RECIRCULATED DRAFT ENVIRONMENTAL IMPACT REPORT

FOR THE

DELANO MARKETPLACE

SCH# 2005011089

VOLUME III OF III - APPENDICES

PREPARED FOR:

CITY OF DELANO
Community Development Department
1015 11th Avenue
Delano, CA 93216

PREPARED BY:

PMC
PACIFIC MUNICIPAL CONSULTANTS

APRIL 2007

TECHNICAL APPENDICES

Appendix J – Traffic and Circulation

Peters Engineering Group. *Delano Marketplace Traffic Impact Study.* March 2007.

Peters Engineering Group. *Addendum No. 1 – Intersection Analyses Considering Railroad Crossing, Delano Marketplace Traffic Impact Study.* April 13, 2007.

Traffic Impact Study

PROPOSED DELANO MARKETPLACE

Prepared For:

Pacific Municipal Consultants
585 Cannery Row, Suite 304
Monterey, California 93940

Date:

March 2007

Job No.:

04-106.02

PETERS ENGINEERING GROUP
A California Corporation

55 Shaw Avenue, Suite 220
Clovis, California 93612

Phone (559) 299-1544
Fax (559) 299-1722

EXECUTIVE SUMMARY

This report presents the results of traffic analyses performed for a new commercial development in Delano, California. The purpose of the traffic impact analysis is to evaluate the effects that project-generated vehicle traffic will have on the existing roadway network in the vicinity of the proposed project and to identify any impacts and associated mitigation measures necessary to maintain acceptable traffic conditions.

The proposed project includes the construction of approximately 445,482 square feet of regional commercial uses on approximately 41 acres on the south side of Woollomes Avenue between Garzoli Avenue and the Dover Parkway alignment. The site is located near the State Route 99/Woollomes Avenue interchange. The proposed regional shopping center will include two major commercial uses, a discount superstore, a home improvement superstore; several restaurant pads for either fast foot or sit-down restaurants; retail pads, and a gas station with 14 fueling positions.

This report includes analysis of the following road segments:

1. Woollomes Avenue – Albany to Dover
2. Woollomes Avenue – Dover to Site Access
3. Woollomes Avenue – Site Access to Garzoli
4. Woollomes Avenue – Garzoli Avenue to SR 99 Southbound Ramps
5. Woollomes Avenue – SR 99 Southbound Ramps to Northbound Ramps
6. Woollomes Avenue – SR 99 Northbound Ramps to Lexington Street
7. Albany Street – Woollomes to 1st Avenue
8. Stradley Avenue – Woollomes to Schuster
9. Garzoli Avenue – Woollomes to Schuster
10. Garzoli Avenue – Schuster to Pond
11. Pond Road – Garzoli to State Route 99 Ramps
12. Pond Road - SR 99 Southbound Ramps to Northbound Ramps

This report also includes analysis of the following intersections:

1. Woollomes Avenue / Albany Street-Stradley Avenue
2. Woollomes Avenue / Dover Parkway
3. Woollomes Avenue / Site Access
4. Woollomes Avenue / Garzoli Avenue
5. Woollomes Avenue / Southbound State Route 99 Ramps
6. Woollomes Avenue / Northbound State Route 99 On Ramp
7. Woollomes Avenue / Northbound State Route 99 Off Ramp/High Street
8. Woollomes Avenue / Lexington Street
9. Pond Road / Northbound State Route 99 Ramps
10. Pond Road / Southbound State Route 99 Ramps
11. Pond Road / Stradley Avenue
12. Pond Road / Garzoli Avenue
13. Schuster Road / Stradley Avenue
14. Schuster Road / Garzoli Avenue

EXECUTIVE SUMMARY (Continued)

The study time periods include the weekday a.m. and p.m. peak hours, which occur between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. The study time periods also include the weekend (Saturday) peak hour for certain intersections near the project site. The peak-hour scenarios were analyzed for the following conditions:

- Existing (E)
- Existing Plus Opening Year Approved Projects (OY, Approximately Year 2007)
- Existing Plus Opening Year Approved Projects Plus Project (OYP, Approximately Year 2007)
- Near-Term With Approved Projects (NT, Approximately Year 2010)
- Near-Term With Approved Projects Plus Project (NTP, Approximately Year 2010)
- Cumulative With Project (CP, Year 2030)

It should be noted that cumulative-without-project conditions in the year 2030 are not analyzed because the project site is planned for commercial uses and the cumulative-without-project scenario is expected to be very similar to the cumulative-with-project scenario.

Existing Conditions

The existing conditions analyses indicate that the study intersections and road segments are currently operating at acceptable levels of service.

Existing Plus Opening Year Approved Projects Conditions

The existing-plus-opening-year approved projects conditions (OY) intersection analyses indicate that the study intersections are expected to continue to operate at acceptable levels of service with completion of the anticipated year 2007 approved projects, with the exception of the intersection of Woollomes Avenue and the northbound SR 99 ramps. The OY road segment analyses indicate that the study road segments are expected to continue to operate at acceptable levels of service.

It is anticipated that the northbound approach to the intersection of Woollomes Avenue and the northbound SR 99 ramps will experience a level of service D based on the OY conditions. A review of traffic signal warrants suggests that the intersection may satisfy peak-hour traffic signal warrants for one lane on each approach. The OY intersection analyses suggest that the Woollomes Avenue / SR 99 interchange is approaching the point that impacts will occur with construction of the approved projects.

Existing Plus Opening Year Approved Projects Plus Project Conditions

The existing-plus-opening-year approved projects plus project conditions (OYP) intersection analyses indicate that the proposed project will create impacts at the following intersections:

- Woollomes Avenue / Dover Parkway
- Woollomes Avenue / Site Access
- Woollomes Avenue / Garzoli Avenue
- Woollomes Avenue / Southbound SR 99 Ramps
- Woollomes Avenue / Northbound SR 99 Off Ramp/High Street

EXECUTIVE SUMMARY (Continued)

The OYP conditions road segment analyses indicate that the proposed project will create impacts at the following locations:

- Woollomes Avenue eastbound between Site Access and Lexington Street
- Woollomes Avenue westbound between Dover Parkway and High Street

In general, traffic operations in urban areas with closely spaced intersections are governed by the operation of the intersections rather than the road segments. As such, the determination of the appropriate mitigations along Woollomes Avenue between Dover Parkway and Lexington Street with construction of the project are based on analysis of the corridor using Synchro 6 software. It is noted that peak-hour traffic signal warrants are expected to be satisfied at each of the impacted intersections. However, it is not feasible to signalize all of the intersections due to the short distances between Garzoli Avenue, the SR 99 southbound ramps, the SR 99 northbound on ramp, the SR 99 northbound off ramp/High Street, and Lexington Street (four existing intersections within a distance of approximately 500 feet and five existing intersections within a distance of approximately 1,200 feet) and the existing railroad. Therefore, modification of this section of the corridor to minimize the number of intersections and maximize the spacing between intersections will be required.

The project should be required to complete a Project Study Report (PSR) in accordance with Caltrans criteria to determine the appropriate interim configuration of the Woollomes Avenue interchange and the adjacent intersections. The PSR will be subject to the review and approval of Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC). The PUC will be involved with respect to the existing railroad. The construction of the interchange improvements will be subject to a Caltrans encroachment permit and any permits required by the PUC or owner of the railroad right of way. Construction of the required improvements must be complete prior to opening of the proposed project.

A conceptual interim interchange configuration to mitigate OYP impacts is illustrated in Figure 30. Figure 30 is not intended to represent an actual design of the interchange. The actual interchange configuration will be determined in the PSR and Project Report (PR) and will be subject to Caltrans review and approval. The concept includes relocation of the northbound on ramp to the east, connecting from High Street. In this vicinity High Street would be converted to one-way northbound traffic only and southbound traffic on High Street would generally be redistributed to Lexington Street, creating an additional impact at Lexington Street requiring signalization. The southbound ramps would be relocated to the west. Garzoli Avenue would be disconnected from Woollomes Avenue and the southbound on ramp. A street connecting Garzoli Avenue to Dover Parkway would be required south of the proposed project site to allow traffic on Garzoli Avenue to access Woollomes Avenue via Dover Parkway.

The mitigation described above would result in a redistribution of the OYP traffic volumes. Figures 31 and 32 present the revised traffic volumes at the study intersections utilized in the mitigated OYP analyses.

EXECUTIVE SUMMARY (Continued)

The results of the mitigated analyses indicate that the following mitigations will be required:

- Construct Woollomes Avenue with two through travel lanes in each direction and a median between Dover Parkway and the SR 99 southbound ramps. Along the site frontage, construct the curb and gutter on the south side of Woollomes in the ultimate location to accommodate the cumulative-with-project year 2030 lane requirements. All traffic signals on Woollomes Avenue shall be coordinated. Communication conduit and cable or equivalent shall be installed to allow coordination of traffic signals.
- Signalize the intersection of Woollomes Avenue and Dover Parkway. Provide a dedicated left-turn lane and protected left-turn phasing on all four approaches. Provide one through lane on each approach. The construction of the ultimate curb and gutter by the project and approved projects will provide enough pavement to stripe dedicated right-turn lanes on the westbound and northbound approaches.
- Signalize the intersection of Woollomes Avenue and the main Site Access drive. It is assumed that the existing driveway on the north side of Woollomes cannot be modified. Therefore, split phasing will be required in the northbound-southbound directions. Provide protected left-turn phasing in the eastbound and westbound directions. Provide two northbound left-turn lanes and two westbound left-turn lanes. The westbound left-turn lanes should be approximately 300 feet in length. Provide two through lanes in the eastbound and westbound directions. Coordinate the traffic signals with the SR 99 ramp intersections.
- Signalize the intersection of Woollomes Avenue and the SR 99 southbound ramps/Garzoli Avenue. Provide protected left-turn phasing and two dedicated left-turn lanes for the westbound left turn.
- Signalize the intersection of Woollomes Avenue and the SR 99 southbound ramps. Provide protected left-turn phasing and a dedicated left-turn lane for the westbound left turn.
- Signalize the intersection of Woollomes Avenue and the SR 99 northbound ramps/High Street. Provide protected left-turn phasing and a dedicated left-turn lane for the eastbound left turn. Provide a dedicated left-turn lane, a dedicated through lane, and a dedicated right-turn lane on the northbound approach to the intersection.

These mitigations are considered conceptual and should be specifically determined in the PSR described above. The mitigations determined by the PSR will be required prior to opening of the project. Any interim improvements constructed by the project that can be incorporated into the ultimate interchange configuration shall be credited against any equitable share contribution required as a cumulative mitigation. The equitable share contribution and ultimate interchange configuration shall be studied in the PSR. The City of Delano is currently preparing an impact fee program that is expected to include impact fees for construction of the ultimate interchange configuration.

It should be noted during preparation of the PSR and evaluation of interim improvements that the ITE *Trip Generation* values utilized for the home improvement superstore portion of the project are likely greater than those that will actually occur on opening day. This suggestion is based on a comparison of the ITE data utilized for the proposed home improvement superstore with the existing traffic volumes on Woollomes Avenue that are influenced by the existing home improvement superstore (Home Depot). The traffic volumes observed at the existing Home Depot are far less than those projected for the proposed home improvement superstore. It is reasonable to assume that the

construction of a second home improvement superstore across the street would not result in as drastic an increase as suggested by the ITE data.

Near-Term With Approved Projects Conditions

The near-term-with-approved-projects conditions (NT) intersection analyses indicate that the study intersections are expected to continue to operate at acceptable levels of service with completion of the approved projects, with the exception of the following intersections:

- Woollomes Avenue / Southbound SR 99 ramps; and
- Woollomes Avenue / Northbound SR 99 ramps-High Street.

The NT road segment analyses indicate that the study road segments are expected to continue to operate at acceptable levels of service, with the exception of the following road segment:

- Woollomes Avenue westbound between High Street and the SR 99 southbound ramps

It is anticipated that the northbound approach to the intersection of Woollomes Avenue and the northbound SR 99 ramps will experience a level of service F based on the NT conditions. It is also anticipated that the southbound approach to the intersection of Woollomes Avenue and the southbound SR 99 ramps will experience a level of service D based on the NT conditions. A review of traffic signal warrants suggests that the intersections may satisfy peak-hour traffic signal warrants for one lane on each approach. The NT intersection analyses suggest that the Woollomes Avenue / SR 99 interchange is approaching the point that impacts will occur with construction of the approved projects.

Near-Term With Approved Projects Plus Project Conditions

The near-term with approved projects plus project conditions (NTP) intersection analyses indicate that the proposed project will create, or contribute to, impacts at the following intersections:

- Woollomes Avenue / Albany Street
- Woollomes Avenue / Dover Parkway
- Woollomes Avenue / Site Access
- Woollomes Avenue / Garzoli Avenue
- Woollomes Avenue / Southbound SR 99 Ramps
- Woollomes Avenue / Northbound SR 99 Off Ramp/High Street

The NTP conditions road segment analyses indicate that the proposed project will create impacts at the following locations:

- Woollomes Avenue eastbound between Site Access and Lexington Street
- Woollomes Avenue westbound between Dover Parkway and High Street

The intersection of Woollomes Avenue and Albany Street is expected to experience a level of service D. Warrants for intersection signalization are not expected to be satisfied. Construction of a westbound right-turn lane is expected to mitigate the westbound approach to a level of service C.

The mitigations described above for the existing-plus-opening-year approved projects plus project conditions (OYP) are also considered for the NTP conditions. The mitigations would result in a redistribution of the NTP traffic volumes. Figures 33 and 34 present the revised traffic volumes at the study intersections utilized in the mitigated NTP analyses.

Mitigated analyses indicate that the mitigations recommended above for the OYP conditions will also provide acceptable levels of service based on the projected NTP conditions.

The project should be required to complete a PSR in accordance with Caltrans criteria to determine the appropriate interim configuration of the Woollomes Avenue interchange and the adjacent intersections. The PSR will be subject to the review and approval of Caltrans, the City of Delano, and PUC. The PUC will be involved with respect to the existing railroad. The construction of the interchange improvements will be subject to a Caltrans encroachment permit and any permits required by the PUC or owner of the railroad right of way. Construction of the required improvements must be complete prior to opening of the proposed project.

Cumulative With Project (Year 2030)

The cumulative-with-project (Year 2030) conditions (CP) intersection analyses indicate that the proposed project will contribute to impacts at the following intersections:

- Woollomes Avenue / Albany Street
- Woollomes Avenue / Dover Parkway
- Woollomes Avenue / Site Access
- Woollomes Avenue / Garzoli Avenue
- Woollomes Avenue / Southbound SR 99 Ramps
- Woollomes Avenue / Northbound SR 99 Off Ramp/High Street
- Woollomes Avenue / Lexington Street
- Pond Road / Northbound SR 99 Ramps
- Pond Road / Southbound SR 99 Ramps
- Pond Road / Stradley Avenue
- Pond Road / Garzoli Avenue
- Schuster Road / Stradley Avenue
- Schuster Road / Garzoli Avenue

The CP conditions road segment analyses indicate that the proposed project will create impacts at the following locations:

- Woollomes Avenue between Albany Street and Lexington Street (both directions)
- Albany Street north and south of Woollomes Avenue (both directions)
- Garzoli Avenue between Shuster Road and Woollomes Avenues (both directions)
- Pond Road between Garzoli Avenue and the SR 99 northbound ramps (both directions)

The mitigations described above for the OYP and NTP conditions are also considered for the CP conditions. The mitigations would result in a redistribution of the CP traffic volumes. Figures 35 and 36 present the revised traffic volumes at the study intersections utilized in the mitigated CP analyses.

EXECUTIVE SUMMARY (Continued)

The results of the mitigated analyses indicate that the following mitigations will be required based on the cumulative year 2030 analyses:

- Construct Woollomes Avenue with three through travel lanes in each direction and a median between Dover Parkway and the SR 99 southbound ramps. All traffic signals on Woollomes Avenue between Albany Street and Lexington Street shall be coordinated. Communication conduit and cable or equivalent shall be installed to allow coordination of traffic signals. The opening-day project-specific mitigations shall be constructed to accommodate these cumulative mitigations.
- Signalize the intersection of Woollomes Avenue and Albany Street. Provide two southbound left-turn lanes and protected left-turn phasing. Provide dedicated right-turn lanes. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Woollomes Avenue and Dover Parkway. Provide two left-turn lane and protected left-turn phasing on all four approaches. Provide three through lanes and one right-turn lane on each approach. The opening-day project-specific mitigations shall be constructed to accommodate these cumulative mitigations.
- Signalize the intersection of Woollomes Avenue and the main Site Access drive. It is assumed that the existing driveway on the north side of Woollomes cannot be modified. Therefore, split phasing will be required in the northbound-southbound directions. Provide protected left-turn phasing in the eastbound and westbound directions. Provide two northbound left-turn lanes, two westbound left-turn lanes, and two eastbound left-turn lanes. (The construction of two eastbound left-turn lanes is only required if modification of the existing driveway on the north side of Woollomes Avenue is feasible.) The westbound left-turn lanes should be approximately 350 feet in length. Provide three through lanes and one right-turn lane on the eastbound and westbound approaches. Coordinate the traffic signals with the SR 99 ramp intersections. The opening-day project-specific mitigations shall be constructed to accommodate these cumulative mitigations.
- Reconstruct the Woollomes Avenue / SR 99 interchange to provide additional capacity. Loop ramps should be considered. A Caltrans PSR will be required to determine the ultimate interchange configuration. The project shall contribute an equitable share of the cost of the reconstruction of the interchange. Any interim improvements constructed by the project that can be incorporated into the ultimate interchange configuration shall be credited against the equitable share contribution. The equitable share contribution shall be determined in the PSR.
- Signalize the intersection of Woollomes Avenue and Lexington Street. Provide protected left-turn phasing and a dedicated left-turn lane for the northbound left turn. Provide two eastbound left-turn lanes. The opening-day project-specific mitigations shall be constructed to accommodate these cumulative mitigations.
- Provide all-way stop sign control at the intersection of Schuster Road and Stradley Avenue. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.

- Provide all-way stop sign control at the intersection of Pond Road and Stradley Avenue. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Schuster Road and Garzoli Avenue. Provide protected left-turn phasing and a dedicated left-turn lane for the northbound left turn. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Pond Road and Garzoli Avenue. Provide protected left-turn phasing and dedicated left-turn lanes. Provide two southbound left-turn lanes. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Pond Road and the southbound SR 99 ramps. Provide protected left-turn phasing and dedicated left-turn lanes. Provide two eastbound left-turn lanes. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Pond Road and the northbound SR 99 ramps. Provide protected left-turn phasing and dedicated left-turn lanes. Provide two northbound left-turn lanes. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Widen the following road segments to at least two lanes in each direction while considering the required number of through lanes based on the intersection analyses:
    - Woollomes Avenue between Albany Street and Lexington Street
    - Albany Street north and south of Woollomes Avenue
    - Garzoli Avenue between Shuster Road and Woollomes Avenue
    - Pond Road between Garzoli Avenue and the SR 99 northbound ramps

Generally-accepted traffic engineering principles and methods were employed to estimate the amount of traffic expected to be generated by the proposed project and to analyze the traffic conditions expected to exist in the future (2030). The conclusion of this study is that the existing road network shall be mitigated with construction of the proposed project in accordance with the mitigation measures contained herein to accommodate the projected traffic volumes based on opening-day conditions and year 2030 conditions.

Project Conditions

Impact 1

The Woollomes Avenue / State Route 99 interchange is not projected to operate at acceptable levels of service with construction of the project. The operation of the High Street and Garzoli Avenue connections to Woollomes are closely related to the operation of the interchange and are therefore considered to be included in this impact.

Mitigation 1

The project shall be required to construct interim opening-day interchange improvements prior to opening of the project. The project shall prepare a Project Study Report (PSR) and Project Report (PR) to identify the specific opening day interchange configuration required. The PSR shall address the operation of the adjacent intersections on Woollomes Avenue at Garzoli Avenue, High Street, Lexington Street, and the proposed site access driveway. The PSR shall also consider the adjacent railroad. The PSR shall be subject to the review and approval of Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC). A conceptual interchange configuration for consideration in the PSR is presented in Figure 30.

Impact 2

Traffic signals are expected to be warranted at the intersection of Woollomes Avenue and Dover Parkway.

Mitigation 2

The project shall signalize the intersection of Woollomes Avenue and Dover Parkway. Provide a dedicated left-turn lane and protected left-turn phasing on all four approaches. Provide one through lane on each approach. The construction of curb, gutter, and median along the project frontage shall accommodate the ultimate year 2030 intersection configuration. The construction of the ultimate curb and gutter by the project and approved projects will provide enough pavement to stripe dedicated right-turn lanes on the westbound, eastbound, and northbound approaches.

Impact 3

Traffic signals are expected to be warranted at the intersection of Woollomes Avenue and the main Site Access Driveway.

Mitigation 3

The project shall signalize the intersection of Woollomes Avenue and the main Site Access Driveway. Split phasing will be required in the northbound-southbound directions. Provide protected left-turn phasing in the eastbound and westbound directions. Provide two northbound left-turn lanes and two westbound left-turn lanes. The westbound left-turn lanes should be approximately 300 feet in length. Provide two through lanes in the eastbound and westbound directions. Coordinate the traffic signals with the SR 99 ramp intersections. The construction of curb, gutter, and median along the project frontage shall accommodate the ultimate year 2030 intersection configuration.

Impact 4

Traffic signals are expected to be warranted at the intersection of Woollomes Avenue and Lexington Street.

Mitigation 4

The project shall signalize the intersection of Woollomes Avenue and Lexington Street. Provide a dedicated northbound left-turn lane with protected left-turn phasing. This mitigation shall be subject to review in the PSR required for the Woollomes Avenue / SR 99 interchange.

Impact 5

The project will create increased traffic volumes on Woollomes Avenue.

Mitigation 5

The project shall construct Woollomes Avenue with two through travel lanes in each direction and a median island in accordance with City of Delano standards between Dover Parkway and the SR 99 southbound ramps. Along the site frontage, construct the median and the curb and gutter on the south side of Woollomes in the ultimate location to accommodate the cumulative-with-project year 2030 lane requirements.

Impact 6

The project will contribute to a level of service D on the westbound approach at the intersection of Woollomes Avenue and Albany Street.

Mitigation 6

The project shall construct a separate westbound right-turn lane at the intersection of Woollomes Avenue and Albany Street.

Cumulative Conditions

Impact 7

The project will contribute traffic to intersections, road segments, and the Pond Road interchange that will require improvements by the year 2030.

Mitigation 7

The project shall pay the City of Delano traffic impact fee.

Impact 8

The project will contribute traffic to the Woollomes Avenue interchange, which will require reconstruction by the year 2030.

Mitigation 8

The project shall contribute an equitable share of the cost of reconstruction of the interchange. The equitable share shall be addressed in the PSR required in Mitigation 1. Any interim improvements constructed by the project that can be incorporated into the ultimate interchange configuration shall be credited against the equitable share contribution.

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1 - INTRODUCTION

This report presents the results of a traffic impact study performed for a new commercial development in Delano, California. The purpose of the traffic impact study is to evaluate the effects that project-generated vehicle traffic will have on the existing roadway network in the vicinity of the proposed project and to identify any impacts and associated mitigation measures necessary to maintain acceptable traffic conditions through the year 2030. A vicinity map of the project site is presented as Figure 1.

2 – PROPOSED PROJECT

The proposed project includes the construction of approximately 445,482 square feet of regional commercial uses on approximately 41 acres on the south side of Woollomes Avenue between Garzoli Avenue and the Dover Parkway alignment. The site is located near the State Route 99/Woollomes Avenue interchange. The proposed regional shopping center will include two major commercial uses, a discount superstore, a home improvement superstore; several restaurant pads for either fast foot or sit-down restaurants; retail pads, and a gas station with 14 fueling positions. Table 1 below summarizes the proposed uses for the project site. A site plan of the proposed project is presented as Figure 2.

Table 1
Proposed Land Use

Building Location	Proposed Use	Parcel Area (square feet)	Building Area (square feet)
Large Anchor Store 1 (Discount Super Store with drive-through pharmacy)	Retail	892,690	228,751
Large Anchor Store 2 (Home Improvement Superstore)	Retail	586,140	172,463
Major 1A and 1B	Food/Retail	56,664	14,410
Pad 1	Food	45,881	6,410
Pad 2	Food	23,945	2,500
Pad 3	Food	27,683	2,500
Pad 5	Retail	45,778	7,750
Pad 6	Food/Retail	51,198	7,374
Pad 7	Food	25,187	3,100
14-fueling position gas station	Retail	35,805	224
	Total	**1,790,971 (41.1 acres)**	**445,482**

It should be noted that the project site plan includes Pad 4; however, Pad 4 has already been processed and is approved with environmental clearance. Therefore, Pad 4 is not considered to be part of the proposed project but is considered in all analysis scenarios except the existing conditions analyses.

3 – STUDY AREA AND TIME PERIOD

This report includes analysis of the following road segments:

1. Woollomes Avenue – Albany to Dover
2. Woollomes Avenue – Dover to Site Access
3. Woollomes Avenue – Site Access to Garzoli
4. Woollomes Avenue – Garzoli Avenue to SR 99 Southbound Ramps
5. Woollomes Avenue – SR 99 Southbound Ramps to Northbound Ramps
6. Woollomes Avenue – SR 99 Northbound Ramps to Lexington Street
7. Albany Street – Woollomes to 1st Avenue
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9. Garzoli Avenue – Woollomes to Schuster
10. Garzoli Avenue – Schuster to Pond
11. Pond Road – Garzoli to State Route 99 Ramps
12. Pond Road - SR 99 Southbound Ramps to Northbound Ramps

This report also includes analysis of the following intersections:

1. Woollomes Avenue / Albany Street-Stradley Avenue
2. Woollomes Avenue / Dover Parkway
3. Woollomes Avenue / Site Access
4. Woollomes Avenue / Garzoli Avenue
5. Woollomes Avenue / Southbound State Route 99 Ramps
6. Woollomes Avenue / Northbound State Route 99 On Ramp
7. Woollomes Avenue / Northbound State Route 99 Off Ramp/High Street
8. Woollomes Avenue / Lexington Street
9. Pond Road / Northbound State Route 99 Ramps
10. Pond Road / Southbound State Route 99 Ramps
11. Pond Road / Stradley Avenue
12. Pond Road / Garzoli Avenue
13. Schuster Road / Stradley Avenue
14. Schuster Road / Garzoli Avenue

The study intersections and road segments are shown in Figure 3.

The study time periods include the weekday a.m. and p.m. peak hours, which occur between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. The study time periods also include the weekend (Saturday) peak hour for certain intersections near the project site. The peak-hour scenarios were analyzed for the following conditions:

- Existing (E)
- Existing Plus Opening Year Approved Projects (OY, Approximately Year 2007)
- Existing Plus Opening Year Approved Projects Plus Project (OYP, Approximately Year 2007)
- Near-Term With Approved Projects (NT, Approximately Year 2010)
- Near-Term With Approved Projects Plus Project (NTP, Approximately Year 2010)
- Cumulative With Project (CP, Year 2030)

It should be noted that cumulative-without-project conditions in the year 2030 are not analyzed because the project site is planned for commercial uses and the cumulative-without-project scenario is expected to be very similar to the cumulative-with-project scenario.

4 – TRAFFIC ANALYSES

4.1 – Project Trip Generation

Data provided in the Institute of Transportation Engineers (ITE) *Trip Generation, 7th Edition*, were used to estimate the number of trips anticipated to be generated by the project. Table 2 presents the trip generation information. The trip generation calculations are included in Appendix A following the figures at the end of the text of this report.

Table 2
Project Trip Generation

Land Use	ITE Code	Units	Peak Hour Traffic Volumes						Weekday Traffic Volumes
			AM		PM		Weekend		
			Enter	Exit	Enter	Exit	Enter	Exit	
Free-Standing Discount Superstore	813	228,751 sq. ft.	215	207	434	452	585	562	11,257
Home Improvement Superstore	862	172,463 sq. ft	112	96	199	224	494	438	5,140
Shopping Center	820	35,944 sq. ft.	23	15	65	71	93	86	1,544
Fast Food With Drive Through	934	8,100 sq. ft.	220	211	146	135	245	235	4,019
Gasoline/Service Station	944	14 fueling positions	85	85	98	98	98*	98*	2,360
		Totals	655	614	942	980	1,515	1,419	24,320

* Data not available for weekends – used p.m. peak hour values.
Reference: *Trip Generation, 7th Edition,* Institute of Transportation Engineers 2003

Data presented in the ITE *Trip Generation Handbook* dated June 2004 suggest that captured-trip reductions are applicable to the proposed project. Captured-trip reductions are calculated as described by ITE and the calculations are included in Appendix A. An internal capture rate of no more than five percent was assumed between individual uses. The Caltrans *Guide for the Preparation of Traffic Impact Studies* dated December 2002 requires justification of internal capture rates only if rates in excess of five percent are used. Table 3 presents the results of the captured-trip analyses.

Table 3
Captured-Trip Reductions

Time Period	Trips Entering Site	Trips Exiting Site
Weekday	-1,013	-1,013
Weekday AM Peak Hour	-67	-67
Weekday PM Peak Hour	-79	-79
Weekend Peak Hour	-124	-124

The project traffic volumes with captured-trip reductions applied are presented in Table 4. These values represent the project traffic that would be expected to occur at the site entrances and exits.

Table 4
Project Traffic With Captured-Trip Reductions

Time Period	Trips Entering Site	Trips Exiting Site
Weekday	11,147	11,147
Weekday AM Peak Hour	588	547
Weekday PM Peak Hour	863	901
Weekend Peak Hour	1,391	1,295

Pass-by reductions were not applied to the project traffic volumes since the existing traffic volumes are minimal on Woollomes Avenue.

The distribution of project traffic to the adjacent road network was performed by manual methods based on a review of the traffic volumes projected using the Kern County travel model. The anticipated project traffic volumes with captured-trip reductions at the study intersections are shown in Figures 4 and 5 for weekday and weekend conditions, respectively.

4.2 – Approved Projects

The traffic volumes expected to be generated by approved projects in the vicinity of the project site are included in the analyses. The City of Delano provided the approved projects and indicated the scenarios in which the approved projects are expected to be complete. Based on information provided by City of Delano staff, the following projects are expected to be completed in the near future and are included in the Year 2007 Existing Plus Opening Year Approved Projects analyses:

- Vineyard Plaza Phase I Shopping Center – northeast of the intersection of Woollomes Avenue and Dover Parkway
- Tract 6326 – north of project site
- Tract 6327 - north of project site
- Pad 4 of the Delano Marketplace – southwest of the intersection of Woollomes and Garzoli Avenues

City of Delano staff indicated that the following approved projects are not expected to be complete by opening day of the project:

- Tract 6470 – northwest of the project site, east side of Albany Street
- Industrial Park – immediately south of the project site
- Belmont Meadows Apartments – northwest of the project site.

These projects are included in the Near-Term With Approved Projects analyses that are based on projected conditions in approximately the year 2010. The locations of the approved projects are presented in Figure 6.

Table 5 presents the trip generation characteristics of the approved projects affecting the study intersections and road segments and included in the analyses as provided by the City of Delano.

Table 5
Approved Projects

Project	ITE Code	Units	Peak Hour Traffic Volumes						Weekday Traffic Volumes
			AM		PM		Weekend		
			Enter	Exit	Enter	Exit	Enter	Exit	
Delano Vineyard Plaza Phase I (Pacific Advisors) Shopping Center	820	58,342 sf	37	24	106	114	151	140	2,506
Ennis Homes (Tract 6326)	210	137 homes	26	78	88	52	70	60	1,312
Ennis Homes (Tract 6327)	210	128 homes	25	73	82	48	65	56	1,226
Marketplace 1 Pad 4	934	3,176 sf	87	83	58	53	96	93	1,576
Marketplace 1 Pad 4	814	4,005 sf	7	9	14	18	14	18	210
Marketplace 1 Pad 4	932	3,176 sf	20	18	22	14	34	31	404
Kern County Housing Authority/Self-Help Enterprises	210	84 homes	16	47	54	31	43	36	804
Opening Year Subtotals			**218**	**332**	**424**	**330**	**473**	**434**	**8,038**
Pacific Holt Corporation (Tract 6470)	210	165 homes	31	93	105	62	84	72	1,580
Commercial-Industrial Parcels (Millennium III, LLC) (Industrial Park)	110	17.65 ac	111	23	29	100	15	3	916
Belmont Meadows Apartments	221	70 units	7	26	27	15	9	33	462
Totals			**367**	**474**	**585**	**507**	**581**	**542**	**10,996**

sf – square feet ac - acres

The Opening Year Approved Projects traffic volumes are presented in Figures 7 and 8 for weekday and weekend conditions, respectively. The Approved Projects traffic volumes are presented in Figures 9 and 10 for weekday and weekend conditions, respectively, and also include the Opening Year Approved Projects.

4.3 – Lane Configurations

The existing lane configurations at each of the study intersections are shown in Figure 11.

The construction of the opening year approved projects is expected to result in the construction of Dover Parkway north of Woollomes Avenue. The lane configurations anticipated for the Existing Plus Opening Year Approved Projects scenario and the Near-Term With Approved Projects scenario are shown in Figure 12.

Based on information provided to Peters Engineering Group, the proposed main project site access intersection on Woollomes will align with the existing Home Depot site access. According to the site plan provided to Peters Engineering Group there is an additional site access to the east of the main site access that will only allow right turns in and out of the project site. Woollomes Avenue is

designated as an arterial street in the vicinity of the project site. The City of Delano General Plan allows for full median openings on arterial streets at no less than 1,000-foot spacing. With access expected at the State Route 99 southbound ramps and at Dover Parkway, no full median openings are allowable along the frontage of the project site since the spacing is less than 1,000 feet. The analyses performed herein will analyze the proposed full median opening to determine whether the proposal impacts the adjacent intersections.

The project will construct portions of Dover Parkway south of Woollomes Avenue along the frontage of the project site. The lane configurations anticipated for the Existing Plus Opening Year Approved Projects Plus Project scenario, the Near-Term With Approved Projects Plus Project scenario, and the Cumulative With Project scenario are shown in Figure 13.

4.4 – Existing Traffic Volumes

Existing traffic volumes were determined by the independent traffic counting firm of Southland Car Counters. Southland performed manual turning movement counts at the study intersections between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m. on weekdays. Weekend traffic counts were performed on a Saturday between 12:00 and 3:00 p.m. based on weekend peak-hour time periods for the proposed project land uses identified in the Institute of Transportation Engineers (ITE) *Trip Generation, 7th Edition.* The results provided by Southland, including the date of the counts, are presented in Appendix B. Existing peak-hour turning movement volumes at the study intersections are presented in Figures 14 and 15 for weekday and weekend conditions, respectively.

4.5 – Opening Year Traffic Volumes

Existing Plus Opening Year Approved Projects traffic volumes were determined by adding the existing traffic volumes and the opening year approved projects traffic volumes. These traffic volumes are projected in approximately the year 2007. The peak hour Existing Plus Opening Year Approved Projects traffic volumes are presented in Figures 16 and 17 for weekday and weekend conditions, respectively. The peak hour Existing Plus Opening Year Approved Projects Plus Project traffic volumes are presented in Figures 18 and 19 for weekday and weekend conditions, respectively.

4.6 – Near-Term Traffic Volumes

Near-Term With Approved Projects traffic volumes were determined by increasing the existing traffic volumes at a rate of three percent per year through the year 2010, and adding the approved projects traffic volumes. The peak hour Near-Term With Approved Projects traffic volumes are presented in Figures 20 and 21 for weekday and weekend conditions, respectively. The peak hour Near-Term With Approved Projects Plus Project traffic volumes are presented in Figures 22 and 23 for weekday and weekend conditions, respectively.

4.7 – Cumulative Year 2030 Traffic Volume Forecasts

The Kern Council of Governments (Kern COG) maintains a computerized traffic model for use in forecasting future traffic volumes based on build-out of land uses contained within the approved General Plan. The year 2030 traffic model was revised to include the proposed land use amendments associated with the City's General Plan Update and other changes that have recently occurred. In order to update the 2030 model for purposes of the City of Delano General Plan Update, LSA Associates provided modifications to the travel model's socioeconomic data. The socioeconomic data was then provided to Kern COG staff and used to perform updated specific

model runs which were used in the traffic analysis. The model output illustrating the daily traffic volumes for the year 2030 is included in Appendix C.

The use of travel models is intended to accommodate all future projects conforming to the General Plan. Future projects that were not specifically included in the model runs were added to the resulting 2030 traffic volumes. The traffic expected to be generated by the projects included in Table 6 was added to the modeling results. The projects described in Table 5 were also added to the modeling results and included in the cumulative analyses.

Table 6
Future Projects

Land Use	ITE Code	Units	Peak Hour Traffic Volumes						Weekday Traffic Volumes
			AM		PM		Weekend		
			Enter	Exit	Enter	Exit	Enter	Exit	
Delano Vineyard Plaza Phase II (Pacific Advisors) (Shopping Center)	820	599,000 sq. ft.	377	241	1,079	1,169	1,549	1,429	25,722
Delano Marketplace II (Shopping Center)	820	549,000 sq. ft.	342	219	980	1,061	1,406	1,298	23,360
Delano Marketplace III (Shopping Center)	820	541,658 sq. ft.	341	218	955	1,057	1,400	1,293	23,260
Delano Marketplace II (Low-Rise Apartment)	221	112 Units	13	48	49	27	14	52	962
Delano Marketplace II (Single Family Detached Housing)	210	141 Homes	27	79	90	53	72	61	1,350
Delano Marketplace III (Single Family Detached Housing)	210	195 Homes	37	110	124	73	99	85	1,868
Reynen & Bardis/Villas at Vintage Park (Annexation)Single Family Detached Housing	210	1671 Homes	314	940	1,064	625	849	723	15,992
Centex Homes/Workman Bros:Single Family Detached Housing	210	399 Homes	75	225	254	149	203	173	3,820
		Totals	**1,526**	**2,080**	**4,535**	**4,214**	**5,592**	**5,114**	**96,334**

The future projects traffic volumes are presented in Figures 24 and 25 for weekday and weekend conditions, respectively.

Year 2030 traffic volumes resulting from the sum of the modeling results and the values in Table 6 were compared to the existing traffic volumes to verify that a minimum annual growth rate of three percent resulted from the traffic projections. Projected 2030 traffic volumes without the project (assuming a vacant project site) at the study intersections are presented in Figures 26 and 27 for weekday and weekend conditions, respectively. Projected 2030 traffic volumes with the project at the study intersections are presented in Figures 28 and 29 for weekday and weekend conditions, respectively.

4.8 - Level of Service

The intersection levels of service (LOS) were determined using the computer program Synchro Version 6 for signalized and unsignalized intersections, which is based on the 2000 Highway Capacity Manual procedures for calculating levels of service. Synchro output for unsignalized intersections is typically very similar to the output that would result from using HCS2000 or HCS+ Highway Capacity Software. Level of service characteristics for unsignalized intersections and signalized intersections are presented in Tables 7 and 8 below and are based on information provided in the *2000 Highway Capacity Manual*.

Table 7
Level of Service Characteristics for Unsignalized Intersections

Level of Service	Description	Average Control Delay (seconds/vehicle)
A	Little or no delay	0-10
B	Short traffic delays	>10-15
C	Medium traffic delays	>15-25
D	Long traffic delays	>25-35
E	Very long traffic delays	>35-50
F	Excessive traffic delays	>50

Reference: *Highway Capacity Manual,* Transportation Research Board

Table 8
Level of Service Characteristics for Signalized Intersections

Level of Service	Description	Control Delay per Vehicle (seconds/vehicle)
A	Uncongested operations; all queues clear in a single cycle.	≤10
B	Very light congestion; an occasional phase is fully utilized.	>10-20
C	Light congestion; occasional queues on approaches.	>20-35
D	Significant congestion on critical approaches, but intersection is functional. Vehicles required to wait through more than one cycle during short peaks. No long-standing queues formed.	>35-55
E	Severe congestion with some long-standing queues on critical approaches. Traffic queue may block nearby intersection(s) upstream of critical approach(es).	>55-80
F	Total breakdown, significant queuing.	>80

Reference: *Highway Capacity Manual,* Transportation Research Board

Road segment analyses were based on the Florida Department of Transportation Table 4-7, Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas (Non-State Roadways, Major City/County Roadways). The table is presented in Appendix D. Level-of-service characteristics for road segments are presented in Table 9.

Table 9
Level of Service Characteristics for Roadways

Level of Service	Description
A	Primarily free flow operations
B	Reasonably unimpeded operations, ability to maneuver only slightly restricted
C	Stable operations, ability to maneuver and select operating speed affected
D	Unstable flow, speeds and ability to maneuver restricted
E	Significant delays, flow quite unstable
F	Extremely slow speeds

Reference: 1998 *Highway Capacity Manual,* Transportation Research Board

Roadway Classification, Standards Policy 11 of the City of Delano General Plan, Section 3.5, Circulation Policies, states, "New arterial and collector streets shall be designed to operate at Level of Service "C" level or better for a period of at least 20 years following their construction, wherever feasible. Freeway interchanges and high volume intersections where it is not feasible to achieve and maintain LOS "C" shall be designed to achieve and maintain LOS "D" for a period of at least 20 years following their construction." It should be noted that Caltrans typically requires a level of service C or better on all State facilities.

4.9 – Intersection Analyses

The results of the intersection analyses are presented in Tables 10 through 15. Levels of service that are considered unacceptable are shown in bold type. Where the intersections are controlled by one-way or two-way stop signs with the major street not required to stop, the level of service for the approach with the greatest delay is presented. The overall intersection level of service is not defined by the *Highway Capacity Manual* for this condition. The intersection analyses are presented in Appendices E through J.

Where unacceptable levels of service resulted, additional mitigated analyses and review of traffic signals warrants were performed and the mitigated LOS results presented in parentheses in the same table. The mitigated intersection level of service analyses are presented in Appendix K. The State of California Department of Transportation *California Manual on Uniform Traffic Control Devices for Streets and Highways* dated September 26, 2006 (CMUTCD) presents various warrant analyses to assist in evaluating the need for traffic signals at an intersection. Figure 4C-4, Warrant 3, Peak Hour (70% Factor) as presented in the CMUTCD was utilized to evaluate the possibility that traffic signals may be warranted at the impacted study intersections. The results of the peak-hour warrant analyses are summarized in Table 16. The peak-hour warrant plots are presented in Appendix L.

Table 10
Existing Conditions – Peak Hour Intersection Level of Service

Intersection	Existing Traffic Control	Level of Service		
		AM	PM	Weekend
Woollomes Avenue/Albany Street	OWSC (WB)	A	A	A
Woollomes Avenue/Dover Parkway	Does not exist	-	-	-
Woollomes Avenue/Site Access	OWSC (SB)	B	A	A
Woollomes Avenue/Garzoli Avenue	OWSC (NB)	A	B	B
Woollomes Avenue/SR 99 SB Ramps	OWSC (SB)	B	C	C
Woollomes Avenue/SR 99 NB On-Ramp	No control	A	A	A
Woollomes Avenue/SR 99 NB Off-Ramp-High Street	TWSC (NB, SB)	B	C	B
Woollomes Avenue/Lexington St.	AWSC	A	A	A
Pond Road/SR 99 NB Ramps	OWSC (SB)	A	A	-
Pond Road/SR 99 SB Ramps	OWSC (NB)	A	A	-
Pond Road/Stradley Avenue	TWSC (NB, SB)	B	B	-
Pond Road/Garzoli Avenue	TWSC (NB, SB)	B	B	-
Schuster Road/Stradley Avenue	TWSC (NB, SB)	A	A	-
Schuster Road/Garzoli Avenue	OWSC (EB)	A	A	-

Notes: OWSC=One-Way Stop Control (Direction of stop-controlled approach)
TWSC=Two-Way Stop Control (Direction of stop-controlled approaches)
AWSC=All-Way Stop Control
NB=Northbound SB=Southbound EB=Eastbound WB=Westbound

Table 11
Existing Plus Opening Year Approved Projects
Peak Hour Intersection Level of Service

Intersection	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	A	A	B
Woollomes Avenue/Dover Parkway	B	B	B
Woollomes Avenue/Site Access	B	B	B
Woollomes Avenue/Garzoli Avenue	B	B	B
Woollomes Avenue/SR 99 SB Ramps	B	C	C
Woollomes Avenue/SR 99 NB On-Ramp	A	A	A
Woollomes Avenue/SR 99 NB Off-Ramp-High Street	B	D	C
Woollomes Avenue/Lexington St.	A	A	A
Pond Road/SR 99 NB Ramps	A	B	-
Pond Road/SR 99 SB Ramps	A	A	-
Pond Road/Stradley Avenue	B	B	-
Pond Road/Garzoli Avenue	B	B	-
Schuster Road/Stradley Avenue	A	A	-
Schuster Road/Garzoli Avenue	A	A	-

NB=Northbound SB=Southbound

Table 12
Existing Plus Opening Year Approved Projects Plus Project
Peak Hour Intersection Level of Service

Intersection	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	B	B	C
Woollomes Avenue/Dover Parkway	C (B)	F (C)	F (C)
Woollomes Avenue/Site Access	F (C)	F (C)	F (C)
Woollomes Avenue/Garzoli Avenue	C (A)	F (B)	F (B)
Woollomes Avenue/SR 99 SB Ramps	C (A)	F (B)	F (B)
Woollomes Avenue/SR 99 NB On-Ramp	A (B)	A (C)	B (C)
Woollomes Avenue/SR 99 NB Off-Ramp-High Street	F (B)	F (C)	F (C)
Woollomes Avenue/Lexington St.	B (A)	C (B)	C (B)
Pond Road/SR 99 NB Ramps	B	B	-
Pond Road/SR 99 SB Ramps	B	A	-
Pond Road/Stradley Avenue	B	B	-
Pond Road/Garzoli Avenue	B	B	-
Schuster Road/Stradley Avenue	A	B	-
Schuster Road/Garzoli Avenue	B	B	-

NB=Northbound SB=Southbound
Mitigated LOS shown in parentheses. See Discussion for associated improvements.

Table 13
Near-Term With Approved Projects
Peak Hour Intersection Level of Service

Intersection	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	A	B	B
Woollomes Avenue/Dover Parkway	B	B	B
Woollomes Avenue/Site Access	B	B	B
Woollomes Avenue/Garzoli Avenue	B	C	B
Woollomes Avenue/SR 99 SB Ramps	B	D	D
Woollomes Avenue/SR 99 NB On-Ramp	A	A	A
Woollomes Avenue/SR 99 NB Off-Ramp-High Street	B	F	D
Woollomes Avenue/Lexington St.	A	B	A
Pond Road/SR 99 NB Ramps	B	B	-
Pond Road/SR 99 SB Ramps	B	A	-
Pond Road/Stradley Avenue	B	B	-
Pond Road/Garzoli Avenue	B	B	-
Schuster Road/Stradley Avenue	A	A	-
Schuster Road/Garzoli Avenue	A	A	-

NB=Northbound SB=Southbound

Table 14
Near-Term With Approved Projects Plus Project
Peak Hour Intersection Level of Service

Intersection	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	B (B)	B (B)	D (C)
Woollomes Avenue/Dover Parkway	D (B)	F (C)	F (C)
Woollomes Avenue/Site Access	F (B)	F (B)	F (C)
Woollomes Avenue/Garzoli Avenue	D (A)	F (B)	F (B)
Woollomes Avenue/SR 99 SB Ramps	D (A)	F (B)	F (B)
Woollomes Avenue/SR 99 NB On-Ramp	A (B)	A (C)	C (D)
Woollomes Avenue/SR 99 NB Off-Ramp-High Street	F (B)	F (C)	F (D)
Woollomes Avenue/Lexington St.	B (A)	C (B)	D (B)
Pond Road/SR 99 NB Ramps	B	B	-
Pond Road/SR 99 SB Ramps	B	B	-
Pond Road/Stradley Avenue	B	B	-
Pond Road/Garzoli Avenue	B	C	-
Schuster Road/Stradley Avenue	A	B	-
Schuster Road/Garzoli Avenue	B	B	-

NB=Northbound SB=Southbound
Mitigated LOS shown in parentheses. See Discussion for associated improvements.

Table 15
Cumulative Year 2030 With Project
Peak Hour Intersection Level of Service

Intersection	Level of Service		
	AM	PM	Weekend
Woollomes Avenue/Albany Street	F (B)	F (C)	F (C)
Woollomes Avenue/Dover Parkway	F (B)	F (D)	F (D)
Woollomes Avenue/Site Access	F (B)	F (D)	F (D)
Woollomes Avenue/Garzoli Avenue	F (A)	F (C)	F (C)
Woollomes Avenue/SR 99 SB Ramps	F (A)	F (C)	F (C)
Woollomes Avenue/SR 99 NB On-Ramp	C (B)	F (C)	F (D)
Woollomes Avenue/SR 99 NB Off-Ramp-High Street	F (B)	F (C)	F (D)
Woollomes Avenue/Lexington St.	C (B)	F (B)	F (B)
Pond Road/SR 99 NB Ramps	F (B)	F (C)	-
Pond Road/SR 99 SB Ramps	F (B)	F (C)	-
Pond Road/Stradley Avenue	D (B)	F (C)	-
Pond Road/Garzoli Avenue	F (C)	F (C)	-
Schuster Road/Stradley Avenue	F (B)	F (C)	-
Schuster Road/Garzoli Avenue	E (B)	F (B)	-

NB=Northbound SB=Southbound
Mitigated LOS shown in parentheses. See Discussion for associated improvements.

Table 16
Results of Peak Hour Traffic Signal Warrant Analyses

Intersection	Scenario				
	OY	OYP	NT	NTP	CP
Woollomes Avenue/Albany Street					W
Woollomes Avenue/Dover Parkway		W		W	W
Woollomes Avenue/Site Access		W		W	W
Woollomes Avenue/Garzoli Avenue		W		W	W
Woollomes Avenue/SR 99 SB Ramps		W	1/1	W	W
Woollomes Avenue/SR 99 NB On-Ramp					
Woollomes Avenue/SR 99 NB Off-Ramp-High	1/1	W	1/1	W	W
Woollomes Avenue/Lexington St.				W	W
Pond Road/SR 99 NB Ramps					W
Pond Road/SR 99 SB Ramps					W
Pond Road/Stradley Avenue					W
Pond Road/Garzoli Avenue					W
Schuster Road/Stradley Avenue					W
Schuster Road/Garzoli Avenue					W

1/1=Traffic signals warranted for one lane on each approach only
W=Traffic signals warranted for all intersection configurations

The results of the intersection level of service analyses are discussed in the Discussion section of this report.

4.10 – Road Segment Analyses

Table 17 presents the specific volume thresholds from Florida Department of Transportation Table 4-7, Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas (Non-State Roadways, Major City/County Roadways) used in the analyses. Tables 18 through 23 present the results of the road segment analyses.

Table 17
Volume Thresholds for Roadway Levels of Service

Lanes	Divided	A	B	C	D	E	F
1	Undivided	-	-	≤480	481 - 760	761 - 810	>810
1	Divided	-	-	≤504	505 - 798	799 - 850	>851
2	Divided	-	-	≤1,120	1,121 - 1,620	1 621 - 1,720	>1,720
3	Divided	-	-	≤1,740	1,741 - 2,450	2,451 - 2,580	>2,580

Reference: Florida Department of Transportation Table 4-7, Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas

Table 18
Existing Conditions – Peak Hour Road Segment Level of Service

Road and Direction Segment	Lanes & Median	AM Vol	AM LOS	PM Vol	PM LOS	Weekend Vol	Weekend LOS
Woollomes Avenue EB							
Albany to Dover	1U	122	C	89	C	65	C
Dover to Site Access	1U	122	C	89	C	65	C
Site Access to Garzoli	1U	117	C	163	C	151	C
Garzoli to SB SR 99 Ramps	1U	164	C	274	C	193	C
SB SR 99 Ramps to NB SR 99 Ramps	1U	130	C	239	C	225	C
NB SR 99 Ramps to Lexington	1U	218	C	285	C	201	C
Woollomes Avenue WB							
Lexington to NB SR 99 Ramps	1U	155	C	230	C	148	C
NB SR 99 Ramps to SB SR 99 Ramps	1U	257	C	382	C	308	C
SB SR 99 Ramps to Garzoli	1U	172	C	226	C	155	C
Garzoli to Site Access	1U	118	C	134	C	136	C
Site Access to Dover	1U	110	C	110	C	72	C
Dover to Albany	1U	110	C	110	C	72	C
Albany Street/Stradley Avenue NB							
Schuster to Woollomes	1U	52	C	60	C	87	C
Woollomes to 1st	1U	88	C	116	C	107	C
Albany Street/Stradley Avenue SB							
1st to Woollomes	1U	83	C	70	C	95	C
Woollomes to Schuster	1U	49	C	46	C	82	C
Garzoli Avenue NB							
Pond to Schuster	1U	61	C	70	C	-	-
Schuster to Woollomes	1U	85	C	124	C	71	C
Garzoli Avenue SB							
Woollomes to Schuster	1U	63	C	105	C	63	C
Schuster to Pond	1U	34	C	74	C	-	-
Pond Road EB							
Garzoli to SB SR 99 Ramps	1U	82	C	113	C	-	-
SB SR 99 Ramps to NB SR 99 Ramps	1U	81	C	63	C	-	-
Pond Road WB							
NB SR 99 Ramps to SB SR 99 Ramps	1U	79	C	102	C	-	-
SB SR 99 Ramps to Garzoli	1U	93	C	96	C	-	-

Vol. – Volume U – Undivided road
EB – Eastbound WB – Westbound NB – Northbound SB - Southbound

Table 19
Existing Plus Opening Year Approved Projects
Peak Hour Road Segment Level of Service

Road and Direction	Lanes &	AM		PM		Weekend	
Segment	Median	Vol	LOS	Vol	LOS	Vol	LOS
Woollomes Avenue EB							
Albany to Dover	1U	146	C	127	C	104	C
Dover to Site Access	1U	179	C	180	C	168	C
Site Access to Garzoli	1U	190	C	266	C	264	C
Garzoli to SB SR 99 Ramps	1U	231	C	381	C	311	C
SB SR 99 Ramps to NB SR 99 Ramps	1U	177	C	316	C	310	C
NB SR 99 Ramps to Lexington	1U	242	C	323	C	243	C
Woollomes Avenue WB							
Lexington to NB SR 99 Ramps	1U	180	C	267	C	187	C
NB SR 99 Ramps to SB SR 99 Ramps	1U	310	C	459	C	392	C
SB SR 99 Ramps to Garzoli	1U	250	C	331	C	274	C
Garzoli to Site Access	1U	182	C	239	C	244	C
Site Access to Dover	1U	151	C	176	C	135	C
Dover to Albany	1U	135	C	145	C	112	C
Albany Street/Stradley Avenue NB							
Schuster to Woollomes	1U	60	C	79	C	99	C
Woollomes to 1st	1U	106	C	149	C	138	C
Albany Street/Stradley Avenue SB							
1st to Woollomes	1U	106	C	99	C	129	C
Woollomes to Schuster	1U	61	C	56	C	96	C
Garzoli Avenue NB							
Pond to Schuster	1U	72	C	83	C	-	-
Schuster to Woollomes	1U	118	C	156	C	107	C
Garzoli Avenue SB							
Woollomes to Schuster	1U	100	C	133	C	105	C
Schuster to Pond	1U	44	C	88	C	-	-
Pond Road EB							
Garzoli to SB SR 99 Ramps	1U	86	C	116	C	-	-
SB SR 99 Ramps to NB SR 99 Ramps	1U	83	C	64	C	-	-
Pond Road WB							
NB SR 99 Ramps to SB SR 99 Ramps	1U	83	C	105	C	-	-
SB SR 99 Ramps to Garzoli	1U	97	C	99	C	-	-

Vol. – Volume U – Undivided road
EB – Eastbound WB – Westbound NB – Northbound SB - Southbound

Table 20
Existing Plus Opening Year Approved Projects Plus Project
Peak Hour Road Segment Level of Service*

Road and Direction Segment	Lanes & Median	AM Vol	AM LOS	PM Vol	PM LOS	Weekend Vol	Weekend LOS
Woollomes Avenue EB							
Albany to Dover	1U	250	C	279	C	358	C
Dover to Site Access	1U	297	C	374	C	471	C
Site Access to Garzoli	1U	446	C (C)	703	**D** (C)	920	**F** (C)
Garzoli to SB SR 99 Ramps	1U	538	**D** (C)	878	**F** (C)	1,059	**F** (C)
SB SR 99 Ramps to NB SR 99 Ramps	1U	402	C (C)	681	**D** (C)	859	**F** (C)
NB SR 99 Ramps to Lexington	1U	346	C (C)	492	**D** (C)	497	**D** (C)
Woollomes Avenue WB							
Lexington to NB SR 99 Ramps	1U	291	C	429	C	458	C
NB SR 99 Ramps to SB SR 99 Ramps	1U	556	**D** (C)	817	**F** (C)	992	**F** (C)
SB SR 99 Ramps to Garzoli	1U	573	**D** (C)	809	**E** (C)	1,070	**F** (C)
Garzoli to Site Access	1U	487	**D** (C)	679	**D** (C)	978	**F** (C)
Site Access to Dover	1U	372	C (C)	515	**D** (C)	670	**D** (C)
Dover to Albany	1U	240	C	311	C	368	C
Albany Street/Stradley Avenue NB							
Schuster to Woollomes	1U	76	C	102	C	139	C
Woollomes to 1st	1U	188	C	282	C	338	C
Albany Street/Stradley Avenue SB							
1st to Woollomes	1U	194	C	227	C	343	C
Woollomes to Schuster	1U	76	C	80	C	132	C
Garzoli Avenue NB							
Pond to Schuster	1U	125	C	160	C	-	-
Schuster to Woollomes	1U	162	C	243	C	244	C
Garzoli Avenue SB							
Woollomes to Schuster	1U	128	C	198	C	211	C
Schuster to Pond	1U	94	C	171	C	-	-
Pond Road EB							
Garzoli to SB SR 99 Ramps	1U	113	C	161	C	-	-
SB SR 99 Ramps to NB SR 99 Ramps	1U	93	C	82	C	-	-
Pond Road WB							
NB SR 99 Ramps to SB SR 99 Ramps	1U	112	C	147	C	-	-
SB SR 99 Ramps to Garzoli	1U	126	C	141	C	-	-

Vol. – Volume U – Undivided road
EB – Eastbound WB – Westbound NB – Northbound SB – Southbound
* Traffic operations in urban areas with closely spaced intersections are governed by the operation of the intersections rather than the road segments. See intersection analyses for mitigation of Woollomes Avenue.

Note: Mitigated levels of service are based on two lanes in each direction with a median. However, the conclusions of the PSR shall govern.

Table 21
Near-Term With Approved Projects
Peak Hour Road Segment Level of Service

Road and Direction	Lanes &	AM		PM		Weekend	
Segment	Median	Vol	LOS	Vol	LOS	Vol	LOS
Woollomes Avenue EB							
Albany to Dover	1U	181	C	143	C	128	C
Dover to Site Access	1U	221	C	195	C	201	C
Site Access to Garzoli	1U	212	C	281	C	311	C
Garzoli to SB SR 99 Ramps	1U	277	C	424	C	362	C
SB SR 99 Ramps to NB SR 99 Ramps	1U	286	C	333	C	356	C
NB SR 99 Ramps to Lexington	1U	280	C	332	C	279	C
Woollomes Avenue WB							
Lexington to NB SR 99 Ramps	1U	205	C	258	C	211	C
NB SR 99 Ramps to SB SR 99 Ramps	1U	363	C	490	D	445	C
SB SR 99 Ramps to Garzoli	1U	352	C	434	C	306	C
Garzoli to Site Access	1U	209	C	269	C	274	C
Site Access to Dover	1U	177	C	201	C	154	C
Dover to Albany	1U	158	C	165	C	128	C
Albany Street/Stradley Avenue NB							
Schuster to Woollomes	1U	70	C	84	C	100	C
Woollomes to 1st	1U	127	C	174	C	146	C
Albany Street/Stradley Avenue SB							
1st to Woollomes	1U	138	C	113	C	153	C
Woollomes to Schuster	1U	74	C	59	C	101	C
Garzoli Avenue NB							
Pond to Schuster	1U	83	C	87	C	-	-
Schuster to Woollomes	1U	133	C	190	C	119	C
Garzoli Avenue SB							
Woollomes to Schuster	1U	113	C	144	C	118	C
Schuster to Pond	1U	53	C	104	C	-	-
Pond Road EB							
Garzoli to SB SR 99 Ramps	1U	99	C	124	C	-	-
SB SR 99 Ramps to NB SR 99 Ramps	1U	95	C	66	C	-	-
Pond Road WB							
NB SR 99 Ramps to SB SR 99 Ramps	1U	99	C	106	C	-	-
SB SR 99 Ramps to Garzoli	1U	112	C	100	C	-	-

Vol. – Volume U – Undivided road
EB – Eastbound WB – Westbound NB – Northbound SB - Southbound

Table 22
Near-Term With Approved Projects Plus Project
Peak Hour Road Segment Level of Service*

Road and Direction Segment	Lanes & Median	AM		PM		Weekend	
		Vol	LOS	Vol	LOS	Vol	LOS
Woollomes Avenue EB							
Albany to Dover	1U	285	C	295	C	382	C
Dover to Site Access	1U	339	C (C)	389	C (C)	504	**D** (C)
Site Access to Garzoli	1U	488	**D** (C)	718	**D** (C)	967	**D** (C)
Garzoli to SB SR 99 Ramps	1U	584	**D** (C)	921	**F** (C)	1,110	**D** (C)
SB SR 99 Ramps to NB SR 99 Ramps	1U	433	C (C)	702	**D** (C)	905	**F** (C)
NB SR 99 Ramps to Lexington	1U	385	C (C)	501	**D** (C)	533	**D** (C)
Woollomes Avenue WB							
Lexington to NB SR 99 Ramps	1U	317	C (C)	420	C (C)	483	**D** (C)
NB SR 99 Ramps to SB SR 99 Ramps	1U	601	**D** (C)	831	**F** (C)	1,045	**D** (C)
SB SR 99 Ramps to Garzoli	1U	607	**D** (C)	839	**F** (C)	1,101	**D** (C)
Garzoli to Site Access	1U	514	**D** (C)	704	**D** (C)	1,007	**D** (C)
Site Access to Dover	1U	398	C (C)	540	**D** (C)	689	**D** (C)
Dover to Albany	1U	263	C	331	C	385	C
Albany Street/Stradley Avenue NB							
Schuster to Woollomes	1U	86	C	107	C	117	C
Woollomes to 1st	1U	209	C	307	C	228	C
Albany Street/Stradley Avenue SB							
1st to Woollomes	1U	226	C	241	C	241	C
Woollomes to Schuster	1U	89	C	83	C	116	C
Garzoli Avenue NB							
Pond to Schuster	1U	136	C	170	C	-	-
Schuster to Woollomes	1U	177	C	277	C	256	C
Garzoli Avenue SB							
Woollomes to Schuster	1U	141	C	209	C	224	C
Schuster to Pond	1U	102	C	193	C	-	-
Pond Road EB							
Garzoli to SB SR 99 Ramps	1U	126	C	172	C	-	-
SB SR 99 Ramps to NB SR 99 Ramps	1U	106	C	85	C	-	-
Pond Road WB							
NB SR 99 Ramps to SB SR 99 Ramps	1U	125	C	151	C	-	-
SB SR 99 Ramps to Garzoli	1U	141	C	145	C	-	-

Vol. – Volume U – Undivided road
EB – Eastbound WB – Westbound NB – Northbound SB – Southbound
* Traffic operations in urban areas with closely spaced intersections are governed by the operation of the intersections rather than the road segments. See intersection analyses for mitigation of Woollomes Avenue.

Note: Mitigated levels of service are based on two lanes in each direction with a median. However, the conclusions of the PSR shall govern.

Table 23
Cumulative Year 2030 With Project
Peak Hour Road Segment Level of Service*

Road and Direction	Lanes &	AM		PM		Weekend	
Segment	Median	Vol	LOS	Vol	LOS	Vol	LOS
Woollomes Avenue EB							
Albany to Dover	1U	655	D(C)	1,496	F(C)	1,597	F(C)
Dover to Site Access	1U	812	F(C)	2,094	F(D)	2,186	F(D)
Site Access to Garzoli	1U	962	F(C)	2,336	F(D)	2,698	F(F)
Garzoli to SB SR 99 Ramps	1U	1,190	F(C)	2,494	F(E)	2,735	F(F)
SB SR 99 Ramps to NB SR 99 Ramps	1U	960	F(C)	1,956	F(D)	2,079	F(D)
NB SR 99 Ramps to Lexington	1U	510	D(C)	1,013	F(C)	1,016	F(C)
Woollomes Avenue WB							
Lexington to NB SR 99 Ramps	1U	513	D(C)	884	F(C)	959	F(C)
NB SR 99 Ramps to SB SR 99 Ramps	1U	1,102	F(C)	1,985	F(D)	2,196	F(D)
SB SR 99 Ramps to Garzoli	1U	1,244	F(C)	2,539	F(E)	2,857	F(F)
Garzoli to Site Access	1U	1,128	F(C)	2,409	F(D)	2,721	F(F)
Site Access to Dover	1U	1,001	F(C)	2,254	F(D)	2,340	F(D)
Dover to Albany	1U	718	D(C)	1,570	F(C)	1,603	F(C)
Albany Street/Stradley Avenue NB							
Schuster to Woollomes	1U	424	C(C)	523	D(C)	626	D(C)
Woollomes to 1st	1U	598	D(C)	973	F(C)	1,029	F(C)
Albany Street/Stradley Avenue SB							
1st to Woollomes	1U	625	D(C)	960	F(C)	1,185	F(D)
Woollomes to Schuster	1U	344	C(C)	562	D(C)	704	D(C)
Garzoli Avenue NB							
Pond to Schuster	1U	378	C(C)	910	F(C)	-	-
Schuster to Woollomes	1U	526	D(C)	618	D(C)	297	C
Garzoli Avenue SB							
Woollomes to Schuster	1U	293	C(C)	761	E(C)	395	C(C)
Schuster to Pond	1U	564	D(C)	749	D(C)	-	-
Pond Road EB							
Garzoli to SB SR 99 Ramps	1U	799	E(C)	777	E(C)	-	-
SB SR 99 Ramps to NB SR 99 Ramps	1U	475	C	395	C	-	-
Pond Road WB							
NB SR 99 Ramps to SB SR 99 Ramps	1U	316	C(C)	732	D(C)	-	-
SB SR 99 Ramps to Garzoli	1U	410	C(C)	999	F(C)	-	-

Vol. – Volume U – Undivided road
EB – Eastbound WB – Westbound NB – Northbound SB - Southbound
* Traffic operations in urban areas with closely spaced intersections are governed by the operation of the intersections rather than the road segments. See intersection analyses for mitigation of Woollomes Avenue.

Note: Mitigated levels of service are based on three through lanes in each direction with a median on Woollomes Avenue and two lanes in each direction on the other streets. However, the conclusions of the PSR shall govern on Woollomes Avenue.

The results of the road segment level of service analyses are discussed in the Discussion section of this report.

4.11 – Discussion

Existing Conditions

The existing conditions analyses indicate that the study intersections and road segments are currently operating at acceptable levels of service.

Existing Plus Opening Year Approved Projects Conditions

The existing-plus-opening-year approved projects conditions (OY) intersection analyses indicate that the study intersections are expected to continue to operate at acceptable levels of service with completion of the anticipated year 2007 approved projects, with the exception of the intersection of Woollomes Avenue and the northbound SR 99 ramps. The OY road segment analyses indicate that the study road segments are expected to continue to operate at acceptable levels of service.

It is anticipated that the northbound approach to the intersection of Woollomes Avenue and the northbound SR 99 ramps will experience a level of service D based on the OY conditions. A review of traffic signal warrants suggests that the intersection may satisfy peak-hour traffic signal warrants for one lane on each approach. The OY intersection analyses suggest that the Woollomes Avenue / SR 99 interchange is approaching the point that impacts will occur with construction of the approved projects.

Existing Plus Opening Year Approved Projects Plus Project Conditions

The existing-plus-opening-year approved projects plus project conditions (OYP) intersection analyses indicate that the proposed project will create impacts at the following intersections:

- Woollomes Avenue / Dover Parkway
- Woollomes Avenue / Site Access
- Woollomes Avenue / Garzoli Avenue
- Woollomes Avenue / Southbound SR 99 Ramps
- Woollomes Avenue / Northbound SR 99 Off Ramp/High Street

The OYP conditions road segment analyses indicate that the proposed project will create impacts at the following locations:

- Woollomes Avenue eastbound between Site Access and Lexington Street
- Woollomes Avenue westbound between Dover Parkway and High Street

In general, traffic operations in urban areas with closely spaced intersections are governed by the operation of the intersections rather than the road segments. As such, the determination of the appropriate mitigations along Woollomes Avenue between Dover Parkway and Lexington Street with construction of the project are based on analysis of the corridor using Synchro 6 software. It is noted that peak-hour traffic signal warrants are expected to be satisfied at each of the impacted intersections. However, it is not feasible to signalize all of the intersections due to the short distances between Garzoli Avenue, the SR 99 southbound ramps, the SR 99 northbound on ramp, the SR 99 northbound off ramp/High Street, and Lexington Street (four existing intersections within a distance of approximately 500 feet and five existing intersections within a distance of approximately 1,200 feet) and the existing railroad. Therefore, modification of this section of the corridor to minimize the number of intersections and maximize the spacing between intersections will be required.

The project should be required to complete a Project Study Report (PSR) in accordance with Caltrans criteria to determine the appropriate interim configuration of the Woollomes Avenue interchange and the adjacent intersections. The PSR will be subject to the review and approval of Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC). The PUC will be involved with respect to the existing railroad. The construction of the interchange improvements will be subject to a Caltrans encroachment permit and any permits required by the PUC or owner of the railroad right of way. Construction of the required improvements must be complete prior to opening of the proposed project.

A conceptual interim interchange configuration to mitigate OYP impacts is illustrated in Figure 30. Figure 30 is not intended to represent an actual design of the interchange. The actual interchange configuration will be determined in the PSR and Project Report (PR) and will be subject to Caltrans review and approval. The concept includes relocation of the northbound on ramp to the east, connecting from High Street. In this vicinity High Street would be converted to one-way northbound traffic only and southbound traffic on High Street would generally be redistributed to Lexington Street, creating an additional impact at Lexington Street requiring signalization. The southbound ramps would be relocated to the west. Garzoli Avenue would be disconnected from Woollomes Avenue and the southbound on ramp. A street connecting Garzoli Avenue to Dover Parkway would be required south of the proposed project site to allow traffic on Garzoli Avenue to access Woollomes Avenue via Dover Parkway.

The mitigation described above would result in a redistribution of the OYP traffic volumes. Figures 31 and 32 present the revised traffic volumes at the study intersections utilized in the mitigated OYP analyses.

The results of the mitigated analyses indicate that the following mitigations will be required:

- Construct Woollomes Avenue with two through travel lanes in each direction and a median between Dover Parkway and the SR 99 southbound ramps. Along the site frontage, construct the curb and gutter on the south side of Woollomes in the ultimate location to accommodate the cumulative-with-project year 2030 lane requirements. All traffic signals on Woollomes Avenue shall be coordinated. Communication conduit and cable or equivalent shall be installed to allow coordination of traffic signals.
- Signalize the intersection of Woollomes Avenue and Dover Parkway. Provide a dedicated left-turn lane and protected left-turn phasing on all four approaches. Provide one through lane on each approach. The construction of the ultimate curb and gutter by the project and approved projects will provide enough pavement to stripe dedicated right-turn lanes on the westbound, eastbound, and northbound approaches.
- Signalize the intersection of Woollomes Avenue and the main Site Access drive. It is assumed that the existing driveway on the north side of Woollomes cannot be modified. Therefore, split phasing will be required in the northbound-southbound directions. Provide protected left-turn phasing in the eastbound and westbound directions. Provide two northbound left-turn lanes and two westbound left-turn lanes. The westbound left-turn lanes should be approximately 300 feet in length. Provide two through lanes in the eastbound and westbound directions. Coordinate the traffic signals with the SR 99 ramp intersections.
- Signalize the intersection of Woollomes Avenue and the SR 99 southbound ramps. Provide protected left-turn phasing and a dedicated left-turn lane for the westbound left turn.

- Signalize the intersection of Woollomes Avenue and the SR 99 northbound ramps/High Street. Provide protected left-turn phasing and a dedicated left-turn lane for the eastbound left turn. Provide a dedicated left-turn lane, a dedicated through lane, and a dedicated right-turn lane on the northbound approach to the intersection.
- Signalize the intersection of Woollomes Avenue and Lexington Street. Provide protected left-turn phasing and a dedicated left-turn lane for the northbound left turn.

These mitigations are considered conceptual and should be specifically determined in the PSR described above. The mitigations determined by the PSR will be required prior to opening of the project. Any interim improvements constructed by the project that can be incorporated into the ultimate interchange configuration shall be credited against any equitable share contribution required as a cumulative mitigation. The equitable share contribution and ultimate interchange configuration shall be studied in the PSR. The City of Delano is currently preparing an impact fee program that is expected to include impact fees for construction of the ultimate interchange configuration.

It should be noted during preparation of the PSR and evaluation of interim improvements that the ITE *Trip Generation* values utilized for the home improvement superstore portion of the project are likely greater than those that will actually occur on opening day. This suggestion is based on a comparison of the ITE data utilized for the proposed home improvement superstore with the existing traffic volumes on Woollomes Avenue that are influenced by the existing home improvement superstore (Home Depot). The traffic volumes observed at the existing Home Depot are far less than those projected for the proposed home improvement superstore. It is reasonable to assume that the construction of a second home improvement superstore across the street would not result in as drastic an increase as suggested by the ITE data.

Near-Term With Approved Projects Conditions

The near-term-with-approved-projects conditions (NT) intersection analyses indicate that the study intersections are expected to continue to operate at acceptable levels of service with completion of the approved projects, with the exception of the following intersections:

- Woollomes Avenue / Southbound SR 99 ramps; and
- Woollomes Avenue / Northbound SR 99 ramps-High Street.

The NT road segment analyses indicate that the study road segments are expected to continue to operate at acceptable levels of service, with the exception of the following road segment:

- Woollomes Avenue westbound between High Street and the SR 99 southbound ramps

It is anticipated that the northbound approach to the intersection of Woollomes Avenue and the northbound SR 99 ramps will experience a level of service F based on the NT conditions. It is also anticipated that the southbound approach to the intersection of Woollomes Avenue and the southbound SR 99 ramps will experience a level of service D based on the NT conditions. A review of traffic signal warrants suggests that the intersections may satisfy peak-hour traffic signal warrants for one lane on each approach. The NT intersection analyses suggest that the Woollomes Avenue / SR 99 interchange is approaching the point that impacts will occur with construction of the approved projects.

Near-Term With Approved Projects Plus Project Conditions

The near-term with approved projects plus project conditions (NTP) intersection analyses indicate that the proposed project will create, or contribute to, impacts at the following intersections:

- Woollomes Avenue / Albany Street
- Woollomes Avenue / Dover Parkway
- Woollomes Avenue / Site Access
- Woollomes Avenue / Garzoli Avenue
- Woollomes Avenue / Southbound SR 99 Ramps
- Woollomes Avenue / Northbound SR 99 Off Ramp/High Street
- Woollomes Avenue / Lexington Street

The NTP conditions road segment analyses indicate that the proposed project will create impacts at the following locations:

- Woollomes Avenue between Dover Parkway and Lexington Street (both directions).

The intersection of Woollomes Avenue and Albany Street is expected to experience a level of service D. Warrants for intersection signalization are not expected to be satisfied. Construction of a westbound right-turn lane is expected to mitigate the westbound approach to a level of service C.

The mitigations described above for the existing-plus-opening-year approved projects plus project conditions (OYP) are also considered for the NTP conditions. The mitigations would result in a redistribution of the NTP traffic volumes. Figures 33 and 34 present the revised traffic volumes at the study intersections utilized in the mitigated NTP analyses.

Mitigated analyses indicate that the mitigations recommended above for the OYP conditions will also provide acceptable levels of service based on the projected NTP conditions, assuming that Woollomes Avenue is considered a high-volume roadway with level of service D acceptable in the near-term condition. If a level of service C is required, the intersection of Woollomes Avenue and Dover Parkway will also require a separate eastbound right-turn lane if a level of service C is required.

The project should be required to complete a PSR in accordance with Caltrans criteria to determine the appropriate interim configuration of the Woollomes Avenue interchange and the adjacent intersections. The PSR will be subject to the review and approval of Caltrans, the City of Delano, and PUC. The PUC will be involved with respect to the existing railroad. The construction of the interchange improvements will be subject to a Caltrans encroachment permit and any permits required by the PUC or owner of the railroad right of way. Construction of the required improvements must be complete prior to opening of the proposed project.

Cumulative With Project (Year 2030)

The cumulative-with-project (Year 2030) conditions (CP) intersection analyses indicate that the proposed project will contribute to impacts at the following intersections:

- Woollomes Avenue / Albany Street
- Woollomes Avenue / Dover Parkway
- Woollomes Avenue / Site Access
- Woollomes Avenue / Garzoli Avenue
- Woollomes Avenue / Southbound SR 99 Ramps
- Woollomes Avenue / Northbound SR 99 Off Ramp/High Street
- Woollomes Avenue / Lexington Street
- Pond Road / Northbound SR 99 Ramps
- Pond Road / Southbound SR 99 Ramps
- Pond Road / Stradley Avenue
- Pond Road / Garzoli Avenue
- Schuster Road / Stradley Avenue
- Schuster Road / Garzoli Avenue

The CP conditions road segment analyses indicate that the proposed project will create impacts at the following locations:

- Woollomes Avenue between Albany Street and Lexington Street (both directions)
- Albany Street north and south of Woollomes Avenue (both directions)
- Garzoli Avenue between Shuster Road and Woollomes Avenues (both directions)
- Pond Road between Garzoli Avenue and the SR 99 northbound ramps (both directions)

The mitigations described above for the OYP and NTP conditions are also considered for the CP conditions. The mitigations would result in a redistribution of the CP traffic volumes. Figures 35 and 36 present the revised traffic volumes at the study intersections utilized in the mitigated CP analyses.

The results of the mitigated analyses indicate that the following mitigations will be required based on the cumulative year 2030 analyses:

- Construct Woollomes Avenue with three through travel lanes in each direction and a median between Dover Parkway and the SR 99 southbound ramps. All traffic signals on Woollomes Avenue between Albany Street and Lexington Street shall be coordinated. Communication conduit and cable or equivalent shall be installed to allow coordination of traffic signals. The opening-day project-specific mitigations shall be constructed to accommodate these cumulative mitigations.

- Signalize the intersection of Woollomes Avenue and Albany Street. Provide two southbound left-turn lanes and protected left-turn phasing. Provide dedicated right-turn lanes. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.

- Signalize the intersection of Woollomes Avenue and Dover Parkway. Provide two left-turn lane and protected left-turn phasing on all four approaches. Provide three through lanes and one right-turn lane on each approach. The opening-day project-specific mitigations shall be constructed to accommodate these cumulative mitigations.

- Signalize the intersection of Woollomes Avenue and the main Site Access drive. It is assumed that the existing driveway on the north side of Woollomes cannot be modified. Therefore, split phasing will be required in the northbound-southbound directions. Provide protected left-turn phasing in the eastbound and westbound directions. Provide two northbound left-turn lanes, two westbound left-turn lanes, and two eastbound left-turn lanes. (The construction of two eastbound left-turn lanes is only required if modification of the existing driveway on the north side of Woollomes Avenue is feasible.) The westbound left-turn lanes should be approximately 350 feet in length. Provide three through lanes and one right-turn lane on the eastbound and westbound approaches. Coordinate the traffic signals with the SR 99 ramp intersections. The opening-day project-specific mitigations shall be constructed to accommodate these cumulative mitigations.
- Reconstruct the Woollomes Avenue / SR 99 interchange to provide additional capacity. Loop ramps should be considered. A Caltrans PSR will be required to determine the ultimate interchange configuration. The project shall contribute an equitable share of the cost of the reconstruction of the interchange. Any interim improvements constructed by the project that can be incorporated into the ultimate interchange configuration shall be credited against the equitable share contribution. The equitable share contribution shall be determined in the PSR.
- Signalize the intersection of Woollomes Avenue and Lexington Street. Provide protected left-turn phasing and a dedicated left-turn lane for the northbound left turn. Provide two eastbound left-turn lanes. The opening-day project-specific mitigations shall be constructed to accommodate these cumulative mitigations.
- Provide all-way stop sign control at the intersection of Schuster Road and Stradley Avenue. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Provide all-way stop sign control at the intersection of Pond Road and Stradley Avenue. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Schuster Road and Garzoli Avenue. Provide protected left-turn phasing and a dedicated left-turn lane for the northbound left turn. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Pond Road and Garzoli Avenue. Provide protected left-turn phasing and dedicated left-turn lanes. Provide two southbound left-turn lanes. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Pond Road and the southbound SR 99 ramps. Provide protected left-turn phasing and dedicated left-turn lanes. Provide two eastbound left-turn lanes. No opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.
- Signalize the intersection of Pond Road and the northbound SR 99 ramps. Provide protected left-turn phasing and dedicated left-turn lanes. Provide two northbound left-turn lanes. No

opening-day project mitigations are required. Payment of the City of Delano traffic impact fee shall be considered as the project's share of the mitigation of this cumulative impact.

- Widen the following road segments to at least two lanes in each direction while considering the required number of through lanes based on the intersection analyses:
  - Woollomes Avenue between Albany Street and Lexington Street
  - Albany Street north and south of Woollomes Avenue
  - Garzoli Avenue between Shuster Road and Woollomes Avenue
  - Pond Road between Garzoli Avenue and the SR 99 northbound ramps

It is noted that the mitigated road segment analyses indicate that the proposed mitigation of constructing three through lanes on Woollomes Avenue may result in levels of service of D, E, or F. However, it is not recommended that more than three through lanes be installed as research indicates that the marginal capacity of additional lanes is not proportional to the number of additional lanes. A paper published in the January 2003 ITE Journal entitled *Effectiveness of Additional Lanes at Signalized Intersections* by Kornel Mucsi and Ata M. Khan suggests that the following factors contribute to the diminishing marginal capacity of each additional lane at a signalized intersection:

- Longer yellow clearance intervals as vehicles on cross streets take a longer time to cross through the intersection. This creates a longer red interval and greater delays on the major street (Woollomes Avenue);
- Longer pedestrian times. Sufficient time must be provided for pedestrians to cross the major street. A wider major street with additional lanes creates a longer red interval and greater delays on the major street (Woollomes Avenue);
- Lane utilization factors decrease with additional lanes. As drivers maneuver for an upcoming left-turn or right-turn, certain through lanes may be heavily utilized while other through lanes are not used to their full capacity.

Peters Engineering Group suggests that the marginal benefits of a fourth through lane on Woollomes Avenue would not achieve to the desired results. A suggested regional strategy would be to control demand by establishing commercial centers in other parts of the city as travel volumes reach capacity in the future.

4.12 – Public Transit

No public transit facilities currently serve the project area. The project may contribute to the need for public transit in the region. At a minimum, space should be reserved for construction of potential bus stops.

5 – IMPACTS AND MITIGATION MEASURES

Project Conditions

Impact 1

The Woollomes Avenue / State Route 99 interchange is not projected to operate at acceptable levels of service with construction of the project. The operation of the High Street and Garzoli Avenue connections to Woollomes are closely related to the operation of the interchange and are therefore considered to be included in this impact.

Mitigation 1

The project shall be required to construct interim opening-day interchange improvements prior to opening of the project. The project shall prepare a Project Study Report (PSR) and Project Report (PR) to identify the specific opening day interchange configuration required. The PSR shall address the operation of the adjacent intersections on Woollomes Avenue at Garzoli Avenue, High Street, Lexington Street, and the proposed site access driveway. The PSR shall also consider the adjacent railroad. The PSR shall be subject to the review and approval of Caltrans, the City of Delano, and the State of California Public Utilities Commission (PUC). A conceptual interchange configuration for consideration in the PSR is presented in Figure 30.

Impact 2

Traffic signals are expected to be warranted at the intersection of Woollomes Avenue and Dover Parkway.

Mitigation 2

The project shall signalize the intersection of Woollomes Avenue and Dover Parkway. Provide a dedicated left-turn lane and protected left-turn phasing on all four approaches. Provide one through lane on each approach. The construction of curb, gutter, and median along the project frontage shall accommodate the ultimate year 2030 intersection configuration. The construction of the ultimate curb and gutter by the project and approved projects will provide enough pavement to stripe dedicated right-turn lanes on the westbound and northbound approaches.

Impact 3

Traffic signals are expected to be warranted at the intersection of Woollomes Avenue and the main Site Access Driveway.

Mitigation 3

The project shall signalize the intersection of Woollomes Avenue and the main Site Access Driveway. Split phasing will be required in the northbound-southbound directions. Provide protected left-turn phasing in the eastbound and westbound directions. Provide two northbound left-turn lanes and two westbound left-turn lanes. The westbound left-turn lanes should be approximately 300 feet in length. Provide two through lanes in the eastbound and westbound directions. Coordinate the traffic signals with the SR 99 ramp intersections. The construction of curb, gutter, and median along the project frontage shall accommodate the ultimate year 2030 intersection configuration.

Impact 4

Traffic signals are expected to be warranted at the intersection of Woollomes Avenue and Lexington Street.

Mitigation 4

The project shall signalize the intersection of Woollomes Avenue and Lexington Street. Provide a dedicated northbound left-turn lane with protected left-turn phasing. This mitigation shall be subject to review in the PSR required for the Woollomes Avenue / SR 99 interchange.

Impact 5

The project will create increased traffic volumes on Woollomes Avenue.

Mitigation 5

The project shall construct Woollomes Avenue with two through travel lanes in each direction and a median island in accordance with City of Delano standards between Dover Parkway and the SR 99 southbound ramps. Along the site frontage, construct the median and the curb and gutter on the south side of Woollomes in the ultimate location to accommodate the cumulative-with-project year 2030 lane requirements.

Impact 6

The project will contribute to a level of service D on the westbound approach at the intersection of Woollomes Avenue and Albany Street.

Mitigation 6

The project shall construct a separate westbound right-turn lane at the intersection of Woollomes Avenue and Albany Street.

Cumulative Conditions

Impact 7

The project will contribute traffic to intersections, road segments, and the Pond Road interchange that will require improvements by the year 2030.

Mitigation 7

The project shall pay the City of Delano traffic impact fee.

Impact 8

The project will contribute traffic to the Woollomes Avenue interchange, which will require reconstruction by the year 2030.

