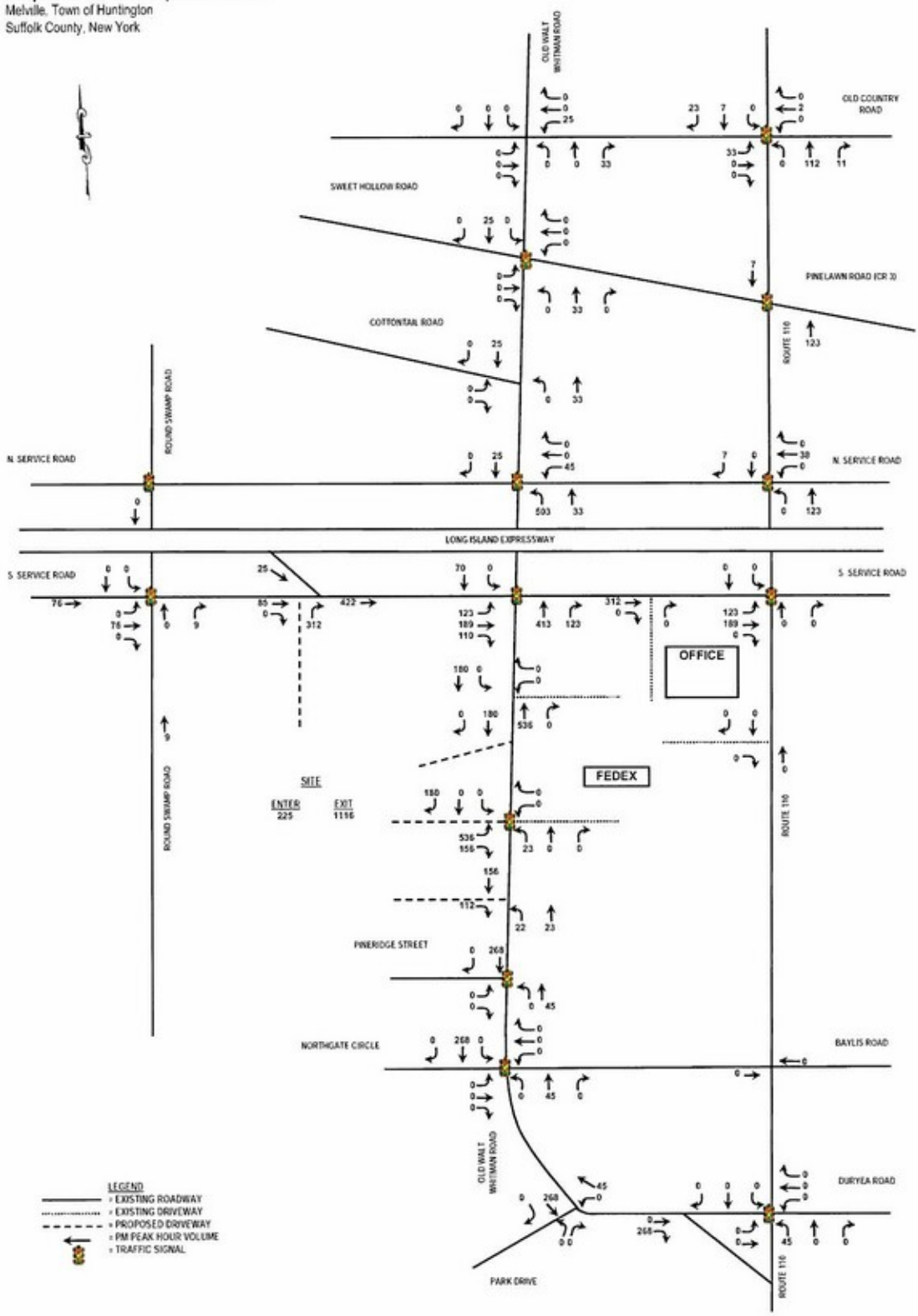


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

TOTAL SITE GENERATED TRAFFIC - EVENING PEAK HOUR

Figure 21

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

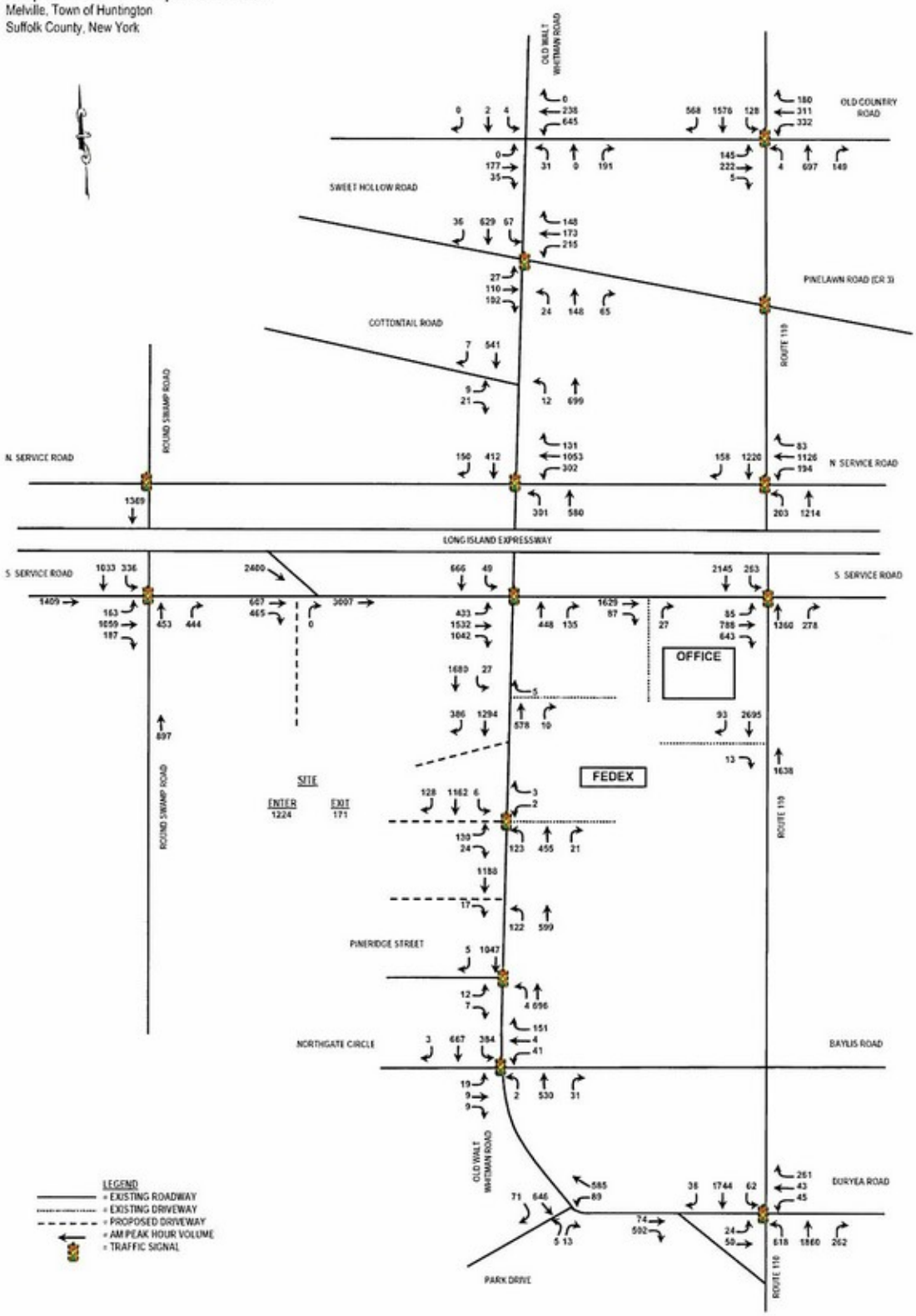


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

FUTURE "BUILD" TRAFFIC VOLUMES - MORNING PEAK HOUR

Figure 22

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York

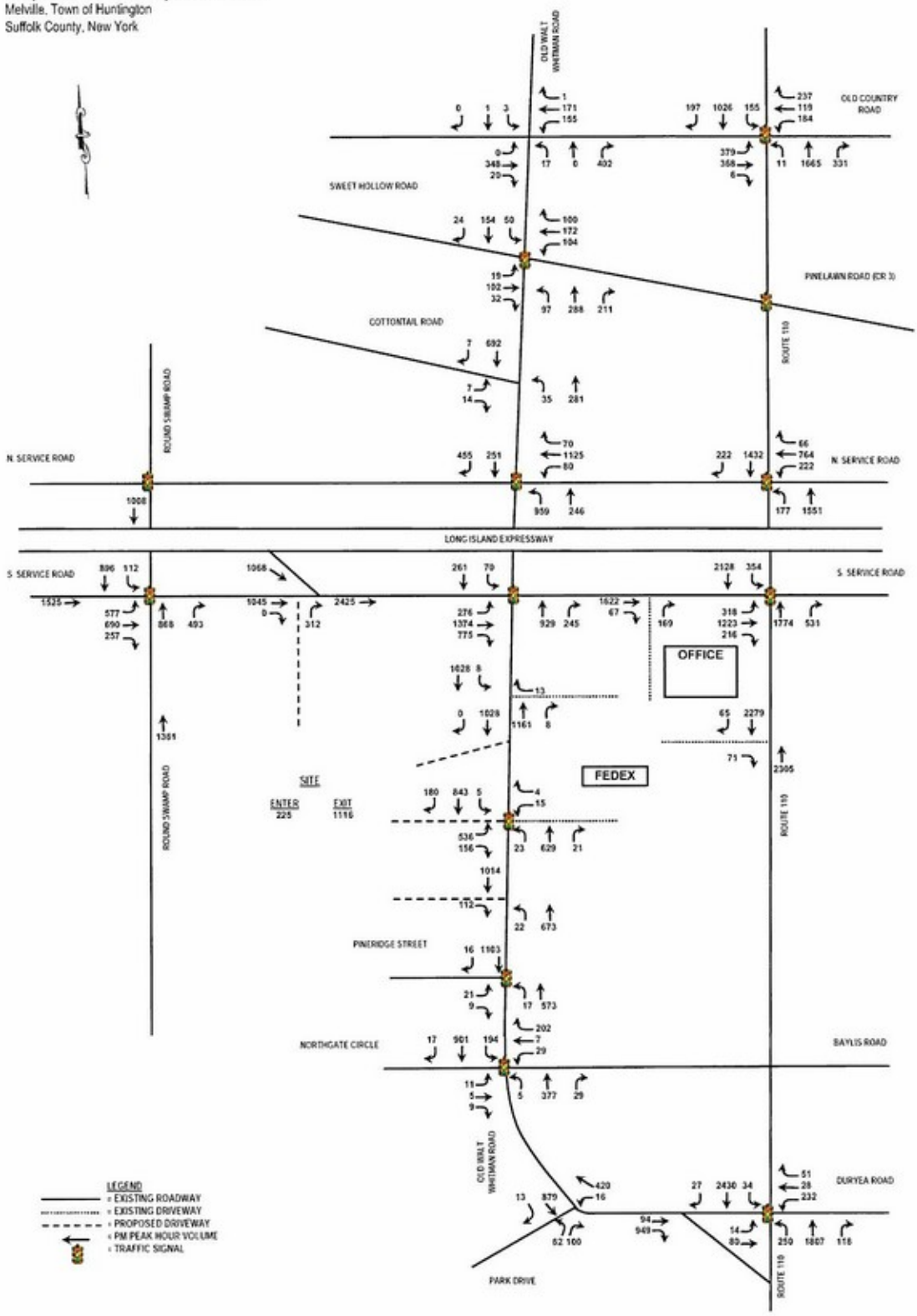


ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

FUTURE "BUILD" TRAFFIC VOLUMES - EVENING PEAK HOUR

Figure 23

Proposed Canon Corporate Center
Melville, Town of Huntington
Suffolk County, New York



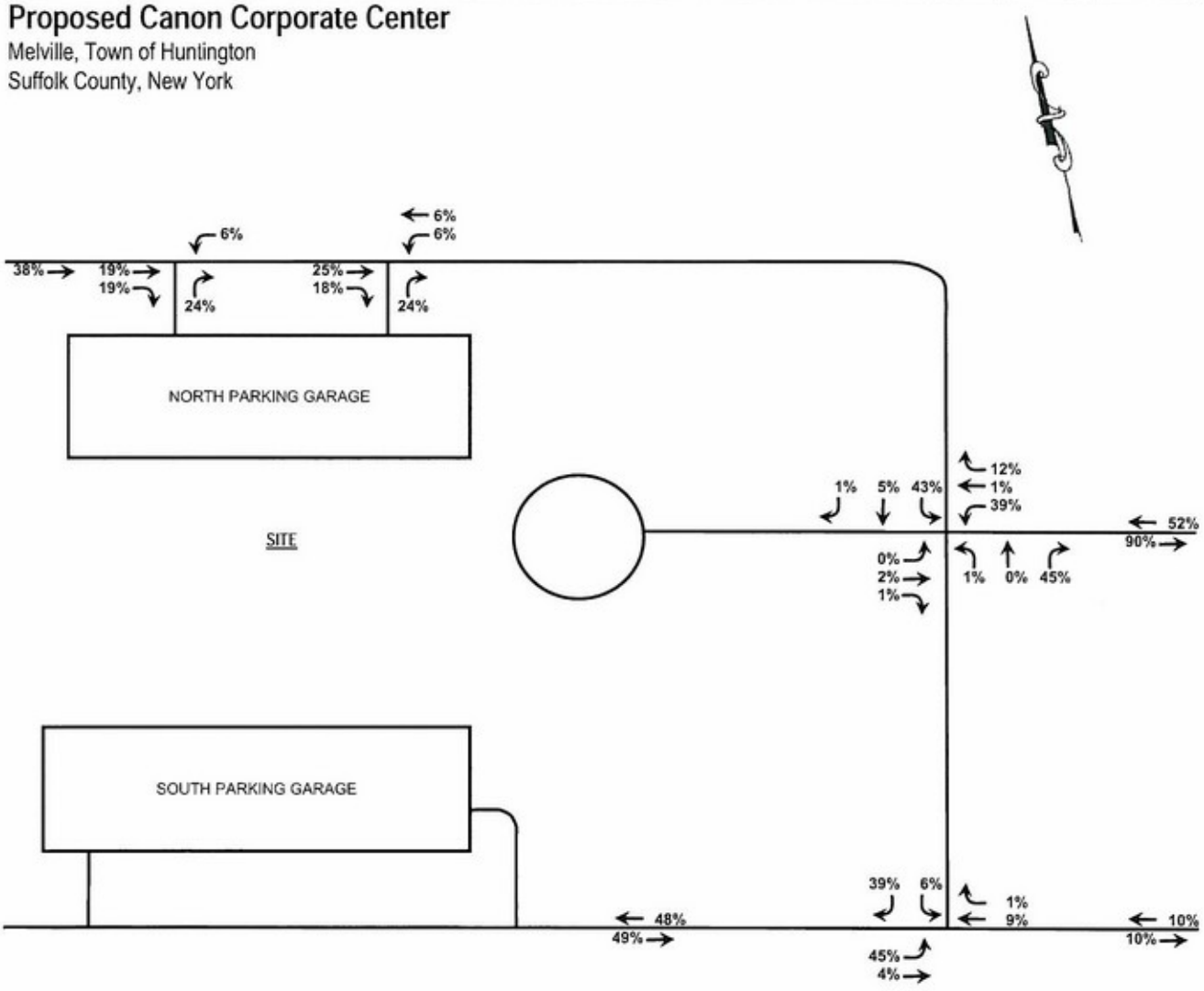
ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

ON-SITE TOTAL SITE GENERATED TRAFFIC DISTRIBUTION
MORNING PEAK HOUR

Figure 24

Proposed Canon Corporate Center

Melville, Town of Huntington
Suffolk County, New York



LEGEND
= PROPOSED ROADWAY
← = AM PEAK HOUR DISTRIBUTION

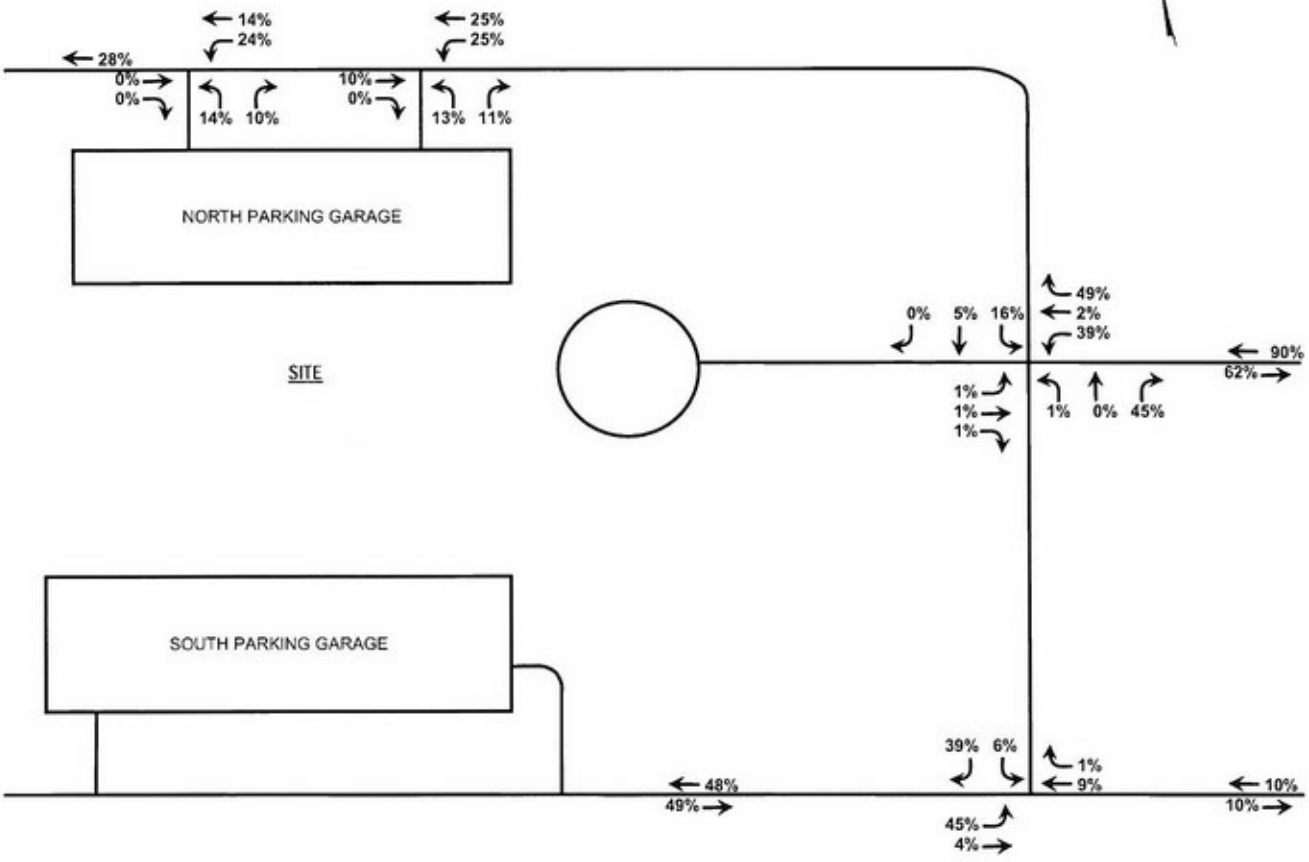
ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