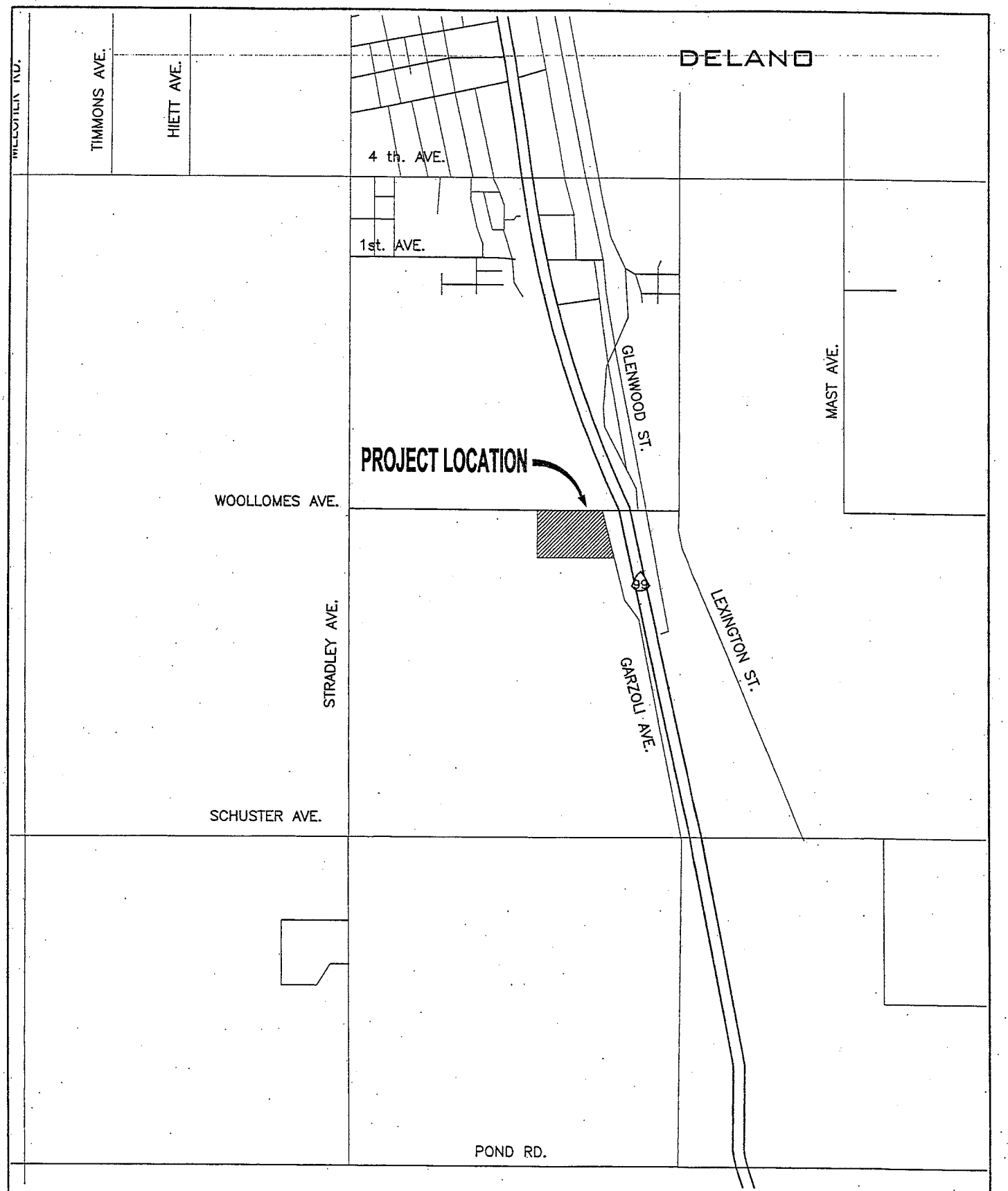
Mitigation 8

The project shall contribute an equitable share of the cost of reconstruction of the interchange. The equitable share shall be addressed in the PSR required in Mitigation 1. Any interim improvements constructed by the project that can be incorporated into the ultimate interchange configuration shall be credited against the equitable share contribution.

6 – CONCLUSION

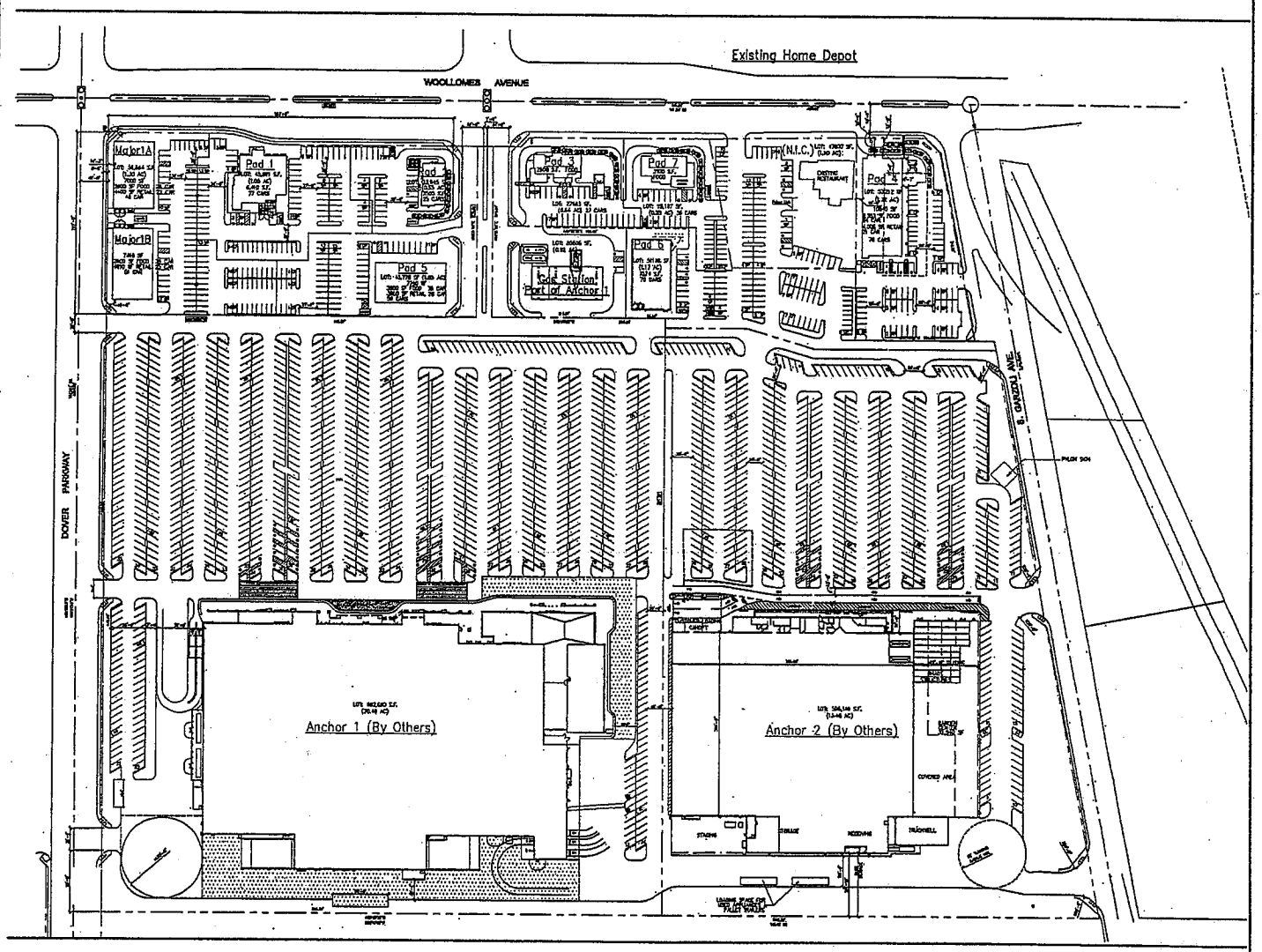
Generally-accepted traffic engineering principles and methods were employed to estimate the amount of traffic expected to be generated by the proposed project and to analyze the traffic conditions expected to exist in the future (2030). The conclusion of this study is that the existing road network shall be mitigated with construction of the proposed project in accordance with the mitigation measures contained herein to accommodate the projected traffic volumes based on opening-day conditions and year 2030 conditions.

FIGURES



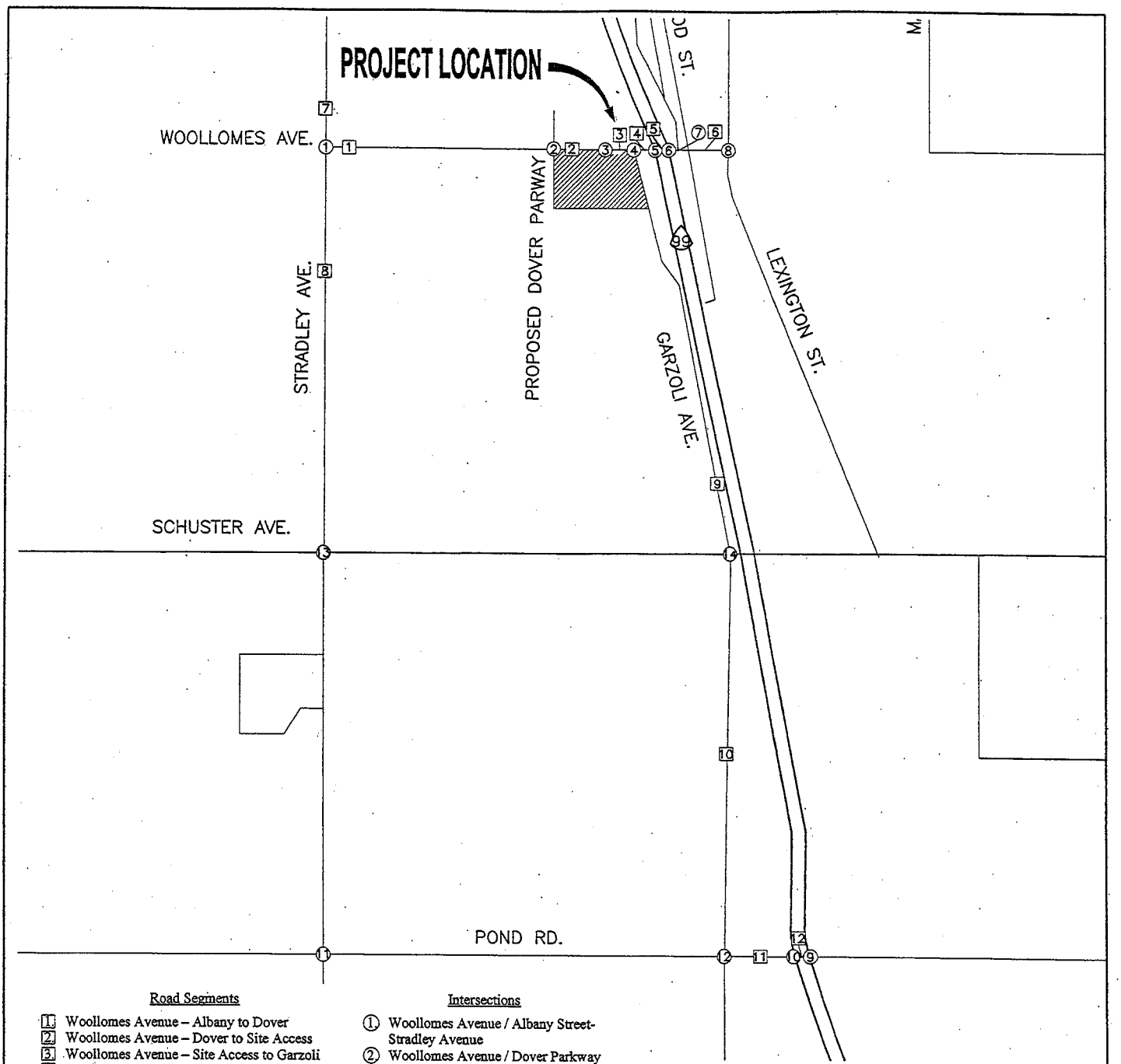
Vicinity Map
Proposed Market Place I Development
Southwest Corner of Woollomes and Dover Parkway
Delano, California

Not to Scale



Site Plan
Proposed Market Place I Development
Southwest Corner of Woollomes and Dover Parkway
Delano, California

Not to Scale



Road Segments

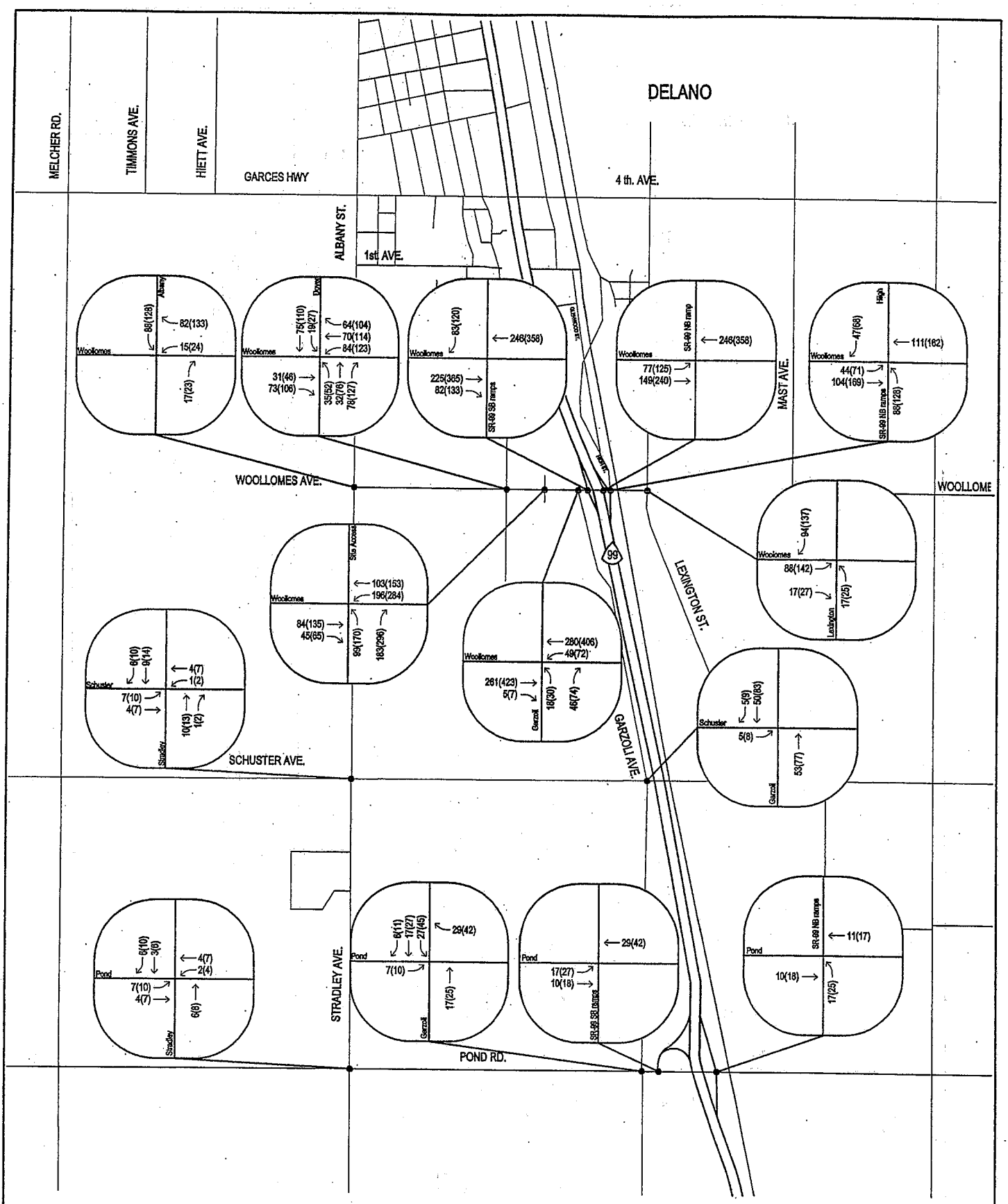
1. Woollomes Avenue – Albany to Dover
2. Woollomes Avenue – Dover to Site Access
3. Woollomes Avenue – Site Access to Garzoli
4. Woollomes Avenue – Garzoli Avenue to SR 99 Southbound Ramps
5. Woollomes Avenue – SR 99 Southbound Ramps to Northbound Ramps
6. Woollomes Avenue – SR 99 Northbound Ramps to Lexington Street
7. Albany Avenue – Woollomes to 1st Avenue
8. Stradley Avenue – Woollomes to Schuster
9. Garzoli Avenue – Woollomes to Schuster
10. Garzoli Avenue – Schuster to Pond
11. Pond Road – Garzoli to State Route 99 Ramps
12. Pond Road - SR 99 Southbound Ramps to Northbound Ramps

Intersections

1. Woollomes Avenue / Albany Street-Stradley Avenue
2. Woollomes Avenue / Dover Parkway
3. Woollomes Avenue / Site Access
4. Woollomes Avenue / Garzoli Avenue
5. Woollomes Avenue / Southbound State Route 99 Ramps
6. Woollomes Avenue / Northbound State Route 99 On Ramp
7. Woollomes Avenue / Northbound State Route 99 Off Ramp/High Street
8. Woollomes Avenue / Lexington Street
9. Pond Road / Northbound State Route 99 Ramps
10. Pond Road / Southbound State Route 99 Ramps
11. Pond Road / Stradley Avenue
12. Pond Road / Garzoli Avenue
13. Schuster Road / Stradley Avenue
14. Schuster Road / Garzoli Avenue

Study Intersections and Road Segments
Proposed Market Place I Development
Southeast Corner of Woollomes and Dover Parkway
Delano, California

Not to Scale



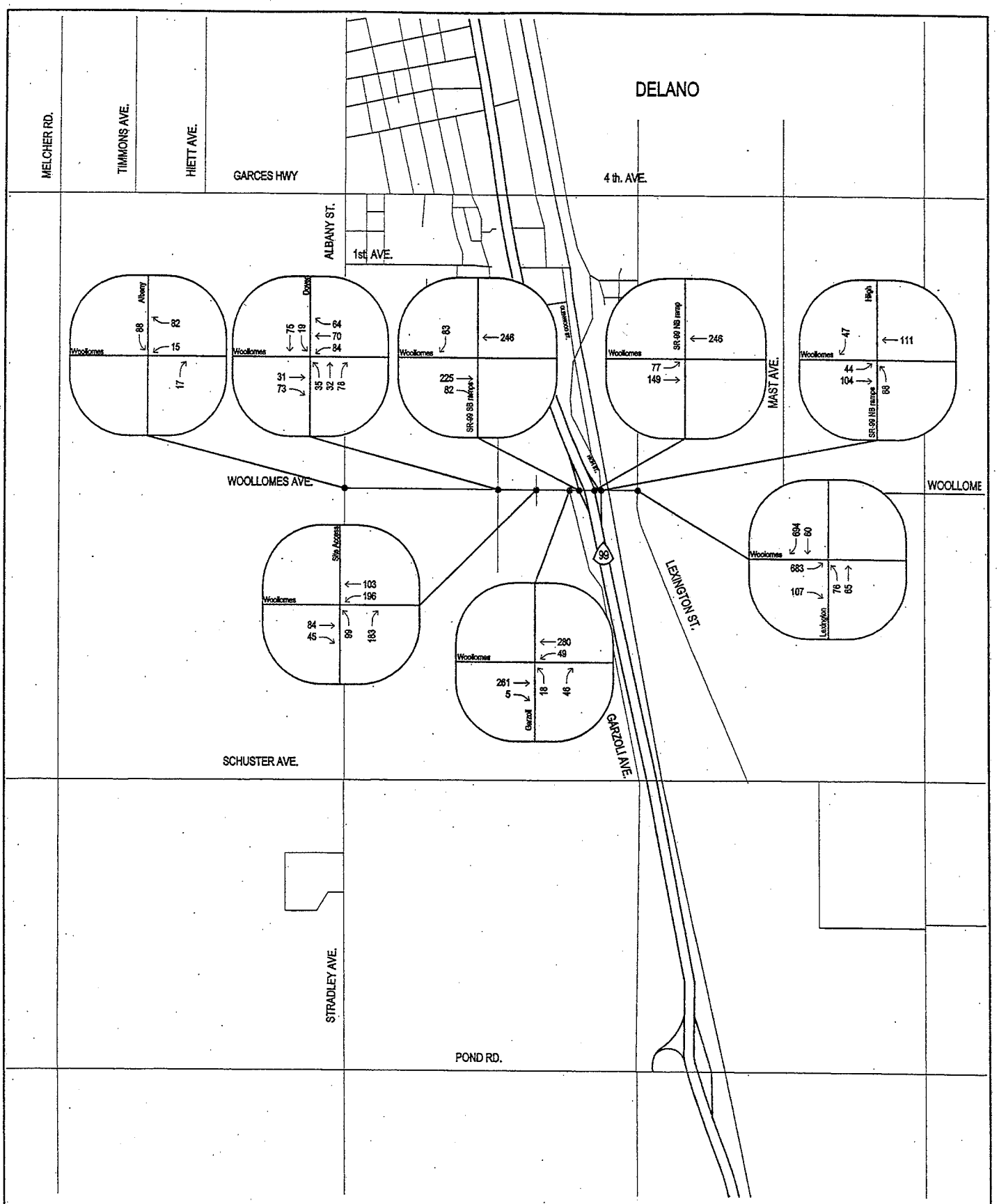
Proposed Market Place I Development
Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

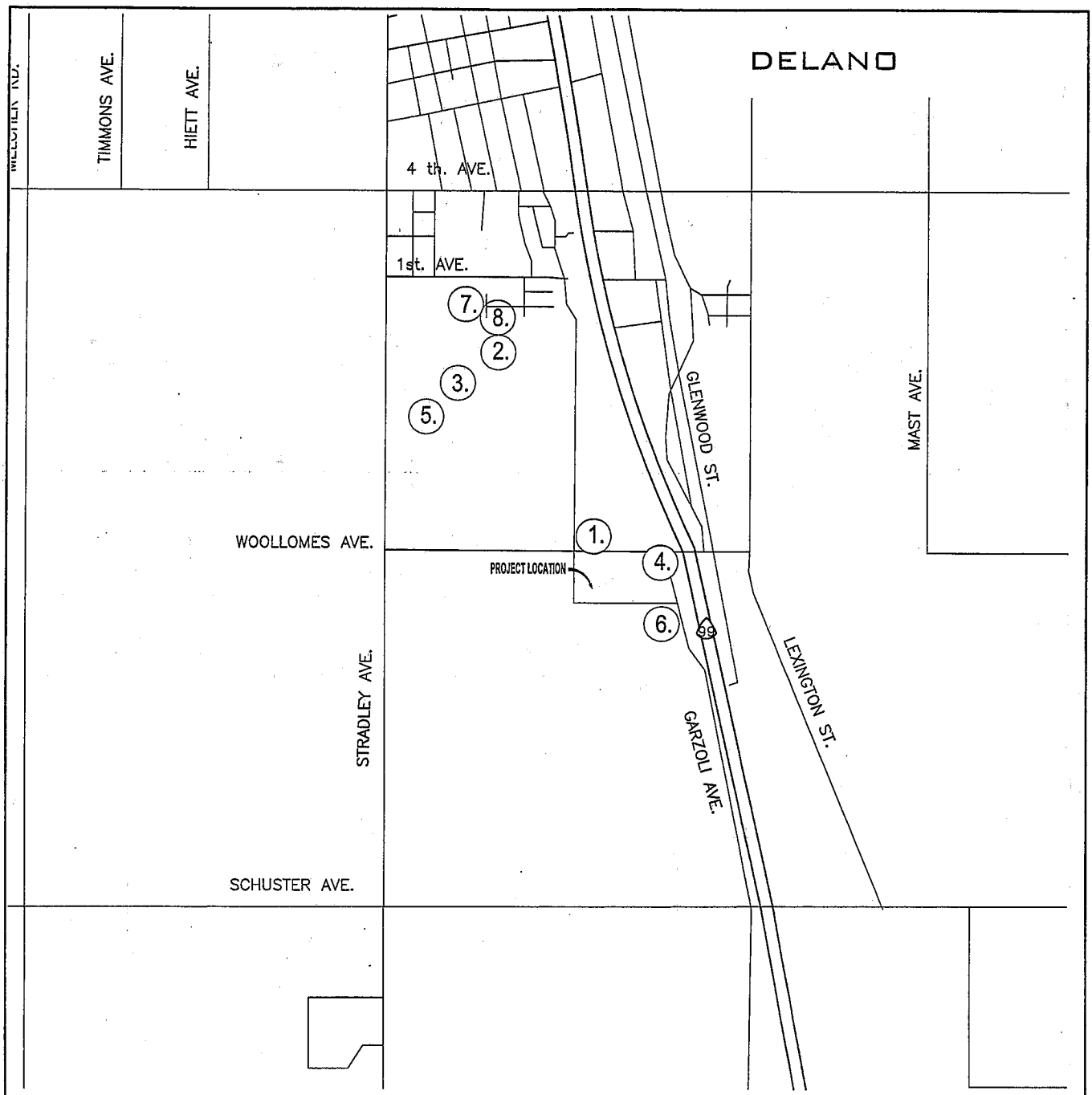


Proposed Market Place I Development
Saturday Project Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale

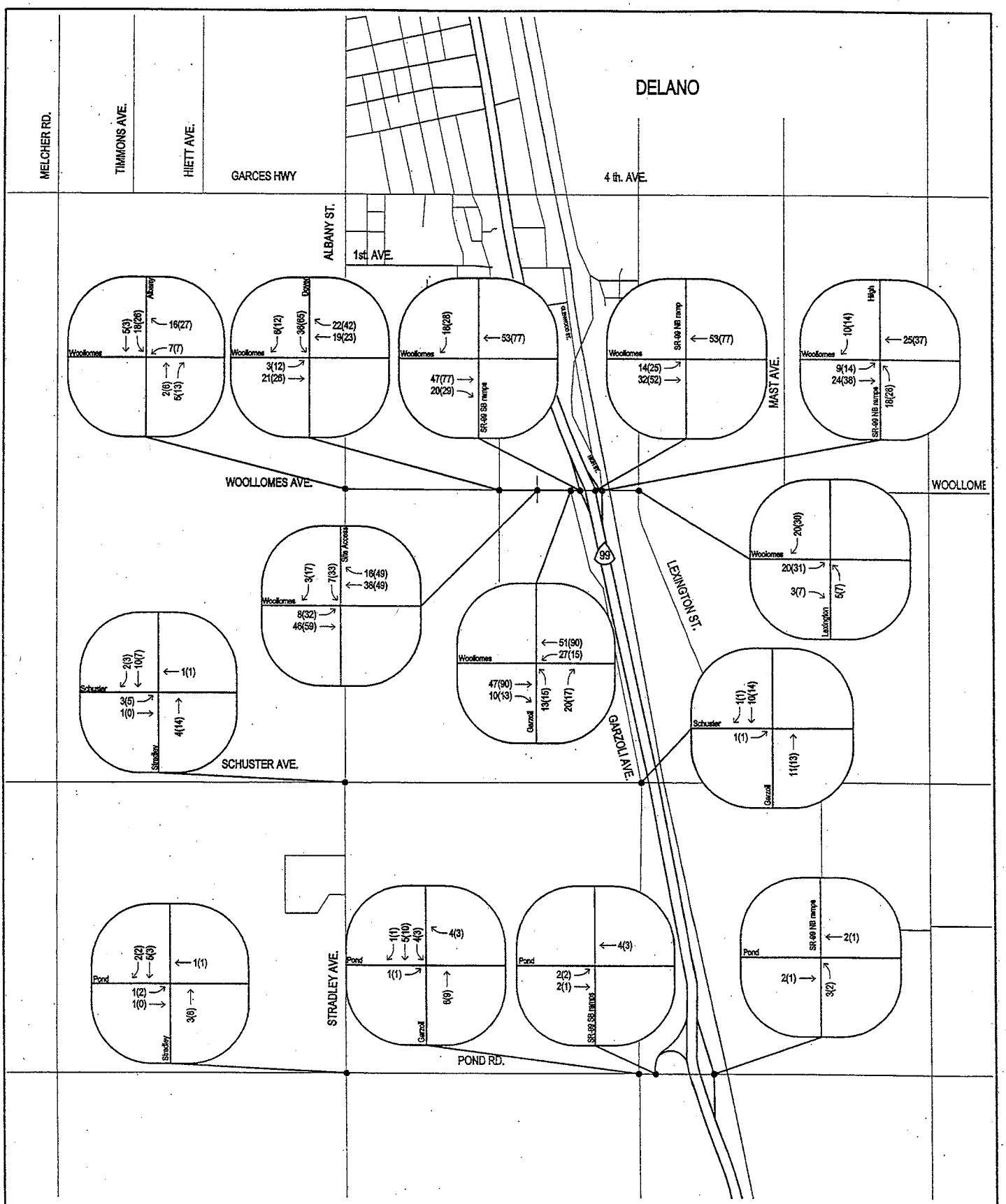


LEGEND

1. Vineyard Plaza Shopping Center
2. Tract 6326
3. Tract 6327
4. Pad 4 (Part of Market Place I Site Plan)
5. Tract 6470
6. Industrial Park
7. Belmont Meadows
8. Residential Development

Approved Project Location Map
Proposed Market Place I Development
Southwest Corner of Woollomes and Dover Parkway
Delano, California

Not to Scale



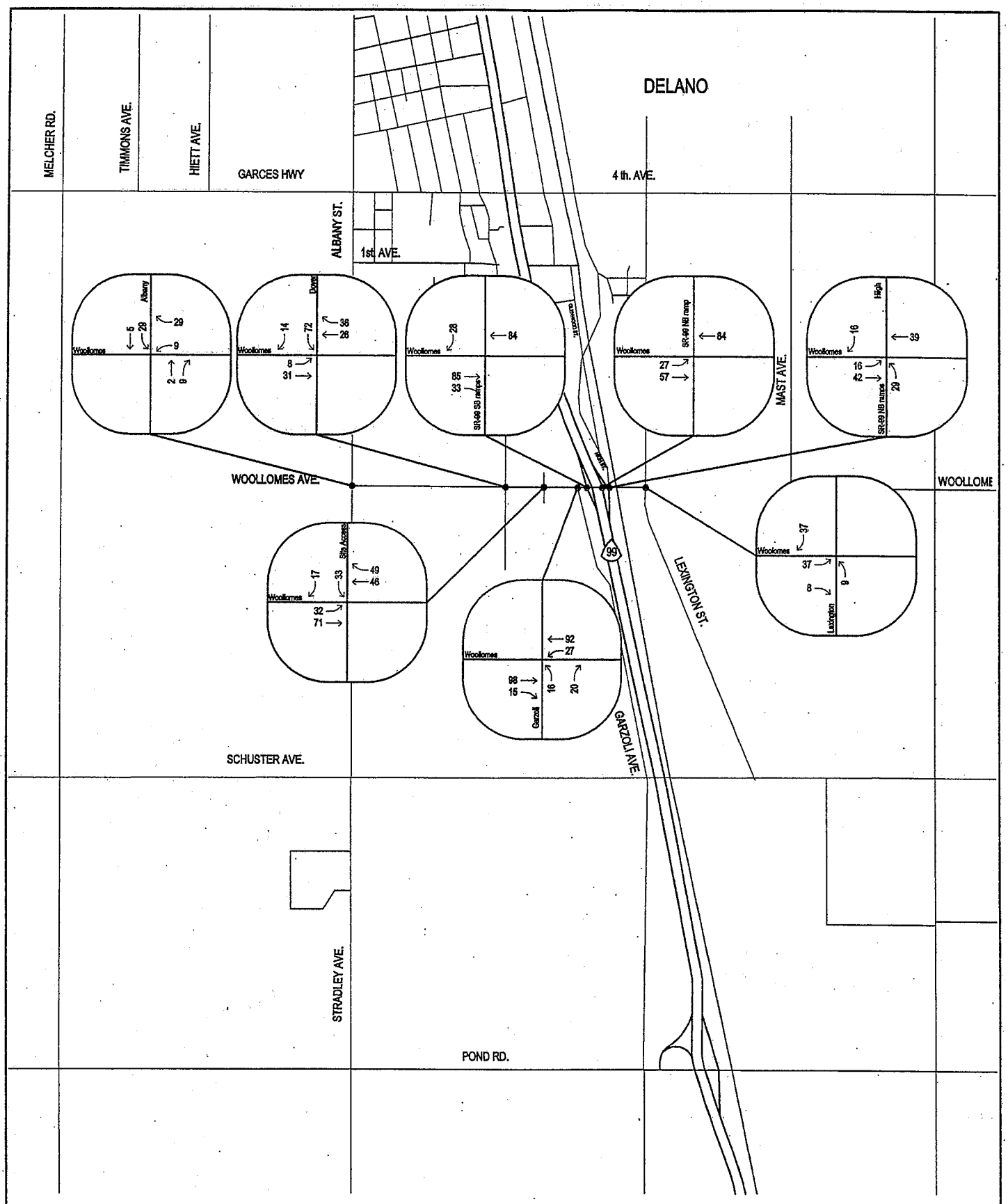
Proposed Market Place I Development
Opening Year Approved Projects Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

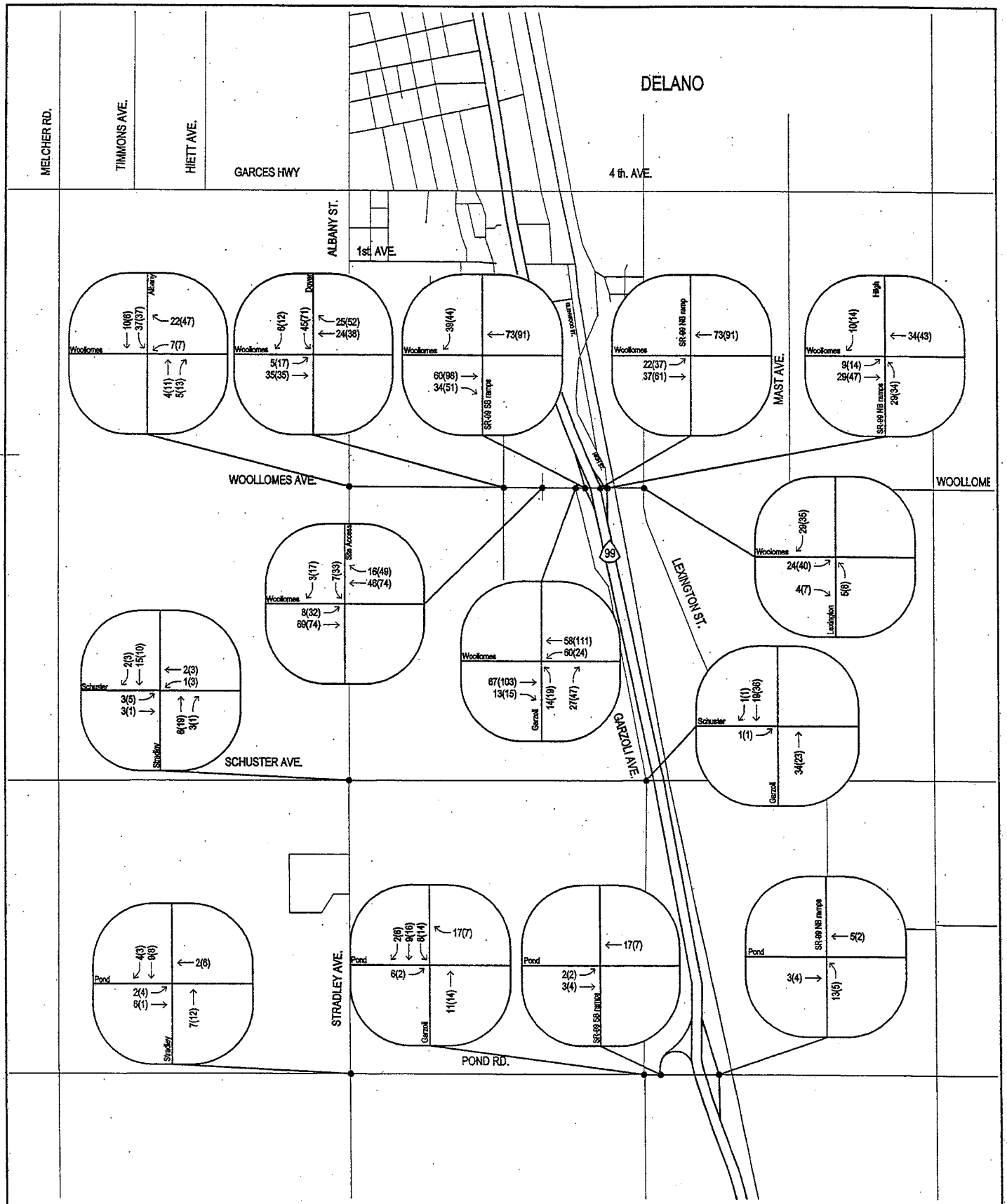


Proposed Market Place I Development
Saturday Opening Year Approved Projects Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



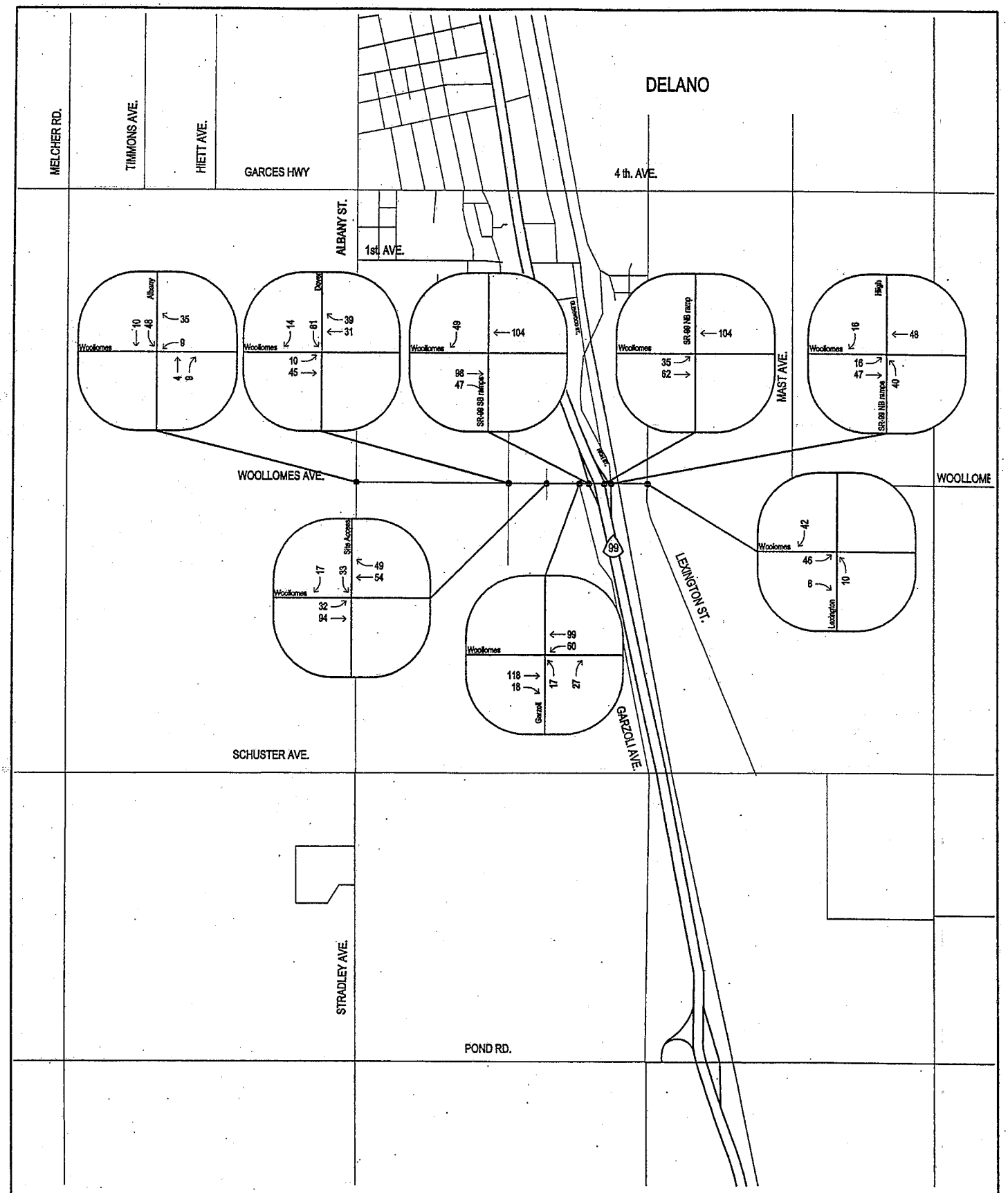
Proposed Market Place I Development
Near-Term Approved Projects Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

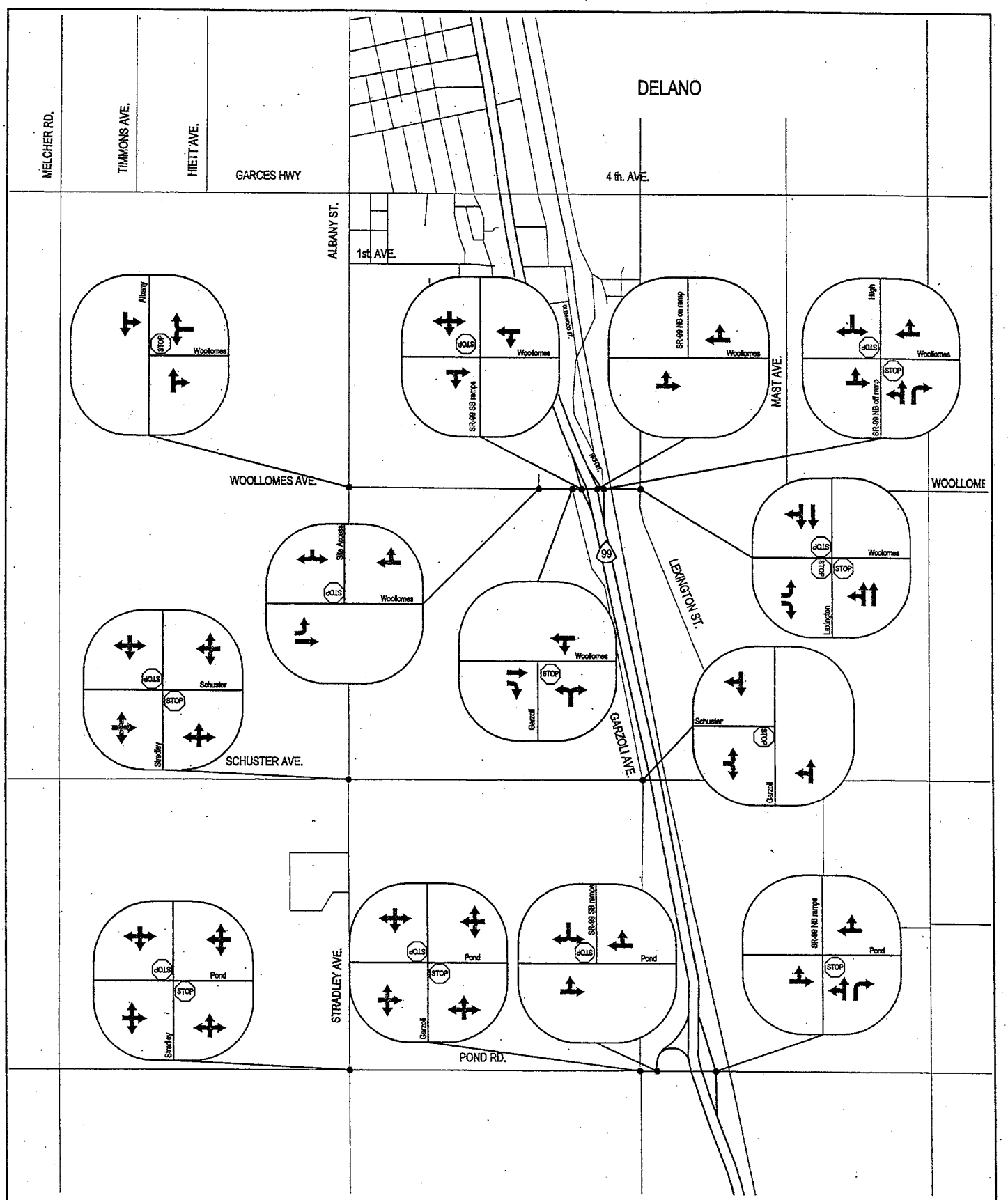


Proposed Market Place I Development
Saturday Near-Term Approved Projects Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale

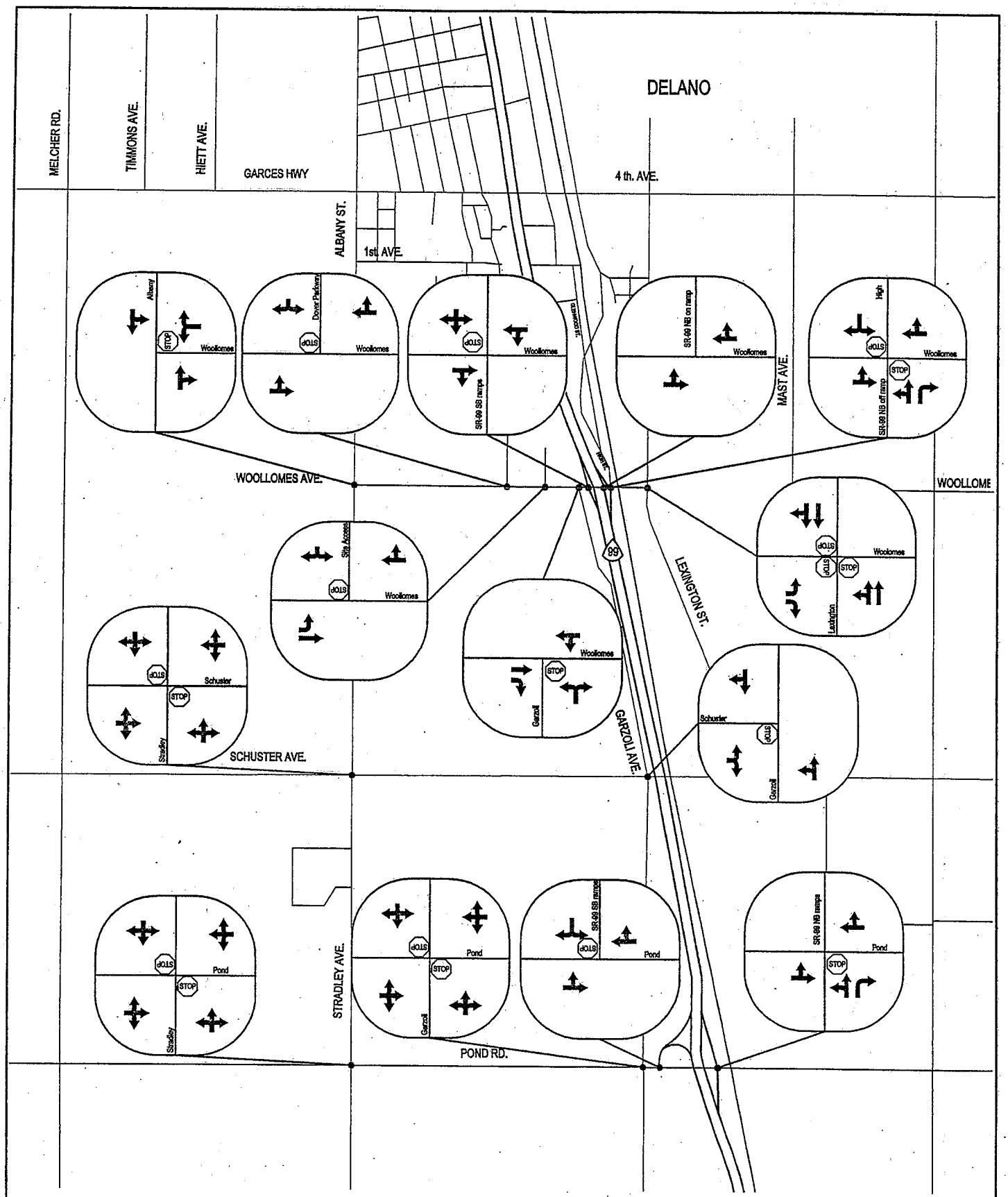


Proposed Market Place I Development
Existing Lane Configurations
Delano, California

LEGEND

- SIGNALIZED INTERSECTION
- STOP SIGN
- DIRECTION OF TRAVEL

Not to Scale

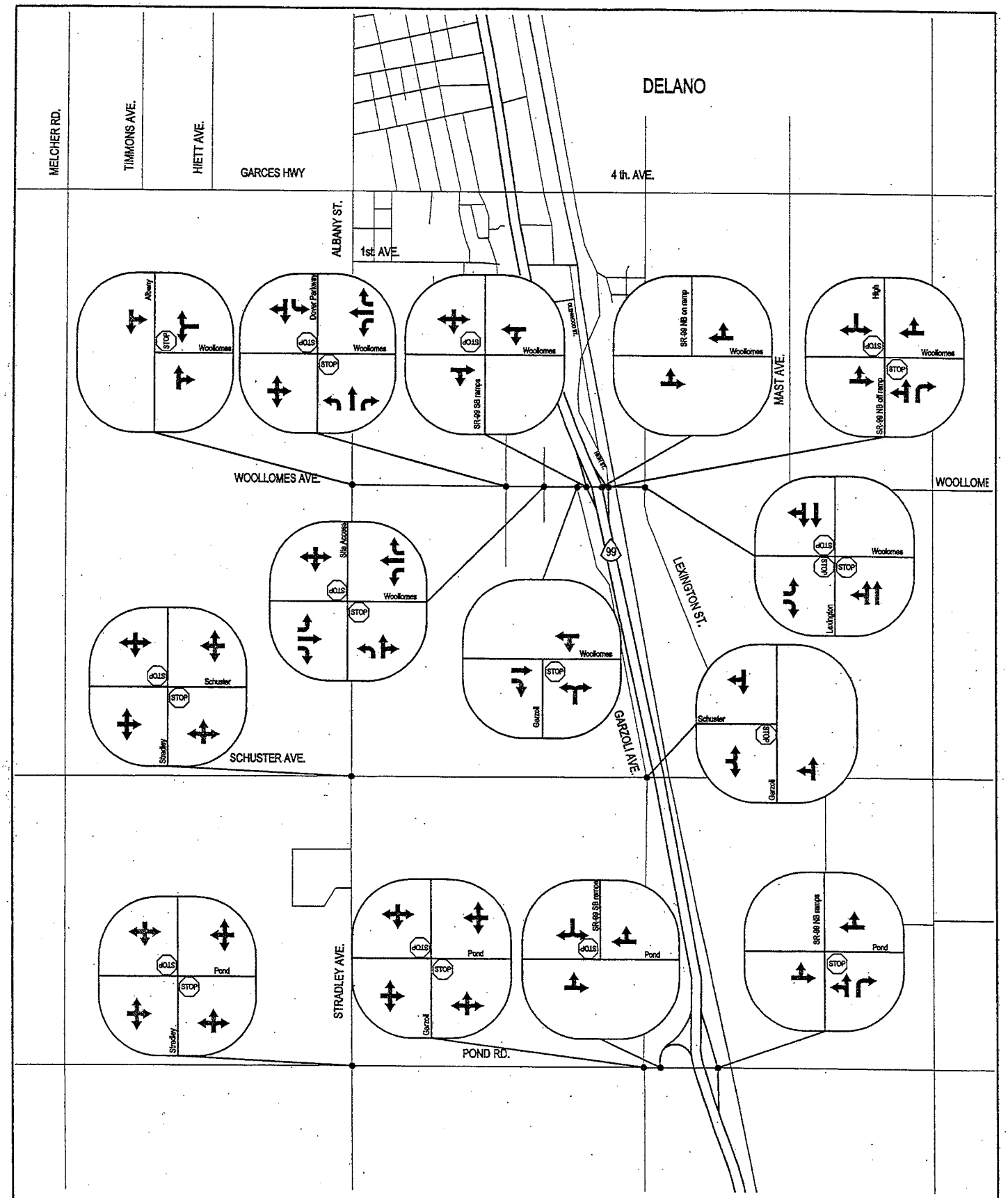


Proposed Market Place I Development
Opening Day/Near-Term Without Project Lane Configurations
Delano, California

LEGEND

- SIGNALIZED INTERSECTION
- STOP SIGN
- DIRECTION OF TRAVEL

Not to Scale

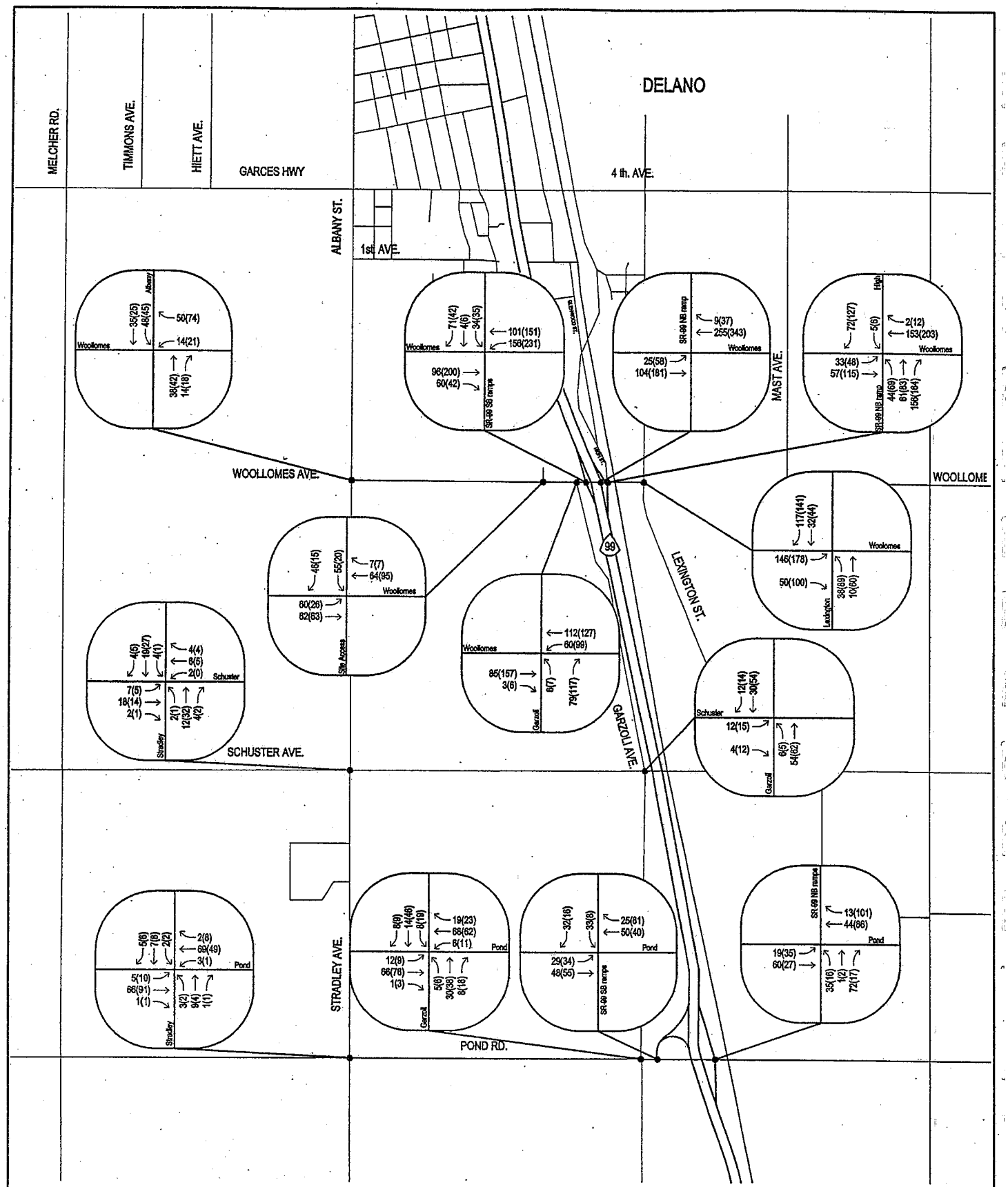


Proposed Market Place I Development
Opening Day/Near-Term With Project Lane Configurations
Delano, California

LEGEND

- SIGNALIZED INTERSECTION
- STOP SIGN
- DIRECTION OF TRAVEL

Not to Scale

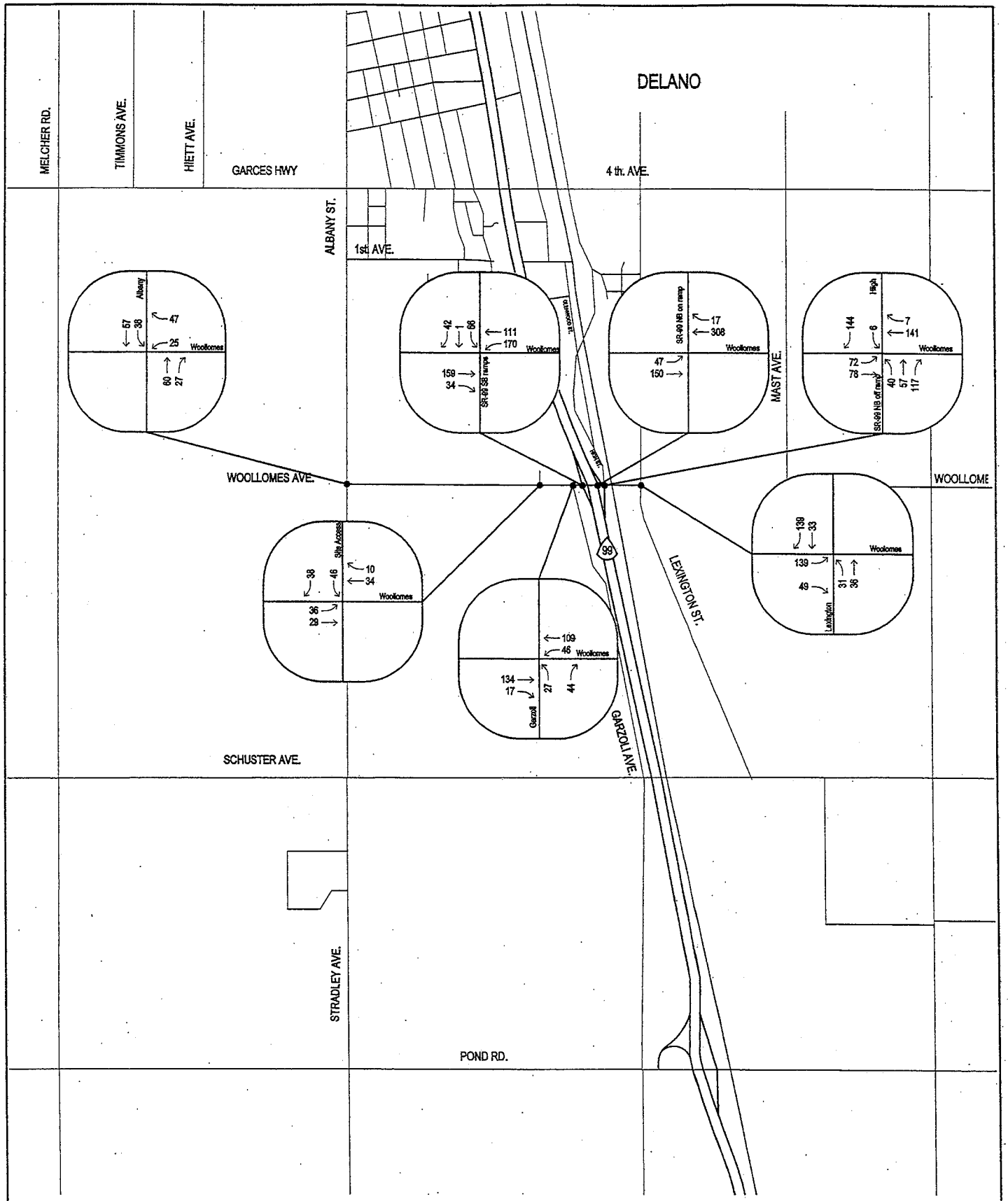


Proposed Market Place I Development
Existing Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

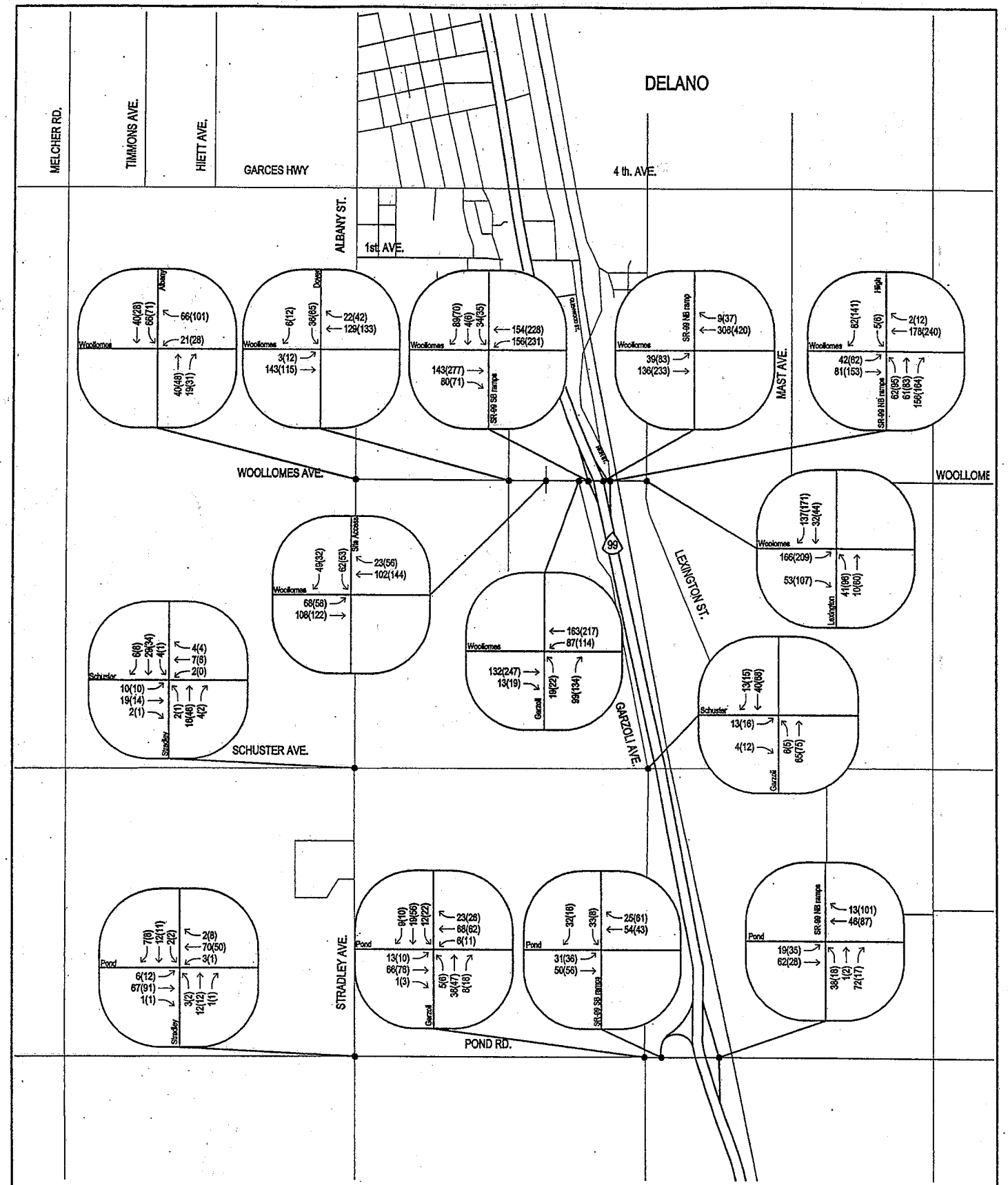


Proposed Market Place I Development
Saturday Existing Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



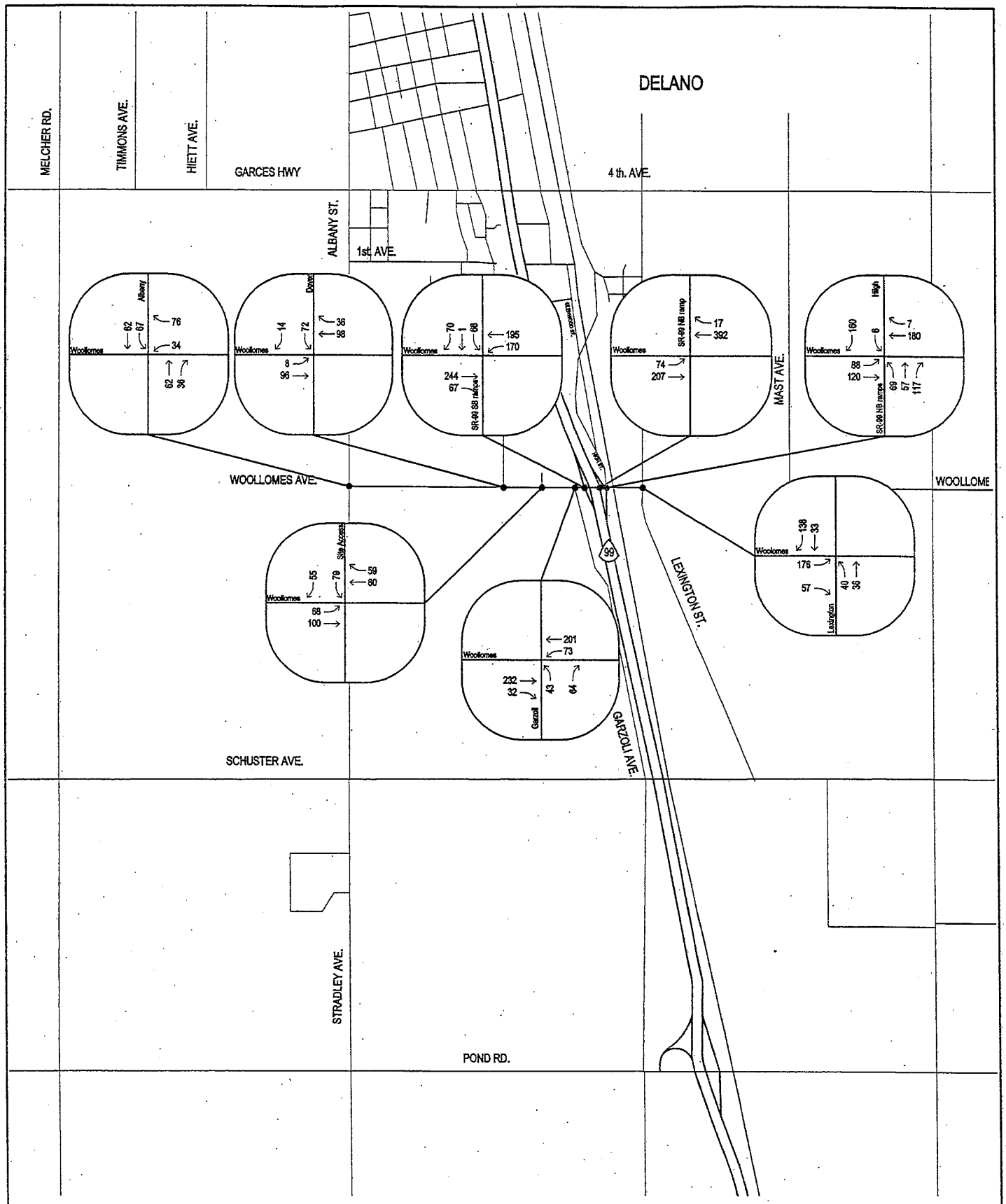
Proposed Market Place I Development
Existing Plus Opening Year Approved Projects Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

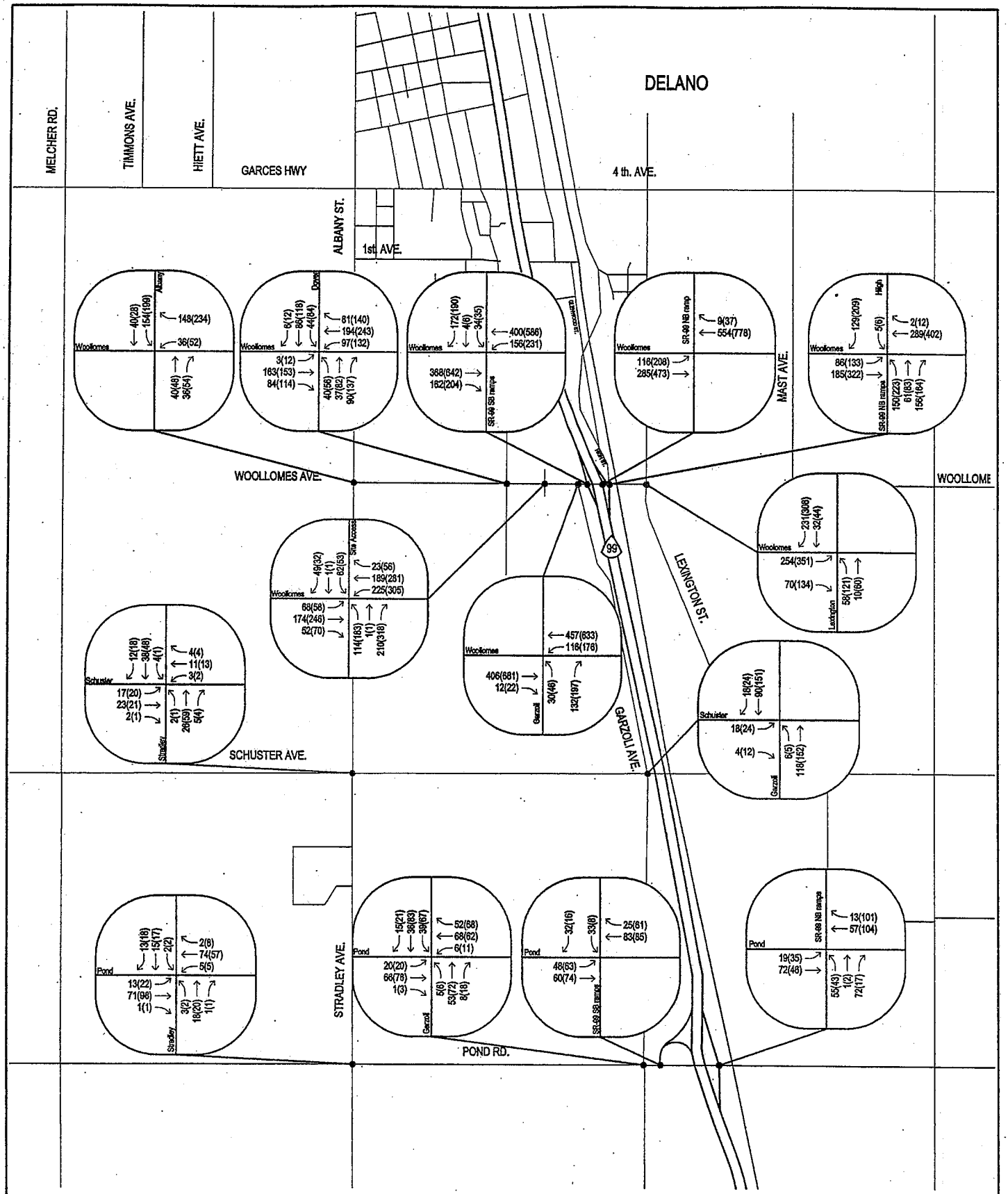


Proposed Market Place I Development
Saturday Existing Plus Opening Year Approved Projects Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



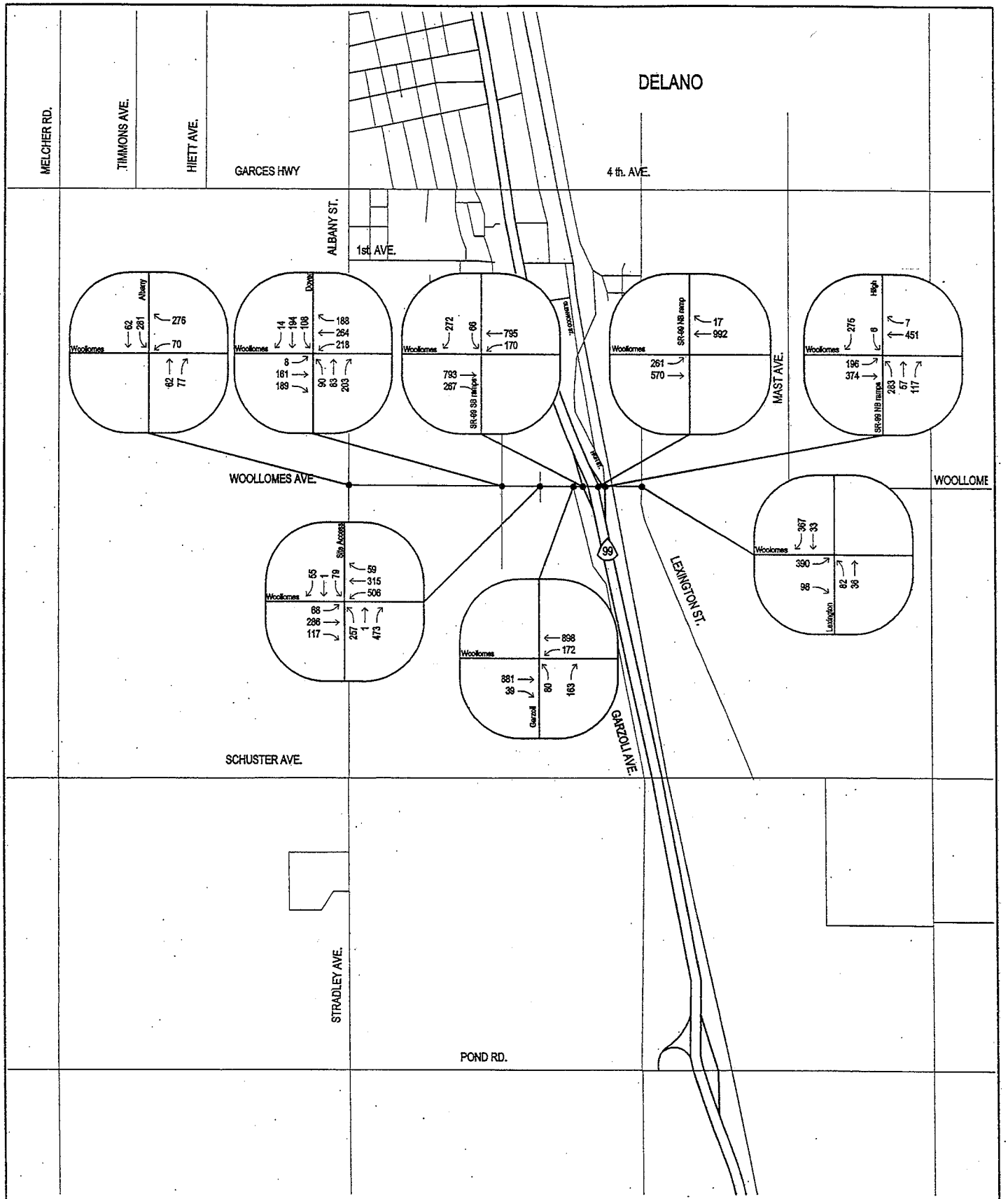
Proposed Market Place I Development
Existing Plus Opening Year Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

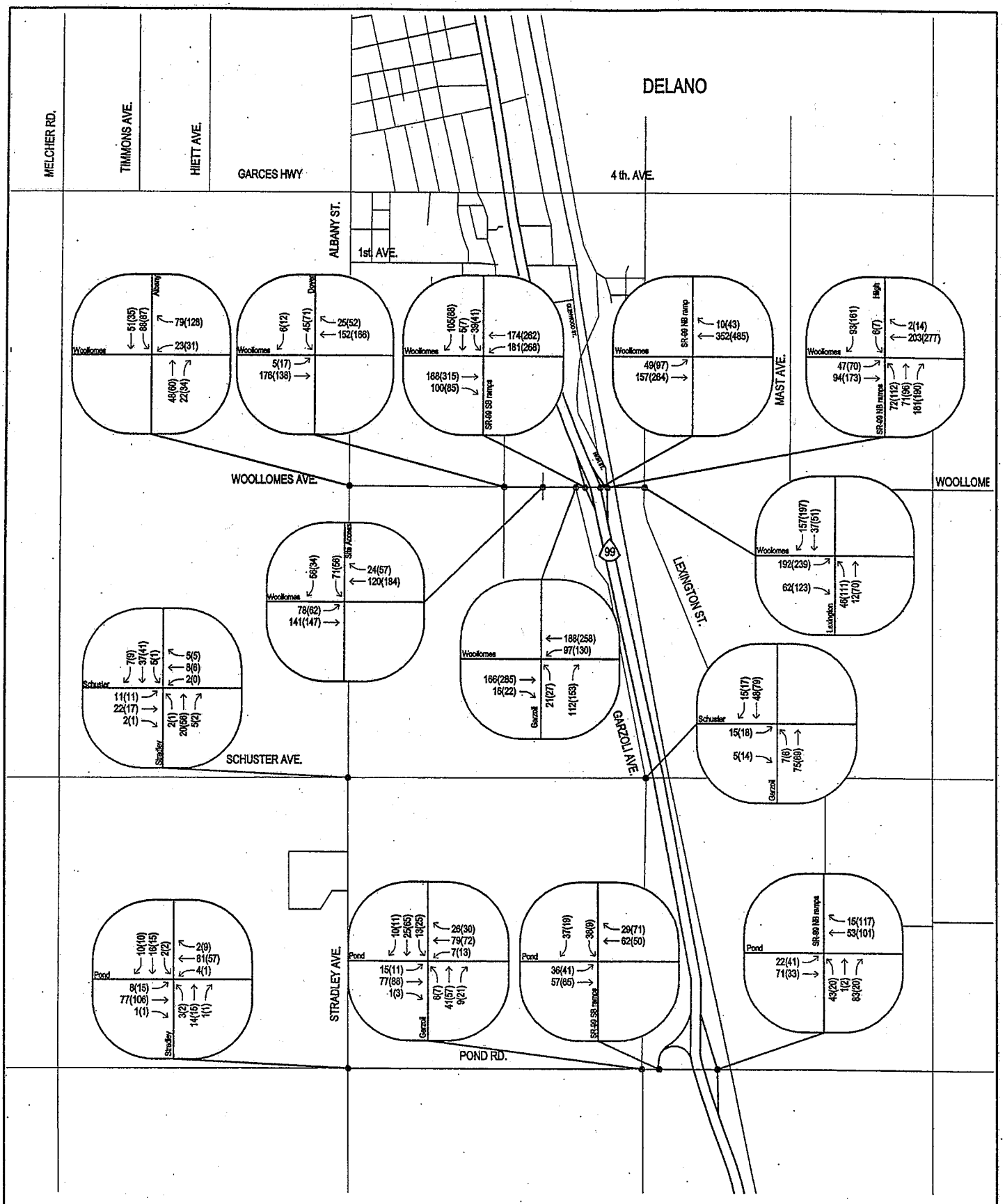


Proposed Market Place I Development
Saturday Existing Plus Opening Year Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



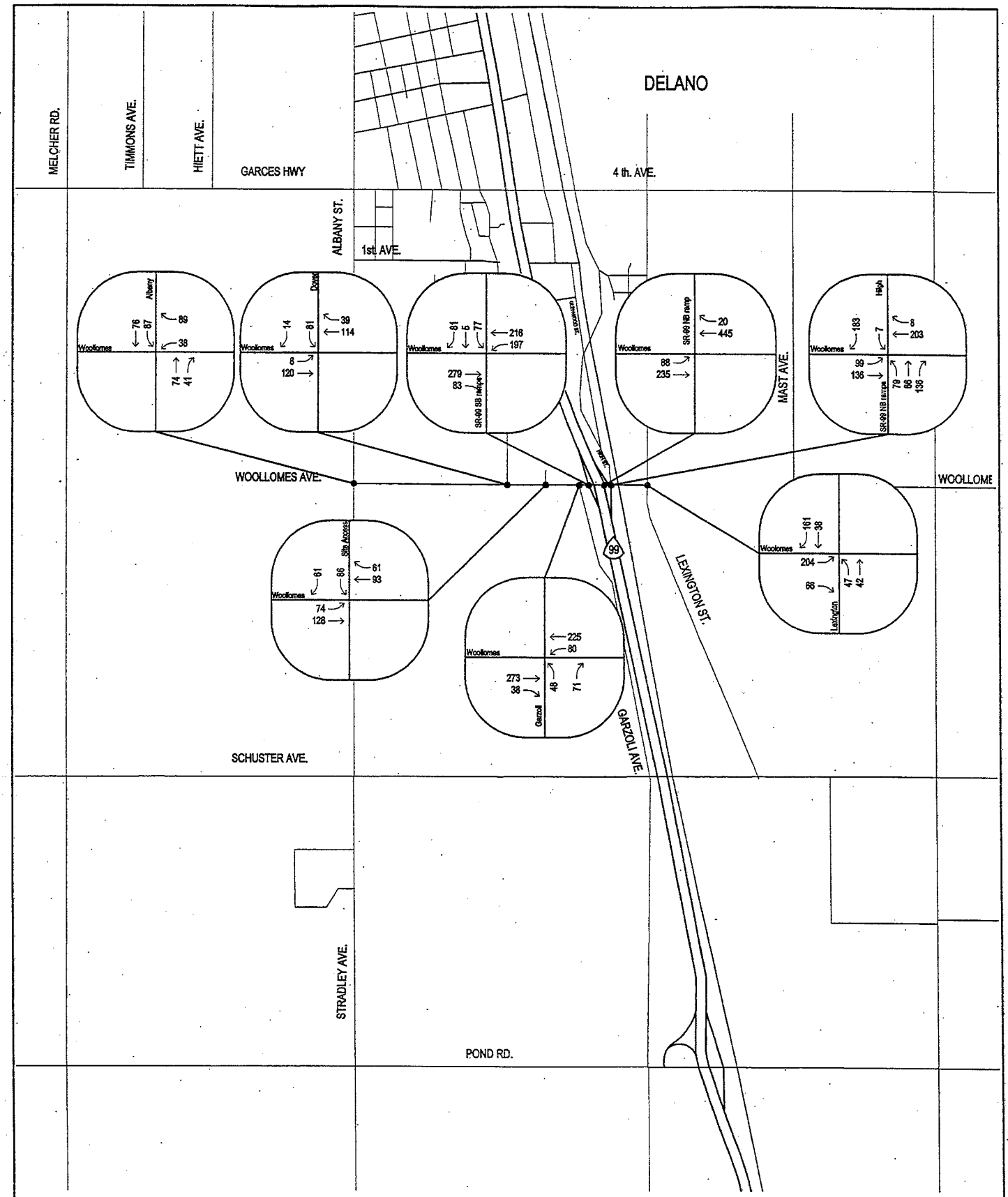
Proposed Market Place I Development
Near-Term Plus Approved Projects Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

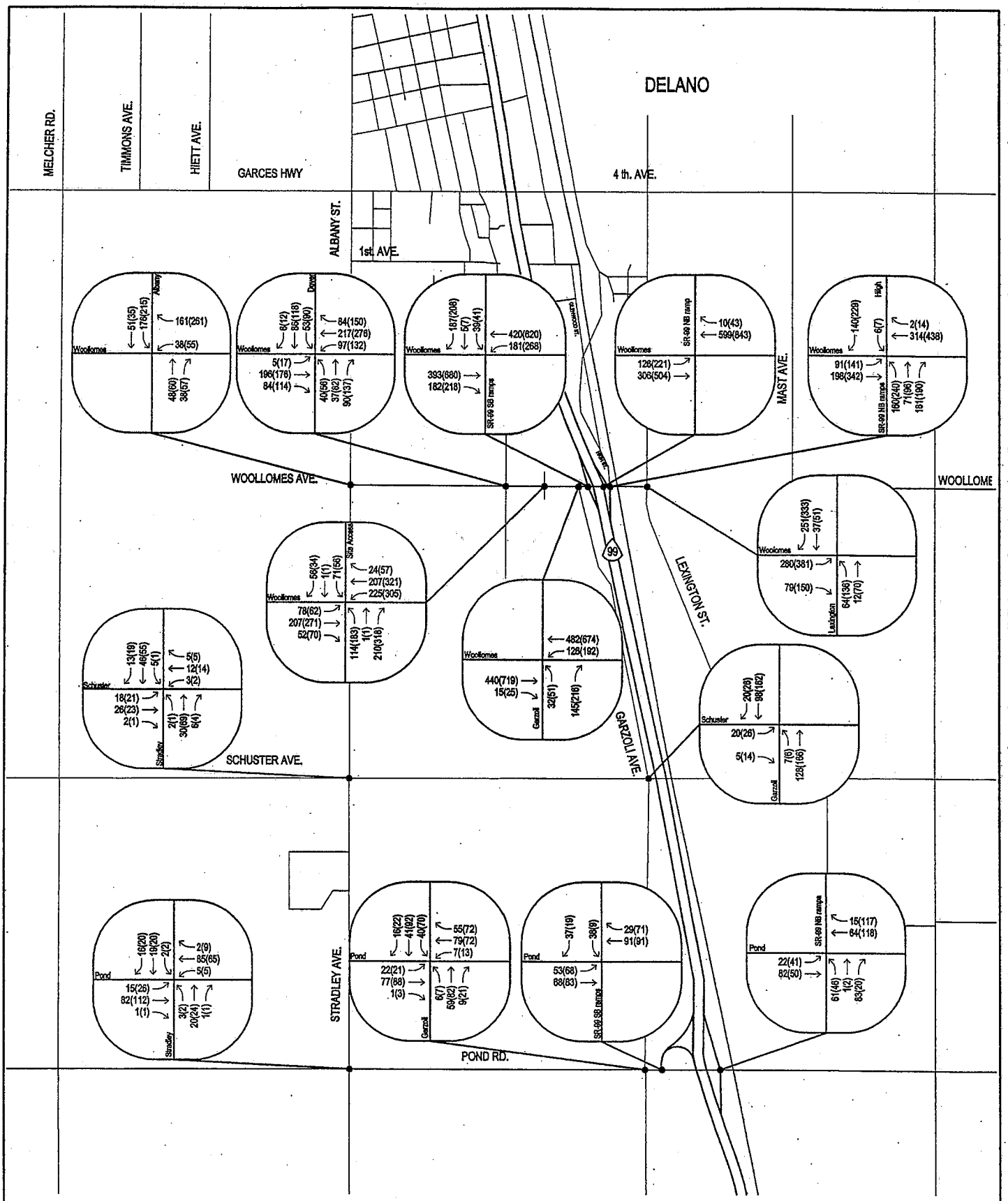


Proposed Market Place I Development
Saturday Near-Term Plus Approved Projects Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



Proposed Market Place I Development
Near-Term Plus Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

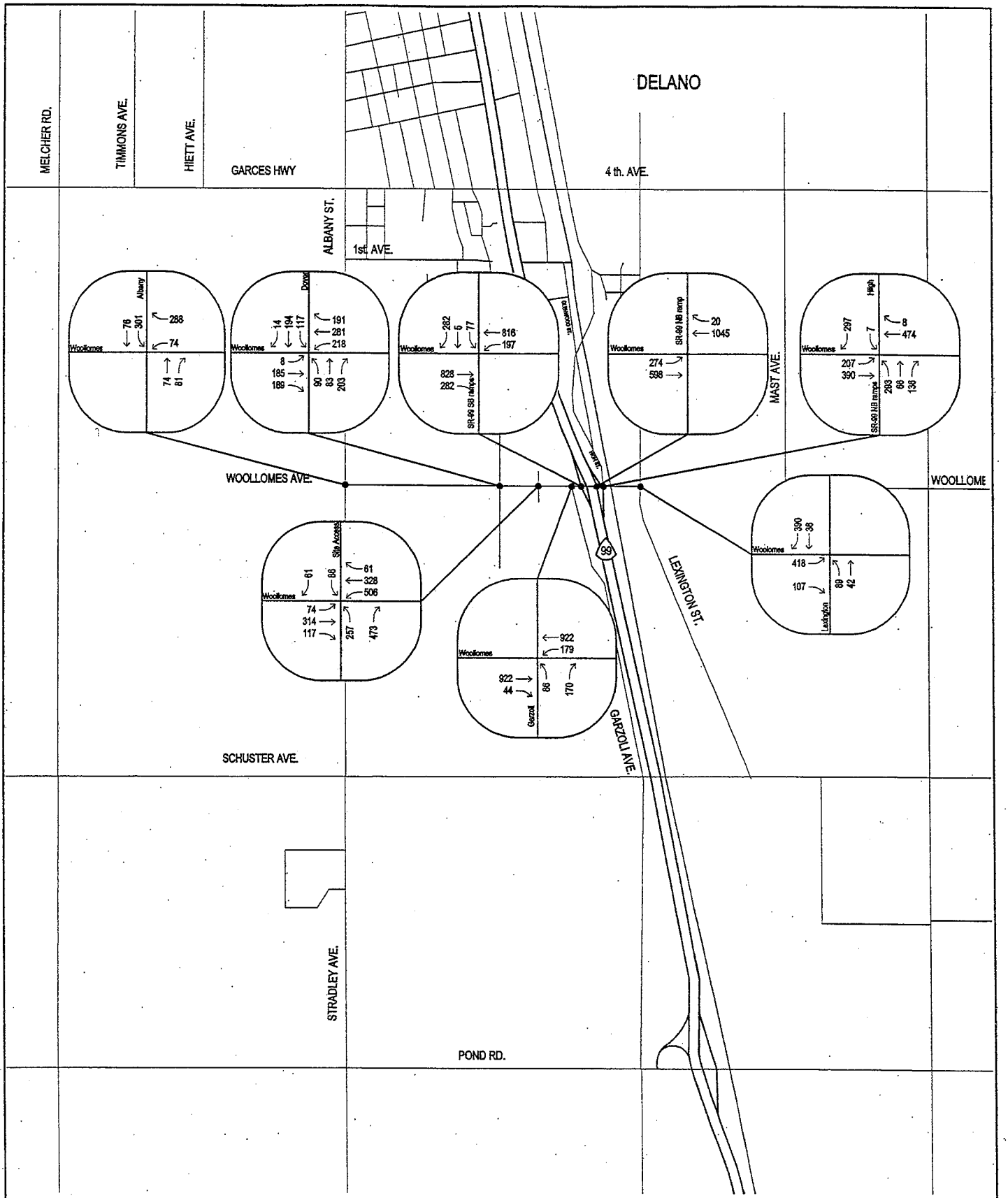
20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

PETERS ENGINEERING GROUP

Figure 22

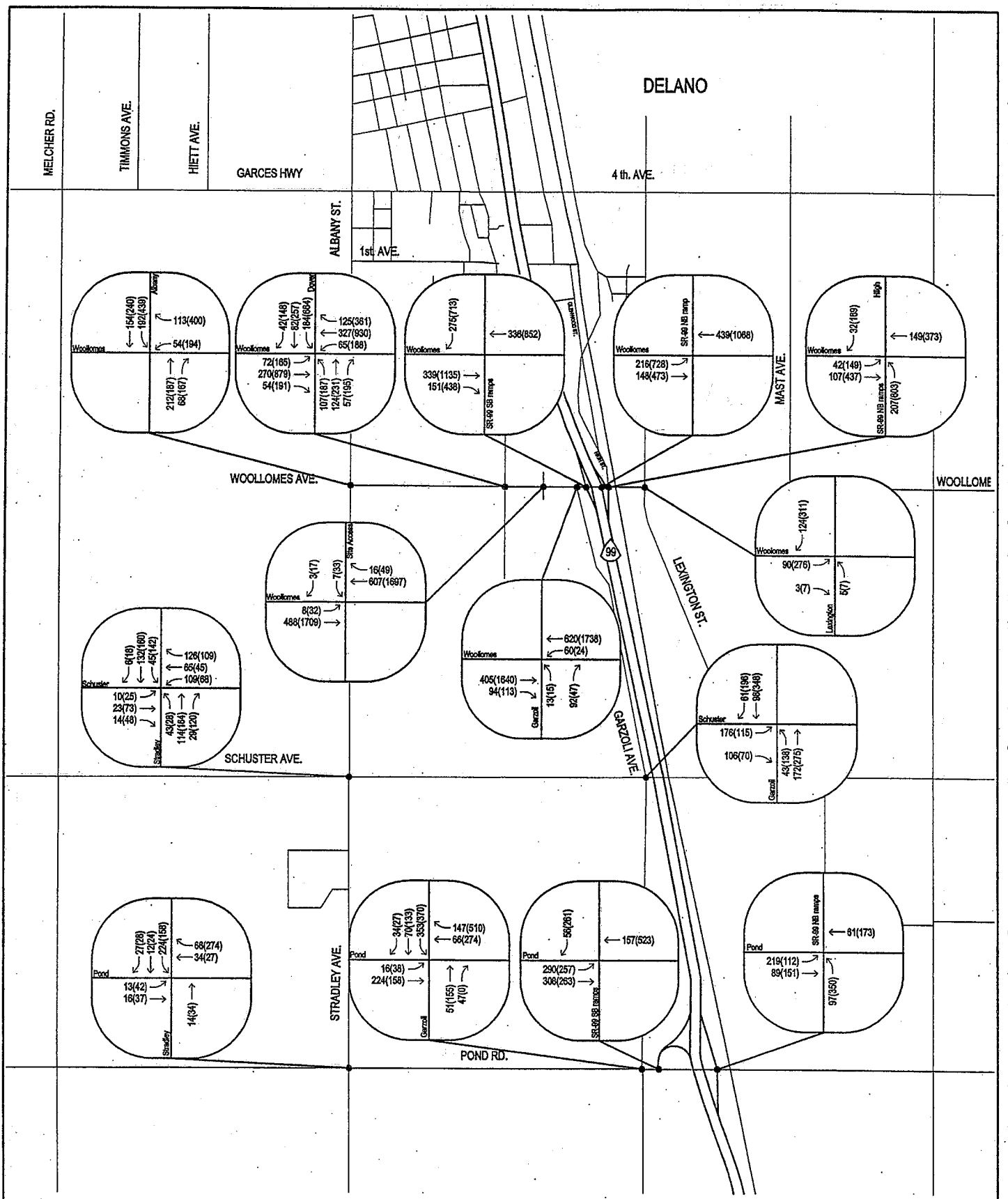


Proposed Market Place I Development
Saturday Near-Term Plus Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



Proposed Market Place I Development
Cumulative 2030 Projects Traffic Volumes
Delano, California

LEGEND

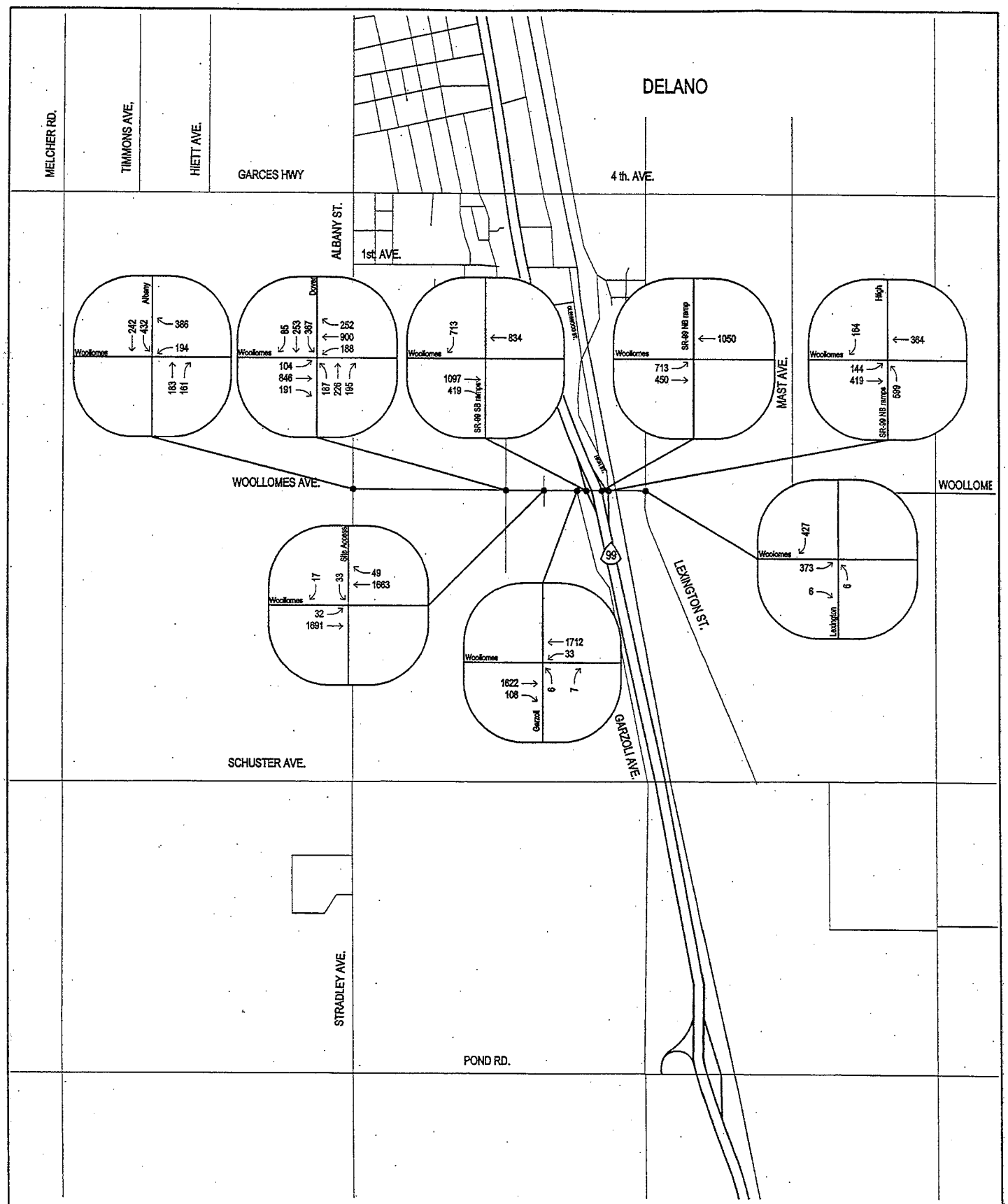
20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

PETERS ENGINEERING GROUP

Figure 24

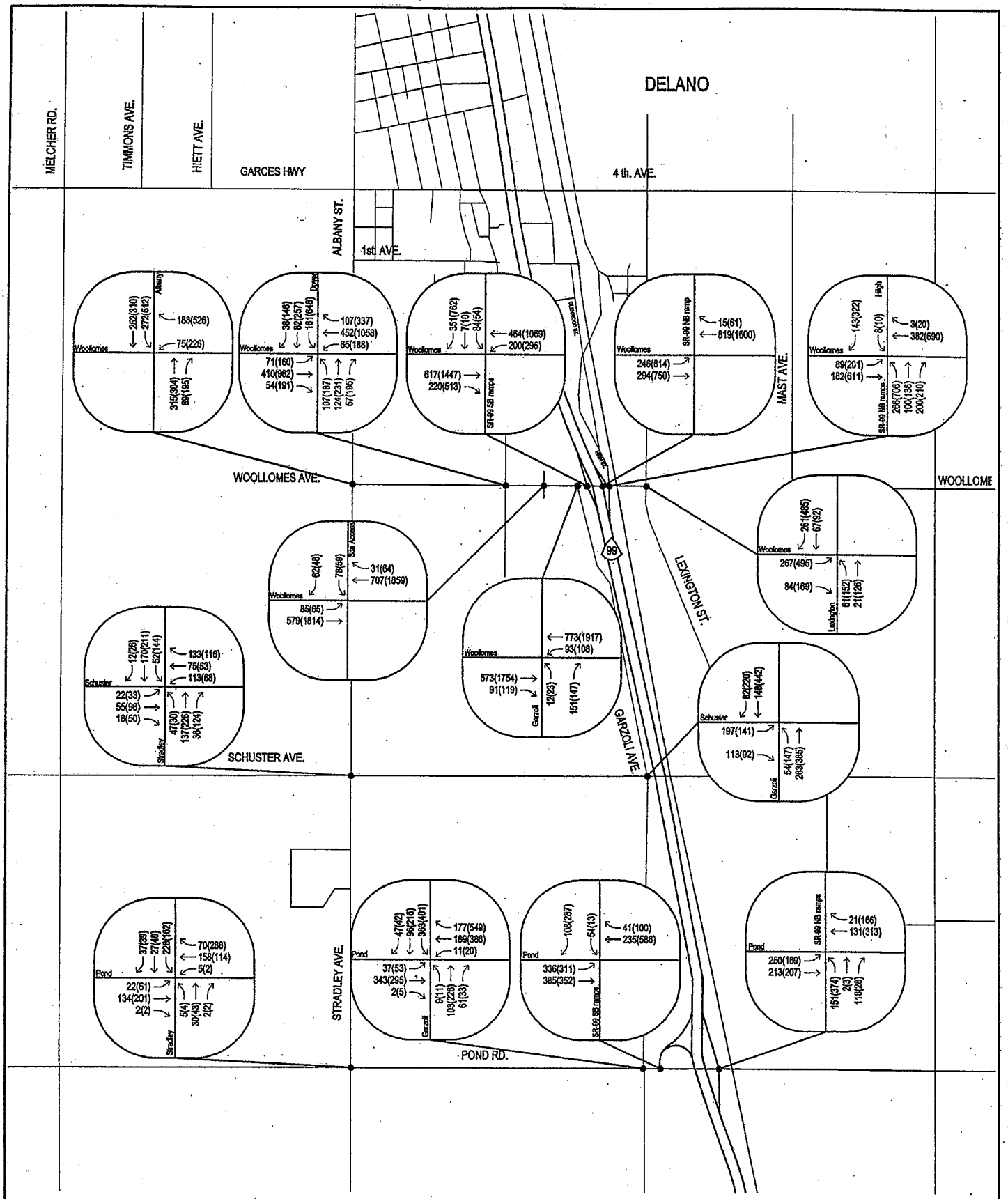


Proposed Market Place I Development
Saturday Cumulative 2030 Projects Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



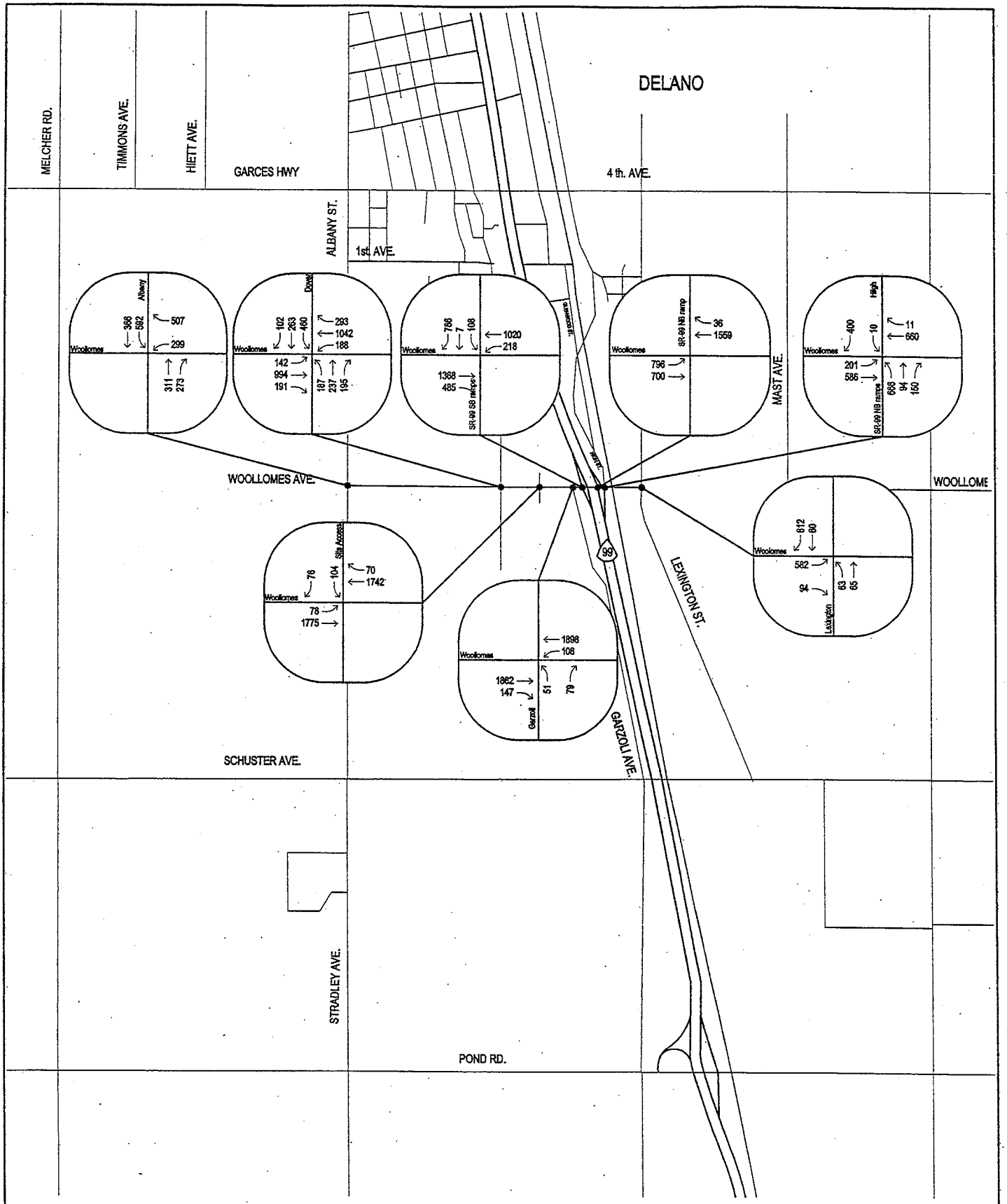
Proposed Market Place I Development
Cumulative Year 2030 Without Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

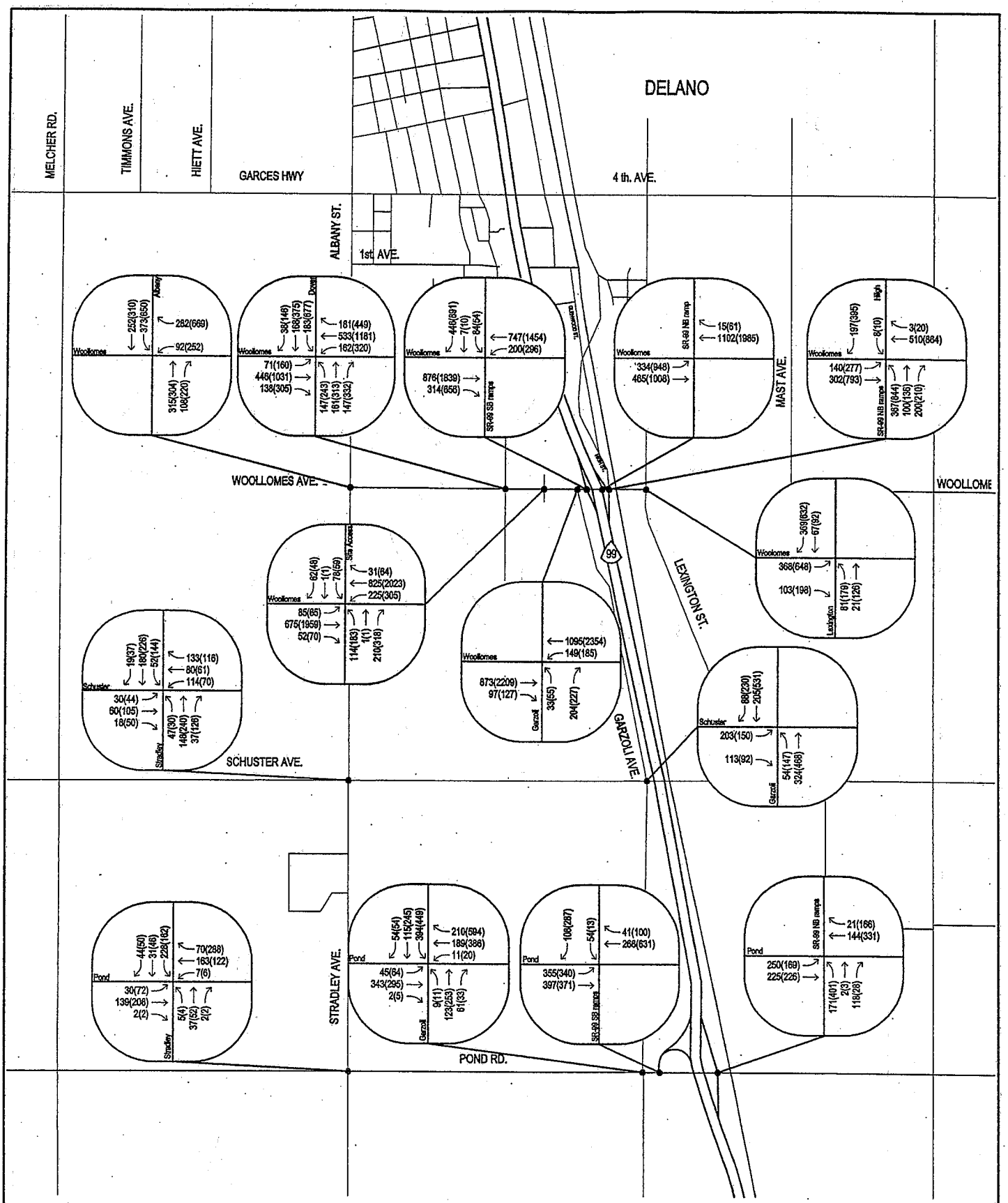


Proposed Market Place I Development
Saturday Cumulative Year 2030 Without Project Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



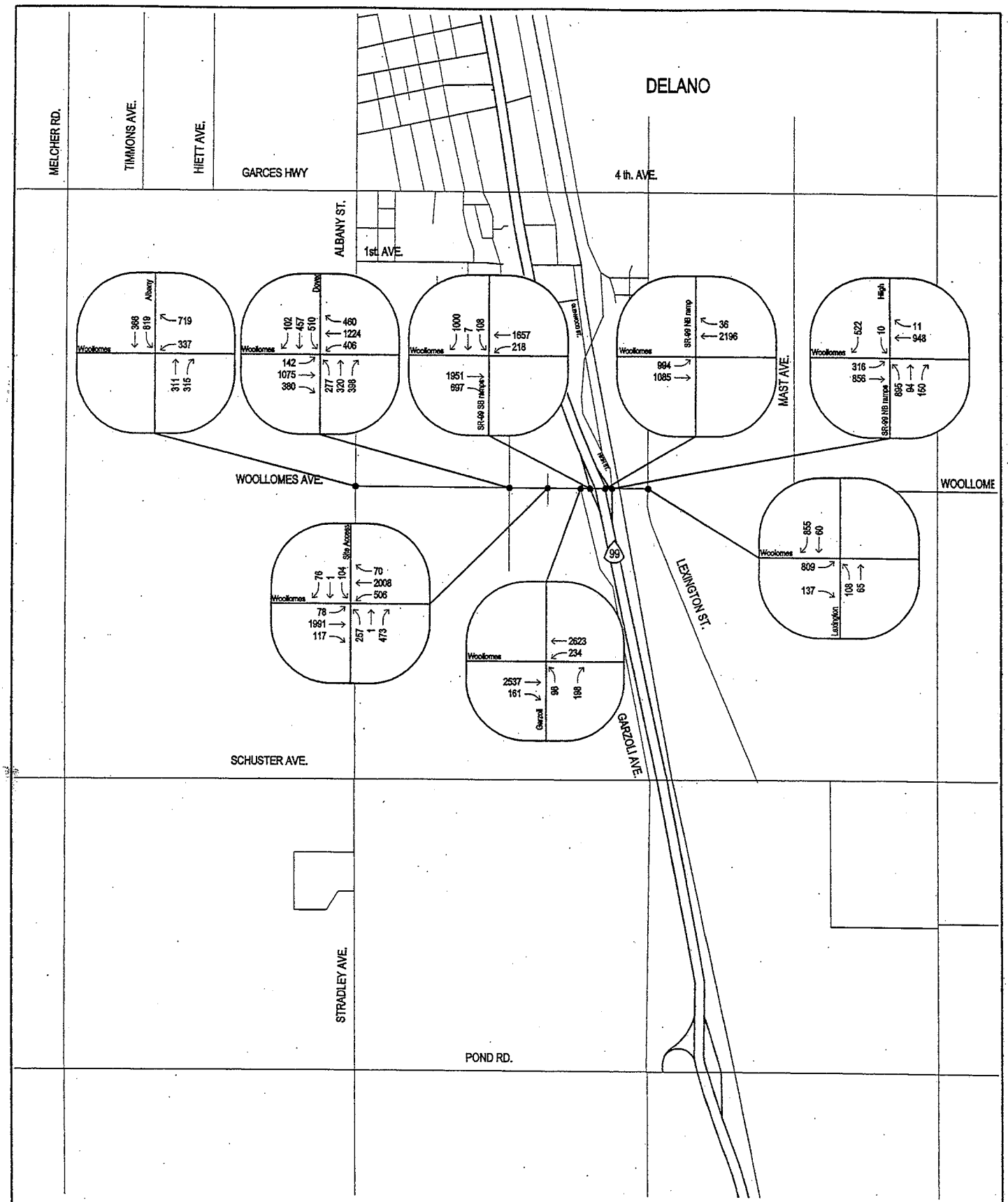
Proposed Market Place I Development
Cumulative Year 2030 With Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

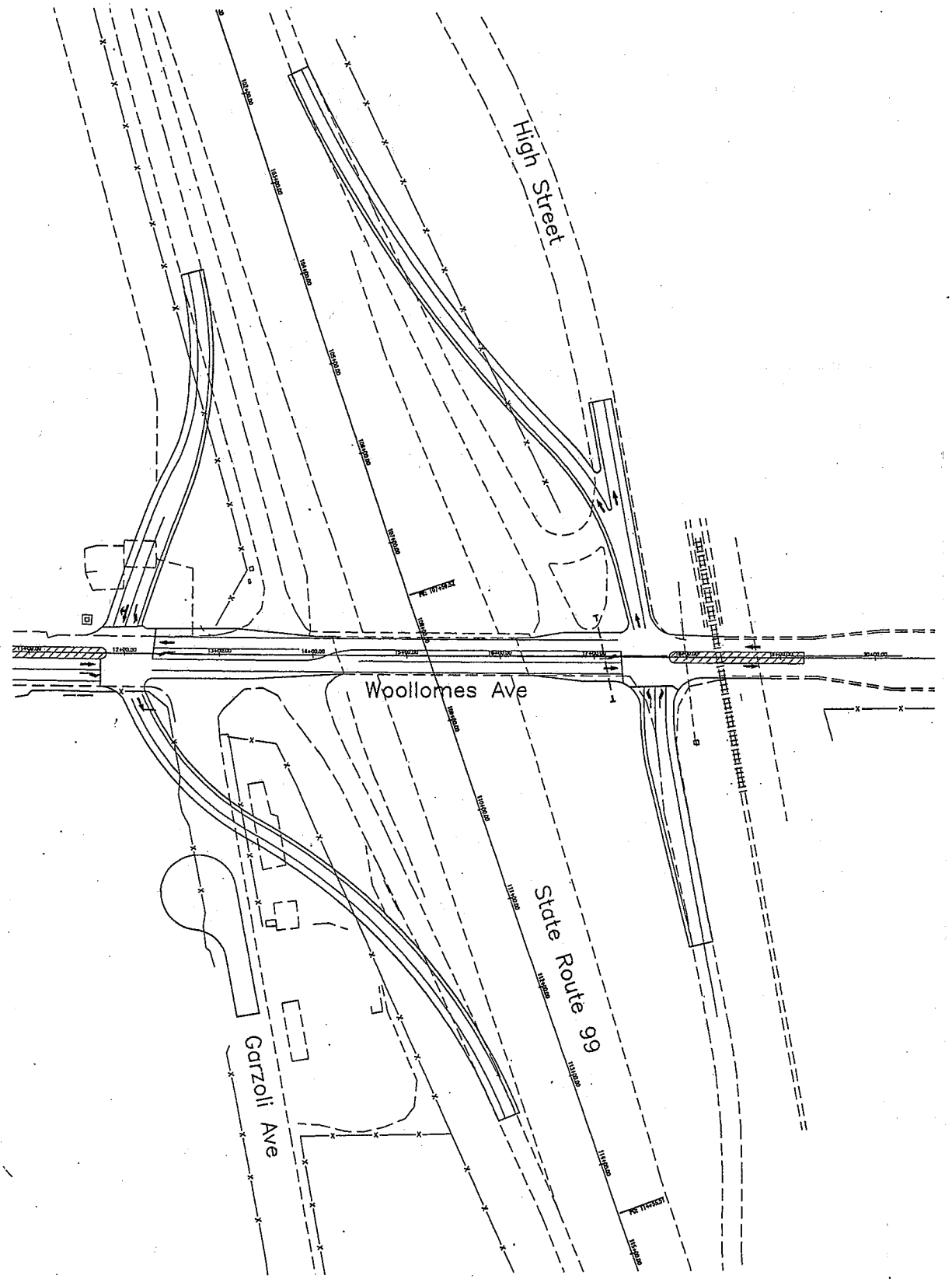


Proposed Market Place I Development
Saturday Cumulative Year 2030 With Project Traffic Volumes
Delano, California

LEGEND

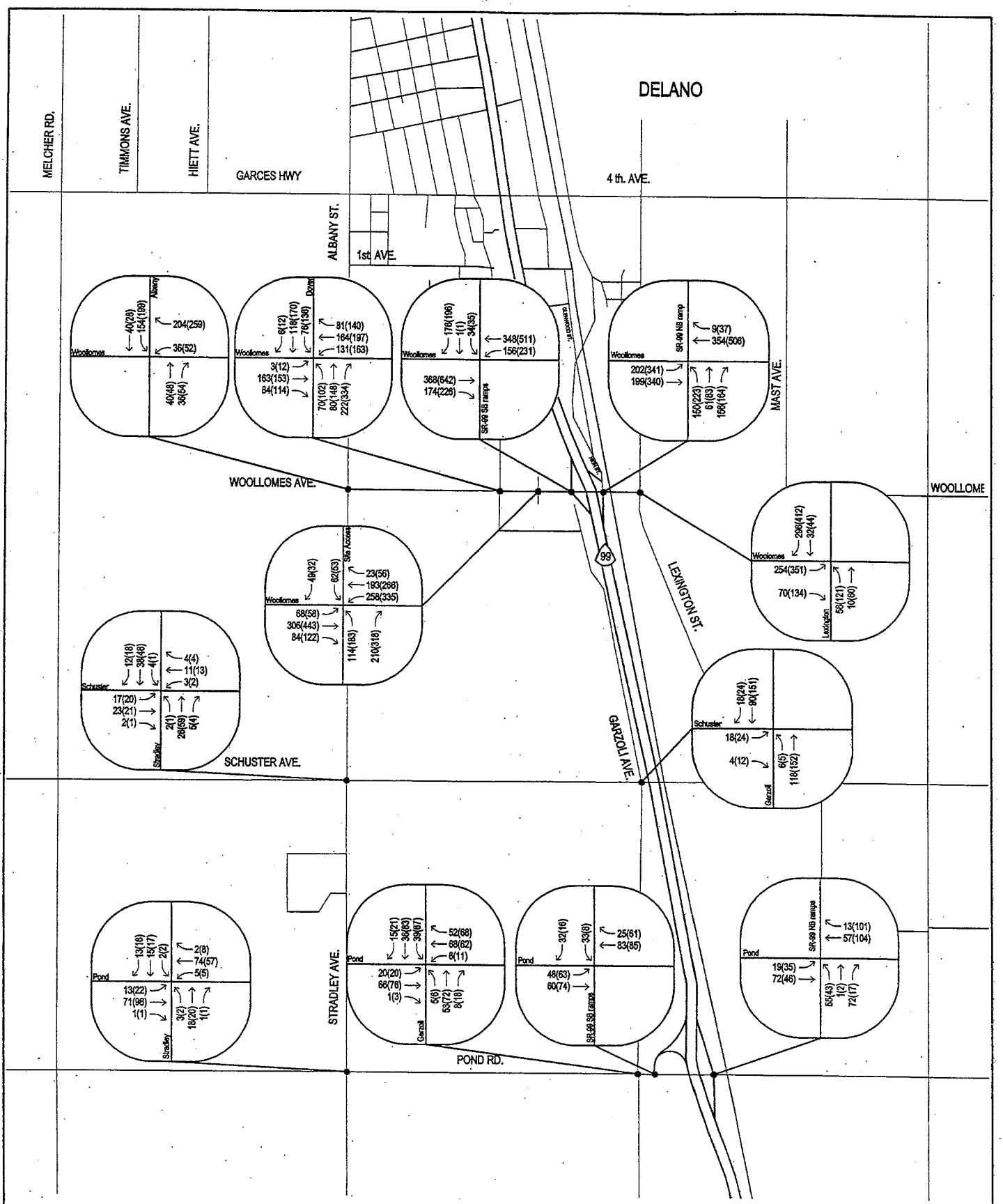
20-Saturday Peak Hour Volumes

Not to Scale



Conceptual Interim Interchange Configuration
Proposed Market Place I Development
Southwest Corner of Woollomes and Dover Parkway
Delano, California

Not to Scale



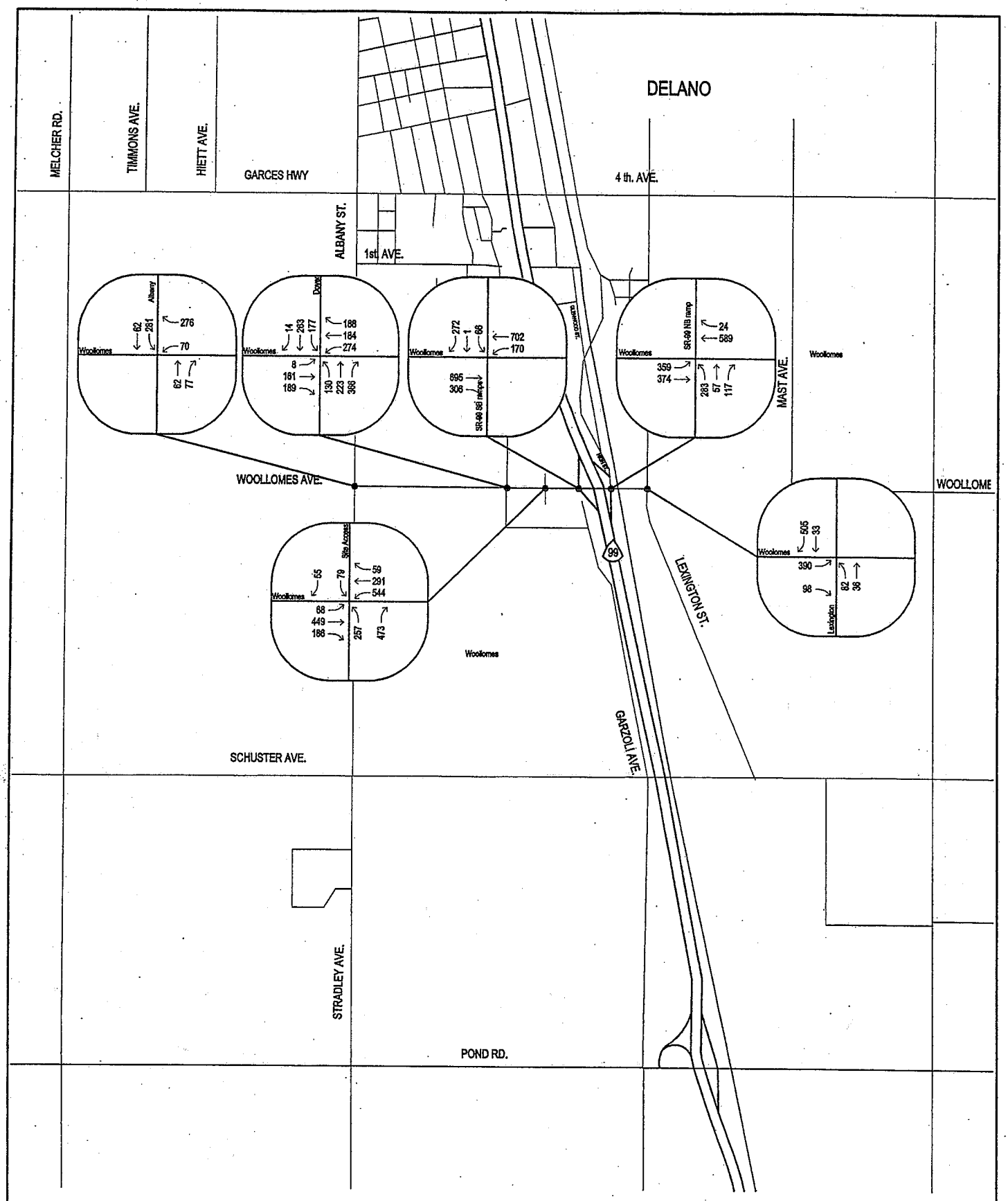
Proposed Market Place I Development
Redistributed Existing Plus Opening Year Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale



Proposed Market Place I Development

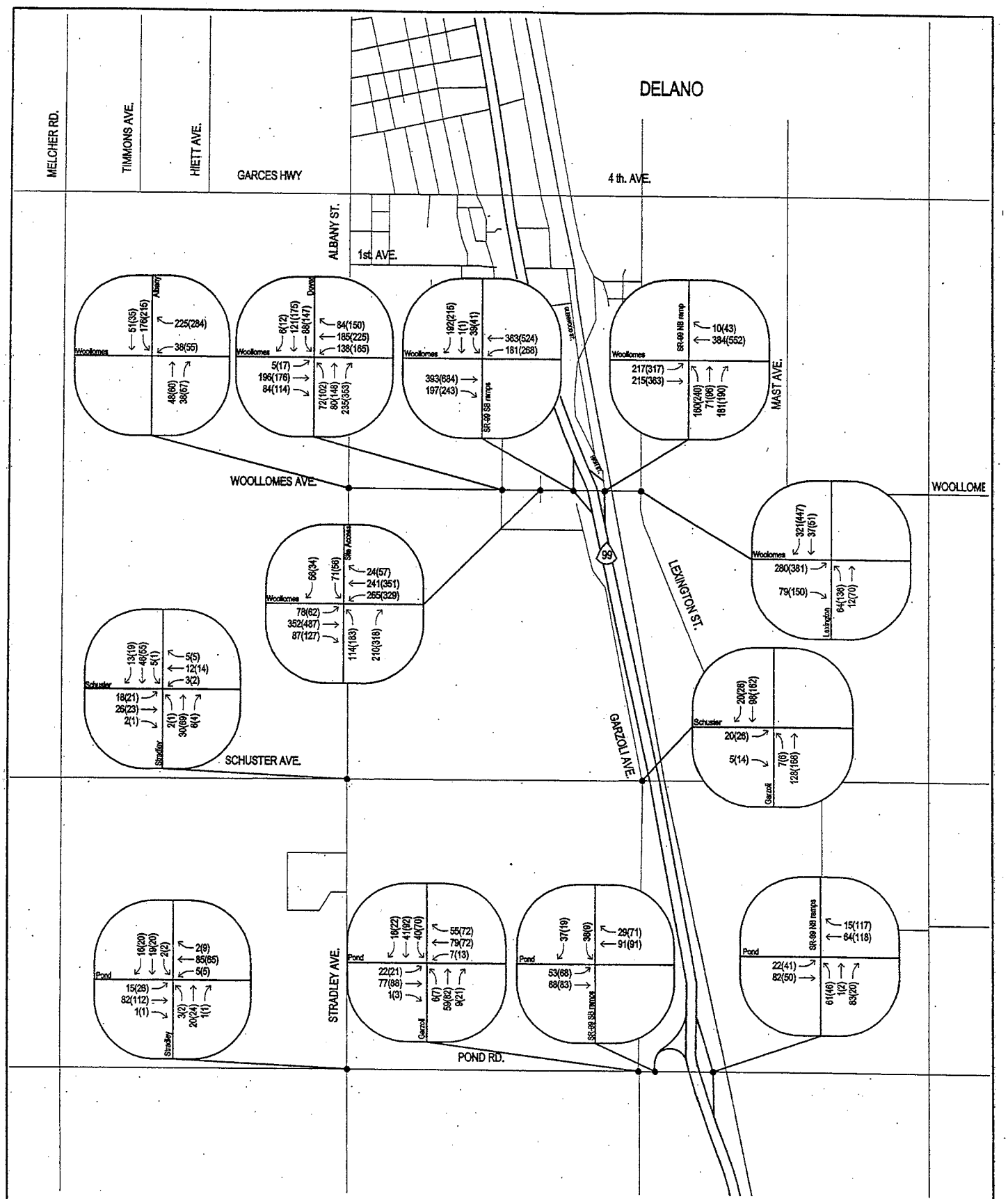
Redistributed Saturday Existing Plus Opening Year Approved Projects Plus Project Traffic Volumes

Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



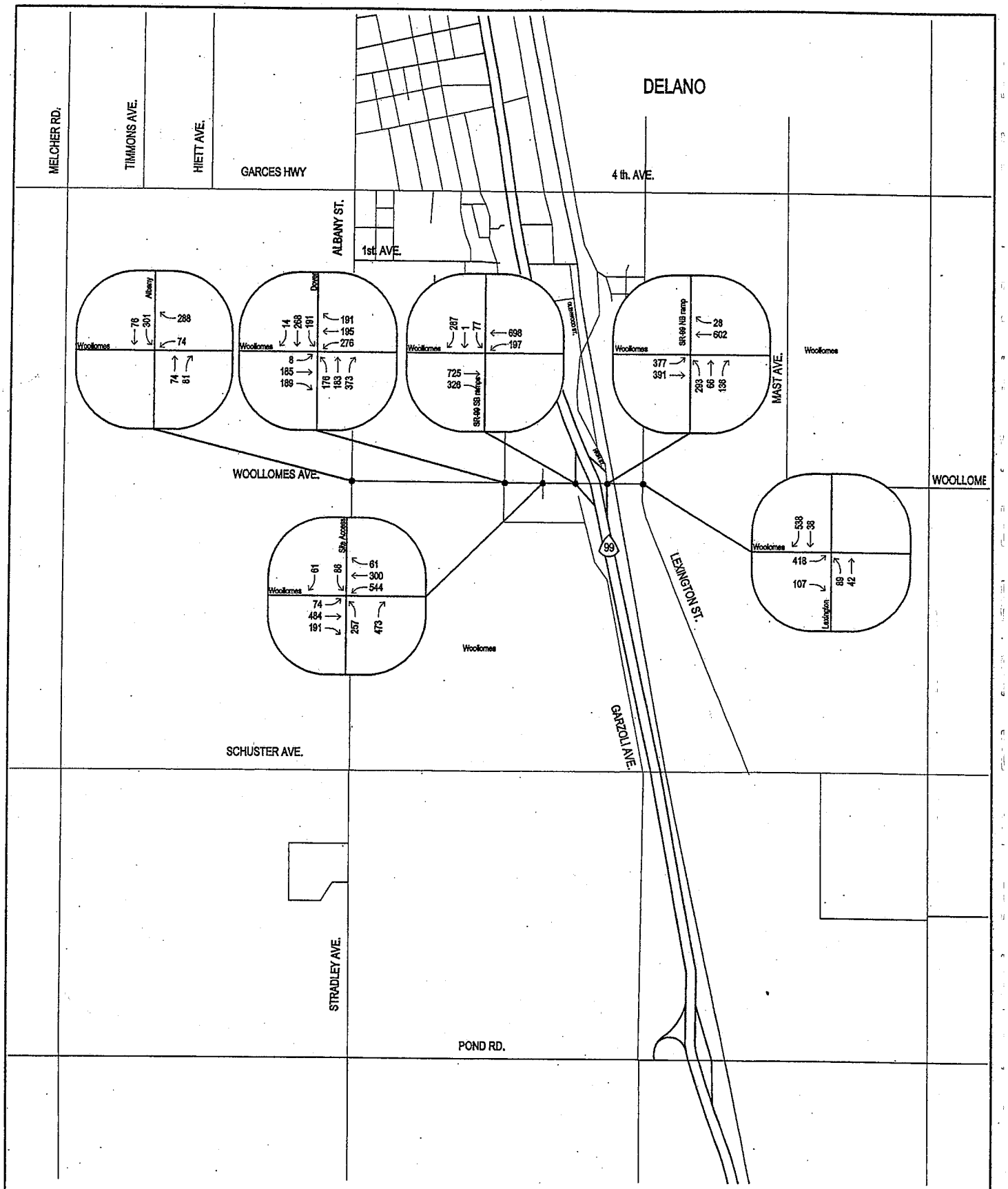
Proposed Market Place I Development
Redistributed Near-Term Plus Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale

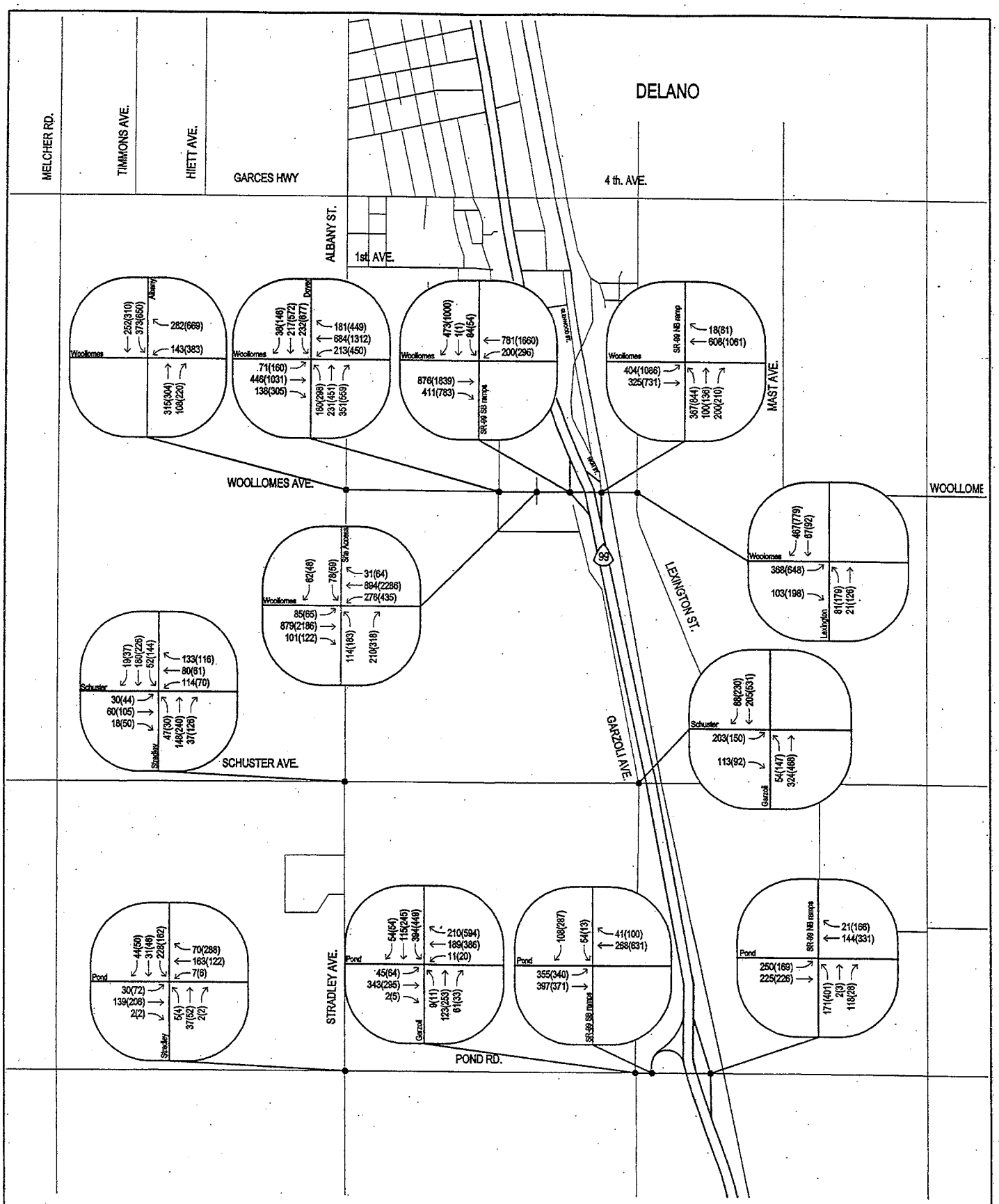


Proposed Market Place I Development
Redistributed Saturday Near-Term Plus Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale



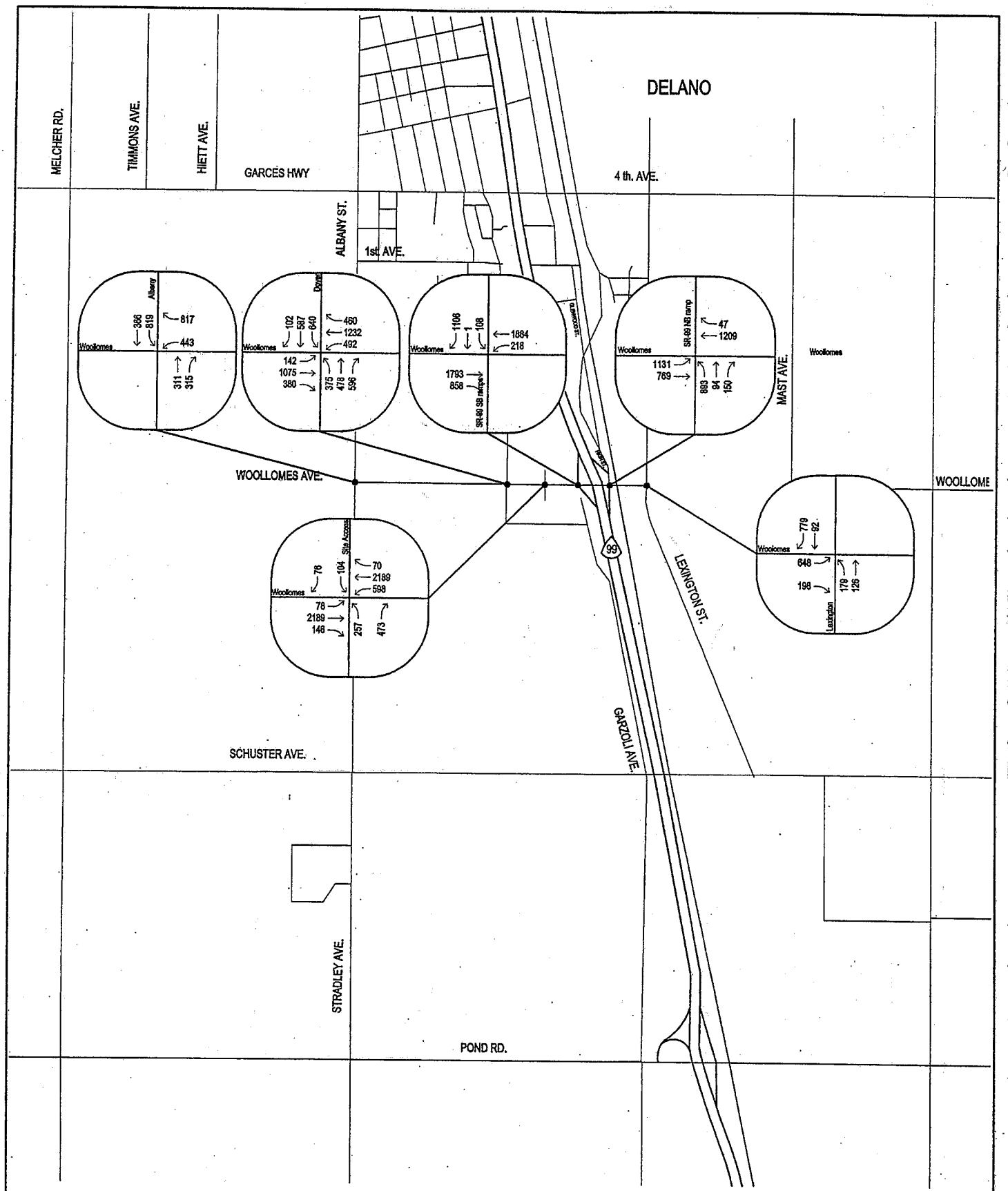
Proposed Market Place I Development
Redistributed Cumulative Year 2030 With Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale



Proposed Market Place I Development
Redistributed Saturday Cumulative Year 2030 With Project Traffic Volumes
Delano, California

LEGEND

20-Saturday Peak Hour Volumes

Not to Scale

APPENDIX A

Trip Generation Calculations

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Free-Standing Discount Superstore
Code 813

Project: 04-106.02
Location: Woollomes and Garzoli
1,000 Square Feet Gross Floor Area 228.751

AM Peak Hour Traffic:

Percentage Entering: 51%
Percentage Exiting: 49%

Average: 420.90 Entering: 214.66 **Entering: 215**

Exiting: 206.24 **Exiting: 207**

PM Peak Hour Traffic:

Percentage Entering: 49%
Percentage Exiting: 51%

Average: 885.27 Entering: 433.78

Exiting: 451.49 **Entering: 434**

Exiting: 452

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 11256.84 Entering: 5628.42

Exiting: 5628.42 **Entering: 5629**

Exiting: 5629

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Home Improvement Superstore
Code 862

Project:	**04-106.02**
Location:	**Woollomes and Garzoli**
1,000 Square Feet Gross Floor Area	**172.463**

AM Peak Hour Traffic:

Percentage Entering: **54%**
Percentage Exiting: **46%**

Average: 206.96 Entering: 111.76 **Entering:** **112**

Exiting: 95.20 **Exiting:** **96**

PM Peak Hour Traffic:

Percentage Entering: **47%**
Percentage Exiting: **53%**

Average: 422.53 Entering: 198.59

Exiting: 223.94 **Entering:** **199**

Exiting: **224**

Weekday Traffic:

Percentage Entering: **50%**
Percentage Exiting: **50%**

Average: 5139.40 Entering: 2569.70

Exiting: 2569.70 **Entering:** **2570**

Best Fit: 4699.11 Entering: 2349.55 **Exiting:** **2570**

Exiting: 2349.55

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Gasoline/Service Station
Code 944

Project: 04-106.02
Location: Market Place I
Fueling Positions 14

AM Peak Hour Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average:	168.98	Entering:	84.49		
		Exiting:	84.49	**Entering:**	**85**
Best Fit:	158.99	Entering:	79.50	**Exiting:**	**85**
		Exiting:	79.50		

PM Peak Hour Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average:	194.04	Entering:	97.02		
		Exiting:	97.02	**Entering:**	**98**
Best Fit:		Entering:	0.00	**Exiting:**	**98**
		Exiting:	0.00		

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average:	2359.84	Entering:	1179.92		
		Exiting:	1179.92	**Entering:**	**1180**
Best Fit:		Entering:	0.00	**Exiting:**	**1180**
		Exiting:	0.00		

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project:	**04-106.02**
Location:	**Woollomes and Garzoli**
1000 Square Feet	
Gross Leasable Area	**35.944**

AM Peak Hour Traffic:

Percentage Entering:			**61%**		
Percentage Exiting:			**39%**		
Average:	37.02	Entering:	22.58		
		Exiting:	14.44	**Entering:**	**23**
				Exiting:	**15**

PM Peak Hour Traffic:

Percentage Entering:			**48%**		
Percentage Exiting:			**52%**		
Average:	134.79	Entering:	64.70		
		Exiting:	70.09	**Entering:**	**65**
				Exiting:	**71**

Weekday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average:	1543.44	Entering:	771.72		
		Exiting:	771.72	**Entering:**	**772**
				Exiting:	**772**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Fast-Food Restaurant with Drive-Through Window
Code 934

Project:	**04-106.02**
Location:	**Woollomes and Garzoli**
1000 Square Feet	
Gross Floor Area	**8.1**

AM Peak Hour Traffic:

Percentage Entering: **51%**
Percentage Exiting: **49%**

Average: 430.19	Entering:	219.40			
	Exiting:	210.79	**Entering:**	**220**	
Best Fit:	Entering:	0.00	**Exiting:**	**211**	
	Exiting:	0.00			

PM Peak Hour Traffic:

Percentage Entering: **52%**
Percentage Exiting: **48%**

Average: 280.58	Entering:	145.90			
	Exiting:	134.68	**Entering:**	**146**	
Best Fit:	Entering:	0.00	**Exiting:**	**135**	
	Exiting:	0.00			

Weekday Traffic:

Percentage Entering: **50%**
Percentage Exiting: **50%**

Average: 4018.57	Entering:	2009.29			
	Exiting:	2009.29	**Entering:**	**2010**	
Best Fit:	Entering:	0.00	**Exiting:**	**2010**	
	Exiting:	0.00			

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Fast-Food Restaurant with Drive-Through Window
Code 934

Project:	**04-106.02**
Location:	**Woollomes and Garzoli**
1000 Square Feet Gross Floor Area	**3.176**

AM Peak Hour Traffic:

Percentage Entering: **51%**
Percentage Exiting: **49%**

Average: 168.68	Entering:	86.03			
	Exiting:	82.65	**Entering:**	**87**	
Best Fit:	Entering:	0.00	**Exiting:**	**83**	
	Exiting:	0.00			

PM Peak Hour Traffic:

Percentage Entering: **52%**
Percentage Exiting: **48%**

Average: 110.02	Entering:	57.21			
	Exiting:	52.81	**Entering:**	**58**	
Best Fit:	Entering:	0.00	**Exiting:**	**53**	
	Exiting:	0.00			

Weekday Traffic:

Percentage Entering: **50%**
Percentage Exiting: **50%**

Average: 1575.68	Entering:	787.84			
	Exiting:	787.84	**Entering:**	**788**	
Best Fit:	Entering:	0.00	**Exiting:**	**788**	
	Exiting:	0.00			

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project: 04-106.02
Location: Northeast of Woollomes and Dover Parkway
1000 Square Feet
Gross Leasable Area 58.342

AM Peak Hour Traffic:

Percentage Entering: 61%
Percentage Exiting: 39%

Average: 60.09 Entering: 36.66

Exiting: 23.44

Entering: 37

Exiting: 24

PM Peak Hour Traffic:

Percentage Entering: 48%
Percentage Exiting: 52%

Average: 218.78 Entering: 105.02

Exiting: 113.77

Entering: 106

Exiting: 114

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 2505.21 Entering: 1252.60

Exiting: 1252.60

Entering: 1253

Exiting: 1253

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 6326

Number of Units: 137

AM Peak Hour Traffic:

Percentage Entering: 25%
Percentage Exiting: 75%

Average: 102.75 Entering: 25.69

Exiting: 77.06

Entering: 26

Exiting: 78

PM Peak Hour Traffic:

Percentage Entering: 63%
Percentage Exiting: 37%

Average: 138.37 Entering: 87.17

Exiting: 51.20

Entering: 88

Exiting: 52

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 1311.09 Entering: 655.55

Exiting: 655.55

Entering: 656

Exiting: 656

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 6327

Number of Units: 128

AM Peak Hour Traffic:

Percentage Entering: **25%**
Percentage Exiting: **75%**

Average: 96.00 Entering: 24.00

Exiting: 72.00

Entering: **25**

Exiting: **73**

PM Peak Hour Traffic:

Percentage Entering: **63%**
Percentage Exiting: **37%**

Average: 129.28 Entering: 81.45

Exiting: 47.83

Entering: **82**

Exiting: **48**

Weekday Traffic:

Percentage Entering: **50%**
Percentage Exiting: **50%**

Average: 1224.96 Entering: 612.48

Exiting: 612.48

Entering: **613**

Exiting: **613**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 6470

Number of Units: 165

AM Peak Hour Traffic:

Percentage Entering: 25%
Percentage Exiting: 75%

Average: 123.75 Entering: 30.94

Exiting: 92.81

Entering: 31

Exiting: 93

PM Peak Hour Traffic:

Percentage Entering: 63%
Percentage Exiting: 37%

Average: 166.65 Entering: 104.99

Exiting: 61.66

Entering: 105

Exiting: 62

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 1579.05 Entering: 789.53

Exiting: 789.53

Entering: 790

Exiting: 790

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 6889

Number of Units: 1671

AM Peak Hour Traffic:

Percentage Entering: 25%
Percentage Exiting: 75%

Average: 1253.25 Entering: 313.31

Exiting: 939.94

Entering: 314

Exiting: 940

PM Peak Hour Traffic:

Percentage Entering: 63%
Percentage Exiting: 37%

Average: 1687.71 Entering: 1063.26

Exiting: 624.45

Entering: 1064

Exiting: 625

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: ####### Entering: 7995.74

Exiting: 7995.74

Entering: 7996

Exiting: 7996

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 5987

Number of Units: 35

AM Peak Hour Traffic:

Percentage Entering: 25%
Percentage Exiting: 75%

Average: 26.25 Entering: 6.56

Exiting: 19.69

Entering: 7

Exiting: 20

PM Peak Hour Traffic:

Percentage Entering: 63%
Percentage Exiting: 37%

Average: 35.35 Entering: 22.27

Exiting: 13.08

Entering: 23

Exiting: 14

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 334.95 Entering: 167.48

Exiting: 167.48

Entering: 168

Exiting: 168

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Specialty Retail Center
Code 814

Project: Delano MP I

Location: Pad 4

1000 Square Feet
Gross Leasable Area 4.005

AM Peak Hour Traffic:
(NOT AVAILABLE)

50% of the PM Peak Hour was assumed for AM

Entering: 7

Exiting: 9

PM Peak Hour Traffic:

Percentage Entering: 44%
Percentage Exiting: 56%

Entering: 14

Best Fit: 31.09 Entering: 13.68 **Exiting:** 18

Exiting: 17.41

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Entering: 105

Best Fit: 208.99 Entering: 104.50 **Exiting:** 105

Exiting: 104.50

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Low-Rise Apartment
Code 221

Project:	**Delano MPI**	
Location:	**K**	
Number of Occupied Units:	**70**	(Based on 97% occupancy of xxx units)

AM Peak Hour Traffic:

Percentage Entering:			**21%**		
Percentage Exiting:			**79%**		
Average:	32.20	Entering:	6.76		
		Exiting:	25.44	**Entering:**	**7**
				Exiting:	**26**

PM Peak Hour Traffic:

Percentage Entering:			**65%**		
Percentage Exiting:			**35%**		
Average:	40.60	Entering:	26.39		
		Exiting:	14.21	**Entering:**	**27**
				Exiting:	**15**

Weekday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average:	461.30	Entering:	230.65		
		Exiting:	230.65	**Entering:**	**231**
				Exiting:	**231**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
General Light Industrial (110)

Project:	**Delnao MPI**
Location:	**South of MPI**
Acres	**17.65**

AM Peak Hour Traffic:

Percentage Entering: **83%**
Percentage Exiting: **17%**

Average: 132.55 Entering: 110.02

Exiting: 22.53

Entering: **111**

Exiting: **23**

PM Peak Hour Traffic:

Percentage Entering: **22%**
Percentage Exiting: **78%**

Average: 128.14 Entering: 28.19

Exiting: 99.95

Entering: **29**

Exiting: **100**

Weekday Traffic:

Percentage Entering: **50%**
Percentage Exiting: **50%**

Average: 914.27 Entering: 457.14

Exiting: 457.14

Entering: **458**

Exiting: **458**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
High-Turnover (Sit-Down) Restaurant
Code 932

Project:	**Delano MPI**
Location:	**Pad 4**
1000 Square Feet Floor Area	**3.176**

AM Peak Hour Traffic:

Percentage Entering: **52%**
Percentage Exiting: **48%**

Average:	36.59	Entering:	19.03		
		Exiting:	17.56	**Entering:**	**20**
Best Fit:		Entering:	0.00	**Exiting:**	**18**
		Exiting:	0.00		

PM Peak Hour Traffic:

Percentage Entering: **61%**
Percentage Exiting: **39%**

Average:	34.68	Entering:	21.16		
		Exiting:	13.53	**Entering:**	**22**
Best Fit:		Entering:	0.00	**Exiting:**	**14**
		Exiting:	0.00		

Weekday Traffic:

Percentage Entering: **50%**
Percentage Exiting: **50%**

Average:	403.83	Entering:	201.91		
		Exiting:	201.91	**Entering:**	**202**
Best Fit:		Entering:	0.00	**Exiting:**	**202**
		Exiting:	0.00		

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project:	**Delano Marketplace II**
Location:	**NW of Woollomes and Dover Parkway**
1000 Square Feet	
Gross Leasable Area	**599**

AM Peak Hour Traffic:

Percentage Entering:			**61%**		
Percentage Exiting:			**39%**		
Average:	616.97	Entering:	376.35		
		Exiting:	240.62	**Entering:**	**377**
Best Fit:	458.13	Entering:	279.46	**Exiting:**	**241**
		Exiting:	178.67		

PM Peak Hour Traffic:

Percentage Entering:			**48%**		
Percentage Exiting:			**52%**		
Average:	2246.25	Entering:	1078.20		
		Exiting:	1168.05	**Entering:**	**1079**
Best Fit:	2040.34	Entering:	979.36	**Exiting:**	**1169**
		Exiting:	1060.98		

Weekday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average:	25721.06	Entering:	12860.53		
		Exiting:	12860.53	**Entering:**	**12861**
Best Fit:	21740.24	Entering:	10870.12	**Exiting:**	**12861**
		Exiting:	10870.12		

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project:	**Delano Marketplace III**
Location:	**SW of Woollomes and Dover Parkway**
1000 Square Feet Gross Leasable Area	**544**

AM Peak Hour Traffic:

Percentage Entering:			**61%**		
Percentage Exiting:			**39%**		
Average:	560.32	Entering:	341.80		
		Exiting:	218.52	**Entering:**	**342**
Best Fit:	432.41	Entering:	263.77	**Exiting:**	**219**
		Exiting:	168.64		

PM Peak Hour Traffic:

Percentage Entering:			**48%**		
Percentage Exiting:			**52%**		
Average:	2040.00	Entering:	979.20		
		Exiting:	1060.80	**Entering:**	**980**
Best Fit:	1914.68	Entering:	919.05	**Exiting:**	**1061**
		Exiting:	995.63		

Weekday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average:	23359.36	Entering:	11679.68		
		Exiting:	11679.68	**Entering:**	**11680**
Best Fit:	20420.96	Entering:	10210.48	**Exiting:**	**11680**
		Exiting:	10210.48		

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano Marketplace II
Tentative Tract No.: n/a
Location: Delano, CA
Number of Units: 141

AM Peak Hour Traffic:	**Percentage Entering:**		**25%**		
	Percentage Exiting:		**75%**		
	Average: 105.75	Entering:	26.44	**Entering:**	**27**
		Exiting:	79.31	**Exiting:**	**79**
PM Peak Hour Traffic:	**Percentage Entering:**		**63%**		
	Percentage Exiting:		**37%**		
	Average: 142.41	Entering:	89.72	**Entering:**	**90**
		Exiting:	52.69	**Exiting:**	**53**
Weekday Traffic:	**Percentage Entering:**		**50%**		
	Percentage Exiting:		**50%**		
	Average: 1349.37	Entering:	674.69	**Entering:**	**675**
		Exiting:	674.69	**Exiting:**	**675**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project:	**Delano Marketplace III**
Tentative Tract No.:	**n/a**
Location:	**Delano, CA**
Number of Units:	**195**

AM Peak Hour Traffic:	**Percentage Entering:**		**25%**			
	Percentage Exiting:		**75%**			
	Average: 146.25	Entering:	36.56	**Entering:**	**37**	
		Exiting:	109.69	**Exiting:**	**110**	
PM Peak Hour Traffic:	**Percentage Entering:**		**63%**			
	Percentage Exiting:		**37%**			
	Average: 196.95	Entering:	124.08	**Entering:**	**124**	
		Exiting:	72.87	**Exiting:**	**73**	
Weekday Traffic:	**Percentage Entering:**		**50%**			
	Percentage Exiting:		**50%**			
	Average: 1866.15	Entering:	933.08	**Entering:**	**934**	
		Exiting:	933.08	**Exiting:**	**934**	

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Low-Rise Apartment
Code 221

Project:	**05-105.01**
Location:	**Delano, CA**
Number of Occupied Units:	**112**

AM Peak Hour Traffic:	**Percentage Entering:**		**21%**			
	Percentage Exiting:		**79%**			
	Average:	51.52	Entering:	10.82		
			Exiting:	40.70	**Entering:**	**13**
	Best Fit:	60.29	Entering:	12.66	**Exiting:**	**48**
			Exiting:	47.63		
PM Peak Hour Traffic:	**Percentage Entering:**		**65%**			
	Percentage Exiting:		**35%**			
	Average:	64.96	Entering:	42.22		
			Exiting:	22.74	**Entering:**	**49**
	Best Fit:	74.61	Entering:	48.50	**Exiting:**	**27**
			Exiting:	26.11		
Weekday Traffic:	**Percentage Entering:**		**50%**			
	Percentage Exiting:		**50%**			
	Average:	738.08	Entering:	369.04		
			Exiting:	369.04	**Entering:**	**481**
	Best Fit:	960.97	Entering:	480.49	**Exiting:**	**481**
			Exiting:	480.49		

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Free-Standing Discount Superstore
Code 813

Project: 04-106.02
Location: Woollomes and Garzoli
1,000 Square Feet
Gross Floor Area 228.751

Satuday Peak Hour Traffic:

Percentage Entering: 51%
Percentage Exiting: 49%

Average: 1146.04 Entering: 584.48 **Entering:** **585**

Exiting: 561.56 **Exiting:** **562**

Saturday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 13153.18 Entering: 6576.59

Exiting: 6576.59 **Entering:** **6577**

Exiting: **6577**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Home Improvement Superstore
Code 862

Project:	**04-106.02**
Location:	**Woollomes and Garzoli**
1,000 Square Feet Gross Floor Area	**172.463**

Saturday Peak Hour Traffic:

Percentage Entering:			**53%**		
Percentage Exiting:			**47%**		
Average: 931.30	Entering:	493.59		**Entering:**	**494**
	Exiting:	437.71		**Exiting:**	**438**

Saturday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average: 7876.39	Entering:	3938.19			
	Exiting:	3938.19		**Entering:**	**3939**
				Exiting:	**3939**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project:	**04-106.02**
Location:	**Woollomes and Garzoli**
1000 Square Feet	
Gross Leasable Area	**35.944**

Saturday Peak Hour Traffic:

Percentage Entering:			**52%**		
Percentage Exiting:			**48%**		
Average:	178.64	Entering:	92.89		
		Exiting:	85.75	**Entering:**	**93**
				Exiting:	**86**

Saturday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average:	1796.12	Entering:	898.06		
		Exiting:	898.06	**Entering:**	**899**
				Exiting:	**899**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project: 04-106.02
Location: Northeast of Woollomes and Dover Parkway
1000 Square Feet
Gross Leasable Area 58.342

Saturday Peak Hour Traffic:

Percentage Entering: 52%
Percentage Exiting: 48%

Average: 289.96 Entering: 150.78

Exiting: 139.18

Entering: 151

Exiting: 140

Saturday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 2915.35 Entering: 1457.67

Exiting: 1457.67

Entering: 1458

Exiting: 1458

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project: 04-106.02
Location: MPII
1000 Square Feet
Gross Leasable Area 599

Saturday Peak Hour Traffic:

Percentage Entering: 52%
Percentage Exiting: 48%

Average: 2977.03 Entering: 1548.06

Exiting: 1428.97

Entering: 1549

Exiting: 1429

Saturday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: ####### Entering: 14966.02

Exiting: 14966.02

Entering: 14967

Exiting: 14967

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project:	**04-106.02**
Location:	**MPIII**
1000 Square Feet	
Gross Leasable Area	**544**

Saturday Peak Hour Traffic:

Percentage Entering:	**52%**
Percentage Exiting:	**48%**

Average: 2703.68 Entering: 1405.91

Exiting: 1297.77

Entering: 1406

Exiting: 1298

Saturday Traffic:

Percentage Entering:	**50%**
Percentage Exiting:	**50%**

Average: ####### Entering: 13591.84

Exiting: 13591.84

Entering: 13592

Exiting: 13592

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Shopping Center
Code 820

Project:	**04-106.02**
Location:	**Vineyard II**
1000 Square Feet	
Gross Leasable Area	**541.658**

Saturday Peak Hour Traffic:

Percentage Entering:	**52%**			
Percentage Exiting:	**48%**			
Average: 2692.04	Entering:	1399.86		
	Exiting:	1292.18	**Entering:**	**1400**
			Exiting:	**1293**

Saturday Traffic:

Percentage Entering:	**50%**			
Percentage Exiting:	**50%**			
Average: #######	Entering:	13533.33		
	Exiting:	13533.33	**Entering:**	**13534**
			Exiting:	**13534**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Fast-Food Restaurant with Drive-Through Window
Code 934

Project:	**04-106.02**
Location:	**Woollomes and Garzoli**
1000 Square Feet Gross Floor Area	**8.1**

Saturday Peak Hour Traffic:

Percentage Entering: **51%**
Percentage Exiting: **49%**

Average: 479.52	Entering:	244.56			
	Exiting:	234.96	**Entering:**	**245**	
Best Fit:	Entering:	0.00	**Exiting:**	**235**	
	Exiting:	0.00			

Saturday Traffic:

Percentage Entering: **50%**
Percentage Exiting: **50%**

Average: 5848.44	Entering:	2924.22			
	Exiting:	2924.22	**Entering:**	**2925**	
Best Fit:	Entering:	0.00	**Exiting:**	**2925**	
	Exiting:	0.00			

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Fast-Food Restaurant with Drive-Through Window
Code 934

Project: 04-106.02
Location: Woollomes and Garzoli
1000 Square Feet Gross Floor Area 3.176

Saturday Peak Hour Traffic:

Percentage Entering: 51%
Percentage Exiting: 49%

Average: 188.02	Entering:	95.89			
	Exiting:	92.13	**Entering:**	**96**	
Best Fit:	Entering:	0.00	**Exiting:**	**93**	
	Exiting:	0.00			

Saturday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 2293.17	Entering:	1146.58		
	Exiting:	1146.58	**Entering:**	**1147**
Best Fit:	Entering:	0.00	**Exiting:**	**1147**
	Exiting:	0.00		

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 6326

Number of Units: 137

Saturday Peak Hour Traffic:

Percentage Entering: 54%
Percentage Exiting: 46%

Average: 128.78 Entering: 69.54

Exiting: 59.24

Entering: 70

Exiting: 60

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 1383.70 Entering: 691.85

Exiting: 691.85

Entering: 692

Exiting: 692

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 6327

Number of Units: 128

Saturday Peak Hour Traffic:

Percentage Entering: 54%
Percentage Exiting: 46%

Average: 120.32 Entering: 64.97

Exiting: 55.35

Entering: 65

Exiting: 56

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 1292.80 Entering: 646.40

Exiting: 646.40

Entering: 647

Exiting: 647

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 6224

Number of Units: 399

Saturday Peak Hour Traffic:

Percentage Entering: 54%
Percentage Exiting: 46%

Average: 375.06 Entering: 202.53

Exiting: 172.53

Entering: 203

Exiting: 173

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 4029.90 Entering: 2014.95

Exiting: 2014.95

Entering: 2015

Exiting: 2015

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Low-Rise Apartment
Code 221

Project:	**Delano MPI**	
Location:	**K**	
Number of Occupied Units:	**70**	(Based on 97% occupancy of xxx units)

Saturday Peak Hour Traffic:

Percentage Entering:			**54%**		
Percentage Exiting:			**46%**		
Average:	40.60	Entering:	21.92		
		Exiting:	18.68	**Entering:**	**22**
				Exiting:	**19**

Saturday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average:	501.20	Entering:	250.60		
		Exiting:	250.60	**Entering:**	**251**
				Exiting:	**251**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
General Light Industrial (110)

Project:	**Delano MPI**
Location:	**South of MPI**
Acres	**17.65**

Saturday Peak Hour Traffic:

Percentage Entering:			**47%**		
Percentage Exiting:			**53%**		
Average:	16.94	Entering:	7.96		
		Exiting:	8.98	**Entering:**	**8**
				Exiting:	**9**

Saturday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average:	154.08	Entering:	77.04		
		Exiting:	77.04	**Entering:**	**78**
				Exiting:	**78**

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: Delano MPI
Tentative Tract No.: 6889

Number of Units: 1671

Saturday Peak Hour Traffic:

Percentage Entering: 54%
Percentage Exiting: 46%

Average: 1570.74 Entering: 848.20

Exiting: 722.54

Entering: 849

Exiting: 723

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: ####### Entering: 8438.55

Exiting: 8438.55

Entering: 8439

Exiting: 8439

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: MPII

Location: Woollomes
Number of Units: 141

Saturday Peak Hour Traffic:

Percentage Entering: 54%
Percentage Exiting: 46%

Average: 132.54 Entering: 71.57

Exiting: 60.97

Entering: 72

Exiting: 61

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 1424.10 Entering: 712.05

Exiting: 712.05

Entering: 713

Exiting: 713

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Single-Family Detached Housing
Code 210

Project: MPIII

Location: Woollomes
Number of Units: 195

Saturday Peak Hour Traffic:

Percentage Entering: 54%
Percentage Exiting: 46%

Average: 183.30 Entering: 98.98

Exiting: 84.32

Entering: 99

Exiting: 85

Weekday Traffic:

Percentage Entering: 50%
Percentage Exiting: 50%

Average: 1969.50 Entering: 984.75

Exiting: 984.75

Entering: 985

Exiting: 985

TRIP GENERATION CALCULATIONS
ITE Trip Generation, 7th Edition
Low-Rise Apartment
Code 221

Project:	**MPII**	
Location:	**Woolomes**	
Number of Occupied Units:	**112**	(Based on 97% occupancy of xxx units)

Saturday Peak Hour Traffic:

Percentage Entering:			**54%**		
Percentage Exiting:			**46%**		
Average:	64.96	Entering:	35.08		
		Exiting:	29.88	**Entering:**	**36**
				Exiting:	**30**

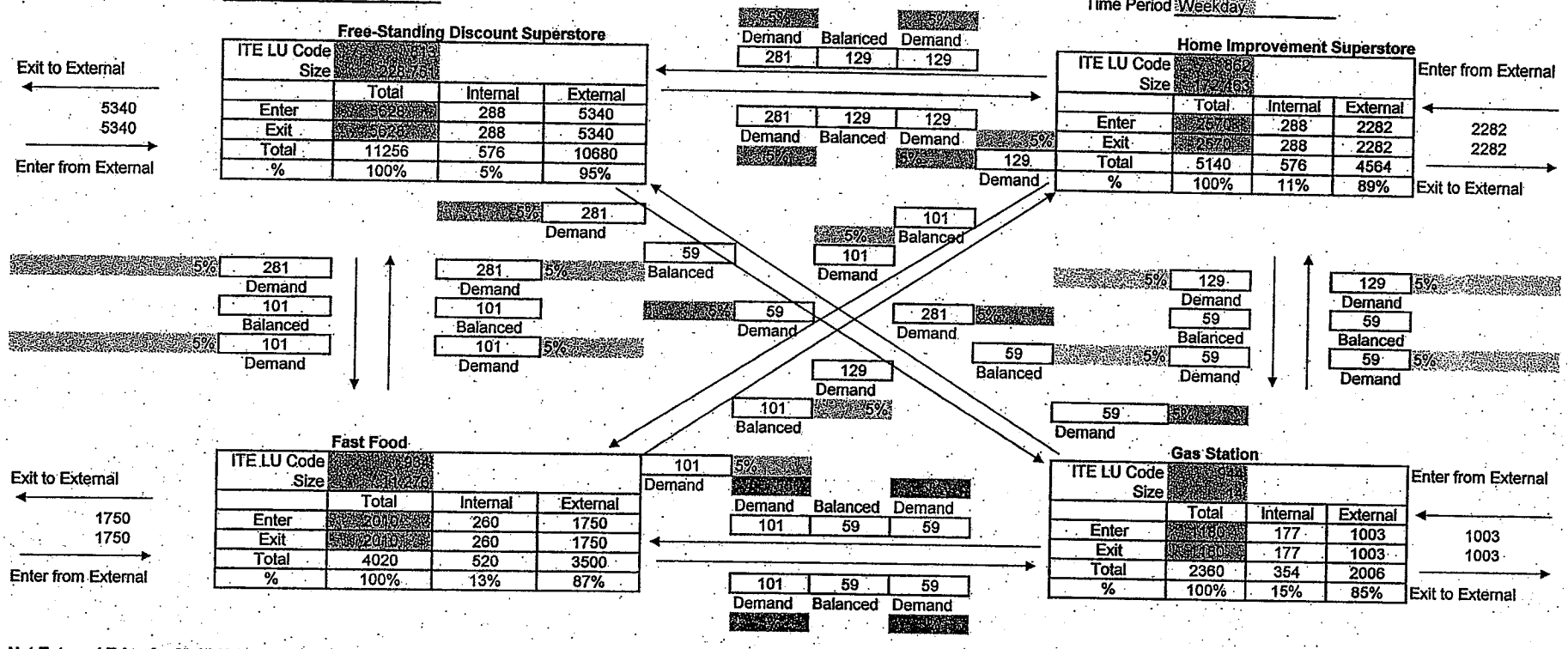
Saturday Traffic:

Percentage Entering:			**50%**		
Percentage Exiting:			**50%**		
Average:	801.92	Entering:	400.96		
		Exiting:	400.96	**Entering:**	**401**
				Exiting:	**401**

MULTI-USE TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Analyst: MS
Date: 11/29/2006

Name of Development: Market Place 1
Time Period: Weekday



Net External Trips for Multi-Use Development

	Land Use A	Land Use B	Land Use C	Land Use D	Total
Enter	5340	2282	1750	1003	10375
Exit	5340	2282	1750	1003	10375
Total	10680	4564	3500	2006	20750
Single-Use Trip Gen. Est.	11256	5140	4020	2360	22776

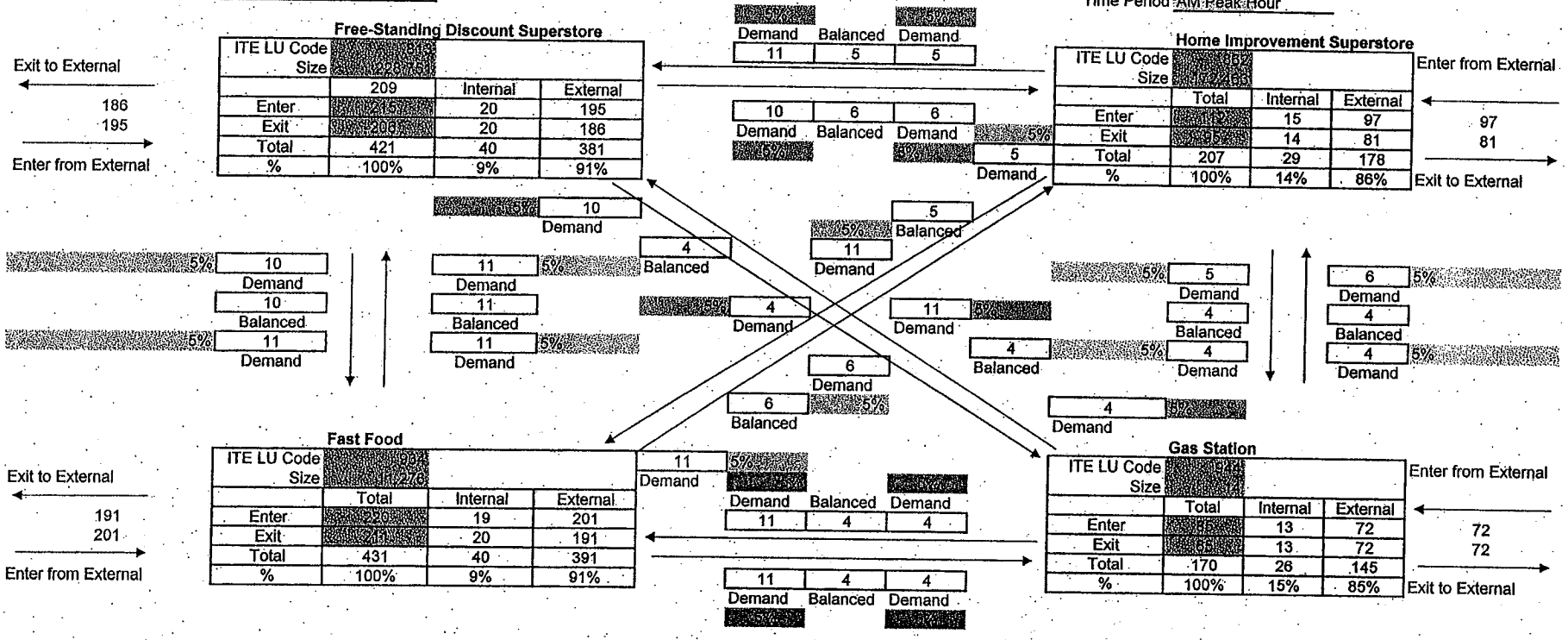
INTERNAL CAPTURE 9%

ITE Totals	Captured
11388	1013
11388	1013

MULTI-USE TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Analyst MS
Date 11/29/2006

Name of Development Market Place
Time Period AM Peak Hour



Net External Trips for Multi-Use Development

	Land Use A	Land Use B	Land Use C	Land Use D	Total
Enter	195	97	201	72	565
Exit	186	81	191	72	530
Total	381	178	391	145	1095
Single-Use Trip Gen. Est.	421	207	431	170	1229

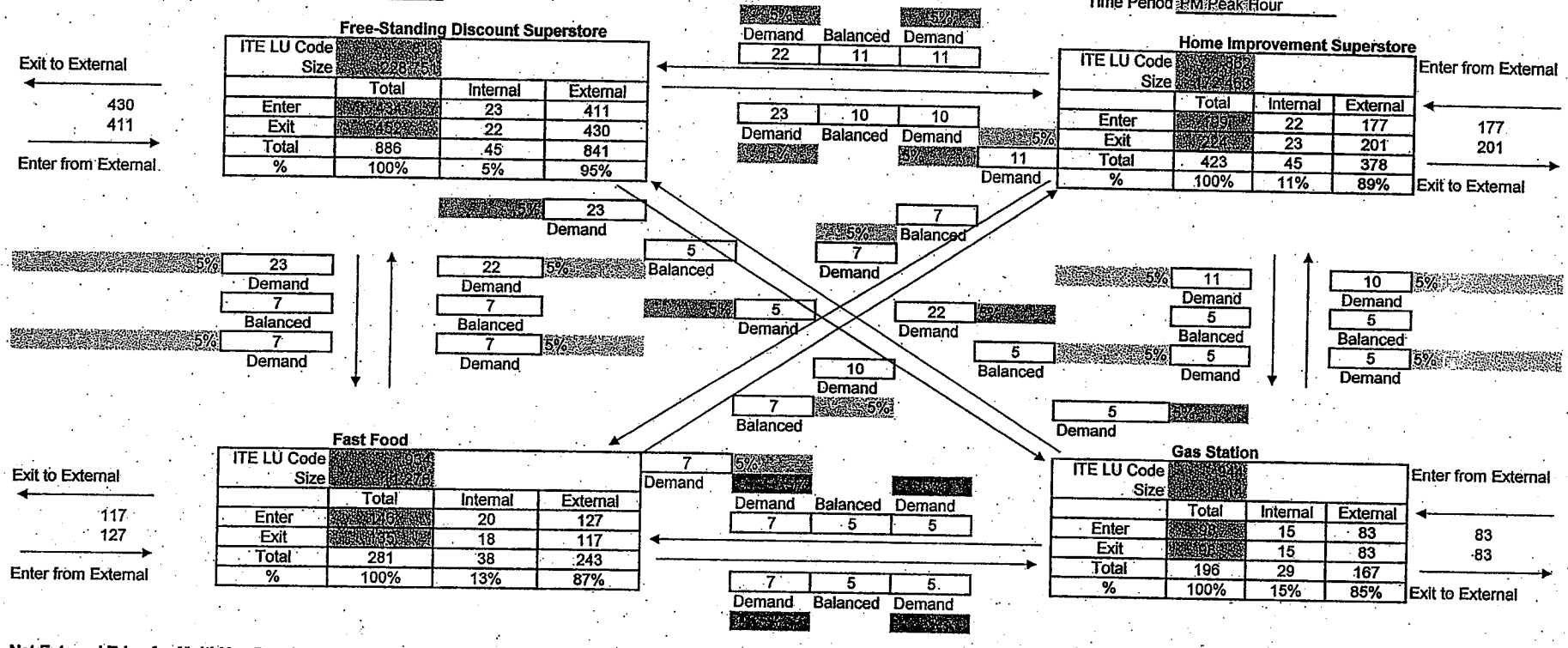
INTERNAL CAPTURE 11%

ITE Totals	Captured
632	67
597	67

MULTI-USE TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Analyst: MS
Date: 11/29/2006