ON-SITE TOTAL SITE GENERATED TRAFFIC DISTRIBUTION
EVENING PEAK HOUR

Figure 25

Proposed Canon Corporate Center

Melville, Town of Huntington
Suffolk County, New York



LEGEND
= PROPOSED ROADWAY
= PM PEAK HOUR DISTRIBUTION

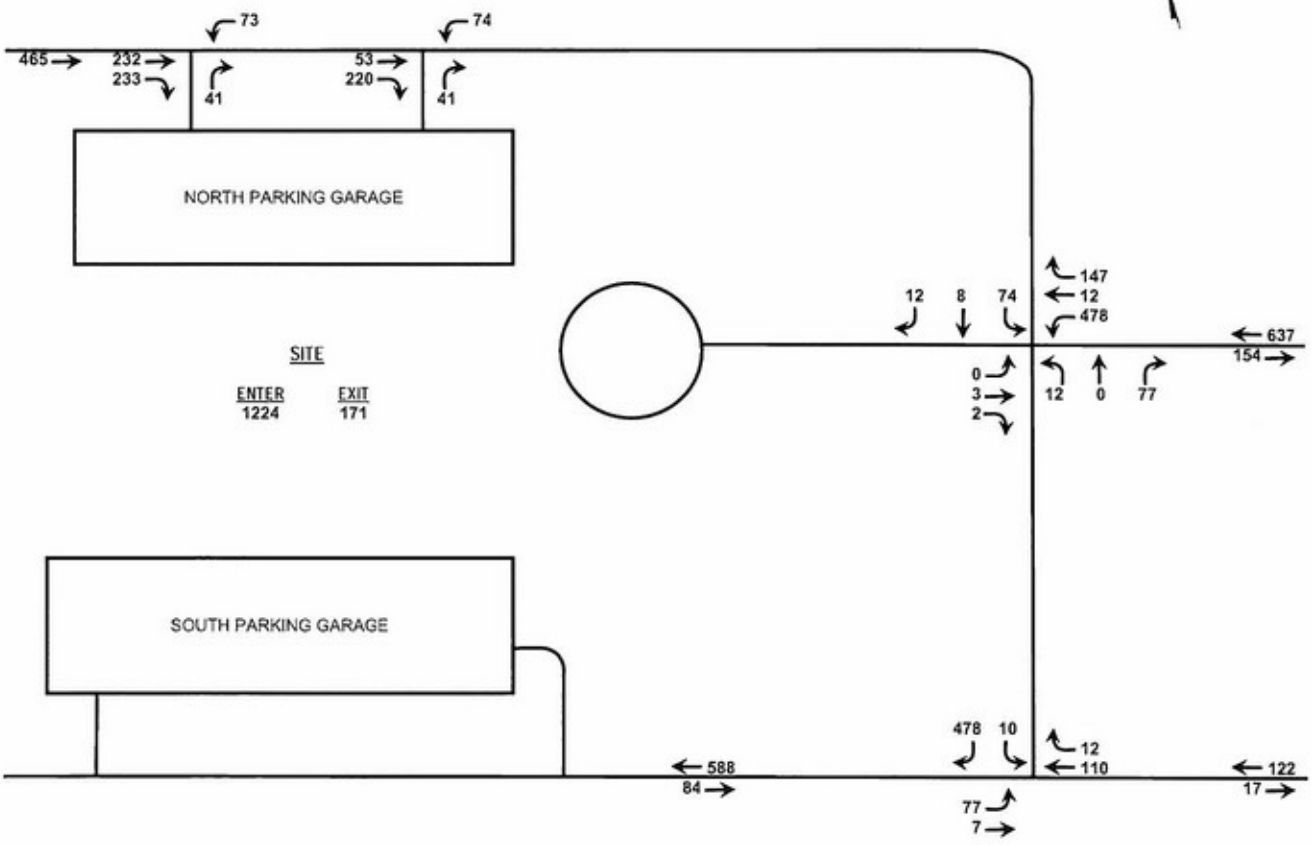
ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

ON-SITE TOTAL SITE GENERATED TRAFFIC
MORNING PEAK HOUR

Figure 26

Proposed Canon Corporate Center

Melville, Town of Huntington
Suffolk County, New York



LEGEND
= PROPOSED ROADWAY
← = AM PEAK HOUR VOLUME

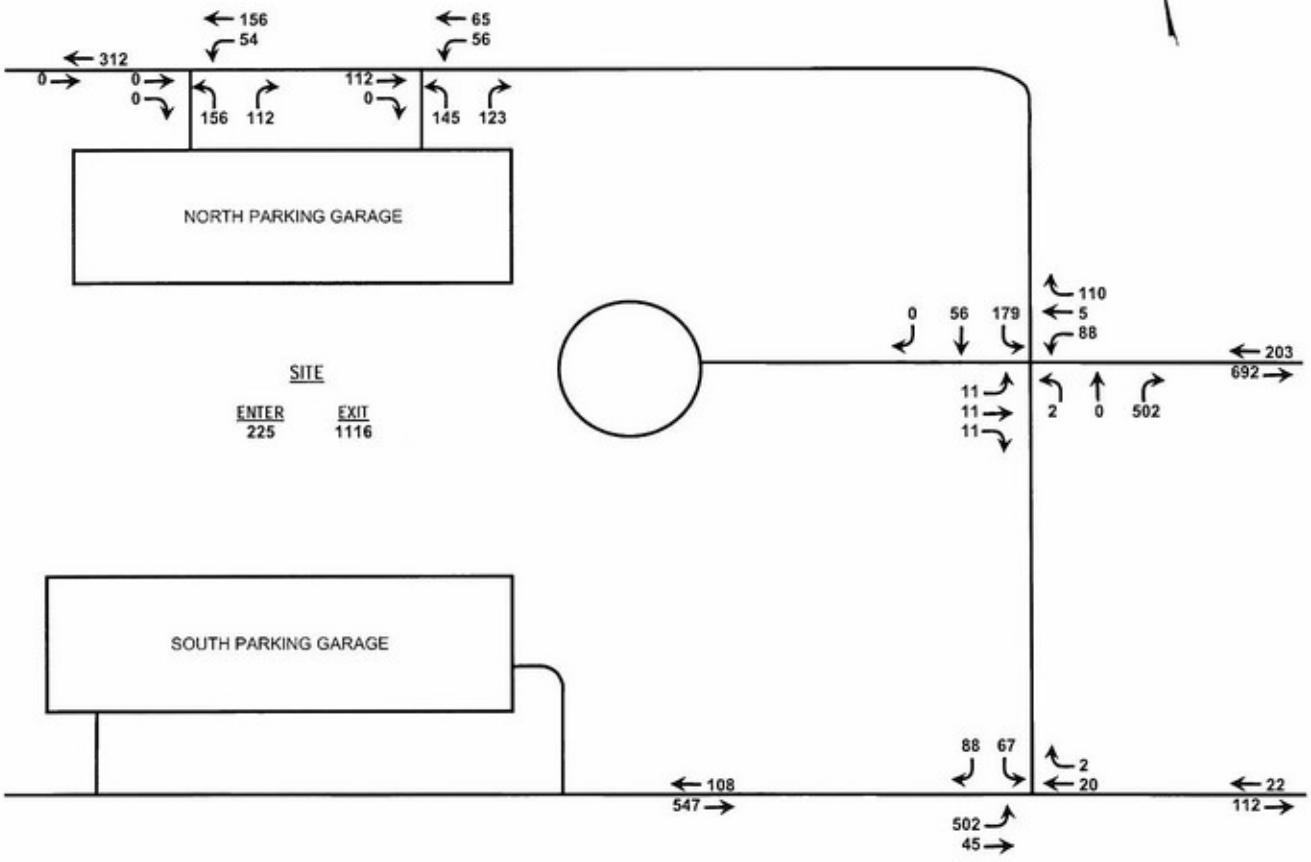
ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

ON-SITE TOTAL SITE GENERATED TRAFFIC
EVENING PEAK HOUR

Figure 27

Proposed Canon Corporate Center

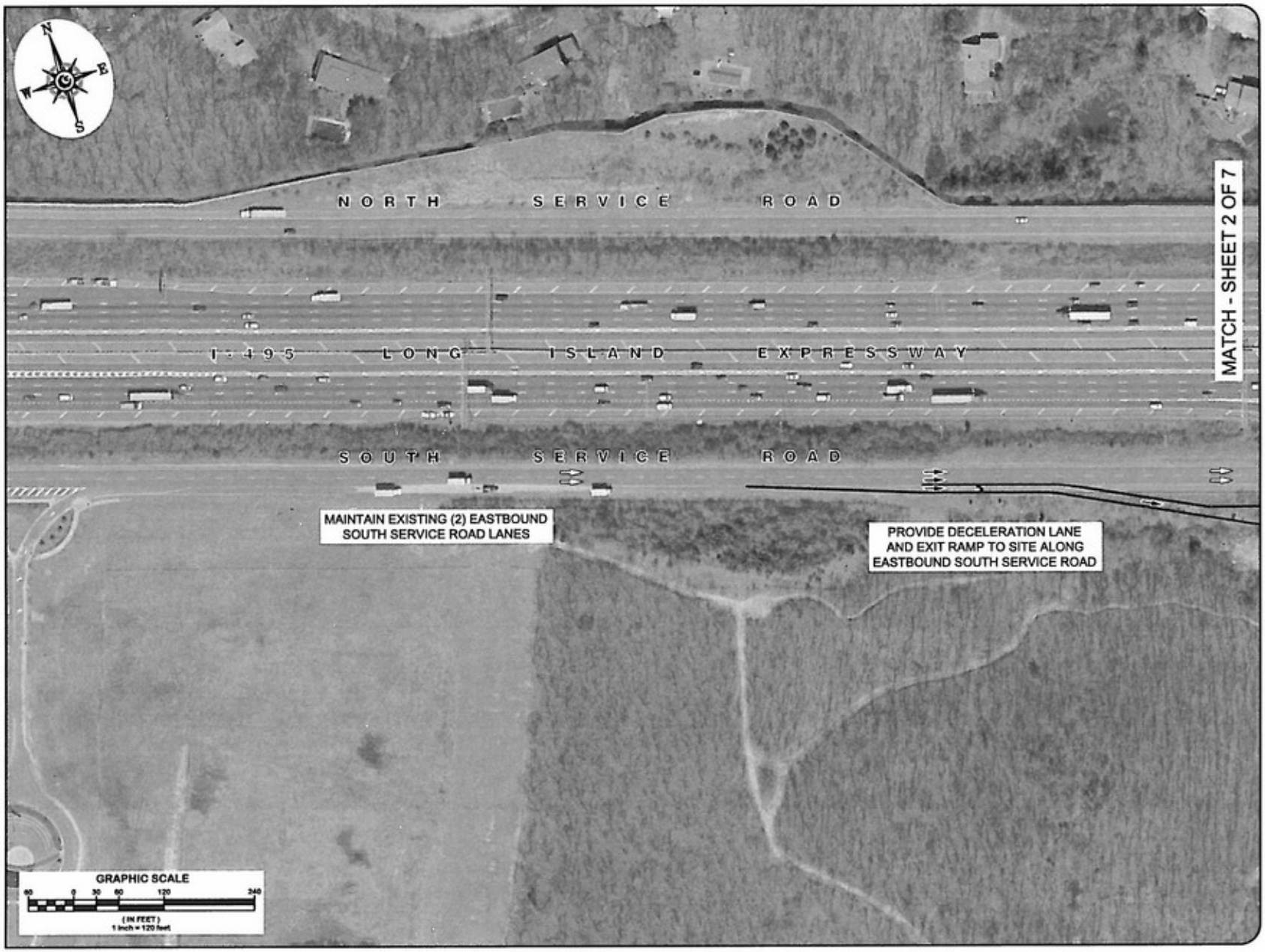
Melville, Town of Huntington
Suffolk County, New York



LEGEND
= PROPOSED ROADWAY
← = PM PEAK HOUR VOLUME

ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

CONCEPTUAL ROADWAY DESIGN PLANS



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Tel: (631) 738-1919
Fax: (631) 738-1177
www.atlantictraffic.com

LEGEND

FUTURE LANES

EXISTING LANES

REVISIONS:

#	DATE	DESCRIPTION
1	9/22/08	FOR PRE-SUBMISSION
2	12/15/08	TOWN OF HUNTINGTON RESUBMISSION

PAUL B. GOING
PROFESSIONAL ENGINEER
NEW YORK LICENSE NO. 076761

DATE: 08/25/08	DRAWN BY: BZ
SCALE: 1" = 120'	CHECKED BY: PAF
REV #:	PROJECT #:

AN08003

NOT FOR CONSTRUCTION

CLIENT/ PROJECT

PROPOSED
CANON AMERICAS HEADQUARTERS

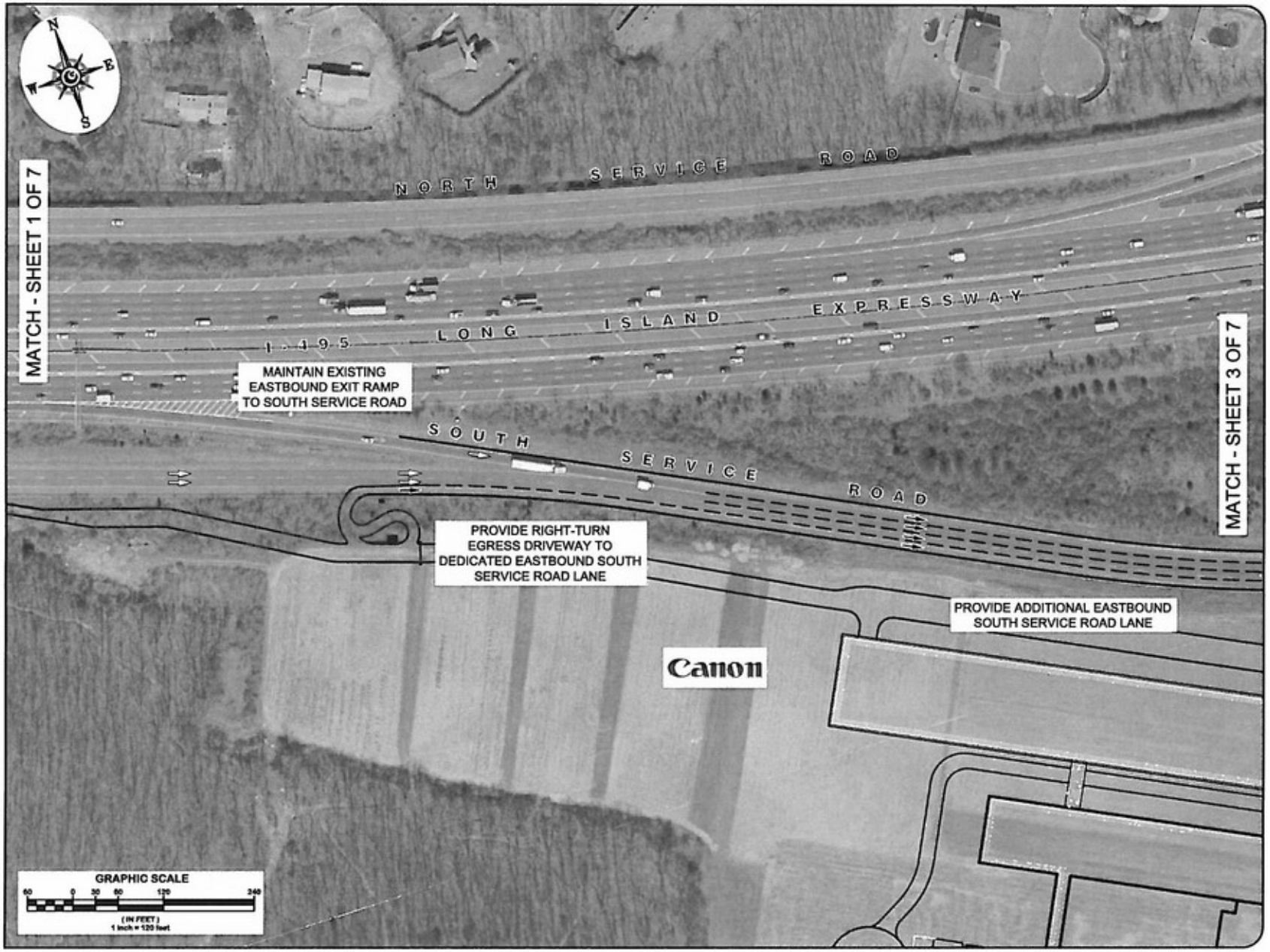
LIE SOUTH SERVICE ROAD & WALT WHITMAN ROAD
MELVILLE, TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

TITLE

CONCEPTUAL ROADWAY IMPROVEMENT PLANS

SHEET NO

1 of 7



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Ronkonkoma, New York 11779
Tel: (631) 738-1919
Fax: (631) 738-1177
www.atlantictraffic.com

LEGEND
FUTURE LANES
EXISTING LANES

REVISIONS:

#	DATE	DESCRIPTION
1	8/29/08	FOR PRESENTATION
2	10/15/08	TOWN OF HUNTINGTON RESUBMISSION

PAUL B. GOING
PROFESSIONAL ENGINEER
NEW YORK LICENSE NO. 076361

DATE: 08/25/08	DRAWN BY: BZ
SCALE: 1" = 120'	CHECKED BY: PAF
REV #:	MYSOOT F

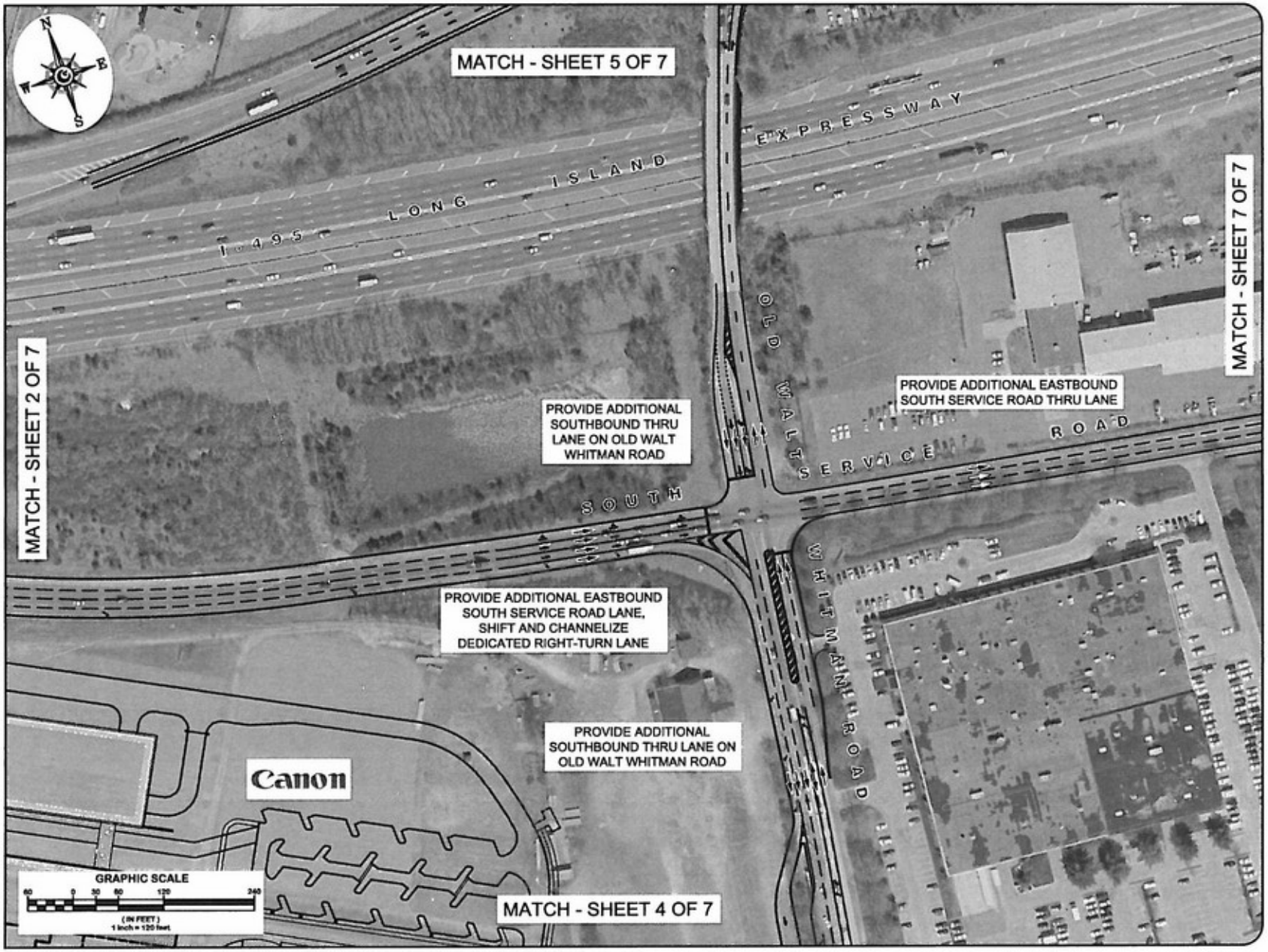
AN08003

NOT FOR CONSTRUCTION

CLIENT/ PROJECT:
PROPOSED
CANON AMERICAS HEADQUARTERS
LIE SOUTH SERVICE ROAD & WALT WHITMAN ROAD
MELVILLE, TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

TITLE:
CONCEPTUAL ROADWAY IMPROVEMENT PLANS

SHEET NO.
2 of 7



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LEGEND

FUTURE LANES

EXISTING LANES

REVISIONS:

#	DATE	DESCRIPTION
1	8/25/08	FOR PRE-SUBMISSION
2	12/17/08	TOWN OF HUNTINGTON RESUBMISSION

PAUL B. GOING
PROFESSIONAL ENGINEER
NEW YORK LICENSE NO. 076367

DATE: 04/15/08	DRAWN BY: BZ
SCALE: 1" = 120'	CHECKED BY: PAF
REV #:	W*SHEET #:

AN08003

NOT FOR CONSTRUCTION

CLIENT/ PROJECT

PROPOSED
CANON AMERICAS HEADQUARTERS

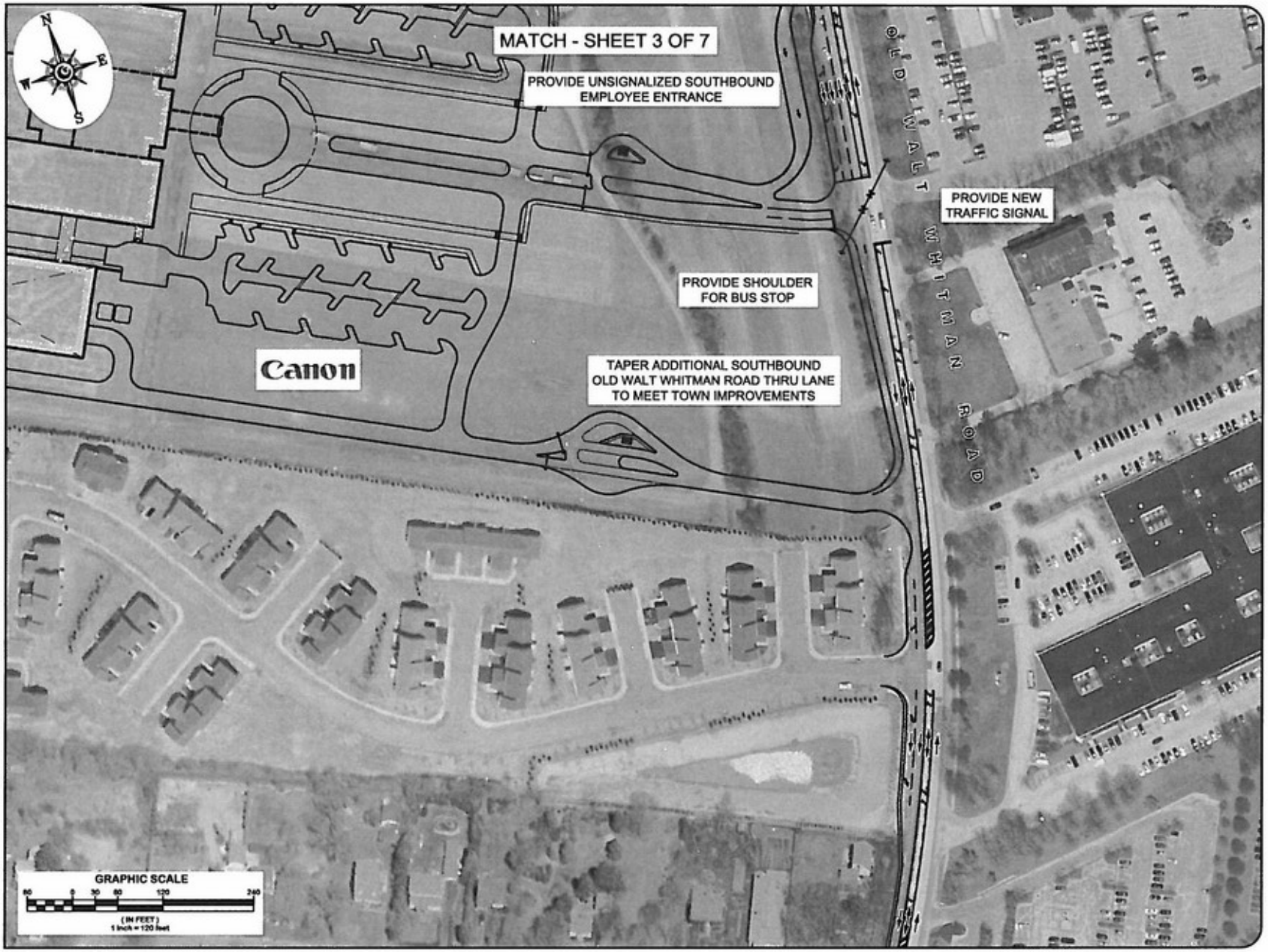
LIE SOUTH SERVICE ROAD & WALT WHITMAN ROAD
MELVILLE, TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

TITLE

CONCEPTUAL ROADWAY IMPROVEMENT PLANS

SHEET NO

3 of 7



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LEGEND

FUTURE LANES

EXISTING LANES

REVISIONS:

#	DATE	DESCRIPTION
1	9/30/08	FOR PRESERVATION
2	12/05/08	RESPONSE TO SUFFOLK COUNTY SUBMISSION

PAUL B. GOING
PROFESSIONAL ENGINEER
NEW YORK LICENSE NO. 076761

DATE: 08/25/08	DRAWN BY: BZ
SCALE: 1" = 120'	CHECKED BY: PAF
REV #:	PROJECT #:

AN08003

NOT FOR CONSTRUCTION

CLIENT/ PROJECT

PROPOSED
CANON AMERICAS HEADQUARTERS

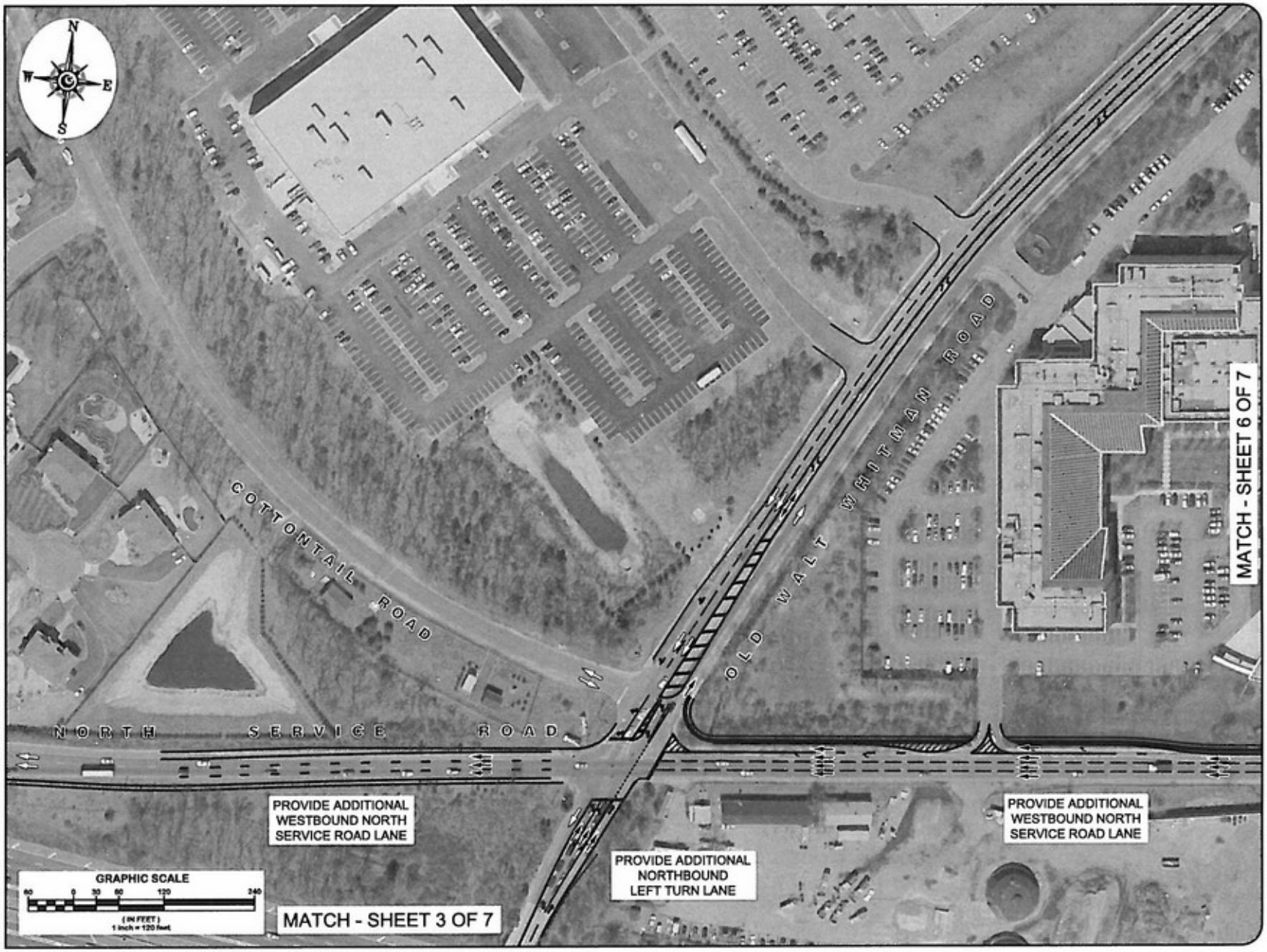
LIE SOUTH SERVICE ROAD & WALT WHITMAN ROAD
MELVILLE, TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

TITLE

CONCEPTUAL ROADWAY IMPROVEMENT PLANS

SHEET NO.

4 of 7



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& DESIGN ENGINEERS, INC.

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SITE PLANNING & ROADWAY DESIGN CONSULTANTS

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LEGEND

FUTURE LANES

EXISTING LANES

REVISIONS:

#	DATE	DESCRIPTION
1	9/24/08	FOR PRESENTATION
2	10/14/08	TOWN OF HUNTINGTON RESUBMISSION

PAUL B. GOING
PROFESSIONAL ENGINEER
NEW YORK LICENSE NO. 070247

DATE: 08/25/08	DRAWN BY: BZ
SCALE: 1" = 120'	CHECKED BY: PAF
REV #:	PROJECT #:

AN08003

NOT FOR CONSTRUCTION

CLIENT/
PROJECT

PROPOSED
CANON AMERICAS HEADQUARTERS

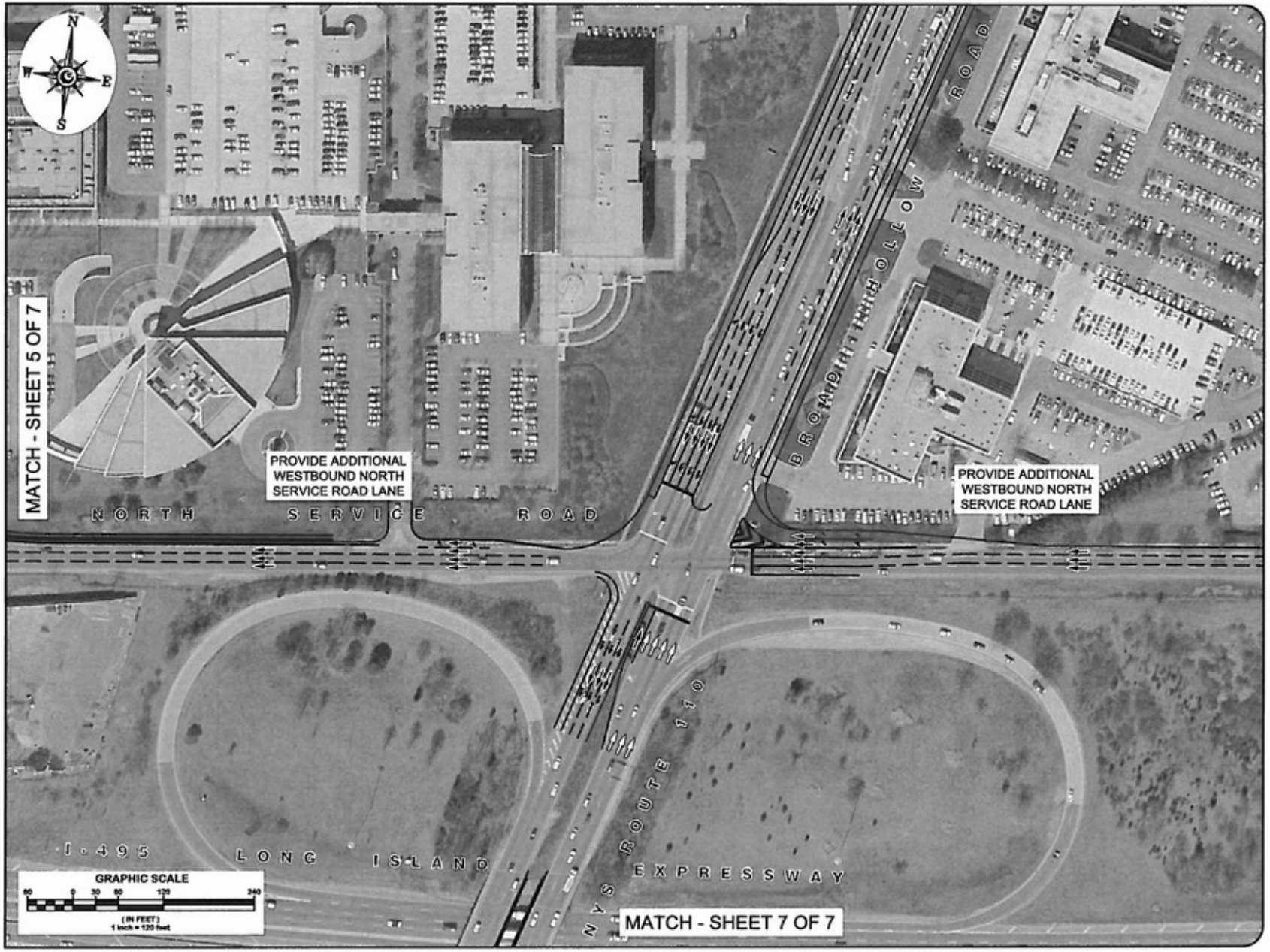
LIE SOUTH SERVICE ROAD &
WALT WHITMAN ROAD
MELVILLE, TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

TITLE

CONCEPTUAL ROADWAY IMPROVEMENT PLANS

SHEET NO.