Name of Development: Market Place
Time Period: PM Peak Hour



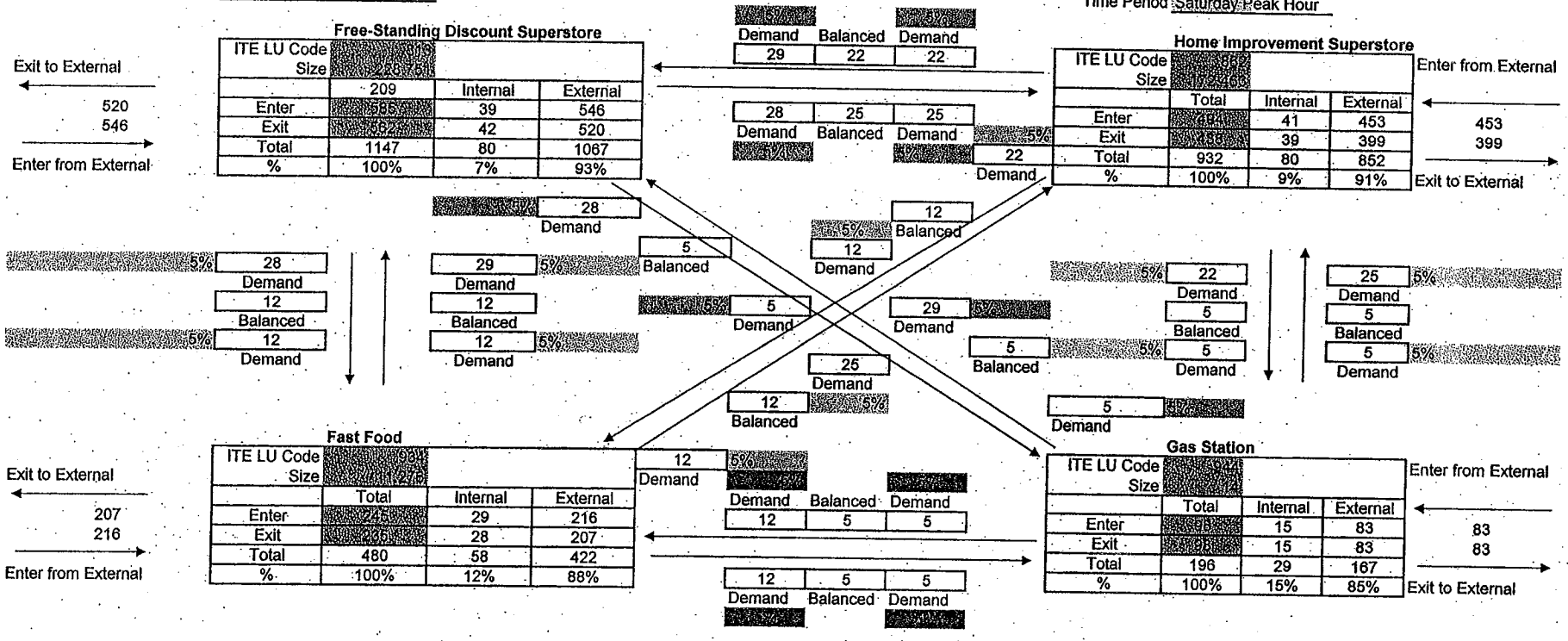
Net External Trips for Multi-Use Development

	Land Use A	Land Use B	Land Use C	Land Use D	Total		ITE Totals	Captured
Enter	411	177	127	83	798		877	79
Exit	430	201	117	83	830		909	79
Total	841	378	243	167	1629	INTERNAL CAPTURE		
Single-Use Trip Gen. Est.	886	423	281	196	1786	9%		

MULTI-USE TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Analyst: MS
Date: 11/29/2006

Name of Development: Market Place
Time Period: Saturday Peak Hour



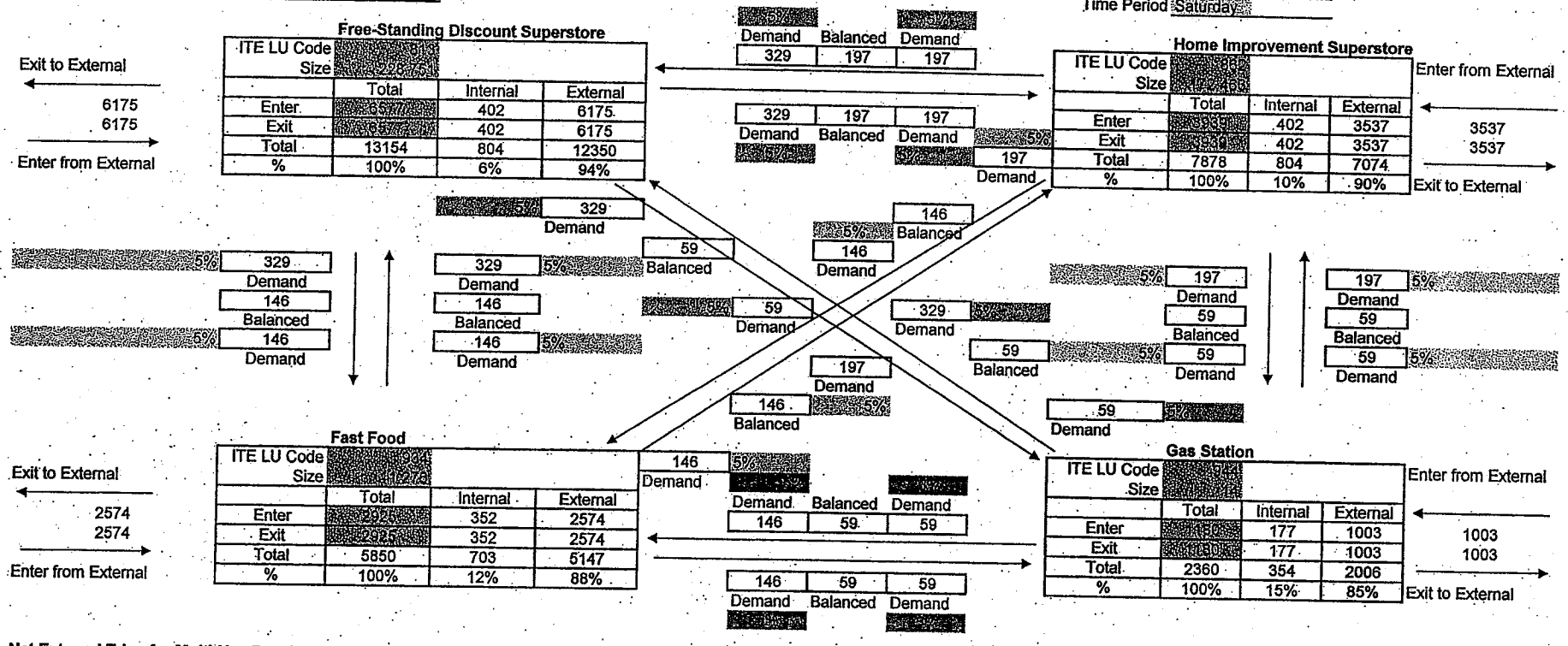
Net External Trips for Multi-Use Development

	Land Use A	Land Use B	Land Use C	Land Use D	Total		ITE Totals	Captured
Enter	546	453	216	83	1298		1422	124
Exit	520	399	207	83	1209		1333	124
Total	1067	852	422	167	2507	INTERNAL CAPTURE		
Single-Use Trip Gen. Est.	1147	932	480	196	2755	9%		

MULTI-USE TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Analyst: MS
Date: 11/29/2006

Name of Development: Market Place 1
Time Period: Saturday



Net External Trips for Multi-Use Development

	Land Use A	Land Use B	Land Use C	Land Use D	Total
Enter	6175	3537	2574	1003	13288
Exit	6175	3537	2574	1003	13288
Total	12350	7074	5147	2006	26576
Single-Use Trip Gen. Est.	13154	7878	5850	2360	29242

INTERNAL CAPTURE 9%

ITE Totals	Captured
14621	1333
14621	1333

APPENDIX B

Traffic Counts

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 SB off Ramp DATE: 08/29/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: TUESDAY PROJECT# 06-8113-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				2		11		12	15	31	19		90
7:15 AM				3		13		15	11	33	19		94
7:30 AM				4		15		22	19	35	22		117
7:45 AM				11		21		27	18	47	30		154
8:00 AM				11		20		24	10	44	25		134
8:15 AM				8		15		23	13	30	24		113
8:30 AM				8		11		21	13	35	25		113
8:45 AM				6		10		21	11	28	20		96
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 53	ST 0	SR 116	EL 0	ET 165	ER 110	WL 283	WT 184	WR 0	TOTAL 911

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	0	0	34	0	71	0	96	60	156	101	0	518
PEAK HR. FACTOR:		0.000			0.820			0.867			0.834		0.841

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 SB off Ramp DATE: 08/29/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: TUESDAY PROJECT# 06-8113-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				8		15		35	12	54	30		154
4:15 PM				9		13		30	12	48	33		145
4:30 PM				10		15		53	11	55	40		184
4:45 PM				8		9		55	8	60	35		175
5:00 PM				6		8		50	10	65	33		172
5:15 PM				11		10		42	13	51	43		170
5:30 PM				8		13		38	11	54	40		164
5:45 PM				9		11		22	10	43	35		130
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	69	0	94	0	325	87	430	289	0	1294

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	0	0	0	35	0	42	0	200	42	231	151	0	701
PEAK HR. FACTOR:		0.000			0.770			0.945			0.974		0.952

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 NB Ramps DATE: 3/9/2005 LOCATION: City of Delano

E-W STREET: Pond Rd DAY: WEDNESDAY PROJECT# 05-8007-028A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	7	0	5				2	3			11	1	29
7:15 AM	14	0	25				4	13			8	1	65
7:30 AM	8	0	20				5	9			14	6	62
7:45 AM	7	0	15				5	26			13	3	69
8:00 AM	6	1	12				5	12			9	3	48
8:15 AM	6	0	9				6	14			10	4	49
8:30 AM	5	0	6				8	6			8	2	35
8:45 AM	5	1	6				5	9			11	7	44
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	58	2	98	0	0	0	40	92	0	0	84	27	401

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	35	1	72	0	0	0	19	60	0	0	44	13	244
PEAK HR. FACTOR:		0.692			0.000			0.637			0.713		0.884

CONTROL: no stopsign (EW) stopsign southbound offramp

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 NB Ramps DATE: 3/9/2005 LOCATION: City of Delano

E-W STREET: Pond Rd DAY: WEDNESDAY PROJECT# 05-8007-028A

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 0	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	7	1	9				3	9		18	13		60
4:15 PM	5	2	7				7	9		25	23		78
4:30 PM	4	0	4				10	6		21	52		97
4:45 PM	5	0	3				9	5		12	11		45
5:00 PM	2	0	3				9	7		28	15		64
5:15 PM	2	2	5				9	10		21	11		60
5:30 PM	8	0	6				2	5		9	4		34
5:45 PM	3	0	2				6	5		7	1		24
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 36	NT 5	NR 39	SL 0	ST 0	SR 0	EL 55	ET 56	ER 0	WL 0	WT 141	WR 130	TOTAL 462

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	16	2	17	0	0	0	35	27	0	0	86	101	284
PEAK HR. FACTOR:		0.625			0.000			0.969			0.640		0.732

CONTROL: no stopsign (EW) stopsign southbound offramp

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 SB Ramps DATE: 3/9/2005 LOCATION: City of Delano

E-W STREET: Pond Rd DAY: WEDNESDAY PROJECT# 05-8007-028B

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 0	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				2		6	4	3			11	7	33
7:15 AM				7		5	7	11			17	7	54
7:30 AM				4		9	8	13			11	7	52
7:45 AM				14		11	6	16			13	6	66
8:00 AM				8		7	8	8			9	5	45
8:15 AM				8		1	8	11			9	5	42
8:30 AM				6		6	3	7			5	8	35
8:45 AM				3		3	13	12			9	4	44
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 52	ST 0	SR 48	EL 57	ET 81	ER 0	WL 0	WT 84	WR 49	TOTAL 371

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	0	0	0	33	0	32	29	48	0	0	50	25	217
PEAK HR. FACTOR:		0.000			0.650			0.875			0.781		0.822

CONTROL: no stopsign (EW) stopsign southbound offramp

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 SB Ramps DATE: 3/9/2005 LOCATION: City of Delano

E-W STREET: Pond Rd DAY: WEDNESDAY PROJECT# 05-8007-028B

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 0	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				4		4	11	11			9	12	51
4:15 PM				7		3	7	12			12	14	55
4:30 PM				2		3	11	14			11	17	58
4:45 PM				2		4	10	10			7	10	43
5:00 PM				1		5	6	15			10	19	56
5:15 PM				3		4	7	16			12	15	57
5:30 PM				1		3	3	6			10	9	32
5:45 PM				2		6	6	8			4	5	31
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 22	ST 0	SR 32	EL 61	ET 92	ER 0	WL 0	WT 75	WR 101	TOTAL 383

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	0	0	0	8	0	16	34	55	0	0	40	61	214
PEAK HR. FACTOR:		0.000			0.857			0.890			0.871		0.922

CONTROL: no stopsign (EW) stopsign southbound offramp

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Albany St DATE: 3/10/2005 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: THURSDAY PROJECT# 05-8007-029

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM		9	4	10	8					5	12		48
7:15 AM		8	3	13	9					4	14		51
7:30 AM		11	5	15	9					3	15		58
7:45 AM		10	2	10	9					2	9		42
8:00 AM		4	2	9	3					3	11		32
8:15 AM		9	1	9	4					3	12		38
8:30 AM		9	5	10	9					4	8		45
8:45 AM		6	4	10	8					5	7		40
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	66	26	86	59	0	0	0	0	29	0	88	354

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	0	38	14	48	35	0	0	0	0	14	0	50	199
PEAK HR. FACTOR:		0.813			0.865			0.000			0.889		0.858

CONTROL:

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Albany St DATE: 3/10/2005 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: THURSDAY PROJECT# 05-8007-029

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM		7	7	10	6					7	17	54	
4:15 PM		15	5	9	4					6	17	56	
4:30 PM		12	5	12	8					5	17	59	
4:45 PM		8	1	14	7					3	23	56	
5:00 PM		6	0	8	3					4	16	37	
5:15 PM		6	3	19	8					2	21	59	
5:30 PM		4	1	12	3					7	20	47	
5:45 PM		4	2	5	1					3	15	30	
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	62	24	89	40	0	0	0	0	37	0	146	398

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	0	42	18	45	25	0	0	0	0	21	0	74	225
PEAK HR. FACTOR:		0.750			0.833			0.000			0.913		0.953

CONTROL:

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT#: 05-8057-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL	ST	SR	EL	ET 1	ER 0	WL 0	WT 0	WR	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1		4					15	0	10	16		46
7:15 AM	1		6					20	0	15	21		63
7:30 AM	0		11					21	0	19	30		81
7:45 AM	1		16					24	1	16	39		97
8:00 AM	3		22					22	0	14	28		89
8:15 AM	2		30					18	2	11	15		78
8:30 AM	2		17					21	1	10	23		74
8:45 AM	1		14					22	3	12	30		82
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 11	NT 0	NR 120	SL 0	ST 0	SR 0	EL 0	ET 163	ER 7	WL 107	WT 202	WR 0	TOTAL 610

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	6	0	79	0	0	0	0	85	3	60	112	0	345
PEAK HR. FACTOR:		0.664			0.000			0.880			0.782		0.889

CONTROL: 1-way stop (N)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT# 05-8057-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0					1	0	0	0		
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1		27					44	0	24	37		133
4:15 PM	2		29					38	1	25	31		126
4:30 PM	1		30					42	3	29	24		129
4:45 PM	3		31					33	2	21	35		125
5:00 PM	4		35					24	5	14	45		127
5:15 PM	3		24					21	3	17	41		109
5:30 PM	9		15					18	3	15	38		98
5:45 PM	3		11					16	2	13	32		77
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	26	0	202	0	0	0	0	236	19	158	283	0	924

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	7	0	117	0	0	0	0	157	6	99	127	0	513
PEAK HR. FACTOR:		0.912			0.000			0.906			0.926		0.964

CONTROL: 1-way stop (N)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 NB on Ramp DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT# 05-8057-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL 0	ET 1	ER	WL	WT 1	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM							2	13			47	3	65
7:15 AM							3	18			58	3	82
7:30 AM							6	14			67	3	90
7:45 AM							4	41			60	1	106
8:00 AM							8	19			79	5	111
8:15 AM							7	30			49	0	86
8:30 AM							6	28			46	3	83
8:45 AM							9	23			50	4	86
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 0	ST 0	SR 0	EL 45	ET 186	ER 0	WL 0	WT 456	WR 22	TOTAL 709

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	0	0	0	0	0	25	104	0	0	255	9	393
PEAK HR. FACTOR:		0.000			0.000			0.717			0.786		0.885

CONTROL: Nothing

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 NB on Ramp DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT# 05-8057-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL 0	ET 1	ER	WL	WT 1	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM							13	56			82	9	160
4:15 PM							7	42			87	11	147
4:30 PM							19	40			85	8	152
4:45 PM							19	43			89	9	160
5:00 PM							16	31			94	16	157
5:15 PM							16	39			74	12	141
5:30 PM							12	34			62	14	122
5:45 PM							6	29			56	9	100
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	0	0	0	108	314	0	0	629	88	1139

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	0	0	0	0	0	0	58	181	0	0	343	37	619
PEAK HR. FACTOR:		0.000			0.000			0.866			0.969		0.967

CONTROL: Nothing

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 NB off Ramp/high St DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT# 05-8057-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1	ST	SR 1	EL 1	ET 1	ER	WL	WT 1	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	11	13	23	0		16	2	10			24	0	99
7:15 AM	10	15	38	2		17	5	13			34	0	134
7:30 AM	12	12	43	2		21	8	5			38	0	141
7:45 AM	13	18	36	0		10	12	30			39	1	159
8:00 AM	9	16	39	1		24	8	9			42	1	149
8:15 AM	8	11	19	2		20	13	19			20	3	115
8:30 AM	7	15	34	4		18	7	20			26	2	133
8:45 AM	8	10	29	1		19	11	11			28	2	119
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL 78	NT 110	NR 261	SL 12	ST 0	SR 145	EL 66	ET 117	ER 0	WL 0	WT 251	WR 9	TOTAL 1049

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	44	61	156	5	0	72	33	57	0	0	153	2	583
PEAK HR. FACTOR:		0.974			0.770			0.536			0.901		0.917

CONTROL: 2-way stop (N,S)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 NB off Ramp/high St DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT# 05-8057-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 1	SL 1	ST	SR 1	EL 1	ET 1	ER	WL	WT 1	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	16	21	41	2		34	26	30			43	4	217
4:15 PM	15	31	44	1		37	10	31			48	3	220
4:30 PM	12	24	35	2		22	13	28			49	2	187
4:45 PM	23	13	43	2		26	11	30			50	3	201
5:00 PM	19	15	42	1		42	14	26			56	4	219
5:15 PM	6	20	44	2		39	10	30			45	2	198
5:30 PM	7	14	40	1		22	9	22			46	0	161
5:45 PM	8	10	39	2		29	7	21			27	3	146
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 106	NT 148	NR 328	SL 13	ST 0	SR 251	EL 100	ET 218	ER 0	WL 0	WT 364	WR 21	TOTAL 1549

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	69	83	164	6	0	127	48	115	0	0	203	12	827
PEAK HR. FACTOR:		0.878			0.773			0.994			0.896		0.940

CONTROL: 2-way stop (N,S)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Stradley Ave | DATE: 09/19/2006 | LOCATION: City of Delano

E-W STREET: Schuster Rd | DAY: TUESDAY | PROJECT# 06-8143-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	2	0	1	2	2	1	2	2	0	5	1	18
7:15 AM	0	6	1	0	3	2	1	1	1	0	2	0	17
7:30 AM	0	3	0	0	9	1	0	1	0	0	0	0	14
7:45 AM	0	4	2	3	4	4	1	3	1	0	3	1	26
8:00 AM	1	4	0	0	4	0	1	10	1	1	1	0	23
8:15 AM	1	2	1	1	7	0	3	2	0	1	1	2	21
8:30 AM	0	2	1	0	4	0	2	3	0	0	1	1	14
8:45 AM	0	0	0	0	5	2	0	2	0	0	1	0	10
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	23	5	5	38	11	9	24	5	2	14	5	143

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =													
	2	12	4	4	19	4	7	18	2	2	6	4	84
PEAK HR. FACTOR:		0.750			0.614			0.563			0.750		0.808

CONTROL: 2 Way Stop (N,S)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Stradley Ave DATE: 09/19/2006 LOCATION: City of Delano

E-W STREET: Schuster Rd DAY: TUESDAY PROJECT# 06-8143-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	8	0	0	9	1	4	3	0	0	3	1	29
4:15 PM	0	5	0	0	2	0	4	3	0	1	1	0	16
4:30 PM	0	7	0	0	2	2	2	7	2	0	1	0	23
4:45 PM	1	10	0	1	5	0	1	2	0	0	2	0	22
5:00 PM	0	7	0	0	5	1	2	4	0	0	1	1	21
5:15 PM	1	6	1	0	9	1	1	6	0	0	0	1	26
5:30 PM	0	8	0	1	8	1	1	3	0	0	4	1	27
5:45 PM	0	11	1	0	5	2	1	1	1	0	0	1	23
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 2	NT 62	NR 2	SL 2	ST 45	SR 8	EL 16	ET 29	ER 3	WL 1	WT 12	WR 5	TOTAL 187

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	1	32	2	1	27	5	5	14	1	0	5	4	97
PEAK HR. FACTOR:		0.729			0.825			0.714			0.450		0.898

CONTROL: 2 Way Stop (N,S)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli Ave DATE: 09/20/2006 LOCATION: City of Delano

E-W STREET: Schuster Rd DAY: WEDNESDAY PROJECT# 06-8143-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	8			13	3	6		1				31
7:15 AM	0	8			10	2	3		1				24
7:30 AM	2	9			4	3	1		1				20
7:45 AM	2	23			5	5	1		3				39
8:00 AM	3	7			6	3	2		1				22
8:15 AM	1	2			8	1	6		0				18
8:30 AM	0	22			11	3	3		0				39
8:45 AM	1	8			5	2	3		0				19
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 9	NT 102	NR 0	SL 0	ST 62	SR 22	EL 25	ET 0	ER 7	WL 0	WT 0	WR 0	TOTAL 227

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	6	54	0	0	30	12	12	0	4	0	0	0	118
PEAK HR. FACTOR:		0.600			0.750			0.667			0.000		0.756

CONTROL: 1-Way Stop E

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli Ave DATE: 09/20/2006 LOCATION: City of Delano

E-W STREET: Schuster Rd DAY: WEDNESDAY PROJECT# 06-8143-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 1	ER 0	WL 0	WT 0	WR 0	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1	15			4	4	5		2				31
4:15 PM	2	22			9	3	5		4				45
4:30 PM	0	14			11	6	2		2				35
4:45 PM	2	13			16	2	5		3				41
5:00 PM	1	13			18	3	3		3				41
5:15 PM	3	15			14	1	3		0				36
5:30 PM	3	6			9	3	3		3				27
5:45 PM	0	7			12	2	5		1				27
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 12	NT 105	NR 0	SL 0	ST 93	SR 24	EL 31	ET 0	ER 18	WL 0	WT 0	WR 0	TOTAL 283

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	5	62	0	0	54	14	15	0	12	0	0	0	162
PEAK HR. FACTOR:		0.698			0.810			0.750			0.000		0.900

CONTROL: 1-Way Stop E

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Stradley Ave DATE: 09/20/2006 LOCATION: City of Delano

E-W STREET: Pond Rd DAY: WEDNESDAY PROJECT# 06-8143-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	2	1	3	1	1	2	14	1	0	14	1	41
7:15 AM	0	3	0	0	1	0	0	13	0	0	16	1	34
7:30 AM	1	2	0	2	2	3	1	17	0	0	17	1	46
7:45 AM	0	2	0	0	3	1	2	21	0	0	22	0	51
8:00 AM	2	2	1	0	1	1	2	15	0	3	14	0	41
8:15 AM	0	0	0	1	0	3	1	11	0	1	7	1	25
8:30 AM	0	0	1	0	1	0	0	9	1	1	5	0	18
8:45 AM	1	0	1	1	0	0	2	11	0	2	11	2	31
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	5	11	4	7	9	9	10	111	2	7	106	6	287

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	3	9	1	2	7	5	5	66	0	3	69	2	172
PEAK HR. FACTOR:		0.650			0.500			0.772			0.841		0.843

CONTROL: 2Way Stop (N,S)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Stradley Ave DATE: 09/20/2006 LOCATION: City of Delano

E-W STREET: Pond Rd DAY: WEDNESDAY PROJECT# 06-8143-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	2	0	0	1	1	1	19			12	4	40
4:15 PM	1	2	0	2	1	1	2	14			8	3	34
4:30 PM	0	1	1	1	1	1	4	20			11	1	41
4:45 PM	0	2	0	0	3	1	4	26			10	4	50
5:00 PM	2	0	0	1	2	4	1	21			14	1	46
5:15 PM	0	1	0	0	2	0	1	24			14	2	44
5:30 PM	1	1	1	2	3	2	0	10			8	5	33
5:45 PM	0	0	1	0	2	1	0	18			8	1	31
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	4	9	3	6	15	11	13	152	0	0	85	21	319

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	2	4	1	2	8	6	10	91	0	0	49	8	181
PEAK HR. FACTOR:		0.875			0.571			0.842			0.891		0.905

CONTROL: 2Way Stop (N,S)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli Avenue DATE: 09/21/2006 LOCATION: City of Delano

E-W STREET: Pond Rd DAY: THURSDAY PROJECT# 06-8143-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	4	2	3	5	0	1	10	2	1	17	2	47
7:15 AM	1	5	6	0	3	0	2	12	5	2	22	4	62
7:30 AM	0	2	3	1	4	2	2	17	1	0	18	5	55
7:45 AM	1	10	2	1	4	3	2	20	0	1	21	6	71
8:00 AM	1	7	3	2	3	1	4	11	0	2	17	5	56
8:15 AM	1	5	2	2	3	3	4	14	0	1	19	5	59
8:30 AM	2	8	1	3	4	1	2	21	1	2	11	3	59
8:45 AM	0	9	3	2	1	1	3	10	0	0	12	2	43
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	6	50	22	14	27	11	20	115	9	9	137	32	452

AM Peak Hr Begins at: 745 AM

PEAK													
VOLUMES =	5	30	8	8	14	8	12	66	1	6	68	19	245
PEAK HR. FACTOR:		0.827			0.938			0.823			0.830		0.863

CONTROL: 2 Way Stop

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli Avenue DATE: 09/21/2006 LOCATION: City of Delano

E-W STREET: Pond Rd DAY: THURSDAY PROJECT# 06-8143-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1	6	3	6	7	3	1	17	1	1	25	7	78
4:15 PM	0	10	6	4	13	2	3	19	0	1	22	9	89
4:30 PM	2	11	7	3	16	1	3	23	1	3	22	4	96
4:45 PM	0	7	3	4	6	3	1	18	0	3	4	3	52
5:00 PM	4	10	2	8	11	3	2	16	2	4	14	7	83
5:15 PM	0	9	2	0	10	2	2	14	0	1	15	7	62
5:30 PM	0	9	1	4	5	4	3	16	0	1	18	3	64
5:45 PM	0	5	0	1	7	4	1	15	1	5	17	5	61
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	7	67	24	30	75	22	16	138	5	19	137	45	585

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	6	38	18	19	46	9	9	76	3	11	62	23	320
PEAK HR. FACTOR:		0.775			0.841			0.815			0.750		0.833

CONTROL: 2 Way Stop

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Lexington DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT# 05-8057-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2			2	0	0	1	0				
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	9	3			2	21	28		5				68
7:15 AM	7	2			4	26	39		13				91
7:30 AM	8	1			5	30	35		12				91
7:45 AM	10	4			9	30	43		3				99
8:00 AM	11	3			14	31	29		22				110
8:15 AM	9	4			9	15	27		13				77
8:30 AM	6	5			3	16	37		21				88
8:45 AM	8	13			4	22	29		12				88
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	68	35	0	0	50	191	267	0	101	0	0	0	712

AM Peak Hr Begins at: 715 AM

PEAK													
VOLUMES =	36	10	0	0	32	117	146	0	50	0	0	0	391
PEAK HR. FACTOR:		0.821			0.828			0.942			0.000		0.889

CONTROL: 3-way stop (N,S,E)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Lexington DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT# 05-8057-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2			2	0	0	1	0				
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	19	9			9	28	54		18				137
4:15 PM	26	11			11	35	48		12				143
4:30 PM	21	17			10	30	40		25				143
4:45 PM	27	20			8	41	44		30				170
5:00 PM	23	14			12	37	39		21				146
5:15 PM	18	9			14	33	55		24				153
5:30 PM	16	13			12	30	44		18				133
5:45 PM	16	16			11	15	46		15				119
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 166	NT 109	NR 0	SL 0	ST 87	SR 249	EL 370	ET 0	ER 163	WL 0	WT 0	WR 0	TOTAL 1144

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	89	60	0	0	44	141	178	0	100	0	0	0	612
PEAK HR. FACTOR:		0.793			0.944			0.880			0.000		0.900

CONTROL: 3-way stop (N,S,E)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli DATE: 12/14/2005 LOCATION: City of Delano

E-W STREET: Woollomes DAY: WEDNESDAY PROJECT# 05-8057-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0					1	0	0	0		
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1		4					15	0	10	16		46
7:15 AM	1		6					20	0	15	21		63
7:30 AM	0		11					21	0	19	30		81
7:45 AM	1		16					24	1	16	39		97
8:00 AM	3		22					22	0	14	28		89
8:15 AM	2		30					18	2	11	15		78
8:30 AM	2		17					21	1	10	23		74
8:45 AM	1		14					22	3	12	30		82
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	11	0	120	0	0	0	0	163	7	107	202	0	610

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	6	0	79	0	0	0	0	85	3	60	112	0	345
PEAK HR. FACTOR:		0.664			0.000			0.880			0.782		0.889

CONTROL: 1-way stop (N)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli | DATE: 12/14/2005 | LOCATION: City of Delano

E-W STREET: Woollomes | DAY: WEDNESDAY | PROJECT# 05-8057-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0					1	0	0	0		
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1		27					44	0	24	37		133
4:15 PM	2		29					38	1	25	31		126
4:30 PM	1		30					42	3	29	24		129
4:45 PM	3		31					33	2	21	35		125
5:00 PM	4		35					24	5	14	45		127
5:15 PM	3		24					21	3	17	41		109
5:30 PM	9		15					18	3	15	38		98
5:45 PM	3		11					16	2	13	32		77
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	26	0	202	0	0	0	0	236	19	158	283	0	924

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	7	0	117	0	0	0	0	157	6	99	127	0	513
PEAK HR. FACTOR:		0.912			0.000			0.906			0.926		0.964

CONTROL: 1-way stop (N)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 SB off Ramp DATE: 08/29/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: TUESDAY PROJECT# 06-8113-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				2		11		12	15	31	19		90
7:15 AM				3		13		15	11	33	19		94
7:30 AM				4		15		22	19	35	22		117
7:45 AM				11		21		27	18	47	30		154
8:00 AM				11		20		24	10	44	25		134
8:15 AM				8		15		23	13	30	24		113
8:30 AM				8		11		21	13	35	25		113
8:45 AM				6		10		21	11	28	20		96
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	0	0	0	53	0	116	0	165	110	283	184	0	911

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	0	0	34	0	71	0	96	60	156	101	0	518
PEAK HR. FACTOR:		0.000			0.820			0.867			0.834		0.841

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 SB off Ramp DATE: 08/29/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: TUESDAY PROJECT# 06-8113-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				8		15		35	12	54	30		154
4:15 PM				9		13		30	12	48	33		145
4:30 PM				10		15		53	11	55	40		184
4:45 PM				8		9		55	8	60	35		175
5:00 PM				6		8		50	10	65	33		172
5:15 PM				11		10		42	13	51	43		170
5:30 PM				8		13		38	11	54	40		164
5:45 PM				9		11		22	10	43	35		130
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 69	ST 0	SR 94	EL 0	ET 325	ER 87	WL 430	WT 289	WR 0	TOTAL 1294

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	0	0	0	35	0	42	0	200	42	231	151	0	701
PEAK HR. FACTOR:		0.000			0.770			0.945			0.974		0.952

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Stradley Ave | DATE: 11/4/2006 | LOCATION: City of Delano

E-W STREET: Woollomes Ave | DAY: SATURDAY | PROJECT# 06-8164-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 0	ER 0	WL .5	WT 0	WR .5	TOTAL
12:00 PM		16	8	11	16					8		14	73
12:15 PM		16	9	5	15					8		10	63
12:30 PM		14	5	10	12					4		10	55
12:45 PM		14	5	12	14					5		13	63
1:00 PM		9	6	7	10					3		14	49
1:15 PM		8	6	12	8					5		12	51
1:30 PM		15	3	6	15					4		14	57
1:45 PM		19	7	12	10					6		16	70
2:00 PM		11	1	14	11					3		16	56
2:15 PM		12	1	14	15					4		17	63
2:30 PM		13	5	13	9					7		15	62
2:45 PM		10	3	12	15					3		15	58
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													

TOTAL VOLUMES =	NL 0	NT 157	NR 59	SL 128	ST 150	SR 0	EL 0	ET 0	ER 0	WL 60	WT 0	WR 166	TOTAL 720

NOON Peak Hr Begins at: 1200 PM

PEAK VOLUMES =	0	60	27	38	57	0	0	0	0	25	0	47	254
PEAK HR. FACTOR:		0.870			0.880			0.000			0.818		0.870

CONTROL: 1-Way Stop WB

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Garzoli Ave DATE: 11/4/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: SATURDAY PROJECT# 06-8164-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 0	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
12:00 PM	6	4					35	4	5	37			91
12:15 PM	6	20					27	6	10	24			93
12:30 PM	5	6					21	1	12	34			79
12:45 PM	4	18					35	5	6	28			96
1:00 PM	5	14					27	6	7	25			84
1:15 PM	2	12					30	3	7	24			78
1:30 PM	9	9					32	6	9	26			91
1:45 PM	8	12					41	5	10	27			103
2:00 PM	7	11					34	3	14	20			89
2:15 PM	3	12					27	3	13	36			94
2:30 PM	4	8					27	5	5	21			70
2:45 PM	5	16					28	9	17	29			104
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													

TOTAL VOLUMES =	NL 64	NT 0	NR 142	SL 0	ST 0	SR 0	EL 0	ET 364	ER 56	WL 115	WT 331	WR 0	TOTAL 1072

NOON Peak Hr Begins at: 130 PM

PEAK VOLUMES =	27	0	44	0	0	0	0	134	17	46	109	0	377
PEAK HR. FACTOR:		0.888			0.000			0.821			0.000		0.915

CONTROL: 1-Way Stop NB

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99SB Ramps DATE: 10/28/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: SATURDAY PROJECT# 06-8164-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	1	0	0	1	0	1	0	0	
12:00 PM				12	0	10		35	12	58	23		150
12:15 PM				12	0	8		39	7	50	31		147
12:30 PM				12	0	10		29	10	40	23		124
12:45 PM				15	0	10		38	8	44	24		139
1:00 PM				18	0	12		44	12	38	31		155
1:15 PM				21	0	10		48	4	48	33		164
1:30 PM				6	0	9		39	6	28	24		112
1:45 PM				12	1	8		40	12	40	26		139
2:00 PM				3	0	8		30	11	26	20		98
2:15 PM				24	0	10		32	9	40	27		142
2:30 PM				9	0	6		39	9	38	43		144
2:45 PM				9	1	8		34	10	46	28		136
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	153	2	109	0	447	110	496	333	0	1650

NOON Peak Hr Begins at: 1230 PM

PEAK VOLUMES =	0	0	0	66	0	42	0	159	34	170	111	0	582
PEAK HR. FACTOR:		0.000			0.871			0.000			0.867		0.887

CONTROL: 1-Way Stop SB

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 NB on- ramps DATE: 11/04/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: SATURDAY PROJECT# 06-8164-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	0	0	0	0	1	0	0	1	0	
12:00 PM							5	39			55	10	109
12:15 PM							19	31			72	0	122
12:30 PM							14	50			84	2	150
12:45 PM							13	36			68	8	125
1:00 PM							11	30			75	3	119
1:15 PM							9	34			81	4	128
1:30 PM							19	39			72	2	132
1:45 PM							15	37			78	2	132
2:00 PM							12	37			54	3	106
2:15 PM							12	49			70	2	133
2:30 PM							11	29			77	3	120
2:45 PM							19	41			63	2	125
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
TOTAL VOLUMES =	0	0	0	0	0	0	159	452	0	0	849	41	1501

NOON Peak Hr Begins at: 1230 PM

PEAK VOLUMES =	0	0	0	0	0	0	47	150	0	0	308	17	522
PEAK HR. FACTOR:		0.000			0.000			0.000			0.000		0.870

CONTROL: No Stops

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-99 NB off-ramp/High St. DATE: 11/4/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: SATURDAY PROJECT# 06-8164-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	1	1	0	1	0	1	0	0	1	0	
12:00 PM	10	17	28	2		25	12	27			30	0	151
12:15 PM	12	11	24	2		35	15	16			25	0	140
12:30 PM	10	21	28	1		28	23	27			48	4	190
12:45 PM	9	8	32	1		36	18	18			31	1	154
1:00 PM	13	11	33	1		38	15	15			27	2	155
1:15 PM	8	17	24	3		42	16	18			35	0	163
1:30 PM	12	6	22	0		32	18	21			30	3	144
1:45 PM	11	13	29	2		35	14	23			34	5	166
2:00 PM	7	11	24	0		25	19	18			25	1	130
2:15 PM	13	18	29	2		37	13	36			22	0	170
2:30 PM	4	9	14	3		35	11	18			41	3	138
2:45 PM	14	19	15	0		20	17	24			31	0	140
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
TOTAL VOLUMES =	NL 123	NT 161	NR 302	SL 17	ST 0	SR 388	EL 191	ET 261	ER 0	WL 0	WT 379	WR 19	TOTAL 1841

NOON Peak Hr Begins at: 1230 PM

PEAK VOLUMES =	40	57	117	6	0	144	72	78	0	0	141	7	662
PEAK HR. FACTOR:		0.907			0.833			0.750			0.712		0.871

CONTROL: 2-Way Stop

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Lexington St DATE: 10/28/2006 LOCATION: City of Delano

E-W STREET: Woollomes Ave DAY: SATURDAY PROJECT# 06-8164-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	0	2	0	0	2	0	0	0	0	
12:00 PM	3	7		2	4	18	25	0	2				61
12:15 PM	9	11		0	1	38	41	2	5				107
12:30 PM	6	8		1	3	30	40	0	3				91
12:45 PM	5	5		0	9	21	39	0	5				84
1:00 PM	4	5		0	4	28	24	0	4				69
1:15 PM	3	3		0	9	35	32	1	12				95
1:30 PM	11	13		1	4	26	33	1	9				98
1:45 PM	4	8		1	14	26	34	0	22				109
2:00 PM	7	11		0	5	24	29	1	7				84
2:15 PM	9	4		0	10	25	43	0	11				102
2:30 PM	8	6		0	3	21	27	0	7				72
2:45 PM	7	6		0	5	28	38	0	11				95
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
VOLUMES =	76	87	0	5	71	320	405	5	98	0	0	0	1067

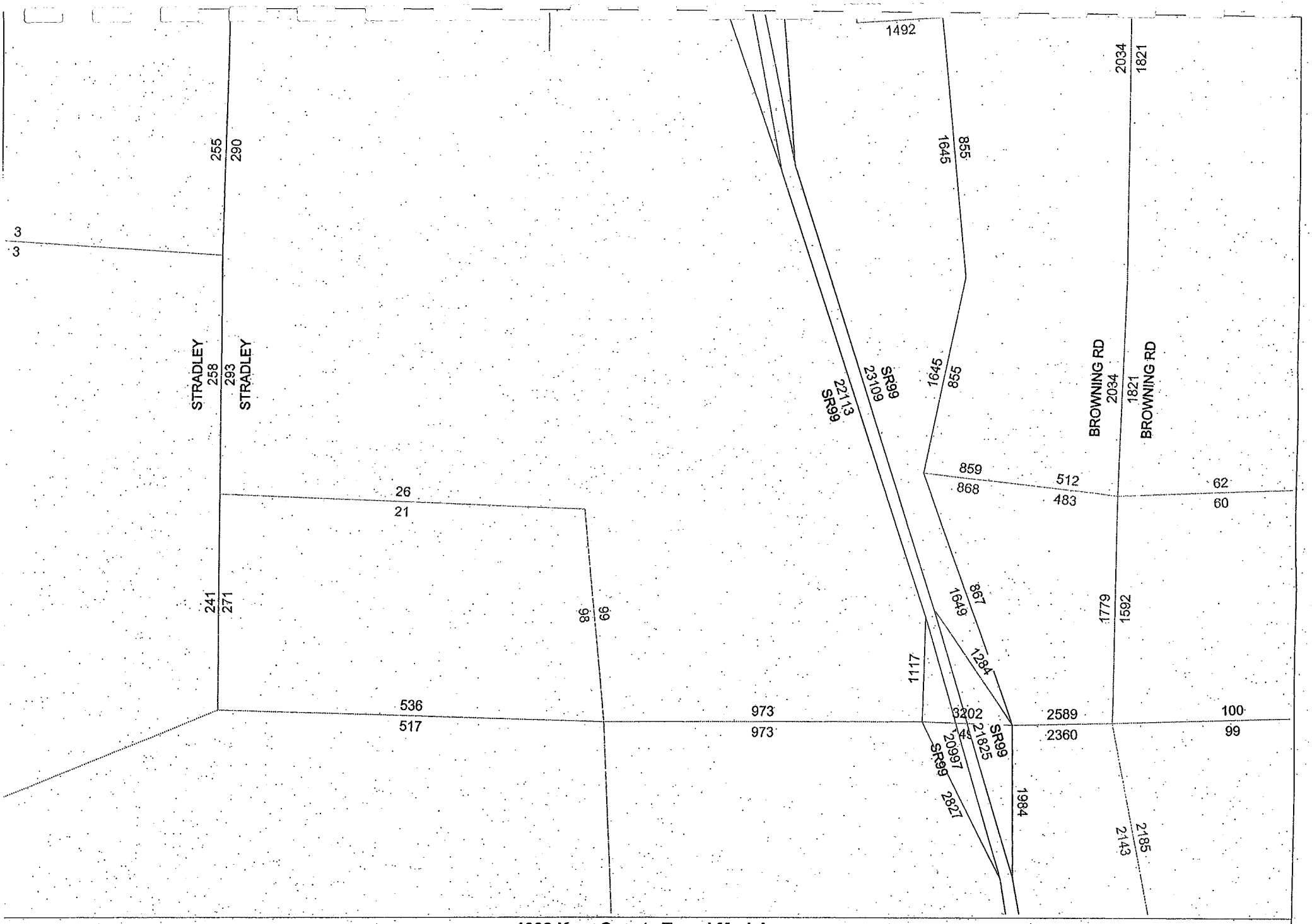
NOON Peak Hr Begins at: 130 PM

PEAK VOLUMES =	31	36	0	2	33	101	139	2	49	0	0	0	393
PEAK HR. FACTOR:		0.698			0.829			0.848			0.000		0.901

CONTROL: 3-Way Stop

APPENDIX C

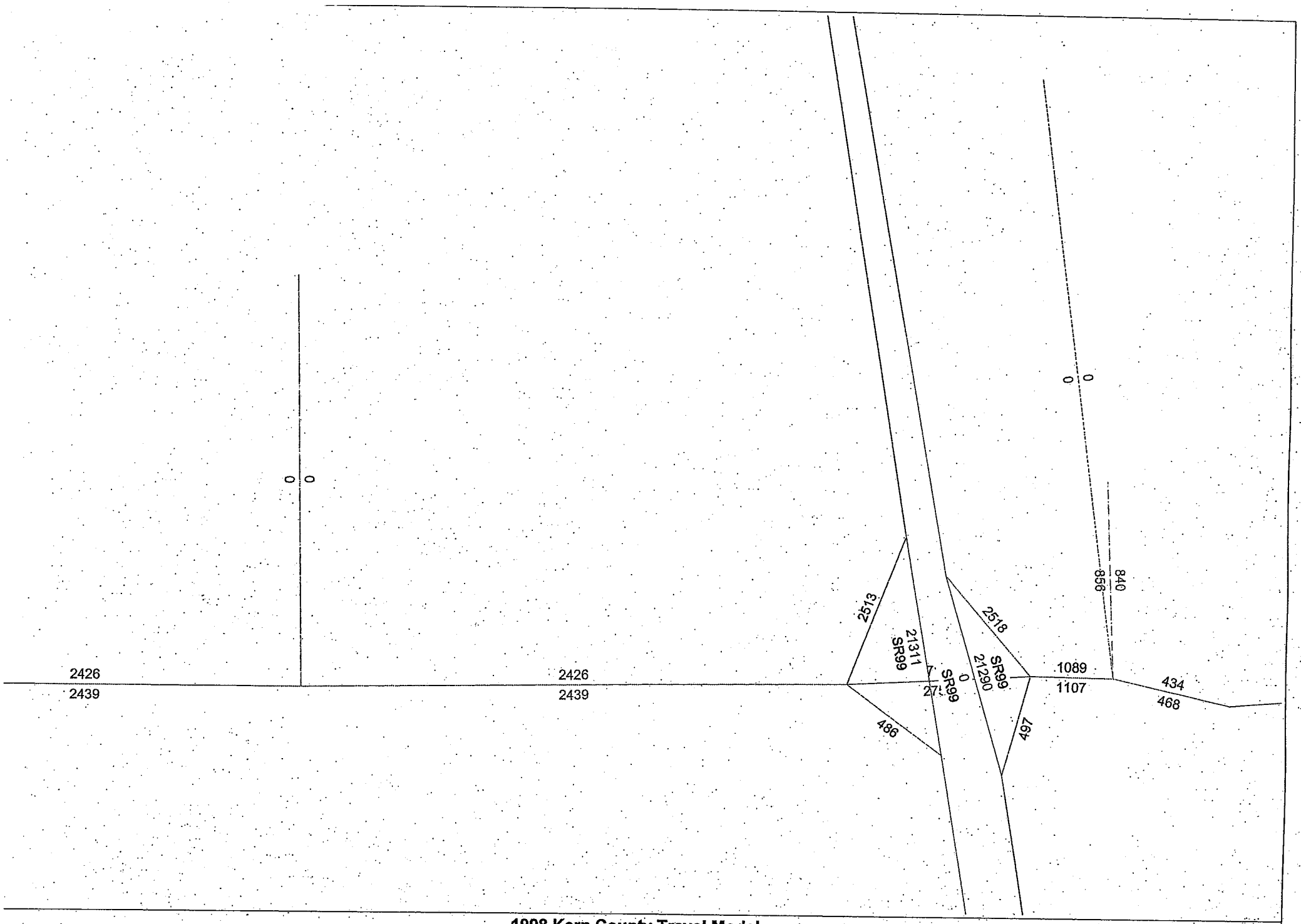
Traffic Model Output



1998 Kern County Travel Model
Daily Traffic Volumes

viper

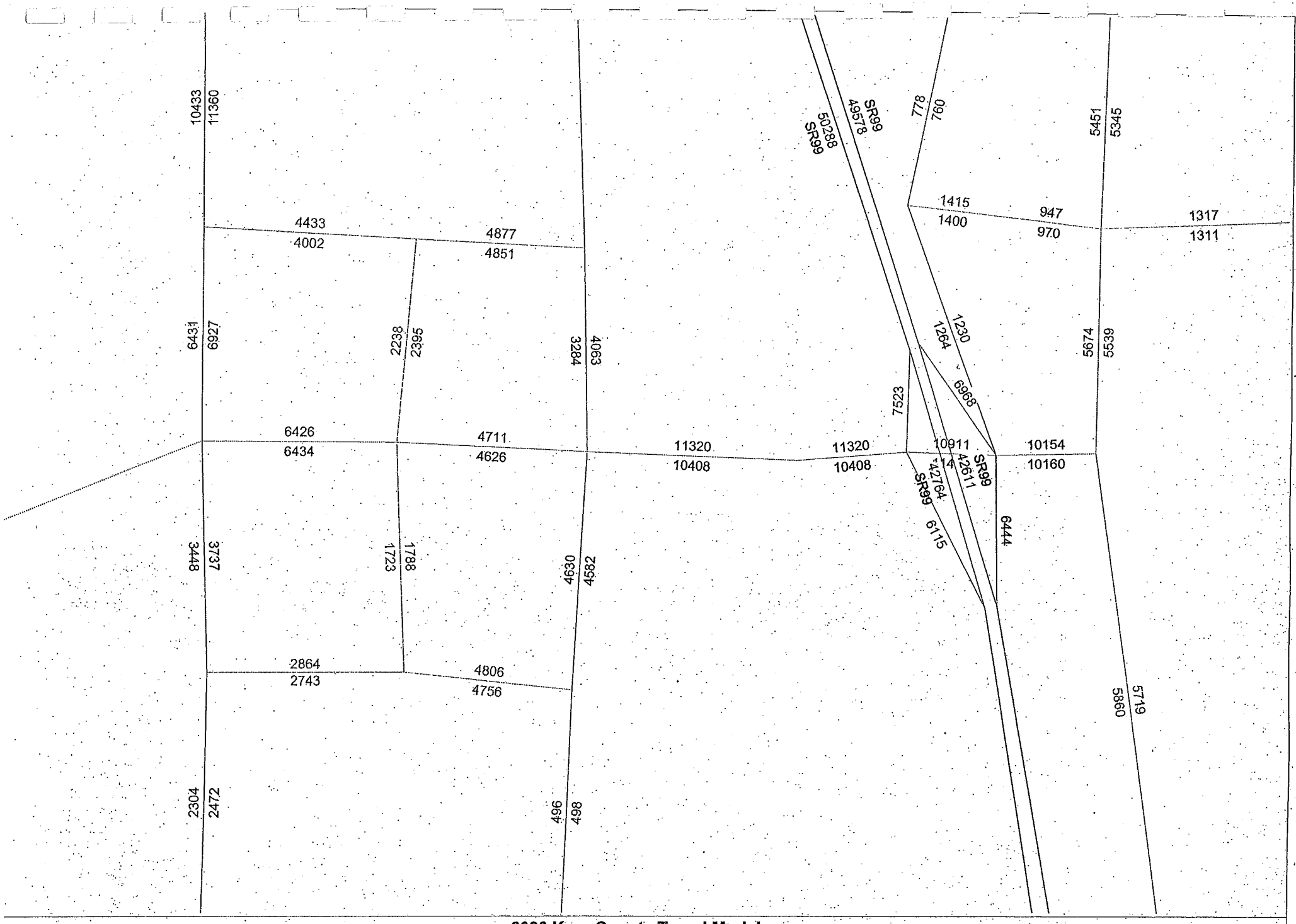
Licensed to Peters Engineering



1998 Kern County Travel Model
Daily Traffic Volumes

Viper

Licensed to Peters Engineering



2030 Kern County Travel Model
Daily Traffic Volumes

viper

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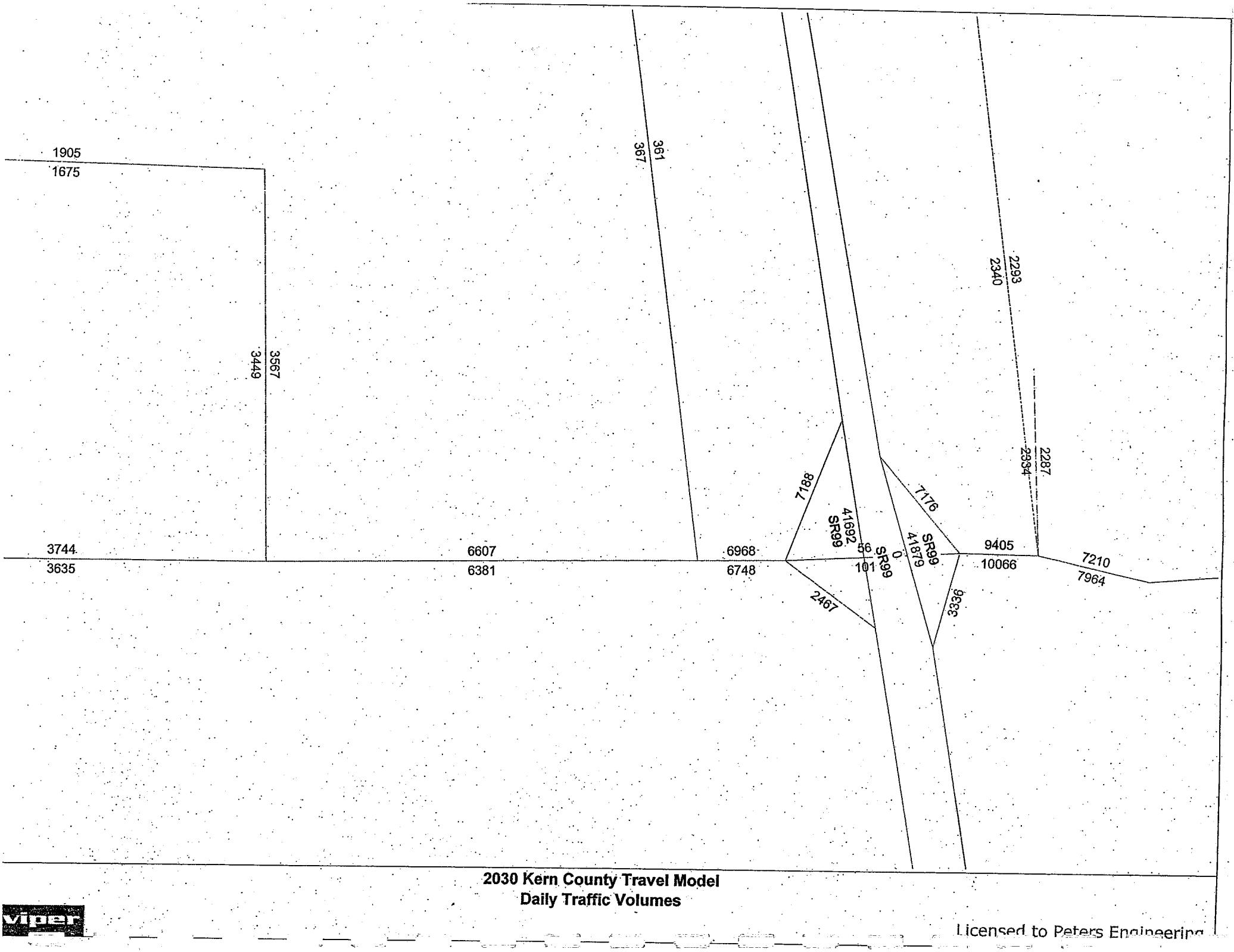


2030 Kern County Travel Model
Daily Traffic Volumes

Licensed to Peters Engineering

APPENDIX D

Florida Department of Transportation
Generalized Peak Hour Directional Volumes for Florida's Urbanized Areas

TABLE 4 - 7
GENERALIZED **PEAK HOUR DIRECTIONAL** VOLUMES FOR FLORIDA'S **URBANIZED AREAS***

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	100	340	670	950	1,300
2	Divided	1,060	1,720	2,500	3,230	3,670
3	Divided	1,600	2,590	3,740	4,840	5,500

STATE TWO-WAY ARTERIALS

Class I (>0.00 to 1.99 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	220	720	860	890
2	Divided	250	1,530	1,810	1,860	***
3	Divided	380	2,330	2,720	2,790	***
4	Divided	490	3,030	3,460	3,540	***

Class II (2.00 to 4.50 signalized intersections per mile)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	100	590	810	850
2	Divided	**	220	1,360	1,710	1,800
3	Divided	**	340	2,110	2,570	2,710
4	Divided	**	440	2,790	3,330	3,500

Class III (more than 4.5 signalized intersections per mile and not within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	**	280	660	810
2	Divided	**	**	650	1,510	1,720
3	Divided	**	**	1,020	2,330	2,580
4	Divided	**	**	1,350	3,070	3,330

Class IV (more than 4.5 signalized intersections per mile and within primary city central business district of an urbanized area over 750,000)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	**	270	720	780
2	Divided	**	**	650	1,580	1,660
3	Divided	**	**	1,000	2,390	2,490
4	Divided	**	**	1,350	3,130	3,250

NON-STATE ROADWAYS

Major City/County Roadways

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	**	480	760	810
2	Divided	**	**	1,120	1,620	1,720
3	Divided	**	**	1,740	2,450	2,580

Other Signalized Roadways
(signalized intersection analysis)

Lanes	Divided	Level of Service A	B	C	D	E
1	Undivided	**	**	250	530	660
2	Divided	**	**	580	1,140	1,320

Source: Florida Department of Transportation 02/22/02
Systems Planning Office
605 Suwannee Street, MS 19
Tallahassee, FL 32399-0450
http://www11.myflorida.com/planning/systems/sm/los/default.htm

FREEWAYS

Interchange spacing ≥ 2 mi. apart

Lanes	Level of Service A	B	C	D	E
2	1,270	2,110	2,940	3,580	3,980
3	1,970	3,260	4,550	5,530	6,150
4	2,660	4,410	6,150	7,480	8,320
5	3,360	5,560	7,760	9,440	10,480
6	4,050	6,710	9,360	11,390	12,650

Interchange spacing < 2 mi. apart

Lanes	Level of Service A	B	C	D	E
2	1,130	1,840	2,660	3,440	3,910
3	1,780	2,890	4,180	5,410	6,150
4	2,340	3,940	5,700	7,380	8,380
5	3,080	4,990	7,220	9,340	10,620
6	3,730	6,040	8,740	11,310	12,850

BICYCLE MODE

(Note: Level of service for the bicycle mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not number of bicyclists using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine maximum service volumes.)

Paved Shoulder/ Bicycle Lane Coverage	Level of Service A	B	C	D	E
0-49%	**	**	170	720	>720
50-84%	**	130	210	>210	***
85-100%	160	380	>380	***	***

PEDESTRIAN MODE

(Note: Level of service for the pedestrian mode in this table is based on roadway geometrics at 40 mph posted speed and traffic conditions, not the number of pedestrians using the facility.) (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine maximum service volumes.)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-49%	**	**	**	330	810
50-84%	**	**	**	520	990
85-100%	**	120	590	>590	***

BUS MODE (Scheduled Fixed Route)

(Buses per hour)

Sidewalk Coverage	Level of Service A	B	C	D	E
0-84%	**	>5	≥4	≥3	≥2
85-100%	>6	>4	≥3	≥2	≥1

ARTERIAL/NON-STATE ROADWAY ADJUSTMENTS

DIVIDED/UNDIVIDED
(alter corresponding volumes by the indicated percent)

Lanes	Median	Left Turns Lanes	Adjustment Factors
1	Divided	Yes	+5%
1	Undivided	No	-20%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

ONE WAY FACILITIES
Increase corresponding volume 20%

*This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Values shown are hourly directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. Level of service letter grade thresholds are probably not comparable across modes and, therefore, cross modal comparisons should be made with caution. Furthermore, combining levels of service of different modes into one overall roadway level of service is not recommended. To convert to annual average daily traffic volumes, these volumes must be divided by appropriate D and K factors. The table's input value defaults and level of service criteria appear on the following page. Calculations are based on planning applications of the Highway Capacity Manual, Bicycle LOS Model, Pedestrian LOS Model and Transit Capacity and Quality of Service Manual, respectively for the automobile/truck, bicycle, pedestrian and bus modes.

**Cannot be achieved using table input value defaults.

***Not applicable for that level of service letter grade. For automobile/truck modes, volumes greater than level of service D become F because intersection capacities have been reached. For bicycle and pedestrian modes, the level of service letter grade (including F) is not achievable, because there is no maximum vehicle volume threshold using table input value defaults.

APPENDIX E

Intersection Level of Service Calculations
Existing Conditions

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	62	64	7	55	46
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	69	71	8	61	51
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	89				293	91
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	89				293	91
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				91	95
cM capacity (veh/h)	1488				653	948

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	67	69	71	8	61	51
Volume Left	67	0	0	0	61	0
Volume Right	0	0	0	8	0	51
cSH	1488	1700	1700	1700	653	948
Volume to Capacity	0.04	0.04	0.04	0.00	0.09	0.05
Queue Length 95th (ft)	4	0	0	0	8	4
Control Delay (s)	7.5	0.0	0.0	0.0	11.1	9.0
Lane LOS	A				B	A
Approach Delay (s)	3.7		0.0		10.1	
Approach LOS					B	

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	14	50	38	14	48	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	56	42	16	53	39
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	216	70			68	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216	70			68	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	94			96	
cM capacity (veh/h)	731	974			1514	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	71	58	92
Volume Left	16	0	53
Volume Right	56	16	0
cSH	908	1700	1514
Volume to Capacity	0.08	0.03	0.04
Queue Length 95th (ft)	6	0	3
Control Delay (s)	9.3	0.0	4.4
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	4.4
Approach LOS	A		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	85	3	60	112	6	79
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	3	67	124	7	88
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			108		372	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			108		372	114
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		99	90
cM capacity (veh/h)			1464		588	920

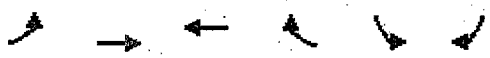
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	94	3	191	94
Volume Left	0	0	67	7
Volume Right	0	3	0	88
cSH	1700	1700	1464	885
Volume to Capacity	0.06	0.00	0.05	0.11
Queue Length 95th (ft)	0	0	4	9
Control Delay (s)	0.0	0.0	2.9	9.6
Lane LOS			A	A
Approach Delay (s)	0.0		2.9	9.6
Approach LOS				A

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	96	60	156	101	0	0	0	0	34	4	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	107	67	173	112	0	0	0	0	38	4	79
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	122			183			700	619	160	619	652	132
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	122			183			700	619	160	619	652	132
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			87			100	100	100	89	99	91
cM capacity (veh/h)	1447			1386			284	350	875	353	335	899

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	173	286	42	79
Volume Left	0	173	38	0
Volume Right	67	0	0	79
cSH	1700	1386	351	899
Volume to Capacity	0.10	0.13	0.12	0.09
Queue Length 95th (ft)	0	11	10	7
Control Delay (s)	0.0	5.3	16.7	9.4
Lane LOS		A	C	A
Approach Delay (s)	0.0	5.3	11.9	
Approach LOS			B	

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	25	104	255	9	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	116	283	10	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	303				479	308
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	303				479	308
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	1252				527	723

Direction, Lane #	EB 1	WB 1				
Volume Total	143	293				
Volume Left	28	0				
Volume Right	0	10				
cSH	1252	1700				
Volume to Capacity	0.02	0.17				
Queue Length 95th (ft)	2	0				
Control Delay (s)	1.7	0.0				
Lane LOS	A					
Approach Delay (s)	1.7	0.0				
Approach LOS						

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	33	57	0	0	153	2	44	61	156	5	0	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	37	63	0	0	170	2	49	68	173	6	0	80
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	182			73			408	329	83	535	328	191
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	182			73			408	329	83	535	328	191
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			90	88	82	98	100	90
cM capacity (veh/h)	1375			1507			475	563	957	322	564	834

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	37	63	172	117	173	6	80	
Volume Left	37	0	0	49	0	6	0	
Volume Right	0	0	2	0	173	0	80	
cSH	1375	1700	1700	522	957	322	834	
Volume to Capacity	0.03	0.04	0.10	0.22	0.18	0.02	0.10	
Queue Length 95th (ft)	2	0	0	21	16	1	8	
Control Delay (s)	7.7	0.0	0.0	13.9	9.6	16.4	9.8	
Lane LOS	A			B	A	C	A	
Approach Delay (s)	2.8		0.0	11.3		10.2		
Approach LOS				B		B		

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	35.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	7	18	2	2	6	4	2	12	4	4	19	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	20	2	2	7	4	2	13	4	4	21	4
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	21			32			85	72	41	81	71	29
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	21			32			85	72	41	81	71	29
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	98	100	99	97	100
cM capacity (veh/h)	1575			1560			847	798	1010	859	799	1026

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	30	13	20	30
Volume Left	8	2	2	4
Volume Right	2	4	4	4
cSH	1575	1560	843	835
Volume to Capacity	0.00	0.00	0.02	0.04
Queue Length 95th (ft)	0	0	2	3
Control Delay (s)	1.9	1.2	9.4	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.9	1.2	9.4	9.5
Approach LOS			A	A

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	12	4	6	54	30	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	4	7	60	33	13
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	133	60	57			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	133	60	57			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	840	986	1529			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	18	67	47
Volume Left	13	7	0
Volume Right	4	0	13
cSH	872	1529	1700
Volume to Capacity	0.02	0.00	0.03
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.2	0.8	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	0.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	66	1	3	69	2	3	9	1	2	7	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	73	1	3	77	2	3	10	1	2	8	6
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	89			84			199	191	94	196	190	98
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	89			84			199	191	94	196	190	98
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	99	100	100	99	99
cM capacity (veh/h)	1488			1493			722	687	944	727	687	940

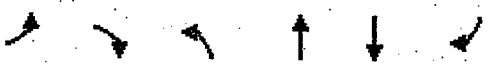
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	80	82	14	16
Volume Left	6	3	3	2
Volume Right	1	2	1	6
cSH	1488	1493	710	767
Volume to Capacity	0.00	0.00	0.02	0.02
Queue Length 95th (ft)	0	0	2	2
Control Delay (s)	0.5	0.3	10.2	9.8
Lane LOS	A	A	B	A
Approach Delay (s)	0.5	0.3	10.2	9.8
Approach LOS			B	A

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	12	66	1	6	68	19	5	30	8	8	14	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	73	1	7	76	21	6	33	9	9	16	9
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	107			84			237	231	94	246	221	106
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	107			84			237	231	94	246	221	106
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	95	99	99	98	99
cM capacity (veh/h)	1466			1493			669	648	944	646	656	930

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	88	103	48	33
Volume Left	13	7	6	9
Volume Right	1	21	9	9
cSH	1466	1493	691	709
Volume to Capacity	0.01	0.00	0.07	0.05
Queue Length 95th (ft)	1	0	6	4
Control Delay (s)	1.2	0.5	10.6	10.3
Lane LOS	A	A	B	B
Approach Delay (s)	1.2	0.5	10.6	10.3
Approach LOS			B	B

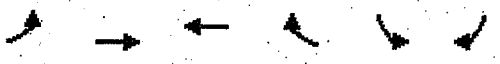
Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	146	50	36	10	32	117
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	162	56	40	11	36	130

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	162	56	44	7	24	142
Volume Left (vph)	162	0	40	0	0	0
Volume Right (vph)	0	56	0	0	0	130
Hadj (s)	0.55	-0.65	0.51	0.05	0.05	-0.59
Departure Headway (s)	5.6	4.4	5.8	5.3	5.2	4.6
Degree Utilization, x	0.25	0.07	0.07	0.01	0.03	0.18
Capacity (veh/h)	620	786	596	644	657	754
Control Delay (s)	9.2	6.5	8.0	7.2	7.2	7.4
Approach Delay (s)	8.5		7.9		7.3	
Approach LOS	A		A		A	

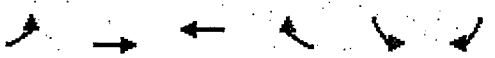
Intersection Summary			
Delay	8.0		
HCM Level of Service	A		
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱		↰↱	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	29	48	50	25	33	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	32	53	56	28	37	36
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	93				207	89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	93				207	89
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				95	96
cM capacity (veh/h)	1482				749	950

Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	86	83	72			
Volume Left	32	0	37			
Volume Right	0	28	36			
cSH	1482	1700	836			
Volume to Capacity	0.02	0.05	0.09			
Queue Length 95th (ft)	2	0	7			
Control Delay (s)	2.9	0.0	9.7			
Lane LOS	A		A			
Approach Delay (s)	2.9	0.0	9.7			
Approach LOS			A			

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	26	63	95	7	20	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	29	70	106	8	22	17
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	123				253	126
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	123				253	126
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				97	98
cM capacity (veh/h)	1445				707	907

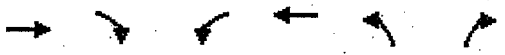
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	29	70	106	8	22	17
Volume Left	29	0	0	0	22	0
Volume Right	0	0	0	8	0	17
cSH	1445	1700	1700	1700	707	907
Volume to Capacity	0.02	0.04	0.06	0.00	0.03	0.02
Queue Length 95th (ft)	2	0	0	0	2	1
Control Delay (s)	7.5	0.0	0.0	0.0	10.3	9.0
Lane LOS	A				B	A
Approach Delay (s)	2.2		0.0		9.7	
Approach LOS					A	

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	21	74	42	18	45	25
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	23	82	47	20	50	28
Pedestrians	10		10		10	
Lane Width (ft)	12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0	
Percent Blockage	1		1		1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	204	77			77	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	204	77			77	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	91			97	
cM capacity (veh/h)	743	965			1503	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	106	67	78
Volume Left	23	0	50
Volume Right	82	20	0
cSH	905	1700	1503
Volume to Capacity	0.12	0.04	0.03
Queue Length 95th (ft)	10	0	3
Control Delay (s)	9.5	0.0	4.9
Lane LOS	A		A
Approach Delay (s)	9.5	0.0	4.9
Approach LOS	A		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	157	6	99	127	7	117
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	174	7	110	141	8	130
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			191		556	194
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			191		556	194
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		98	84
cM capacity (veh/h)			1365		444	830

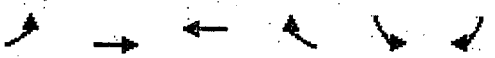
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	174	7	251	138		
Volume Left	0	0	110	8		
Volume Right	0	7	0	130		
cSH	1700	1700	1365	791		
Volume to Capacity	0.10	0.00	0.08	0.17		
Queue Length 95th (ft)	0	0	7	16		
Control Delay (s)	0.0	0.0	3.8	10.5		
Lane LOS			A	B		
Approach Delay (s)	0.0		3.8	10.5		
Approach LOS				B		

Intersection Summary						
Average Delay	4.2					
Intersection Capacity Utilization	41.8%		ICU Level of Service		A	
Analysis Period (min)	15					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	200	42	231	151	0	0	0	0	35	6	42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	222	47	257	168	0	0	0	0	39	7	47
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	178			279			997	947	266	947	970	188
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	178			279			997	947	266	947	970	188
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			80			100	100	100	80	97	94
cM capacity (veh/h)	1380			1278			170	206	764	198	200	838

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	269	424	46	47
Volume Left	0	257	39	0
Volume Right	47	0	0	47
cSH	1700	1278	199	838
Volume to Capacity	0.16	0.20	0.23	0.06
Queue Length 95th (ft)	0	19	21	4
Control Delay (s)	0.0	5.9	28.4	9.6
Lane LOS		A	D	A
Approach Delay (s)	0.0	5.9	18.9	
Approach LOS			C	

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	58	181	343	37	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	64	201	381	41	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	432				752	422
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	432				752	422
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				100	100
cM capacity (veh/h)	1122				352	625

Direction, Lane #	EB 1	WB 1
Volume Total	266	422
Volume Left	64	0
Volume Right	0	41
cSH	1122	1700
Volume to Capacity	0.06	0.25
Queue Length 95th (ft)	5	0
Control Delay (s)	2.5	0.0
Lane LOS	A	
Approach Delay (s)	2.5	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	48	115	0	0	203	12	69	83	164	6	0	127
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	53	128	0	0	226	13	77	92	182	7	0	141
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	249			138			628	493	148	715	487	252
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	249			138			628	493	148	715	487	252
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			75	79	79	97	100	82
cM capacity (veh/h)	1300			1428			303	448	882	217	452	771

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	53	128	239	169	182	7	141
Volume Left	53	0	0	77	0	7	0
Volume Right	0	0	13	0	182	0	141
cSH	1300	1700	1700	368	882	217	771
Volume to Capacity	0.04	0.08	0.14	0.46	0.21	0.03	0.18
Queue Length 95th (ft)	3	0	0	58	19	2	17
Control Delay (s)	7.9	0.0	0.0	22.8	10.1	22.1	10.7
Lane LOS	A			C	B	C	B
Approach Delay (s)	2.3		0.0	16.2		11.2	
Approach LOS				C		B	

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	14	1	0	5	4	1	32	2	1	27	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	16	1	0	6	4	1	36	2	1	30	6
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	20			27			76	57	36	75	56	28
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	20			27			76	57	36	75	56	28
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	96	100	100	96	99
cM capacity (veh/h)	1576			1568			854	815	1016	852	817	1027

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	10	39	37
Volume Left	6	0	1	1
Volume Right	1	4	2	6
cSH	1576	1568	826	844
Volume to Capacity	0.00	0.00	0.05	0.04
Queue Length 95th (ft)	0	0	4	3
Control Delay (s)	1.8	0.0	9.6	9.5
Lane LOS	A		A	A
Approach Delay (s)	1.8	0.0	9.6	9.5
Approach LOS			A	A

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	15	12	5	62	54	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	13	6	69	60	16
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	168	88	86			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168	88	86			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	804	952	1492			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	30	74	76
Volume Left	17	6	0
Volume Right	13	0	16
cSH	863	1492	1700
Volume to Capacity	0.03	0.00	0.04
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.3	0.6	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	91	1	1	49	8	2	4	1	2	8	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	101	1	1	54	9	2	4	1	2	9	7
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	73			112			216	209	122	208	206	79
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	73			112			216	209	122	208	206	79
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	99	100	100	99	99
cM capacity (veh/h)	1507			1459			700	669	911	716	672	963

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	113	64	8	18
Volume Left	11	1	2	2
Volume Right	1	9	1	7
cSH	1507	1459	705	765
Volume to Capacity	0.01	0.00	0.01	0.02
Queue Length 95th (ft)	1	0	1	2
Control Delay (s)	0.8	0.1	10.2	9.8
Lane LOS	A	A	B	A
Approach Delay (s)	0.8	0.1	10.2	9.8
Approach LOS			B	A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	24.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	76	3	11	62	23	6	38	18	19	46	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	84	3	12	69	26	7	42	20	21	51	10
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	104			98			268	245	106	273	234	102
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	104			98			268	245	106	273	234	102
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	93	98	97	92	99
cM capacity (veh/h)	1468			1477			609	635	930	604	644	935

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	98	107	69	82
Volume Left	10	12	7	21
Volume Right	3	26	20	10
cSH	1468	1477	696	658
Volume to Capacity	0.01	0.01	0.10	0.13
Queue Length 95th (ft)	1	1	8	11
Control Delay (s)	0.8	0.9	10.7	11.3
Lane LOS	A	A	B	B
Approach Delay (s)	0.8	0.9	10.7	11.3
Approach LOS			B	B

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	178	100	89	60	44	141
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	198	111	99	67	49	157

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	198	111	121	44	33	173
Volume Left (vph)	198	0	99	0	0	0
Volume Right (vph)	0	111	0	0	0	157
Hadj (s)	0.55	-0.65	0.46	0.05	0.05	-0.58
Departure Headway (s)	6.0	4.8	6.1	5.6	5.6	5.0
Degree Utilization, x	0.33	0.15	0.20	0.07	0.05	0.24
Capacity (veh/h)	573	709	567	603	602	684
Control Delay (s)	10.7	7.4	9.4	7.9	7.7	8.4
Approach Delay (s)	9.5		9.0		8.3	
Approach LOS	A		A		A	

Intersection Summary			
Delay	9.0		
HCM Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	34	55	40	61	8	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	61	44	68	9	18
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122				235	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122				235	98
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				99	98
cM capacity (veh/h)	1447				719	939

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	99	112	27
Volume Left	38	0	9
Volume Right	0	68	18
cSH	1447	1700	852
Volume to Capacity	0.03	0.07	0.03
Queue Length 95th (ft)	2	0	2
Control Delay (s)	3.0	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	3.0	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	36	29	34	10	46	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	32	38	11	51	42
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	59				170	58
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	59				170	58
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	96
cM capacity (veh/h)	1526				783	989

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	40	32	38	11	51	42
Volume Left	40	0	0	0	51	0
Volume Right	0	0	0	11	0	42
cSH	1526	1700	1700	1700	783	989
Volume to Capacity	0.03	0.02	0.02	0.01	0.07	0.04
Queue Length 95th (ft)	2	0	0	0	5	3
Control Delay (s)	7.4	0.0	0.0	0.0	9.9	8.8
Lane LOS	A				A	A
Approach Delay (s)	4.1		0.0		9.4	
Approach LOS					A	

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	25	47	60	27	38	57
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	28	52	67	30	42	63
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	249	102			107	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249	102			107	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	94			97	
cM capacity (veh/h)	704	935			1466	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	80	97	106
Volume Left	28	0	42
Volume Right	52	30	0
cSH	839	1700	1466
Volume to Capacity	0.10	0.06	0.03
Queue Length 95th (ft)	8	0	2
Control Delay (s)	9.7	0.0	3.1
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	3.1
Approach LOS	A		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	134	17	46	109	27	44
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	149	19	51	121	30	49
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			178		392	169
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			178		392	169
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		95	94
cM capacity (veh/h)			1380		578	858

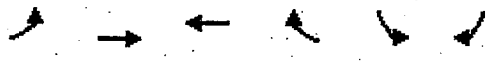
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	149	19	172	79
Volume Left	0	0	51	30
Volume Right	0	19	0	49
cSH	1700	1700	1380	724
Volume to Capacity	0.09	0.01	0.04	0.11
Queue Length 95th (ft)	0	0	3	9
Control Delay (s)	0.0	0.0	2.5	10.6
Lane LOS			A	B
Approach Delay (s)	0.0		2.5	10.6
Approach LOS				B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	159	34	170	111	0	0	0	0	66	1	42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	177	38	189	123	0	0	0	0	73	1	47
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	133			224			764	717	216	717	736	143
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	133			224			764	717	216	717	736	143
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			86			100	100	100	76	100	95
cM capacity (veh/h)	1433			1338			265	302	815	299	294	887

Direction, Lane #	EB 1	WB 1	SB 1	SB 2								
Volume Total	214	312	74	47								
Volume Left	0	189	73	0								
Volume Right	38	0	0	47								
cSH	1700	1338	299	887								
Volume to Capacity	0.13	0.14	0.25	0.05								
Queue Length 95th (ft)	0	12	24	4								
Control Delay (s)	0.0	5.4	21.0	9.3								
Lane LOS		A	C	A								
Approach Delay (s)	0.0	5.4	16.5									
Approach LOS			C									

Intersection Summary			
Average Delay	5.7		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	WBL	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	47	150	308	17	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	52	167	342	19	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	371				643	372
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	371				643	372
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				100	100
cM capacity (veh/h)	1182				414	666

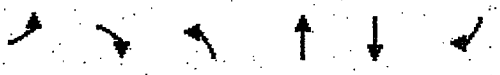
Direction, Lane #	EB 1	WB 1
Volume Total	219	361
Volume Left	52	0
Volume Right	0	19
cSH	1182	1700
Volume to Capacity	0.04	0.21
Queue Length 95th (ft)	3	0
Control Delay (s)	2.3	0.0
Lane LOS	A	
Approach Delay (s)	2.3	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	72	78	0	0	141	7	40	57	117	6	0	144
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	80	87	0	0	157	8	44	63	130	7	0	160
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	174			97			587	431	107	589	427	181
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	174			97			587	431	107	589	427	181
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			86	87	86	98	100	81
cM capacity (veh/h)	1384			1478			316	478	929	300	480	845

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	80	87	164	108	130	7	160
Volume Left	80	0	0	44	0	7	0
Volume Right	0	0	8	0	130	0	160
cSH	1384	1700	1700	394	929	300	845
Volume to Capacity	0.06	0.05	0.10	0.27	0.14	0.02	0.19
Queue Length 95th (ft)	5	0	0	27	12	2	17
Control Delay (s)	7.8	0.0	0.0	17.5	9.5	17.3	10.3
Lane LOS	A			C	A	C	B
Approach Delay (s)	3.7		0.0	13.1		10.5	
Approach LOS				B		B	

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	139	49	31	36	33	139
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	154	54	34	40	37	154

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	154	54	48	27	24	167
Volume Left (vph)	154	0	34	0	0	0
Volume Right (vph)	0	54	0	0	0	154
Hadj (s)	0.55	-0.65	0.41	0.05	0.05	-0.60
Departure Headway (s)	5.7	4.5	5.7	5.3	5.2	4.6
Degree Utilization, x	0.24	0.07	0.08	0.04	0.04	0.21
Capacity (veh/h)	606	762	606	644	657	755
Control Delay (s)	9.3	6.6	7.9	7.3	7.2	7.6
Approach Delay (s)	8.6		7.7		7.5	
Approach LOS	A		A		A	

Intersection Summary			
Delay	8.0		
HCM Level of Service	A		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX F

Intersection Level of Service Calculations
Existing Plus Opening Year Approved Projects Conditions

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	68	108	102	23	62	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	76	120	113	26	69	54
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	149				404	133
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	149				404	133
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				88	94
cM capacity (veh/h)	1415				559	898

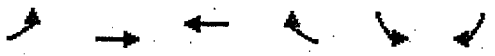
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	76	120	113	26	69	54
Volume Left	76	0	0	0	69	0
Volume Right	0	0	0	26	0	54
cSH	1415	1700	1700	1700	559	898
Volume to Capacity	0.05	0.07	0.07	0.02	0.12	0.06
Queue Length 95th (ft)	4	0	0	0	10	5
Control Delay (s)	7.7	0.0	0.0	0.0	12.3	9.3
Lane LOS	A				B	A
Approach Delay (s)	3.0		0.0		11.0	
Approach LOS					B	

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	21	66	40	19	66	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	23	73	44	21	73	44
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	266	75			76	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	266	75			76	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	92			95	
cM capacity (veh/h)	674	967			1505	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	97	66	118
Volume Left	23	0	73
Volume Right	73	21	0
cSH	876	1700	1505
Volume to Capacity	0.11	0.04	0.05
Queue Length 95th (ft)	9	0	4
Control Delay (s)	9.6	0.0	4.8
Lane LOS	A		A
Approach Delay (s)	9.6	0.0	4.8
Approach LOS	A		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	3	143	129	22	36	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	159	143	24	40	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	168				321	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	168				321	156
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	99
cM capacity (veh/h)	1404				669	888

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	162	168	47
Volume Left	3	0	40
Volume Right	0	24	7
cSH	1404	1700	693
Volume to Capacity	0.00	0.10	0.07
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.2	0.0	10.6
Lane LOS	A		B
Approach Delay (s)	0.2	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	132	13	87	168	19	99
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	147	14	97	181	21	110
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			171		541	167
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			171		541	167
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		95	87
cM capacity (veh/h)			1388		458	860

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	147	14	278	131
Volume Left	0	0	97	21
Volume Right	0	14	0	110
cSH	1700	1700	1388	754
Volume to Capacity	0.09	0.01	0.07	0.17
Queue Length 95th (ft)	0	0	6	16
Control Delay (s)	0.0	0.0	3.1	10.8
Lane LOS			A	B
Approach Delay (s)	0.0		3.1	10.8
Approach LOS				B

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	143	80	156	154	0	0	0	0	34	4	89
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	159	89	173	171	0	0	0	0	38	4	99
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	181			258			842	741	223	741	786	191
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	181			258			842	741	223	741	786	191
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			87			100	100	100	87	98	88
cM capacity (veh/h)	1377			1301			218	295	807	290	278	834

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	248	344	42	99
Volume Left	0	173	38	0
Volume Right	89	0	0	99
cSH	1700	1301	289	834
Volume to Capacity	0.15	0.13	0.15	0.12
Queue Length 95th (ft)	0	11	13	10
Control Delay (s)	0.0	4.7	19.6	9.9
Lane LOS		A	C	A
Approach Delay (s)	0.0	4.7	12.8	
Approach LOS			B	

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	39	136	308	9	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	43	151	342	10	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	362				605	367
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	362				605	367
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				100	100
cM capacity (veh/h)	1191				439	670

Direction, Lane #	EB 1	WB 1
Volume Total	194	352
Volume Left	43	0
Volume Right	0	10
cSH	1191	1700
Volume to Capacity	0.04	0.21
Queue Length 95th (ft)	3	0
Control Delay (s)	2.1	0.0
Lane LOS	A	
Approach Delay (s)	2.1	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	42	81	0	0	178	2	62	61	156	5	0	82
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	47	90	0	0	198	2	69	68	173	6	0	91
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	210			100			493	403	110	609	402	219
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	210			100			493	403	110	609	402	219
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			83	87	81	98	100	89
cM capacity (veh/h)	1343			1474			406	507	925	280	508	805

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	47	90	200	137	173	6	91
Volume Left	47	0	0	69	0	6	0
Volume Right	0	0	2	0	173	0	91
cSH	1343	1700	1700	451	925	280	805
Volume to Capacity	0.03	0.05	0.12	0.30	0.19	0.02	0.11
Queue Length 95th (ft)	3	0	0	32	17	2	10
Control Delay (s)	7.8	0.0	0.0	16.4	9.8	18.1	10.0
Lane LOS	A			C	A	C	B
Approach Delay (s)	2.7		0.0	12.7		10.5	
Approach LOS				B		B	

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	19	2	2	7	4	2	16	4	4	29	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	21	2	2	8	4	2	18	4	4	32	7
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			33			102	81	42	92	80	30
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			33			102	81	42	92	80	30
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	98	100	99	96	99
cM capacity (veh/h)	1573			1559			814	787	1009	839	788	1024

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	34	14	24	43
Volume Left	11	2	2	4
Volume Right	2	4	4	7
cSH	1573	1559	822	822
Volume to Capacity	0.01	0.00	0.03	0.05
Queue Length 95th (ft)	1	0	2	4
Control Delay (s)	2.4	1.1	9.5	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	2.4	1.1	9.5	9.6
Approach LOS			A	A

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	13	4	6	65	40	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	4	7	72	44	14
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	157	72	69			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157	72	69			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	814	971	1513			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	19	79	59
Volume Left	14	7	0
Volume Right	4	0	14
cSH	847	1513	1700
Volume to Capacity	0.02	0.00	0.03
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	21.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	6	67	1	3	70	2	3	12	1	2	12	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	74	1	3	78	2	3	13	1	2	13	8
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	90			86			208	195	95	202	194	99
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	90			86			208	195	95	202	194	99
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	98	100	100	98	99
cM capacity (veh/h)	1486			1492			705	682	943	717	683	938

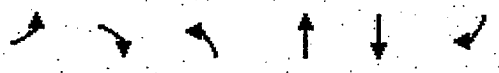
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	82	83	18	23
Volume Left	7	3	3	2
Volume Right	1	2	1	8
cSH	1486	1492	699	755
Volume to Capacity	0.00	0.00	0.03	0.03
Queue Length 95th (ft)	0	0	2	2
Control Delay (s)	0.6	0.3	10.3	9.9
Lane LOS	A	A	B	A
Approach Delay (s)	0.6	0.3	10.3	9.9
Approach LOS			B	A

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	66	1	6	68	23	5	36	8	12	19	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	73	1	7	76	26	6	40	9	13	21	10
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	111			84			245	237	94	253	225	108
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	111			84			245	237	94	253	225	108
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	94	99	98	97	99
cM capacity (veh/h)	1460			1493			655	642	944	632	652	927

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	89	108	54	44
Volume Left	14	7	6	13
Volume Right	1	26	9	10
cSH	1460	1493	679	692
Volume to Capacity	0.01	0.00	0.08	0.06
Queue Length 95th (ft)	1	0	7	5
Control Delay (s)	1.3	0.5	10.8	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	1.3	0.5	10.8	10.6
Approach LOS			B	B

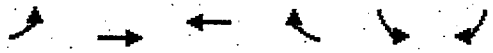
Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	166	53	41	10	32	137
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	184	59	46	11	36	152

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	184	59	49	7	24	164
Volume Left (vph)	184	0	46	0	0	0
Volume Right (vph)	0	59	0	0	0	152
Hadj (s)	0.55	-0.65	0.51	0.05	0.05	-0.60
Departure Headway (s)	5.6	4.4	5.9	5.4	5.3	4.6
Degree Utilization, x	0.29	0.07	0.08	0.01	0.03	0.21
Capacity (veh/h)	612	772	583	629	645	740
Control Delay (s)	9.7	6.6	8.2	7.3	7.3	7.7
Approach Delay (s)	8.9		8.1		7.6	
Approach LOS	A		A		A	