5 of 7



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LEGEND

FUTURE LANES

EXISTING LANES

REVISIONS:

#	DATE	DESCRIPTION
1	5/7/08	FOR PRESENTATION
2	12/19/08	TOWN OF HUNTINGTON RESUBMISSION

PAUL B. GOING
PROFESSIONAL ENGINEER
NEW YORK LICENSE NO. 075261

DATE 08/25/08	DRAWN BY BZ
SCALE 1" = 120'	CHECKED BY PAP
REV #	APPROVED #

AN08003

NOT FOR CONSTRUCTION

CLIENT/
PROJECT

PROPOSED
CANON AMERICAS HEADQUARTERS

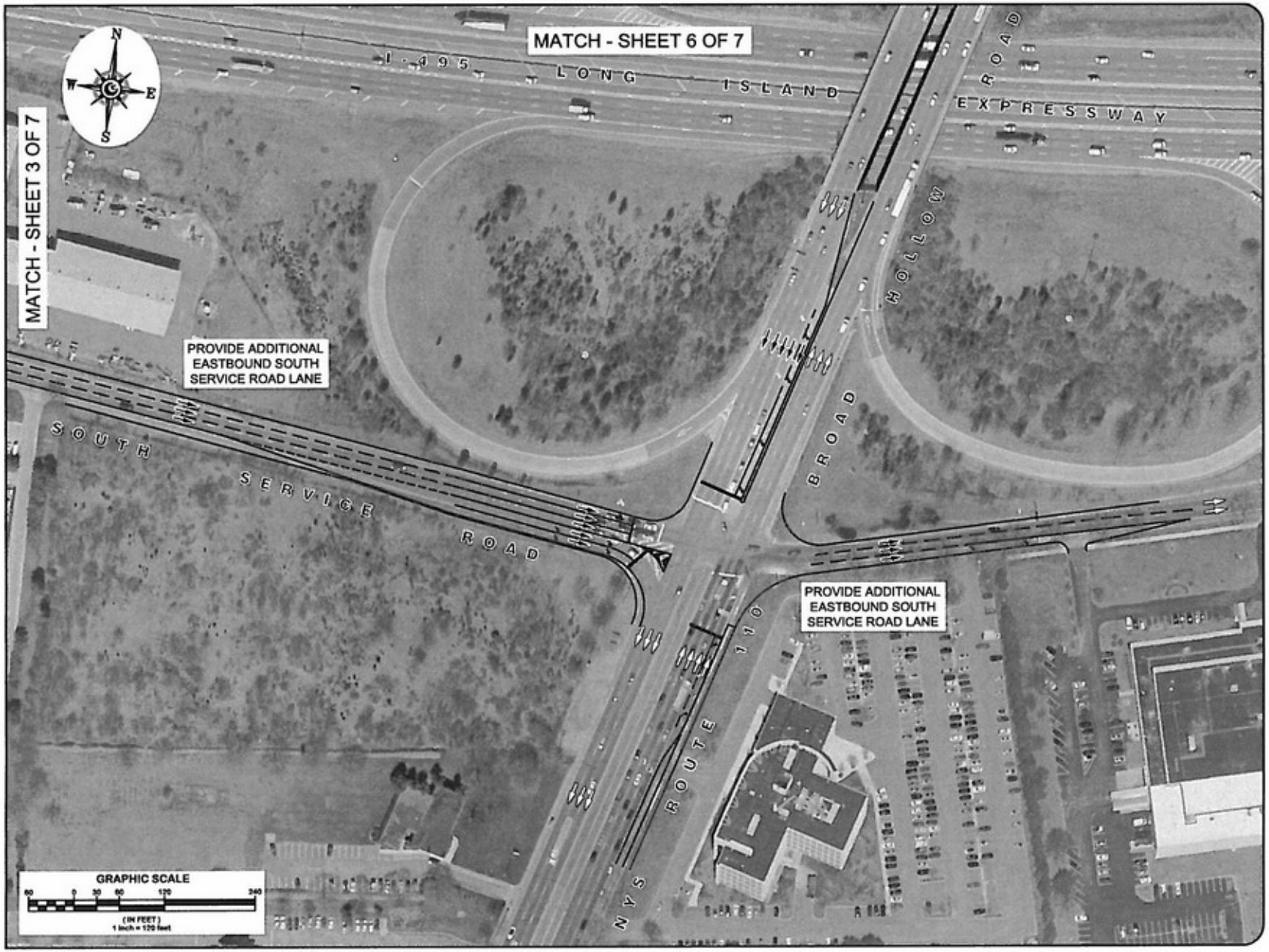
LIE SOUTH SERVICE ROAD & WALT WHITMAN ROAD
MELVILLE, TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

TITLE

CONCEPTUAL ROADWAY IMPROVEMENT PLANS

SHEET NO

6 of 7



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LEGEND

FUTURE LANES

EXISTING LANES

REVISIONS:

#	DATE	DESCRIPTION
1	9/22/08	FOR PRESERVATION
2	12/15/08	TOWN OF HUNTINGTON RESUBMISSION

PAUL B. GOING
PROFESSIONAL ENGINEER
NEW YORK LICENSE NO. 076067

DATE: 08/25/08	DRAWN BY: BZ
SCALE: 1" = 120'	CHECKED BY: PAT
REV #:	WP/DOT #:

AN08003

NOT FOR CONSTRUCTION

CLIENT/ PROJECT:

PROPOSED
CANON AMERICAS HEADQUARTERS

LIE SOUTH SERVICE ROAD & WALT WHITMAN ROAD
MELVILLE, TOWN OF HUNTINGTON
SUFFOLK COUNTY, NEW YORK

TITLE:

CONCEPTUAL ROADWAY IMPROVEMENT PLANS

SHEET NO.

7 of 7

TECHNICAL APPENDIX

ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

PROPOSED ROADWAY NETWORK IMPROVEMENT MEASURES

ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

Proposed Roadway Network Improvement Measures

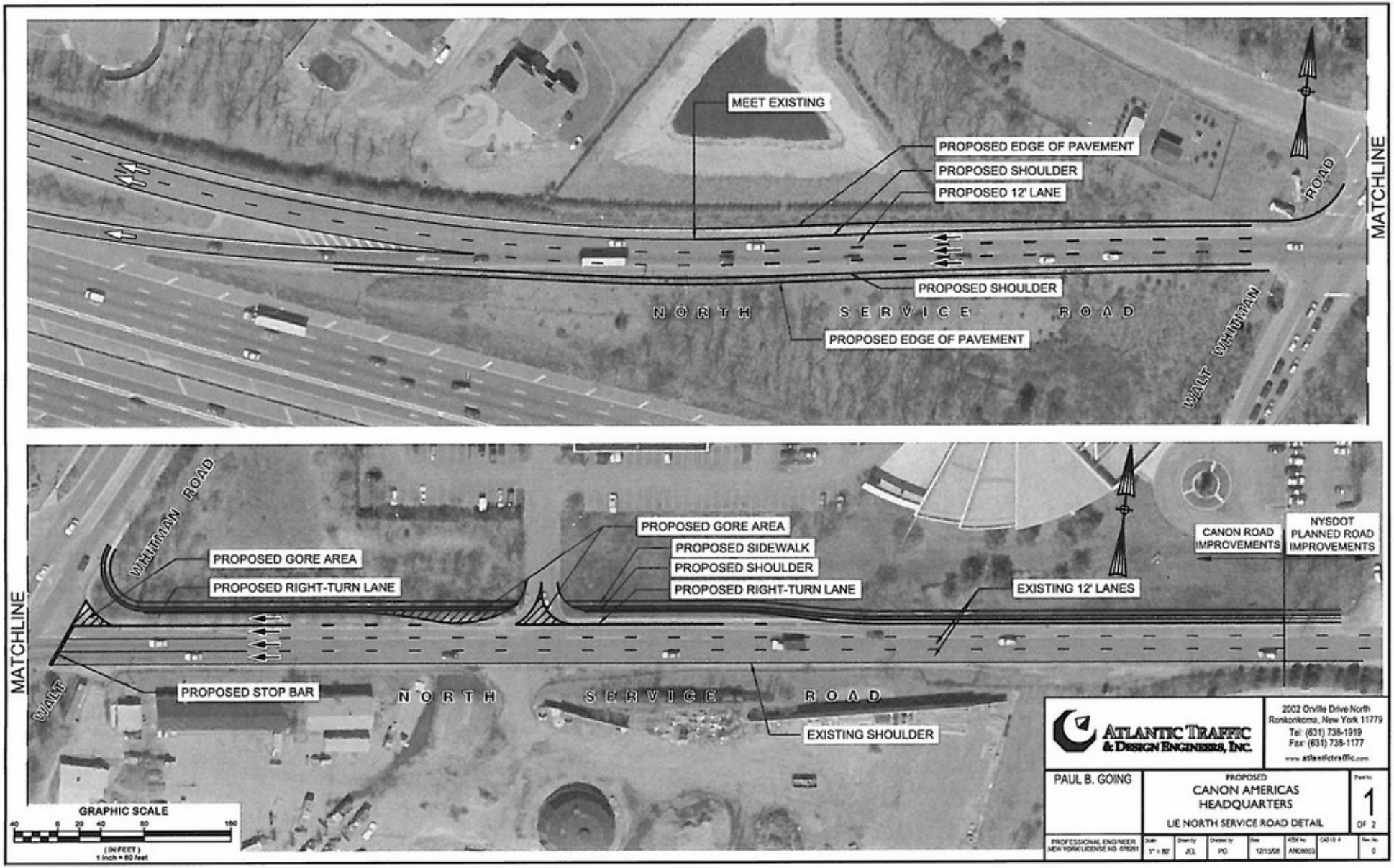
The following improvements will be funded by a Development Impact Fee in the amount of $1.3 Million dollars to be paid by the Applicant and deposited in the Town's Trust and Agency Account established for traffic improvements associated with the Walt Whitman Road area. Surplus funds remaining after the completion of the following improvements will be used by the Town for economic development programming and transportation infrastructure in Melville.

	LOCATION	MITIGATION IMPROVEMENT
1	Canon Frontage Walt Whitman Rd.	Additional SB through lane along WWR; merges back to one prior to southerly egress driveway and not conflicting with the existing right turn lane at Paumonauk Hills Court. Sufficient dedication must be provided to allow for maintaining the exiting northbound shoulder and 1 NB lane, center median, two SB through lanes, necessary right turn lanes into Canon. Also included is any utility and/or drainage relocation or improvements, curb and sidewalk provisions and any requisite improvements within the established Town right-of-way.
2	Walt Whitman Rd @ Canon Main Driveway	Traffic Signal Installation
3	Walt Whitman Rd. & Old Country Rd.	Traffic Signal Modifications
4	Walt Whitman Rd. & Pinelawn Rd./Sweet Hollow Rd.	Traffic Signal Modifications
5	Walt Whitman Rd. Bridge	Pavement marking upgrades and approach capacity upgrades along north and south approaches to the bridge.
6	Walt Whitman Rd. & Pineridge Street	Traffic Signal Modifications
7	Walt Whitman Rd. & Northgate Cir./Baylis Rd.	Traffic Signal Modifications
8	Walt Whitman Rd.& Park Drive	Traffic Signal Modifications
9	Walt Whitman Road -general	All signals from the LIE South Service Rd. to Park Drive must be interconnected. The Town of Huntington Traffic Engineer will determine the interconnection method based on a field inspection and consultations with the applicant's engineer.

The following improvements will benefit the regional transportation system and are required in order to mitigate the traffic impacts related to the Canon project. The Town, in cooperation with the Applicant is seeking grant funding from the Federal government, New York State and Suffolk County to fund these improvements.

	LOCATION	MITIGATION IMPROVEMENT
1	LIE S. Service Rd.	Widening to provide additional EB through lane beginning at Eastbound LIE Exit 49S continuing easterly along Canon's frontage through WWR to meet widened EB approach just west of RT. 110. Upgrade Signalization.
2	Walt Whitman Rd. & LIE N. Service Rd.	Additional NB left turn bay. Additional WB Service Road through lane beginning west of Route 110 continuing through WWR to the westbound I-495 entrance ramp. SB roadway widening and realignment of west curb between NSR and Cottontail Road may be required and should be confirmed during final design. Upgrade Signalization
3	NYS RT. 110 & Old Country Rd.	Traffic Signal Modifications
4	NYS RT. 110 & LIE N. Service Road	Traffic Signal Modifications
5	NYS RT. 110 & LIE S. Service Road	Traffic Signal Modifications
6	NYS RT. 110 & Walt Whitman Rd.	Traffic Signal Modifications
7	Round Swamp Rd. & LIE N Service Road and S. Service Rd.	Traffic Signal Modifications

Prior to the Planning Board granting final site plan approval of the project, the Applicant, the Town and the New York State Department of Transportation will agree to an Infrastructure Implementation Plan that will detail the source of funding and the timing for the construction of the infrastructure improvements detailed above, and that final site plan approval will be subject to the acceptance of the Infrastructure Implementation Plan by the New York State Department of Transportation. The Applicant and the Town of Huntington will continue to work cooperatively to obtain grant financing or public monies for public infrastructure improvements in the project area.



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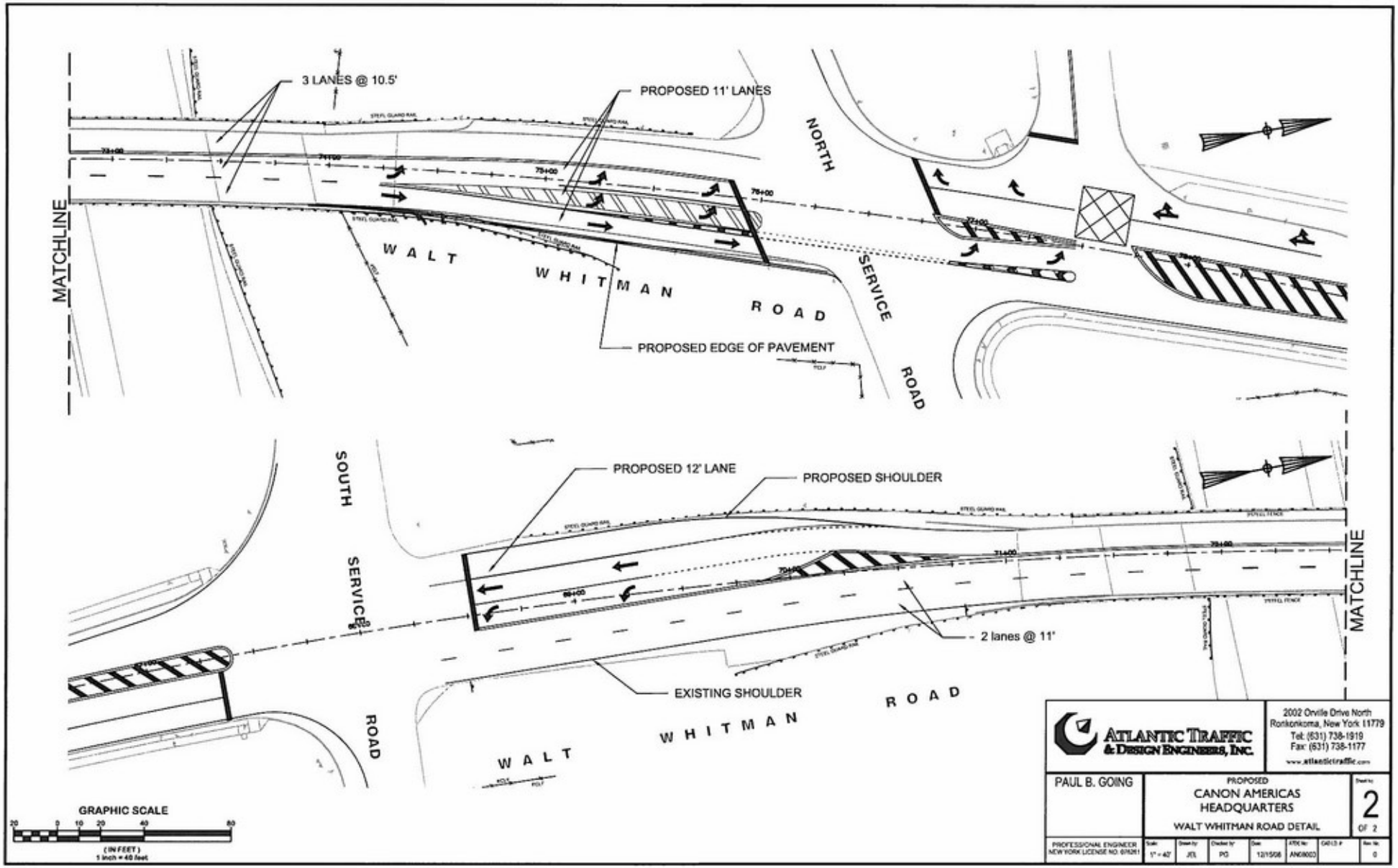
PAUL B. GOING

PROPOSED
CANON AMERICAS HEADQUARTERS
LIE NORTH SERVICE ROAD DETAIL

Sheet No. 1 OF 2

PROFESSIONAL ENGINEER NEW YORK LICENSE NO. 076291	Scale	Drawn by	Checked by	Date	ATM No.	CAD ID #	Rev. No.
	1" = 80'	JEL	PG	12/13/08	ANC8003		0



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PAUL B. GOING

PROPOSED
CANON AMERICAS HEADQUARTERS
WALT WHITMAN ROAD DETAIL

Sheet No. 2 OF 2

PROFESSIONAL ENGINEER NEW YORK LICENSE NO. 076261	Scale	Drawn by	Checked by	Date	ATEK No.	CAD I.D. #	Rev. No.
	1" = 40'	JEL	PG	12/15/06	ANO80CD		0

TECHNICAL APPENDIX

ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

HIGHWAY CAPACITY ANALYSIS

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Duryea Road & Rt 110/OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	2008 Existing
		Project ID	2008 AM Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1		0	1	1	2	3	1	1	3	1
Lane Group		LT			LT	R	L	T	R	L	T	R
Volume, V (vph)	24	49		44	42	256	330	1823	257	61	1697	37
% Heavy Vehicles, %HV	9	7		7	0	2	6	9	2	14	7	3
Peak-Hour Factor, PHF	0.82	0.77		0.73	0.65	0.80	0.88	0.89	0.80	0.79	0.96	0.67
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT		3			3	3	3	3	3	3	3	3
Unit Extension, UE		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	0	0	0	0	0	0	0
Lane Width		13.0			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0			0	0	0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 32.0	G =	G =	G =	G = 32.0	G = 74.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 5	Y = 6	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 155.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		93			125	320	375	2048	321	77	1768	55
Lane Group Capacity, c		304			281	305	637	2116	706	305	2156	698
v/c Ratio, X		0.31			0.44	1.05	0.59	0.97	0.45	0.25	0.82	0.08
Total Green Ratio, g/C		0.21			0.21	0.21	0.21	0.48	0.48	0.21	0.48	0.48
Uniform Delay, d_1		52.1			53.7	61.5	55.6	39.3	27.0	51.5	34.8	22.0
Progression Factor, PF		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k		0.11			0.11	0.50	0.18	0.47	0.11	0.11	0.36	0.11
Incremental Delay, d_2		0.6			1.1	65.0	1.4	12.9	0.5	0.4	2.6	0.0
Initial Queue Delay, d_3		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay		52.7			54.9	126.5	57.0	52.2	27.5	51.9	37.4	22.0
Lane Group LOS		D			D	F	E	D	C	D	D	C
Approach Delay	52.7			106.4			50.0			37.6		
Approach LOS	D			F			D			D		
Intersection Delay	50.3			X_c = 0.90			Intersection LOS			D		

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Duryea Road & Rt 110/OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	
		Project ID	2010 Future AM No-Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1		0	1	1	2	3	1	1	3	1
Lane Group		LT			LT	R	L	T	R	L	T	R
Volume, V (vph)	24	50		45	43	261	373	1860	262	62	1744	38
% Heavy Vehicles, %HV	9	7		7	0	2	6	9	2	14	7	3
Peak-Hour Factor, PHF	0.82	0.77		0.73	0.65	0.80	0.88	0.89	0.80	0.79	0.96	0.67
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT		3			3	3	3	3	3	3	3	3
Unit Extension, UE		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	0	0	0	0	0	0	0
Lane Width		13.0			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0			0	0	0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 32.0	G =	G =	G =	G = 32.0	G = 74.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 5	Y = 6	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 155.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		94			128	326	424	2090	327	78	1817	57
Lane Group Capacity, c		301			279	305	637	2116	706	305	2156	698
v/c Ratio, X		0.31			0.46	1.07	0.67	0.99	0.46	0.26	0.84	0.08
Total Green Ratio, g/C		0.21			0.21	0.21	0.21	0.48	0.48	0.21	0.48	0.48
Uniform Delay, d_1		52.2			53.9	61.5	56.6	40.1	27.2	51.5	35.4	22.0
Progression Factor, PF		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k		0.11			0.11	0.50	0.24	0.49	0.11	0.11	0.38	0.11
Incremental Delay, d_2		0.6			1.2	71.0	2.6	16.7	0.5	0.4	3.2	0.1
Initial Queue Delay, d_3		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay		52.8			55.1	132.5	59.2	56.7	27.7	52.0	38.6	22.1
Lane Group LOS		D			E	F	E	E	C	D	D	C
Approach Delay	52.8			110.7			53.8			38.7		
Approach LOS	D			F			D			D		
Intersection Delay	53.1			X_c = 0.93			Intersection LOS			D		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Duryea Road & Rt 110/OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	
		Project ID	2010 Future AM Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1		0	1	1	2	3	1	1	3	1
Lane Group		LT			LT	R	L	T	R	L	T	R
Volume, V (vph)	24	50		45	43	261	618	1860	262	62	1744	38
% Heavy Vehicles, %HV	9	7		7	0	2	6	9	2	14	7	3
Peak-Hour Factor, PHF	0.82	0.77		0.73	0.65	0.80	0.88	0.89	0.80	0.79	0.96	0.67
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT		3			3	3	3	3	3	3	3	3
Unit Extension, UE		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	0	0	0	0	0	0	0
Lane Width		13.0			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0			0	0	0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 32.0	G =	G =	G =	G = 32.0	G = 74.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 5	Y = 6	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 155.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		94			128	326	702	2090	327	78	1817	57
Lane Group Capacity, c		301			279	305	637	2116	706	305	2156	698
v/c Ratio, X		0.31			0.46	1.07	1.10	0.99	0.46	0.26	0.84	0.08
Total Green Ratio, g/C		0.21			0.21	0.21	0.21	0.48	0.48	0.21	0.48	0.48
Uniform Delay, d_1		52.2			53.9	61.5	61.5	40.1	27.2	51.5	35.4	22.0
Progression Factor, PF		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k		0.11			0.11	0.50	0.50	0.49	0.11	0.11	0.38	0.11
Incremental Delay, d_2		0.6			1.2	71.0	66.9	16.7	0.5	0.4	3.2	0.1
Initial Queue Delay, d_3		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay		52.8			55.1	132.5	128.4	56.7	27.7	52.0	38.6	22.1
Lane Group LOS		D			E	F	F	E	C	D	D	C
Approach Delay	52.8			110.7			69.8			38.7		
Approach LOS	D			F			E			D		
Intersection Delay	62.0			X_c = 1.03			Intersection LOS			E		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Duryea Road & Rt 110/OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	
		Project ID	2010 Future AM Build With Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1		0	1	1	2	3	1	1	3	1
Lane Group		LT			LT	R	L	T	R	L	T	R
Volume, V (vph)	24	50		45	43	261	618	1860	262	62	1744	38
% Heavy Vehicles, %HV	9	7		7	0	2	6	9	2	14	7	3
Peak-Hour Factor, PHF	0.82	0.77		0.73	0.65	0.80	0.88	0.89	0.80	0.79	0.96	0.67
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT		3			3	3	3	3	3	3	3	3
Unit Extension, UE		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	0	0	0	0	0	0	0
Lane Width		13.0			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0			0	0	0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 31.7	G =	G =	G =	G = 37.1	G = 69.2	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 6	Y = 5	Y =	Y =

Duration of Analysis, T = 0.25 | Cycle Length, C = 155.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		94			128	326	702	2090	327	78	1817	57
Lane Group Capacity, c		297			276	302	739	1979	660	354	2016	653
v/c Ratio, X		0.32			0.46	1.08	0.95	1.06	0.50	0.22	0.90	0.09
Total Green Ratio, g/C		0.20			0.20	0.20	0.24	0.45	0.45	0.24	0.45	0.45
Uniform Delay, d_1		52.4			54.2	61.7	58.0	42.9	30.5	47.3	39.7	24.7
Progression Factor, PF		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k		0.11			0.11	0.50	0.46	0.50	0.11	0.11	0.42	0.11
Incremental Delay, d_2		0.6			1.2	74.6	21.7	36.9	0.6	0.3	6.1	0.1
Initial Queue Delay, d_3		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay		53.1			55.4	136.2	79.7	79.8	31.1	47.7	45.8	24.8
Lane Group LOS		D			E	F	E	E	C	D	D	C
Approach Delay	53.1			113.4			74.7			45.3		
Approach LOS	D			F			E			D		
Intersection Delay	67.2			X_c = 1.03			Intersection LOS			E		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Duryea Road & Rt 110/OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	PM Peak Hour	Analysis Year	2008 Existing
		Project ID	2008 PM Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1		0	1	1	2	3	1	1	3	1
Lane Group		LT			LT	R	L	T	R	L	T	R
Volume, V (vph)	14	78		227	27	50	184	1771	116	33	2313	26
% Heavy Vehicles, %HV	0	8		3	8	15	5	3	1	13	3	4
Peak-Hour Factor, PHF	0.81	0.70		0.81	0.78	0.56	0.90	0.92	0.83	0.78	0.93	0.60
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT		3			3	3	3	3	3	3	3	3
Unit Extension, UE		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	0	0	0	0	0	0	0
Lane Width		13.0			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0			0	0	0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 48.0	G =	G =	G =	G = 19.0	G = 86.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 5	Y = 6	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 170.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		128			315	89	204	1925	140	42	2487	43
Lane Group Capacity, c		437			295	370	348	2373	755	167	2373	733
v/c Ratio, X		0.29			1.07	0.24	0.59	0.81	0.19	0.25	1.05	0.06
Total Green Ratio, g/C		0.28			0.28	0.28	0.11	0.51	0.51	0.11	0.51	0.51
Uniform Delay, d_1		47.7			61.0	47.0	71.8	35.2	22.9	69.0	42.0	21.4
Progression Factor, PF		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k		0.11			0.50	0.11	0.18	0.35	0.11	0.11	0.50	0.11
Incremental Delay, d_2		0.4			71.5	0.3	2.6	2.2	0.1	0.8	32.6	0.0
Initial Queue Delay, d_3		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay		48.1			132.5	47.3	74.3	37.4	23.0	69.8	74.6	21.4
Lane Group LOS		D			F	D	E	D	C	E	E	C
Approach Delay	48.1			113.7			39.9			73.6		
Approach LOS	D			F			D			E		
Intersection Delay	61.8			X_c = 1.00			Intersection LOS			E		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Duryea Road & Rt 110/OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	PM Peak Hour	Analysis Year	
		Project ID	2010 Future PM No-Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1		0	1	1	2	3	1	1	3	1
Lane Group		LT			LT	R	L	T	R	L	T	R
Volume, V (vph)	14	80		232	28	51	205	1807	118	34	2430	27
% Heavy Vehicles, %HV	0	8		3	8	15	5	3	1	13	3	4
Peak-Hour Factor, PHF	0.81	0.70		0.81	0.78	0.56	0.90	0.92	0.83	0.78	0.93	0.60
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT		3			3	3	3	3	3	3	3	3
Unit Extension, UE		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	0	0	0	0	0	0	0
Lane Width		13.0			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0			0	0	0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 48.0	G =	G =	G =	G = 19.0	G = 86.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 5	Y = 6	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 170.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		131			322	91	228	1964	142	44	2613	45
Lane Group Capacity, c		433			293	370	348	2373	755	167	2373	733
v/c Ratio, X		0.30			1.10	0.25	0.66	0.83	0.19	0.26	1.10	0.06
Total Green Ratio, g/C		0.28			0.28	0.28	0.11	0.51	0.51	0.11	0.51	0.51
Uniform Delay, d_1		47.9			61.0	47.0	72.4	35.7	22.9	69.1	42.0	21.4
Progression Factor, PF		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k		0.11			0.50	0.11	0.23	0.37	0.11	0.11	0.50	0.11
Incremental Delay, d_2		0.4			81.7	0.3	4.4	2.6	0.1	0.8	52.7	0.0
Initial Queue Delay, d_3		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay		48.3			142.7	47.4	76.8	38.3	23.1	69.9	94.7	21.5
Lane Group LOS		D			F	D	E	D	C	E	F	C
Approach Delay	48.3			121.7			41.1			93.0		
Approach LOS	D			F			D			F		
Intersection Delay	72.4			X_c = 1.05			Intersection LOS			E		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Duryea Road & Rt 110/OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	PM Peak Hour	Analysis Year	
		Project ID	2010 Future PM Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1		0	1	1	2	3	1	1	3	1
Lane Group		LT			LT	R	L	T	R	L	T	R
Volume, V (vph)	14	80		232	28	51	250	1807	118	34	2430	27
% Heavy Vehicles, %HV	0	8		3	8	15	5	3	1	13	3	4
Peak-Hour Factor, PHF	0.81	0.70		0.81	0.78	0.56	0.90	0.92	0.83	0.78	0.93	0.60
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e		2.0			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT		3			3	3	3	3	3	3	3	3
Unit Extension, UE		3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	0	0	0	0	0	0	0
Lane Width		13.0			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0			0	0	0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	EW Perm	02	03	04	Excl. Left	Thru & RT	07	08
Timing	G = 48.0	G =	G =	G =	G = 19.0	G = 86.0	G =	G =
	Y = 6	Y =	Y =	Y =	Y = 5	Y = 6	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 170.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		131			322	91	278	1964	142	44	2613	45
Lane Group Capacity, c		433			293	370	348	2373	755	167	2373	733
v/c Ratio, X		0.30			1.10	0.25	0.80	0.83	0.19	0.26	1.10	0.06
Total Green Ratio, g/C		0.28			0.28	0.28	0.11	0.51	0.51	0.11	0.51	0.51
Uniform Delay, d_1		47.9			61.0	47.0	73.6	35.7	22.9	69.1	42.0	21.4
Progression Factor, PF		1.000			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k		0.11			0.50	0.11	0.34	0.37	0.11	0.11	0.50	0.11
Incremental Delay, d_2		0.4			81.7	0.3	12.4	2.6	0.1	0.8	52.7	0.0
Initial Queue Delay, d_3		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay		48.3			142.7	47.4	86.0	38.3	23.1	69.9	94.7	21.5
Lane Group LOS		D			F	D	F	D	C	E	F	C
Approach Delay	48.3			121.7			42.9			93.0		
Approach LOS	D			F			D			F		
Intersection Delay	72.9			X_c = 1.06			Intersection LOS			E		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	LIE S Service Road & Site Driv
Agency/Co.	ATDE	Jurisdiction	
Date Performed	8/20/08	Analysis Year	2010 Future Build
Analysis Time Period	PM Peak Hour		

Project Description: AN08003: Canon - Melville

East/West Street: LIE S. Service Road | North/South Street: Site Driveway

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1045	0			
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	0	1161	0	0	0	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	0	0
Configuration		T	TR			
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)			312			
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	0	0	346	0	0	0
Percent Heavy Vehicles	0	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	1	0	0	0
Configuration			R			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					346			
C (m) (veh/h)					514			
v/c					0.67			
95% queue length					4.99			
Control Delay (s/veh)					25.2			
LOS					D			
Approach Delay (s/veh)	--	--	25.2					
Approach LOS	--	--	D					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Main Access Aisle & Easterly N
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future Build
Analysis Time Period	AM Peak Hour		

Project Description AN08003: Canon

East/West Street: Main Access Aisle | North/South Street: Easterly No. Parking Garage

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		53	220	74	0	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.90	0.90	1.00
Hourly Flow Rate, HFR (veh/h)	0	58	244	82	0	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	1	0
Configuration		T	TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0		41			
Peak-Hour Factor, PHF	0.90	1.00	0.90	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	45	0	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		82		45				
C (m) (veh/h)		1256		894				
v/c		0.07		0.05				
95% queue length		0.21		0.16				
Control Delay (s/veh)		8.1		9.2				
LOS		A		A				
Approach Delay (s/veh)	--	--	9.2					
Approach LOS	--	--	A					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Main Access Aisle & Easterly N
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future Build
Analysis Time Period	PM Peak Hour		

Project Description AN08003: Canon

East/West Street: Main Access Aisle | North/South Street: Easterly No. Parking Garage

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		112	0	56	65	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.90	0.90	1.00
Hourly Flow Rate, HFR (veh/h)	0	124	0	62	72	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	1	0
Configuration		T	TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	145		123			
Peak-Hour Factor, PHF	0.90	1.00	0.90	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	161	0	136	0	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		62		297				
C (m) (veh/h)		1461		752				
v/c		0.04		0.39				
95% queue length		0.13		1.90				
Control Delay (s/veh)		7.6		12.9				
LOS		A		B				
Approach Delay (s/veh)	--	--	12.9					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Main Access Aisle & Westerly N
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future Build
Analysis Time Period	AM Peak Hour		

Project Description: AN08003: Canon

East/West Street: Main Access Aisle | North/South Street: Westerly No. Parking Garage

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		232	233	73		
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.90	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	257	258	81	0	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	1	0	0
Configuration		T	TR	L		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)			41			
Peak-Hour Factor, PHF	1.00	1.00	0.90	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	45	0	0	0
Percent Heavy Vehicles	0	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	1	0	0	0
Configuration			R			

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L			R			
v (veh/h)		81			45			
C (m) (veh/h)		1051			781			
v/c		0.08			0.06			
95% queue length		0.25			0.18			
Control Delay (s/veh)		8.7			9.9			
LOS		A			A			
Approach Delay (s/veh)	--	--	9.9					
Approach LOS	--	--	A					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Main Access Aisle & Westerly N
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future Build
Analysis Time Period	PM Peak Hour		

Project Description AN08003: Canon

East/West Street: Main Access Aisle | North/South Street: Westerly No. Parking Garage

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)				54	156	
Peak-Hour Factor, PHF	1.00	0.90	0.90	0.90	0.90	1.00
Hourly Flow Rate, HFR (veh/h)	0	0	0	60	173	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	0	0	0	1	0
Configuration				LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	156		112			
Peak-Hour Factor, PHF	0.90	1.00	0.90	1.00	1.00	1.00
Hourly Flow Rate, HFR (veh/h)	173	0	124	0	0	0
Percent Heavy Vehicles	2	0	2	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
v (veh/h)		60		297				
C (m) (veh/h)		1623		799				
v/c		0.04		0.37				
95% queue length		0.12		1.73				
Control Delay (s/veh)		7.3		12.1				
LOS		A		B				
Approach Delay (s/veh)	--	--	12.1					
Approach LOS	--	--	B					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Rd & Old Walt Whit
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2008 Existing
Analysis Time Period	AM Peak Hour		

Project Description AN08003: Canon - Melville

East/West Street: Old Country Road | North/South Street: Old Walt Whitman Road

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	174	34	501	233	0
Peak-Hour Factor, PHF	0.90	0.93	0.73	0.87	0.88	0.90
Hourly Flow Rate, HFR (veh/h)	0	187	46	575	264	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration	LTR			L		TR
Upstream Signal		1			1	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	30	0	182	4	2	0
Peak-Hour Factor, PHF	0.88	0.90	0.89	0.50	0.50	0.90
Hourly Flow Rate, HFR (veh/h)	34	0	204	8	4	0
Percent Heavy Vehicles	0	0	7	50	100	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	L		LTR			LTR	
v (veh/h)	0	575		238			12	
C (m) (veh/h)	1312	1335		256			28	
v/c	0.00	0.43		0.93			0.43	
95% queue length	0.00	2.22		8.39			1.35	
Control Delay (s/veh)	7.7	9.7		81.6			208.3	
LOS	A	A		F			F	
Approach Delay (s/veh)	--	--	81.6			208.3		
Approach LOS	--	--	F			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Rd & Old Walt Whit
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future No-Build
Analysis Time Period	AM Peak Hour		

Project Description AN08003: Canon - Melville

East/West Street: Old Country Road | North/South Street: Old Walt Whitman Road

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	177	35	511	238	0
Peak-Hour Factor, PHF	0.90	0.93	0.73	0.87	0.88	0.90
Hourly Flow Rate, HFR (veh/h)	0	190	47	587	270	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration	LTR			L		TR
Upstream Signal		1			1	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	31	0	186	4	2	0
Peak-Hour Factor, PHF	0.88	0.90	0.89	0.50	0.50	0.90
Hourly Flow Rate, HFR (veh/h)	35	0	208	8	4	0
Percent Heavy Vehicles	0	0	7	50	100	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	L	LT		R		LTR	
v (veh/h)	0	587	35		208		12	
C (m) (veh/h)	1305	1330	46		814		26	
v/c	0.00	0.44	0.76		0.26		0.46	
95% queue length	0.00	2.31	3.00		1.02		1.42	
Control Delay (s/veh)	7.8	9.8	201.8		10.9		230.7	
LOS	A	A	F		B		F	
Approach Delay (s/veh)	--	--	38.4			230.7		
Approach LOS	--	--	E			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Rd & Old Walt Whit
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future Build
Analysis Time Period	AM Peak Hour		