Intersection Summary						
Delay			8.3			
HCM Level of Service			A			
Intersection Capacity Utilization		31.9%		ICU Level of Service		A
Analysis Period (min)			15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	31	50	54	25	33	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	34	56	60	28	37	36
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	98				218	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98				218	94
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				95	96
cM capacity (veh/h)	1477				737	944

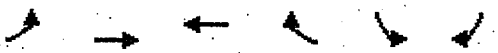
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	90	88	72
Volume Left	34	0	37
Volume Right	0	28	36
cSH	1477	1700	826
Volume to Capacity	0.02	0.05	0.09
Queue Length 95th (ft)	2	0	7
Control Delay (s)	3.0	0.0	9.8
Lane LOS	A		A
Approach Delay (s)	3.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	62	0	0	46	13	38	1	72	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	69	0	0	51	14	42	1	80	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	76			79			189	197	89	270	189	78
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76			79			189	197	89	270	189	78
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			94	100	92	100	100	100
cM capacity (veh/h)	1517			1500			743	682	950	607	688	971

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	90	66	123
Volume Left	21	0	42
Volume Right	0	14	80
cSH	1517	1700	865
Volume to Capacity	0.01	0.04	0.14
Queue Length 95th (ft)	1	0	12
Control Delay (s)	1.8	0.0	9.9
Lane LOS	A		A
Approach Delay (s)	1.8	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	32.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	58	122	144	56	53	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	64	136	160	62	59	36
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	232				444	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	232				444	180
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				89	96
cM capacity (veh/h)	1318				532	846

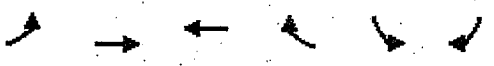
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	64	136	160	62	59	36
Volume Left	64	0	0	0	59	0
Volume Right	0	0	0	62	0	36
cSH	1318	1700	1700	1700	532	846
Volume to Capacity	0.05	0.08	0.09	0.04	0.11	0.04
Queue Length 95th (ft)	4	0	0	0	9	3
Control Delay (s)	7.9	0.0	0.0	0.0	12.6	9.4
Lane LOS	A				B	A
Approach Delay (s)	2.5		0.0		11.4	
Approach LOS					B	

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	28	101	48	31	71	28
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	31	112	53	34	79	31
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	279	91			98	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	279	91			98	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	88			95	
cM capacity (veh/h)	659	948			1477	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	143	88	110
Volume Left	31	0	79
Volume Right	112	34	0
cSH	866	1700	1477
Volume to Capacity	0.17	0.05	0.05
Queue Length 95th (ft)	15	0	4
Control Delay (s)	10.0	0.0	5.5
Lane LOS	A		A
Approach Delay (s)	10.0	0.0	5.5
Approach LOS	A		

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	12	115	133	42	65	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	128	148	47	72	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	194				326	171
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	194				326	171
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				89	98
cM capacity (veh/h)	1373				660	870

Direction, Lane #	EB 1	WB 1	SB 1									
Volume Total	141	194	86									
Volume Left	13	0	72									
Volume Right	0	47	13									
cSH	1373	1700	686									
Volume to Capacity	0.01	0.11	0.12									
Queue Length 95th (ft)	1	0	11									
Control Delay (s)	0.8	0.0	11.0									
Lane LOS	A		B									
Approach Delay (s)	0.8	0.0	11.0									
Approach LOS			B									

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	247	19	114	217	22	134
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	274	21	127	241	24	149
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			306		789	294
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			306		789	294
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		92	80
cM capacity (veh/h)			1239		316	730

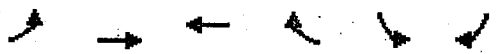
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	274	21	368	173
Volume Left	0	0	127	24
Volume Right	0	21	0	149
cSH	1700	1700	1239	616
Volume to Capacity	0.16	0.01	0.10	0.28
Queue Length 95th (ft)	0	0	9	29
Control Delay (s)	0.0	0.0	3.5	13.1
Lane LOS			A	B
Approach Delay (s)	0.0		3.5	13.1
Approach LOS				B

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	277	71	231	228	0	0	0	0	35	6	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	308	79	257	253	0	0	0	0	39	7	78
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	263			397			1215	1134	367	1134	1173	273
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	263			397			1215	1134	367	1134	1173	273
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			78			100	100	100	73	95	90
cM capacity (veh/h)	1284			1156			111	156	670	145	147	750

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	387	510	46	78
Volume Left	0	257	39	0
Volume Right	79	0	0	78
cSH	1700	1156	145	750
Volume to Capacity	0.23	0.22	0.31	0.10
Queue Length 95th (ft)	0	21	31	9
Control Delay (s)	0.0	5.7	40.7	10.4
Lane LOS		A	E	B
Approach Delay (s)	0.0	5.7	21.6	
Approach LOS			C	

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	83	233	420	37	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	92	259	467	41	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	518				951	507
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	518				951	507
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				100	100
cM capacity (veh/h)	1043				260	559

Direction, Lane #	EB 1	WB 1
Volume Total	351	508
Volume Left	92	0
Volume Right	0	41
cSH	1043	1700
Volume to Capacity	0.09	0.30
Queue Length 95th (ft)	7	0
Control Delay (s)	3.0	0.0
Lane LOS	A	
Approach Delay (s)	3.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	62	153	0	0	240	12	95	83	164	6	0	141
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	69	170	0	0	267	13	106	92	182	7	0	157
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	290			180			758	608	190	829	601	293
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	290			180			758	608	190	829	601	293
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			55	76	78	96	100	79
cM capacity (veh/h)	1256			1378			236	380	835	171	384	731

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	69	170	280	198	182	7	157
Volume Left	69	0	0	106	0	7	0
Volume Right	0	0	13	0	182	0	157
cSH	1256	1700	1700	286	835	171	731
Volume to Capacity	0.05	0.10	0.16	0.69	0.22	0.04	0.21
Queue Length 95th (ft)	4	0	0	117	21	3	20
Control Delay (s)	8.0	0.0	0.0	41.5	10.5	26.9	11.3
Lane LOS	A			E	B	D	B
Approach Delay (s)	2.3		0.0	26.6		11.9	
Approach LOS				D		B	

Intersection Summary			
Average Delay	11.9		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	14	1	0	6	4	1	46	2	1	34	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	16	1	0	7	4	1	51	2	1	38	9
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	21			27			95	69	36	95	68	29
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	21			27			95	69	36	95	68	29
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	94	100	100	95	99
cM capacity (veh/h)	1575			1568			817	800	1016	812	802	1026

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	28	11	54	48
Volume Left	11	0	1	1
Volume Right	1	4	2	9
cSH	1575	1568	807	836
Volume to Capacity	0.01	0.00	0.07	0.06
Queue Length 95th (ft)	1	0	5	5
Control Delay (s)	3.0	0.0	9.8	9.6
Lane LOS	A		A	A
Approach Delay (s)	3.0	0.0	9.8	9.6
Approach LOS			A	A

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	16	12	5	75	68	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	13	6	83	76	17
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198	104	102			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	104	102			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	772	932	1471			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	31	89	92
Volume Left	18	6	0
Volume Right	13	0	17
cSH	833	1471	1700
Volume to Capacity	0.04	0.00	0.05
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.5	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	12	91	1	1	50	8	2	12	1	2	11	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	101	1	1	56	9	2	13	1	2	12	9
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	74			112			226	215	122	218	211	80
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	74			112			226	215	122	218	211	80
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	98	100	100	98	99
cM capacity (veh/h)	1506			1459			685	663	911	697	667	961

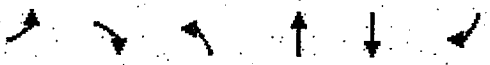
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	116	66	17	23
Volume Left	13	1	2	2
Volume Right	1	9	1	9
cSH	1506	1459	678	758
Volume to Capacity	0.01	0.00	0.02	0.03
Queue Length 95th (ft)	1	0	2	2
Control Delay (s)	0.9	0.1	10.4	9.9
Lane LOS	A	A	B	A
Approach Delay (s)	0.9	0.1	10.4	9.9
Approach LOS			B	A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	76	3	11	62	26	6	47	18	22	56	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	84	3	12	69	29	7	52	20	24	62	11
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	108			98			278	251	106	282	238	103
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	108			98			278	251	106	282	238	103
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	92	98	96	90	99
cM capacity (veh/h)	1464			1477			590	630	930	587	640	933

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	99	110	79	98
Volume Left	11	12	7	24
Volume Right	3	29	20	11
cSH	1464	1477	682	649
Volume to Capacity	0.01	0.01	0.12	0.15
Queue Length 95th (ft)	1	1	10	13
Control Delay (s)	0.9	0.9	11.0	11.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.9	0.9	11.0	11.5
Approach LOS			B	B

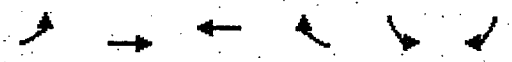
Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	26.9%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	209	107	96	60	44	171
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	232	119	107	67	49	190

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	232	119	129	44	33	206
Volume Left (vph)	232	0	107	0	0	0
Volume Right (vph)	0	119	0	0	0	190
Hadj (s)	0.55	-0.65	0.46	0.05	0.05	0.59
Departure Headway (s)	6.1	4.9	6.2	5.8	5.8	5.1
Degree Utilization, x	0.39	0.16	0.22	0.07	0.05	0.29
Capacity (veh/h)	563	692	548	581	584	664
Control Delay (s)	11.8	7.7	9.8	8.1	7.9	9.1
Approach Delay (s)	10.4		9.4		8.9	
Approach LOS	B		A		A	

Intersection Summary			
Delay	9.7		
HCM Level of Service	A		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	36	56	43	61	8	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	62	48	68	9	18
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	126				244	102
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126				244	102
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				99	98
cM capacity (veh/h)	1443				710	935

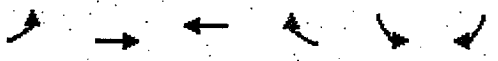
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	102	116	27
Volume Left	40	0	9
Volume Right	0	68	18
cSH	1443	1700	846
Volume to Capacity	0.03	0.07	0.03
Queue Length 95th (ft)	2	0	2
Control Delay (s)	3.1	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	3.1	0.0	9.4
Approach LOS			A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	28	0	0	87	101	18	2	17	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	31	0	0	97	112	20	2	19	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	219			41			282	338	51	302	282	173
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	219			41			282	338	51	302	282	173
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			97	100	98	100	100	100
cM capacity (veh/h)	1345			1549			639	560	997	611	602	861

Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	70	209	41									
Volume Left	39	0	20									
Volume Right	0	112	19									
cSH	1345	1700	758									
Volume to Capacity	0.03	0.12	0.05									
Queue Length 95th (ft)	2	0	4									
Control Delay (s)	4.4	0.0	10.0									
Lane LOS	A		B									
Approach Delay (s)	4.4	0.0	10.0									
Approach LOS			B									

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	68	100	80	59	79	55
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	76	111	89	66	88	61
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	164				371	109
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	164				371	109
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				85	93
cM capacity (veh/h)	1396				584	926

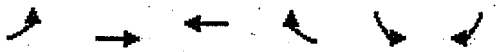
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	76	111	89	66	88	61
Volume Left	76	0	0	0	88	0
Volume Right	0	0	0	66	0	61
cSH	1396	1700	1700	1700	584	926
Volume to Capacity	0.05	0.07	0.05	0.04	0.15	0.07
Queue Length 95th (ft)	4	0	0	0	13	5
Control Delay (s)	7.7	0.0	0.0	0.0	12.3	9.2
Lane LOS	A				B	A
Approach Delay (s)	3.1		0.0		11.0	
Approach LOS					B	

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	24.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	84	76	62	36	67	62
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	84	69	40	74	69
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	327	109			119	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	327	109			119	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	91			95	
cM capacity (veh/h)	621	926			1451	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	122	109	143
Volume Left	38	0	74
Volume Right	84	40	0
cSH	804	1700	1451
Volume to Capacity	0.15	0.06	0.05
Queue Length 95th (ft)	13	0	4
Control Delay (s)	10.3	0.0	4.2
Lane LOS	B		A
Approach Delay (s)	10.3	0.0	4.2
Approach LOS	B		

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	8	96	98	36	72	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	107	109	40	80	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	149				253	129
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	149				253	129
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				89	98
cM capacity (veh/h)	1426				729	918

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	116	149	96
Volume Left	9	0	80
Volume Right	0	40	16
cSH	1426	1700	754
Volume to Capacity	0.01	0.09	0.13
Queue Length 95th (ft)	0	0	11
Control Delay (s)	0.6	0.0	10.5
Lane LOS	A		B
Approach Delay (s)	0.6	0.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	232	32	73	201	43	64
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	258	36	81	223	48	71
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			303		663	278
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			303		663	278
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		88	90
cM capacity (veh/h)			1241		390	746

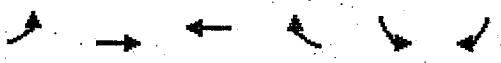
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	258	36	304	119
Volume Left	0	0	81	48
Volume Right	0	36	0	71
cSH	1700	1700	1241	546
Volume to Capacity	0.15	0.02	0.07	0.22
Queue Length 95th (ft)	0	0	5	21
Control Delay (s)	0.0	0.0	2.6	13.4
Lane LOS			A	B
Approach Delay (s)	0.0		2.6	13.4
Approach LOS				B

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	244	67	170	195	0	0	0	0	66	1	70
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	271	74	189	217	0	0	0	0	73	1	78
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	227			356			1001	923	328	923	960	237
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	227			356			1001	923	328	923	960	237
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			84			100	100	100	66	99	90
cM capacity (veh/h)	1325			1198			171	225	705	214	214	787

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	346	406	74	78
Volume Left	0	189	73	0
Volume Right	74	0	0	78
cSH	1700	1198	214	787
Volume to Capacity	0.20	0.16	0.35	0.10
Queue Length 95th (ft)	0	14	37	8
Control Delay (s)	0.0	4.8	30.5	10.1
Lane LOS		A	D	B
Approach Delay (s)	0.0	4.8	20.1	
Approach LOS			C	

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	74	207	392	17	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	82	230	436	19	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	464				859	465
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	464				859	465
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				100	100
cM capacity (veh/h)	1092				298	590

Direction, Lane #	EB 1	WB 1
Volume Total	312	454
Volume Left	82	0
Volume Right	0	19
cSH	1092	1700
Volume to Capacity	0.08	0.27
Queue Length 95th (ft)	6	0
Control Delay (s)	2.8	0.0
Lane LOS	A	
Approach Delay (s)	2.8	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	88	120	0	0	180	7	69	57	117	6	0	160
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	98	133	0	0	200	8	77	63	130	7	0	178
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	218			143			731	557	153	714	553	224
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	218			143			731	557	153	714	553	224
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			68	84	85	97	100	78
cM capacity (veh/h)	1335			1421			240	399	875	237	401	800

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	98	133	208	140	130	7	178
Volume Left	98	0	0	77	0	7	0
Volume Right	0	0	8	0	130	0	178
cSH	1335	1700	1700	293	875	237	800
Volume to Capacity	0.07	0.08	0.12	0.48	0.15	0.03	0.22
Queue Length 95th (ft)	6	0	0	61	13	2	21
Control Delay (s)	7.9	0.0	0.0	28.1	9.8	20.6	10.8
Lane LOS	A			D	A	C	B
Approach Delay (s)	3.3		0.0	19.3		11.1	
Approach LOS				C		B	

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	41.2%	ICU Level of Service		A
Analysis Period (min)	15			

APPENDIX G

Intersection Level of Service Calculations
Existing Plus Opening Year Approved Projects Plus Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	68	174	52	225	189	23	114	1	210	62	1	49
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	76	193	58	250	210	26	127	1	233	69	1	54
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	246			251			1119	1090	203	1308	1122	230
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	246			251			1119	1090	203	1308	1122	230
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			81			7	99	72	11	99	93
cM capacity (veh/h)	1304			1308			137	162	828	77	155	793

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	76	193	58	250	210	26	127	234	69	56
Volume Left	76	0	0	250	0	0	127	0	69	0
Volume Right	0	0	58	0	0	26	0	233	0	54
cSH	1304	1700	1700	1308	1700	1700	137	812	77	733
Volume to Capacity	0.06	0.11	0.03	0.19	0.12	0.02	0.93	0.29	0.89	0.08
Queue Length 95th (ft)	5	0	0	18	0	0	158	30	114	6
Control Delay (s)	7.9	0.0	0.0	8.4	0.0	0.0	121.3	11.2	165.6	10.3
Lane LOS	A			A			F	B	F	B
Approach Delay (s)	1.8			4.3			49.8		96.3	
Approach LOS							E		F	

Intersection Summary			
Average Delay	25.2		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	36	148	40	36	154	40
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	164	44	40	171	44
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	471	84			94	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	471	84			94	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	83			88	
cM capacity (veh/h)	478	956			1481	

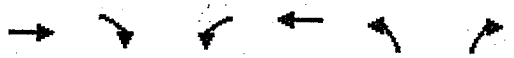
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	204	84	216
Volume Left	40	0	171
Volume Right	164	40	0
cSH	799	1700	1481
Volume to Capacity	0.26	0.05	0.12
Queue Length 95th (ft)	25	0	10
Control Delay (s)	11.0	0.0	6.3
Lane LOS	B		A
Approach Delay (s)	11.0	0.0	6.3
Approach LOS	B		

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	3	163	84	97	194	81	40	37	90	44	86	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	181	93	108	216	90	44	41	100	49	96	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	306			274			720	756	228	786	712	216
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	306			274			720	756	228	786	712	216
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			92			82	87	88	78	71	99
cM capacity (veh/h)	1250			1283			246	307	809	227	326	822

Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2			
Volume Total	278	108	216	90	44	41	100	49	102			
Volume Left	3	108	0	0	44	0	0	49	0			
Volume Right	93	0	0	90	0	0	100	0	7			
cSH	1250	1283	1700	1700	246	307	809	227	339			
Volume to Capacity	0.00	0.08	0.13	0.05	0.18	0.13	0.12	0.22	0.30			
Queue Length 95th (ft)	0	7	0	0	16	11	11	20	31			
Control Delay (s)	0.1	8.1	0.0	0.0	22.9	18.5	10.1	25.2	20.1			
Lane LOS	A	A			C	C	B	D	C			
Approach Delay (s)	0.1	2.1			15.0			21.8				
Approach LOS					C			C				

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	43.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	406	12	116	457	30	132
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	451	13	129	508	33	147
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			474		1237	471
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			474		1237	471
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		80	75
cM capacity (veh/h)			1073		167	581

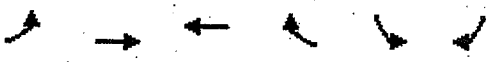
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	451	13	637	180
Volume Left	0	0	129	33
Volume Right	0	13	0	147
cSH	1700	1700	1073	398
Volume to Capacity	0.27	0.01	0.12	0.45
Queue Length 95th (ft)	0	0	10	57
Control Delay (s)	0.0	0.0	3.0	21.3
Lane LOS			A	C
Approach Delay (s)	0.0		3.0	21.3
Approach LOS				C

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	368	162	156	400	0	0	0	0	34	4	172
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	409	180	173	444	0	0	0	0	38	4	191
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	454			599			1503	1310	519	1310	1400	464
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	454			599			1503	1310	519	1310	1400	464
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			82			100	100	100	67	96	67
cM capacity (veh/h)	1092			973			55	129	550	114	114	586

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	589	618	42	191
Volume Left	0	173	38	0
Volume Right	180	0	0	191
cSH	1700	973	114	586
Volume to Capacity	0.35	0.18	0.37	0.33
Queue Length 95th (ft)	0	16	38	35
Control Delay (s)	0.0	4.3	54.0	14.1
Lane LOS		A	F	B
Approach Delay (s)	0.0	4.3	21.3	
Approach LOS			C	

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	79.3%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	116	285	554	9	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	129	317	616	10	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	636				1215	641
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	636				1215	641
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				100	100
cM capacity (veh/h)	943				171	469

Direction, Lane #	EB 1	WB 1
Volume Total	446	626
Volume Left	129	0
Volume Right	0	10
cSH	943	1700
Volume to Capacity	0.14	0.37
Queue Length 95th (ft)	12	0
Control Delay (s)	3.8	0.0
Lane LOS	A	
Approach Delay (s)	3.8	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	86	185	0	0	289	2	150	61	156	5	0	129
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	96	206	0	0	321	2	167	68	173	6	0	143
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	333			216			882	740	226	946	739	342
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	333			216			882	740	226	946	739	342
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			100			13	78	78	96	100	79
cM capacity (veh/h)	1210			1337			192	311	798	143	311	687

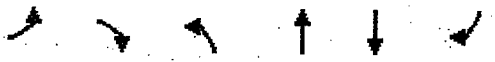
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	96	206	323	234	173	6	143
Volume Left	96	0	0	167	0	6	0
Volume Right	0	0	2	0	173	0	143
cSH	1210	1700	1700	216	798	143	687
Volume to Capacity	0.08	0.12	0.19	1.09	0.22	0.04	0.21
Queue Length 95th (ft)	6	0	0	266	21	3	20
Control Delay (s)	8.2	0.0	0.0	133.7	10.8	31.1	11.6
Lane LOS	A			F	B	D	B
Approach Delay (s)	2.6		0.0	81.4		12.4	
Approach LOS				F		B	

Intersection Summary			
Average Delay	30.3		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	17	23	2	3	11	4	2	26	5	4	38	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	26	2	3	12	4	2	29	6	4	42	13
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	27			38			140	108	47	126	107	34
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	27			38			140	108	47	126	107	34
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	96	99	99	94	99
cM capacity (veh/h)	1568			1553			751	757	1003	785	758	1019

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	47	20	37	60
Volume Left	19	3	2	4
Volume Right	2	4	6	13
cSH	1568	1553	785	806
Volume to Capacity	0.01	0.00	0.05	0.07
Queue Length 95th (ft)	1	0	4	6
Control Delay (s)	3.0	1.2	9.8	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	3.0	1.2	9.8	9.8
Approach LOS			A	A

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	18	4	6	118	90	18
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	20	4	7	131	100	20
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	274	130	130			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	274	130	130			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	698	902	1437			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	24	138	120
Volume Left	20	7	0
Volume Right	4	0	20
cSH	728	1437	1700
Volume to Capacity	0.03	0.00	0.07
Queue Length 95th (ft)	3	0	0
Control Delay (s)	10.1	0.4	0.0
Lane LOS	B	A	
Approach Delay (s)	10.1	0.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	13	71	1	5	74	2	3	18	1	2	15	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	79	1	6	82	2	3	20	1	2	17	14
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	94			90			246	224	99	234	223	103
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	94			90			246	224	99	234	223	103
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	97	100	100	97	98
cM capacity (veh/h)	1481			1486			655	653	938	674	654	933

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	94	90	24	33
Volume Left	14	6	3	2
Volume Right	1	2	1	14
cSH	1481	1486	663	753
Volume to Capacity	0.01	0.00	0.04	0.04
Queue Length 95th (ft)	1	0	3	3
Control Delay (s)	1.2	0.5	10.6	10.0
Lane LOS	A	A	B	B
Approach Delay (s)	1.2	0.5	10.6	10.0
Approach LOS			B	B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	66	1	6	68	52	5	53	8	39	36	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	73	1	7	76	58	6	59	9	43	40	17
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	143			84			293	285	94	294	257	124
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143			84			293	285	94	294	257	124
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	90	99	92	94	98
cM capacity (veh/h)	1421			1493			587	600	944	575	622	908

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	97	140	73	100
Volume Left	22	7	6	43
Volume Right	1	58	9	17
cSH	1421	1493	627	633
Volume to Capacity	0.02	0.00	0.12	0.16
Queue Length 95th (ft)	1	0	10	14
Control Delay (s)	1.8	0.4	11.5	11.8
Lane LOS	A	A	B	B
Approach Delay (s)	1.8	0.4	11.5	11.8
Approach LOS			B	B

Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	30.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	254	70	58	10	32	231
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	282	78	64	11	36	257

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	282	78	68	7	24	269
Volume Left (vph)	282	0	64	0	0	0
Volume Right (vph)	0	78	0	0	0	257
Hadj (s)	0.55	-0.65	0.52	0.05	0.05	-0.62
Departure Headway (s)	6.0	4.8	6.4	5.9	5.7	5.0
Degree Utilization, x	0.47	0.10	0.12	0.01	0.04	0.38
Capacity (veh/h)	579	712	526	563	593	682
Control Delay (s)	12.9	7.1	9.1	7.8	7.7	9.8
Approach Delay (s)	11.7		9.0		9.7	
Approach LOS	B		A		A	

Intersection Summary			
Delay	10.6		
HCM Level of Service	B		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	48	60	83	25	33	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	53	67	92	28	37	36
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	130				299	126
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130				299	126
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				94	96
cM capacity (veh/h)	1437				653	906

Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	120	120	72			
Volume Left	53	0	37			
Volume Right	0	28	36			
cSH	1437	1700	757			
Volume to Capacity	0.04	0.07	0.10			
Queue Length 95th (ft)	3	0	8			
Control Delay (s)	3.5	0.0	10.3			
Lane LOS	A		B			
Approach Delay (s)	3.5	0.0	10.3			
Approach LOS			B			

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	72	0	0	57	13	55	1	72	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	80	0	0	63	14	61	1	80	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	88			90			213	220	100	293	213	91
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	88			90			213	220	100	293	213	91
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			91	100	91	100	100	100
cM capacity (veh/h)	1502			1486			717	662	937	585	668	956

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	101	78	142
Volume Left	21	0	61
Volume Right	0	14	80
cSH	1502	1700	826
Volume to Capacity	0.01	0.05	0.17
Queue Length 95th (ft)	1	0	15
Control Delay (s)	1.6	0.0	10.3
Lane LOS	A		B
Approach Delay (s)	1.6	0.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	58	246	70	305	281	56	183	1	318	53	1	32
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	64	273	78	339	312	62	203	1	353	59	1	36
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	384			351			1438	1464	283	1766	1480	332
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	384			351			1438	1464	283	1766	1480	332
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			72			0	99	53	0	99	95
cM capacity (veh/h)	1159			1202			77	86	747	25	84	695

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	64	273	78	339	312	62	203	354	59	37
Volume Left	64	0	0	339	0	0	203	0	59	0
Volume Right	0	0	78	0	0	62	0	353	0	36
cSH	1159	1700	1700	1202	1700	1700	77	729	25	570
Volume to Capacity	0.06	0.16	0.05	0.28	0.18	0.04	2.65	0.49	2.37	0.06
Queue Length 95th (ft)	4	0	0	29	0	0	493	67	182	5
Control Delay (s)	8.3	0.0	0.0	9.2	0.0	0.0	864.5	14.5	955.9	11.8
Lane LOS	A			A			F	B	F	B
Approach Delay (s)	1.3			4.4			324.4		593.6	
Approach LOS							F		F	

Intersection Summary				
Average Delay	135.4			
Intersection Capacity Utilization	66.3%	ICU Level of Service		C
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	52	234	48	54	199	28
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	58	260	53	60	221	31
Pedestrians	10		10		10	
Lane Width (ft)	12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0	
Percent Blockage	1		1		1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	577	103			123	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	577	103			123	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	72			85	
cM capacity (veh/h)	397	933			1445	

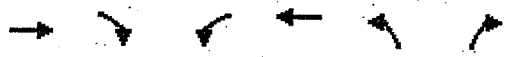
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	318	113	252
Volume Left	58	0	221
Volume Right	260	60	0
cSH	749	1700	1445
Volume to Capacity	0.42	0.07	0.15
Queue Length 95th (ft)	53	0	13
Control Delay (s)	13.3	0.0	7.1
Lane LOS	B		A
Approach Delay (s)	13.3	0.0	7.1
Approach LOS	B		

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	12	153	114	132	243	140	56	82	137	84	118	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	170	127	147	270	156	62	91	152	93	131	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	426			297			902	979	233	1021	887	270
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	426			297			902	979	233	1021	887	270
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			88			54	58	81	12	47	98
cM capacity (veh/h)	1128			1259			134	218	803	106	246	766

Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2			
Volume Total	310	147	270	156	62	91	152	93	144			
Volume Left	13	147	0	0	62	0	0	93	0			
Volume Right	127	0	0	156	0	0	152	0	13			
cSH	1128	1259	1700	1700	134	218	803	106	263			
Volume to Capacity	0.01	0.12	0.16	0.09	0.46	0.42	0.19	0.88	0.55			
Queue Length 95th (ft)	1	10	0	0	53	48	17	129	76			
Control Delay (s)	0.5	8.2	0.0	0.0	53.3	33.0	10.5	130.8	34.2			
Lane LOS	A	A			F	D	B	F	D			
Approach Delay (s)	0.5	2.1			25.9			72.1				
Approach LOS					D			F				

Intersection Summary				
Average Delay	18.5			
Intersection Capacity Utilization	52.1%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	681	22	176	633	46	197
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	757	24	196	703	51	219
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			791		1871	777
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			791		1871	777
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			76		13	44
cM capacity (veh/h)			818		59	389

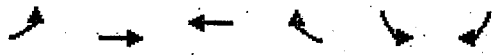
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2
Volume Total	757	24	899	270	
Volume Left	0	0	196	51	
Volume Right	0	24	0	219	
cSH	1700	1700	818	189	
Volume to Capacity	0.45	0.01	0.24	1.43	
Queue Length 95th (ft)	0	0	23	409	
Control Delay (s)	0.0	0.0	5.8	267.9	
Lane LOS			A	F	
Approach Delay (s)	0.0		5.8	267.9	
Approach LOS				F	

Intersection Summary			
Average Delay	39.8		
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	642	204	231	586	0	0	0	0	35	6	190
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	713	227	257	651	0	0	0	0	39	7	211
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	661			950			2226	2011	847	2011	2124	671
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	661			950			2226	2011	847	2011	2124	671
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			64			100	100	100	0	79	53
cM capacity (veh/h)	915			719			10	37	357	31	32	447

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	940	908	46	211
Volume Left	0	257	39	0
Volume Right	227	0	0	211
cSH	1700	719	31	447
Volume to Capacity	0.55	0.36	1.48	0.47
Queue Length 95th (ft)	0	41	129	62
Control Delay (s)	0.0	8.9	526.6	20.1
Lane LOS		A	F	C
Approach Delay (s)	0.0	8.9	110.0	
Approach LOS			F	

Intersection Summary			
Average Delay	17.3		
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	208	473	778	37	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	231	526	864	41	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	916				1893	905
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	916				1893	905
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	69				100	100
cM capacity (veh/h)	741				52	331

Direction, Lane #	EB 1	WB 1
Volume Total	757	906
Volume Left	231	0
Volume Right	0	41
cSH	741	1700
Volume to Capacity	0.31	0.53
Queue Length 95th (ft)	33	0
Control Delay (s)	7.5	0.0
Lane LOS	A	
Approach Delay (s)	7.5	0.0
Approach LOS		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	133	322	0	0	402	12	223	83	164	6	0	209
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	148	358	0	0	447	13	248	92	182	7	0	232
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	470			368			1359	1133	378	1355	1127	473
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	470			368			1359	1133	378	1355	1127	473
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	86			100			0	46	72	86	100	60
cM capacity (veh/h)	1077			1175			65	171	656	46	173	579

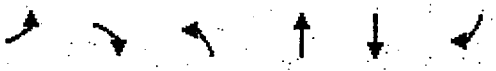
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	148	358	460	340	182	7	232
Volume Left	148	0	0	248	0	7	0
Volume Right	0	0	13	0	182	0	232
cSH	1077	1700	1700	78	656	46	579
Volume to Capacity	0.14	0.21	0.27	4.34	0.28	0.14	0.40
Queue Length 95th (ft)	12	0	0	Err	28	12	48
Control Delay (s)	8.9	0.0	0.0	Err	12.5	96.0	15.3
Lane LOS	A			F	B	F	C
Approach Delay (s)	2.6		0.0	651	4.4	17.6	
Approach LOS				F		C	

Intersection Summary				
Average Delay	1973.4			
Intersection Capacity Utilization	62.7%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	21	1	2	13	4	1	59	4	1	48	18
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	23	1	2	14	4	1	66	4	1	53	20
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	29			34			156	112	44	147	110	37
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	29			34			156	112	44	147	110	37
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	91	100	100	93	98
cM capacity (veh/h)	1565			1557			719	752	1006	731	753	1016

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	47	21	71	74
Volume Left	22	2	1	1
Volume Right	1	4	4	20
cSH	1565	1557	763	809
Volume to Capacity	0.01	0.00	0.09	0.09
Queue Length 95th (ft)	1	0	8	8
Control Delay (s)	3.5	0.8	10.2	9.9
Lane LOS	A	A	B	A
Approach Delay (s)	3.5	0.8	10.2	9.9
Approach LOS			B	A

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	24	12	5	152	151	24
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	13	6	169	168	27
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	381	201	204			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	381	201	204			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	98	100			
cM capacity (veh/h)	606	823	1350			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	40	174	194
Volume Left	27	6	0
Volume Right	13	0	27
cSH	665	1350	1700
Volume to Capacity	0.06	0.00	0.11
Queue Length 95th (ft)	5	0	0
Control Delay (s)	10.8	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	10.8	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	98	1	5	57	8	2	20	1	2	17	18
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	109	1	6	63	9	2	22	1	2	19	20
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	82			120			287	262	129	269	258	88
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	82			120			287	262	129	269	258	88
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	96	100	100	97	98
cM capacity (veh/h)	1496			1449			607	618	902	633	621	952

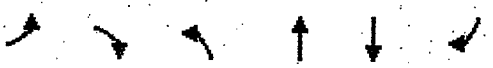
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	78	26	41
Volume Left	24	6	2	2
Volume Right	1	9	1	20
cSH	1496	1449	626	748
Volume to Capacity	0.02	0.00	0.04	0.05
Queue Length 95th (ft)	1	0	3	4
Control Delay (s)	1.5	0.6	11.0	10.1
Lane LOS	A	A	B	B
Approach Delay (s)	1.5	0.6	11.0	10.1
Approach LOS			B	B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	25.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	20	76	3	11	62	68	6	72	18	67	83	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	84	3	12	69	76	7	80	20	74	92	23
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	154			98			351	319	106	342	283	127
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	154			98			351	319	106	342	283	127
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			99	86	98	85	85	97
cM capacity (veh/h)	1408			1477			493	572	930	509	599	906

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	157	107	190
Volume Left	22	12	7	74
Volume Right	3	76	20	23
cSH	1408	1477	610	583
Volume to Capacity	0.02	0.01	0.17	0.33
Queue Length 95th (ft)	1	1	16	35
Control Delay (s)	1.6	0.6	12.2	14.1
Lane LOS	A	A	B	B
Approach Delay (s)	1.6	0.6	12.2	14.1
Approach LOS			B	B

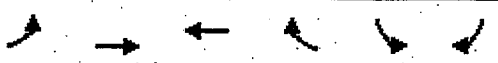
Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	351	134	121	60	44	308
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	390	149	134	67	49	342

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	390	149	157	44	33	359
Volume Left (vph)	390	0	134	0	0	0
Volume Right (vph)	0	149	0	0	0	342
Hadj (s)	0.55	-0.65	0.48	0.05	0.05	-0.62
Departure Headway (s)	6.7	5.5	7.3	6.8	6.6	5.9
Degree Utilization, x	0.73	0.23	0.32	0.08	0.06	0.59
Capacity (veh/h)	513	622	458	491	514	576
Control Delay (s)	24.6	9.0	12.4	9.3	8.8	15.9
Approach Delay (s)	20.3		11.7		15.3	
Approach LOS	C		B		C	

Intersection Summary			
Delay	17.1		
HCM Level of Service	C		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	63	74	85	61	8	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	70	82	94	68	9	18
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	172				371	148
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	172				371	148
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				98	98
cM capacity (veh/h)	1387				586	881

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	152	162	27
Volume Left	70	0	9
Volume Right	0	68	18
cSH	1387	1700	755
Volume to Capacity	0.05	0.10	0.04
Queue Length 95th (ft)	4	0	3
Control Delay (s)	3.8	0.0	9.9
Lane LOS	A		A
Approach Delay (s)	3.8	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	35	46	0	0	104	101	43	2	17	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	51	0	0	116	112	48	2	19	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	238			61			321	377	71	341	321	192
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	238			61			321	377	71	341	321	192
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			92	100	98	100	100	100
cM capacity (veh/h)	1323			1523			602	532	972	576	572	840

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	90	228	69
Volume Left	39	0	48
Volume Right	0	112	19
cSH	1323	1700	669
Volume to Capacity	0.03	0.13	0.10
Queue Length 95th (ft)	2	0	9
Control Delay (s)	3.5	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	3.5	0.0	11.0
Approach LOS			B

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	68	286	117	506	315	59	257	1	473	79	1	55
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	76	318	130	562	350	66	286	1	526	88	1	61
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	426			448			2015	2019	328	2489	2083	370
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	426			448			2015	2019	328	2489	2083	370
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			49			0	96	25	0	95	91
cM capacity (veh/h)	1119			1107			21	26	705	3	24	662

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	76	318	130	562	350	66	286	527	88	62
Volume Left	76	0	0	562	0	0	286	0	88	0
Volume Right	0	0	130	0	0	66	0	526	0	61
cSH	1119	1700	1700	1107	1700	1700	21	669	3	449
Volume to Capacity	0.07	0.19	0.08	0.51	0.21	0.04	13.31	0.79	32.17	0.14
Queue Length 95th (ft)	5	0	0	74	0	0	Err	193	Err	12
Control Delay (s)	8.4	0.0	0.0	11.6	0.0	0.0	Err	27.3	Err	14.3
Lane LOS	A			B			F	D	F	B
Approach Delay (s)	1.2			6.6			3533.1		5857.2	
Approach LOS							F		F	

Intersection Summary			
Average Delay	1524.5		
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	70	276	62	77	281	62
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	307	69	86	312	69
Pedestrians	10		10		10	
Lane Width (ft)	12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0	
Percent Blockage	1		1		1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	825	132			164	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	825	132			164	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	66			78	
cM capacity (veh/h)	260	900			1396	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	384	154	381
Volume Left	78	0	312
Volume Right	307	86	0
cSH	601	1700	1396
Volume to Capacity	0.64	0.09	0.22
Queue Length 95th (ft)	114	0	21
Control Delay (s)	21.0	0.0	7.2
Lane LOS	C		A
Approach Delay (s)	21.0	0.0	7.2
Approach LOS	C		

Intersection Summary			
Average Delay	11.7		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	161	189	218	264	188	90	83	203	108	194	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	179	210	242	293	209	100	92	226	120	216	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	502			389			1203	1288	284	1351	1184	293
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	502			389			1203	1288	284	1351	1184	293
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			79			0	28	70	0	0	98
cM capacity (veh/h)	1057			1164			0	128	753	32	148	744

Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	398	242	293	209	100	92	226	120	231
Volume Left	9	242	0	0	100	0	0	120	0
Volume Right	210	0	0	209	0	0	226	0	16
cSH	1057	1164	1700	1700	0	128	753	32	156
Volume to Capacity	0.01	0.21	0.17	0.12	Err	0.72	0.30	3.80	1.48
Queue Length 95th (ft)	1	20	0	0	Err	101	31	Err	378
Control Delay (s)	0.3	8.9	0.0	0.0	Err	84.5	11.8	Err	300.1
Lane LOS	A	A			F	F	B	F	F
Approach Delay (s)	0.3	2.9			Err		3614.9		
Approach LOS					F			F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	WBL	WBT	NBL	NBR	SBL	SBT	SBR
Lane Configurations									
Sign Control	Free			Free	Stop				
Grade	0%			0%	0%				
Volume (veh/h)	881	39	172	898	80	163			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90			
Hourly flow rate (vph)	979	43	191	998	89	181			
Pedestrians	10			10	10				
Lane Width (ft)	12.0			12.0	12.0				
Walking Speed (ft/s)	4.0			4.0	4.0				
Percent Blockage	1			1	1				
Right turn flare (veh)									
Median type					None				
Median storage veh)									
Upstream signal (ft)									
pX, platoon unblocked									
vC, conflicting volume			1032		2379	999			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol			1032		2379	999			
tC, single (s)			4.1		6.4	6.2			
tC, 2 stage (s)									
tF (s)			2.2		3.5	3.3			
p0 queue free %			71		0	37			
cM capacity (veh/h)			664		26	289			

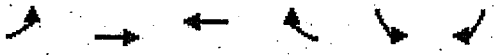
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1	SB 2	SB 3
Volume Total	979	43	1189	270			
Volume Left	0	0	191	89			
Volume Right	0	43	0	181			
cSH	1700	1700	664	68			
Volume to Capacity	0.58	0.03	0.29	4.00			
Queue Length 95th (ft)	0	0	30	Err			
Control Delay (s)	0.0	0.0	9.4	Err			
Lane LOS			A	F			
Approach Delay (s)	0.0		9.4	Err			
Approach LOS				F			

Intersection Summary				
Average Delay	1092.6			
Intersection Capacity Utilization	128.3%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	793	267	170	795	0	0	0	0	66	0	272
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	881	297	189	883	0	0	0	0	73	0	302
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	893			1188			2613	2311	1049	2311	2459	903
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	893			1188			2613	2311	1049	2311	2459	903
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			68			100	100	100	0	100	8
cM capacity (veh/h)	749			584			1	25	273	19	20	329

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	1178	1072	73	302
Volume Left	0	189	73	0
Volume Right	297	0	0	302
cSH	1700	584	19	329
Volume to Capacity	0.69	0.32	3.77	0.92
Queue Length 95th (ft)	0	35	Err	228
Control Delay (s)	0.0	10.3	Err	67.5
Lane LOS		B	F	F
Approach Delay (s)	0.0	10.3	2006.8	
Approach LOS			F	

Intersection Summary			
Average Delay	291.3		
Intersection Capacity Utilization	130.7%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	261	570	992	17	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	290	633	1102	19	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1131				2345	1132
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1131				2345	1132
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	53				100	100
cM capacity (veh/h)	614				21	244

Direction, Lane #	EB 1	WB 1
Volume Total	923	1121
Volume Left	290	0
Volume Right	0	19
cSH	614	1700
Volume to Capacity	0.47	0.66
Queue Length 95th (ft)	63	0
Control Delay (s)	13.3	0.0
Lane LOS	B	
Approach Delay (s)	13.3	0.0
Approach LOS		

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	113.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	196	374	0	0	451	7	283	57	117	6	0	275
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	218	416	0	0	501	8	314	63	130	7	0	306
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	519			426			1682	1380	436	1538	1376	525
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	519			426			1682	1380	436	1538	1376	525
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			100			0	43	79	80	100	44
cM capacity (veh/h)	1033			1119			26	111	608	34	112	541

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	218	416	509	378	130	7	306
Volume Left	218	0	0	314	0	7	0
Volume Right	0	0	8	0	130	0	306
cSH	1033	1700	1700	30	608	34	541
Volume to Capacity	0.21	0.24	0.30	12.47	0.21	0.20	0.56
Queue Length 95th (ft)	20	0	0	Err	20	16	87
Control Delay (s)	9.4	0.0	0.0	Err	12.5	136.2	19.9
Lane LOS	A			F	B	F	C
Approach Delay (s)	3.2		0.0	7442.3		22.4	
Approach LOS				F		C	

Intersection Summary				
Average Delay	1930.5			
Intersection Capacity Utilization	70.9%	ICU Level of Service		C
Analysis Period (min)	15			

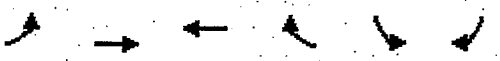
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	390	98	82	36	33	367
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	433	109	91	40	37	408

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	433	109	104	27	24	420
Volume Left (vph)	433	0	91	0	0	0
Volume Right (vph)	0	109	0	0	0	408
Hadj (s)	0.55	-0.65	0.49	0.05	0.05	-0.63
Departure Headway (s)	6.7	5.5	7.5	7.0	6.6	5.9
Degree Utilization, x	0.81	0.17	0.22	0.05	0.04	0.68
Capacity (veh/h)	522	627	439	472	518	588
Control Delay (s)	30.6	8.4	11.3	9.2	8.7	19.4
Approach Delay (s)	26.1		10.9		18.8	
Approach LOS	D		B		C	

Intersection Summary			
Delay	21.4		
HCM Level of Service	C		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX H

Intersection Level of Service Calculations
Near-Term With Approved Projects Conditions



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	78	141	120	24	71	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	87	157	133	27	79	62
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	170				483	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	170				483	153
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				84	93
cM capacity (veh/h)	1390				498	875

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	87	157	133	27	79	62
Volume Left	87	0	0	0	79	0
Volume Right	0	0	0	27	0	62
cSH	1390	1700	1700	1700	498	875
Volume to Capacity	0.06	0.09	0.08	0.02	0.16	0.07
Queue Length 95th (ft)	5	0	0	0	14	6
Control Delay (s)	7.8	0.0	0.0	0.0	13.6	9.4
Lane LOS	A				B	A
Approach Delay (s)	2.8		0.0		11.7	
Approach LOS					B	

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	24.3%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	23	79	48	22	88	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	26	88	53	24	98	57
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	338	86			88	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	338	86			88	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	91			93	
cM capacity (veh/h)	603	954			1489	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	113	78	154
Volume Left	26	0	98
Volume Right	88	24	0
cSH	843	1700	1489
Volume to Capacity	0.13	0.05	0.07
Queue Length 95th (ft)	12	0	5
Control Delay (s)	9.9	0.0	5.0
Lane LOS	A		A
Approach Delay (s)	9.9	0.0	5.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		Y	
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	5	176	152	25	45	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	196	169	28	50	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	197				389	183
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	197				389	183
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	99
cM capacity (veh/h)	1370				610	857

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	201	197	57
Volume Left	6	0	50
Volume Right	0	28	7
cSH	1370	1700	631
Volume to Capacity	0.00	0.12	0.09
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.2	0.0	11.3
Lane LOS	A		B
Approach Delay (s)	0.2	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NWL	NWT	NEL	NER
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	166	16	97	188	21	112
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	184	18	108	209	23	124
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			212		629	204
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			212		629	204
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		94	85
cM capacity (veh/h)			1341		402	820

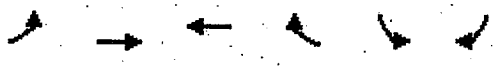
Direction, Lane #	EB 1	EB 2	NW 1	NE 1	SE 1	SE 2
Volume Total	184	18	317	148		
Volume Left	0	0	108	23		
Volume Right	0	18	0	124		
cSH	1700	1700	1341	704		
Volume to Capacity	0.11	0.01	0.08	0.21		
Queue Length 95th (ft)	0	0	7	20		
Control Delay (s)	0.0	0.0	3.2	11.5		
Lane LOS			A	B		
Approach Delay (s)	0.0		3.2	11.5		
Approach LOS				B		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	168	100	181	174	0	0	0	0	39	5	105
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	187	111	201	193	0	0	0	0	43	6	117
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	203			308			977	858	262	858	913	213
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203			308			977	858	262	858	913	213
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			84			100	100	100	82	98	86
cM capacity (veh/h)	1351			1247			166	244	768	236	226	811

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	298	394	49	117
Volume Left	0	201	43	0
Volume Right	111	0	0	117
cSH	1700	1247	235	811
Volume to Capacity	0.18	0.16	0.21	0.14
Queue Length 95th (ft)	0	14	19	13
Control Delay (s)	0.0	5.1	24.3	10.2
Lane LOS		A	C	B
Approach Delay (s)	0.0	5.1	14.3	
Approach LOS			B	

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	49	157	352	10	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	54	174	391	11	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	412				700	417
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	412				700	417
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				100	100
cM capacity (veh/h)	1141				381	629

Direction, Lane #	EB 1	WB 1
Volume Total	229	402
Volume Left	54	0
Volume Right	0	11
cSH	1141	1700
Volume to Capacity	0.05	0.24
Queue Length 95th (ft)	4	0
Control Delay (s)	2.3	0.0
Lane LOS	A	
Approach Delay (s)	2.3	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	47	94	0	0	203	2	72	71	181	6	0	93
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	52	104	0	0	226	2	80	79	201	7	0	103
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	238			114			559	457	124	696	456	247
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	238			114			559	457	124	696	456	247
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			78	83	78	97	100	87
cM capacity (veh/h)	1312			1456			358	471	908	227	472	777

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	52	104	228	159	201	7	103
Volume Left	52	0	0	80	0	7	0
Volume Right	0	0	2	0	201	0	103
cSH	1312	1700	1700	406	908	227	777
Volume to Capacity	0.04	0.06	0.13	0.39	0.22	0.03	0.13
Queue Length 95th (ft)	3	0	0	46	21	2	11
Control Delay (s)	7.9	0.0	0.0	19.4	10.1	21.4	10.3
Lane LOS	A			C	B	C	B
Approach Delay (s)	2.6		0.0	14.2		11.0	
Approach LOS				B		B	

Intersection Summary				
Average Delay	7.9			
Intersection Capacity Utilization	39.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	11	22	2	2	8	5	2	20	5	5	37	7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	24	2	2	9	6	2	22	6	6	41	8
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	24			37			114	89	46	103	87	32
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	24			37			114	89	46	103	87	32
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	97	99	99	95	99
cM capacity (veh/h)	1571			1555			790	779	1004	821	780	1022

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	17	30	54
Volume Left	12	2	2	6
Volume Right	2	6	6	8
cSH	1571	1555	813	812
Volume to Capacity	0.01	0.00	0.04	0.07
Queue Length 95th (ft)	1	0	3	5
Control Delay (s)	2.3	1.0	9.6	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	2.3	1.0	9.6	9.8
Approach LOS			A	A

Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	19.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	15	5	7	75	48	15
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	6	8	83	53	17
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	181	82	80			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	181	82	80			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	99			
cM capacity (veh/h)	789	959	1499			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	91	70
Volume Left	17	8	0
Volume Right	6	0	17
cSH	826	1499	1700
Volume to Capacity	0.03	0.01	0.04
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.5	0.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	0.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	77	1	4	81	2	3	14	1	2	16	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	86	1	4	90	2	3	16	1	2	18	11
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	102			97			244	225	106	233	224	111
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	102			97			244	225	106	233	224	111
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	98	100	100	97	99
cM capacity (veh/h)	1471			1478			661	655	930	681	656	924

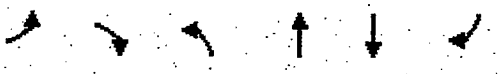
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	96	97	20	31
Volume Left	9	4	3	2
Volume Right	1	2	1	11
cSH	1471	1478	667	734
Volume to Capacity	0.01	0.00	0.03	0.04
Queue Length 95th (ft)	0	0	2	3
Control Delay (s)	0.7	0.4	10.6	10.1
Lane LOS	A	A	B	B
Approach Delay (s)	0.7	0.4	10.6	10.1
Approach LOS			B	B

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	21.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	77	1	7	79	26	6	41	9	13	25	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	86	1	8	88	29	7	46	10	14	28	11
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	127			97			282	272	106	290	258	122
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	127			97			282	272	106	290	258	122
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	93	99	98	96	99
cM capacity (veh/h)	1441			1478			611	612	930	591	623	911

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	103	124	62	53
Volume Left	17	8	7	14
Volume Right	1	29	10	11
cSH	1441	1478	648	657
Volume to Capacity	0.01	0.01	0.10	0.08
Queue Length 95th (ft)	1	0	8	7
Control Delay (s)	1.3	0.5	11.1	11.0
Lane LOS	A	A	B	B
Approach Delay (s)	1.3	0.5	11.1	11.0
Approach LOS			B	B

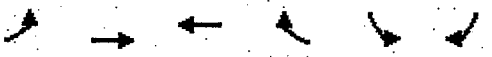
Intersection Summary					
Average Delay	4.3				
Intersection Capacity Utilization	24.6%	ICU Level of Service		A	
Analysis Period (min)	15				



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	192	62	46	12	37	157
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	213	69	51	13	41	174

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	213	69	56	9	27	188
Volume Left (vph)	213	0	51	0	0	0
Volume Right (vph)	0	69	0	0	0	174
Hadj (s)	0.55	-0.65	0.51	0.05	0.05	-0.60
Departure Headway (s)	5.7	4.5	6.0	5.6	5.4	4.8
Degree Utilization, x	0.34	0.09	0.09	0.01	0.04	0.25
Capacity (veh/h)	602	753	566	608	627	719
Control Delay (s)	10.4	6.8	8.4	7.4	7.5	8.1
Approach Delay (s)	9.5		8.3		8.1	
Approach LOS	A		A		A	

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	36	57	62	29	38	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	63	69	32	42	41
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	111				248	105
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	111				248	105
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				94	96
cM capacity (veh/h)	1460				706	931

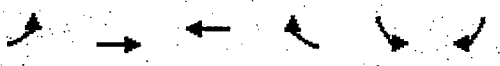
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	103	101	83
Volume Left	40	0	42
Volume Right	0	32	41
cSH	1460	1700	801
Volume to Capacity	0.03	0.06	0.10
Queue Length 95th (ft)	2	0	9
Control Delay (s)	3.0	0.0	10.0
Lane LOS	A		B
Approach Delay (s)	3.0	0.0	10.0
Approach LOS			B

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	71	0	0	53	15	43	1	83	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	79	0	0	59	17	48	1	92	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.6	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	86			89			215	223	99	308	215	87
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	86			89			215	223	99	308	215	87
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			93	100	90	100	100	100
cM capacity (veh/h)	1505			1488			714	657	938	563	664	960

Direction, Lane #	EB 1	WB 1	NB 1									
Volume Total	103	76	141									
Volume Left	24	0	48									
Volume Right	0	17	92									
cSH	1505	1700	845									
Volume to Capacity	0.02	0.04	0.17									
Queue Length 95th (ft)	1	0	15									
Control Delay (s)	1.9	0.0	10.1									
Lane LOS	A		B									
Approach Delay (s)	1.9	0.0	10.1									
Approach LOS			B									

Intersection Summary												
Average Delay	5.1											
Intersection Capacity Utilization	33.7%	ICU Level of Service	A									
Analysis Period (min)	15											



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	62	147	184	57	56	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	69	163	204	63	62	38
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	278				526	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	278				526	224
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				87	95
cM capacity (veh/h)	1269				475	799

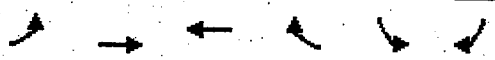
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	69	163	204	63	62	38
Volume Left	69	0	0	0	62	0
Volume Right	0	0	0	63	0	38
cSH	1269	1700	1700	1700	475	799
Volume to Capacity	0.05	0.10	0.12	0.04	0.13	0.05
Queue Length 95th (ft)	4	0	0	0	11	4
Control Delay (s)	8.0	0.0	0.0	0.0	13.7	9.7
Lane LOS	A				B	A
Approach Delay (s)	2.4		0.0		12.2	
Approach LOS					B	

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	31	128	60	34	87	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	34	142	67	38	97	39
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	338	106			114	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	338	106			114	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	85			93	
cM capacity (veh/h)	602	930			1456	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	177	104	136
Volume Left	34	0	97
Volume Right	142	38	0
cSH	841	1700	1456
Volume to Capacity	0.21	0.06	0.07
Queue Length 95th (ft)	20	0	5
Control Delay (s)	10.4	0.0	5.6
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	5.6
Approach LOS	B		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	17	138	166	52	71	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	153	184	58	79	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	242				404	213
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	242				404	213
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				87	98
cM capacity (veh/h)	1318				592	824

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	172	242	92
Volume Left	19	0	79
Volume Right	0	58	13
cSH	1318	1700	617
Volume to Capacity	0.01	0.14	0.15
Queue Length 95th (ft)	1	0	13
Control Delay (s)	1.0	0.0	11.9
Lane LOS	A		B
Approach Delay (s)	1.0	0.0	11.9
Approach LOS			B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	285	22	130	258	27	153
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	317	24	144	287	30	170
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			351		912	337
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			351		912	337
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			88		89	75
cM capacity (veh/h)			1192		262	691

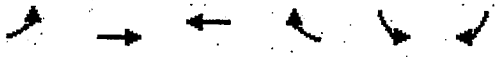
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	317	24	431	200
Volume Left	0	0	144	30
Volume Right	0	24	0	170
cSH	1700	1700	1192	555
Volume to Capacity	0.19	0.01	0.12	0.36
Queue Length 95th (ft)	0	0	10	41
Control Delay (s)	0.0	0.0	3.6	15.1
Lane LOS			A	C
Approach Delay (s)	0.0		3.6	15.1
Approach LOS				C

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	315	85	268	262	0	0	0	0	41	7	88
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	350	94	298	291	0	0	0	0	46	8	98
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	301			454			1406	1304	417	1304	1351	311
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	301			454			1406	1304	417	1304	1351	311
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			73			100	100	100	57	93	86
cM capacity (veh/h)	1244			1101			74	115	628	106	108	715

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	444	589	53	98
Volume Left	0	298	46	0
Volume Right	94	0	0	98
cSH	1700	1101	106	715
Volume to Capacity	0.26	0.27	0.50	0.14
Queue Length 95th (ft)	0	28	57	12
Control Delay (s)	0.0	6.3	69.2	10.8
Lane LOS		A	F	B
Approach Delay (s)	0.0	6.3	31.4	
Approach LOS			D	

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	WBL	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱		
Sign Control		Free	Free	Stop	
Grade		0%	0%	0%	
Volume (veh/h)	97	264	485	43	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	108	293	539	48	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	597			1092	583	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	597			1092	583	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	89			100	100	
cM capacity (veh/h)	975			209	506	

Direction, Lane #	EB 1	WB 1
Volume Total	401	587
Volume Left	108	0
Volume Right	0	48
cSH	975	1700
Volume to Capacity	0.11	0.35
Queue Length 95th (ft)	9	0
Control Delay (s)	3.4	0.0
Lane LOS	A	
Approach Delay (s)	3.4	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	70	173	0	0	277	14	112	96	190	7	0	161
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	78	192	0	0	308	16	124	107	211	8	0	179
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	333			202			862	691	212	948	683	336
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	333			202			862	691	212	948	683	336
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			34	68	74	94	100	74
cM capacity (veh/h)	1210			1352			188	337	812	124	341	692

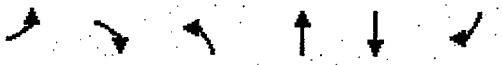
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	192	323	231	211	8	179
Volume Left	78	0	0	124	0	8	0
Volume Right	0	0	16	0	211	0	179
cSH	1210	1700	1700	236	812	124	692
Volume to Capacity	0.06	0.11	0.19	0.98	0.26	0.06	0.26
Queue Length 95th (ft)	5	0	0	225	26	5	26
Control Delay (s)	8.2	0.0	0.0	97.7	11.0	35.9	12.0
Lane LOS	A			F	B	E	B
Approach Delay (s)	2.4		0.0	56.3		13.0	
Approach LOS				F		B	

Intersection Summary				
Average Delay	22.9			
Intersection Capacity Utilization	49.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	11	17	1	0	6	5	1	56	2	1	41	9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	19	1	0	7	6	1	62	2	1	46	10
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			30			106	76	39	107	74	29
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			30			106	76	39	107	74	29
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	92	100	100	94	99
cM capacity (veh/h)	1573			1563			796	793	1012	788	795	1025

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	32	12	66	57
Volume Left	12	0	1	1
Volume Right	1	6	2	10
cSH	1573	1563	799	828
Volume to Capacity	0.01	0.00	0.08	0.07
Queue Length 95th (ft)	1	0	7	6
Control Delay (s)	2.8	0.0	9.9	9.7
Lane LOS	A		A	A
Approach Delay (s)	2.8	0.0	9.9	9.7
Approach LOS			A	A

Intersection Summary			
Average Delay	7.7		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	18	14	6	89	79	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	20	16	7	99	88	19
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	229	117	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	229	117	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	98	100			
cM capacity (veh/h)	741	917	1453			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	36	106	107
Volume Left	20	7	0
Volume Right	16	0	19
cSH	808	1453	1700
Volume to Capacity	0.04	0.00	0.06
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.7	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	106	1	1	57	9	2	15	1	2	15	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	118	1	1	63	10	2	17	1	2	17	11
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	83			129			262	247	138	252	243	88
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			129			262	247	138	252	243	88
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	97	100	100	97	99
cM capacity (veh/h)	1495			1439			642	635	892	659	639	951

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	136	74	20	30
Volume Left	17	1	2	2
Volume Right	1	10	1	11
cSH	1495	1439	646	729
Volume to Capacity	0.01	0.00	0.03	0.04
Queue Length 95th (ft)	1	0	2	3
Control Delay (s)	1.0	0.1	10.7	10.2
Lane LOS	A	A	B	B
Approach Delay (s)	1.0	0.1	10.7	10.2
Approach LOS			B	B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	11	88	3	13	72	30	7	57	21	25	65	11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	98	3	14	80	33	8	63	23	28	72	12
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	123			111			318	286	119	324	271	117
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	123			111			318	286	119	324	271	117
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			99	89	97	95	88	99
cM capacity (veh/h)	1445			1460			544	600	914	538	612	917

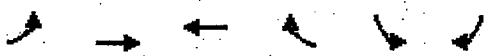
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	113	128	94	112
Volume Left	12	14	8	28
Volume Right	3	33	23	12
cSH	1445	1460	650	613
Volume to Capacity	0.01	0.01	0.15	0.18
Queue Length 95th (ft)	1	1	13	17
Control Delay (s)	0.9	0.9	11.5	12.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.9	0.9	11.5	12.2
Approach LOS			B	B

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	239	123	111	70	51	197
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	266	137	123	78	57	219

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	266	137	149	52	38	238
Volume Left (vph)	266	0	123	0	0	0
Volume Right (vph)	0	137	0	0	0	219
Hadj (s)	0.55	-0.65	0.46	0.05	0.05	-0.59
Departure Headway (s)	6.3	5.1	6.5	6.1	6.0	5.4
Degree Utilization, x	0.47	0.19	0.27	0.09	0.06	0.36
Capacity (veh/h)	547	666	527	557	562	637
Control Delay (s)	13.5	8.2	10.7	8.5	8.2	10.1
Approach Delay (s)	11.7		10.1		9.9	
Approach LOS	B		B		A	

Intersection Summary			
Delay	10.8		
HCM Level of Service	B		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	41	65	50	71	9	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	46	72	56	79	10	21
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	144				278	115
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	144				278	115
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				99	98
cM capacity (veh/h)	1420				675	919

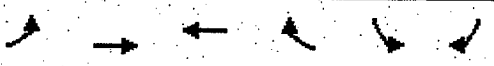
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	118	134	31
Volume Left	46	0	10
Volume Right	0	79	21
cSH	1420	1700	824
Volume to Capacity	0.03	0.08	0.04
Queue Length 95th (ft)	2	0	3
Control Delay (s)	3.1	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	3.1	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	33	0	0	101	117	20	2	20	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	46	37	0	0	112	130	22	2	22	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	252			47			325	390	57	348	325	197
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	252			47			325	390	57	348	325	197
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			96	100	98	100	100	100
cM capacity (veh/h)	1307			1542			596	520	990	565	566	834

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	82	242	47
Volume Left	46	0	22
Volume Right	0	130	22
cSH	1307	1700	729
Volume to Capacity	0.03	0.14	0.06
Queue Length 95th (ft)	3	0	5
Control Delay (s)	4.5	0.0	10.3
Lane LOS	A		B
Approach Delay (s)	4.5	0.0	10.3
Approach LOS			B

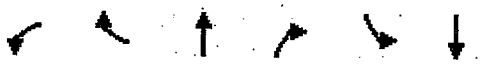
Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	74	128	93	61	86	61
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	82	142	103	68	96	68
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	181				430	123
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	181				430	123
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				82	93
cM capacity (veh/h)	1377				537	910

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	82	142	103	68	96	68
Volume Left	82	0	0	0	96	0
Volume Right	0	0	0	68	0	68
cSH	1377	1700	1700	1700	537	910
Volume to Capacity	0.06	0.08	0.06	0.04	0.18	0.07
Queue Length 95th (ft)	5	0	0	0	16	6
Control Delay (s)	7.8	0.0	0.0	0.0	13.2	9.3
Lane LOS	A				B	A
Approach Delay (s)	2.9		0.0		11.5	
Approach LOS					B	

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Volume (veh/h)	38	89	74	41	87	76
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	42	99	82	46	97	84
Pedestrians	10		10		10	
Lane Width (ft)	12.0		12.0		12.0	
Walking Speed (ft/s)	4.0		4.0		4.0	
Percent Blockage	1		1		1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	403	125			138	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	403	125			138	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	89			93	
cM capacity (veh/h)	552	908			1428	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	141	128	181
Volume Left	42	0	97
Volume Right	99	46	0
cSH	761	1700	1428
Volume to Capacity	0.19	0.08	0.07
Queue Length 95th (ft)	17	0	5
Control Delay (s)	10.8	0.0	4.4
Lane LOS	B		A
Approach Delay (s)	10.8	0.0	4.4
Approach LOS	B		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	8	120	114	39	81	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	133	127	43	90	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	170				299	148
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	170				299	148
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				87	98
cM capacity (veh/h)	1401				685	896

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	142	170	106
Volume Left	9	0	90
Volume Right	0	43	16
cSH	1401	1700	710
Volume to Capacity	0.01	0.10	0.15
Queue Length 95th (ft)	0	0	13
Control Delay (s)	0.5	0.0	11.0
Lane LOS	A		B
Approach Delay (s)	0.5	0.0	11.0
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	273	38	80	225	48	71
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	303	42	89	250	53	79
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			356		751	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			356		751	323
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		84	89
cM capacity (veh/h)			1188		843	703

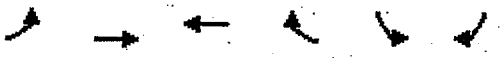
Direction, Lane #	EB 1	EB 2	WB 1	NB 1		
Volume Total	303	42	339	132		
Volume Left	0	0	89	53		
Volume Right	0	42	0	79		
cSH	1700	1700	1188	494		
Volume to Capacity	0.18	0.02	0.07	0.27		
Queue Length 95th (ft)	0	0	6	27		
Control Delay (s)	0.0	0.0	2.7	14.9		
Lane LOS			A	B		
Approach Delay (s)	0.0		2.7	14.9		
Approach LOS				B		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	279	83	197	216	0	0	0	0	77	5	81
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	310	92	219	240	0	0	0	0	86	6	90
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	250			412			1147	1054	376	1054	1100	260
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	250			412			1147	1054	376	1054	1100	260
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			81			100	100	100	49	97	88
cM capacity (veh/h)	1299			1141			127	180	663	169	169	763

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	402	459	91	90
Volume Left	0	219	86	0
Volume Right	92	0	0	90
cSH	1700	1141	169	763
Volume to Capacity	0.24	0.19	0.54	0.12
Queue Length 95th (ft)	0	18	68	10
Control Delay (s)	0.0	5.3	48.7	10.3
Lane LOS		A	E	B
Approach Delay (s)	0.0	5.3	29.6	
Approach LOS			D	

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	88	235	445	20	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	98	261	494	22	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	527				982	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	527				982	526
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				100	100
cM capacity (veh/h)	1035				247	546

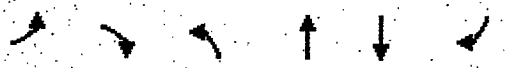
Direction, Lane #	EB 1	WB 1				
Volume Total	359	517				
Volume Left	98	0				
Volume Right	0	22				
cSH	1035	1700				
Volume to Capacity	0.09	0.30				
Queue Length 95th (ft)	8	0				
Control Delay (s)	3.1	0.0				
Lane LOS	A					
Approach Delay (s)	3.1	0.0				
Approach LOS						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	99	136	0	0	203	8	79	66	136	7	0	183
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	110	151	0	0	226	9	88	73	151	8	0	203
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	244			161			824	626	171	809	621	250
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	244			161			824	626	171	809	621	250
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			100			55	80	82	96	100	74
cM capacity (veh/h)	1305			1400			195	360	856	188	362	773

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	110	151	234	161	151	8	203
Volume Left	110	0	0	88	0	8	0
Volume Right	0	0	9	0	151	0	203
cSH	1305	1700	1700	246	856	188	773
Volume to Capacity	0.08	0.09	0.14	0.65	0.18	0.04	0.26
Queue Length 95th (ft)	7	0	0	103	16	3	26
Control Delay (s)	8.0	0.0	0.0	43.7	10.1	24.9	11.3
Lane LOS	A			E	B	C	B
Approach Delay (s)	3.4		0.0	27.4		11.8	
Approach LOS				D		B	

Intersection Summary				
Average Delay	11.7			
Intersection Capacity Utilization	43.9%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	204	66	47	42	38	161
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	227	73	52	47	42	179

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	227	73	68	31	28	193
Volume Left (vph)	227	0	52	0	0	0
Volume Right (vph)	0	73	0	0	0	179
Hadj (s)	0.55	-0.65	0.44	0.05	0.05	-0.60
Departure Headway (s)	5.8	4.6	6.0	5.6	5.5	4.9
Degree Utilization, x	0.37	0.09	0.11	0.05	0.04	0.26
Capacity (veh/h)	590	734	565	600	614	702
Control Delay (s)	11.0	6.9	8.6	7.7	7.6	8.4
Approach Delay (s)	10.0		8.3		8.3	
Approach LOS	B		A		A	

Intersection Summary			
Delay	9.1		
HCM Level of Service	A		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX I

Intersection Level of Service Calculations
Near-Term With Approved Projects Plus Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	78	207	52	225	207	24	114	1	210	71	1	56
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	87	230	58	250	230	27	127	1	233	79	1	62
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	267			288			1206	1170	240	1387	1201	250
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	267			288			1206	1170	240	1387	1201	250
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			80			0	99	70	0	99	92
cM capacity (veh/h)	1281			1268			116	143	790	66	137	773

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	87	230	58	250	230	27	127	234	79	63
Volume Left	87	0	0	250	0	0	127	0	79	0
Volume Right	0	0	58	0	0	27	0	233	0	62
cSH	1281	1700	1700	1268	1700	1700	116	773	66	715
Volume to Capacity	0.07	0.14	0.03	0.20	0.14	0.02	1.09	0.30	1.19	0.09
Queue Length 95th (ft)	5	0	0	18	0	0	190	32	158	7
Control Delay (s)	8.0	0.0	0.0	8.5	0.0	0.0	182.3	11.7	280.0	10.5
Lane LOS	A			A			F	B	F	B
Approach Delay (s)	1.9			4.2			71.5		160.0	
Approach LOS							F		F	

Intersection Summary			
Average Delay	37.1		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	38	161	48	38	176	51
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	42	179	53	42	196	57
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	542	94			106	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	542	94			106	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	81			87	
cM capacity (veh/h)	426	944			1467	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	221	96	252
Volume Left	42	0	196
Volume Right	179	42	0
cSH	766	1700	1467
Volume to Capacity	0.29	0.06	0.13
Queue Length 95th (ft)	30	0	12
Control Delay (s)	11.6	0.0	6.3
Lane LOS	B		A
Approach Delay (s)	11.6	0.0	6.3
Approach LOS	B		

Intersection Summary			
Average Delay	7.3		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	196	84	97	217	84	40	37	90	53	86	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	218	93	108	241	93	44	41	100	59	96	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	334			311			787	826	264	853	779	241
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	334			311			787	826	264	853	779	241
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			91			79	85	87	71	68	99
cM capacity (veh/h)	1219			1244			214	279	772	200	296	795

Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	317	108	241	93	44	41	100	59	102
Volume Left	6	108	0	0	44	0	0	59	0
Volume Right	93	0	0	93	0	0	100	0	7
cSH	1219	1244	1700	1700	214	279	772	200	309
Volume to Capacity	0.00	0.09	0.14	0.05	0.21	0.15	0.13	0.29	0.33
Queue Length 95th (ft)	0	7	0	0	19	13	11	29	35
Control Delay (s)	0.2	8.2	0.0	0.0	26.1	20.2	10.4	30.3	22.3
Lane LOS	A	A			D	C	B	D	C
Approach Delay (s)	0.2	2.0			16.3			25.2	
Approach LOS					C			D	

Intersection Summary				
Average Delay	7.3			
Intersection Capacity Utilization	46.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	440	15	126	482	32	145
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	489	17	140	536	36	161
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			516		1324	509
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			516		1324	509
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			86		76	71
cM capacity (veh/h)			1036		146	553

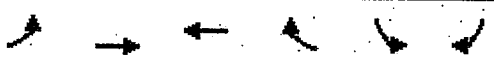
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	489	17	676	197
Volume Left	0	0	140	36
Volume Right	0	17	0	161
cSH	1700	1700	1036	367
Volume to Capacity	0.29	0.01	0.14	0.54
Queue Length 95th (ft)	0	0	12	76
Control Delay (s)	0.0	0.0	3.3	25.6
Lane LOS			A	D
Approach Delay (s)	0.0		3.3	25.6
Approach LOS				D

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	393	182	181	420	0	0	0	0	39	5	187
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	437	202	201	467	0	0	0	0	43	6	208
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	477			649			1637	1427	558	1427	1528	487
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	477			649			1637	1427	558	1427	1528	487
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			78			100	100	100	53	94	63
cM capacity (veh/h)	1071			932			40	105	523	92	91	569

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	639	668	49	208
Volume Left	0	201	43	0
Volume Right	202	0	0	208
cSH	1700	932	91	569
Volume to Capacity	0.38	0.22	0.53	0.37
Queue Length 95th (ft)	0	20	60	42
Control Delay (s)	0.0	5.0	82.6	14.9
Lane LOS		A	F	B
Approach Delay (s)	0.0	5.0	27.8	
Approach LOS			D	

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	126	306	599	10	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	140	340	666	11	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	687				1311	691
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	687				1311	691
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				100	100
cM capacity (veh/h)	902				146	439

Direction, Lane #	EB 1	WB 1
Volume Total	480	677
Volume Left	140	0
Volume Right	0	11
cSH	902	1700
Volume to Capacity	0.16	0.40
Queue Length 95th (ft)	14	0
Control Delay (s)	4.2	0.0
Lane LOS	A	
Approach Delay (s)	4.2	0.0
Approach LOS		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	91	198	0	0	314	2	160	71	181	6	0	140
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	101	220	0	0	349	2	178	79	201	7	0	156
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	361			230			948	793	240	1033	792	370
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	361			230			948	793	240	1033	792	370
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			0	73	74	94	100	77
cM capacity (veh/h)	1182			1321			167	288	783	112	288	662

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	101	220	351	257	201	7	156
Volume Left	101	0	0	178	0	7	0
Volume Right	0	0	2	0	201	0	156
cSH	1182	1700	1700	191	783	112	662
Volume to Capacity	0.09	0.13	0.21	1.34	0.26	0.06	0.23
Queue Length 95th (ft)	7	0	0	368	26	5	23
Control Delay (s)	8.3	0.0	0.0	232.3	11.2	39.2	12.1
Lane LOS	A			F	B	E	B
Approach Delay (s)	2.6		0.0	135.1		13.2	
Approach LOS				F		B	

Intersection Summary				
Average Delay	50.2			
Intersection Capacity Utilization	51.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	18	26	2	3	12	5	2	30	6	5	46	13
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	20	29	2	3	13	6	2	33	7	6	51	14
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	29			41			153	116	50	136	114	36
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	29			41			153	116	50	136	114	36
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	96	99	99	93	99
cM capacity (veh/h)	1565			1549			729	749	999	767	750	1016

Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	51	22	42	71								
Volume Left	20	3	2	6								
Volume Right	2	6	7	14								
cSH	1565	1549	778	794								
Volume to Capacity	0.01	0.00	0.05	0.09								
Queue Length 95th (ft)	1	0	4	7								
Control Delay (s)	2.9	1.1	9.9	10.0								
Lane LOS	A	A	A	A								
Approach Delay (s)	2.9	1.1	9.9	10.0								
Approach LOS			A	A								

Intersection Summary				
Average Delay	7.0			
Intersection Capacity Utilization	21.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	20	5	7	128	98	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	6	8	142	109	22
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	298	140	141			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	298	140	141			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	99	99			
cM capacity (veh/h)	676	890	1424			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	28	150	131
Volume Left	22	8	0
Volume Right	6	0	22
cSH	710	1424	1700
Volume to Capacity	0.04	0.01	0.08
Queue Length 95th (ft)	3	0	0
Control Delay (s)	10.3	0.4	0.0
Lane LOS	B	A	
Approach Delay (s)	10.3	0.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	25.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	15	82	1	5	85	2	3	20	1	2	19	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	91	1	6	94	2	3	22	1	2	21	18
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	107			102			280	253	112	264	252	116
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	107			102			280	253	112	264	252	116
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			99	96	100	100	97	98
cM capacity (veh/h)	1466			1471			615	628	923	641	629	919

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	109	102	27	41
Volume Left	17	6	3	2
Volume Right	1	2	1	18
cSH	1466	1471	635	729
Volume to Capacity	0.01	0.00	0.04	0.06
Queue Length 95th (ft)	1	0	3	4
Control Delay (s)	1.2	0.4	10.9	10.2
Lane LOS	A	A	B	B
Approach Delay (s)	1.2	0.4	10.9	10.2
Approach LOS			B	B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	77	1	7	79	55	6	59	9	40	41	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	86	1	8	88	61	7	66	10	44	46	18
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	159			97			329	319	106	332	289	138
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	159			97			329	319	106	332	289	138
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			99	89	99	92	92	98
cM capacity (veh/h)	1403			1478			548	572	930	534	595	892

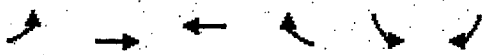
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	111	157	82	108
Volume Left	24	8	7	44
Volume Right	1	61	10	18
cSH	1403	1478	598	600
Volume to Capacity	0.02	0.01	0.14	0.18
Queue Length 95th (ft)	1	0	12	16
Control Delay (s)	1.8	0.4	12.0	12.3
Lane LOS	A	A	B	B
Approach Delay (s)	1.8	0.4	12.0	12.3
Approach LOS			B	B

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	280	79	64	12	37	251
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	311	88	71	13	41	279

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	311	88	76	9	27	293
Volume Left (vph)	311	0	71	0	0	0
Volume Right (vph)	0	88	0	0	0	279
Hadj (s)	0.55	-0.65	0.52	0.05	0.05	-0.62
Departure Headway (s)	6.1	4.9	6.6	6.2	5.9	5.2
Degree Utilization, x	0.53	0.12	0.14	0.02	0.04	0.42
Capacity (veh/h)	569	695	510	544	577	663
Control Delay (s)	14.5	7.4	9.5	8.0	7.9	10.8
Approach Delay (s)	12.9		9.3		10.5	
Approach LOS	B		A		B	

Intersection Summary			
Delay	11.6		
HCM Level of Service	B		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	53	68	91	29	38	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	59	76	101	32	42	41
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	143				331	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	143				331	137
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				93	95
cM capacity (veh/h)	1421				624	894

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	134	133	83
Volume Left	59	0	42
Volume Right	0	32	41
cSH	1421	1700	733
Volume to Capacity	0.04	0.08	0.11
Queue Length 95th (ft)	3	0	10
Control Delay (s)	3.5	0.0	10.5
Lane LOS	A		B
Approach Delay (s)	3.5	0.0	10.5
Approach LOS			B

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	82	0	0	64	15	61	1	83	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	91	0	0	71	17	68	1	92	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	98			101			239	248	111	332	239	99
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	98			101			239	248	111	332	239	99
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			90	100	90	100	100	100
cM capacity (veh/h)	1489			1473			688	637	924	642	644	946

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	116	88	161
Volume Left	24	0	68
Volume Right	0	17	92
cSH	1489	1700	805
Volume to Capacity	0.02	0.05	0.20
Queue Length 95th (ft)	1	0	19
Control Delay (s)	1.7	0.0	10.6
Lane LOS	A		B
Approach Delay (s)	1.7	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	62	271	70	305	321	57	183	1	318	56	1	34
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	69	301	78	339	357	63	203	1	353	62	1	38
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	430			379			1522	1547	311	1847	1561	377
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	430			379			1522	1547	311	1847	1561	377
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			71			0	99	51	0	98	94
cM capacity (veh/h)	1115			1174			66	75	721	21	74	657

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	69	301	78	339	357	63	203	354	62	39
Volume Left	69	0	0	339	0	0	203	0	62	0
Volume Right	0	0	78	0	0	63	0	353	0	38
cSH	1115	1700	1700	1174	1700	1700	66	702	21	536
Volume to Capacity	0.06	0.18	0.05	0.29	0.21	0.04	3.09	0.51	2.99	0.07
Queue Length 95th (ft)	5	0	0	30	0	0	Err	72	202	6
Control Delay (s)	8.4	0.0	0.0	9.3	0.0	0.0	Err	15.2	1283.0	12.2
Lane LOS	A			A			F	C	F	B
Approach Delay (s)	1.3			4.2			3654.7		794.2	
Approach LOS							F		F	

Intersection Summary			
Average Delay	1137.8		
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	55	261	60	57	215	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	61	290	67	63	239	39
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	635	118			140	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	635	118			140	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	68			83	
cM capacity (veh/h)	361	915			1425	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	351	130	278
Volume Left	61	0	239
Volume Right	290	63	0
cSH	722	1700	1425
Volume to Capacity	0.49	0.08	0.17
Queue Length 95th (ft)	67	0	15
Control Delay (s)	14.6	0.0	7.1
Lane LOS	B		A
Approach Delay (s)	14.6	0.0	7.1
Approach LOS	B		

Intersection Summary			
Average Delay	9.4		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	17	176	114	132	276	150	56	82	137	90	118	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	196	127	147	307	167	62	91	152	100	131	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	473			322			976	1063	259	1094	960	307
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	473			322			976	1063	259	1094	960	307
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			88			43	53	80	0	41	98
cM capacity (veh/h)	1083			1232			108	192	777	87	221	731

Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	341	147	307	167	62	91	152	100	144
Volume Left	19	147	0	0	62	0	0	100	0
Volume Right	127	0	0	167	0	0	152	0	13
cSH	1083	1232	1700	1700	108	192	777	87	236
Volume to Capacity	0.02	0.12	0.18	0.10	0.57	0.47	0.20	1.15	0.61
Queue Length 95th (ft)	1	10	0	0	69	57	18	174	90
Control Delay (s)	0.6	8.3	0.0	0.0	75.8	39.5	10.8	229.2	41.5
Lane LOS	A	A			F	E	B	F	E
Approach Delay (s)	0.6	2.0			32.6			118.3	
Approach LOS					D			F	

Intersection Summary				
Average Delay	26.7			
Intersection Capacity Utilization	55.3%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	719	25	192	674	51	216
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	799	28	213	749	57	240
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			837		1994	819
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			837		1994	819
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			73		0	35
cM capacity (veh/h)			786		47	368

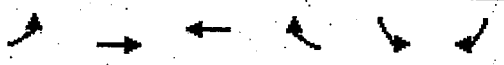
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	799	28	962	297
Volume Left	0	0	213	57
Volume Right	0	28	0	240
cSH	1700	1700	786	160
Volume to Capacity	0.47	0.02	0.27	1.85
Queue Length 95th (ft)	0	0	27	552
Control Delay (s)	0.0	0.0	6.8	454.7
Lane LOS			A	F
Approach Delay (s)	0.0		6.8	454.7
Approach LOS				F

Intersection Summary			
Average Delay	67.8		
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	680	218	268	620	0	0	0	0	41	7	208
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	756	242	298	689	0	0	0	0	46	8	231
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	699			1008			2416	2181	897	2181	2302	709
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	699			1008			2416	2181	897	2181	2302	709
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			56			100	100	100	0	64	46
cM capacity (veh/h)	886			684			5	26	334	21	21	425

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	998	987	53	231
Volume Left	0	298	46	0
Volume Right	242	0	0	231
cSH	1700	684	21	425
Volume to Capacity	0.59	0.44	2.51	0.54
Queue Length 95th (ft)	0	55	173	79
Control Delay (s)	0.0	11.6	1068.8	23.1
Lane LOS		B	F	C
Approach Delay (s)	0.0	11.6	219.2	
Approach LOS			F	

Intersection Summary			
Average Delay	32.5		
Intersection Capacity Utilization	117.2%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	221	504	843	43	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	246	560	937	48	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	994				2032	981
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	994				2032	981
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	64				100	100
cM capacity (veh/h)	692				40	299

Direction, Lane #	EB 1	WB 1				
Volume Total	806	984				
Volume Left	246	0				
Volume Right	0	48				
cSH	692	1700				
Volume to Capacity	0.36	0.58				
Queue Length 95th (ft)	40	0				
Control Delay (s)	8.8	0.0				
Lane LOS	A					
Approach Delay (s)	8.8	0.0				
Approach LOS						

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	141	342	0	0	438	14	240	96	190	7	0	229
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	157	380	0	0	487	16	267	107	211	8	0	254
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	512			390			1462	1216	400	1472	1208	514
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	512			390			1462	1216	400	1472	1208	514
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			100			0	29	67	70	100	54
cM capacity (veh/h)	1039			1153			49	151	637	26	152	549

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	157	380	502	373	211	8	254
Volume Left	157	0	0	267	0	8	0
Volume Right	0	0	16	0	211	0	254
cSH	1039	1700	1700	61	637	26	549
Volume to Capacity	0.15	0.22	0.30	6.16	0.33	0.30	0.46
Queue Length 95th (ft)	13	0	0	Err	36	23	61
Control Delay (s)	9.1	0.0	0.0	Err	13.4	193.9	17.1
Lane LOS	A			F	B	F	C
Approach Delay (s)	2.7		0.0	6392.0		22.3	
Approach LOS				F		C	

Intersection Summary			
Average Delay	1985.1		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	21	23	1	2	14	5	1	69	4	1	55	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	23	26	1	2	16	6	1	77	4	1	61	21
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	31			37			167	118	46	158	116	38
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	31			37			167	118	46	158	116	38
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	90	100	100	92	98
cM capacity (veh/h)	1562			1555			700	745	1004	708	747	1014

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	50	23	82	83
Volume Left	23	2	1	1
Volume Right	1	6	4	21
cSH	1562	1555	755	800
Volume to Capacity	0.01	0.00	0.11	0.10
Queue Length 95th (ft)	1	0	9	9
Control Delay (s)	3.5	0.7	10.4	10.0
Lane LOS	A	A	B	B
Approach Delay (s)	3.5	0.7	10.4	10.0
Approach LOS			B	B

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	26	14	6	166	162	26
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	29	16	7	184	180	29
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	412	214	219			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	412	214	219			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	98	100			
cM capacity (veh/h)	581	809	1333			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	44	191	209
Volume Left	29	7	0
Volume Right	16	0	29
cSH	645	1333	1700
Volume to Capacity	0.07	0.00	0.12
Queue Length 95th (ft)	6	0	0
Control Delay (s)	11.0	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.0	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	26.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEL	SET	SER
Lane Configurations					↔			↔			↔			↔	
Sign Control					Free			Free			Stop			Stop	
Grade					0%			0%			0%			0%	
Volume (veh/h)	26			112		1	5			65		9	2	24	1	1	2	20	20
Peak Hour Factor	0.90			0.90		0.90	0.90			0.90		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	29			124		1	6			72		10	2	27	1	1	2	22	22
Pedestrians					10						10						10		
Lane Width (ft)					12.0						12.0						12.0		
Walking Speed (ft/s)					4.0						4.0						4.0		
Percent Blockage					1						1						1		
Right turn flare (veh)																			
Median type														None				None	
Median storage veh)																			
Upstream signal (ft)																			
pX, platoon unblocked																			
vC, conflicting volume	92					136						324	296	145	306		292		97
vC1, stage 1 conf vol																			
vC2, stage 2 conf vol																			
vCu, unblocked vol	92					136						324	296	145	306		292		97
tC, single (s)	4.1					4.1						7.1	6.5	6.2	7.1		6.5		6.2
tC, 2 stage (s)																			
tF (s)	2.2					2.2						3.5	4.0	3.3	3.5		4.0		3.3
p0 queue free %	98					100						100	95	100	100		96		98
cM capacity (veh/h)	1484					1431						567	590	885	593		593		940