Project Description: AN08003: Canon - Melville

East/West Street: Old Country Road — North/South Street: Old Walt Whitman Road

Intersection Orientation: East-West — Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	177	35	645	238	0
Peak-Hour Factor, PHF	0.90	0.93	0.73	0.87	0.88	0.90
Hourly Flow Rate, HFR (veh/h)	0	190	47	741	270	0
Percent Heavy Vehicles	0	--	--	2	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration	LTR			L		TR
Upstream Signal		1			1	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	31	0	191	4	2	0
Peak-Hour Factor, PHF	0.88	0.90	0.89	0.50	0.50	0.90
Hourly Flow Rate, HFR (veh/h)	35	0	214	8	4	0
Percent Heavy Vehicles	0	0	7	50	100	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	L	LT		R		LTR	
v (veh/h)	0	741	35		214		12	
C (m) (veh/h)	1305	1330	22		814		13	
v/c	0.00	0.56	1.59		0.26		0.92	
95% queue length	0.00	3.60	4.53		1.06		2.06	
Control Delay (s/veh)	7.8	11.1	668.8		11.0		604.2	
LOS	A	B	F		B		F	
Approach Delay (s/veh)	--	--	103.5			604.2		
Approach LOS	--	--	F			F		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	With Town & DOT Improvements
Time Period	AM Peak Hour	Analysis Year	2010 Future No-Build w MIT
		Project ID	2010 Future AM No-Build with Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1	0	1	1	0	0	1	1	0	1	1
Lane Group		LTR		L	TR			LT	R		LT	R
Volume, V (vph)	0	177	35	208	95	0	31	0	186	4	305	143
% Heavy Vehicles, %HV	0	7	0	2	9	0	0	0	7	50	2	0
Peak-Hour Factor, PHF	0.90	0.93	0.73	0.87	0.88	0.90	0.88	0.90	0.89	0.50	0.80	0.90
Pretimed (P) or Actuated (A)	A	A	A	A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0		2.0	2.0			2.0	2.0		2.0	2.0
Extension of Effective Green, e		2.0		2.0	2.0			2.0	2.0		2.0	2.0
Arrival Type, AT		3		3	3			3	3		3	3
Unit Extension, UE		3.0		3.0	3.0			3.0	3.0		3.0	3.0
Filtering/Metering, I		1.000		1.000	1.000			1.000	1.000		1.000	1.000
Initial Unmet Demand, Q_b		0.0		0.0	0.0			0.0	0.0		0.0	0.0
Ped / Bike / RTOR Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width		12.0		12.0	12.0			12.0	12.0		12.0	12.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0		0	0			0	0		0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	NS Perm	06	07	08
Timing	G = 27.0	G = 17.8	G =	G =	G = 84.0	G =	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 7	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		238		239	108			35	209		389	159
Lane Group Capacity, c		208		319	314			643	845		1029	1171
v/c Ratio, X		1.14		0.75	0.34			0.05	0.25		0.38	0.14
Total Green Ratio, g/C		0.12		0.18	0.18			0.56	0.56		0.56	0.73
Uniform Delay, d_1		66.1		58.3	53.8			15.0	16.9		18.4	6.3
Progression Factor, PF		1.000		1.000	1.000			1.000	1.000		1.000	1.000
Delay Calibration, k		0.50		0.30	0.11			0.11	0.11		0.11	0.11
Incremental Delay, d_2		106.7		9.5	0.7			0.0	0.2		0.2	0.1
Initial Queue Delay, d_3		0.0		0.0	0.0			0.0	0.0		0.0	0.0
Control Delay		172.8		67.8	54.4			15.0	17.0		18.7	6.3
Lane Group LOS		F		E	D			B	B		B	A
Approach Delay	172.8			63.6			16.7			15.1		
Approach LOS	F			E			B			B		
Intersection Delay	54.9			X_c = 0.56			Intersection LOS			D		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	With Mitigation & Town & DOT
Time Period	AM Peak Hour	Analysis Year	2010 Future Build w MIT
		Project ID	2010 Future AM Build with Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1	0	1	1	0	0	1	1	0	1	1
Lane Group		LTR		L	TR			LT	R		LT	R
Volume, V (vph)	0	177	35	220	95	0	31	0	191	4	427	143
% Heavy Vehicles, %HV	0	7	0	2	9	0	0	0	7	50	2	0
Peak-Hour Factor, PHF	0.90	0.93	0.73	0.87	0.88	0.90	0.88	0.90	0.89	0.50	0.80	0.90
Pretimed (P) or Actuated (A)	A	A	A	A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0		2.0	2.0			2.0	2.0		2.0	2.0
Extension of Effective Green, e		2.0		2.0	2.0			2.0	2.0		2.0	2.0
Arrival Type, AT		3		3	3			3	3		3	3
Unit Extension, UE		3.0		3.0	3.0			3.0	3.0		3.0	3.0
Filtering/Metering, I		1.000		1.000	1.000			1.000	1.000		1.000	1.000
Initial Unmet Demand, Q_b		0.0		0.0	0.0			0.0	0.0		0.0	0.0
Ped / Bike / RTOR Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width		12.0		12.0	12.0			12.0	12.0		12.0	12.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0		0	0			0	0		0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	NS Perm	06	07	08
Timing	G = 27.0	G = 17.8	G =	G =	G = 84.0	G =	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 7	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		238		253	108			35	215		542	159
Lane Group Capacity, c		208		319	314			577	845		1033	1171
v/c Ratio, X		1.14		0.79	0.34			0.06	0.25		0.52	0.14
Total Green Ratio, g/C		0.12		0.18	0.18			0.56	0.56		0.56	0.73
Uniform Delay, d_1		66.1		58.8	53.8			15.0	16.9		20.6	6.3
Progression Factor, PF		1.000		1.000	1.000			1.000	1.000		1.000	1.000
Delay Calibration, k		0.50		0.34	0.11			0.11	0.11		0.13	0.11
Incremental Delay, d_2		106.7		12.9	0.7			0.0	0.2		0.5	0.1
Initial Queue Delay, d_3		0.0		0.0	0.0			0.0	0.0		0.0	0.0
Control Delay		172.8		71.7	54.4			15.1	17.1		21.1	6.3
Lane Group LOS		F		E	D			B	B		C	A
Approach Delay	172.8			66.5			16.8			17.7		
Approach LOS	F			E			B			B		
Intersection Delay	52.7			X_c = 0.67			Intersection LOS			D		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Rd & Old Walt Whit
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2008 Existing
Analysis Time Period	PM Peak Hour		

Project Description AN08003: Canon - Melville

East/West Street: Old Country Road | North/South Street: Old Walt Whitman Road

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	341	20	127	169	1
Peak-Hour Factor, PHF	0.90	0.81	0.79	0.78	0.87	0.25
Hourly Flow Rate, HFR (veh/h)	0	420	25	162	194	4
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration	LTR			L		TR
Upstream Signal		1			1	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	17	0	362	3	1	0
Peak-Hour Factor, PHF	0.67	0.90	0.93	0.38	0.25	0.90
Hourly Flow Rate, HFR (veh/h)	25	0	389	7	4	0
Percent Heavy Vehicles	19	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration		LTR			LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	L		LTR			LTR	
v (veh/h)	0	162		414			11	
C (m) (veh/h)	1387	1126		554			82	
v/c	0.00	0.14		0.75			0.13	
95% queue length	0.00	0.50		6.48			0.44	
Control Delay (s/veh)	7.6	8.7		28.2			55.6	
LOS	A	A		D			F	
Approach Delay (s/veh)	--	--	28.2			55.6		
Approach LOS	--	--	D			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Rd & Old Walt Whit
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future No-Build
Analysis Time Period	PM Peak Hour		

Project Description AN08003: Canon - Melville

East/West Street: Old Country Road | North/South Street: Old Walt Whitman Road

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	348	20	130	171	1
Peak-Hour Factor, PHF	0.90	0.81	0.79	0.78	0.87	0.25
Hourly Flow Rate, HFR (veh/h)	0	429	25	166	196	4
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration	LTR			L		TR
Upstream Signal		1			1	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	17	0	369	3	1	0
Peak-Hour Factor, PHF	0.67	0.90	0.93	0.38	0.25	0.90
Hourly Flow Rate, HFR (veh/h)	25	0	396	7	4	0
Percent Heavy Vehicles	19	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	L	LT		R		LTR	
v (veh/h)	0	166	25		396		11	
C (m) (veh/h)	1384	1117	188		620		75	
v/c	0.00	0.15	0.13		0.64		0.15	
95% queue length	0.00	0.52	0.45		4.56		0.49	
Control Delay (s/veh)	7.6	8.8	27.1		20.5		61.1	
LOS	A	A	D		C		F	
Approach Delay (s/veh)	--	--	20.9			61.1		
Approach LOS	--	--	C			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Rd & Old Walt Whit
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future Build
Analysis Time Period	PM Peak Hour		

Project Description: AN08003: Canon - Melville

East/West Street: Old Country Road | North/South Street: Old Walt Whitman Road

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	348	20	155	171	1
Peak-Hour Factor, PHF	0.90	0.81	0.79	0.78	0.87	0.25
Hourly Flow Rate, HFR (veh/h)	0	429	25	198	196	4
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	1	1	0
Configuration	LTR			L		TR
Upstream Signal		1			1	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	17	0	402	3	1	0
Peak-Hour Factor, PHF	0.67	0.90	0.93	0.38	0.25	0.90
Hourly Flow Rate, HFR (veh/h)	25	0	432	7	4	0
Percent Heavy Vehicles	19	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LTR	L	LT		R		LTR	
v (veh/h)	0	198	25		432		11	
C (m) (veh/h)	1384	1117	165		620		56	
v/c	0.00	0.18	0.15		0.70		0.20	
95% queue length	0.00	0.64	0.52		5.57		0.66	
Control Delay (s/veh)	7.6	8.9	30.7		23.1		84.4	
LOS	A	A	D		C		F	
Approach Delay (s/veh)	--	--	23.5			84.4		
Approach LOS	--	--	C			F		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	With Town & DOT Improvements
Time Period	PM Peak Hour	Analysis Year	2010 Future No-Build w MIT
		Project ID	2010 Future PM No-Build with Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	0	1	0	1	1	0	0	1	1	0	1	1
Lane Group		LTR		L	TR			LT	R		LT	R
Volume, V (vph)	0	348	20	55	72	1	17	0	369	3	76	99
% Heavy Vehicles, %HV	0	2	0	0	1	0	19	0	0	0	0	0
Peak-Hour Factor, PHF	0.90	0.81	0.79	0.78	0.87	0.25	0.67	0.90	0.93	0.38	0.80	0.90
Pretimed (P) or Actuated (A)	A	A	A	A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0		2.0	2.0			2.0	2.0		2.0	2.0
Extension of Effective Green, e		2.0		2.0	2.0			2.0	2.0		2.0	2.0
Arrival Type, AT		3		3	3			3	3		3	3
Unit Extension, UE		3.0		3.0	3.0			3.0	3.0		3.0	3.0
Filtering/Metering, I		1.000		1.000	1.000			1.000	1.000		1.000	1.000
Initial Unmet Demand, Q_b		0.0		0.0	0.0			0.0	0.0		0.0	0.0
Ped / Bike / RTOR Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width		12.0		12.0	12.0			12.0	12.0		12.0	12.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0		0	0			0	0		0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	NS Perm	06	07	08
Timing	G = 10.0	G = 27.8	G =	G =	G = 91.0	G =	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 7	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		455		71	87			25	397		103	110
Lane Group Capacity, c		343		120	125			741	980		1138	1354
v/c Ratio, X		1.33		0.59	0.70			0.03	0.41		0.09	0.08
Total Green Ratio, g/C		0.19		0.07	0.07			0.61	0.61		0.61	0.84
Uniform Delay, d_1		61.1		68.0	68.5			11.8	15.4		12.3	2.1
Progression Factor, PF		1.000		1.000	1.000			1.000	1.000		1.000	1.000
Delay Calibration, k		0.50		0.18	0.26			0.11	0.11		0.11	0.11
Incremental Delay, d_2		165.8		7.6	15.6			0.0	0.3		0.0	0.0
Initial Queue Delay, d_3		0.0		0.0	0.0			0.0	0.0		0.0	0.0
Control Delay		226.9		75.6	84.1			11.9	15.7		12.3	2.1
Lane Group LOS		F		E	F			B	B		B	A
Approach Delay	226.9			80.3			15.4			7.0		
Approach LOS	F			F			B			A		
Intersection Delay	99.3			X_c = 0.63			Intersection LOS			F		

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & OWW
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	PM Peak Hour	Analysis Year	2010 Future Build w MIT
		Project ID	2010 Future PM Build with Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_l	0	1	0	1	1	0	0	1	1	0	1	1
Lane Group		LTR		L	TR			LT	R		LT	R
Volume, V (vph)	0	348	20	57	72	1	17	0	402	3	98	99
% Heavy Vehicles, %HV	0	2	0	0	1	0	19	0	0	0	0	0
Peak-Hour Factor, PHF	0.90	0.81	0.79	0.78	0.87	0.25	0.67	0.90	0.93	0.38	0.80	0.90
Pretimed (P) or Actuated (A)	A	A	A	A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1		2.0		2.0	2.0			2.0	2.0		2.0	2.0
Extension of Effective Green, e		2.0		2.0	2.0			2.0	2.0		2.0	2.0
Arrival Type, AT		3		3	3			3	3		3	3
Unit Extension, UE		3.0		3.0	3.0			3.0	3.0		3.0	3.0
Filtering/Metering, I		1.000		1.000	1.000			1.000	1.000		1.000	1.000
Initial Unmet Demand, Q_b		0.0		0.0	0.0			0.0	0.0		0.0	0.0
Ped / Bike / RTOR Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width		12.0		12.0	12.0			12.0	12.0		12.0	12.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B		0		0	0			0	0		0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	NS Perm	06	07	08
Timing	G = 10.0	G = 28.8	G =	G =	G = 90.0	G =	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 7	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v		455		73	87			25	432		130	110
Lane Group Capacity, c		355		120	125			721	969		1129	1354
v/c Ratio, X		1.28		0.61	0.70			0.03	0.45		0.12	0.08
Total Green Ratio, g/C		0.19		0.07	0.07			0.60	0.60		0.60	0.84
Uniform Delay, d_1		60.6		68.1	68.5			12.3	16.4		12.9	2.1
Progression Factor, PF		1.000		1.000	1.000			1.000	1.000		1.000	1.000
Delay Calibration, k		0.50		0.19	0.26			0.11	0.11		0.11	0.11
Incremental Delay, d_2		146.7		8.6	15.6			0.0	0.3		0.0	0.0
Initial Queue Delay, d_3		0.0		0.0	0.0			0.0	0.0		0.0	0.0
Control Delay		207.3		76.7	84.1			12.3	16.7		12.9	2.1
Lane Group LOS		F		E	F			B	B		B	A
Approach Delay	207.3			80.7			16.5			8.0		
Approach LOS	F			F			B			A		
Intersection Delay	88.9			X_c = 0.65			Intersection LOS			F		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	2008 Existing
		Project ID	2008 AM Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	2	1	1	2	1
Lane Group	L	T		L	LTR		L	T	R	L	T	R
Volume, V (vph)	137	218		325	293	176	4	661	144	125	1481	437
% Heavy Vehicles, %HV	2	13		3	9	2	0	11	12	3	3	2
Peak-Hour Factor, PHF	0.79	0.90		0.75	0.92	0.79	0.50	0.86	0.82	0.75	0.92	0.85
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT	3	3		3	3		3	3	3	3	3	3
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	0	0	0	29	0	0	0
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	13.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 27.0	G = 17.8	G =	G =	G = 10.0	G = 69.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	173	242		433	541		8	769	140	167	1610	514
Lane Group Capacity, c	196	186		315	557		62	1499	1023	338	1967	1187
v/c Ratio, X	0.88	1.30		1.37	0.97		0.13	0.51	0.14	0.49	0.82	0.43
Total Green Ratio, g/C	0.12	0.12		0.18	0.18		0.46	0.46	0.69	0.57	0.56	0.73
Uniform Delay, d_1	65.1	66.1		61.5	61.1		23.3	28.6	8.1	17.6	26.8	8.2
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k	0.41	0.50		0.50	0.48		0.11	0.12	0.11	0.11	0.36	0.11
Incremental Delay, d_2	34.2	169.0		187.4	30.8		0.9	0.3	0.1	1.1	2.9	0.3
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	99.3	235.1		248.9	91.9		24.2	28.9	8.2	18.8	29.7	8.5
Lane Group LOS	F	F		F	F		C	C	A	B	C	A
Approach Delay	178.5			161.7			25.7			24.1		
Approach LOS	F			F			C			C		
Intersection Delay	67.5			X_c = 1.00			Intersection LOS			E		

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	
		Project ID	2010 Future AM No-Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	2	1	1	2	1
Lane Group	L	T		L	LTR		L	T	R	L	T	R
Volume, V (vph)	140	222		332	299	180	4	680	147	128	1541	446
% Heavy Vehicles, %HV	2	13		3	9	2	0	11	12	3	3	2
Peak-Hour Factor, PHF	0.79	0.90		0.75	0.92	0.79	0.50	0.86	0.82	0.75	0.92	0.85
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, I_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT	3	3		3	3		3	3	3	3	3	3
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	36	0	0	0	0	0	0
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	13.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 27.0	G = 17.8	G =	G =	G = 10.0	G = 69.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	177	247		443	507		8	791	179	171	1675	525
Lane Group Capacity, c	196	186		315	559		50	1499	1023	330	1967	1187
v/c Ratio, X	0.90	1.33		1.41	0.91		0.16	0.53	0.17	0.52	0.85	0.44
Total Green Ratio, g/C	0.12	0.12		0.18	0.18		0.46	0.46	0.69	0.57	0.56	0.73
Uniform Delay, d_1	65.2	66.1		61.5	60.3		23.6	28.9	8.4	17.9	27.8	8.3
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k	0.42	0.50		0.50	0.43		0.11	0.13	0.11	0.12	0.38	0.11
Incremental Delay, d_2	38.5	179.8		200.9	18.6		1.5	0.4	0.1	1.4	3.8	0.3
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	103.8	245.9		262.4	78.9		25.1	29.2	8.5	19.3	31.6	8.6
Lane Group LOS	F	F		F	E		C	C	A	B	C	A
Approach Delay	186.6			164.4			25.4			25.6		
Approach LOS	F			F			C			C		
Intersection Delay	67.9			X_c = 1.03			Intersection LOS			E		