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	154	88	30	47
Volume Left	29	6	2	2
Volume Right	1	10	1	22
cSH	1484	1431	595	720
Volume to Capacity	0.02	0.00	0.05	0.06
Queue Length 95th (ft)	1	0	4	5
Control Delay (s)	1.5	0.5	11.4	10.4
Lane LOS	A	A	B	B
Approach Delay (s)	1.5	0.5	11.4	10.4
Approach LOS			B	B

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	26.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	21	88	3	13	72	72	7	82	21	70	92	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	23	98	3	14	80	80	8	91	23	78	102	24
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	170			111			391	355	119	384	317	140
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	170			111			391	355	119	384	317	140
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			98	83	97	83	82	97
cM capacity (veh/h)	1390			1460			453	545	914	463	572	890

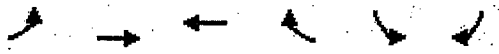
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	124	174	122	204
Volume Left	23	14	8	78
Volume Right	3	80	23	24
cSH	1390	1460	582	547
Volume to Capacity	0.02	0.01	0.21	0.37
Queue Length 95th (ft)	1	1	20	43
Control Delay (s)	1.5	0.7	12.8	15.5
Lane LOS	A	A	B	C
Approach Delay (s)	1.5	0.7	12.8	15.5
Approach LOS			B	C

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	381	150	136	70	51	333
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	423	167	151	78	57	370

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	423	167	177	52	38	389
Volume Left (vph)	423	0	151	0	0	0
Volume Right (vph)	0	167	0	0	0	370
Hadj (s)	0.55	-0.65	0.48	0.05	0.05	-0.61
Departure Headway (s)	7.0	5.8	7.6	7.1	6.9	6.2
Degree Utilization, x	0.82	0.27	0.37	0.10	0.07	0.67
Capacity (veh/h)	501	601	443	473	495	556
Control Delay (s)	33.0	9.6	13.8	9.7	9.2	19.6
Approach Delay (s)	26.4		12.9		18.6	
Approach LOS	D		B		C	

Intersection Summary			
Delay	21.3		
HCM Level of Service	C		
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	68	83	91	71	9	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	76	92	101	79	10	21
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	190				404	161
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	190				404	161
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				98	98
cM capacity (veh/h)	1366				558	867

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	168	180	31
Volume Left	76	0	10
Volume Right	0	79	21
cSH	1366	1700	736
Volume to Capacity	0.06	0.11	0.04
Queue Length 95th (ft)	4	0	3
Control Delay (s)	3.8	0.0	10.1
Lane LOS	A		B
Approach Delay (s)	3.8	0.0	10.1
Approach LOS			B

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	34.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	50	0	0	118	117	46	2	20	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	46	56	0	0	131	130	51	2	22	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	271			66			363	428	76	386	363	216
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	271			66			363	428	76	386	363	216
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			91	100	98	100	100	100
cM capacity (veh/h)	1287			1517			562	495	967	538	539	814

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	101	261	76
Volume Left	46	0	51
Volume Right	0	130	22
cSH	1287	1700	638
Volume to Capacity	0.04	0.15	0.12
Queue Length 95th (ft)	3	0	10
Control Delay (s)	3.7	0.0	11.4
Lane LOS	A		B
Approach Delay (s)	3.7	0.0	11.4
Approach LOS			B

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	74	314	117	506	328	61	257	0	473	86	0	61
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	82	349	130	562	364	68	286	0	526	96	0	68
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	442			479			2080	2080	359	2548	2142	384
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	442			479			2080	2080	359	2548	2142	384
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			48			0	100	22	0	100	90
cM capacity (veh/h)	1103			1078			19	23	678	2	21	650

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	82	349	130	562	364	68	286	526	96	68
Volume Left	82	0	0	562	0	0	286	0	96	0
Volume Right	0	0	130	0	0	68	0	526	0	68
cSH	1103	1700	1700	1078	1700	1700	19	678	2	650
Volume to Capacity	0.07	0.21	0.08	0.52	0.21	0.04	14.89	0.78	43.65	0.10
Queue Length 95th (ft)	6	0	0	78	0	0	Err	186	Err	9
Control Delay (s)	8.5	0.0	0.0	11.9	0.0	0.0	Err	26.2	Err	11.2
Lane LOS	A			B			F	D	F	B
Approach Delay (s)	1.2			6.7			3537.2		5854.4	
Approach LOS							F		F	

Intersection Summary			
Average Delay	1514.9		
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	74	288	74	81	301	76
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	82	320	82	90	334	84
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	901	147			182	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	901	147			182	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	64	64			76	
cM capacity (veh/h)	229	882			1375	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	402	172	419
Volume Left	82	0	334
Volume Right	320	90	0
cSH	557	1700	1375
Volume to Capacity	0.72	0.10	0.24
Queue Length 95th (ft)	149	0	24
Control Delay (s)	26.4	0.0	7.2
Lane LOS	D		A
Approach Delay (s)	26.4	0.0	7.2
Approach LOS	D		

Intersection Summary			
Average Delay	13.7		
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	8	185	189	218	281	191	90	83	203	117	194	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	206	210	242	312	212	100	92	226	130	216	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	524			416			1248	1337	311	1397	1230	312
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	524			416			1248	1337	311	1397	1230	312
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			79			0	22	69	0	0	98
cM capacity (veh/h)	1037			1138			0	119	727	25	138	726

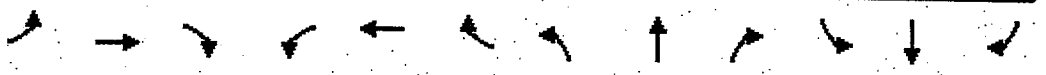
Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	424	242	312	212	100	92	226	130	231
Volume Left	9	242	0	0	100	0	0	130	0
Volume Right	210	0	0	212	0	0	226	0	16
cSH	1037	1138	1700	1700	0	119	727	25	146
Volume to Capacity	0.01	0.21	0.18	0.12	Err	0.78	0.31	5.16	1.58
Queue Length 95th (ft)	1	20	0	0	Err	111	33	Err	401
Control Delay (s)	0.3	9.0	0.0	0.0	Err	99.3	12.2	Err	347.7
Lane LOS	A	A			F	F	B	F	F
Approach Delay (s)	0.3	2.8			Err		3822.2		
Approach LOS					F			F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Lane Configurations		↑	↗				↰	↱	
Sign Control		Free					Free	Stop	
Grade		0%					0%	0%	
Volume (veh/h)		922	44	179			922	86	170
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)		1024	49	199			1024	96	189
Pedestrians		10					10	10	
Lane Width (ft)		12.0					12.0	12.0	
Walking Speed (ft/s)		4.0					4.0	4.0	
Percent Blockage		1					1	1	
Right turn flare (veh)									
Median type								None	
Median storage veh)									
Upstream signal (ft)									
pX, platoon unblocked									
vC, conflicting volume				1083				2467	1044
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol				1083				2467	1044
tC, single (s)				4.1				6.4	6.2
tC, 2 stage (s)									
tF (s)				2.2				3.5	3.3
p0 queue free %				69				0	31
cM capacity (veh/h)				635				22	272

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	1024	49	1223	284
Volume Left	0	0	199	96
Volume Right	0	49	0	189
cSH	1700	1700	635	57
Volume to Capacity	0.60	0.03	0.31	4.97
Queue Length 95th (ft)	0	0	33	Err
Control Delay (s)	0.0	0.0	10.9	Err
Lane LOS			B	F
Approach Delay (s)	0.0		10.9	Err
Approach LOS				F

Intersection Summary			
Average Delay	1107.1		
Intersection Capacity Utilization	132.9%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	828	282	197	816	0	0	0	0	77	5	282
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	920	313	219	907	0	0	0	0	86	6	313
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	917			1243			2757	2441	1097	2441	2598	927
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	917			1243			2757	2441	1097	2441	2598	927
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			61			100	100	100	0	63	2
cM capacity (veh/h)	734			557			0	19	256	14	15	319

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	1233	1126	91	313
Volume Left	0	219	86	0
Volume Right	313	0	0	313
cSH	1700	557	15	319
Volume to Capacity	0.73	0.39	6.28	0.98
Queue Length 95th (ft)	0	47	Err	263
Control Delay (s)	0.0	13.6	Err	83.4
Lane LOS		B	F	F
Approach Delay (s)	0.0	13.6	2317.1	
Approach LOS			F	

Intersection Summary			
Average Delay	344.7		
Intersection Capacity Utilization	136.6%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↰	↱			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	274	598	1045	20	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	304	664	1161	22	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1193				2466	1192
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1193				2466	1192
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	48				100	100
cM capacity (veh/h)	581				16	225

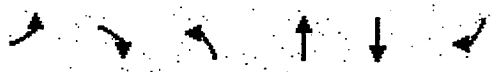
Direction, Lane #	EB 1	WB 1
Volume Total	969	1183
Volume Left	304	0
Volume Right	0	22
cSH	581	1700
Volume to Capacity	0.52	0.70
Queue Length 95th (ft)	76	0
Control Delay (s)	16.1	0.0
Lane LOS	C	
Approach Delay (s)	16.1	0.0
Approach LOS		

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	119.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	207	390	0	0	474	8	293	66	136	7	0	297
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	230	433	0	0	527	9	326	73	151	8	0	330
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	546			443			1774	1449	453	1632	1444	551
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	546			443			1774	1449	453	1632	1444	551
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	77			100			0	26	75	61	100	37
cM capacity (veh/h)	1010			1102			19	99	594	20	100	523

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	230	433	536	399	151	8	330
Volume Left	230	0	0	326	0	8	0
Volume Right	0	0	9	0	151	0	330
cSH	1010	1700	1700	22	594	20	523
Volume to Capacity	0.23	0.25	0.32	17.91	0.25	0.39	0.63
Queue Length 95th (ft)	22	0	0	Err	25	28	109
Control Delay (s)	9.6	0.0	0.0	Err	13.1	277.3	22.9
Lane LOS	A			F	B	F	C
Approach Delay (s)	3.3		0.0	7255.4		28.8	
Approach LOS				F		D	

Intersection Summary			
Average Delay	1918.1		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	418	107	89	42	38	390
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	464	119	99	47	42	433

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	464	119	114	31	28	447
Volume Left (vph)	464	0	99	0	0	0
Volume Right (vph)	0	119	0	0	0	433
Hadj (s)	0.55	-0.65	0.48	0.05	0.05	-0.63
Departure Headway (s)	6.9	5.7	7.7	7.3	6.8	6.1
Degree Utilization, x	0.88	0.19	0.25	0.06	0.05	0.75
Capacity (veh/h)	513	611	450	473	503	572
Control Delay (s)	41.1	8.8	12.0	9.6	8.9	24.1
Approach Delay (s)	34.5		11.5		23.2	
Approach LOS	D		B		C	

Intersection Summary			
Delay	27.3		
HCM Level of Service	D		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX J

Intersection Level of Service Calculations
Cumulative With Project Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	85	675	52	225	825	31	114	1	210	78	1	62
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	94	750	58	250	917	34	127	1	233	87	1	69
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	961			808			2435	2400	760	2609	2423	937
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	961			808			2435	2400	760	2609	2423	937
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			69			0	94	42	0	94	78
cM capacity (veh/h)	706			813			11	20	401	4	19	314

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2		
Volume Total	94	750	58	250	917	34	127	234	87	70		
Volume Left	94	0	0	250	0	0	127	0	87	0		
Volume Right	0	0	58	0	0	34	0	233	0	69		
cSH	706	1700	1700	813	1700	1700	11	367	4	252		
Volume to Capacity	0.13	0.44	0.03	0.31	0.54	0.02	11.56	0.64	19.93	0.28		
Queue Length 95th (ft)	12	0	0	33	0	0	Err	106	Err	27		
Control Delay (s)	10.9	0.0	0.0	11.4	0.0	0.0	Err	30.6	Err	24.7		
Lane LOS	B			B			F	D	F	C		
Approach Delay (s)	1.1			2.4			3527.2		5542.4			
Approach LOS							F		F			

Intersection Summary			
Average Delay	818.7		
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	92	282	315	108	373	252
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	102	313	350	120	414	280
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1539	430			480	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1539	430			480	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	49			61	
cM capacity (veh/h)	76	618			1068	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	416	470	694
Volume Left	102	0	414
Volume Right	313	120	0
cSH	224	1700	1068
Volume to Capacity	1.85	0.28	0.39
Queue Length 95th (ft)	731	0	46
Control Delay (s)	437.4	0.0	8.2
Lane LOS	F		A
Approach Delay (s)	437.4	0.0	8.2
Approach LOS	F		

Intersection Summary			
Average Delay	118.7		
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	71	446	138	162	533	181	147	151	147	183	168	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	496	153	180	592	201	163	179	163	203	187	42
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	793			649			1818	1883	572	1935	1759	592
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	793			649			1818	1883	572	1935	1759	592
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			81			0	0	68	0	0	92
cM capacity (veh/h)	823			932			0	51	518	0	61	504

Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	728	180	592	201	163	179	163	203	229
Volume Left	79	180	0	0	163	0	0	203	0
Volume Right	153	0	0	201	0	0	163	0	42
cSH	823	932	1700	1700	0	51	518	0	73
Volume to Capacity	0.10	0.19	0.35	0.12	Err	3.48	0.32	Err	3.12
Queue Length 95th (ft)	8	18	0	0	Err	Err	34	Err	Err
Control Delay (s)	2.4	9.8	0.0	0.0	Err	Err	15.1	Err	Err
Lane LOS	A	A			F	F	C	F	F
Approach Delay (s)	2.4	1.8			Err			Err	
Approach LOS					F			F	

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	96.5%	ICU Level of Service		F
Analysis Period (min)	15			

Movement	EBL	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	873	97	149	1095	33	204
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	970	108	166	1217	37	227
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1088		2538	990
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1088		2538	990
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			74		0	23
cM capacity (veh/h)			632		22	293

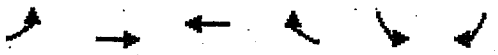
Direction, Lane #	EB 1	EB 2	WB 1	NB 1								
Volume Total	970	108	1382	263								
Volume Left	0	0	166	37								
Volume Right	0	108	0	227								
cSH	1700	1700	632	107								
Volume to Capacity	0.57	0.06	0.26	2.47								
Queue Length 95th (ft)	0	0	26	594								
Control Delay (s)	0.0	0.0	11.8	753.5								
Lane LOS			B	F								
Approach Delay (s)	0.0		11.8	753.5								
Approach LOS				F								

Intersection Summary			
Average Delay	78.9		
Intersection Capacity Utilization	137.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	876	314	200	747	0	0	0	0	84	7	446
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	973	349	222	830	0	0	0	0	93	8	496
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	840			1332			2942	2442	1168	2442	2617	850
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	840			1332			2942	2442	1168	2442	2617	850
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			57			0	100	100	0	43	0
cM capacity (veh/h)	784			515			0	18	232	14	14	353

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	1322	1052	101	496
Volume Left	0	222	93	0
Volume Right	349	0	0	496
cSH	1700	515	14	353
Volume to Capacity	0.78	0.43	7.34	1.40
Queue Length 95th (ft)	0	54	Err	630
Control Delay (s)	0.0	15.1	Err	227.5
Lane LOS		C	F	F
Approach Delay (s)	0.0	15.1	1883.4	
Approach LOS			F	

Intersection Summary			
Average Delay	383.6		
Intersection Capacity Utilization	138.0%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	334	465	1102	15	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	371	517	1224	17	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1251				2512	1253
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1251				2512	1253
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	33				100	100
cM capacity (veh/h)	553				10	207

Direction, Lane #	EB 1	WB 1
Volume Total	888	1241
Volume Left	371	0
Volume Right	0	17
cSH	553	1700
Volume to Capacity	0.67	0.73
Queue Length 95th (ft)	125	0
Control Delay (s)	23.3	0.0
Lane LOS	C	
Approach Delay (s)	23.3	0.0
Approach LOS		

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	118.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	140	302	0	0	510	3	367	100	200	8	0	197
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	156	336	0	0	567	3	408	111	222	9	0	219
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	580			346			1454	1237	356	1513	1235	588
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	580			346			1454	1237	356	1513	1235	588
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			100			0	23	67	58	100	56
cM capacity (veh/h)	981			1198			51	145	675	21	145	498

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	156	336	570	519	222	9	219
Volume Left	156	0	0	408	0	9	0
Volume Right	0	0	3	0	222	0	219
cSH	981	1700	1700	60	675	21	498
Volume to Capacity	0.16	0.20	0.34	8.69	0.33	0.42	0.44
Queue Length 95th (ft)	14	0	0	Err	36	30	55
Control Delay (s)	9.4	0.0	0.0	Err	12.9	265.7	17.8
Lane LOS	A			F	B	F	C
Approach Delay (s)	3.0		0.0	7004.7		274	
Approach LOS				F		D	

Intersection Summary			
Average Delay	2561.1		
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	60	18	114	80	133	47	148	37	52	180	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	67	20	127	89	148	52	164	41	58	200	21
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	247			97			701	653	97	703	589	183
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	247			97			701	653	97	703	589	183
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			91			70	51	96	69	46	97
cM capacity (veh/h)	1302			1478			176	338	941	186	367	843

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	120	363	258	279
Volume Left	33	127	52	58
Volume Right	20	148	41	21
cSH	1302	1478	311	317
Volume to Capacity	0.03	0.09	0.83	0.88
Queue Length 95th (ft)	2	7	176	203
Control Delay (s)	2.3	3.2	54.0	61.7
Lane LOS	A	A	F	F
Approach Delay (s)	2.3	3.2	54.0	61.7
Approach LOS			F	F

Intersection Summary			
Average Delay	31.9		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	203	113	54	324	205	88
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	226	126	60	360	228	98
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	777	297	336			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	777	297	336			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	34	83	95			
cM capacity (veh/h)	340	728	1208			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	351	420	326
Volume Left	226	60	0
Volume Right	126	0	98
cSH	420	1208	1700
Volume to Capacity	0.84	0.05	0.19
Queue Length 95th (ft)	198	4	0
Control Delay (s)	44.3	1.6	0.0
Lane LOS	E	A	
Approach Delay (s)	44.3	1.6	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	14.8		
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	139	2	7	163	70	5	37	2	228	31	44
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	154	2	8	181	78	6	41	2	253	34	49
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	269			167			544	517	176	501	479	240
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	269			167			544	517	176	501	479	240
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			99	91	100	40	93	94
cM capacity (veh/h)	1278			1393			376	439	851	421	461	783

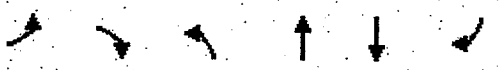
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	190	267	49	337								
Volume Left	33	8	6	253								
Volume Right	2	78	2	49								
cSH	1278	1393	440	455								
Volume to Capacity	0.03	0.01	0.11	0.74								
Queue Length 95th (ft)	2	0	9	151								
Control Delay (s)	1.6	0.3	14.2	32.2								
Lane LOS	A	A	B	D								
Approach Delay (s)	1.6	0.3	14.2	32.2								
Approach LOS			B	D								

Intersection Summary			
Average Delay	14.1		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	45	343	2	11	189	210	9	123	61	394	115	54
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	381	2	12	210	233	10	137	68	438	128	60
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	453			393			977	970	402	989	854	347
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	453			393			977	970	402	989	854	347
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			92	42	89	0	53	91
cM capacity (veh/h)	1093			1150			124	234	635	101	274	683

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	433	456	214	626
Volume Left	50	12	10	438
Volume Right	2	233	68	60
cSH	1093	1150	278	128
Volume to Capacity	0.05	0.01	0.77	4.90
Queue Length 95th (ft)	4	1	146	Err
Control Delay (s)	1.4	0.3	51.0	Err
Lane LOS	A	A	F	F
Approach Delay (s)	1.4	0.3	51.0	Err
Approach LOS			F	F

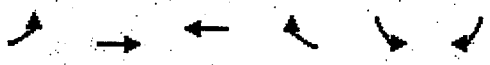
Intersection Summary			
Average Delay	3624.7		
Intersection Capacity Utilization	93.1%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	368	103	81	21	67	369
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	409	114	90	23	74	410

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	409	114	98	16	50	435
Volume Left (vph)	409	0	90	0	0	0
Volume Right (vph)	0	114	0	0	0	410
Hadj (s)	0.55	-0.65	0.51	0.05	0.05	-0.61
Departure Headway (s)	6.7	5.5	7.5	7.0	6.4	5.8
Degree Utilization, x	0.76	0.18	0.20	0.03	0.09	0.70
Capacity (veh/h)	518	623	450	474	529	599
Control Delay (s)	26.9	8.5	11.1	9.0	8.9	19.8
Approach Delay (s)	22.8		10.9		18.7	
Approach LOS	C		B		C	

Intersection Summary			
Delay	19.8		
HCM Level of Service	C		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	355	397	268	41	54	108
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	394	441	298	46	60	120
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	353				1571	341
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	353				1571	341
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	67				25	83
cM capacity (veh/h)	1190				80	688

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	836	343	180
Volume Left	394	0	60
Volume Right	0	46	120
cSH	1190	1700	194
Volume to Capacity	0.33	0.20	0.93
Queue Length 95th (ft)	37	0	185
Control Delay (s)	6.7	0.0	97.1
Lane LOS	A		F
Approach Delay (s)	6.7	0.0	97.1
Approach LOS			F

Intersection Summary			
Average Delay	17.0		
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	250	225	0	0	144	21	171	2	118	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	278	250	0	0	160	23	190	2	131	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	193			260			997	1009	270	1129	997	192
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	193			260			997	1009	270	1129	997	192
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	80			100			0	99	83	100	100	100
cM capacity (veh/h)	1374			1288			183	189	754	123	192	840

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	528	183	323
Volume Left	278	0	190
Volume Right	0	23	131
cSH	1374	1700	264
Volume to Capacity	0.20	0.11	1.22
Queue Length 95th (ft)	19	0	382
Control Delay (s)	5.3	0.0	168.9
Lane LOS	A		F
Approach Delay (s)	5.3	0.0	168.9
Approach LOS			F

Intersection Summary			
Average Delay	55.5		
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	65	1959	70	305	2023	64	183	1	318	59	1	48
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	72	2177	78	339	2248	71	203	1	353	66	1	53
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2329			2254			5311	5328	2187	5621	5334	2268
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2329			2254			5311	5328	2187	5621	5334	2268
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	65			0			0	0	0	0	0	0
cM capacity (veh/h)	209			226			0	0	57	0	0	50

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	72	2177	78	339	2248	71	203	354	66	54
Volume Left	72	0	0	339	0	0	203	0	66	0
Volume Right	0	0	78	0	0	71	0	353	0	53
cSH	209	1700	1700	226	1700	1700	0	0	0	0
Volume to Capacity	0.35	1.28	0.05	1.50	1.32	0.04	Err	Err	Err	Err
Queue Length 95th (ft)	36	0	0	510	0	0	Err	Err	Err	Err
Control Delay (s)	31.0	0.0	0.0	287.1	0.0	0.0	Err	Err	Err	Err
Lane LOS	D			F			F	F	F	F
Approach Delay (s)	1.0			36.6			Err		Err	
Approach LOS							F		F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	156.4%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	252	669	304	220	650	310
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	280	743	338	244	722	344
Pedestrians	10		10			10
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2269	480			592	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2269	480			592	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			26	
cM capacity (veh/h)	11	574			971	

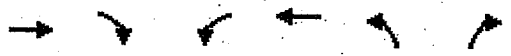
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1023	582	1067
Volume Left	280	0	722
Volume Right	743	244	0
cSH	39	1700	971
Volume to Capacity	26.46	0.34	0.74
Queue Length 95th (ft)	Err	0	178
Control Delay (s)	Err	0.0	18.2
Lane LOS	F		C
Approach Delay (s)	Err	0.0	18.2
Approach LOS	F		

Intersection Summary			
Average Delay	3836.4		
Intersection Capacity Utilization	148.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑			↑			↑	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	160	1031	305	320	1181	449	243	313	332	677	375	146
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	178	1146	339	356	1312	499	270	348	369	752	417	162
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1811			1484			4064	4193	1315	4237	3863	1312
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1811			1484			4064	4193	1315	4237	3863	1312
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	47			21			0	0	0	0	0	16
cM capacity (veh/h)	337			450			0	0	192	0	0	193

Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2			
Volume Total	1662	356	1312	499	270	348	369	752	579			
Volume Left	178	356	0	0	270	0	0	752	0			
Volume Right	339	0	0	499	0	0	369	0	162			
cSH	337	450	1700	1700	0	0	192	0	0			
Volume to Capacity	0.53	0.79	0.77	0.29	Err	1667	04	1.92	Err	1188	39	
Queue Length 95th (ft)	73	177	0	0	Err	Err	680	Err	Err			
Control Delay (s)	103.6	37.0	0.0	0.0	Err	Err	474.1	Err	Err			
Lane LOS	F	E			F	F	F	F	F			
Approach Delay (s)	103.6	6.1			Err			Err				
Approach LOS					F			F				

Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization		211.1%			ICU Level of Service				H			
Analysis Period (min)			15									



Movement	EBL	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	2209	127	185	2354	55	227
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2454	141	206	2616	61	252
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			2606		5501	2474
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			2606		5501	2474
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			0		0	0
cM capacity (veh/h)			162		0	37

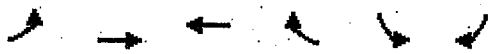
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	2454	141	2821	313
Volume Left	0	0	206	61
Volume Right	0	141	0	252
cSH	1700	1700	162	0
Volume to Capacity	1.44	0.08	1.27	Err
Queue Length 95th (ft)	0	0	297	Err
Control Delay (s)	0.0	0.0	156	Err
Lane LOS			C	F
Approach Delay (s)	0.0		156	Err
Approach LOS				F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	278.3%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	1839	656	296	1454	0	0	0	0	54	10	891
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2043	729	329	1616	0	0	0	0	60	11	990
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1626			2782			5697	4701	2428	4701	5066	1636
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1626			2782			5697	4701	2428	4701	5066	1636
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			0			0	0	100	0	0	0
cM capacity (veh/h)	394			139			0	0	40	0	0	122

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	2772	1944	71	990
Volume Left	0	329	60	0
Volume Right	729	0	0	990
cSH	1700	139	0	122
Volume to Capacity	1.63	2.36	Err	8.13
Queue Length 95th (ft)	0	702	Err	Err
Control Delay (s)	0.0	1584.9	Err	Err
Lane LOS		F	F	F
Approach Delay (s)	0.0	1584.9	Err	
Approach LOS			F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	250.9%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	948	1008	1985	61	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1053	1120	2206	68	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2283				5486	2259
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2283				5486	2259
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	0				0	100
cM capacity (veh/h)	220				0	51

Direction, Lane #	EB 1	WB 1
Volume Total	2173	2273
Volume Left	1053	0
Volume Right	0	68
cSH	220	1700
Volume to Capacity	4.79	1.34
Queue Length 95th (ft)	Err	0
Control Delay (s)	3486.9	0.0
Lane LOS	F	
Approach Delay (s)	3486.9	0.0
Approach LOS		

Intersection Summary			
Average Delay	1704.3		
Intersection Capacity Utilization	229.9%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	277	793	0	0	864	20	844	136	210	10	0	395
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	308	881	0	0	960	22	938	151	233	11	0	439
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	992			891			2927	2499	901	2797	2488	991
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	992			891			2927	2499	901	2797	2488	991
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	55			100			0	0	29	0	100	0
cM capacity (veh/h)	687			750			0	16	330	0	16	292

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	308	881	982	1089	233	11	439
Volume Left	308	0	0	938	0	11	0
Volume Right	0	0	22	0	233	0	439
cSH	687	1700	1700	0	330	0	292
Volume to Capacity	0.45	0.52	0.58	Err	0.71	Err	1.50
Queue Length 95th (ft)	58	0	0	Err	128	Err	623
Control Delay (s)	14.4	0.0	0.0	Err	38.5	Err	275.1
Lane LOS	B			F	E	F	F
Approach Delay (s)	3.7		0.0	Err		Err	
Approach LOS				F		F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	136.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	44	105	50	70	61	116	30	240	126	144	226	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	117	56	78	68	129	33	267	140	160	251	41
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			182			717	614	164	823	578	152
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	207			182			717	614	164	823	578	152
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			94			76	26	84	0	34	95
cM capacity (veh/h)	1347			1375			141	363	863	89	381	877

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	221	274	440	452
Volume Left	49	78	33	160
Volume Right	56	129	140	41
cSH	1347	1375	388	181
Volume to Capacity	0.04	0.06	1.13	2.50
Queue Length 95th (ft)	3	4	413	958
Control Delay (s)	2.0	2.6	119.9	730.4
Lane LOS	A	A	F	F
Approach Delay (s)	2.0	2.6	119.9	730.4
Approach LOS			F	F

Intersection Summary			
Average Delay	276.8		
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	150	92	147	468	531	230
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	167	102	163	520	590	256
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1584	738	856			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1584	738	856			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	75	79			
cM capacity (veh/h)	92	409	774			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	269	683	846
Volume Left	167	163	0
Volume Right	102	0	256
cSH	130	774	1700
Volume to Capacity	2.06	0.21	0.50
Queue Length 95th (ft)	548	20	0
Control Delay (s)	558.6	5.1	0.0
Lane LOS	F	A	
Approach Delay (s)	558.6	5.1	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	85.5		
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	72	208	2	6	122	288	4	52	2	162	46	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	80	231	2	7	136	320	4	58	2	180	51	56
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	466			243			802	881	252	752	722	316
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	466			243			802	881	252	752	722	316
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			99			98	78	100	27	84	92
cM capacity (veh/h)	1082			1306			222	258	771	246	319	711

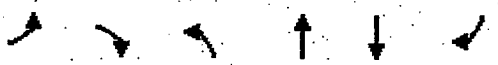
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	313	462	64	287
Volume Left	80	7	4	180
Volume Right	2	320	2	56
cSH	1082	1306	261	295
Volume to Capacity	0.07	0.01	0.25	0.97
Queue Length 95th (ft)	6	0	24	247
Control Delay (s)	2.7	0.2	23.3	84.2
Lane LOS	A	A	C	F
Approach Delay (s)	2.7	0.2	23.3	84.2
Approach LOS			C	F

Intersection Summary			
Average Delay	23.6		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	64	295	5	20	386	594	11	253	33	449	245	54
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	71	328	6	22	429	660	12	281	37	499	272	60
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1099			343			1492	1626	351	1473	1299	779
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1099			343			1492	1626	351	1473	1299	779
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			98			0	0	95	0	0	85
cM capacity (veh/h)	626			1200			0	87	679	0	138	388

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	404	1111	330	831
Volume Left	71	22	12	499
Volume Right	6	660	37	60
cSH	626	1200	0	0
Volume to Capacity	0.11	0.02	Err	Err
Queue Length 95th (ft)	10	1	Err	Err
Control Delay (s)	3.4	0.6	Err	Err
Lane LOS	A	A	F	F
Approach Delay (s)	3.4	0.6	Err	Err
Approach LOS			F	F

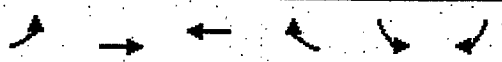
Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	127.3%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	648	198	179	126	92	632
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	720	220	199	140	102	702

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	720	220	246	93	68	736
Volume Left (vph)	720	0	199	0	0	0
Volume Right (vph)	0	220	0	0	0	702
Hadj (s)	0.55	-0.65	0.46	0.05	0.05	-0.62
Departure Headway (s)	7.7	6.5	8.1	7.7	7.4	6.7
Degree Utilization, x	1.55	0.40	0.56	0.20	0.14	1.37
Capacity (veh/h)	469	543	429	458	477	548
Control Delay (s)	276.1	12.6	19.7	11.5	10.4	198.6
Approach Delay (s)	214.4		17.4		182.7	
Approach LOS	F		C		F	

Intersection Summary			
Delay	170.1		
HCM Level of Service	F		
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	NBL	NBT	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations								
Sign Control			Free	Free			Stop	
Grade			0%	0%			0%	
Volume (veh/h)	340		371	631	100		13	287
Peak Hour Factor	0.90		0.90	0.90	0.90		0.90	0.90
Hourly flow rate (vph)	378		412	701	111		14	319
Pedestrians			10	10			10	
Lane Width (ft)			12.0	12.0			12.0	
Walking Speed (ft/s)			4.0	4.0			4.0	
Percent Blockage			1	1			1	
Right turn flare (veh)								
Median type							None	
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked								
vC, conflicting volume	822						1944	777
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	822						1944	777
tC, single (s)	4.1						6.4	6.2
tC, 2 stage (s)								
tF (s)	2.2						3.5	3.3
p0 queue free %	53						61	18
cM capacity (veh/h)	796						37	389

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	790	812	333
Volume Left	378	0	14
Volume Right	0	111	319
cSH	796	1700	275
Volume to Capacity	0.47	0.48	1.21
Queue Length 95th (ft)	65	0	386
Control Delay (s)	10.9	0.0	163.8
Lane LOS	B		F
Approach Delay (s)	10.9	0.0	163.8
Approach LOS			F

Intersection Summary			
Average Delay	32.6		
Intersection Capacity Utilization	107.2%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	169	226	0	0	331	166	401	3	28	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	188	251	0	0	368	184	446	3	31	0	0	0
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			0.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	562			261			1107	1199	271	1139	1107	480
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	562			261			1107	1199	271	1139	1107	480
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	81			100			0	98	96	100	100	100
cM capacity (veh/h)	1004			1287			156	149	752	141	169	579

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	439	552	480
Volume Left	188	0	446
Volume Right	0	184	31
cSH	1004	1700	165
Volume to Capacity	0.19	0.32	2.91
Queue Length 95th (ft)	17	0	1089
Control Delay (s)	5.2	0.0	920.2
Lane LOS	A		F
Approach Delay (s)	5.2	0.0	920.2
Approach LOS			F

Intersection Summary			
Average Delay	301.8		
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	78	1991	117	506	2008	70	257	1	473	104	1	76
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	87	2212	130	562	2231	78	286	1	526	116	1	84
Pedestrians		10			10						10	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2319			2342			5836	5829	2222	6287	5881	2251
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2319			2342			5836	5829	2222	6287	5881	2251
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	59			0			0	0	0	0	0	0
cM capacity (veh/h)	211			208			0	0	54	0	0	51

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2
Volume Total	87	2212	130	562	2231	78	286	527	116	86
Volume Left	87	0	0	562	0	0	286	0	116	0
Volume Right	0	0	130	0	0	78	0	526	0	84
cSH	211	1700	1700	208	1700	1700	0	0	0	0
Volume to Capacity	0.41	1.30	0.08	2.70	1.31	0.05	Err	Err	Err	Err
Queue Length 95th (ft)	47	0	0	1214	0	0	Err	Err	Err	Err
Control Delay (s)	33.4	0.0	0.0	812.8	0.0	0.0	Err	Err	Err	Err
Lane LOS	D			F			F	F	F	F
Approach Delay (s)	1.2			159.2			Err		Err	
Approach LOS							F		F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	181.3%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBR	WBL	WBR	NBT	NBR	SBL	SBR
Lane Configurations								
Sign Control	Stop				Free			Free
Grade	0%				0%			0%
Volume (veh/h)	337		719	311	315	819		366
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90		0.90
Hourly flow rate (vph)	374		799	346	350	910		407
Pedestrians	10			10				10
Lane Width (ft)	12.0			12.0				12.0
Walking Speed (ft/s)	4.0			4.0				4.0
Percent Blockage	1			1				1
Right turn flare (veh)								
Median type	None							
Median storage veh)								
Upstream signal (ft)								
pX, platoon unblocked								
vC, conflicting volume	2767		541				706	
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	2767		541				706	
tC, single (s)	6.4		6.2				4.1	
tC, 2 stage (s)								
tF (s)	3.5		3.3				2.2	
p0 queue free %	0		0				0	
cM capacity (veh/h)	0		531				881	

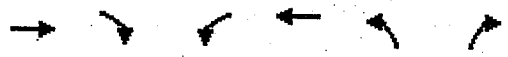
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	1173	696	1317
Volume Left	374	0	910
Volume Right	799	350	0
cSH	0	1700	881
Volume to Capacity	Err	0.41	1.03
Queue Length 95th (ft)	Err	0	510
Control Delay (s)	Err	0.0	66.8
Lane LOS	F		F
Approach Delay (s)	Err	0.0	66.8
Approach LOS	F		

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	174.4%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	142	1075	380	406	1224	460	277	320	398	510	457	102
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	158	1194	422	451	1360	511	308	356	442	567	508	113
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1871			1617			4351	4494	1406	4603	4194	1360
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1871			1617			4351	4494	1406	4603	4194	1360
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	51			0			0	0	0	0	0	37
cM capacity (veh/h)	319			400			0	0	170	0	0	181

Direction, Lane #	EB 1	WB 1	WB 2	WB 3	NB 1	NB 2	NB 3	SB 1	SB 2			
Volume Total	1774	451	1360	511	308	356	442	567	621			
Volume Left	158	451	0	0	308	0	0	567	0			
Volume Right	422	0	0	511	0	0	442	0	113			
cSH	319	400	1700	1700	0	0	170	0	0			
Volume to Capacity	0.49	1.13	0.80	0.30	Err	Err	2.61	Err	Err			
Queue Length 95th (ft)	65	414	0	0	Err	Err	959	Err	Err			
Control Delay (s)	249.2	115.9	0.0	0.0	Err	Err	781.4	Err	Err			
Lane LOS	F	F			F	F	F	F	F			
Approach Delay (s)	249.2	22.5			Err			Err				
Approach LOS					F			F				

Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			210.9%		ICU Level of Service				H			
Analysis Period (min)			15									



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	2537	161	234	2623	98	198
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2819	179	260	2914	109	220
Pedestrians	10			10	10	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			3008		6273	2839
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3008		6273	2839
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			0		0	0
cM capacity (veh/h)			112		0	22

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total	2819	179	3174	329	
Volume Left	0	0	260	109	
Volume Right	0	179	0	220	
cSH	1700	1700	112	0	
Volume to Capacity	1.66	0.11	2.32	Err	
Queue Length 95th (ft)	0	0	569	Err	
Control Delay (s)	0.0	0.0	55.9	Err	
Lane LOS			F	F	
Approach Delay (s)	0.0		55.9	Err	
Approach LOS				F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	312.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	1951	697	218	1657	0	0	0	0	108	7	1000
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	2168	774	242	1841	0	0	0	0	120	8	1111
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			0.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1851			2952			6016	4901	2575	4901	5288	1861
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1851			2952			6016	4901	2575	4901	5288	1861
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			0			0	0	100	0	0	0
cM capacity (veh/h)	322			119			0	0	33	0	0	89

Direction, Lane #	EB 1	WB 1	SB 1	SB 2
Volume Total	2942	2083	128	1111
Volume Left	0	242	120	0
Volume Right	774	0	0	1111
cSH	1700	119	0	89
Volume to Capacity	1.73	2.04	Err	12.48
Queue Length 95th (ft)	0	499	Err	Err
Control Delay (s)	0.0	64.5	Err	Err
Lane LOS		F	F	F
Approach Delay (s)	0.0	64.5	Err	
Approach LOS			F	

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	267.7%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕			
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	994	1085	2196	36	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1104	1206	2440	40	0	0
Pedestrians		10	10		10	
Lane Width (ft)		12.0	12.0		0.0	
Walking Speed (ft/s)		4.0	4.0		4.0	
Percent Blockage		1	1		0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2490				5894	2480
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2490				5894	2480
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	0				0	100
cM capacity (veh/h)	182				0	37

Direction, Lane #	EB 1	WB 1				
Volume Total	2310	2480				
Volume Left	1104	0				
Volume Right	0	40				
cSH	182	1700				
Volume to Capacity	6.06	1.46				
Queue Length 95th (ft)	Err	0				
Control Delay (s)	5288.5	0.0				
Lane LOS	F					
Approach Delay (s)	5288.5	0.0				
Approach LOS						

Intersection Summary			
Average Delay	2550.4		
Intersection Capacity Utilization	246.0%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	316	856	0	0	948	11	895	94	150	10	0	522
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	351	951	0	0	1053	12	994	104	167	11	0	580
Pedestrians		10			10			10			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1076			961			3313	2739	971	2952	2733	1079
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1076			961			3313	2739	971	2952	2733	1079
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	45			100			0	0	44	0	100	0
cM capacity (veh/h)	639			706			0	9	300	0	9	260

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	351	951	1066	1099	167	11	580
Volume Left	351	0	0	994	0	11	0
Volume Right	0	0	12	0	167	0	580
cSH	639	1700	1700	0	300	0	260
Volume to Capacity	0.55	0.56	0.63	Err	0.56	Err	2.23
Queue Length 95th (ft)	84	0	0	Err	79	Err	1122
Control Delay (s)	17.3	0.0	0.0	Err	31.0	Err	597.9
Lane LOS	C			F	D	F	F
Approach Delay (s)	4.7		0.0	Err		Err	
Approach LOS				F		F	

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	148.4%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Volume (vph)	809	137	108	65	60	855
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	899	152	120	72	67	950

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	899	152	144	48	44	972
Volume Left (vph)	899	0	120	0	0	0
Volume Right (vph)	0	152	0	0	0	950
Hadj (s)	0.55	-0.65	0.47	0.05	0.05	-0.63
Departure Headway (s)	7.4	6.2	8.1	7.7	7.0	6.3
Degree Utilization, x	1.85	0.26	0.32	0.10	0.09	1.71
Capacity (veh/h)	493	572	440	462	502	575
Control Delay (s)	406.2	10.2	13.7	10.3	9.5	342.4
Approach Delay (s)	348.9		12.9		327.8	
Approach LOS	F		B		F	

Intersection Summary				
Delay	310.8			
HCM Level of Service	F			
Intersection Capacity Utilization	91.2%	ICU Level of Service		F
Analysis Period (min)	15			

APPENDIX K

Intersection Level of Service Calculations
Mitigated Conditions

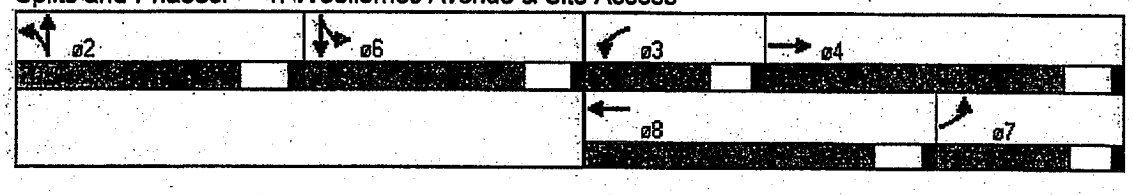
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					0.96					0.98	
Frt			0.850			0.850		0.850			0.941	
Flt Protected	0.950			0.950			0.950				0.973	
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3400	1568	0	0	1669	0
Flt Permitted	0.950			0.950			0.950				0.973	
Satd. Flow (perm)	1722	3505	1568	3400	3505	1498	3400	1568	0	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			27		557			44	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	78	352	87	265	241	24	114	0	210	71	0	56
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	87	391	97	294	268	27	127	0	233	79	0	62
Lane Group Flow (vph)	87	391	97	294	268	27	127	233	0	0	141	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	13.6	26.0	26.0	13.0	25.4	25.4	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	17.0%	32.5%	32.5%	16.3%	31.8%	31.8%	25.6%	25.6%	0.0%	25.6%	25.6%	0.0%
Maximum Green (s)	9.6	21.5	21.5	9.0	20.9	20.9	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	9.4	12.0	12.0	8.6	16.1	16.1	8.1	8.1			9.3	
Actuated g/C Ratio	0.16	0.22	0.22	0.16	0.30	0.30	0.15	0.15			0.17	
v/c Ratio	0.31	0.51	0.23	0.54	0.26	0.06	0.25	0.33			0.44	
Control Delay	24.8	21.8	6.6	27.3	19.6	10.0	23.8	1.2			20.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay	24.8	21.8	6.6	27.3	19.6	10.0	23.8	1.2			20.6	
LOS	C	C	A	C	B	A	C	A			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		19.7			23.0			9.2			20.6	
Approach LOS		B			C			A			C	
Queue Length 50th (ft)	23	57	0	44	40	0	18	0			28	
Queue Length 95th (ft)	68	110	32	97	83	18	45	0			80	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	321	1209	604	569	1303	573	905	826			484	
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.27	0.32	0.16	0.52	0.21	0.05	0.14	0.28			0.29	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 54.4
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 53.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Woollomes Avenue & Site Access

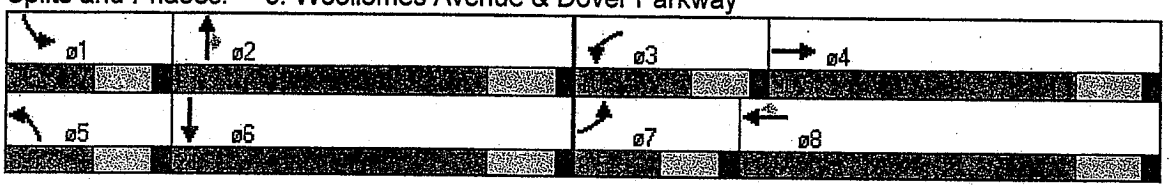


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.949				0.850			0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1751	0	1752	1845	1568	1752	1845	1568	1752	1830	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1751	0	1752	1845	1568	1752	1845	1568	1752	1830	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43				90			247		4	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	3	163	84	131	164	81	70	80	222	76	118	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	181	93	146	182	90	78	89	247	84	131	7
Lane Group Flow (vph)	3	274	0	146	182	90	78	89	247	84	138	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phases	7	4		3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	
Total Split (s)	8.5	20.5	0.0	10.0	22.0	22.0	8.5	21.0	21.0	8.5	21.0	0.0
Total Split (%)	14.2%	34.2%	0.0%	16.7%	36.7%	36.7%	14.2%	35.0%	35.0%	14.2%	35.0%	0.0%
Maximum Green (s)	4.5	16.0		6.0	17.5	17.5	4.5	16.5	16.5	4.5	16.5	
Yellow Time (s)	3.0	3.5		3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	4.6	11.5		6.2	18.2	18.2	4.6	16.4	16.4	4.6	16.4	
Actuated g/C Ratio	0.09	0.25		0.13	0.39	0.39	0.10	0.37	0.37	0.10	0.37	
v/c Ratio	0.02	0.59		0.62	0.25	0.13	0.47	0.13	0.34	0.50	0.20	
Control Delay	25.0	18.6		37.9	11.0	4.1	34.8	17.3	4.7	36.8	17.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.0	18.6		37.9	11.0	4.1	34.8	17.3	4.7	36.8	17.6	
LOS	C	B		D	B	A	C	B	A	D	B	
Approach Delay		18.6			18.9			13.1			24.9	
Approach LOS		B			B			B			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	1	55		40	28	0	21	21	0	23	33	
Queue Length 95th (ft)	7	124		#132	88	25	#77	55	47	#83	78	
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	158	598		234	789	722	167	838	847	167	883	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.46		0.62	0.23	0.12	0.47	0.11	0.29	0.50	0.17	

Intersection Summary
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 44.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 18.0 Intersection LOS: B
Intersection Capacity Utilization 44.7% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woollomes Avenue & Dover Parkway

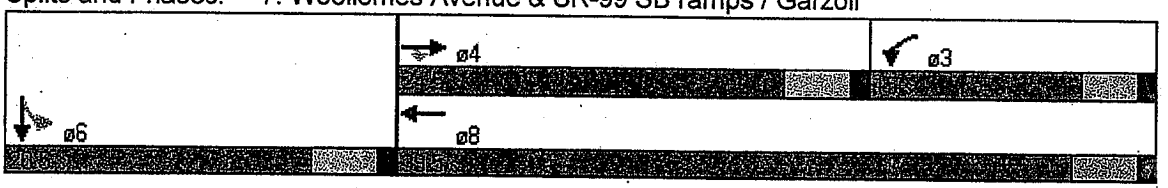


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	113		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50	50	
Trailing Detector (ft)		0	0	0	0					0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96	0.99								
Frt			0.850								0.851	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1845	1568	1752	1845	0	0	0	0	1752	1570	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1845	1508	1734	1845	0	0	0	0	1752	1570	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			193								196	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	368	174	156	348	0	0	0	0	34	1	176
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	409	193	173	387	0	0	0	0	38	1	196
Lane Group Flow (vph)	0	409	193	173	387	0	0	0	0	38	197	0
Turn Type			Perm	Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4							6		
Detector Phases		4	4	3	8					6	6	
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	
Total Split (s)	0.0	24.5	24.5	15.0	39.5	0.0	0.0	0.0	0.0	20.5	20.5	0.0
Total Split (%)	0.0%	40.8%	40.8%	25.0%	65.8%	0.0%	0.0%	0.0%	0.0%	34.2%	34.2%	0.0%
Maximum Green (s)		20.0	20.0	11.0	35.0					16.0	16.0	
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0					0	0	
Act Effct Green (s)		29.2	29.2	11.0	44.2					7.8	7.8	
Actuated g/C Ratio		0.49	0.49	0.18	0.74					0.13	0.13	
v/c Ratio		0.46	0.23	0.54	0.28					0.17	0.53	
Control Delay		12.9	2.7	18.9	0.4					23.8	9.7	
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		12.9	2.7	18.9	0.4					23.8	9.7	
LOS		B	A	B	A					C	A	
Approach Delay		9.6			6.1						12.0	
Approach LOS		A			A						B	
Queue Length 50th (ft)		88	0	60	0					13	0	
Queue Length 95th (ft)		176	31	m61	m0					33	46	
Internal Link Dist (ft)		750			420			412			569	
Turn Bay Length (ft)				113								
Base Capacity (vph)		897	832	321	1359					482	574	
Starvation Cap Reductn		0	0	0	0					0	0	
Spillback Cap Reductn		0	0	0	0					0	0	
Storage Cap Reductn		0	0	0	0					0	0	
Reduced v/c Ratio		0.46	0.23	0.54	0.28					0.08	0.34	

Intersection Summary
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 8.6 Intersection LOS: A
Intersection Capacity Utilization 49.0% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli



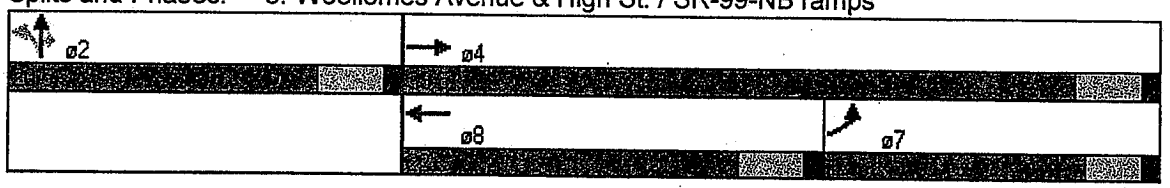
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50	50			
Trailing Detector (ft)	0	0			0		0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.98		0.98			
Frt					0.997				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1752	1845	0	0	1837	0	1752	1845	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1734	1845	0	0	1837	0	1720	1845	1532	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2				173			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	202	199	0	0	354	9	150	61	156	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	224	221	0	0	393	10	167	68	173	0	0	0
Lane Group Flow (vph)	224	221	0	0	403	0	167	68	173	0	0	0
Turn Type	Prot						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Detector Phases	7	4			8		2	2	2			
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5		20.5	20.5	20.5			
Total Split (s)	17.5	39.5	0.0	0.0	22.0	0.0	20.5	20.5	20.5	0.0	0.0	0.0
Total Split (%)	29.2%	65.8%	0.0%	0.0%	36.7%	0.0%	34.2%	34.2%	34.2%	0.0%	0.0%	0.0%
Maximum Green (s)	13.5	35.0			17.5		16.0	16.0	16.0			
Yellow Time (s)	3.0	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			None		Min	Min	Min			
Walk Time (s)		5.0			5.0		5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	19.2	40.6			17.4		11.4	11.4	11.4			
Actuated g/C Ratio	0.32	0.68			0.29		0.19	0.19	0.19			
v/c Ratio	0.40	0.18			0.75		0.51	0.19	0.40			
Control Delay	19.0	1.1			24.5		26.5	20.2	6.6			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			

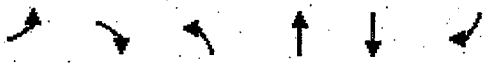
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	19.0	1.1		24.5			26.5	20.2	6.6			
LOS	B	A		C			C	C	A			
Approach Delay		10.1			24.5			17.0				
Approach LOS		B			C			B				
Queue Length 50th (ft)	81	7		91			55	21	0			
Queue Length 95th (ft)	156	13		#214			94	45	38			
Internal Link Dist (ft)		420		598				493			693	
Turn Bay Length (ft)	410											
Base Capacity (vph)	559	1247		581			473	507	547			
Starvation Cap Reductn	0	0		0			0	0	0			
Spillback Cap Reductn	0	0		0			0	0	0			
Storage Cap Reductn	0	0		0			0	0	0			
Reduced v/c Ratio	0.40	0.18		0.69			0.35	0.13	0.32			

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 4:EBT and 7:EBL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 17.0 Intersection LOS: B
Intersection Capacity Utilization 49.0% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps





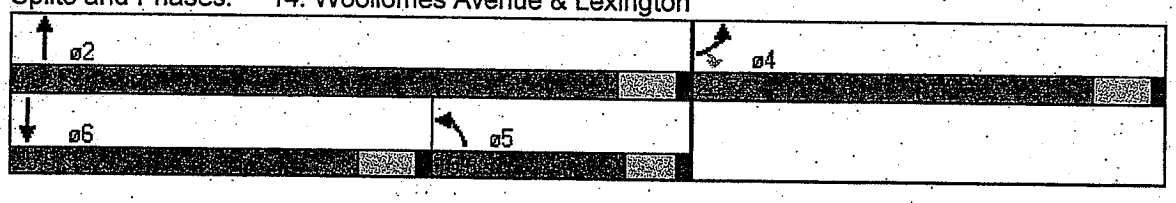
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.99	0.98	0.99		0.96	
Frt		0.850			0.865	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1568	1752	3505	2918	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1729	1529	1729	3505	2918	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		78			329	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	678			443	1703	
Travel Time (s)	15.4			10.1	38.7	
Volume (vph)	254	70	58	10	32	296
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	282	78	64	11	36	329
Lane Group Flow (vph)	282	78	64	11	365	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phases	4	4	5	2	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	
Total Split (s)	28.7	28.7	15.8	41.3	25.5	0.0
Total Split (%)	41.0%	41.0%	22.6%	59.0%	36.4%	0.0%
Maximum Green (s)	24.2	24.2	11.8	36.8	21.0	
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	46.5	46.5	7.8	15.5	7.7	
Actuated g/C Ratio	0.66	0.66	0.11	0.22	0.11	
v/c Ratio	0.24	0.07	0.33	0.01	0.60	
Control Delay	4.4	1.7	32.5	15.8	9.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.4	1.7	32.5	15.8	9.6	
LOS	A	A	C	B	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	3.8			30.1	9.6	
Approach LOS	A			C	A	
Queue Length 50th (ft)	31	0	26	2	7	
Queue Length 95th (ft)	71	m5	57	6	42	
Internal Link Dist (ft)	598			363	1623	
Turn Bay Length (ft)						
Base Capacity (vph)	1163	1042	295	1868	1124	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.24	0.07	0.22	0.01	0.32	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 28 (40%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 8.9 Intersection LOS: A
Intersection Capacity Utilization 39.4% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Woollomes Avenue & Lexington

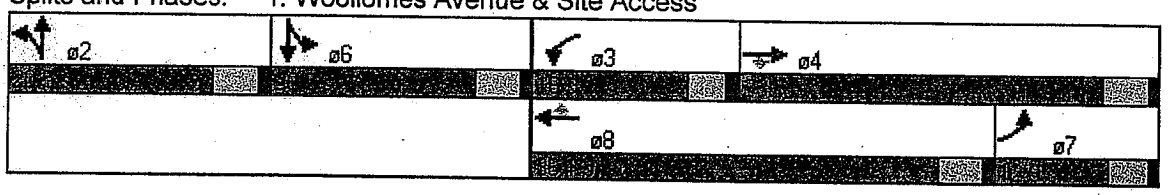


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					0.95					0.98	
Frt			0.850			0.850		0.850			0.949	
Flt Protected	0.950			0.950			0.950				0.970	
Satd. Flow (prot)	1752	1845	1568	3400	1845	1568	3400	1568	0	0	1680	0
Flt Permitted	0.950			0.950			0.950				0.970	
Satd. Flow (perm)	1720	1845	1568	3400	1845	1493	3400	1568	0	0	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			62		542			30	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	58	443	122	335	266	56	183	0	318	53	0	32
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	64	492	136	372	296	62	203	0	353	59	0	36
Lane Group Flow (vph)	64	492	136	372	296	62	203	353	0	0	95	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	12.9	33.0	33.0	16.0	36.1	36.1	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	14.3%	36.7%	36.7%	17.8%	40.1%	40.1%	22.8%	22.8%	0.0%	22.8%	22.8%	0.0%
Maximum Green (s)	8.9	28.5	28.5	12.0	31.6	31.6	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	13.4	23.2	23.2	11.2	26.4	26.4	10.5	10.5			8.9	
Actuated g/C Ratio	0.18	0.33	0.33	0.16	0.37	0.37	0.15	0.15			0.13	
v/c Ratio	0.20	0.81	0.22	0.69	0.43	0.10	0.40	0.51			0.40	
Control Delay	28.2	34.5	5.0	38.1	24.0	7.0	31.5	2.6			28.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay	28.2	34.5	5.0	38.1	24.0	7.0	31.5	2.6			28.3	
LOS	C	C	A	D	C	A	C	A			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		28.1			29.7			13.2			28.3	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	21	191	0	82	123	0	44	0			28	
Queue Length 95th (ft)	65	#390	37	#165	211	27	80	0			76	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	341	711	688	588	809	689	749	768			386	
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.19	0.69	0.20	0.63	0.37	0.09	0.27	0.46			0.25	

Intersection Summary
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 70.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 24.7 Intersection LOS: C
Intersection Capacity Utilization 73.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Woollomes Avenue & Site Access



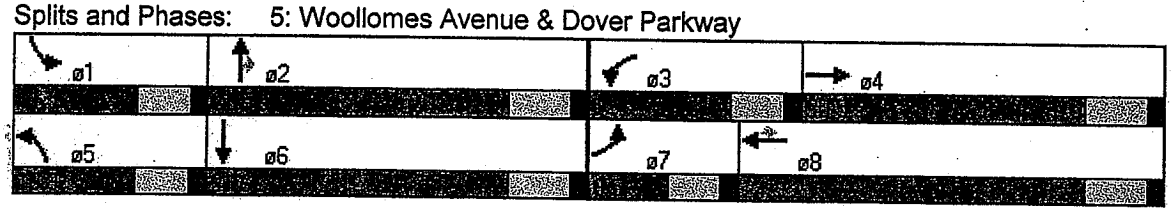
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.936				0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1727	0	1752	1845	1568	1752	1845	1568	1752	1826	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1727	0	1752	1845	1568	1752	1845	1568	1752	1826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55				156			371		5	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	12	153	114	163	197	140	102	148	334	136	170	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	170	127	181	219	156	113	164	371	151	189	13
Lane Group Flow (vph)	13	297	0	181	219	156	113	164	371	151	202	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phases	7	4		3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	
Total Split (s)	8.5	20.5	0.0	12.0	24.0	24.0	10.9	21.5	21.5	11.0	21.6	0.0
Total Split (%)	13.1%	31.5%	0.0%	18.5%	36.9%	36.9%	16.8%	33.1%	33.1%	16.9%	33.2%	0.0%
Maximum Green (s)	4.5	16.0		8.0	19.5	19.5	6.9	17.0	17.0	7.0	17.1	
Yellow Time (s)	3.0	3.5		3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	4.6	12.5		8.1	23.3	23.3	6.7	13.1	13.1	7.0	13.2	
Actuated g/C Ratio	0.08	0.23		0.15	0.43	0.43	0.12	0.24	0.24	0.12	0.24	
v/c Ratio	0.10	0.68		0.70	0.28	0.20	0.54	0.37	0.56	0.70	0.45	
Control Delay	30.9	24.7		43.2	13.6	3.9	37.3	22.3	6.4	46.2	23.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.9	24.7		43.2	13.6	3.9	37.3	22.3	6.4	46.2	23.0	
LOS	C	C		D	B	A	D	C	A	D	C	
Approach Delay		24.9			20.5			15.8			32.9	
Approach LOS		C			C			B			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	4	72		59	43	0	36	48	0	50	59	
Queue Length 95th (ft)	20	157		#171	121	36	#106	99	57	#150	118	
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	132	536		266	801	769	217	561	735	220	561	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.55		0.68	0.27	0.20	0.52	0.29	0.50	0.69	0.36	

Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 54.3
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 22.0 Intersection LOS: C
Intersection Capacity Utilization 53.2% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woollomes Avenue & Dover Parkway



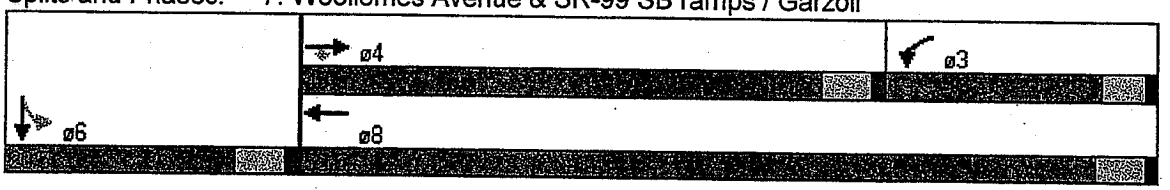
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	165		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50	50	
Trailing Detector (ft)		0	0	0	0					0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96	0.99								
Frt			0.850								0.851	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1845	1568	1752	1845	0	0	0	0	1752	1570	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1845	1498	1736	1845	0	0	0	0	1752	1570	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			251								218	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	642	226	231	511	0	0	0	0	35	1	196
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	713	251	257	568	0	0	0	0	39	1	218
Lane Group Flow (vph)	0	713	251	257	568	0	0	0	0	39	219	0
Turn Type			Perm	Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4							6		
Detector Phases		4	4	3	8					6	6	
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	
Total Split (s)	0.0	40.5	40.5	19.0	59.5	0.0	0.0	0.0	0.0	20.5	20.5	0.0
Total Split (%)	0.0%	50.6%	50.6%	23.8%	74.4%	0.0%	0.0%	0.0%	0.0%	25.6%	25.6%	0.0%
Maximum Green (s)		36.0	36.0	15.0	55.0					16.0	16.0	
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0					0	0	
Act Effct Green (s)		44.6	44.6	15.0	63.6					8.4	8.4	
Actuated g/C Ratio		0.56	0.56	0.19	0.80					0.10	0.10	
v/c Ratio		0.69	0.27	0.78	0.39					0.21	0.61	
Control Delay		18.1	2.3	40.6	0.6					34.3	12.7	
Queue Delay		0.0	0.0	0.0	0.4					0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	18.1	2.3	40.6	1.0						34.3	12.7	
LOS	B	A	D	A						C	B	
Approach Delay	14.0			13.4							16.0	
Approach LOS	B			B							B	
Queue Length 50th (ft)	231	0	142	1						18	0	
Queue Length 95th (ft)	420	34	m170	m2						44	58	
Internal Link Dist (ft)	750			420			412				569	
Turn Bay Length (ft)			165									
Base Capacity (vph)	1029	946	329	1467						361	497	
Starvation Cap Reductn	0	0	0	451						0	0	
Spillback Cap Reductn	0	0	0	0						0	0	
Storage Cap Reductn	0	0	0	0						0	0	
Reduced v/c Ratio	0.69	0.27	0.78	0.56						0.11	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 14.0 Intersection LOS: B
Intersection Capacity Utilization 70.2% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli



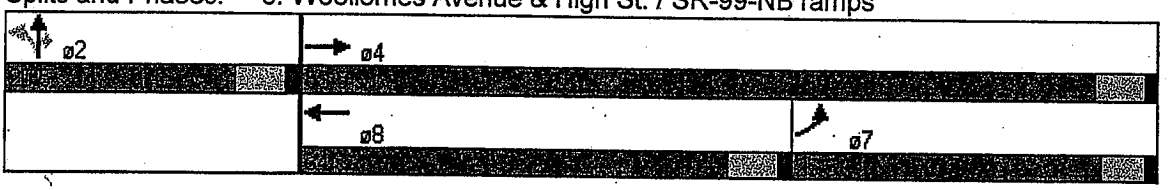
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50	50			
Trailing Detector (ft)	0	0			0		0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.98		0.97			
Frt					0.991				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1752	1845	0	0	1823	0	1752	1845	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1733	1845	0	0	1823	0	1709	1845	1526	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					5				182			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	341	340	0	0	506	37	223	83	164	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	379	378	0	0	562	41	248	92	182	0	0	0
Lane Group Flow (vph)	379	378	0	0	603	0	248	92	182	0	0	0
Turn Type	Prot						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Detector Phases	7	4			8		2	2	2			
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5		20.5	20.5	20.5			
Total Split (s)	25.5	59.5	0.0	0.0	34.0	0.0	20.5	20.5	20.5	0.0	0.0	0.0
Total Split (%)	31.9%	74.4%	0.0%	0.0%	42.5%	0.0%	25.6%	25.6%	25.6%	0.0%	0.0%	0.0%
Maximum Green (s)	21.5	55.0			29.5		16.0	16.0	16.0			
Yellow Time (s)	3.0	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			None		Min	Min	Min			
Walk Time (s)		5.0			5.0		5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	23.0	56.9			29.9		15.1	15.1	15.1			
Actuated g/C Ratio	0.29	0.71			0.37		0.19	0.19	0.19			
v/c Ratio	0.75	0.29			0.88		0.77	0.26	0.42			
Control Delay	36.9	2.3			31.3		47.6	29.2	7.8			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	36.9	2.3			31.3		47.6	29.2	7.8			
LOS	D	A			C		D	C	A			
Approach Delay		19.6			31.3			30.5				
Approach LOS		B			C			C				
Queue Length 50th (ft)	211	42			199		116	39	0			
Queue Length 95th (ft)	#334	16			#444		#215	79	50			
Internal Link Dist (ft)		420			598			493				693
Turn Bay Length (ft)	410											
Base Capacity (vph)	503	1312			687		352	381	459			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.75	0.29			0.88		0.70	0.24	0.40			

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 4:EBT and 7:EBL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 26.4 Intersection LOS: C
Intersection Capacity Utilization 70.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps



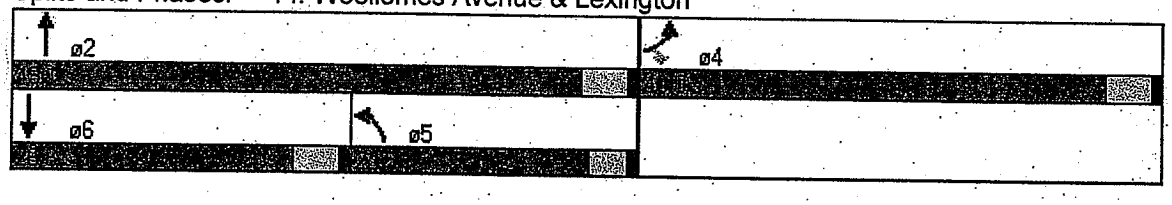
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98	0.97	0.99		0.96	
Frt		0.850			0.864	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1568	1752	3505	2898	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1723	1523	1728	3505	2898	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		149			458	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	678			443	1703	
Travel Time (s)	15.4			10.1	38.7	
Volume (vph)	351	134	121	60	44	412
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	390	149	134	67	49	458
Lane Group Flow (vph)	390	149	134	67	507	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phases	4	4	5	2	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	
Total Split (s)	40.9	40.9	22.5	49.1	26.6	0.0
Total Split (%)	45.4%	45.4%	25.0%	54.6%	29.6%	0.0%
Maximum Green (s)	36.4	36.4	18.5	44.6	22.1	
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	57.2	57.2	11.9	24.8	8.9	
Actuated g/C Ratio	0.64	0.64	0.13	0.28	0.10	
v/c Ratio	0.35	0.15	0.58	0.07	0.73	
Control Delay	8.8	2.3	46.0	21.6	12.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.8	2.3	46.0	21.6	12.2	
LOS	A	A	D	C	B	

Lane Group	EBL	EBT	EBR	NBL	NBT	SBT	SBR
Approach Delay	7.0			37.9	12.2		
Approach LOS	A			D	B		
Queue Length 50th (ft)	76	4		73	15	14	
Queue Length 95th (ft)	m147	m15		124	25	56	
Internal Link Dist (ft)	598				363	1623	
Turn Bay Length (ft)							
Base Capacity (vph)	1114	1023		360	1756	1071	
Starvation Cap Reductn	0	0		0	0	0	
Spillback Cap Reductn	0	0		0	0	0	
Storage Cap Reductn	0	0		0	0	0	
Reduced v/c Ratio	0.35	0.15		0.37	0.04	0.47	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 23 (26%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 14.1 Intersection LOS: B
Intersection Capacity Utilization 51.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal

Splits and Phases: 14: Woollomes Avenue & Lexington

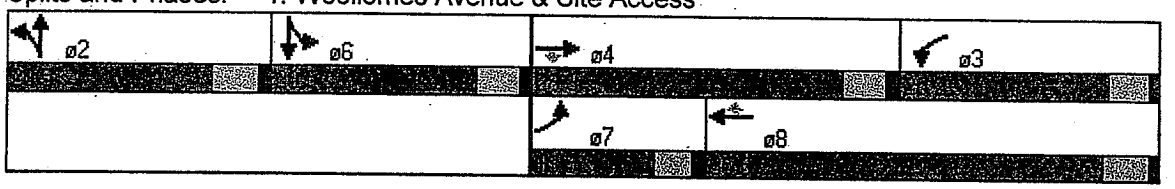


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					0.95					0.98	
Frt			0.850			0.850		0.850			0.945	
Flt Protected	0.950			0.950			0.950				0.971	
Satd. Flow (prot)	1752	1845	1568	3400	1845	1568	3400	1568	0	0	1673	0
Flt Permitted	0.950			0.950			0.950				0.971	
Satd. Flow (perm)	1721	1845	1568	3400	1845	1493	3400	1568	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			207			66		549			34	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	68	449	186	544	291	59	257	0	473	79	0	55
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	76	499	207	604	323	66	286	0	526	88	0	61
Lane Group Flow (vph)	76	499	207	604	323	66	286	526	0	0	149	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	13.5	28.8	28.8	20.2	35.5	35.5	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	15.0%	32.0%	32.0%	22.4%	39.4%	39.4%	22.8%	22.8%	0.0%	22.8%	22.8%	0.0%
Maximum Green (s)	9.5	24.3	24.3	16.2	31.0	31.0	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	8.1	24.8	24.8	16.3	35.2	35.2	13.2	13.2			11.3	
Actuated g/C Ratio	0.10	0.30	0.30	0.20	0.43	0.43	0.16	0.16			0.14	
v/c Ratio	0.45	0.89	0.33	0.89	0.41	0.10	0.52	0.74			0.57	
Control Delay	45.0	49.5	5.5	50.6	21.1	5.8	35.4	9.6			34.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay	45.0	49.5	5.5	50.6	21.1	5.8	35.4	9.6			34.7	
LOS	D	D	A	D	C	A	D	A			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		37.4			38.0			18.7			34.7	
Approach LOS		D			D			B			C	
Queue Length 50th (ft)	37	243	0	157	120	0	70	0			55	
Queue Length 95th (ft)	85	#483	51	#288	223	27	114	77			116	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	196	563	622	679	795	681	663	748			346	
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.39	0.89	0.33	0.89	0.41	0.10	0.43	0.70			0.43	

Intersection Summary
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 81.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 91.4% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Woollomes Avenue & Site Access



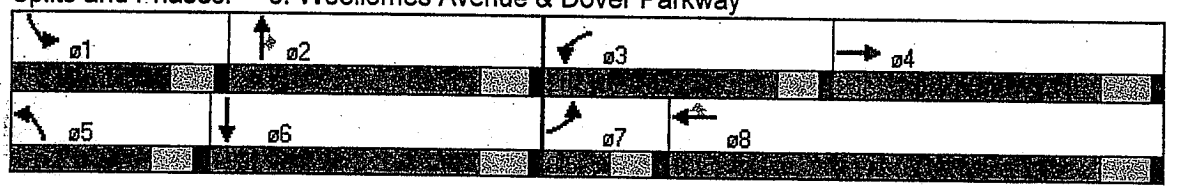
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.919				0.850			0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1695	0	1752	1845	1568	1752	1845	1568	1752	1830	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1695	0	1752	1845	1568	1752	1845	1568	1752	1830	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		69				209			407		3	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	8	161	189	274	184	188	130	223	366	177	263	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	179	210	304	204	209	144	248	407	197	292	16
Lane Group Flow (vph)	9	389	0	304	204	209	144	248	407	197	308	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phases	7	4		3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	
Total Split (s)	8.5	23.0	0.0	20.0	34.5	34.5	13.7	22.0	22.0	15.0	23.3	0.0
Total Split (%)	10.6%	28.8%	0.0%	25.0%	43.1%	43.1%	17.1%	27.5%	27.5%	18.8%	29.1%	0.0%
Maximum Green (s)	4.5	18.5		16.0	30.0	30.0	9.7	17.5	17.5	11.0	18.8	
Yellow Time (s)	3.0	3.5		3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	4.6	17.4		15.0	34.9	34.9	9.0	15.1	15.1	10.5	19.3	
Actuated g/C Ratio	0.06	0.23		0.20	0.47	0.47	0.12	0.20	0.20	0.14	0.26	
v/c Ratio	0.09	0.86		0.86	0.24	0.25	0.70	0.66	0.63	0.79	0.64	
Control Delay	39.9	44.4		55.2	14.2	3.3	52.7	37.3	8.1	57.7	34.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	39.9	44.4		55.2	14.2	3.3	52.7	37.3	8.1	57.7	34.0	
LOS	D	D		E	B	A	D	D	A	E	C	
Approach Delay		44.3			28.4			25.2			43.2	
Approach LOS		D			C			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	4	154		147	55	0	70	112	0	97	199	
Queue Length 95th (ft)	19	#310		#286	120	40	#150	186	71	#208	#233	
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	99	480		377	879	857	221	434	680	262	498	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.09	0.81		0.81	0.23	0.24	0.65	0.57	0.60	0.75	0.62	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 74.3
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 33.1 Intersection LOS: C
Intersection Capacity Utilization 70.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woollomes Avenue & Dover Parkway



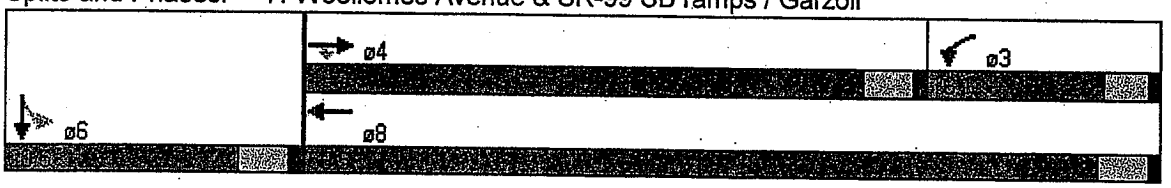
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	113		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50	50	
Trailing Detector (ft)		0	0	0	0					0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96	0.99								
Frt			0.850								0.850	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1845	1568	1752	1845	0	0	0	0	1752	1568	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1845	1498	1737	1845	0	0	0	0	1752	1568	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			340								252	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	695	306	170	702	0	0	0	0	66	1	272
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	772	340	189	780	0	0	0	0	73	1	302
Lane Group Flow (vph)	0	772	340	189	780	0	0	0	0	73	303	0
Turn Type			Perm	Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4							6		
Detector Phases		4	4	3	8					6	6	
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	
Total Split (s)	0.0	43.4	43.4	16.1	59.5	0.0	0.0	0.0	0.0	20.5	20.5	0.0
Total Split (%)	0.0%	54.3%	54.3%	20.1%	74.4%	0.0%	0.0%	0.0%	0.0%	25.6%	25.6%	0.0%
Maximum Green (s)		38.9	38.9	12.1	55.0					16.0	16.0	
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0					0	0	
Act Effct Green (s)		45.6	45.6	12.1	61.7					10.3	10.3	
Actuated g/C Ratio		0.57	0.57	0.15	0.77					0.13	0.13	
v/c Ratio		0.73	0.34	0.71	0.55					0.32	0.72	
Control Delay		19.6	2.4	35.2	1.0					33.9	17.5	
Queue Delay		0.0	0.0	0.0	0.8					0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Total Delay	19.6	2.4	35.2	1.8						33.9	17.5
LOS	B	A	D	A						C	B
Approach Delay	14.4			8.3						20.7	
Approach LOS	B			A						C	
Queue Length 50th (ft)	250	0	105	0						34	24
Queue Length 95th (ft)	#546	40	m111	m9						66	94
Internal Link Dist (ft)	750			420			412				569
Turn Bay Length (ft)			113								
Base Capacity (vph)	1052	1000	265	1423						361	523
Starvation Cap Reductn	0	0	0	338						0	0
Spillback Cap Reductn	0	0	0	0						0	0
Storage Cap Reductn	0	0	0	0						0	0
Reduced v/c Ratio	0.73	0.34	0.71	0.72						0.20	0.58

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli



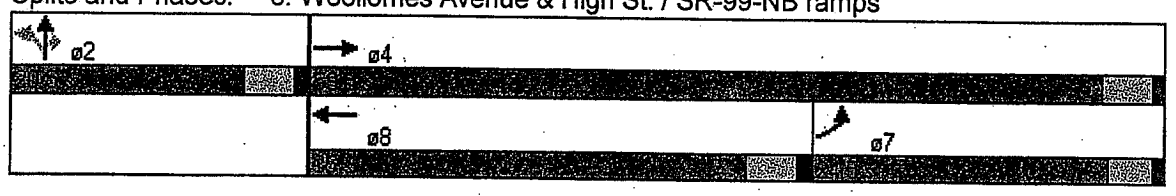
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50	50			
Trailing Detector (ft)	0	0			0		0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.98		0.97			
Frt					0.995				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1752	1845	0	0	1832	0	1752	1845	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1735	1845	0	0	1832	0	1709	1845	1526	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3				130			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	359	374	0	0	589	24	283	57	117	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	399	416	0	0	654	27	314	63	130	0	0	0
Lane Group Flow (vph)	399	416	0	0	681	0	314	63	130	0	0	0
Turn Type	Prot						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Detector Phases	7	4			8		2	2	2			
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5		20.5	20.5	20.5			
Total Split (s)	24.5	59.5	0.0	0.0	35.0	0.0	20.5	20.5	20.5	0.0	0.0	0.0
Total Split (%)	30.6%	74.4%	0.0%	0.0%	43.8%	0.0%	25.6%	25.6%	25.6%	0.0%	0.0%	0.0%
Maximum Green (s)	20.5	55.0			30.5		16.0	16.0	16.0			
Yellow Time (s)	3.0	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			None		Min	Min	Min			
Walk Time (s)		5.0			5.0		5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	20.9	55.7			30.8		16.3	16.3	16.3			
Actuated g/C Ratio	0.26	0.70			0.38		0.20	0.20	0.20			
v/c Ratio	0.87	0.32			0.96		0.90	0.17	0.31			
Control Delay	41.5	1.3			42.6		62.3	27.5	7.6			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			

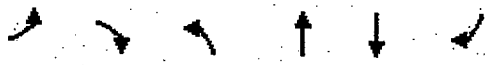
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	41.5	1.3			42.6		62.3	27.5	7.6			
LOS	D	A			D		E	C	A			
Approach Delay		21.0			42.6			44.0				
Approach LOS		C			D			D				
Queue Length 50th (ft)	220	20			682		154	26	0			
Queue Length 95th (ft)	m#356	m24			#524		#299	59	43			
Internal Link Dist (ft)		420			598			493			693	
Turn Bay Length (ft)	410											
Base Capacity (vph)	459	1285			712		352	381	418			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.87	0.32			0.96		0.89	0.17	0.31			

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 19 (24%), Referenced to phase 4:EBT and 7:EBL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 34.1 Intersection LOS: C
Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps



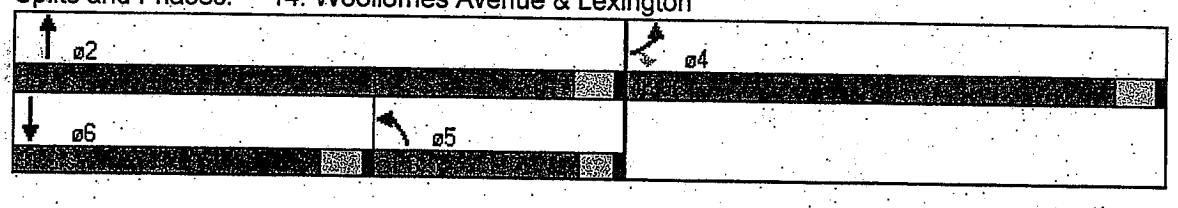


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98	0.97	0.99		0.95	
Frt		0.850			0.859	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1568	1752	3505	2868	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1720	1520	1729	3505	2868	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		109			561	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	678			443	1703	
Travel Time (s)	15.4			10.1	38.7	
Volume (vph)	390	98	82	36	33	505
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	433	109	91	40	37	561
Lane Group Flow (vph)	433	109	91	40	598	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phases	4	4	5	2	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	
Total Split (s)	46.9	46.9	21.8	53.1	31.3	0.0
Total Split (%)	46.9%	46.9%	21.8%	53.1%	31.3%	0.0%
Maximum Green (s)	42.4	42.4	17.8	48.6	26.8	
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	70.5	70.5	10.3	21.5	9.3	
Actuated g/C Ratio	0.70	0.70	0.10	0.22	0.09	
v/c Ratio	0.35	0.10	0.51	0.05	0.86dr	
Control Delay	5.0	1.0	51.6	26.5	12.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.0	1.0	51.6	26.5	12.4	
LOS	A	A	D	C	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	4.2			43.9	12.4	
Approach LOS	A			D	B	
Queue Length 50th (ft)	48	1	56	10	12	
Queue Length 95th (ft)	127	2	102	20	59	
Internal Link Dist (ft)	598			363	1623	
Turn Bay Length (ft)						
Base Capacity (vph)	1235	1103	312	1721	1191	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.35	0.10	0.29	0.02	0.50	

Intersection Summary
Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 29 (29%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 54.4% ICU Level of Service A
Analysis Period (min) 15
dr - Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 14: Woollomes Avenue & Lexington

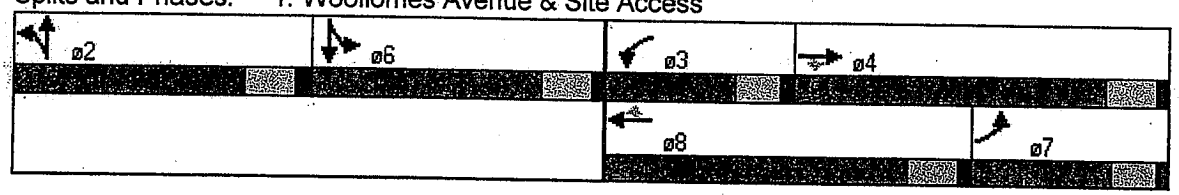


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					0.96					0.98	
Frt			0.850			0.850		0.850			0.941	
Flt Protected	0.950			0.950			0.950				0.973	
Satd. Flow (prot)	1752	1845	1568	3400	1845	1568	3400	1568	0	0	1669	0
Flt Permitted	0.950			0.950			0.950				0.973	
Satd. Flow (perm)	1722	1845	1568	3400	1845	1498	3400	1568	0	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			27		557			44	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	78	352	87	265	241	24	114	0	210	71	0	56
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	87	391	97	294	268	27	127	0	233	79	0	62
Lane Group Flow (vph)	87	391	97	294	268	27	127	233	0	0	141	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	13.6	26.0	26.0	13.0	25.4	25.4	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	17.0%	32.5%	32.5%	16.3%	31.8%	31.8%	25.6%	25.6%	0.0%	25.6%	25.6%	0.0%
Maximum Green (s)	9.6	21.5	21.5	9.0	20.9	20.9	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	9.8	17.5	17.5	8.7	21.5	21.5	8.2	8.2			9.6	
Actuated g/C Ratio	0.15	0.29	0.29	0.14	0.36	0.36	0.14	0.14			0.16	
v/c Ratio	0.33	0.73	0.19	0.60	0.41	0.05	0.27	0.34			0.47	
Control Delay	29.0	29.4	5.6	32.4	21.1	8.3	27.4	1.3			23.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay	29.0	29.4	5.6	32.4	21.1	8.3	27.4	1.3			23.3	
LOS	C	C	A	C	C	A	C	A			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		25.3			26.2			10.5			23.3	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	27	126	0	54	90	0	22	0			33	
Queue Length 95th (ft)	77	247	30	#113	166	16	49	0			85	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	300	631	600	514	699	584	828	803			448	
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.29	0.62	0.16	0.57	0.38	0.05	0.15	0.29			0.31	

Intersection Summary
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 60.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 61.8% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Woollomes Avenue & Site Access



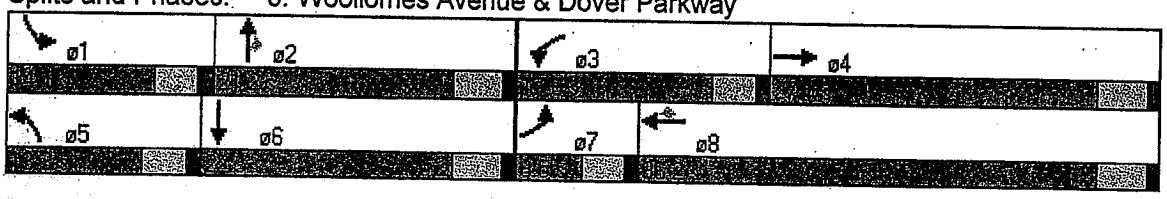
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955				0.850			0.850		0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1762	0	1752	1845	1568	1752	1845	1568	1752	1832	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1762	0	1752	1845	1568	1752	1845	1568	1752	1832	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27				93			261		3	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	5	196	84	138	185	84	72	80	235	88	121	6
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	218	93	153	206	93	80	89	261	98	134	7
Lane Group Flow (vph)	6	311	0	153	206	93	80	89	261	98	141	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phases	7	4		3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	
Total Split (s)	8.5	27.1	0.0	17.6	36.2	36.2	13.3	21.2	21.2	14.1	22.0	0.0
Total Split (%)	10.6%	33.9%	0.0%	22.0%	45.3%	45.3%	16.6%	26.5%	26.5%	17.6%	27.5%	0.0%
Maximum Green (s)	4.5	22.6		13.6	31.7	31.7	9.3	16.7	16.7	10.1	17.5	
Yellow Time (s)	3.0	3.5		3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	5.1	14.5		10.0	24.6	24.6	7.9	18.6	18.6	8.3	19.0	
Actuated g/C Ratio	0.08	0.26		0.18	0.44	0.44	0.14	0.35	0.35	0.14	0.35	
v/c Ratio	0.04	0.65		0.49	0.25	0.13	0.33	0.14	0.37	0.39	0.22	
Control Delay	35.2	25.5		30.7	11.4	3.7	32.1	25.1	6.0	32.4	24.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	35.2	25.5		30.7	11.4	3.7	32.1	25.1	6.0	32.4	24.9	
LOS	D	C		C	B	A	C	C	A	C	C	
Approach Delay		25.7			16.4			14.8			28.0	
Approach LOS		C			B			B			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	2	92		51	39	0	27	29	0	33	46	
Queue Length 95th (ft)	14	195		125	111	26	78	76	59	90	110	
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	147	673		429	981	878	294	762	801	316	774	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.46		0.36	0.21	0.11	0.27	0.12	0.33	0.31	0.18	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 53.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 19.9 Intersection LOS: B
Intersection Capacity Utilization 47.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Woollomes Avenue & Dover Parkway



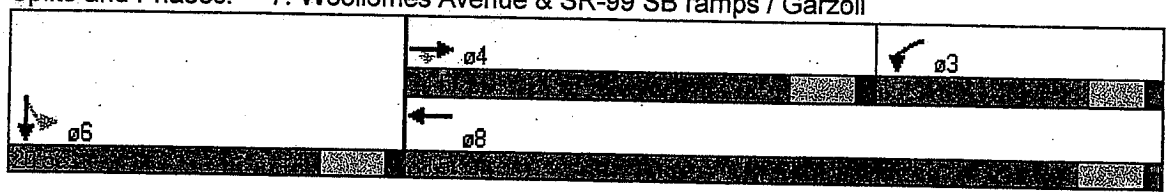
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	113		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50	50	
Trailing Detector (ft)		0	0	0						0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96	0.99								
Frt			0.850								0.851	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1845	1568	1752	1845	0	0	0	0	1752	1570	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1845	1508	1735	1845	0	0	0	0	1752	1570	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			219								213	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	393	197	181	363	0	0	0	0	39	1	192
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	437	219	201	403	0	0	0	0	43	1	213
Lane Group Flow (vph)	0	437	219	201	403	0	0	0	0	43	214	0
Turn Type			Perm	Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4							6		
Detector Phases		4	4	3	8					6	6	
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	
Total Split (s)	0.0	24.5	24.5	15.0	39.5	0.0	0.0	0.0	0.0	20.5	20.5	0.0
Total Split (%)	0.0%	40.8%	40.8%	25.0%	65.8%	0.0%	0.0%	0.0%	0.0%	34.2%	34.2%	0.0%
Maximum Green (s)		20.0	20.0	11.0	35.0					16.0	16.0	
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0					0	0	
Act Effct Green (s)		29.0	29.0	11.0	44.0					8.0	8.0	
Actuated g/C Ratio		0.48	0.48	0.18	0.73					0.13	0.13	
v/c Ratio		0.49	0.26	0.63	0.30					0.19	0.54	
Control Delay		13.5	2.8	20.7	0.4					23.9	9.6	
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	13.5	2.8	20.7	0.4						23.9	9.6	
LOS	B	A	C	A						C	A	
Approach Delay	9.9			7.2						12.0		
Approach LOS	A			A						B		
Queue Length 50th (ft)	96	0	74	0						14	0	
Queue Length 95th (ft)	194	33	m68	m0						36	47	
Internal Link Dist (ft)	750			420			412				569	
Turn Bay Length (ft)			113									
Base Capacity (vph)	893	843	321	1354						482	586	
Starvation Cap Reductn	0	0	0	0						0	0	
Spillback Cap Reductn	0	0	0	0						0	0	
Storage Cap Reductn	0	0	0	0						0	0	
Reduced v/c Ratio	0.49	0.26	0.63	0.36						0.09	0.37	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 9.2 Intersection LOS: A
Intersection Capacity Utilization 52.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli



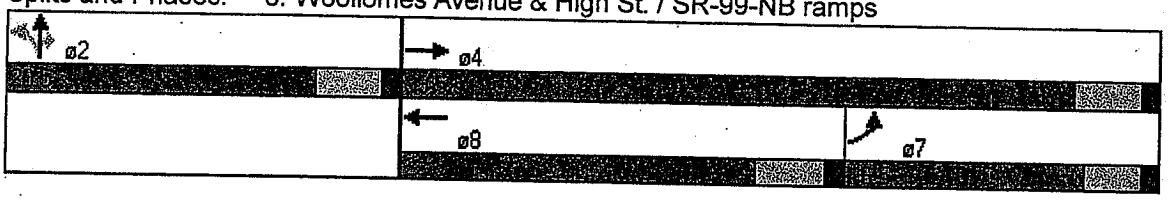
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50	50			
Trailing Detector (ft)	0	0			0		0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.98		0.98			
Frt					0.997				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1752	1845	0	0	1837	0	1752	1845	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1735	1845	0	0	1837	0	1720	1845	1532	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					2				201			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	217	215	0	0	384	10	160	71	181	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	241	239	0	0	427	11	178	79	201	0	0	0
Lane Group Flow (vph)	241	239	0	0	438	0	178	79	201	0	0	0
Turn Type	Prot						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Detector Phases	7	4			8		2	2	2			
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5		20.5	20.5	20.5			
Total Split (s)	16.5	39.5	0.0	0.0	23.0	0.0	20.5	20.5	20.5	0.0	0.0	0.0
Total Split (%)	27.5%	65.8%	0.0%	0.0%	38.3%	0.0%	34.2%	34.2%	34.2%	0.0%	0.0%	0.0%
Maximum Green (s)	12.5	35.0			18.5		16.0	16.0	16.0			
Yellow Time (s)	3.0	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			None		Min	Min	Min			
Walk Time (s)		5.0			5.0		5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	18.0	40.1			18.1		11.9	11.9	11.9			
Actuated g/C Ratio	0.30	0.67			0.30		0.20	0.20	0.20			
v/c Ratio	0.46	0.19			0.79		0.52	0.22	0.43			
Control Delay	21.4	1.2			25.2		26.3	20.1	6.4			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			

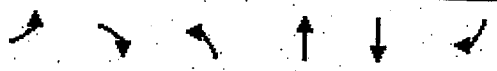
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	21.4	1.2		25.2			26.3	20.1	6.4			
LOS	C	A		C			C	C	A			
Approach Delay		11.3			25.2			16.5				
Approach LOS		B			C			B				
Queue Length 50th (ft)	90	8		97			58	24	0			
Queue Length 95th (ft)	#177	14		#249			100	50	41			
Internal Link Dist (ft)		420		598				493			693	
Turn Bay Length (ft)	410											
Base Capacity (vph)	526	1233		601			473	507	567			
Starvation Cap Reductn	0	0		0			0	0	0			
Spillback Cap Reductn	0	0		0			0	0	0			
Storage Cap Reductn	0	0		0			0	0	0			
Reduced v/c Ratio	0.46	0.19		0.73			0.38	0.16	0.35			

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 20 (33%), Referenced to phase 4:EBT and 7:EBL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 17.5 Intersection LOS: B
Intersection Capacity Utilization 52.7% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps



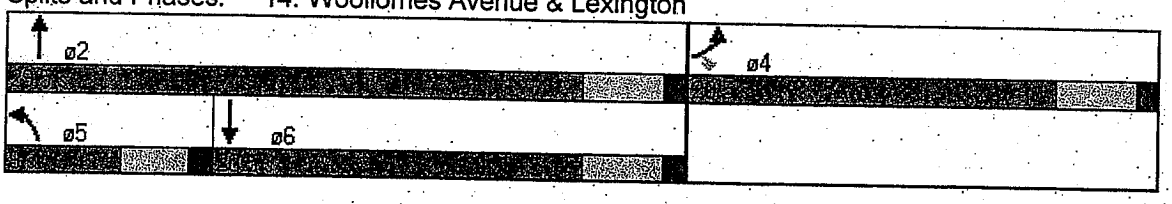


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.99	0.98	0.99		0.97	
Frt		0.850			0.865	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1568	1752	3505	2936	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1736	1535	1737	3505	2936	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		88			357	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	678			443	1703	
Travel Time (s)	15.4			10.1	38.7	
Volume (vph)	280	79	64	12	37	321
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	311	88	71	13	41	357
Lane Group Flow (vph)	311	88	71	13	398	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phases	4	4	5	2	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	
Total Split (s)	20.5	20.5	9.0	29.5	20.5	0.0
Total Split (%)	41.0%	41.0%	18.0%	59.0%	41.0%	0.0%
Maximum Green (s)	16.0	16.0	5.0	25.0	16.0	
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	29.0	29.0	5.0	13.0	7.6	
Actuated g/C Ratio	0.58	0.58	0.10	0.26	0.15	
v/c Ratio	0.31	0.09	0.41	0.01	0.53	
Control Delay	7.3	2.6	28.6	10.0	6.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.3	2.6	28.6	10.0	6.5	
LOS	A	A	C	A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	6.2			25.7	6.5	
Approach LOS	A			C	A	
Queue Length 50th (ft)	38	0	20	1	5	
Queue Length 95th (ft)	95	m6	51	5	32	
Internal Link Dist (ft)	598			363	1623	
Turn Bay Length (ft)						
Base Capacity (vph)	1016	927	175	1788	1208	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.31	0.09	0.41	0.01	0.33	

Intersection Summary
Area Type: Other
Cycle Length: 50
Actuated Cycle Length: 50
Offset: 17 (34%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 8.2 Intersection LOS: A
Intersection Capacity Utilization 41.7% ICU Level of Service A
Analysis Period (min) 15
m - Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Woollomes Avenue & Lexington



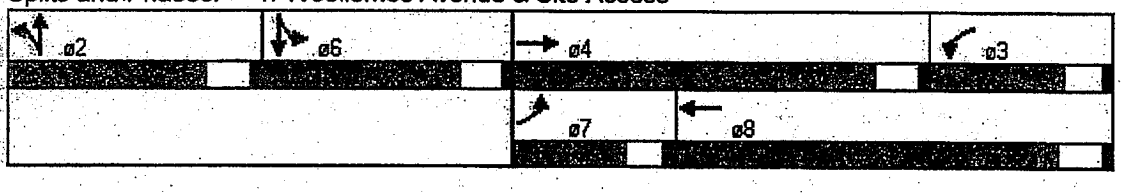
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					0.95					0.98	
Frt			0.850			0.850		0.850			0.949	
Flt Protected	0.950			0.950			0.950				0.970	
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3400	1568	0	0	1680	0
Flt Permitted	0.950			0.950			0.950				0.970	
Satd. Flow (perm)	1724	3505	1568	3400	3505	1493	3400	1568	0	0	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			63		501			30	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	62	487	127	329	351	57	183	0	318	56	0	34
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	541	141	366	390	63	203	0	353	62	0	38
Lane Group Flow (vph)	69	541	141	366	390	63	203	353	0	0	100	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	13.2	34.0	34.0	15.0	35.8	35.8	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	14.7%	37.8%	37.8%	16.7%	39.8%	39.8%	22.8%	22.8%	0.0%	22.8%	22.8%	0.0%
Maximum Green (s)	9.2	29.5	29.5	11.0	31.3	31.3	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	7.6	15.6	15.6	10.7	23.5	23.5	10.0	10.0			8.8	
Actuated g/C Ratio	0.12	0.25	0.25	0.17	0.38	0.38	0.16	0.16			0.14	
v/c Ratio	0.34	0.61	0.28	0.62	0.29	0.10	0.37	0.52			0.38	
Control Delay	33.4	24.0	5.9	31.7	16.7	6.1	26.6	3.1			24.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay	33.4	24.0	5.9	31.7	16.7	6.1	26.6	3.1			24.3	
LOS	C	C	A	C	B	A	C	A			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		21.5			22.6			11.7			24.3	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	23	90	0	63	56	0	35	0			23	
Queue Length 95th (ft)	70	163	39	#152	113	25	74	2			74	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	243	1401	711	620	1623	725	839	764			430	
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.28	0.39	0.20	0.59	0.24	0.09	0.24	0.46			0.23	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 61.5
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 19.6 Intersection LOS: B
Intersection Capacity Utilization 63.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Woollomes Avenue & Site Access

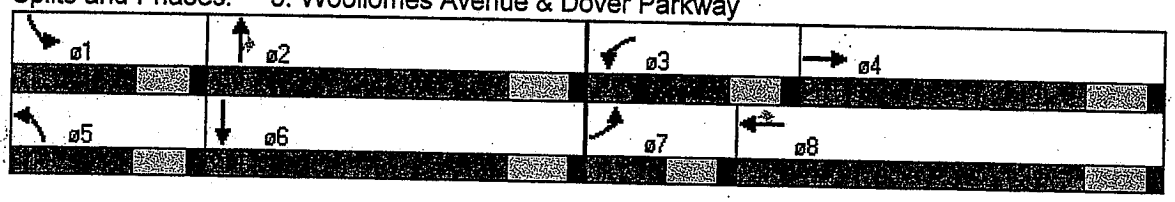


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.941				0.850			0.850		0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1736	0	1752	1845	1568	1752	1845	1568	1752	1828	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1736	0	1752	1845	1568	1752	1845	1568	1752	1828	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48				167			392		5	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	17	176	114	165	225	150	102	148	353	147	175	12
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	196	127	183	250	167	113	164	392	163	194	13
Lane Group Flow (vph)	19	323	0	183	250	167	113	164	392	163	207	0
Turn Type	Prot			Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phases	7	4		3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	
Total Split (s)	8.5	20.5	0.0	12.0	24.0	24.0	10.9	21.5	21.5	11.0	21.6	0.0
Total Split (%)	13.1%	31.5%	0.0%	18.5%	36.9%	36.9%	16.8%	33.1%	33.1%	16.9%	33.2%	0.0%
Maximum Green (s)	4.5	16.0		8.0	19.5	19.5	6.9	17.0	17.0	7.0	17.1	
Yellow Time (s)	3.0	3.5		3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	4.5	13.4		8.1	24.0	24.0	6.7	11.7	11.7	7.1	14.5	
Actuated g/C Ratio	0.07	0.24		0.14	0.42	0.42	0.11	0.21	0.21	0.13	0.26	
v/c Ratio	0.15	0.72		0.73	0.32	0.22	0.56	0.43	0.62	0.74	0.44	
Control Delay	32.4	27.8		46.6	14.1	3.9	38.9	23.6	7.3	50.3	22.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.4	27.8		46.6	14.1	3.9	38.9	23.6	7.3	50.3	22.7	
LOS	C	C		D	B	A	D	C	A	D	C	
Approach Delay		28.1			21.2			16.6			34.8	
Approach LOS		C			C			B			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	6	84		63	50	0	38	50	0	56	63	
Queue Length 95th (ft)	26	#187		#175	138	37	#107	99	58	#163	120	
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	125	519		252	786	764	207	523	725	221	552	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.62		0.73	0.32	0.22	0.55	0.31	0.54	0.74	0.38	

Intersection Summary
Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 56.5
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 23.4 Intersection LOS: C
Intersection Capacity Utilization 56.2% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woollomes Avenue & Dover Parkway

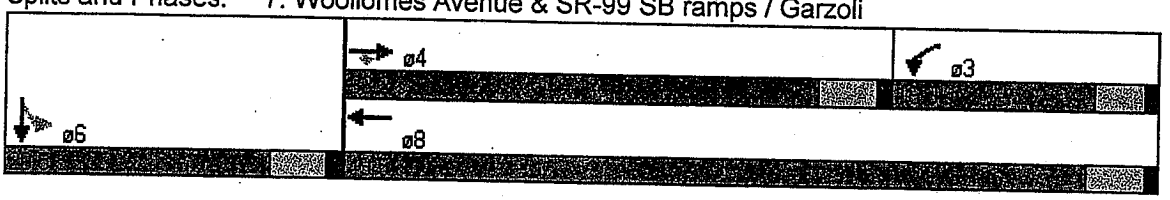


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	113		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50	50	
Trailing Detector (ft)		0	0	0	0					0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96	0.99								
Frt			0.850								0.851	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1845	1568	1752	1845	0	0	0	0	1752	1570	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1845	1503	1739	1845	0	0	0	0	1752	1570	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			270								239	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	684	243	268	524	0	0	0	0	41	1	215
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	760	270	298	582	0	0	0	0	46	1	239
Lane Group Flow (vph)	0	760	270	298	582	0	0	0	0	46	240	0
Turn Type			Perm	Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4							6		
Detector Phases		4	4	3	8					6	6	
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	
Total Split (s)	0.0	33.2	33.2	16.3	49.5	0.0	0.0	0.0	0.0	20.5	20.5	0.0
Total Split (%)	0.0%	47.4%	47.4%	23.3%	70.7%	0.0%	0.0%	0.0%	0.0%	29.3%	29.3%	0.0%
Maximum Green (s)		28.7	28.7	12.3	45.0					16.0	16.0	
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0					0	0	
Act Effct Green (s)		37.3	37.3	12.3	53.6					8.4	8.4	
Actuated g/C Ratio		0.53	0.53	0.18	0.77					0.12	0.12	
v/c Ratio		0.77	0.29	0.97	0.41					0.22	0.60	
Control Delay		21.3	2.4	51.3	0.4					29.2	11.1	
Queue Delay		0.0	0.0	0.0	0.2					0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	21.3	2.4	51.3	0.6						29.2	11.1	
LOS	C	A	D	A						C	B	
Approach Delay	16.3			17.8						14.0		
Approach LOS	B			B						B		
Queue Length 50th (ft)	233	0	126	0						18	0	
Queue Length 95th (ft)	#499	36	m#176	m1						43	56	
Internal Link Dist (ft)	750			420			412				569	
Turn Bay Length (ft)			113									
Base Capacity (vph)	984	927	308	1413						413	553	
Starvation Cap Reductn	0	0	0	254						0	0	
Spillback Cap Reductn	0	0	0	0						0	0	
Storage Cap Reductn	0	0	0	0						0	0	
Reduced v/c Ratio	0.77	0.29	0.97	0.50						0.11	0.43	

Intersection Summary
Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

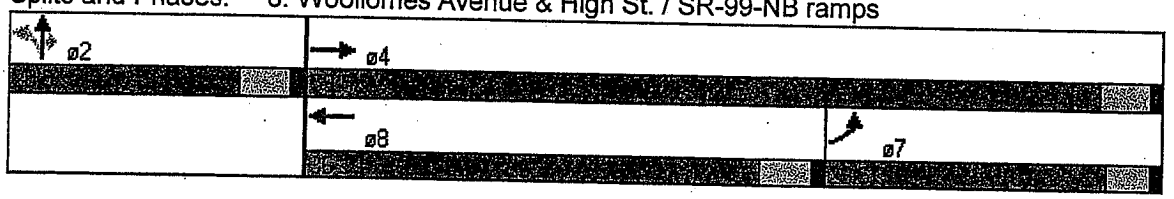


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50	50			
Trailing Detector (ft)	0	0			0		0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.98		0.97			
Frt					0.990				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1752	1845	0	0	1820	0	1752	1845	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1735	1845	0	0	1820	0	1709	1845	1526	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6				211			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	317	363	0	0	552	43	240	96	190	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	352	403	0	0	613	48	267	107	211	0	0	0
Lane Group Flow (vph)	352	403	0	0	661	0	267	107	211	0	0	0
Turn Type	Prot						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Detector Phases	7	4			8		2	2	2			
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5		20.5	20.5	20.5			
Total Split (s)	23.5	59.5	0.0	0.0	36.0	0.0	20.5	20.5	20.5	0.0	0.0	0.0
Total Split (%)	29.4%	74.4%	0.0%	0.0%	45.0%	0.0%	25.6%	25.6%	25.6%	0.0%	0.0%	0.0%
Maximum Green (s)	19.5	55.0			31.5		16.0	16.0	16.0			
Yellow Time (s)	3.0	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			None		Min	Min	Min			
Walk Time (s)		5.0			5.0		5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	20.6	56.5			31.8		15.5	15.5	15.5			
Actuated g/C Ratio	0.26	0.71			0.40		0.19	0.19	0.19			
v/c Ratio	0.78	0.31			0.91		0.81	0.30	0.45			
Control Delay	34.2	0.9			30.5		50.5	29.6	7.7			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	34.2	0.9			30.5		50.5	29.6	7.7			
LOS	C	A			C		D	C	A			
Approach Delay		16.4			30.5			31.3				
Approach LOS		B			C			C				
Queue Length 50th (ft)	193	12			214		126	45	0			
Queue Length 95th (ft)	m#292	m16			#492		#238	89	53			
Internal Link Dist (ft)		420			598			493			693	
Turn Bay Length (ft)	410											
Base Capacity (vph)	452	1303			734		352	381	482			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.78	0.31			0.90		0.76	0.28	0.44			

Intersection Summary
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 4:EBT and 7:EBL, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 25.4 Intersection LOS: C
Intersection Capacity Utilization 74.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps

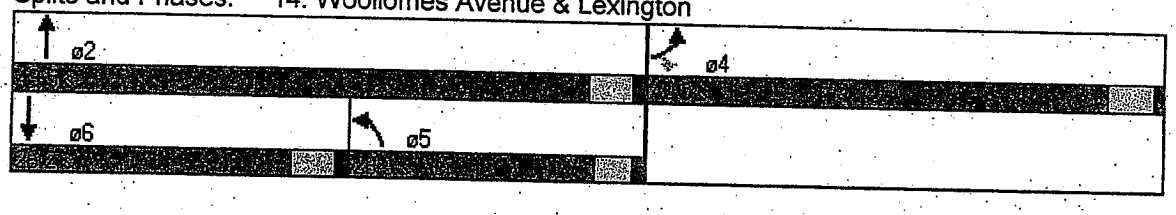


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR						
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0						
Leading Detector (ft)	50	50	50	50	50							
Trailing Detector (ft)	0	0	0	0	0							
Turning Speed (mph)	15	9	15			9						
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95						
Ped Bike Factor	0.98	0.97	0.99		0.96							
Frt		0.850			0.865							
Flt Protected	0.950		0.950									
Satd. Flow (prot)	1752	1568	1752	3505	2902	0						
Flt Permitted	0.950		0.950									
Satd. Flow (perm)	1723	1523	1730	3505	2902	0						
Right Turn on Red		Yes				Yes						
Satd. Flow (RTOR)		167			497							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00						
Link Speed (mph)	30			30	30							
Link Distance (ft)	678			443	1703							
Travel Time (s)	15.4			10.1	38.7							
Volume (vph)	381	150	136	70	51	447						
Confl. Peds. (#/hr)	10	10	10			10						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90						
Adj. Flow (vph)	423	167	151	78	57	497						
Lane Group Flow (vph)	423	167	151	78	554	0						
Turn Type		Perm	Prot									
Protected Phases	4		5	2	6							
Permitted Phases		4										
Detector Phases	4	4	5	2	6							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0							
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5							
Total Split (s)	40.5	40.5	23.3	49.5	26.2	0.0						
Total Split (%)	45.0%	45.0%	25.9%	55.0%	29.1%	0.0%						
Maximum Green (s)	36.0	36.0	19.3	45.0	21.7							
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5							
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0							
Lead/Lag			Lag		Lead							
Lead-Lag Optimize?			Yes		Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0							
Recall Mode	C-Max	C-Max	None	Min	Min							
Walk Time (s)	5.0	5.0		5.0	5.0							
Flash Dont Walk (s)	11.0	11.0		11.0	11.0							
Pedestrian Calls (#/hr)	0	0		0	0							
Act Effct Green (s)	55.9	55.9	12.7	26.1	9.4							
Actuated g/C Ratio	0.62	0.62	0.14	0.29	0.10							
v/c Ratio	0.39	0.17	0.61	0.08	0.74							
Control Delay	10.7	2.7	46.2	20.7	12.2							
Queue Delay	0.0	0.0	0.0	0.0	0.0							
Total Delay	10.7	2.7	46.2	20.7	12.2							
LOS	B	A	D	C	B							

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	8.5			37.5	12.2	
Approach LOS	A			D	B	
Queue Length 50th (ft)	94	6	82	17	16	
Queue Length 95th (ft)	m183	m17	135	27	60	
Internal Link Dist (ft)	598			363	1623	
Turn Bay Length (ft)						
Base Capacity (vph)	1088	1009	376	1772	1090	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.39	0.17	0.40	0.04	0.51	

Intersection Summary
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 23 (26%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 14.8 Intersection LOS: B
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal

Splits and Phases: 14: Woollomes Avenue & Lexington



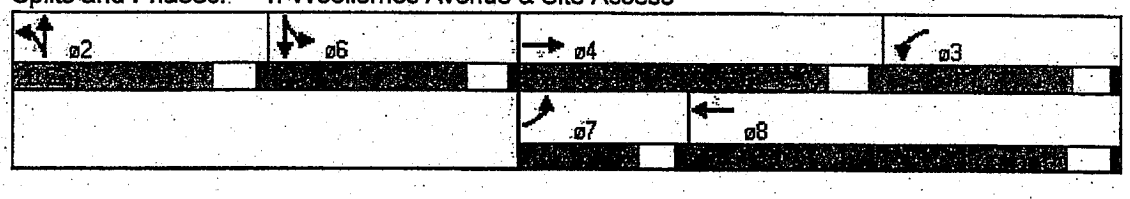
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98					0.95					0.98	
Frt			0.850			0.850		0.850			0.944	
Flt Protected	0.950			0.950			0.950				0.972	
Satd. Flow (prot)	1752	3505	1568	3400	3505	1568	3400	1568	0	0	1673	0
Flt Permitted	0.950			0.950			0.950				0.972	
Satd. Flow (perm)	1721	3505	1568	3400	3505	1493	3400	1568	0	0	1665	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			212			68		520			35	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	74	484	191	544	300	61	257	0	473	86	0	61
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	82	538	212	604	333	68	286	0	526	96	0	68
Lane Group Flow (vph)	82	538	212	604	333	68	286	526	0	0	164	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	13.8	29.6	29.6	19.4	35.2	35.2	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	15.3%	32.9%	32.9%	21.6%	39.1%	39.1%	22.8%	22.8%	0.0%	22.8%	22.8%	0.0%
Maximum Green (s)	9.8	25.1	25.1	15.4	30.7	30.7	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	8.1	17.5	17.5	15.9	27.8	27.8	12.6	12.6			11.2	
Actuated g/C Ratio	0.11	0.24	0.24	0.22	0.38	0.38	0.17	0.17			0.15	
v/c Ratio	0.43	0.65	0.40	0.82	0.25	0.11	0.49	0.75			0.58	
Control Delay	41.6	29.7	6.3	42.0	19.0	6.0	32.2	11.1			32.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Total Delay	41.6	29.7	6.3	42.0	19.0	6.0	32.2	11.1			32.9	
LOS	D	C	A	D	B	A	C	B			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		24.9			32.0			18.6			32.9	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	35	115	0	136	57	0	60	2			54	
Queue Length 95th (ft)	90	186	50	#297	105	27	114	103			128	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	225	1113	642	733	1445	655	736	747			383	
Starvation Cap Reductn	0	0	0	0	0	0	0	0			0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0			0	
Storage Cap Reductn	0	0	0	0	0	0	0	0			0	
Reduced v/c Ratio	0.36	0.48	0.33	0.82	0.23	0.10	0.39	0.70			0.43	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 73.6
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 26.1 Intersection LOS: C
Intersection Capacity Utilization 81.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Woollomes Avenue & Site Access



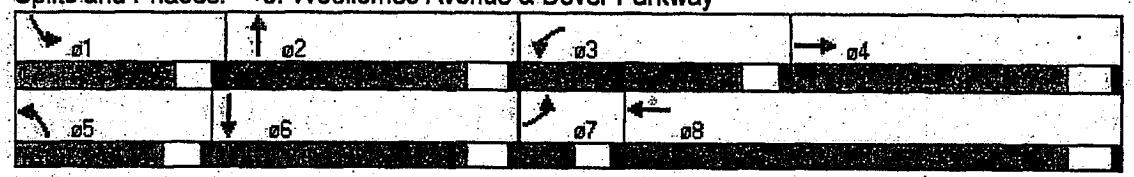
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1845	1568	1752	1845	1568	1752	1845	1568	1752	1830	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1845	1568	1752	1845	1568	1752	1845	1568	1752	1830	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			210			212			414		3	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	8	185	189	276	195	191	176	183	373	191	268	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	206	210	307	217	212	196	203	414	212	298	16
Lane Group Flow (vph)	9	206	210	307	217	212	196	203	414	212	314	0
Turn Type	Prot		NA	Prot		Perm	Prot		Perm	Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phases	7	4		3	8	8	5	2	2	1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	
Total Split (s)	8.5	27.0	0.0	22.0	40.5	40.5	16.0	24.0	24.0	17.0	25.0	0.0
Total Split (%)	9.4%	30.0%	0.0%	24.4%	45.0%	45.0%	17.8%	26.7%	26.7%	18.9%	27.8%	0.0%
Maximum Green (s)	4.5	22.5		18.0	36.0	36.0	12.0	19.5	19.5	13.0	20.5	
Yellow Time (s)	3.0	3.5		3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	None	Min	
Walk Time (s)		5.0			5.0	5.0		5.0	5.0		5.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0		11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	4.6	14.0	0.0	16.4	33.1	33.1	11.4	16.3	16.3	12.2	17.1	
Actuated g/C Ratio	0.06	0.19	0.00	0.22	0.44	0.44	0.15	0.22	0.22	0.16	0.23	
v/c Ratio	0.09	0.60	1.00	0.81	0.27	0.26	0.74	0.51	0.62	0.75	0.75	
Control Delay	42.8	37.3	72.1	48.1	16.0	3.5	52.6	32.6	7.8	51.2	40.7	
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	42.8	37.3	72.1	48.1	16.0	3.5	52.6	32.6	7.8	51.2	40.7	
LOS	D	D	E	D	B	A	D	C	A	D	D	
Approach Delay		54.6			25.8			24.8			45.0	
Approach LOS		D			C			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	4	96	0	144	64	0	95	88	0	102	142	
Queue Length 95th (ft)	20	165	#136	#306	135	42	#221	165	75	#233	#269	
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	98	511	210	418	869	851	283	474	711	306	495	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.09	0.40	1.00	0.73	0.25	0.25	0.69	0.43	0.58	0.69	0.63	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 75.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 34.4 Intersection LOS: C
Intersection Capacity Utilization 63.1% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woollomes Avenue & Dover Parkway

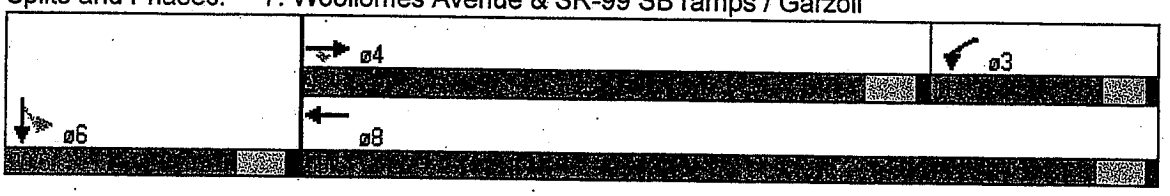


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	113		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	1		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50	50	
Trailing Detector (ft)		0	0	0	0					0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96	0.99								
Frt			0.850								0.850	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1845	1568	1752	1845	0	0	0	0	1752	1568	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1845	1498	1738	1845	0	0	0	0	1752	1568	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			362								254	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	725	326	197	698	0	0	0	0	77	1	287
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	806	362	219	776	0	0	0	0	86	1	319
Lane Group Flow (vph)	0	806	362	219	776	0	0	0	0	86	320	0
Turn Type			Perm	Prot						Perm		
Protected Phases		4		3	8						6	
Permitted Phases			4							6		
Detector Phases		4	4	3	8					6	6	
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	
Total Split (s)	0.0	43.5	43.5	16.0	59.5	0.0	0.0	0.0	0.0	20.5	20.5	0.0
Total Split (%)	0.0%	54.4%	54.4%	20.0%	74.4%	0.0%	0.0%	0.0%	0.0%	25.6%	25.6%	0.0%
Maximum Green (s)		39.0	39.0	12.0	55.0					16.0	16.0	
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0					0	0	
Act Effct Green (s)		45.2	45.2	12.0	61.2					10.8	10.8	
Actuated g/C Ratio		0.56	0.56	0.15	0.76					0.14	0.14	
v/c Ratio		0.77	0.36	0.83	0.55					0.36	0.74	
Control Delay		21.5	2.4	40.2	1.0					34.4	19.1	
Queue Delay		0.0	0.0	0.0	0.9					0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	21.5	2.4	40.2	1.9						34.4	19.1	
LOS	C	A	D	A						C	B	
Approach Delay	13.6			10.3						22.3		
Approach LOS	B			B						C		
Queue Length 50th (ft)	276	0	122	0						40	31	
Queue Length 95th (ft)	#583	41	m126	m5						75	105	
Internal Link Dist (ft)	750			420			412				569	
Turn Bay Length (ft)			113									
Base Capacity (vph)	1043	1004	263	1412						361	525	
Starvation Cap Reductn	0	0	0	346						0	0	
Spillback Cap Reductn	0	0	0	0						0	0	
Storage Cap Reductn	0	0	0	0						0	0	
Reduced v/c Ratio	0.77	0.36	0.83	0.78						0.24	0.61	

Intersection Summary
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 14.6 Intersection LOS: B
Intersection Capacity Utilization 80.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

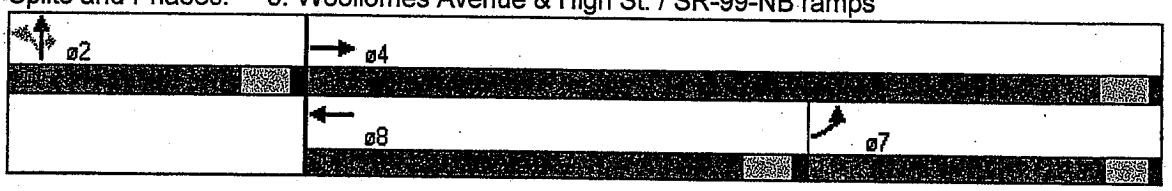


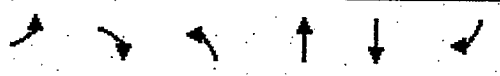
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	1		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50	50			
Trailing Detector (ft)	0	0			0		0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.98		0.97			
Frt					0.994				0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1752	1845	0	0	1830	0	1752	1845	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1736	1845	0	0	1830	0	1709	1845	1526	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					3				151			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	377	391	0	0	602	28	293	66	136	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	419	434	0	0	669	31	326	73	151	0	0	0
Lane Group Flow (vph)	419	434	0	0	700	0	326	73	151	0	0	0
Turn Type	Prot						Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Detector Phases	7	4			8		2	2	2			
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5		20.5	20.5	20.5			
Total Split (s)	24.5	59.5	0.0	0.0	35.0	0.0	20.5	20.5	20.5	0.0	0.0	0.0
Total Split (%)	30.6%	74.4%	0.0%	0.0%	43.8%	0.0%	25.6%	25.6%	25.6%	0.0%	0.0%	0.0%
Maximum Green (s)	20.5	55.0			30.5		16.0	16.0	16.0			
Yellow Time (s)	3.0	3.5			3.5		3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Lead/Lag	Lag				Lead							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			None		Min	Min	Min			
Walk Time (s)		5.0			5.0		5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0		11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	20.5	55.5			31.0		16.5	16.5	16.5			
Actuated g/C Ratio	0.26	0.69			0.39		0.21	0.21	0.21			
v/c Ratio	0.93	0.34			0.98		0.93	0.19	0.35			
Control Delay	49.5	1.5			46.4		66.2	27.9	7.5			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	49.5	1.5		46.4		66.2	27.9	7.5				
LOS	D	A		D		E	C	A				
Approach Delay		25.1		46.4			45.0					
Approach LOS		C		D			D					
Queue Length 50th (ft)	233	23		348		161	30	0				
Queue Length 95th (ft)	m#357	m27		#550		#313	65	46				
Internal Link Dist (ft)		420		598			493				693	
Turn Bay Length (ft)	410											
Base Capacity (vph)	449	1280		711		352	381	435				
Starvation Cap Reductn	0	0		0		0	0	0				
Spillback Cap Reductn	0	0		0		0	0	0				
Storage Cap Reductn	0	0		0		0	0	0				
Reduced v/c Ratio	0.93	0.34		0.98		0.93	0.19	0.35				

Intersection Summary
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 19 (24%), Referenced to phase 4:EBT and 7:EBL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 80.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps



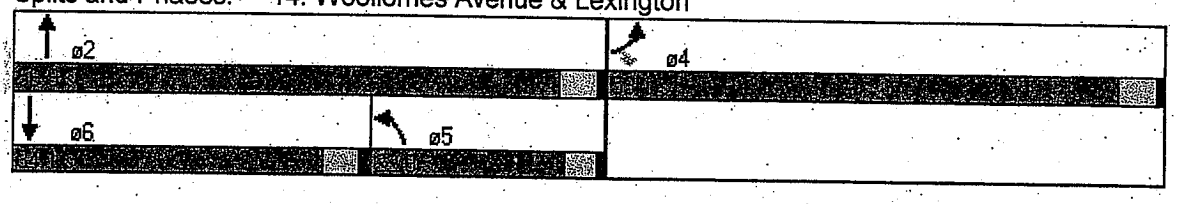


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98	0.97	0.99		0.95	
Frt		0.850			0.860	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1568	1752	3505	2863	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1716	1517	1728	3505	2863	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		119			598	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	678			443	1703	
Travel Time (s)	15.4			10.1	38.7	
Volume (vph)	418	107	89	42	38	538
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	464	119	99	47	42	598
Lane Group Flow (vph)	464	119	99	47	640	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phases	4	4	5	2	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	
Total Split (s)	53.1	53.1	22.8	56.9	34.1	0.0
Total Split (%)	48.3%	48.3%	20.7%	51.7%	31.0%	0.0%
Maximum Green (s)	48.6	48.6	18.8	52.4	29.6	
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	78.9	78.9	11.2	23.1	9.9	
Actuated g/C Ratio	0.72	0.72	0.10	0.21	0.09	
v/c Ratio	0.37	0.11	0.55	0.06	0.88dr	
Control Delay	8.4	2.6	58.0	29.9	13.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.4	2.6	58.0	29.9	13.6	
LOS	A	A	E	C	B	

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Approach Delay	7.2				49.0	18.6	
Approach LOS	A				D	B	
Queue Length 50th (ft)	121	6	68		13	14	
Queue Length 95th (ft)	307	33	118		25	66	
Internal Link Dist (ft)	598				363	1623	
Turn Bay Length (ft)							
Base Capacity (vph)	1257	1122	299		1686	1218	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	17	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.37	0.11	0.33		0.03	0.53	

Intersection Summary
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 54 (49%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 14.6 Intersection LOS: B
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 14: Woollomes Avenue & Lexington

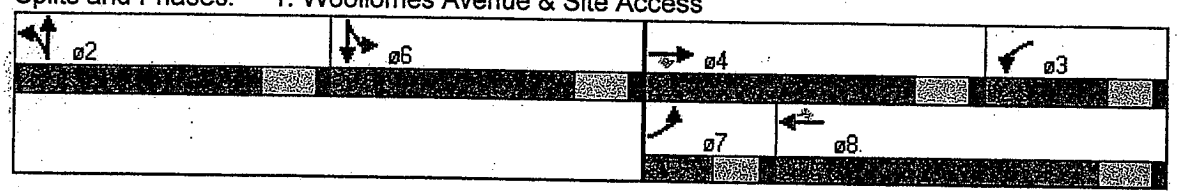


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97				0.99	0.97	
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	5036	1568	3400	5036	1568	3400	1568	0	1752	1528	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3380	5036	1568	3400	5036	1528	3400	1568	0	1735	1528	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			34		507			361	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	85	879	101	276	894	31	114	0	210	78	0	62
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	94	977	112	307	993	34	127	0	233	87	0	69
Lane Group Flow (vph)	94	977	112	307	993	34	127	233	0	87	69	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	8.5	22.0	22.0	12.0	25.5	25.5	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	11.3%	29.3%	29.3%	16.0%	34.0%	34.0%	27.3%	27.3%	0.0%	27.3%	27.3%	0.0%
Maximum Green (s)	4.5	17.5	17.5	8.0	21.0	21.0	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	4.5	16.6	16.6	8.0	22.2	22.2	8.2	8.2		8.7	8.7	
Actuated g/C Ratio	0.08	0.29	0.29	0.14	0.38	0.38	0.14	0.14		0.15	0.15	
v/c Ratio	0.36	0.67	0.21	0.65	0.51	0.06	0.26	0.35		0.33	0.13	
Control Delay	31.5	21.4	5.5	33.0	16.2	6.3	24.5	1.5		26.4	0.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	31.5	21.4	5.5	33.0	16.2	6.3	24.5	1.5		26.4	0.5	
LOS	C	C	A	C	B	A	C	A		C	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		20.7			19.8			9.6			14.9	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	16	107	0	54	98	0	21	0		28	0	
Queue Length 95th (ft)	39	169	32	#114	158	17	44	0		66	0	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	258	1541	557	475	1947	612	854	773		443	656	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.36	0.63	0.20	0.65	0.51	0.06	0.15	0.30		0.20	0.11	

Intersection Summary
Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 57.8
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 18.7 Intersection LOS: B
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Woollomes Avenue & Site Access

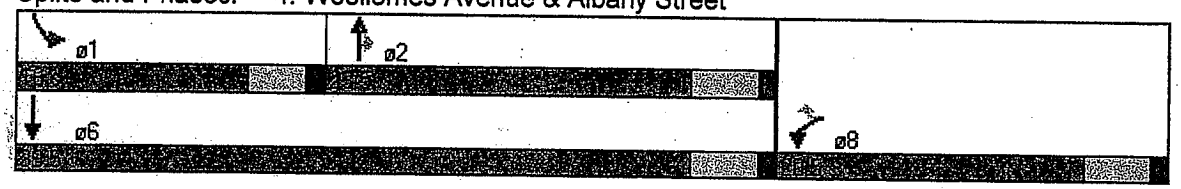


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor	0.99	0.96		0.98	0.99	
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1752	1568	1845	1568	3400	1845
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1733	1508	1845	1532	3376	1845
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		313		120		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	2638		448			2647
Travel Time (s)	60.0		10.2			60.2
Volume (vph)	143	282	315	108	373	252
Confl. Peds. (#/hr)	10	10		10	10	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	159	313	350	120	414	280
Lane Group Flow (vph)	159	313	350	120	414	280
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	20.5	20.5	8.5	20.5
Total Split (s)	20.5	20.5	23.5	23.5	16.0	39.5
Total Split (%)	34.2%	34.2%	39.2%	39.2%	26.7%	65.8%
Maximum Green (s)	16.0	16.0	19.0	19.0	12.0	35.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	None	Min
Walk Time (s)	5.0	5.0	5.0	5.0		5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effct Green (s)	10.2	10.2	13.9	13.9	10.2	28.2
Actuated g/C Ratio	0.22	0.22	0.30	0.30	0.22	0.60
v/c Ratio	0.42	0.55	0.64	0.22	0.56	0.25
Control Delay	20.8	6.8	21.1	4.7	21.2	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	6.8	21.1	4.7	21.2	5.4
LOS	C	A	C	A	C	A

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach Delay	11.5		16.9			14.8
Approach LOS	B		B			B
Queue Length 50th (ft)	38	0	81	0	51	28
Queue Length 95th (ft)	90	51	176	29	109	73
Internal Link Dist (ft)	2558		368			2567
Turn Bay Length (ft)						
Base Capacity (vph)	555	692	698	654	861	1219
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.45	0.50	0.18	0.48	0.28

Intersection Summary
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 46.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 14.5 Intersection LOS: B
Intersection Capacity Utilization 46.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 4: Woollomes Avenue & Albany Street



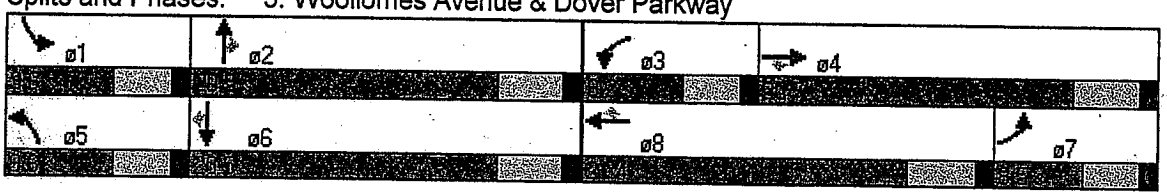
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	5036	1568	3400	5036	1568	3400	3505	1568	3400	3505	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3400	5036	1568	3400	5036	1568	3400	3505	1568	3400	3505	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			153			201			312			42
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	71	446	138	213	684	181	180	231	351	232	217	38
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	79	496	153	237	760	201	200	257	390	258	241	42
Lane Group Flow (vph)	79	496	153	237	760	201	200	257	390	258	241	42
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phases	7	4	4	3	8	8	5	2	2	1	6	6
Minimum Initial (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
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	20.5
Total Split (s)	8.5	20.7	20.7	9.2	21.4	21.4	9.6	20.5	20.5	9.6	20.5	20.5
Total Split (%)	14.2%	34.5%	34.5%	15.3%	35.7%	35.7%	16.0%	34.2%	34.2%	16.0%	34.2%	34.2%
Maximum Green (s)	4.5	16.2	16.2	5.2	16.9	16.9	5.6	16.0	16.0	5.6	16.0	16.0
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	4.5	12.6	12.6	5.3	17.4	17.4	5.7	10.8	10.8	5.7	13.2	13.2
Actuated g/C Ratio	0.08	0.25	0.25	0.10	0.34	0.34	0.11	0.21	0.21	0.11	0.26	0.26
v/c Ratio	0.28	0.40	0.30	0.67	0.44	0.30	0.55	0.34	0.67	0.67	0.27	0.10
Control Delay	27.4	17.1	5.5	36.3	15.5	4.5	30.4	18.7	11.4	35.5	17.7	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	17.1	5.5	36.3	15.5	4.5	30.4	18.7	11.4	35.5	17.7	7.1
LOS	C	B	A	D	B	A	C	B	B	D	B	A
Approach Delay		15.8			17.7			18.1			25.4	
Approach LOS		B			B			B			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	11	43	0	36	69	0	30	35	20	39	33	0
Queue Length 95th (ft)	32	77	36	#97	116	40	#73	64	89	#103	61	19
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	284	1547	588	356	1763	679	366	1084	682	383	1087	515
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.32	0.26	0.67	0.43	0.30	0.55	0.25	0.57	0.67	0.22	0.08

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 50.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 18.6 Intersection LOS: B
Intersection Capacity Utilization 47.0% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woollomes Avenue & Dover Parkway

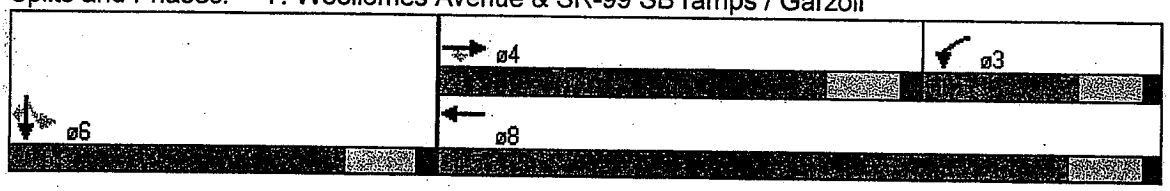


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰	↑	↱↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	113		0	0		0	0		0
Storage Lanes	0		2	2		0	0		0	1		2
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)		50	50	50	50					50	50	50
Trailing Detector (ft)		0	0	0	0					0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor			0.96	1.00								
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	5036	2760	3400	5036	0	0	0	0	1752	1845	2760
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	5036	2658	3385	5036	0	0	0	0	1752	1845	2760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			457									244
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	876	411	200	781	0	0	0	0	84	1	473
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	973	457	222	868	0	0	0	0	93	1	526
Lane Group Flow (vph)	0	973	457	222	868	0	0	0	0	93	1	526
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Detector Phases		4	4	3	8					6	6	6
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	23.0	23.0	11.5	34.5	0.0	0.0	0.0	0.0	20.5	20.5	20.5
Total Split (%)	0.0%	41.8%	41.8%	20.9%	62.7%	0.0%	0.0%	0.0%	0.0%	37.3%	37.3%	37.3%
Maximum Green (s)		18.5	18.5	7.5	30.0					16.0	16.0	16.0
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	Min
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0					0	0	0
Act Effct Green (s)		23.6	23.6	7.5	35.1					11.9	11.9	11.9
Actuated g/C Ratio		0.43	0.43	0.14	0.64					0.22	0.22	0.22
v/c Ratio		0.45	0.33	0.48	0.27					0.24	0.00	0.67
Control Delay		12.8	2.3	16.9	0.5					17.9	14.0	14.1
Queue Delay		0.0	0.0	0.0	0.0					0.0	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	12.8	2.3	16.9	0.5						17.9	14.0	14.1
LOS	B	A	B	A						B	B	B
Approach Delay	9.4			3.8							14.7	
Approach LOS	A			A							B	
Queue Length 50th (ft)	79	0	39	0						25	0	46
Queue Length 95th (ft)	127	27	52	0						51	3	80
Internal Link Dist (ft)	750			420			412				569	
Turn Bay Length (ft)			113									
Base Capacity (vph)	2159	1400	464	3212						526	554	999
Starvation Cap Reductn	0	0	0	0						0	0	0
Spillback Cap Reductn	0	0	0	0						0	0	0
Storage Cap Reductn	0	0	0	0						0	0	0
Reduced v/c Ratio	0.45	0.33	0.48	0.27						0.18	0.00	0.53

Intersection Summary
Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 44.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

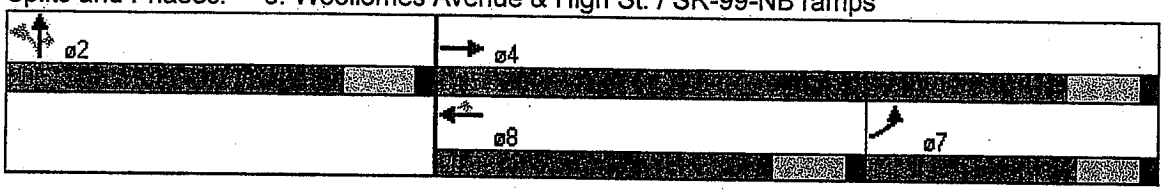


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	2		0	0		1	2		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50	50	50			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.98	0.99		0.98			
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3400	5036	0	0	5036	1568	3400	3505	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3377	5036	0	0	5036	1533	3365	3505	1533	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						20			222			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	404	325	0	0	608	18	367	100	200	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	449	361	0	0	676	20	408	111	222	0	0	0
Lane Group Flow (vph)	449	361	0	0	676	20	408	111	222	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Detector Phases	7	4			8	8	2	2	2			
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5	20.5	20.5	20.5	20.5			
Total Split (s)	14.0	34.5	0.0	0.0	20.5	20.5	20.5	20.5	20.5	0.0	0.0	0.0
Total Split (%)	25.5%	62.7%	0.0%	0.0%	37.3%	37.3%	37.3%	37.3%	37.3%	0.0%	0.0%	0.0%
Maximum Green (s)	10.0	30.0			16.0	16.0	16.0	16.0	16.0			
Yellow Time (s)	3.0	3.5			3.5	3.5	3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			None	None	Min	Min	Min			
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0	0	0	0	0			
Act Effct Green (s)	17.1	34.2			13.1	13.1	12.8	12.8	12.8			
Actuated g/C Ratio	0.31	0.62			0.24	0.24	0.23	0.23	0.23			
v/c Ratio	0.42	0.12			0.56	0.05	0.52	0.14	0.42			
Control Delay	11.2	0.8			16.8	5.8	20.4	15.9	5.5			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	11.2	0.8			16.8	5.8	20.4	15.9	5.5			
LOS	B	A			B	A	C	B	A			
Approach Delay		6.5			16.5			15.2				
Approach LOS		A			B			B				
Queue Length 50th (ft)	71	3			53	0	60	15	0			
Queue Length 95th (ft)	120	5			73	m2	86	28	39			
Internal Link Dist (ft)		420			598			493			693	
Turn Bay Length (ft)	410											
Base Capacity (vph)	1057	3135			1511	474	1010	1052	615			
Starvation Cap Reductn	0	0			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.42	0.12			0.45	0.04	0.40	0.11	0.36			

Intersection Summary
Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 16 (29%), Referenced to phase 4:EBT and 7:EBL, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 12.5 Intersection LOS: B
Intersection Capacity Utilization 44.2% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↰	↱		↰	↱
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	60	18	114	80	133	47	148	37	52	180	19
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	67	20	127	89	148	52	164	41	58	200	21

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	120	363	52	206	58	221
Volume Left (vph)	33	127	52	0	58	0
Volume Right (vph)	20	148	0	41	0	21
Hadj (s)	0.01	-0.12	0.55	-0.09	0.55	-0.02
Departure Headway (s)	6.2	5.5	7.0	6.4	7.0	6.4
Degree Utilization, x	0.21	0.56	0.10	0.36	0.11	0.39
Capacity (veh/h)	515	613	478	527	481	527
Control Delay (s)	10.8	15.4	9.6	11.7	9.6	12.2
Approach Delay (s)	10.8	15.4	11.3		11.7	
Approach LOS	B	C	B		B	

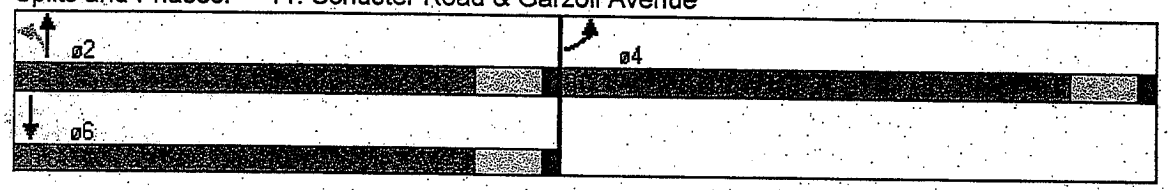
Intersection Summary			
Delay	12.8		
HCM Level of Service	B		
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50		50	50	50	
Trailing Detector (ft)	0		0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.99		0.99	
Frt	0.952				0.959	
Flt Protected	0.969		0.950			
Satd. Flow (prot)	1688	0	1752	1845	1749	0
Flt Permitted	0.969		0.477			
Satd. Flow (perm)	1667	0	871	1845	1749	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	61				44	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	4415			5245	4717	
Travel Time (s)	100.3			119.2	107.2	
Volume (vph)	203	113	54	324	205	88
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	226	126	60	360	228	98
Lane Group Flow (vph)	352	0	60	360	326	0
Turn Type			Perm			
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phases	4		2	2	6	
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.5		20.5	20.5	20.5	
Total Split (s)	31.2	0.0	28.8	28.8	28.8	0.0
Total Split (%)	52.0%	0.0%	48.0%	48.0%	48.0%	0.0%
Maximum Green (s)	26.7		24.3	24.3	24.3	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		Min	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	11.8		14.6	14.6	14.6	
Actuated g/C Ratio	0.34		0.42	0.42	0.42	
v/c Ratio	0.57		0.16	0.47	0.43	
Control Delay	11.6		9.0	10.6	9.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	11.6		9.0	10.6	9.1	
LOS	B		A	B	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	11.6		10.4	9.1		
Approach LOS	B		B	A		
Queue Length 50th (ft)	33		6	40	30	
Queue Length 95th (ft)	114		28	124	102	
Internal Link Dist (ft)	4335			5165	4637	
Turn Bay Length (ft)						
Base Capacity (vph)	954		486	1029	995	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.37		0.12	0.35	0.33	

Intersection Summary
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 34.8
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 10.4 Intersection LOS: B
Intersection Capacity Utilization 48.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 11: Schuster Road & Garzoli Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	139	2	7	163	70	5	37	2	228	31	44
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	154	2	8	181	78	6	41	2	253	34	49

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	190	267	49	337
Volume Left (vph)	33	8	6	253
Volume Right (vph)	2	78	2	49
Hadj (s)	0.08	-0.12	0.05	0.11
Departure Headway (s)	5.5	5.2	5.8	5.3
Degree Utilization, x	0.29	0.38	0.08	0.50
Capacity (veh/h)	604	647	533	636
Control Delay (s)	10.7	11.4	9.3	13.5
Approach Delay (s)	10.7	11.4	9.3	13.5
Approach LOS	B	B	A	B

Intersection Summary			
Delay	12.0		
HCM Level of Service	B		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

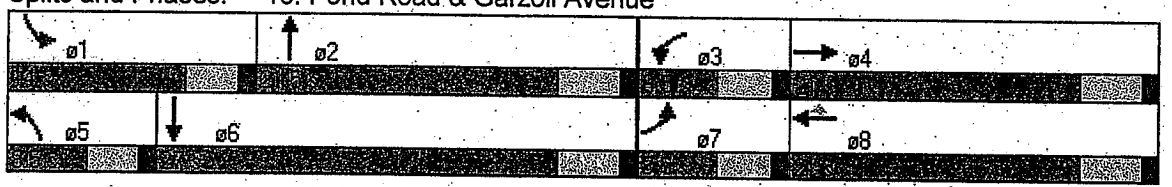
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99		0.98	0.98	0.99		0.99	0.99	
Frt		0.999				0.850		0.950			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1842	0	1752	1845	1568	1752	1739	0	3400	1734	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1736	1842	0	1732	1845	1530	1725	1739	0	3369	1734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						233		38			40	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4690			520			682			5245	
Travel Time (s)		106.6			11.8			15.5			119.2	
Volume (vph)	45	343	2	11	189	210	9	123	61	394	115	54
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	50	381	2	12	210	233	10	137	68	438	128	60
Lane Group Flow (vph)	50	383	0	12	210	233	10	205	0	438	188	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Detector Phases	7	4		3	8	8	5	2		1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	8.5	20.5		8.5	20.5	
Total Split (s)	8.5	21.0	0.0	8.5	21.0	21.0	8.5	21.5	0.0	14.0	27.0	0.0
Total Split (%)	13.1%	32.3%	0.0%	13.1%	32.3%	32.3%	13.1%	33.1%	0.0%	21.5%	41.5%	0.0%
Maximum Green (s)	4.5	16.5		4.5	16.5	16.5	4.5	17.0		10.0	22.5	
Yellow Time (s)	3.0	3.5		3.0	3.5	3.5	3.0	3.5		3.0	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)		5.0			5.0	5.0		5.0			5.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	4.6	16.3		4.6	13.1	13.1	4.6	10.8		9.9	23.5	
Actuated g/C Ratio	0.08	0.32		0.08	0.26	0.26	0.08	0.21		0.19	0.46	
v/c Ratio	0.34	0.65		0.09	0.44	0.41	0.07	0.52		0.66	0.23	
Control Delay	32.9	23.5		29.6	21.4	5.7	29.3	20.6		28.2	9.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	32.9	23.5		29.6	21.4	5.7	29.3	20.6		28.2	9.7	
LOS	C	C		C	C	A	C	C		C	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		24.6			13.6			21.0			22.7	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	15	91		4	58	0	3	46		66	25	
Queue Length 95th (ft)	#50	#268		19	124	46	17	107		#156	84	
Internal Link Dist (ft)		4610			440			602			5165	
Turn Bay Length (ft)												
Base Capacity (vph)	148	659		140	587	646	140	566		690	849	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.34	0.58		0.09	0.36	0.36	0.07	0.36		0.63	0.22	

Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 50.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 57.4% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: Pond Road & Garzoli Avenue

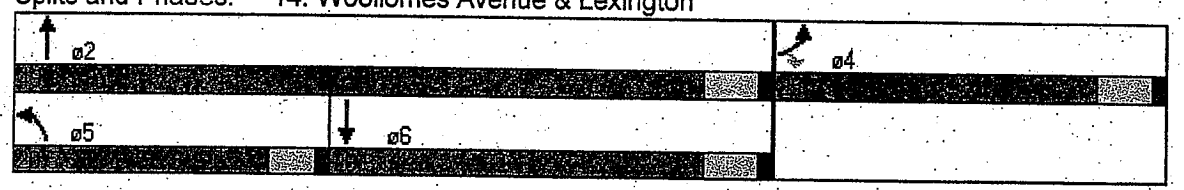


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98	0.97	0.99		0.98	
Frt		0.850			0.869	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3400	1568	1752	3505	2977	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3320	1528	1742	3505	2977	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		114			519	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	678			443	1703	
Travel Time (s)	15.4			10.1	38.7	
Volume (vph)	368	103	81	21	67	467
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	409	114	90	23	74	519
Lane Group Flow (vph)	409	114	90	23	593	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phases	4	4	5	2	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	
Total Split (s)	25.7	25.7	20.5	49.3	28.8	0.0
Total Split (%)	34.3%	34.3%	27.3%	65.7%	38.4%	0.0%
Maximum Green (s)	21.2	21.2	16.5	44.8	24.3	
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	46.7	46.7	9.0	20.3	9.2	
Actuated g/C Ratio	0.62	0.62	0.12	0.27	0.12	
v/c Ratio	0.19	0.11	0.43	0.02	0.72	
Control Delay	12.2	7.1	36.1	15.6	10.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.2	7.1	36.1	15.6	10.5	
LOS	B	A	D	B	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	11.1			32.0	10.5	
Approach LOS	B			C	B	
Queue Length 50th (ft)	43	1	40	4	16	
Queue Length 95th (ft)	109	33	78	10	57	
Internal Link Dist (ft)	598			363	1623	
Turn Bay Length (ft)						
Base Capacity (vph)	2119	995	385	2117	1332	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.11	0.23	0.01	0.45	

Intersection Summary
Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 64 (85%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 12.7 Intersection LOS: B
Intersection Capacity Utilization 45.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 14: Woollomes Avenue & Lexington

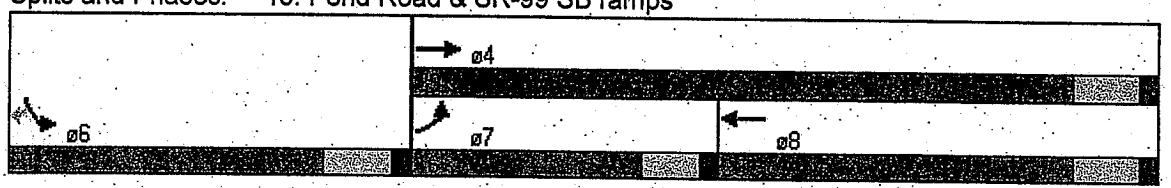


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		1.00		0.99	0.98
Frt			0.982			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3400	1845	1806	0	1752	1568
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3360	1845	1806	0	1733	1532
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			14			120
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30	30		30	
Link Distance (ft)		520	626		310	
Travel Time (s)		11.8	14.2		7.0	
Volume (vph)	355	397	268	41	54	108
Confl. Peds. (#/hr)	10			10	10	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	394	441	298	46	60	120
Lane Group Flow (vph)	394	441	344	0	60	120
Turn Type	Prot					Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Detector Phases	7	4	8		6	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	8.5	20.5	20.5		20.5	20.5
Total Split (s)	16.0	39.0	23.0	0.0	21.0	21.0
Total Split (%)	26.7%	65.0%	38.3%	0.0%	35.0%	35.0%
Maximum Green (s)	12.0	34.5	18.5		16.5	16.5
Yellow Time (s)	3.0	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		Min	Min
Walk Time (s)		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	9.8	27.1	13.2		7.6	7.6
Actuated g/C Ratio	0.23	0.63	0.31		0.18	0.18
v/c Ratio	0.51	0.38	0.61		0.19	0.32
Control Delay	18.1	4.9	17.8		18.9	7.5
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	18.1	4.9	17.8		18.9	7.5
LOS	B	A	B		B	A

Lane Groups	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		11.1	17.8		11.3	
Approach LOS		B	B		B	
Queue Length 50th (ft)	42	38	66		13	0
Queue Length 95th (ft)	90	86	144		42	34
Internal Link Dist (ft)		440	546		230	
Turn Bay Length (ft)						
Base Capacity (vph)	918	1276	719		577	585
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.43	0.35	0.48		0.10	0.21

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 43	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 12.8	Intersection LOS: B
Intersection Capacity Utilization 43.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 15: Pond Road & SR-99 SB ramps



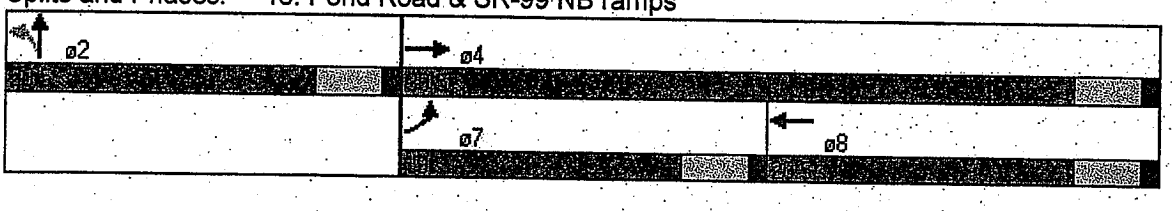
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50				
Trailing Detector (ft)	0	0			0		0	0				
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				1.00		0.98	0.96				
Frt					0.983			0.852				
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1752	1845	0	0	1805	0	3400	1512	0	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1727	1845	0	0	1805	0	3336	1512	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					12			131				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		626			723			329			289	
Travel Time (s)		14.2			16.4			7.5			6.6	
Volume (vph)	250	225	0	0	144	21	171	2	118	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	278	250	0	0	160	23	190	2	131	0	0	0
Lane Group Flow (vph)	278	250	0	0	183	0	190	133	0	0	0	0
Turn Type	Prot						Perm					
Protected Phases	7	4			8			2				
Permitted Phases							2					
Detector Phases	7	4			8		2	2				
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0				
Minimum Split (s)	8.5	20.5			20.5		20.5	20.5				
Total Split (s)	19.0	39.5	0.0	0.0	20.5	0.0	20.5	20.5	0.0	0.0	0.0	0.0
Total Split (%)	31.7%	65.8%	0.0%	0.0%	34.2%	0.0%	34.2%	34.2%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	14.5	35.0			16.0		16.0	16.0				
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	None	None			None		Min	Min				
Walk Time (s)		5.0			5.0		5.0	5.0				
Flash Dont Walk (s)		11.0			11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0			0		0	0				
Act Effct Green (s)	11.6	22.8			9.8		14.5	14.5				
Actuated g/C Ratio	0.27	0.54			0.23		0.36	0.36				
v/c Ratio	0.58	0.25			0.43		0.16	0.21				
Control Delay	19.4	4.6			17.2		16.2	5.6				
Queue Delay	0.0	0.0			0.0		0.0	0.0				
Total Delay	19.4	4.6			17.2		16.2	5.6				
LOS	B	A			B		B	A				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		12.4			17.2			11.8				
Approach LOS		B			B			B				
Queue Length 50th (ft)	55	21			35		20	0				
Queue Length 95th (ft)	135	49			86		48	35				
Internal Link Dist (ft)		546			643			249			209	
Turn Bay Length (ft)												
Base Capacity (vph)	581	1215			625		1511	757				
Starvation Cap Reductn	0	0			0		0	0				
Spillback Cap Reductn	0	0			0		0	0				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.48	0.21			0.29		0.13	0.18				

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 40.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 43.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 16: Pond Road & SR-99 NB ramps



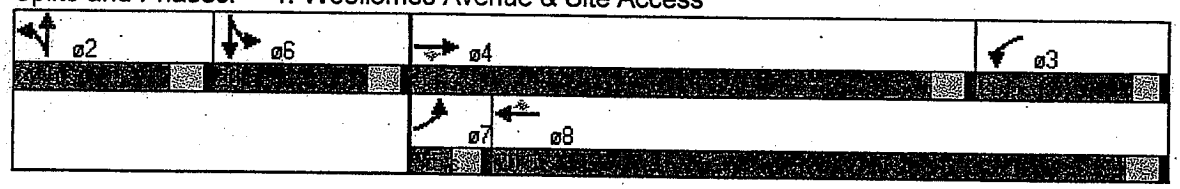
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.97				0.99	0.97	
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	5036	1568	3400	5036	1568	3400	1568	0	1752	1515	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3396	5036	1568	3400	5036	1515	3400	1568	0	1728	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			93			57		328			93	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	65	2186	122	435	2286	64	183	0	318	59	0	48
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	2376	133	473	2485	70	199	0	346	64	0	52
Lane Group Flow (vph)	71	2376	133	473	2485	70	199	346	0	64	52	0
Turn Type	Prot		Perm	Prot		Perm	Split			Split		
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	4	3	8	8	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	8.5	58.7	58.7	20.3	70.5	70.5	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	7.1%	48.9%	48.9%	16.9%	58.8%	58.8%	17.1%	17.1%	0.0%	17.1%	17.1%	0.0%
Maximum Green (s)	4.5	54.2	54.2	16.3	66.0	66.0	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	4.5	54.9	54.9	16.3	68.5	68.5	12.4	12.4		9.8	9.8	
Actuated g/C Ratio	0.04	0.50	0.50	0.15	0.63	0.63	0.11	0.11		0.09	0.09	
v/c Ratio	0.51	0.94	0.16	0.93	0.79	0.07	0.52	0.74		0.41	0.24	
Control Delay	66.7	35.6	6.5	73.4	19.0	4.0	50.9	16.7		55.5	4.3	
Queue Delay	0.0	16.8	0.0	0.0	0.1	0.0	0.0	0.0		0.0	0.0	
Total Delay	66.7	52.4	6.5	73.4	19.1	4.0	50.9	16.7		55.5	4.3	
LOS	E	D	A	E	B	A	D	B		E	A	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		50.4			27.2			29.2			32.6	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	25	553	14	170	456	3	68	12		43	0	
Queue Length 95th (ft)	#55	#787	52	#298	636	24	109	108		90	9	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	138	2523	832	508	3151	970	495	509		249	295	
Starvation Cap Reductn	0	221	0	0	48	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.51	1.03	0.16	0.93	0.80	0.07	0.40	0.68		0.26	0.18	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 109.5
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 37.0 Intersection LOS: D
Intersection Capacity Utilization 91.0% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Woollomes Avenue & Site Access

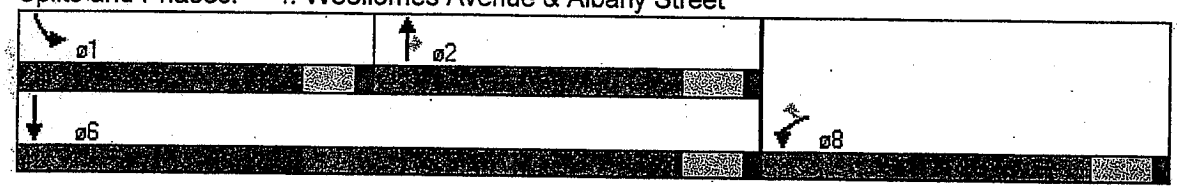


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor	0.99	0.96		0.98	0.99	
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1752	1568	1845	1568	3400	1845
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1731	1505	1845	1530	3374	1845
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		626		244		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	2638		448			2647
Travel Time (s)	60.0		10.2			60.2
Volume (vph)	383	669	304	220	650	310
Confl. Peds. (#/hr)	10	10		10	10	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	426	743	338	244	722	344
Lane Group Flow (vph)	426	743	338	244	722	344
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	20.5	20.5	8.5	20.5
Total Split (s)	23.0	23.0	22.0	22.0	20.0	42.0
Total Split (%)	35.4%	35.4%	33.8%	33.8%	30.8%	64.6%
Maximum Green (s)	18.5	18.5	17.5	17.5	16.0	37.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	None	Min
Walk Time (s)	5.0	5.0	5.0	5.0		5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effct Green (s)	17.7	17.7	15.1	15.1	15.1	34.3
Actuated g/C Ratio	0.29	0.29	0.25	0.25	0.25	0.57
v/c Ratio	0.82	0.84	0.73	0.43	0.84	0.33
Control Delay	36.7	14.9	31.4	5.7	33.7	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	14.9	31.4	5.7	33.7	8.0
LOS	D	B	C	A	C	A

Lane Group	WBL	WBR	NBL	NBT	SBL	SBT
Approach Delay	22.9		20.6		25.4	
Approach LOS	C		C		C	
Queue Length 50th (ft)	153	35	118	0	138	62
Queue Length 95th (ft)	#301	#250	199	47	#230	104
Internal Link Dist (ft)	2558		368		2567	
Turn Bay Length (ft)						
Base Capacity (vph)	546	900	531	614	900	1101
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.83	0.64	0.40	0.80	0.31

Intersection Summary
Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 60.2
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 23.4 Intersection LOS: C
Intersection Capacity Utilization 65.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Woollomes Avenue & Albany Street

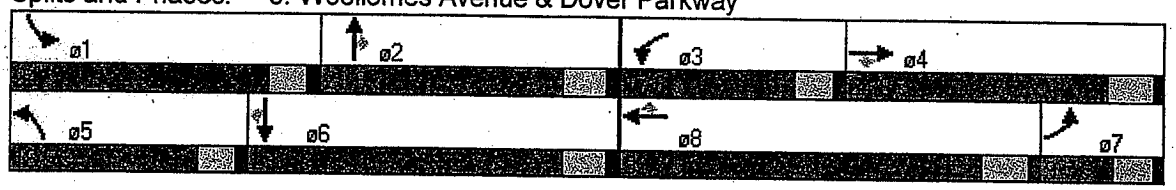


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	5036	1568	3400	5036	1568	3400	3505	1568	3400	3505	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3400	5036	1568	3400	5036	1568	3400	3505	1568	3400	3505	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			332			462			331			155
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	160	1031	305	450	1312	449	298	451	559	677	572	146
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1121	332	489	1426	488	324	490	608	736	622	159
Lane Group Flow (vph)	174	1121	332	489	1426	488	324	490	608	736	622	159
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phases	7	4	4	3	8	8	5	2	2	1	6	6
Minimum Initial (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
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	20.5
Total Split (s)	9.7	24.8	24.8	17.6	32.7	32.7	18.5	23.6	23.6	24.0	29.1	29.1
Total Split (%)	10.8%	27.6%	27.6%	19.6%	36.3%	36.3%	20.6%	26.2%	26.2%	26.7%	32.3%	32.3%
Maximum Green (s)	5.7	20.3	20.3	13.6	28.2	28.2	14.5	19.1	19.1	20.0	24.6	24.6
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.5	3.0	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	5.7	20.8	20.8	13.6	28.7	28.7	12.9	19.6	19.6	20.0	26.7	26.7
Actuated g/C Ratio	0.06	0.23	0.23	0.15	0.32	0.32	0.14	0.22	0.22	0.22	0.30	0.30
v/c Ratio	0.81	0.96	0.54	0.95	0.89	0.60	0.67	0.64	1.01	0.97	0.60	0.28
Control Delay	70.1	54.1	7.0	68.7	37.4	6.5	43.4	36.5	58.1	63.0	30.3	6.1
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	15.5	7.6	0.0	0.0
Total Delay	70.1	54.5	7.0	68.7	37.4	6.5	43.4	36.5	73.6	70.6	30.3	6.1
LOS	E	D	A	E	D	A	D	D	E	E	C	A
Approach Delay		46.5			37.5			53.9			47.3	
Approach LOS		D			D			D			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	51	231	0	143	280	10	90	134	188	215	160	2
Queue Length 95th (ft)	#106	#324	67	#240	#351	88	132	187	#415	#331	220	46
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	215	1164	618	514	1606	815	539	763	600	756	1040	574
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	4	0	0	0	0	0	0	27	26	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.97	0.54	0.95	0.89	0.60	0.60	0.64	1.06	1.01	0.60	0.28

Intersection Summary
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 45.1 Intersection LOS: D
Intersection Capacity Utilization 83.8% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Woollomes Avenue & Dover Parkway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰	↑	↱↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	113		0	0		0	0		0
Storage Lanes	0		2	2		0	0		0	1		2
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
Leading Detector (ft)		50	50	50	50					50	50	50
Trailing Detector (ft)		0	0	0	0					0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor			0.95	1.00								
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	5036	2760	3400	5036	0	0	0	0	1752	1845	2760
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	5036	2628	3394	5036	0	0	0	0	1752	1845	2760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			851									20
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	1839	783	296	1660	0	0	0	0	54	1	1000
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1999	851	322	1804	0	0	0	0	59	1	1087
Lane Group Flow (vph)	0	1999	851	322	1804	0	0	0	0	59	1	1087
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Detector Phases		4	4	3	8					6	6	6
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	40.0	40.0	13.0	53.0	0.0	0.0	0.0	0.0	37.0	37.0	37.0
Total Split (%)	0.0%	44.4%	44.4%	14.4%	58.9%	0.0%	0.0%	0.0%	0.0%	41.1%	41.1%	41.1%
Maximum Green (s)		35.5	35.5	9.0	48.5					32.5	32.5	32.5
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lag	Lag	Lead								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	Min
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0					0	0	0
Act Effct Green (s)		36.0	36.0	9.0	49.0					33.0	33.0	33.0
Actuated g/C Ratio		0.40	0.40	0.10	0.54					0.37	0.37	0.37
v/c Ratio		0.99	0.54	0.95	0.66					0.09	0.00	1.06
Control Delay		46.2	2.8	64.5	2.2					19.3	18.0	74.5
Queue Delay		5.4	0.0	0.0	0.5					0.0	0.0	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	51.6	2.8	64.5	2.7						19.3	18.0	74.9
LOS	D	A	E	A						B	B	E
Approach Delay	37.0			12.0						72.0		
Approach LOS	D			B						E		
Queue Length 50th (ft)	405	0	89	37						22	0	~386
Queue Length 95th (ft)	#530	38	m92	m39						48	4	#525
Internal Link Dist (ft)	750			420			412			569		
Turn Bay Length (ft)			113									
Base Capacity (vph)	2014	1562	340	2742						642	677	1025
Starvation Cap Reductn	0	0	0	435						0	0	0
Spillback Cap Reductn	43	0	0	23						19	0	1
Storage Cap Reductn	0	0	0	0						0	0	0
Reduced v/c Ratio	1.01	0.54	0.95	0.78						0.09	0.00	1.06

Intersection Summary

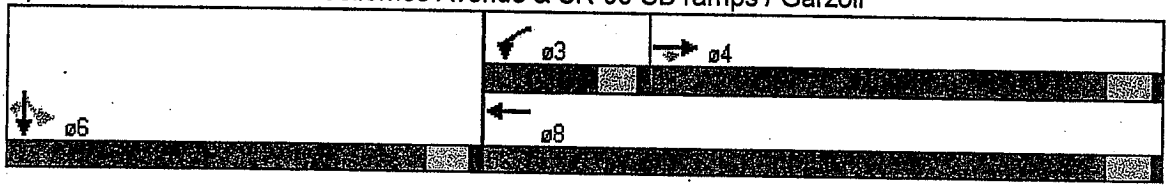
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 34.9 Intersection LOS: C
Intersection Capacity Utilization 85.6% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

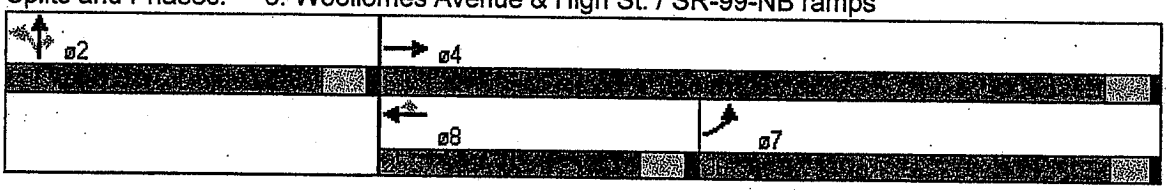


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	2		0	0		1	2		1	0		0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50	50	50	50	50			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97	0.98		0.97			
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3400	5036	0	0	5036	1568	3400	1845	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3380	5036	0	0	5036	1523	3342	1845	1523	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						88			203			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	1086	731	0	0	1061	81	844	136	210	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1180	795	0	0	1153	88	917	148	228	0	0	0
Lane Group Flow (vph)	1180	795	0	0	1153	88	917	148	228	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Detector Phases	7	4			8	8	2	2	2			
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5	20.5	20.5	20.5	20.5			
Total Split (s)	36.0	61.0	0.0	0.0	25.0	25.0	29.0	29.0	29.0	0.0	0.0	0.0
Total Split (%)	40.0%	67.8%	0.0%	0.0%	27.8%	27.8%	32.2%	32.2%	32.2%	0.0%	0.0%	0.0%
Maximum Green (s)	32.0	56.5			20.5	20.5	24.5	24.5	24.5			
Yellow Time (s)	3.0	3.5			3.5	3.5	3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Recall Mode	C-Max	C-Max			None	None	Min	Min	Min			
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0	0	0	0	0			
Act Effct Green (s)	32.0	57.0			21.0	21.0	25.0	25.0	25.0			
Actuated g/C Ratio	0.36	0.63			0.23	0.23	0.28	0.28	0.28			
v/c Ratio	0.98	0.25			0.98	0.21	0.99	0.29	0.40			
Control Delay	20.9	0.3			50.2	7.4	60.5	27.4	7.7			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	20.9	0.3		50.2	7.4		60.5	27.4	7.7			
LOS	C	A		D	A		E	C	A			
Approach Delay		12.6			47.2			47.4				
Approach LOS		B			D			D				
Queue Length 50th (ft)	343	1		211	0		267	66	10			
Queue Length 95th (ft)	m376	m2		#329	m12		#397	117	66			
Internal Link Dist (ft)		420			598			493			693	
Turn Bay Length (ft)	410											
Base Capacity (vph)	1209	3189		1175	423		928	513	570			
Starvation Cap Reductn	0	0		0	0		0	0	0			
Spillback Cap Reductn	0	0		0	0		0	0	0			
Storage Cap Reductn	0	0		0	0		0	0	0			
Reduced v/c Ratio	0.98	0.25		0.98	0.21		0.99	0.29	0.40			

Intersection Summary
Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 18 (20%), Referenced to phase 4:EBT and 7:EBL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 32.1 Intersection LOS: C
Intersection Capacity Utilization 85.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	44	105	50	70	61	116	30	240	126	144	226	37
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	117	56	78	68	129	33	267	140	160	251	41

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	221	274	33	407	160	292
Volume Left (vph)	49	78	33	0	160	0
Volume Right (vph)	56	129	0	140	0	41
Hadj (s)	-0.06	-0.17	0.55	-0.19	0.55	-0.05
Departure Headway (s)	7.5	7.2	7.9	7.2	8.0	7.3
Degree Utilization, x	0.46	0.55	0.07	0.81	0.35	0.60
Capacity (veh/h)	428	455	437	488	430	462
Control Delay (s)	16.6	18.4	10.3	32.6	14.1	19.4
Approach Delay (s)	16.6	18.4	30.9		17.5	
Approach LOS	C	C	D		C	

Intersection Summary				
Delay	21.8			
HCM Level of Service	C			
Intersection Capacity Utilization	60.0%	ICU Level of Service	B	
Analysis Period (min)	15			

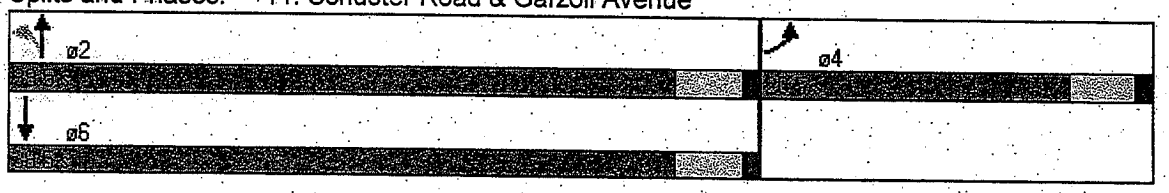
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50		50	50	50	
Trailing Detector (ft)	0		0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				0.99	
Frt	0.949				0.959	
Flt Protected	0.970		0.950			
Satd. Flow (prot)	1683	0	1752	1845	1748	0
Flt Permitted	0.970		0.174			
Satd. Flow (perm)	1664	0	321	1845	1748	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	51				64	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	4415			5245	4717	
Travel Time (s)	100.3			119.2	107.2	
Volume (vph)	150	92	147	468	531	230
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	102	163	520	590	256
Lane Group Flow (vph)	269	0	163	520	846	0
Turn Type			Perm			
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phases	4		2	2	6	
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.5		20.5	20.5	20.5	
Total Split (s)	20.5	0.0	39.5	39.5	39.5	0.0
Total Split (%)	34.2%	0.0%	65.8%	65.8%	65.8%	0.0%
Maximum Green (s)	16.0		35.0	35.0	35.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		Min	Min	Min	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	12.4		35.3	35.3	35.3	
Actuated g/C Ratio	0.22		0.63	0.63	0.63	
v/c Ratio	0.65		0.80	0.44	0.75	
Control Delay	23.1		44.7	7.4	13.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	23.1		44.7	7.4	13.3	
LOS	C		D	A	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	23.1			16.3	13.3	
Approach LOS	C			B	B	
Queue Length 50th (ft)	65		35	76	154	
Queue Length 95th (ft)	130		#154	155	#387	
Internal Link Dist (ft)	4335			5165	4637	
Turn Bay Length (ft)						
Base Capacity (vph)	503		204	1173	1135	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.53		0.80	0.44	0.75	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 55.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 74.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Schuster Road & Garzoli Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	72	208	2	6	122	288	4	52	2	162	46	50
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	80	231	2	7	136	320	4	58	2	180	51	56

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	313	462	64	287
Volume Left (vph)	80	7	4	180
Volume Right (vph)	2	320	2	56
Hadj (s)	0.10	-0.36	0.04	0.06
Departure Headway (s)	5.9	5.3	6.9	6.2
Degree Utilization, x	0.52	0.68	0.12	0.50
Capacity (veh/h)	569	655	424	530
Control Delay (s)	15.1	18.7	10.8	15.3
Approach Delay (s)	15.1	18.7	10.8	15.3
Approach LOS	C	C	B	C

Intersection Summary			
Delay	16.4		
HCM Level of Service	C		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

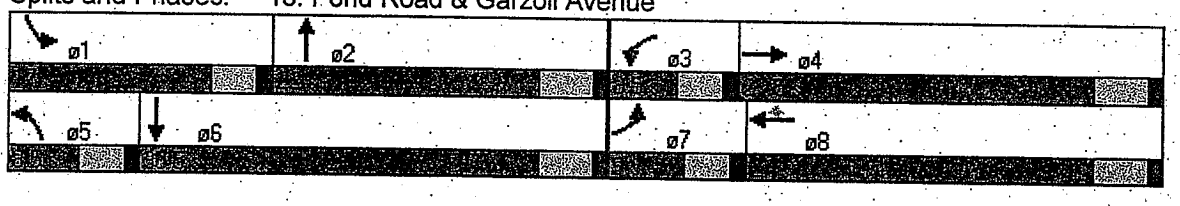
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99	1.00		0.99		0.97	0.99	1.00		0.99	0.99	
Frt		0.997				0.850		0.983			0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1838	0	1752	1845	1568	1752	1808	0	3400	1781	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1739	1838	0	1727	1845	1528	1727	1808	0	3369	1781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				462		8			16	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4690			520			682			5245	
Travel Time (s)		106.6			11.8			15.5			119.2	
Volume (vph)	64	295	5	20	386	594	11	253	33	449	245	54
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	71	328	6	22	429	660	12	281	37	499	272	60
Lane Group Flow (vph)	71	334	0	22	429	660	12	318	0	499	332	0
Turn Type	Prot			Prot		Perm	Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8						
Detector Phases	7	4		3	8	8	5	2		1	6	
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5		8.5	20.5	20.5	8.5	20.5		8.5	20.5	
Total Split (s)	9.0	27.5	0.0	8.5	27.0	27.0	8.5	22.0	0.0	17.0	30.5	0.0
Total Split (%)	12.0%	36.7%	0.0%	11.3%	36.0%	36.0%	11.3%	29.3%	0.0%	22.7%	40.7%	0.0%
Maximum Green (s)	5.0	23.0		4.5	22.5	22.5	4.5	17.5		13.0	26.0	
Yellow Time (s)	3.0	3.5		3.0	3.5	3.5	3.0	3.5		3.0	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)		5.0			5.0	5.0		5.0			5.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0			11.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	5.2	23.2		4.7	19.7	19.7	4.7	15.4		12.4	30.6	
Actuated g/C Ratio	0.08	0.35		0.07	0.29	0.29	0.06	0.23		0.19	0.46	
v/c Ratio	0.54	0.52		0.19	0.79	0.85	0.11	0.75		0.79	0.40	
Control Delay	51.2	22.2		38.6	35.1	20.0	37.5	37.8		39.5	15.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	51.2	22.2		38.6	35.1	20.0	37.5	37.8		39.5	15.8	
LOS	D	C		D	D	B	D	D		D	B	

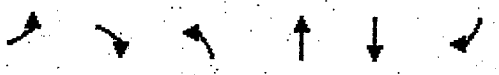
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		27.3			26.2			37.8			30.0	
Approach LOS		C			C			D			C	
Queue Length 50th (ft)	33	105		10	179	78	5	133		117	91	
Queue Length 95th (ft)	#90	210		32	#312	#293	21	#243		#195	190	
Internal Link Dist (ft)		4610			440			602			5165	
Turn Bay Length (ft)												
Base Capacity (vph)	132	709		114	620	820	112	490		684	844	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.54	0.47		0.19	0.69	0.80	0.11	0.65		0.73	0.39	