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	AM Peak Hour	Analysis Year	2010 Future Build
		Project ID	2010 Future AM Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	2	1	1	2	1
Lane Group	L	T		L	LTR		L	T	R	L	T	R
Volume, V (vph)	145	222		332	311	180	4	697	149	128	1578	568
% Heavy Vehicles, %HV	2	13		3	9	2	0	11	12	3	3	2
Peak-Hour Factor, PHF	0.79	0.90		0.75	0.92	0.79	0.50	0.86	0.82	0.75	0.92	0.85
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT	3	3		3	3		3	3	3	3	3	3
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	36	0	0	0	0	0	0
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	13.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 27.0	G = 17.8	G =	G =	G = 10.0	G = 69.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	184	247		443	520		8	810	182	171	1715	668
Lane Group Capacity, c	196	186		315	560		49	1499	1023	323	1967	1187
v/c Ratio, X	0.94	1.33		1.41	0.93		0.16	0.54	0.18	0.53	0.87	0.56
Total Green Ratio, g/C	0.12	0.12		0.18	0.18		0.46	0.46	0.69	0.57	0.56	0.73
Uniform Delay, d_1	65.6	66.1		61.5	60.6		23.6	29.1	8.4	18.1	28.4	9.6
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k	0.45	0.50		0.50	0.44		0.11	0.14	0.11	0.13	0.40	0.16
Incremental Delay, d_2	47.0	179.8		200.9	22.0		1.6	0.4	0.1	1.7	4.6	0.6
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	112.6	245.9		262.4	82.6		25.2	29.5	8.5	19.7	33.0	10.2
Lane Group LOS	F	F		F	F		C	C	A	B	C	B
Approach Delay	189.0			165.3			25.6			26.1		
Approach LOS	F			F			C			C		
Intersection Delay	67.3			X_c = 1.05			Intersection LOS			E		

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	WITH Town & DOT Improvements
Time Period	AM Peak Hour	Analysis Year	2010 Future No-Build w MIT
		Project ID	2010 Future AM No-Build with MIT

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	3	1	1	3	
Lane Group	L	T		L	LTR		L	T	R	L	T	
Volume, V (vph)	140	222		332	299	180	4	680	147	128	1541	
% Heavy Vehicles, %HV	2	13		3	9	0	0	11	12	3	3	
Peak-Hour Factor, PHF	0.79	0.90		0.75	0.92	0.79	0.50	0.86	0.82	0.75	0.92	
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type, AT	3	3		3	3		3	3	3	3	3	
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ped / Bike / RTOR Volumes	0	0		0	0	36	0	0	0	0	0	
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 27.0	G = 17.8	G =	G =	G = 10.0	G = 69.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	177	247		443	507		8	791	179	171	1675	
Lane Group Capacity, c	196	186		315	563		93	2145	1023	357	2814	
v/c Ratio, X	0.90	1.33		1.41	0.90		0.09	0.37	0.17	0.48	0.60	
Total Green Ratio, g/C	0.12	0.12		0.18	0.18		0.46	0.46	0.69	0.57	0.56	
Uniform Delay, d_1	65.2	66.1		61.5	60.2		22.8	26.3	8.4	16.3	21.8	
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Delay Calibration, k	0.42	0.50		0.50	0.42		0.11	0.11	0.11	0.11	0.18	
Incremental Delay, d_2	38.5	179.8		200.9	17.6		0.4	0.1	0.1	1.0	0.3	
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Control Delay	103.8	245.9		262.4	77.7		23.2	26.4	8.5	17.3	22.1	
Lane Group LOS	F	F		F	E		C	C	A	B	C	
Approach Delay	186.6			163.8			23.1			21.7		
Approach LOS	F			F			C			C		
Intersection Delay	70.8			X_c = 0.87			Intersection LOS			E		

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	WITH TOWN & DOT IMPROVEMENTS
Time Period	AM Peak Hour	Analysis Year	2010 Future Build w MIT
		Project ID	2010 Future AM Build with MIT

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	3	1	1	3	
Lane Group	L	T		L	LTR		L	T	R	L	T	
Volume, V (vph)	145	222		332	311	180	4	697	149	128	1578	
% Heavy Vehicles, %HV	2	13		3	9	2	0	11	12	3	3	
Peak-Hour Factor, PHF	0.79	0.90		0.75	0.92	0.79	0.50	0.86	0.82	0.75	0.92	
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type, AT	3	3		3	3		3	3	3	3	3	
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ped / Bike / RTOR Volumes	0	0		0	0	36	0	0	0	0	0	
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 27.0	G = 17.8	G =	G =	G = 10.0	G = 69.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	184	247		443	520		8	810	182	171	1715	
Lane Group Capacity, c	196	186		315	560		87	2145	1023	351	2814	
v/c Ratio, X	0.94	1.33		1.41	0.93		0.09	0.38	0.18	0.49	0.61	
Total Green Ratio, g/C	0.12	0.12		0.18	0.18		0.46	0.46	0.69	0.57	0.56	
Uniform Delay, d_1	65.6	66.1		61.5	60.6		22.8	26.5	8.4	16.4	22.0	
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Delay Calibration, k	0.45	0.50		0.50	0.44		0.11	0.11	0.11	0.11	0.20	
Incremental Delay, d_2	47.0	179.8		200.9	22.0		0.5	0.1	0.1	1.1	0.4	
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Control Delay	112.6	245.9		262.4	82.6		23.3	26.6	8.5	17.5	22.4	
Lane Group LOS	F	F		F	F		C	C	A	B	C	
Approach Delay	189.0			165.3			23.3			22.0		
Approach LOS	F			F			C			C		
Intersection Delay	71.3			X_c = 0.88			Intersection LOS			E		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	PM Peak Hour	Analysis Year	2008 Existing
		Project ID	2008 PM Existing

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	2	1	1	2	1
Lane Group	L	T		L	LTR		L	T	R	L	T	R
Volume, V (vph)	339	361		180	115	232	11	1494	314	152	982	171
% Heavy Vehicles, %HV	0	1		2	6	1	0	1	1	0	3	0
Peak-Hour Factor, PHF	0.95	0.99		0.80	0.77	0.81	0.83	0.91	0.87	0.79	0.88	0.72
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT	3	3		3	3		3	3	3	3	3	3
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	46	0	0	0	0	0	0
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	13.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 10.0	G = 27.8	G =	G =	G = 19.0	G = 67.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	357	365		225	379		13	1642	361	192	1116	237
Lane Group Capacity, c	312	325		118	206		210	1600	925	270	2131	1400
v/c Ratio, X	1.14	1.12		1.91	1.84		0.06	1.03	0.39	0.71	0.52	0.17
Total Green Ratio, g/C	0.19	0.19		0.07	0.07		0.45	0.45	0.56	0.62	0.61	0.84
Uniform Delay, d_1	61.1	61.1		70.0	70.0		23.6	41.5	18.6	45.7	17.0	2.3
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k	0.50	0.50		0.50	0.50		0.11	0.50	0.11	0.27	0.13	0.11
Incremental Delay, d_2	95.9	87.4		437.9	396.2		0.1	29.5	0.3	8.5	0.2	0.1
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	157.0	148.5		507.9	466.2		23.7	71.0	18.9	54.2	17.2	2.3
Lane Group LOS	F	F		F	F		C	E	B	D	B	A
Approach Delay	152.7			481.7			61.3			19.6		
Approach LOS	F			F			E			B		
Intersection Delay	113.6			X_c = 1.12			Intersection LOS			F		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	PM Peak Hour	Analysis Year	
		Project ID	2010 Future PM No-Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	2	1	1	2	1
Lane Group	L	T		L	LTR		L	T	R	L	T	R
Volume, V (vph)	346	368		184	117	237	11	1553	320	155	1019	174
% Heavy Vehicles, %HV	0	1		2	6	1	0	1	1	0	3	0
Peak-Hour Factor, PHF	0.95	0.99		0.80	0.77	0.81	0.83	0.91	0.87	0.79	0.88	0.72
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT	3	3		3	3		3	3	3	3	3	3
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	47	0	0	0	0	0	0
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	13.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 10.0	G = 27.8	G =	G =	G = 19.0	G = 67.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	364	372		230	387		13	1707	368	196	1158	242
Lane Group Capacity, c	312	325		118	206		201	1600	925	270	2131	1400
v/c Ratio, X	1.17	1.14		1.95	1.88		0.06	1.07	0.40	0.73	0.54	0.17
Total Green Ratio, g/C	0.19	0.19		0.07	0.07		0.45	0.45	0.56	0.62	0.61	0.84
Uniform Delay, d_1	61.1	61.1		70.0	70.0		23.6	41.5	18.7	46.2	17.3	2.3
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k	0.50	0.50		0.50	0.50		0.11	0.50	0.11	0.29	0.14	0.11
Incremental Delay, d_2	104.1	95.1		456.4	413.3		0.1	42.7	0.3	9.4	0.3	0.1
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	165.2	156.2		526.4	483.3		23.8	84.2	19.0	55.6	17.6	2.3
Lane Group LOS	F	F		F	F		C	F	B	E	B	A
Approach Delay	160.6			499.4			72.4			20.0		
Approach LOS	F			F			E			B		
Intersection Delay	121.0			X_c = 1.15			Intersection LOS			F		

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	
Time Period	PM Peak Hour	Analysis Year	2010 Future Build
		Project ID	2010 Future PM Build

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	2	1	1	2	1
Lane Group	L	T		L	LTR		L	T	R	L	T	R
Volume, V (vph)	379	368		184	119	237	11	1665	331	155	1026	197
% Heavy Vehicles, %HV	0	1		2	6	1	0	1	1	0	3	0
Peak-Hour Factor, PHF	0.95	0.99		0.80	0.77	0.81	0.83	0.91	0.87	0.79	0.88	0.72
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	A
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival Type, AT	3	3		3	3		3	3	3	3	3	3
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Ped / Bike / RTOR Volumes	0	0		0	0	47	0	0	0	0	0	0
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	13.0
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	0
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 10.0	G = 27.8	G =	G =	G = 19.0	G = 67.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	399	372		230	390		13	1830	380	196	1166	274
Lane Group Capacity, c	312	325		118	206		200	1600	925	270	2131	1400
v/c Ratio, X	1.28	1.14		1.95	1.89		0.06	1.14	0.41	0.73	0.55	0.20
Total Green Ratio, g/C	0.19	0.19		0.07	0.07		0.45	0.45	0.56	0.62	0.61	0.84
Uniform Delay, d_1	61.1	61.1		70.0	70.0		23.6	41.5	18.9	46.2	17.4	2.3
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Delay Calibration, k	0.50	0.50		0.50	0.50		0.11	0.50	0.11	0.29	0.15	0.11
Incremental Delay, d_2	147.9	95.1		456.4	419.7		0.1	72.7	0.3	9.4	0.3	0.1
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	209.0	156.2		526.4	489.7		23.8	114.2	19.2	55.6	17.7	2.4
Lane Group LOS	F	F		F	F		C	F	B	E	B	A
Approach Delay	183.5			503.3			97.4			19.7		
Approach LOS	F			F			F			B		
Intersection Delay	133.8			X_c = 1.22			Intersection LOS			F		

HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	With Town & DOT Improvements
Time Period	PM Peak Hour	Analysis Year	2010 Future No-Build w MIT
		Project ID	2010 Future PM No-Build with Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_l	1	1		1	2	0	1	3	1	1	3	
Lane Group	L	T		L	LTR		L	T	R	L	T	
Volume, V (vph)	346	368		184	117	237	11	1553	320	155	1019	
% Heavy Vehicles, %HV	0	1		2	6	1	0	1	1	0	3	
Peak-Hour Factor, PHF	0.95	0.99		0.80	0.77	0.81	0.83	0.91	0.87	0.79	0.88	
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type, AT	3	3		3	3		3	3	3	3	3	
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ped / Bike / RTOR Volumes	0	0		0	0	47	0	0	0	0	0	
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 10.0	G = 27.8	G =	G =	G = 19.0	G = 67.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 150.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	364	372		230	387		13	1707	368	196	1158	
Lane Group Capacity, c	312	325		118	206		190	2289	925	270	3049	
v/c Ratio, X	1.17	1.14		1.95	1.88		0.07	0.75	0.40	0.73	0.38	
Total Green Ratio, g/C	0.19	0.19		0.07	0.07		0.45	0.45	0.56	0.62	0.61	
Uniform Delay, d_1	61.1	61.1		70.0	70.0		23.7	34.4	18.7	43.0	15.1	
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Delay Calibration, k	0.50	0.50		0.50	0.50		0.11	0.30	0.11	0.29	0.11	
Incremental Delay, d_2	104.1	95.1		456.4	413.3		0.2	1.4	0.3	9.4	0.1	
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Control Delay	165.2	156.2		526.4	483.3		23.8	35.8	19.0	52.4	15.2	
Lane Group LOS	F	F		F	F		C	D	B	D	B	
Approach Delay	160.6			499.4			32.8			20.5		
Approach LOS	F			F			C			C		
Intersection Delay	109.0			X_c = 0.97			Intersection LOS			F		

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HCS+™ DETAILED REPORT

General Information		Site Information	
Analyst	JJM	Intersection	Old Country Road & Rt 110
Agency or Co.	ATDE AN08003	Area Type	All other areas
Date Performed	11/24/08	Jurisdiction	WITH TOWN & DOT IMPROVEMENTS
Time Period	PM Peak Hour	Analysis Year	2010 Future Build w MIT
		Project ID	2010 Future PM Build with Mitigation

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N_1	1	1		1	2	0	1	3	1	1	3	
Lane Group	L	T		L	LTR		L	T	R	L	T	
Volume, V (vph)	379	368		184	119	237	11	1665	331	155	1026	
% Heavy Vehicles, %HV	0	1		2	6	1	0	1	1	0	3	
Peak-Hour Factor, PHF	0.95	0.99		0.80	0.77	0.81	0.83	0.91	0.87	0.79	0.88	
Pretimed (P) or Actuated (A)	A	A		A	A	A	A	A	A	A	A	
Start-up Lost Time, l_1	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Extension of Effective Green, e	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival Type, AT	3	3		3	3		3	3	3	3	3	
Unit Extension, UE	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Filtering/Metering, I	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Initial Unmet Demand, Q_b	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Ped / Bike / RTOR Volumes	0	0		0	0	47	0	0	0	0	0	
Lane Width	10.0	10.0		12.0	11.0		11.0	12.0	13.0	11.0	12.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N_m												
Buses Stopping, N_B	0	0		0	0		0	0	0	0	0	
Min. Time for Pedestrians, G_p	3.2			3.2			3.2			3.2		

Phasing	WB Only	EB Only	03	04	SB Only	NS Perm	07	08
Timing	G = 10.0	G = 28.8	G =	G =	G = 19.0	G = 66.0	G =	G =
	Y = 7.2	Y = 7	Y =	Y =	Y = 5	Y = 7	Y =	Y =

Duration of Analysis, T = 0.25 | Cycle Length, C = 150.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	399	372		230	390		13	1830	380	196	1166	
Lane Group Capacity, c	324	337		118	206		186	2255	914	270	3015	
v/c Ratio, X	1.23	1.10		1.95	1.89		0.07	0.81	0.42	0.73	0.39	
Total Green Ratio, g/C	0.19	0.19		0.07	0.07		0.44	0.44	0.55	0.61	0.60	
Uniform Delay, d_1	60.6	60.6		70.0	70.0		24.3	36.6	19.4	43.5	15.6	
Progression Factor, PF	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Delay Calibration, k	0.50	0.50		0.50	0.50		0.11	0.35	0.11	0.29	0.11	
Incremental Delay, d_2	128.2	79.9		456.4	419.7		0.2	2.4	0.3	9.4	0.1	
Initial Queue Delay, d_3	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Control Delay	188.8	140.5		526.4	489.7		24.4	38.9	19.7	52.8	15.7	
Lane Group LOS	F	F		F	F		C	D	B	D	B	
Approach Delay	165.5			503.3			35.6			21.1		
Approach LOS	F			F			D			C		
Intersection Delay	110.0			X_c = 1.03			Intersection LOS			F		

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Southerly Access Aisle & Main
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future Build
Analysis Time Period	AM Peak Hour		

Project Description: AN08003: Canon

East/West Street: Southerly Access Aisle | North/South Street: Main Access Aisle

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	77	7			110	12
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	85	7	0	0	122	13
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				10		478
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.90	1.00	0.90
Hourly Flow Rate, HFR (veh/h)	0	0	0	11	0	531
Percent Heavy Vehicles	0	0	0	2	0	2
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	85						542	
C (m) (veh/h)	1449						914	
v/c	0.06						0.59	
95% queue length	0.19						4.02	
Control Delay (s/veh)	7.6						14.5	
LOS	A						B	
Approach Delay (s/veh)	--	--					14.5	
Approach LOS	--	--					B	

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	JJM	Intersection	Southerly Access Aisle & Main
Agency/Co.	ATDE	Jurisdiction	
Date Performed	11/24/08	Analysis Year	2010 Future Build
Analysis Time Period	PM Peak Hour		

Project Description: AN08003: Canon

East/West Street: Southerly Access Aisle | North/South Street: Main Access Aisle

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	502	45			20	2
Peak-Hour Factor, PHF	0.90	0.90	1.00	1.00	0.90	0.90
Hourly Flow Rate, HFR (veh/h)	557	50	0	0	22	2
Percent Heavy Vehicles	2	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				67		88
Peak-Hour Factor, PHF	1.00	1.00	1.00	0.90	1.00	0.90
Hourly Flow Rate, HFR (veh/h)	0	0	0	74	0	97
Percent Heavy Vehicles	0	0	0	2	0	2
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (veh/h)	557						171	
C (m) (veh/h)	1591						267	
v/c	0.35						0.64	
95% queue length	1.60						4.01	
Control Delay (s/veh)	8.5						39.7	
LOS	A						E	
Approach Delay (s/veh)	--	--					39.7	
Approach LOS	--	--					E	

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ATLANTIC TRAFFIC
& DESIGN ENGINEERS, INC.

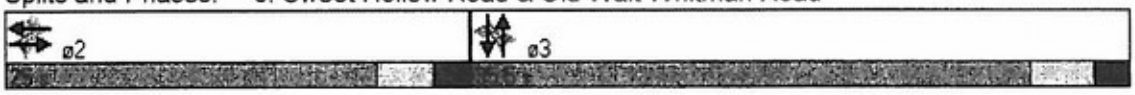
SYNCHRO ANALYSIS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↑	↱		↔			↔	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1984	0	1636	1712	1478	0	1926	0	0	2072	0
Flt Permitted		0.939		0.456				0.872			0.918	
Satd. Flow (perm)	0	1874	0	785	1712	1478	0	1691	0	0	1916	0
Satd. Flow (RTOR)		56				184		53			8	
Volume (vph)	26	108	100	211	170	145	24	140	64	66	485	35
Lane Group Flow (vph)	0	345	0	234	279	184	0	283	0	0	670	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		2			2			3			3	
Permitted Phases	2			2		2	3			3		
Total Split (s)	25.0	25.0	0.0	25.0	25.0	25.0	35.5	35.5	0.0	35.5	35.5	0.0
Act Effct Green (s)		21.0		21.0	21.0	21.0		31.5			31.5	
Actuated g/C Ratio		0.35		0.35	0.35	0.35		0.52			0.52	
v/c Ratio		0.50		0.86	0.47	0.29		0.31			0.67	
Control Delay		16.0		51.5	18.6	4.1		7.8			14.7	
Queue Delay		0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay		16.0		51.5	18.6	4.1		7.8			14.7	
LOS		B		D	B	A		A			B	
Approach Delay		16.0			25.8			7.8			14.7	
Approach LOS		B			C			A			B	

Intersection Summary

Cycle Length: 60.5
Actuated Cycle Length: 60.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 17.8 — Intersection LOS: B
Intersection Capacity Utilization 77.2% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road

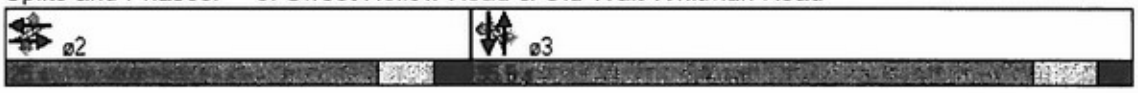


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1765	1546	1694	1655	1531	1736	1685	1568	1589	1756	1346
Flt Permitted		0.905		0.581			0.331			0.655		
Satd. Flow (perm)	0	1612	1546	1036	1655	1531	605	1685	1568	1096	1756	1346
Satd. Flow (RTOR)			134			187			87			43
Volume (vph)	27	110	102	215	173	148	24	143	65	67	495	36
Lane Group Flow (vph)	0	217	134	239	284	187	41	161	87	91	550	43
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			2			3			3	
Permitted Phases	2		2	2		2	3		3	3		3
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	35.5	35.5	35.5	35.5	35.5	35.5
Act Effct Green (s)		21.0	21.0	21.0	21.0	21.0	31.5	31.5	31.5	31.5	31.5	31.5
Actuated g/C Ratio		0.35	0.35	0.35	0.35	0.35	0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio		0.39	0.21	0.66	0.49	0.29	0.13	0.18	0.10	0.16	0.60	0.06
Control Delay		17.5	4.1	28.1	19.2	4.0	8.8	8.4	2.4	8.5	13.6	3.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		17.5	4.1	28.1	19.2	4.0	8.8	8.4	2.4	8.5	13.6	3.0
LOS		B	A	C	B	A	A	A	A	A	B	A
Approach Delay		12.4			18.2			6.6			12.3	
Approach LOS		B			B			A			B	

Intersection Summary

Cycle Length: 60.5
Actuated Cycle Length: 60.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.6 Intersection LOS: B
Intersection Capacity Utilization 72.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road

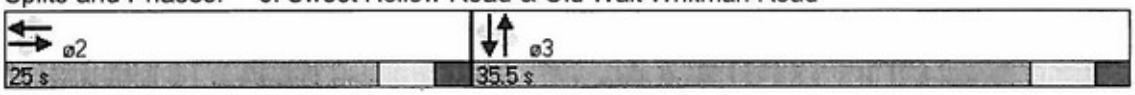


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1765	1546	1694	1655	1531	1736	1685	1568	1589	1756	1346
Flt Permitted		0.905		0.581			0.331			0.655		
Satd. Flow (perm)	0	1612	1546	1036	1655	1531	605	1685	1568	1096	1756	1346
Satd. Flow (RTOR)			134			187			87			43
Volume (vph)	27	110	102	215	173	148	24	143	65	67	495	36
Lane Group Flow (vph)	0	217	134	239	284	187	41	161	87	91	550	43
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			2			3			3	
Permitted Phases	2		2	2		2	3		3	3		3
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	35.5	35.5	35.5	35.5	35.5	35.5
Act Effct Green (s)		21.0	21.0	21.0	21.0	21.0	31.5	31.5	31.5	31.5	31.5	31.5
Actuated g/C Ratio		0.35	0.35	0.35	0.35	0.35	0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio		0.39	0.21	0.66	0.49	0.29	0.13	0.18	0.10	0.16	0.60	0.06
Control Delay		17.5	4.1	28.1	19.2	4.0	8.8	8.4	2.4	8.5	13.6	3.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		17.5	4.1	28.1	19.2	4.0	8.8	8.4	2.4	8.5	13.6	3.0
LOS		B	A	C	B	A	A	A	A	A	B	A
Approach Delay		12.4			18.2			6.6			12.3	
Approach LOS		B			B			A			B	

Intersection Summary

Cycle Length: 60.5
Actuated Cycle Length: 60.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 13.6 — Intersection LOS: B
Intersection Capacity Utilization 72.1% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1765	1546	1694	1655	1531	1736	1685	1568	1589	1756	1346
Flt Permitted		0.905		0.581			0.217			0.652		
Satd. Flow (perm)	0	1612	1546	1036	1655	1531	396	1685	1568	1091	1756	1346
Satd. Flow (RTOR)			134			187			87			43
Volume (vph)	27	110	102	215	173	148	24	148	65	67	629	36
Lane Group Flow (vph)	0	217	134	239	284	187	41	166	87	91	699	43
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			2			3			3	
Permitted Phases	2		2	2		2	3		3	3		3
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	35.5	35.5	35.5	35.5	35.5	35.5
Act Effct Green (s)		21.0	21.0	21.0	21.0	21.0	31.5	31.5	31.5	31.5	31.5	31.5
Actuated g/C Ratio		0.35	0.35	0.35	0.35	0.35	0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio		0.39	0.21	0.66	0.49	0.29	0.20	0.19	0.10	0.16	0.76	0.06
Control Delay		17.5	4.1	28.1	19.2	4.0	10.8	8.4	2.4	8.6	18.8	3.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		17.5	4.1	28.1	19.2	4.0	10.8	8.4	2.4	8.6	18.8	3.0
LOS		B	A	C	B	A	B	A	A	A	B	A
Approach Delay		12.4			18.2			7.0			16.9	
Approach LOS		B			B			A			B	

Intersection Summary			
Cycle Length: 60.5			
Actuated Cycle Length: 60.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 15.3		Intersection LOS: B	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

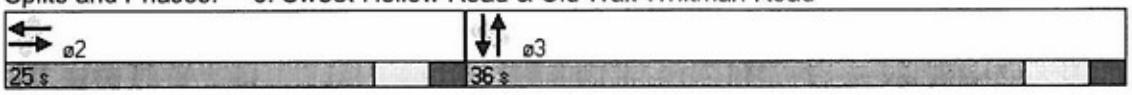
Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1765	1546	1694	1655	1531	1736	1685	1568	1589	1756	1346
Flt Permitted		0.904		0.579			0.219			0.652		
Satd. Flow (perm)	0	1610	1546	1032	1655	1531	400	1685	1568	1091	1756	1346
Satd. Flow (RTOR)			134			187			87			43
Volume (vph)	27	110	102	215	173	148	24	148	65	67	629	36
Lane Group Flow (vph)	0	217	134	239	284	187	41	166	87	91	699	43
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			2			3			3	
Permitted Phases	2		2	2		2	3		3	3		3
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	36.0	36.0	36.0	36.0	36.0	36.0
Act Effct Green (s)		21.0	21.0	21.0	21.0	21.0	32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio		0.34	0.34	0.34	0.34	0.34	0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio		0.39	0.22	0.67	0.50	0.29	0.20	0.19	0.10	0.16	0.76	0.06
Control Delay		17.8	4.2	29.0	19.6	4.0	10.6	8.4	2.4	8.5	18.4	2.9
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		17.8	4.2	29.0	19.6	4.0	10.6	8.4	2.4	8.5	18.4	2.9
LOS		B	A	C	B	A	B	A	A	A	B	A
Approach Delay		12.6			18.6			6.9			16.6	
Approach LOS		B			B			A			B	

Intersection Summary

Cycle Length: 61
Actuated Cycle Length: 61
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 15.3 — Intersection LOS: B
Intersection Capacity Utilization 79.2% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road

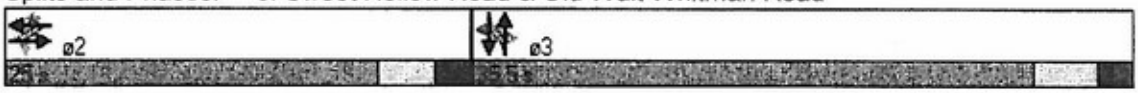


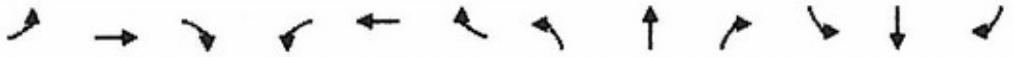
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	2078	0	1668	1900	1507	0	2005	0	0	2047	0
Flt Permitted		0.932		0.634				0.897			0.793	
Satd. Flow (perm)	0	1953	0	1113	1900	1507	0	1813	0	0	1643	0
Satd. Flow (RTOR)		23				115		74			16	
Volume (vph)	19	100	31	102	169	98	95	250	207	49	126	24
Lane Group Flow (vph)	0	187	0	132	217	115	0	688	0	0	255	0
Turn Type	Perm			Perm		Perm	Perm			Perm		
Protected Phases		2			2			3			3	
Permitted Phases	2			2		2	3			3		
Total Split (s)	25.0	25.0	0.0	25.0	25.0	25.0	35.5	35.5	0.0	35.5	35.5	0.0
Act Effct Green (s)		21.0		21.0	21.0	21.0		31.5			31.5	
Actuated g/C Ratio		0.35		0.35	0.35	0.35		0.52			0.52	
v/c Ratio		0.27		0.34	0.33	0.19		0.70			0.30	
Control Delay		13.7		17.8	16.3	4.3		14.5			8.8	
Queue Delay		0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay		13.7		17.8	16.3	4.3		14.5			8.8	
LOS		B		B	B	A		B			A	
Approach Delay		13.7			13.8			14.5			8.8	
Approach LOS		B			B			B			A	

Intersection Summary

Cycle Length: 60.5
Actuated Cycle Length: 60.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 64.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road



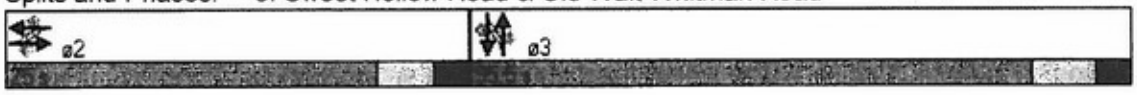


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1818	1561	1728	1837	1561	1805	1818	1583	1685	1722	1449
Flt Permitted		0.918		0.661			0.653			0.523		
Satd. Flow (perm)	0	1686	1561	1202	1837	1561	1241	1818	1583	927	1722	1449
Satd. Flow (RTOR)			40			118			180			29
Volume (vph)	19	102	32	104	172	100	97	255	211	50	129	24
Lane Group Flow (vph)	0	151	40	135	221	118	118	323	260	65	165	29
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			2			3			3	
Permitted Phases	2		2	2		2	3		3	3		3
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	35.5	35.5	35.5	35.5	35.5	35.5
Act Effct Green (s)		21.0	21.0	21.0	21.0	21.0	31.5	31.5	31.5	31.5	31.5	31.5
Actuated g/C Ratio		0.35	0.35	0.35	0.35	0.35	0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio		0.26	0.07	0.32	0.35	0.19	0.18	0.34	0.29	0.13	0.18	0.04
Control Delay		15.7	5.6	17.3	16.6	4.2	8.6	9.7	3.7	8.4	8.4	3.2
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.7	5.6	17.3	16.6	4.2	8.6	9.7	3.7	8.4	8.4	3.2
LOS		B	A	B	B	A	A	A	A	A	A	A
Approach Delay		13.6			13.7			7.3			7.8	
Approach LOS		B			B			A			A	

Intersection Summary

Cycle Length: 60.5
Actuated Cycle Length: 60.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 10.0 Intersection LOS: A
Intersection Capacity Utilization 56.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road

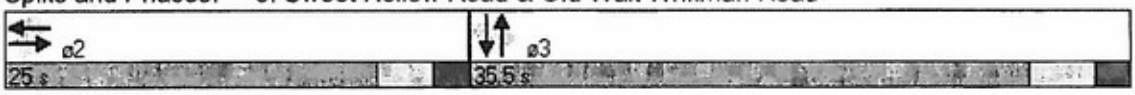


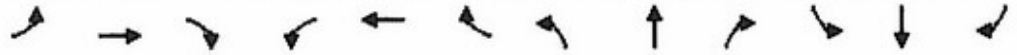
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1818	1561	1728	1837	1561	1805	1818	1583	1685	1722	1449
Flt Permitted		0.918		0.661			0.653			0.523		
Satd. Flow (perm)	0	1686	1561	1202	1837	1561	1241	1818	1583	927	1722	1449
Satd. Flow (RTOR)			40			118			180			29
Volume (vph)	19	102	32	104	172	100	97	255	211	50	129	24
Lane Group Flow (vph)	0	151	40	135	221	118	118	323	260	65	165	29
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			2			3			3	
Permitted Phases	2		2	2		2	3		3	3		3
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	35.5	35.5	35.5	35.5	35.5	35.5
Act Effct Green (s)		21.0	21.0	21.0	21.0	21.0	31.5	31.5	31.5	31.5	31.5	31.5
Actuated g/C Ratio		0.35	0.35	0.35	0.35	0.35	0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio		0.26	0.07	0.32	0.35	0.19	0.18	0.34	0.29	0.13	0.18	0.04
Control Delay		15.7	5.6	17.3	16.6	4.2	8.6	9.7	3.7	8.4	8.4	3.2
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.7	5.6	17.3	16.6	4.2	8.6	9.7	3.7	8.4	8.4	3.2
LOS		B	A	B	B	A	A	A	A	A	A	A
Approach Delay		13.6			13.7			7.3			7.8	
Approach LOS		B			B			A			A	

Intersection Summary

Cycle Length: 60.5
Actuated Cycle Length: 60.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 10.0 Intersection LOS: A
Intersection Capacity Utilization 56.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1818	1561	1728	1837	1561	1805	1818	1583	1685	1722	1449
Flt Permitted		0.918		0.661			0.634			0.485		
Satd. Flow (perm)	0	1686	1561	1202	1837	1561	1205	1818	1583	860	1722	1449
Satd. Flow (RTOR)			40			118			159			29
Volume (vph)	19	102	32	104	172	100	97	288	211	50	154	24
Lane Group Flow (vph)	0	151	40	135	221	118	118	365	260	65	197	29
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			2			3			3	
Permitted Phases	2		2	2		2	3		3	3		3
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	35.5	35.5	35.5	35.5	35.5	35.5
Act Effct Green (s)		21.0	21.0	21.0	21.0	21.0	31.5	31.5	31.5	31.5	31.5	31.5
Actuated g/C Ratio		0.35	0.35	0.35	0.35	0.35	0.52	0.52	0.52	0.52	0.52	0.52
v/c Ratio		0.26	0.07	0.32	0.35	0.19	0.19	0.39	0.29	0.15	0.22	0.04
Control Delay		15.7	5.6	17.3	16.6	4.2	8.7	10.2	4.3	8.6	8.7	3.2
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.7	5.6	17.3	16.6	4.2	8.7	10.2	4.3	8.6	8.7	3.2
LOS		B	A	B	B	A	A	B	A	A	A	A
Approach Delay		13.6			13.7			7.9			8.1	
Approach LOS		B			B			A			A	

Intersection Summary	
Cycle Length: 60.5	
Actuated Cycle Length: 60.5	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay: 10.2	Intersection LOS: B
Intersection Capacity Utilization 58.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1818	1561	1728	1837	1561	1805	1818	1583	1685	1722	1449
Flt Permitted		0.916		0.661			0.634			0.491		
Satd. Flow (perm)	0	1682	1561	1202	1837	1561	1205	1818	1583	871	1722	1449
Satd. Flow (RTOR)			40			118			165			29
Volume (vph)	19	102	32	104	172	100	97	288	211	50	154	24
Lane Group Flow (vph)	0	151	40	135	221	118	118	365	260	65	197	29
Turn Type	Perm		Perm	Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			2			3			3	
Permitted Phases	2		2	2		2	3		3	3		3
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	36.5	36.5	36.5	36.5	36.5	36.5
Act Effct Green (s)		20.0	20.0	20.0	20.0	20.0	32.5	32.5	32.5	32.5	32.5	32.5
Actuated g/C Ratio		0.33	0.33	0.33	0.33	0.33	0.54	0.54	0.54	0.54	0.54	0.54
v/c Ratio		0.27	0.07	0.34	0.36	0.20	0.18	0.37	0.28	0.14	0.21	0.04
Control Delay		16.6	5.9	18.3	17.6	4.4	8.1	9.5	3.9	8.0	8.1	3.0
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		16.6	5.9	18.3	17.6	4.4	8.1	9.5	3.9	8.0	8.1	3.0
LOS		B	A	B	B	A	A	A	A	A	A	A
Approach Delay		14.3			14.5			7.3			7.6	
Approach LOS		B			B			A			A	

Intersection Summary

Cycle Length: 60.5
Actuated Cycle Length: 60.5
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 10.2 Intersection LOS: B
Intersection Capacity Utilization 58.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Sweet Hollow Road & Old Walt Whitman Road