Intersection Summary

Area Type: Other
Cycle Length: 75
Actuated Cycle Length: 66.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 29.0 Intersection LOS: C
Intersection Capacity Utilization 66.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: Pond Road & Garzoli Avenue





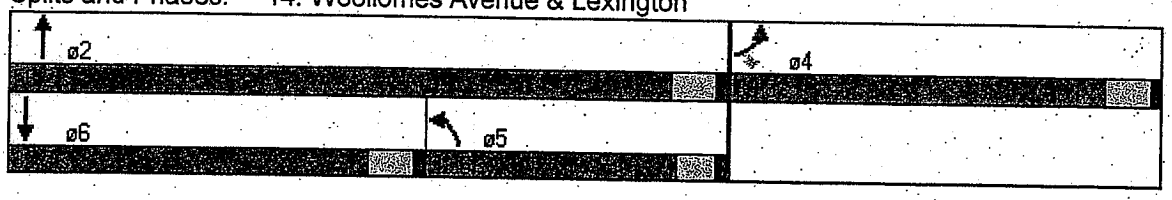
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.97	0.97	1.00		0.97	
Frt		0.850			0.866	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3400	1568	1752	3505	2958	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3304	1523	1745	3505	2958	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		220			777	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	678			443	1703	
Travel Time (s)	15.4			10.1	38.7	
Volume (vph)	648	198	179	126	92	779
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	720	220	199	140	102	866
Lane Group Flow (vph)	720	220	199	140	968	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phases	4	4	5	2	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	
Total Split (s)	33.8	33.8	23.5	56.2	32.7	0.0
Total Split (%)	37.6%	37.6%	26.1%	62.4%	36.3%	0.0%
Maximum Green (s)	29.3	29.3	19.5	51.7	28.2	
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	47.1	47.1	15.2	34.9	15.8	
Actuated g/C Ratio	0.52	0.52	0.17	0.39	0.18	
v/c Ratio	0.40	0.24	0.67	0.10	0.95dr	
Control Delay	7.7	1.0	45.9	15.2	13.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.7	1.0	45.9	15.2	13.7	
LOS	A	A	D	B	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SB
Approach Delay	6.1			33.2	13.7	
Approach LOS	A			C	B	
Queue Length 50th (ft)	40	1	107	26	51	
Queue Length 95th (ft)	131	3	165	30	106	
Internal Link Dist (ft)	598			363	1623	
Turn Bay Length (ft)						
Base Capacity (vph)	1778	901	387	2033	1472	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.40	0.24	0.51	0.07	0.66	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 24 (27%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 13.5 Intersection LOS: B
Intersection Capacity Utilization 67.1% ICU Level of Service C
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 14: Woollomes Avenue & Lexington

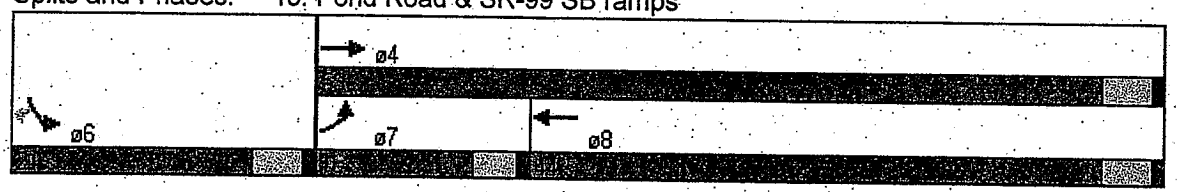


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50		50	50
Trailing Detector (ft)	0	0	0		0	0
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		1.00		0.98	0.97
Frt			0.982			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3400	1845	1805	0	1752	1568
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	3372	1845	1805	0	1726	1526
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			14			319
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30	30		30	
Link Distance (ft)		520	626		310	
Travel Time (s)		11.8	14.2		7.0	
Volume (vph)	340	371	631	100	13	287
Confl. Peds. (#/hr)	10			10	10	10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	378	412	701	111	14	319
Lane Group Flow (vph)	378	412	812	0	14	319
Turn Type	Prot					Perm
Protected Phases	7	4	8		6	
Permitted Phases						6
Detector Phases	7	4	8		6	6
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	8.5	20.5	20.5		20.5	20.5
Total Split (s)	15.0	59.0	44.0	0.0	21.0	21.0
Total Split (%)	18.8%	73.8%	55.0%	0.0%	26.3%	26.3%
Maximum Green (s)	11.0	54.5	39.5		16.5	16.5
Yellow Time (s)	3.0	3.5	3.5		3.5	3.5
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		Min	Min
Walk Time (s)		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	10.5	47.6	32.9		8.6	8.6
Actuated g/C Ratio	0.16	0.74	0.51		0.13	0.13
v/c Ratio	0.68	0.30	0.87		0.06	0.66
Control Delay	35.5	3.8	26.6		27.2	11.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	35.5	3.8	26.6		27.2	11.3
LOS	D	A	C		C	B

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Approach Delay		19.0	26.6		11.9	
Approach LOS		B	C		B	
Queue Length 50th (ft)	75	31	236		5	0
Queue Length 95th (ft)	#159	103	#574		20	65
Internal Link Dist (ft)		440	546		230	
Turn Bay Length (ft)						
Base Capacity (vph)	591	1417	1024		417	606
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.64	0.29	0.79		0.03	0.53

Intersection Summary
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 64.5
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 65.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 15: Pond Road & SR-99 SB ramps

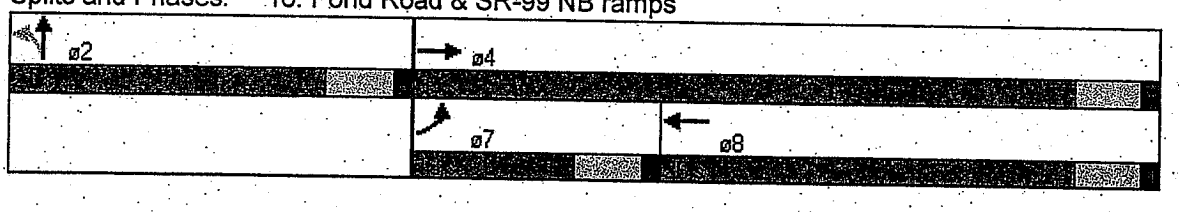


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50			50		50	50				
Trailing Detector (ft)	0	0			0		0	0				
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				0.99		0.98	0.97				
Frt					0.955			0.863				
Flt Protected	0.950						0.950					
Satd. Flow (prot)	1752	1845	0	0	1739	0	3400	1536	0	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	1737	1845	0	0	1739	0	3336	1536	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					47			31				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		626			723			329			289	
Travel Time (s)		14.2			16.4			7.5			6.6	
Volume (vph)	169	226	0	0	331	166	401	3	28	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	188	251	0	0	368	184	446	3	31	0	0	0
Lane Group Flow (vph)	188	251	0	0	552	0	446	34	0	0	0	0
Turn Type	Prot						Perm					
Protected Phases	7	4			8			2				
Permitted Phases							2					
Detector Phases	7	4			8		2	2				
Minimum Initial (s)	4.0	4.0			4.0		4.0	4.0				
Minimum Split (s)	8.5	20.5			20.5		20.5	20.5				
Total Split (s)	13.0	39.0	0.0	0.0	26.0	0.0	21.0	21.0	0.0	0.0	0.0	0.0
Total Split (%)	21.7%	65.0%	0.0%	0.0%	43.3%	0.0%	35.0%	35.0%	0.0%	0.0%	0.0%	0.0%
Maximum Green (s)	8.5	34.5			21.5		16.5	16.5				
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?	Yes				Yes							
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0				
Recall Mode	None	None			None		Min	Min				
Walk Time (s)		5.0			5.0		5.0	5.0				
Flash Dont Walk (s)		11.0			11.0		11.0	11.0				
Pedestrian Calls (#/hr)		0			0		0	0				
Act Effct Green (s)	8.7	28.3			19.0		12.7	12.7				
Actuated g/C Ratio	0.17	0.57			0.38		0.25	0.25				
v/c Ratio	0.64	0.24			0.80		0.52	0.08				
Control Delay	35.9	5.9			25.3		20.0	8.0				
Queue Delay	0.0	0.0			0.3		0.0	0.0				
Total Delay	35.9	5.9			25.7		20.0	8.0				
LOS	D	A			C		C	A				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		18.8			25.7			19.2				
Approach LOS		B			C			B				
Queue Length 50th (ft)	60	30			141		68	1				
Queue Length 95th (ft)	#152	69			#327		105	18				
Internal Link Dist (ft)		546			643			249			209	
Turn Bay Length (ft)												
Base Capacity (vph)	309	1166			771		1092	524				
Starvation Cap Reductn	0	0			0		0	0				
Spillback Cap Reductn	0	0			28		5	0				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.61	0.22			0.74		0.41	0.06				

Intersection Summary
Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 49.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 21.5 Intersection LOS: C
Intersection Capacity Utilization 58.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Pond Road & SR-99 NB ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.97				0.99	0.97	
Frt			0.850			0.850		0.850			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	5036	1568	3400	5036	1568	3400	1568	0	1752	1515	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3395	5036	1568	3400	5036	1515	3400	1568	0	1733	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			76		280			84	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		610			830			294			346	
Travel Time (s)		13.9			18.9			6.7			7.9	
Volume (vph)	78	2189	146	598	2189	70	257	0	473	104	0	76
Confl. Peds. (#/hr)	10					10				10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	2379	159	650	2379	76	279	0	514	113	0	83
Lane Group Flow (vph)	85	2379	159	650	2379	76	279	514	0	113	83	0
Turn Type	Prot		pm+ov	Prot		pm+ov	Split			Split		
Protected Phases	7	4	2	3	8	6	2	2		6	6	
Permitted Phases			4			8						
Detector Phases	7	4	2	3	8	6	2	2		6	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	20.5	20.5		20.5	20.5	
Total Split (s)	9.1	55.0	20.5	24.0	69.9	20.5	20.5	20.5	0.0	20.5	20.5	0.0
Total Split (%)	7.6%	45.8%	17.1%	20.0%	58.3%	17.1%	17.1%	17.1%	0.0%	17.1%	17.1%	0.0%
Maximum Green (s)	5.1	50.5	16.0	20.0	65.4	16.0	16.0	16.0		16.0	16.0	
Yellow Time (s)	3.0	3.5	3.5	3.0	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	Min	None	C-Max	Min	Min	Min		Min	Min	
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	5.1	54.5	71.0	20.0	69.4	82.4	16.5	16.5		13.0	13.0	
Actuated g/C Ratio	0.04	0.45	0.59	0.17	0.58	0.69	0.14	0.14		0.11	0.11	
v/c Ratio	0.59	1.04	0.16	1.15	0.82	0.07	0.60	1.12		0.60	0.35	
Control Delay	59.7	38.9	0.3	120.7	20.3	1.6	54.5	102.7		63.6	13.8	
Queue Delay	0.0	1.7	0.0	0.0	0.1	0.0	0.0	0.0		0.0	0.0	
Total Delay	59.7	40.6	0.3	120.7	20.4	1.6	54.5	102.7		63.6	13.8	
LOS	E	D	A	F	C	A	D	F		E	B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		38.8			40.9			85.8			42.5	
Approach LOS		D			D			F			D	
Queue Length 50th (ft)	36	~710	0	~314	416	3	106	~260		85	0	
Queue Length 95th (ft)	m38	m#787	m0	m#373	m529	m4	152	#477		143	46	
Internal Link Dist (ft)		530			750			214			266	
Turn Bay Length (ft)												
Base Capacity (vph)	145	2289	985	567	2914	1100	468	457		241	281	
Starvation Cap Reductn	0	10	0	0	41	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.59	1.04	0.16	1.15	0.83	0.07	0.60	1.12		0.47	0.30	

Intersection Summary

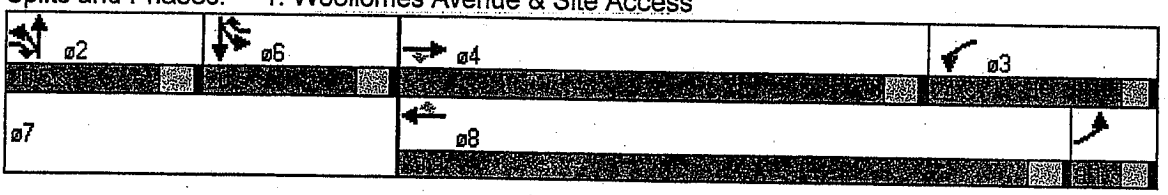
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 102 (85%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.15
Intersection Signal Delay: 45.4 Intersection LOS: D
Intersection Capacity Utilization 107.7% ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Woollomes Avenue & Site Access

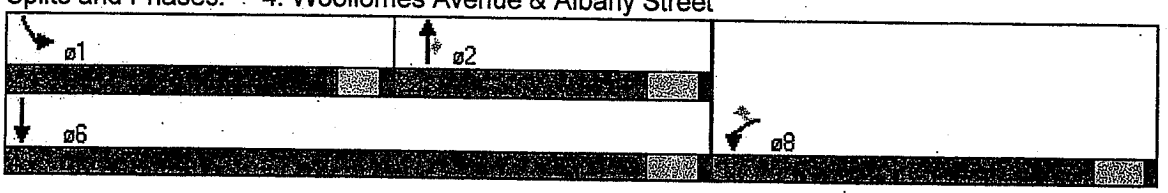


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Ped Bike Factor	0.98	0.96		0.97	0.99	
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1752	1568	1845	1568	3400	1845
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1726	1498	1845	1526	3368	1845
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		674		350		
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30		30			30
Link Distance (ft)	2638		448			2647
Travel Time (s)	60.0		10.2			60.2
Volume (vph)	443	817	311	315	819	366
Confl. Peds. (#/hr)	10	10		10	10	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	492	908	346	350	910	407
Lane Group Flow (vph)	492	908	346	350	910	407
Turn Type		Perm		Perm	Prot	
Protected Phases	8		2		1	6
Permitted Phases		8		2		
Detector Phases	8	8	2	2	1	6
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.5	20.5	20.5	20.5	8.5	20.5
Total Split (s)	31.0	31.0	22.0	22.0	27.0	49.0
Total Split (%)	38.8%	38.8%	27.5%	27.5%	33.8%	61.3%
Maximum Green (s)	26.5	26.5	17.5	17.5	23.0	44.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.0	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	Min	None	Min
Walk Time (s)	5.0	5.0	5.0	5.0		5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		11.0
Pedestrian Calls (#/hr)	0	0	0	0		0
Act Effct Green (s)	25.2	25.2	16.9	16.9	22.2	43.1
Actuated g/C Ratio	0.33	0.33	0.22	0.22	0.29	0.56
v/c Ratio	0.85	0.96	0.85	0.57	0.92	0.39
Control Delay	40.4	30.0	50.4	7.5	42.9	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	30.0	50.4	7.5	42.9	11.0
LOS	D	C	D	A	D	B

Lane Group	WBL	WBR	NBT	NBR	SBT	SBR
Approach Delay	33.6		28.8		33.0	
Approach LOS	C		C		C	
Queue Length 50th (ft)	223	124	166	0	226	105
Queue Length 95th (ft)	#388	#433	#305	65	#343	165
Internal Link Dist (ft)	2558		368		2567	
Turn Bay Length (ft)						
Base Capacity (vph)	607	959	430	625	1019	1063
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.95	0.80	0.56	0.89	0.38

Intersection Summary
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 76.4
Natural Cycle: 80
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 32.4 Intersection LOS: C
Intersection Capacity Utilization 74.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles

Splits and Phases: 4: Woollomes Avenue & Albany Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	50
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Flt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	5036	1568	3400	5036	1568	3400	3505	1568	3400	3505	1568
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3400	5036	1568	3400	5036	1568	3400	3505	1568	3400	3505	1568
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			364			500			301			111
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2638			610			304			648	
Travel Time (s)		60.0			13.9			6.9			14.7	
Volume (vph)	142	1075	380	492	1232	460	375	478	596	640	587	102
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	1168	413	535	1339	500	408	520	648	696	638	111
Lane Group Flow (vph)	154	1168	413	535	1339	500	408	520	648	696	638	111
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phases	7	4	4	3	8	8	5	2	2	1	6	6
Minimum Initial (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
Minimum Split (s)	8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	20.5	8.5	20.5	20.5
Total Split (s)	11.8	34.0	34.0	23.0	45.2	45.2	25.7	34.0	34.0	29.0	37.3	37.3
Total Split (%)	9.8%	28.3%	28.3%	19.2%	37.7%	37.7%	21.4%	28.3%	28.3%	24.2%	31.1%	31.1%
Maximum Green (s)	7.3	29.5	29.5	18.5	40.7	40.7	21.2	29.5	29.5	24.5	32.8	32.8
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	Min	Min	None	Min	Min
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	7.8	30.0	30.0	19.0	41.2	41.2	19.2	30.0	30.0	25.0	35.8	35.8
Actuated g/C Ratio	0.06	0.25	0.25	0.16	0.34	0.34	0.16	0.25	0.25	0.21	0.30	0.30
v/c Ratio	0.70	0.93	0.62	0.99	0.77	0.58	0.75	0.59	1.05	0.98	0.61	0.20
Control Delay	72.0	57.3	10.8	71.9	29.4	3.7	57.2	42.9	73.6	77.5	39.6	7.0
Queue Delay	0.0	2.4	0.0	0.0	0.0	0.7	0.0	0.0	1.2	0.0	0.0	0.0
Total Delay	72.0	59.7	10.8	71.9	29.4	4.3	57.2	42.9	74.8	77.5	39.6	7.0
LOS	E	E	B	E	C	A	E	D	E	E	D	A
Approach Delay		49.2			33.7			59.7			55.3	
Approach LOS		D			C			E			E	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	61	324	30	209	313	20	156	187	~359	278	224	0
Queue Length 95th (ft)	#106	#412	130	m#327	321	m52	207	246	#590	#404	295	44
Internal Link Dist (ft)		2558			530			224			568	
Turn Bay Length (ft)												
Base Capacity (vph)	221	1259	665	538	1729	867	615	876	618	708	1046	546
Starvation Cap Reductn	0	0	0	0	0	126	0	0	0	0	0	0
Spillback Cap Reductn	0	39	0	0	0	0	0	0	2	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.96	0.62	0.99	0.77	0.67	0.66	0.59	1.05	0.98	0.61	0.20

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 73 (61%), Referenced to phase 4:EBT and 8:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.05

Intersection Signal Delay: 47.6 Intersection LOS: D

Intersection Capacity Utilization 85.9% ICU Level of Service E

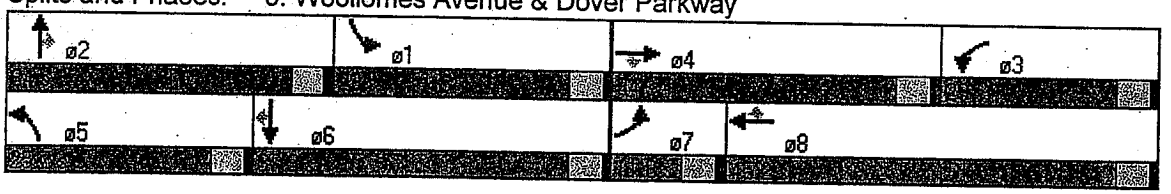
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Woollomes Avenue & Dover Parkway



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱↱	↰↰	↑↑↑					↰	↑	↱↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	113		0	0		0	0		0
Storage Lanes	0		2	2		0	0		0	1		2
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
Leading Detector (ft)		50	50	50	50					50	50	50
Trailing Detector (ft)		0	0	0	0					0	0	0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	0.91	0.88	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	0.88
Ped Bike Factor			0.94	1.00								
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	5036	2760	3400	5036	0	0	0	0	1752	1845	2760
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	5036	2603	3391	5036	0	0	0	0	1752	1845	2760
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			719									7
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		830			500			492			649	
Travel Time (s)		18.9			11.4			11.2			14.8	
Volume (vph)	0	1793	858	218	1884	0	0	0	0	108	1	1106
Confl. Peds. (#/hr)			10	10			10		10			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1949	933	237	2048	0	0	0	0	117	1	1202
Lane Group Flow (vph)	0	1949	933	237	2048	0	0	0	0	117	1	1202
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		4		3	8						6	
Permitted Phases			4							6		6
Detector Phases		4	4	3	8					6	6	6
Minimum Initial (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Minimum Split (s)		20.5	20.5	8.5	20.5					20.5	20.5	20.5
Total Split (s)	0.0	52.0	52.0	13.0	65.0	0.0	0.0	0.0	0.0	55.0	55.0	55.0
Total Split (%)	0.0%	43.3%	43.3%	10.8%	54.2%	0.0%	0.0%	0.0%	0.0%	45.8%	45.8%	45.8%
Maximum Green (s)		47.5	47.5	9.0	60.5					50.5	50.5	50.5
Yellow Time (s)		3.5	3.5	3.0	3.5					3.5	3.5	3.5
All-Red Time (s)		1.0	1.0	1.0	1.0					1.0	1.0	1.0
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Recall Mode		C-Max	C-Max	None	C-Max					Min	Min	Min
Walk Time (s)		5.0	5.0		5.0					5.0	5.0	5.0
Flash Dont Walk (s)		11.0	11.0		11.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		0	0		0					0	0	0
Act Effct Green (s)		48.0	48.0	9.0	61.0					51.0	51.0	51.0
Actuated g/C Ratio		0.40	0.40	0.08	0.51					0.42	0.42	0.42
v/c Ratio		0.97	0.63	0.93	0.80					0.16	0.00	1.02
Control Delay		19.1	1.4	79.6	29.7					22.0	20.0	66.1
Queue Delay		2.2	0.0	0.0	1.2					0.1	0.0	0.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay	21.3		1.4	79.6	30.9					22.1	20.0	66.1
LOS	C		A	E	C					C	B	E
Approach Delay	14.9				35.9						62.2	
Approach LOS	B				D						E	
Queue Length 50th (ft)	313		0	#87	365					55	0	#560
Queue Length 95th (ft)	m280		m0	m#113	424					95	4	#710
Internal Link Dist (ft)	750				420			412			569	
Turn Bay Length (ft)				113								
Base Capacity (vph)	2014		1473	255	2560					745	784	1177
Starvation Cap Reductn	0		0	0	280					0	0	0
Spillback Cap Reductn	33		0	0	0					165	0	0
Storage Cap Reductn	0		0	0	0					0	0	0
Reduced v/c Ratio	0.98		0.63	0.93	0.90					0.20	0.00	1.02

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow, Master Intersection

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 31.9 Intersection LOS: C

Intersection Capacity Utilization 82.6% ICU Level of Service E

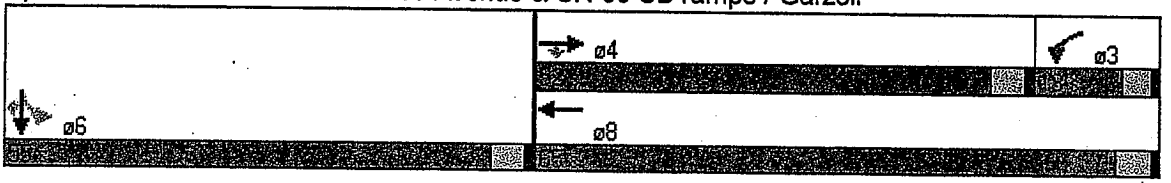
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	410		0	0		0	0		0	0		0
Storage Lanes	2		0	0		1	2		1	0		0
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
Leading Detector (ft)	50	50			50	50	50	50	50			
Trailing Detector (ft)	0	0			0	0	0	0	0			
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	0.97	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99					0.97	0.98		0.97			
Frt						0.850			0.850			
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3400	5036	0	0	5036	1568	3400	3505	1568	0	0	0
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3383	5036	0	0	5036	1520	3336	3505	1520	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						51			163			
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			678			573			773	
Travel Time (s)		11.4			15.4			13.0			17.6	
Volume (vph)	1131	769	0	0	1209	47	893	94	150	0	0	0
Confl. Peds. (#/hr)	10		10	10		10	10		10			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	3%	0%	0%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	1229	836	0	0	1314	51	971	102	163	0	0	0
Lane Group Flow (vph)	1229	836	0	0	1314	51	971	102	163	0	0	0
Turn Type	Prot					Perm	Perm		Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Detector Phases	7	4			8	8	2	2	2			
Minimum Initial (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Minimum Split (s)	8.5	20.5			20.5	20.5	20.5	20.5	20.5			
Total Split (s)	38.0	68.0	0.0	0.0	30.0	30.0	32.0	32.0	32.0	0.0	0.0	0.0
Total Split (%)	38.0%	68.0%	0.0%	0.0%	30.0%	30.0%	32.0%	32.0%	32.0%	0.0%	0.0%	0.0%
Maximum Green (s)	34.0	63.5			25.5	25.5	27.5	27.5	27.5			
Yellow Time (s)	3.0	3.5			3.5	3.5	3.5	3.5	3.5			
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
Recall Mode	None	C-Max			C-Max	C-Max	Min	Min	Min			
Walk Time (s)		5.0			5.0	5.0	5.0	5.0	5.0			
Flash Dont Walk (s)		11.0			11.0	11.0	11.0	11.0	11.0			
Pedestrian Calls (#/hr)		0			0	0	0	0	0			
Act Effct Green (s)	34.0	64.0			26.0	26.0	28.0	28.0	28.0			
Actuated g/C Ratio	0.34	0.64			0.26	0.26	0.28	0.28	0.28			
v/c Ratio	1.06	0.26			1.00	0.12	1.04	0.10	0.30			
Control Delay	64.2	0.5			63.5	9.0	76.4	27.1	6.1			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	1.1	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	65.3	0.5			63.5	9.0	76.4	27.1	6.1			
LOS	E	A			E	A	E	C	A			
Approach Delay		39.1			61.4			63.1				
Approach LOS		D			E			E				
Queue Length 50th (ft)	~464	3			~309	0	~346	25	0			
Queue Length 95th (ft)	m#464	m3			#415	29	#470	46	48			
Internal Link Dist (ft)		420			598			493			693	
Turn Bay Length (ft)	410											
Base Capacity (vph)	1156	3223			1309	433	934	981	543			
Starvation Cap Reductn	3	0			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	1.07	0.26			1.00	0.12	1.04	0.10	0.30			

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 52.0 Intersection LOS: D

Intersection Capacity Utilization 91.1% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

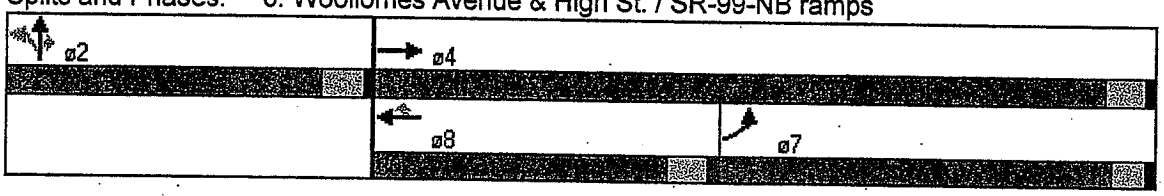
Queue shown is maximum after two cycles.

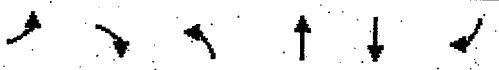
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Woollomes Avenue & High St. / SR-99-NB ramps



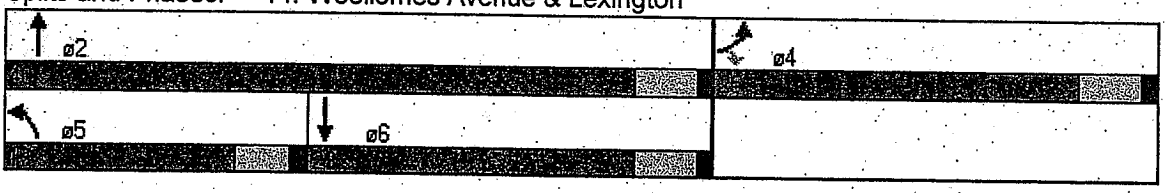


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor	0.98	0.98	1.00		0.98	
Frt		0.850			0.866	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	3400	1568	1752	3505	2970	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	3331	1530	1747	3505	2970	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		220			769	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			30	30	
Link Distance (ft)	678			443	1703	
Travel Time (s)	15.4			10.1	38.7	
Volume (vph)	648	198	179	126	92	779
Confl. Peds. (#/hr)	10	10	10			10
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	720	220	199	140	102	866
Lane Group Flow (vph)	720	220	199	140	968	0
Turn Type		Perm	Prot			
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phases	4	4	5	2	6	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.5	20.5	8.5	20.5	20.5	
Total Split (s)	25.0	25.0	17.0	40.0	23.0	0.0
Total Split (%)	38.5%	38.5%	26.2%	61.5%	35.4%	0.0%
Maximum Green (s)	20.5	20.5	13.0	35.5	18.5	
Yellow Time (s)	3.5	3.5	3.0	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	None	Min	Min	
Walk Time (s)	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	28.5	28.5	11.3	28.5	13.3	
Actuated g/C Ratio	0.44	0.44	0.17	0.44	0.20	
v/c Ratio	0.48	0.28	0.66	0.09	0.93dr	
Control Delay	15.5	6.3	35.5	9.1	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.5	6.3	35.5	9.1	10.2	
LOS	B	A	D	A	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach Delay	13.4			24.6	10.2	
Approach LOS	B			C	B	
Queue Length 50th (ft)	154	33	73	15	35	
Queue Length 95th (ft)	212	78	132	23	81	
Internal Link Dist (ft)	598			363	1623	
Turn Bay Length (ft)						
Base Capacity (vph)	1490	794	350	1941	1412	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.48	0.28	0.57	0.07	0.69	

Intersection Summary
Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 62 (95%), Referenced to phase 4:EBL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 13.7 Intersection LOS: B
Intersection Capacity Utilization 67.1% ICU Level of Service C
Analysis Period (min) 15
dr Defacto Right Lane Recode with 1 though lane as a right lane

Splits and Phases: 14: Woollomes Avenue & Lexington



APPENDIX L

Peak-Hour Traffic Signal Warrant Analyses

PEAK HOUR WARRANTS LEGEND

Existing Plus Opening Year Approved Projects (PM)

Existing Plus Opening Year Approved Projects Plus Project (AM)

Existing Plus Opening Year Approved Projects Plus Project (PM)

Existing Plus Opening Year Approved Projects Plus Project (Saturday)

Near-Term With Approved Projects (PM)

Near-Term With Approved Projects (Saturday)

Near-Term With Approved Projects Plus Project (AM)

Near-Term With Approved Projects Plus Project (PM)

Near-Term With Approved Projects Plus Project (Saturday)

Cumulative With Project (AM)

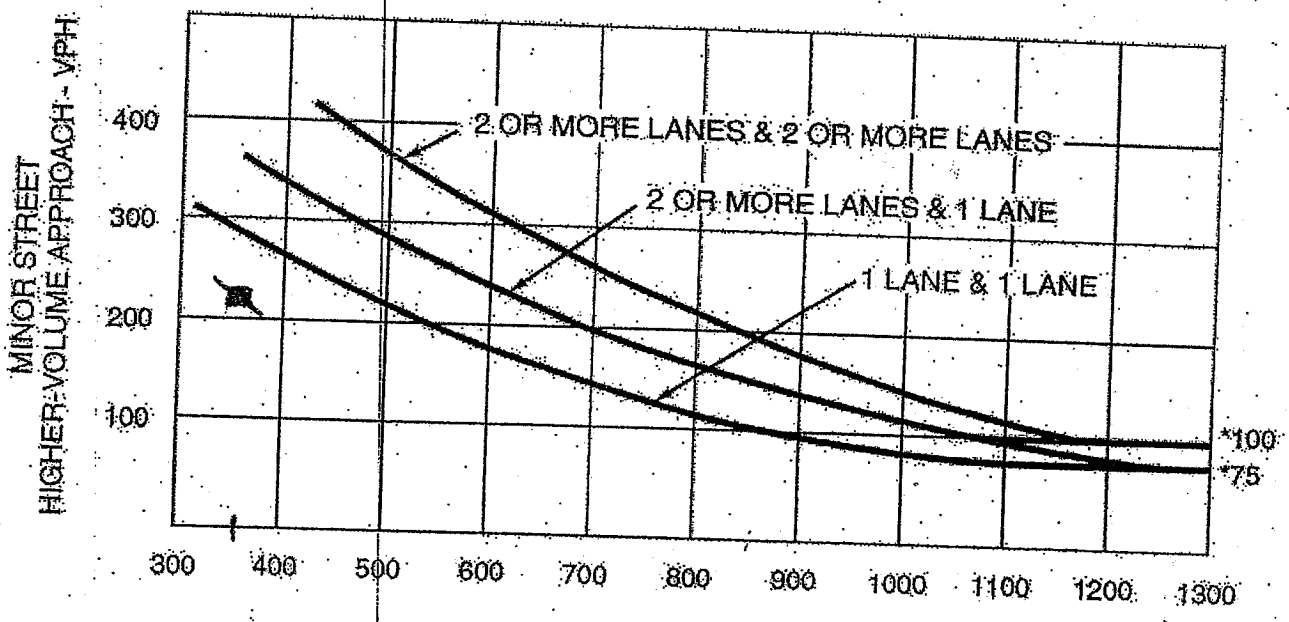
Cumulative With Project (PM)

Cumulative With Project (Saturday)

Woollomes/Albany

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

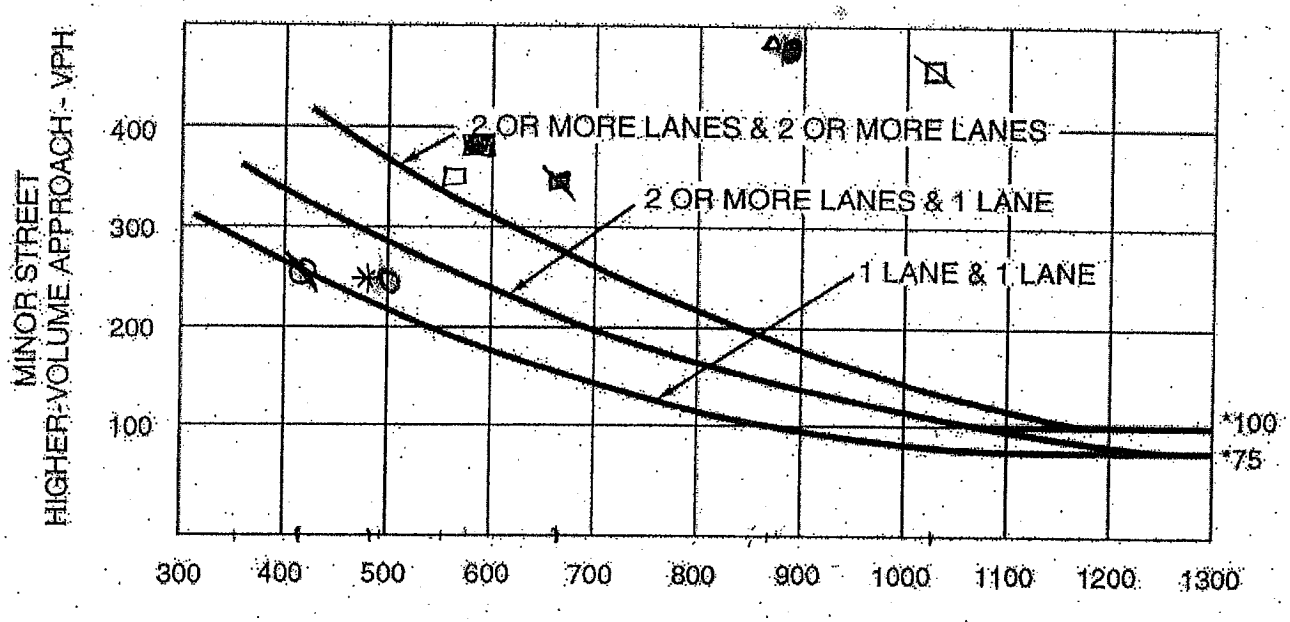


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Vic Homes Ave / High Street

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

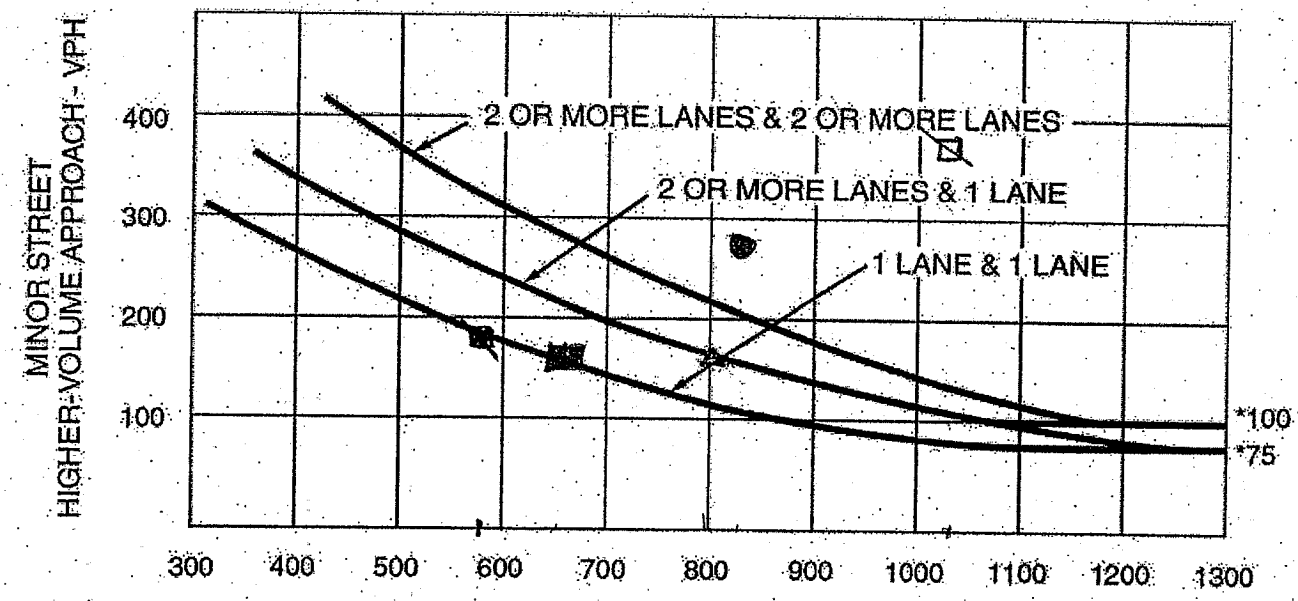


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Woolhomes Ave / Dover Parkway

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



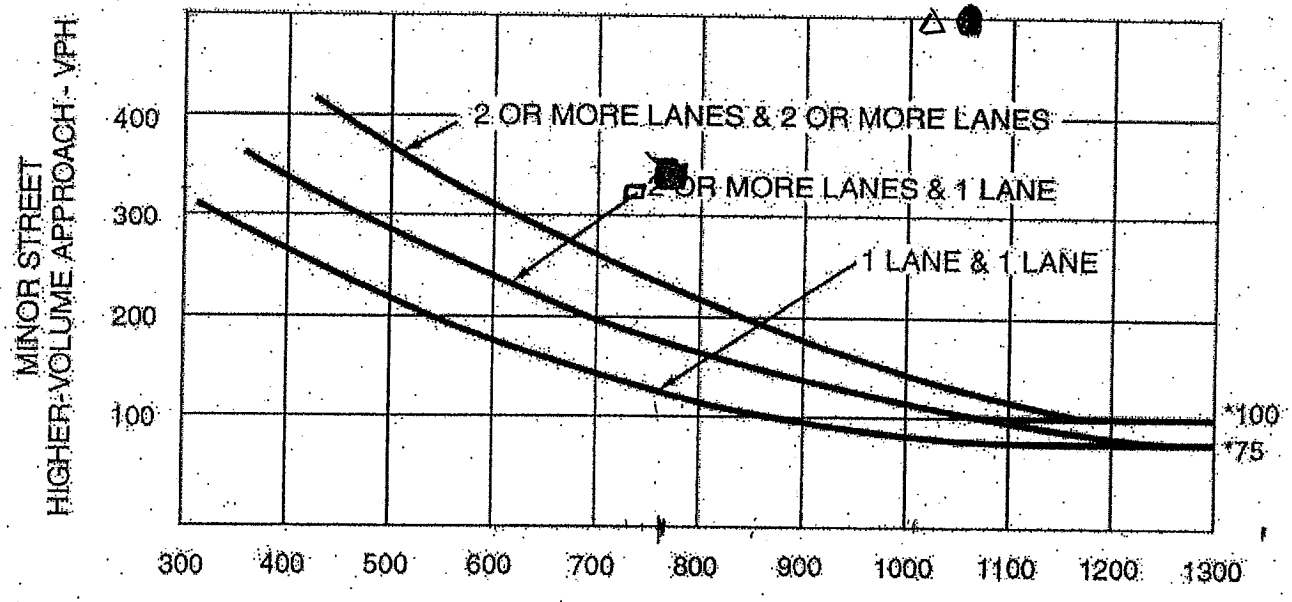
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Woollomes/Dover

Wollomes Ave / Site Access

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

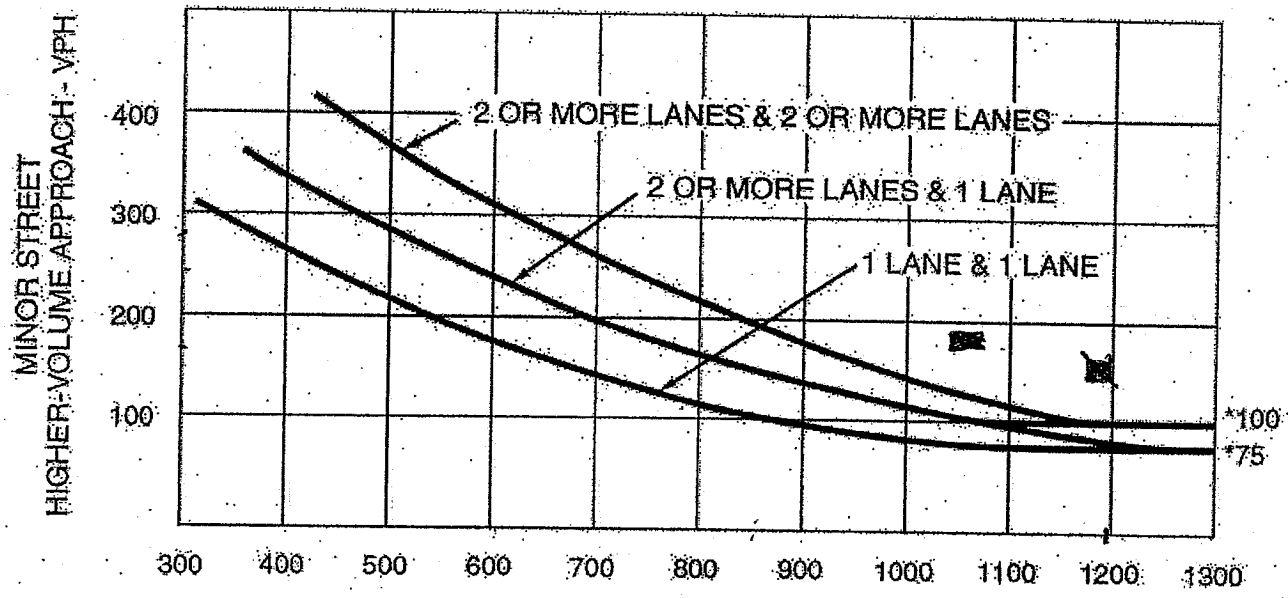


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Woodhaven Ave / Garrett Ave

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

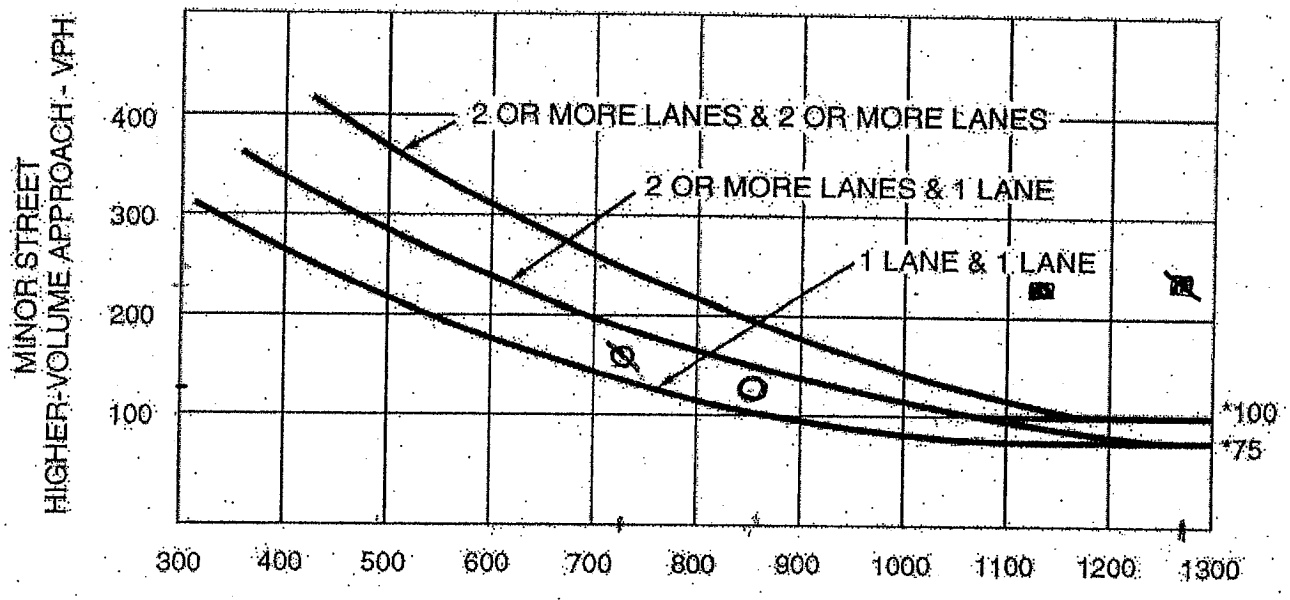


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Wallones Ave / SR 99 SB Ramps

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

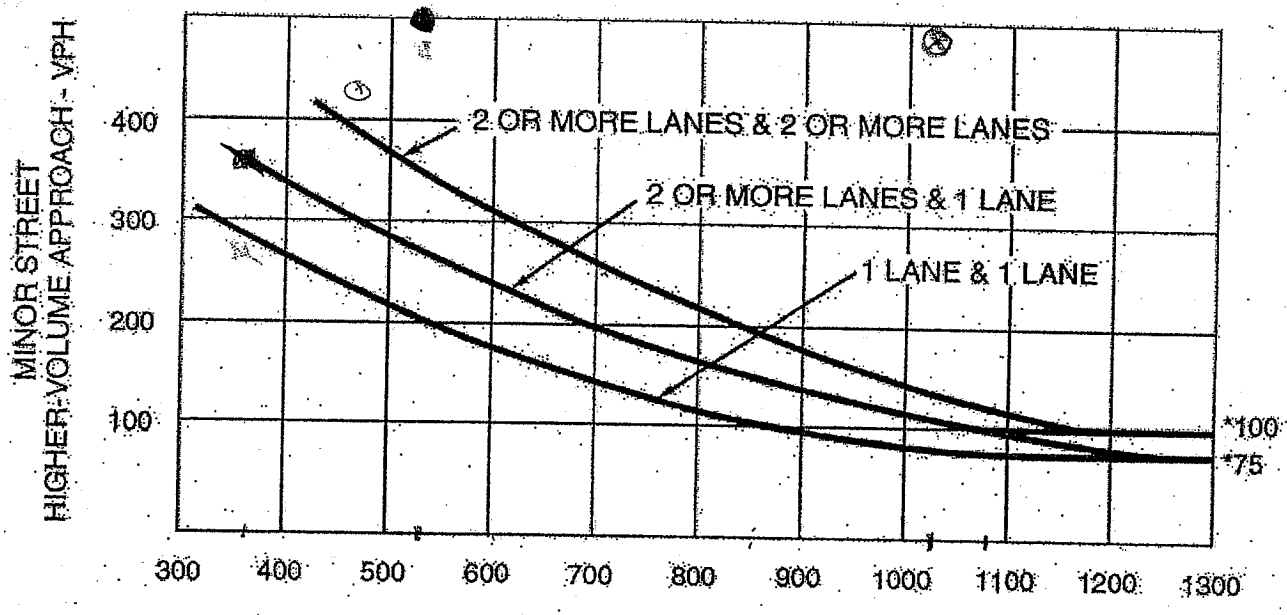


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Woollomes Ave./Lexington St

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

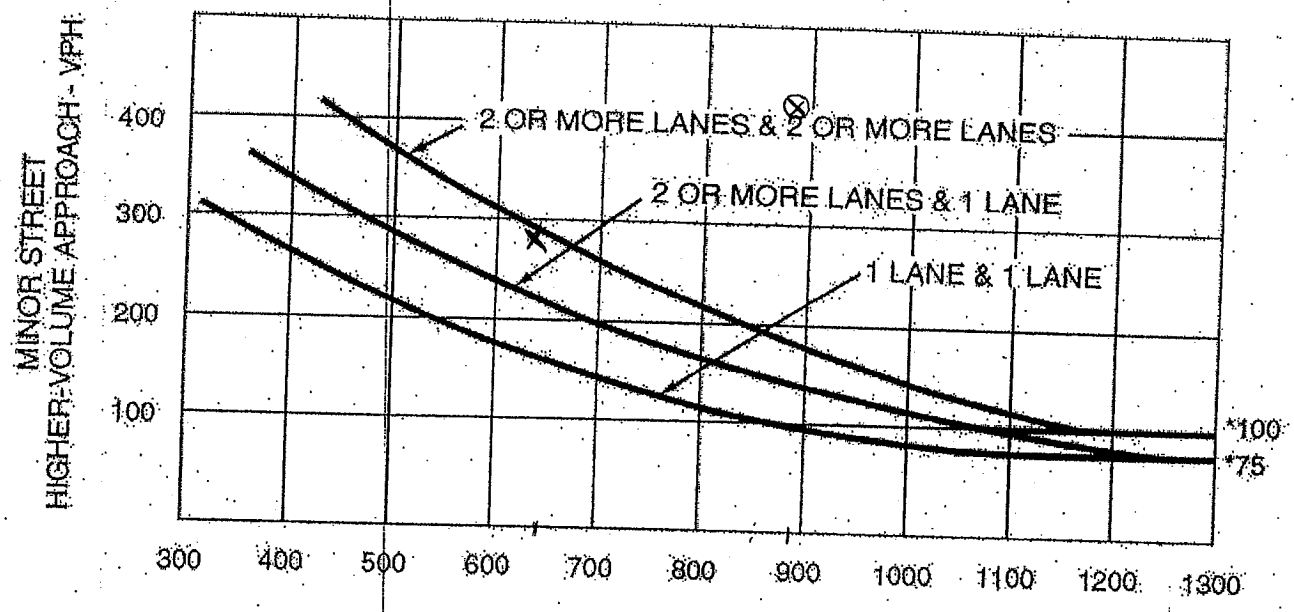


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

POND/99 NB

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

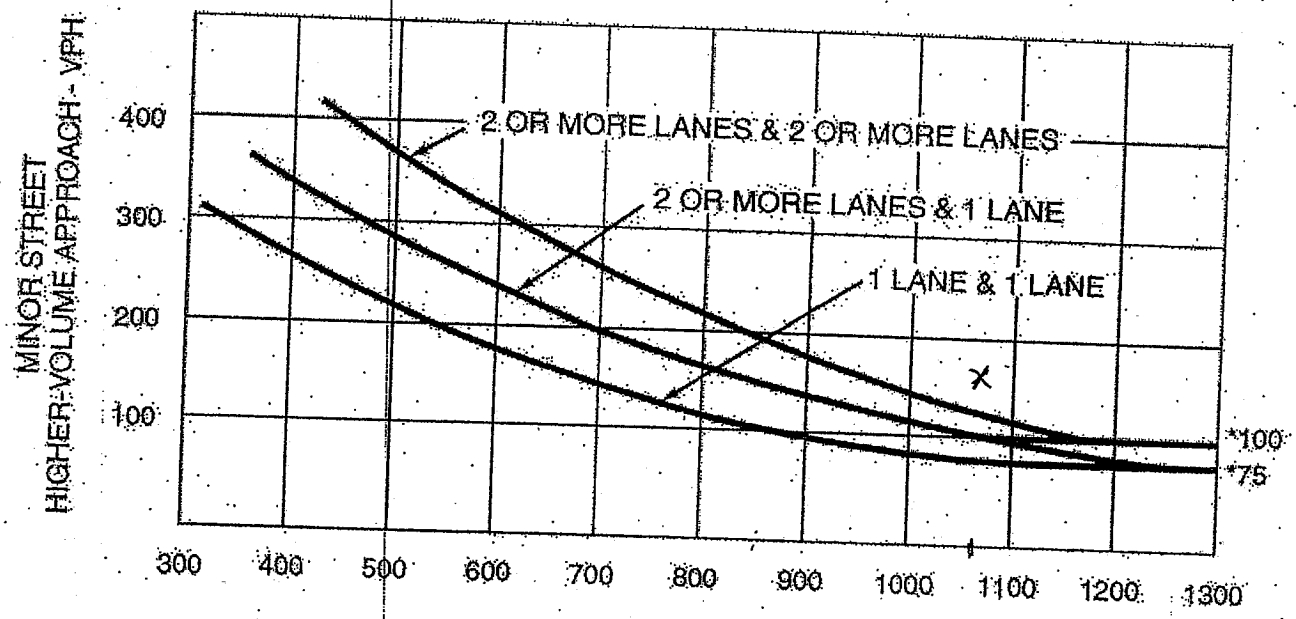


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

POND/99 SB

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

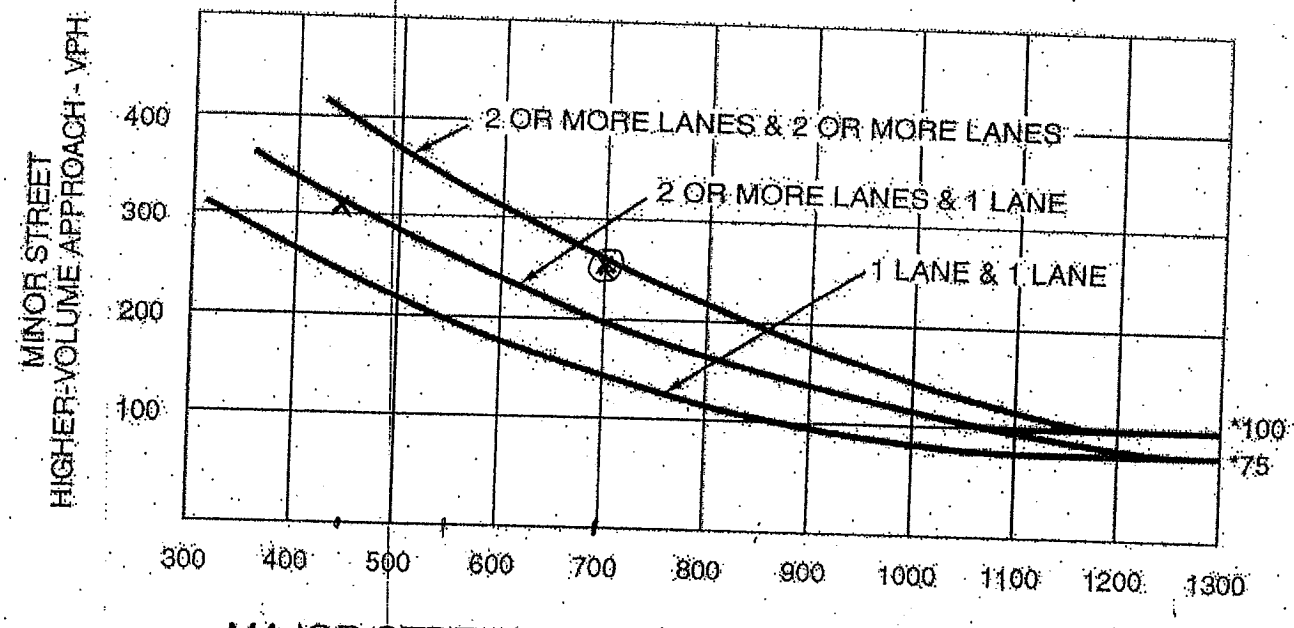


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

POND/STRADLEY

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

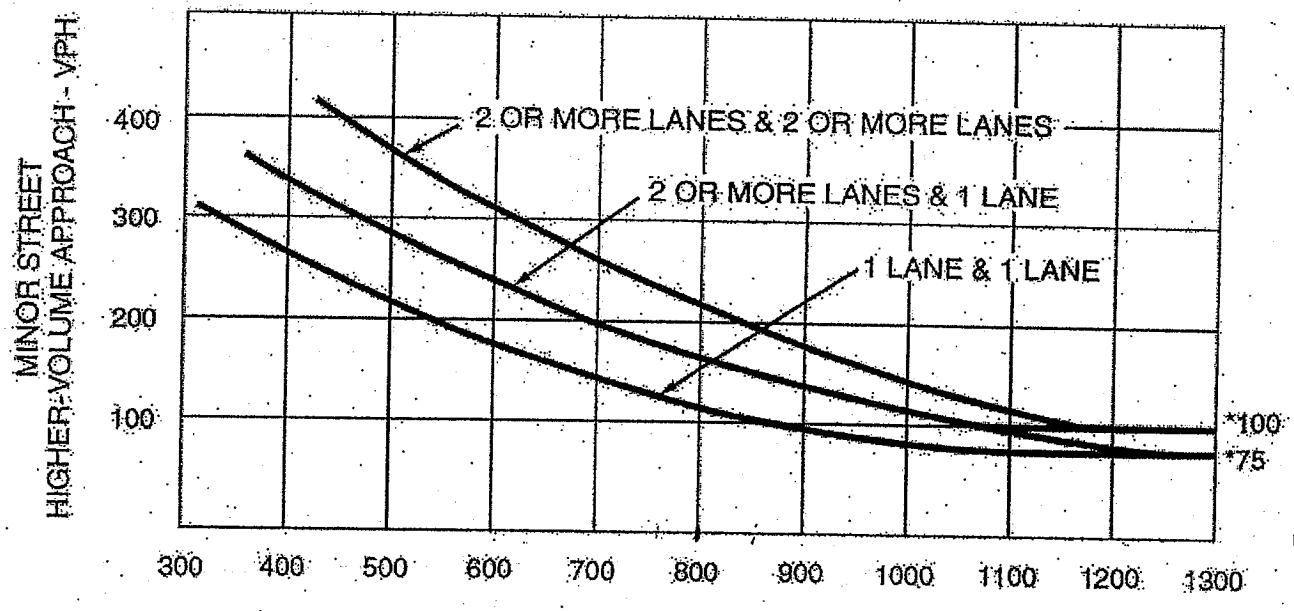


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

POND/GARZOLI

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

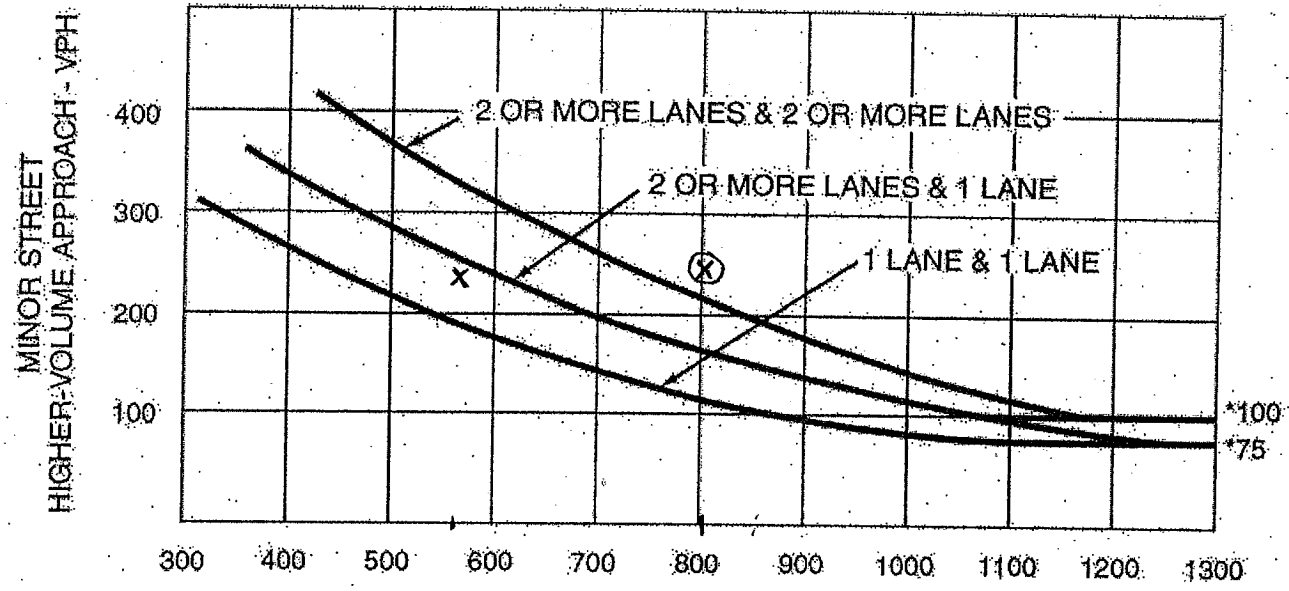


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

SCHUSTER/STRADLEY

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

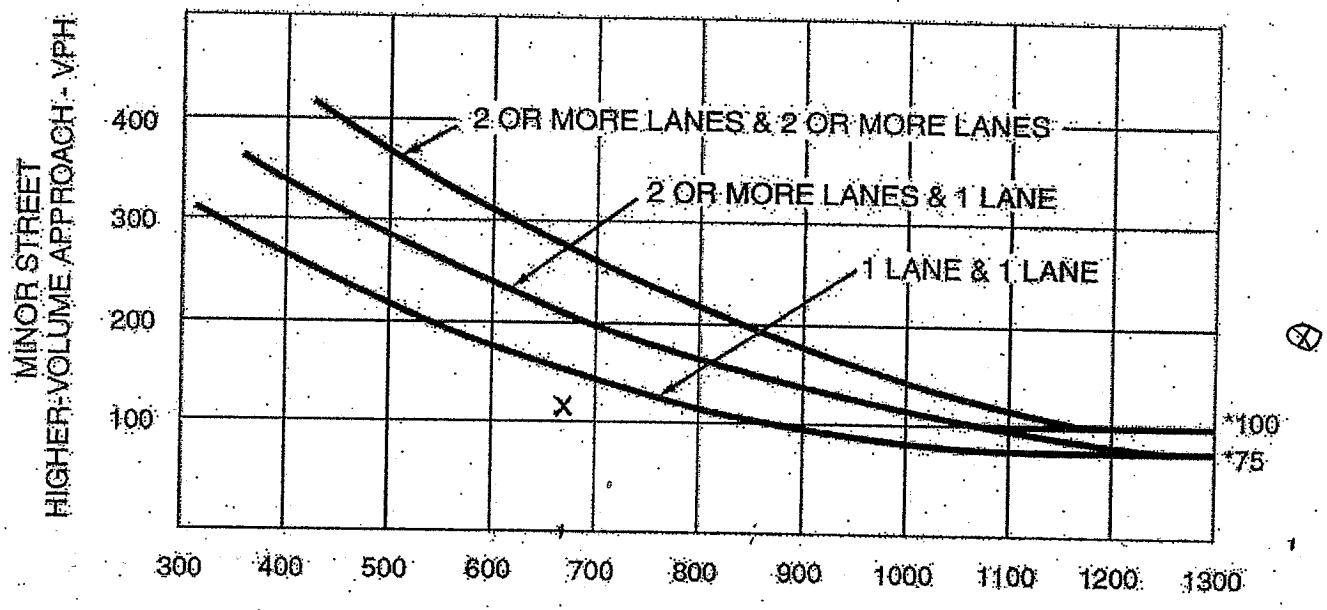


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

SCHUSTER/GARZOLI

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE ~~70~~ 64 km/h OR ABOVE 40 mph ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

PETERS ENGINEERING GROUP
A CALIFORNIA CORPORATION

55 SHAW AVENUE, SUITE 220
CLOVIS, CALIFORNIA 93612

PHONE (559) 299-1544
FAX (559) 299-1722

Ms. Erika Spencer
Pacific Municipal Consultants
585 Cannery Row, Suite 304
Monterey, California 93940

April 13, 2007

Subject: Addendum No. 1 – Intersection Analyses Considering Railroad Crossing
Delano Marketplace Traffic Impact Study
Delano, California

Introduction

This report presents the results of additional traffic analyses to supplement the results presented in the Delano Marketplace Traffic Impact Study dated March 2007 (hereinafter referred to as TIS). The additional analyses consider the operational and queuing characteristics of intersections at the Woollomes Avenue and State Route (SR) 99 interchange during a railroad preemption event. The existing railroad crossing is located on Woollomes Avenue approximately 60 feet east of High Street/Northbound SR 99 off ramp.

Study Area and Time Period

Caltrans and the State of California Public Utilities Commission (CPUC) required analysis of the interchange to consider the operational characteristics of the intersections and the adjacent railroad. This report is primarily concerned with the following intersections:

- Woollomes Avenue / Garzoli Avenue
- Woollomes Avenue / Southbound State Route 99 Ramps
- Woollomes Avenue / Northbound State Route 99 On Ramp
- Woollomes Avenue / Northbound State Route 99 Off Ramp/High Street
- Woollomes Avenue / Lexington Street

The study time periods are the same as those analyzed in the TIS, including weekday a.m. and p.m. peak hours (which occur between 7:00 and 9:00 a.m. and between 4:00 and 6:00 p.m.) and the weekend (Saturday) peak hour. The peak-hour scenarios were analyzed for the following conditions:

- Existing
- Existing Plus Opening Year Approved Projects (Approximately Year 2007)
- Existing Plus Opening Year Approved Projects Plus Project (Approximately Year 2007)
- Near-Term With Approved Projects (Approximately Year 2010)
- Near-Term With Approved Projects Plus Project (Approximately Year 2010)
- Cumulative With Project (Year 2030).

Railroad Preemption Phasing

Based on the results of the TIS, it is anticipated that signalization of the intersections within the Woollomes Avenue / SR 99 interchange will eventually be required. The discussions below pertain to conditions that are expected to exist after signalization of the intersections.

Railroad crossing gates are activated by sensors on the railroad tracks in advance of the crossing. With the installation of the appropriate equipment and wiring, the traffic signal phasing at intersections adjacent to railroad crossings can be preempted by an approaching train. In the past it was common for traffic signals to be programmed for flashing red lights on all approaches during a railroad preemption event. However, it is becoming more common for preemption to include a phase that attempts to clear vehicles that may be on the railroad tracks as the train is approaching. Once the crossing gates have lowered, the preempted traffic signals can still provide a signal phasing scheme that provides green time to movements that do not conflict with the train.

At the intersection of Woollomes Avenue and High Street/Northbound SR 99 off ramp, the signals should begin the clearance phase immediately upon activation by an approaching train. The clearance phase will include immediately providing the yellow clearance interval to the phase that is currently green upon activation. Green time will then be provided to the westbound approaches of Woollomes Avenue, including both the westbound left-turn and through phases. These phases shall remain green until after the crossing gates have lowered.

At the intersection of Woollomes Avenue and Lexington Street, the signals should begin the clearance phase immediately upon activation by an approaching train. The clearance phase will include immediately providing the yellow clearance interval to the phase that is currently green upon activation. Green time will then be provided to the eastbound approaches of Woollomes Avenue, including both the eastbound left-turn and through phases. These phases shall remain green until after the crossing gates have lowered.

The assumed worst-case scenario for study purposes would include a westbound queue of vehicles extending from High Street and the Northbound SR 99 off ramp through the existing railroad tracks and to the limit line east of the railroad tracks. This queue length is approximately 85 feet, which is typically considered to be enough space for storage of four vehicles. The storage length provided between the intersection and the railroad is approximately 60 feet, which is typically considered to be enough space for storage of two vehicles. Therefore, enough green time must be provided to clear at least two vehicles and preferably four vehicles from the westbound queue. The fourth or fifth vehicles will likely proceed through the yellow clearance interval or utilize the available storage space provided between the railroad and the intersection.

Assuming a saturation flow rate of only 1,500 vehicles per hour and using headway and startup lost time assumptions (saturation headway of 2.4 seconds, startup lost time of 2.0 seconds for first vehicle and decreasing by 0.5 seconds per subsequent vehicle), approximately nine seconds are required to clear two vehicles and a queue of four vehicles requires approximately 15 seconds to clear. Therefore, the clearance time required upon detection of a train will be approximately four seconds for yellow clearance of the phase that is green at the time the train is detected, one second for all-red time, and at least nine seconds of green time to clear westbound traffic, for a minimum of 14 seconds required. In order to

clear four vehicles, the clearance time required will be approximately four seconds for yellow clearance of the phase that is green at the time the train is detected, one second for all-red time, and approximately 15 seconds of green time to clear westbound traffic, for approximately 20 seconds required to clear four vehicles.

Peters Engineering Group has been informed previously by CPUC staff that the detector unit on the railroad tracks typically provides 35 seconds of advance notification that a train is approaching. Approximately 20 seconds are available to clear the tracks before the crossing gates are lowered into position. Therefore, it appears that sufficient time will be available to provide clearance green time to westbound movements prior to a train arriving at the intersection.

Once the crossing gates have lowered, preemption traffic signal phasing can be employed that will allow northbound left turns and eastbound left turns to occur at the Woollomes Avenue/Northbound SR 99 off ramp intersection.

Prevention of the northbound right turn may require installation of protected right-turn phasing. This phasing is considered optional since queuing at the railroad crossing backing up into the northbound right-turn lane would not block any other traffic movements at the intersection.

Intersection Analyses

Additional intersection analyses were performed assuming railroad preemption. Analyses were performed based on a worst-case scenario assuming that a train 1.5 miles in length and traveling at 10 miles per hour arrives during the peak hour. This causes a railroad preemption event of nine minutes duration. The intersection level of service is less applicable when considering these preempted periods since certain movements are not allowed. However, queue lengths become a greater concern during railroad preemption, especially adjacent to freeway interchanges, because of the possibility that lengthy queues can block downstream intersections and extend toward the freeway mainline. Traffic simulation was prepared and observed using the computer program SimTraffic associated with Synchro 6. Queuing and blocking reports resulting from the SimTraffic analyses are attached.

Table 1 presents the approximate queue lengths for traffic on Woollomes Avenue. The values are rounded up to the nearest 25-foot increment. The distances reported are measured from the railroad stop bar. It should be noted that westbound queues exceeding approximately 525 feet would extend to Lexington Street and eastbound queues exceeding approximately 425 feet would extend to the southbound off ramp. It should also be noted that northbound queues of approximately 1,000 feet on the northbound SR 99 off ramp will back up to the freeway mainline and southbound queues of approximately 1,150 feet on the southbound SR 99 off ramp will back up to the freeway mainline.

Table 1
Railroad Crossing Queue Length Summary – Woollomes Avenue

Analysis Scenario	Eastbound Queue (feet)			Westbound Queue (feet)		
	A.M.	P.M.	Weekend	A.M.	P.M.	Weekend
Existing	590	1,000	636	510	698	564
Existing Plus Opening Year Approved Projects	734	1,120	1,015	690	796	582
Existing Plus Opening Year Approved Projects Plus Project	>1,320	>1,320	>1,320	910	1,055	1,077
Near-Term With Approved Projects	795	1,200	1,160	760	814	705
Near-Term With Approved Projects Plus Project	>1,320	>1,320	>1,320	963	1,132	1,118
Cumulative Without Project	>1,320	>1,320	>1,320	933	>1,320	>1,320
Cumulative With Project	>1,320	>1,320	>1,320	>1,320	>1,320	>1,320

Table 2 presents the approximate queue lengths for the northbound and southbound SR 99 off ramps.

Table 2
Railroad Crossing Queue Length Summary – Freeway Off Ramps

Analysis Scenario	Northbound Queue (feet)			Southbound Queue (feet)		
	A.M.	P.M.	Weekend	A.M.	P.M.	Weekend
Existing	650	700	570	50	108	72
Existing Plus Opening Year Approved Projects	1,000	1,070	600	50	144	180
Existing Plus Opening Year Approved Projects Plus Project	>1,320	>1,320	>1,320	300	508	800
Near-Term With Approved Projects	1,250	1,300	1,000	162	300	203
Near-Term With Approved Projects Plus Project	>1,320	>1,320	>1,320	500	736	830
Cumulative Without Project	>1,320	>1,320	>1,320	>1,320	>1,320	>1,320
Cumulative With Project	>1,320	>1,320	>1,320	>1,320	>1,320	>1,320

Tables 1 and 2 indicate that queues on Woollomes are expected to back up to adjacent intersections for all analysis scenarios. Queues are expected to back up the northbound freeway mainline for all scenarios except the existing conditions. Queues are expected to back up near the southbound freeway mainline (up to approximately 800 feet) for the opening day project conditions and for the cumulative conditions.

The analyses described above are based on the traffic volumes as presented in the TIS. However, driver behavior must also be considered. Since High Street provides an alternate route that passes under the railroad tracks north of Woollomes, it is anticipated that a majority of drivers experiencing delays while traveling eastbound on Woollomes Avenue or northbound on the SR 99 off ramp would decide to utilize High Street to avoid delays. This results in a redistribution of traffic that is expected to occur during railroad preemption in which most of the eastbound through movements and northbound right-turn movements at the Woollomes Avenue/High Street/Northbound SR 99 off ramp intersection will become eastbound left-turn and northbound through movements, respectively. Figures 1 through 6 present the redistributed traffic volumes.

To facilitate the redistribution of traffic, it would be necessary to provide separate left-turn, through, and right-turn lanes on the northbound off ramp. Also, in order to minimize the queue lengths on the southbound off ramp, separate left-turn, through, and right-turn lanes should be included.

Tables 3 and 4 present the approximate queue lengths resulting from these mitigated analyses for each of the project scenarios.

Table 3
Mitigated Railroad Crossing Queue Length Summary – Woollomes Avenue

Analysis Scenario	Eastbound Queue (feet)			Westbound Queue (feet)		
	A.M.	P.M.	Weekend	A.M.	P.M.	Weekend
Existing Plus Opening Year Approved Projects Plus Project	125	375	300	1,175	>1,320	>1,320
Near-Term With Approved Projects Plus Project	250	400	425	1,200	>1,320	>1,320
Cumulative With Project	200	324	300	1,150	>1,320	>1,320

Table 4
Mitigated Railroad Crossing Queue Length Summary – Freeway Off Ramps

Analysis Scenario	Northbound Queue (feet)			Southbound Queue (feet)		
	A.M.	P.M.	Weekend	A.M.	P.M.	Weekend
Existing Plus Opening Year Approved Projects Plus Project	100	150	175	25	25	25
Near-Term With Approved Projects Plus Project	125	250	225	25	25	25
Cumulative With Project	325	400	100	25	25	25

The results of the analyses indicate the interchange queuing expected to result in the event that a nine-minute train delay occurs on Woollomes Avenue can be mitigated with lane additions on the northbound and southbound SR 99 off ramps. Westbound queues are expected to back to Lexington Street but will not affect the interchange. Conceptual interim interchange lane configurations to mitigate opening-year and near-term impacts are illustrated in Figure 7. The actual interchange configuration will be determined in the Project Study Report and Project Report and will be subject to Caltrans review and approval.

The discussion of cumulative interchange conditions presented in the TIS remains applicable without revision.

Conclusions and Recommendations

Generally-accepted traffic engineering principles and methods were employed to estimate the amount of traffic expected to exist in the future (2030) and to analyze the traffic conditions expected to exist in the future. The conclusion of this study is that, with certain mitigations as illustrated in Figure 7, traffic queues at the Woollomes Avenue/SR 99 interchange in the event of a nine-minute train delay can be minimized such that acceptable traffic operations will result within the interchange and traffic will not back up into the freeway mainline.

Thank you for the opportunity to perform these additional analyses. Please feel free to call our office if you have any questions.

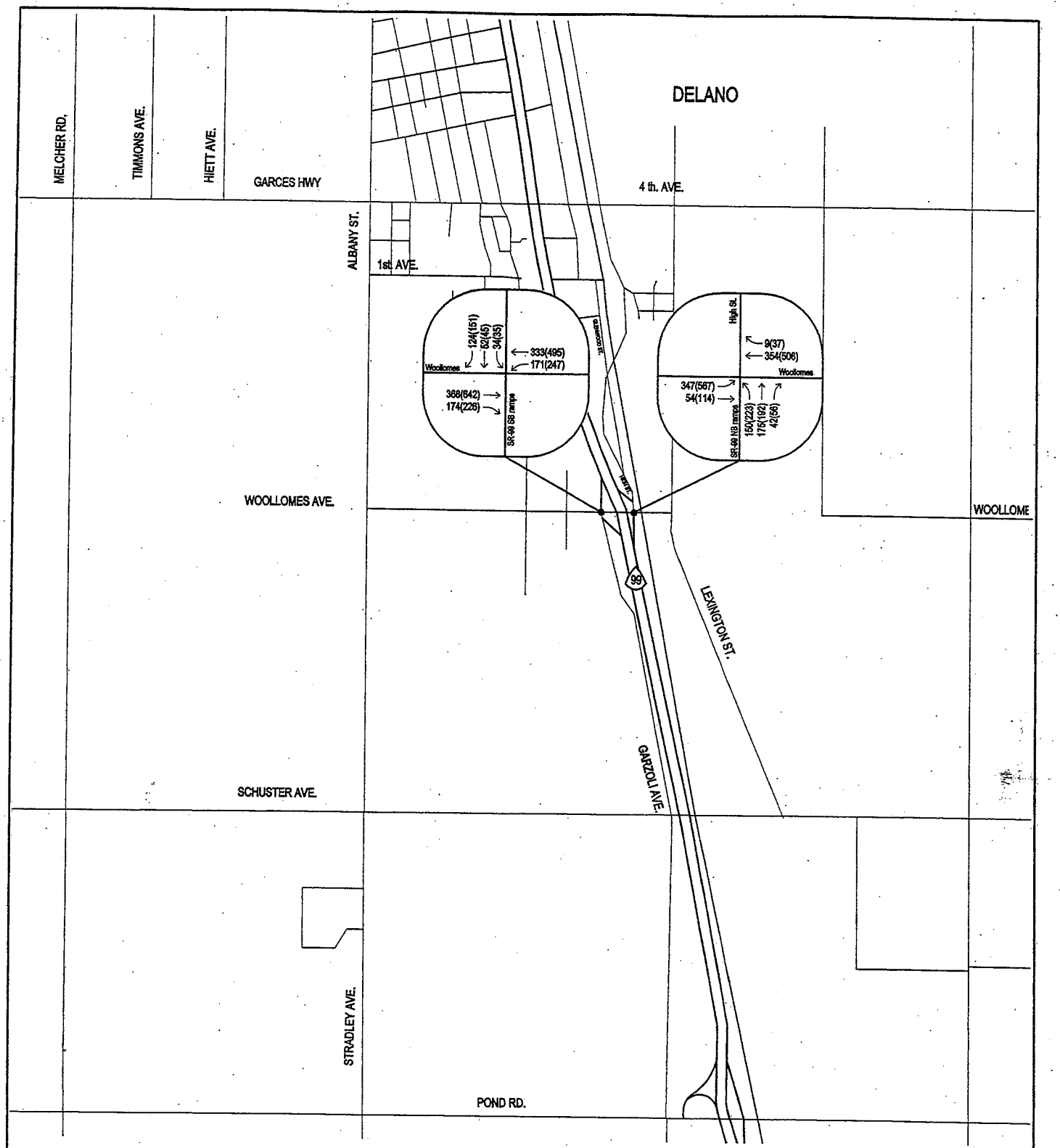
PETERS ENGINEERING GROUP

John Rowland, P.E.

Attachments: Figures 1 through 7
Queing and Blocking Reports

REGISTERED PROFESSIONAL ENGINEER
JOHN ROWLAND
No. C52753
Exp. 12-31-08
CIVIL
STATE OF CALIFORNIA

4-13-07



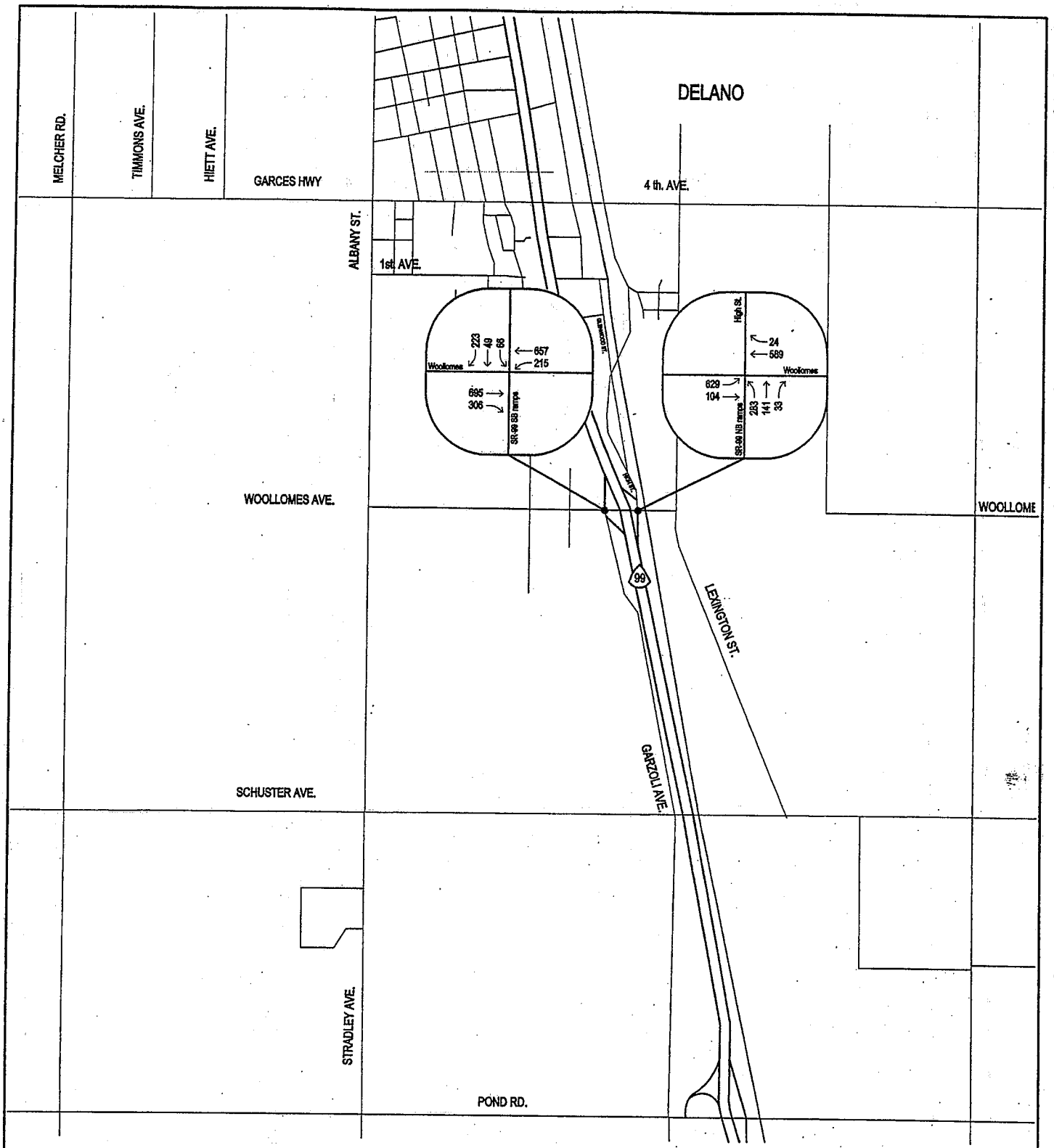
Proposed Market Place I Development
Redistributed Existing Plus Opening Year Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale



Proposed Market Place I Development
Redistributed Saturday Existing Plus Opening Year Approved Projects Plus Project Traffic Volumes
Delano, California

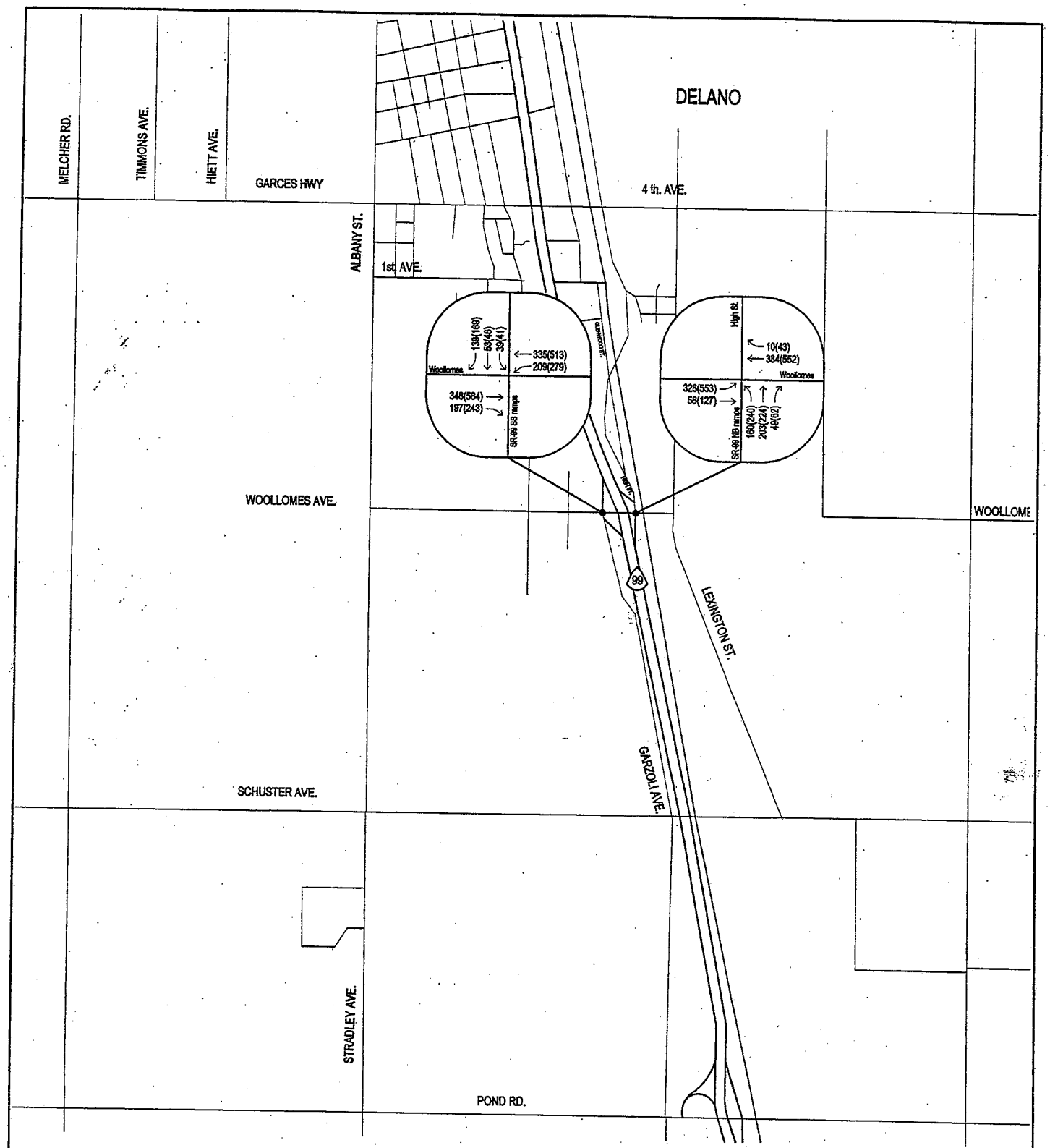
LEGEND

20-Saturday Peak Hour Volumes

Not to Scale

PETERS ENGINEERING GROUP

Figure 2



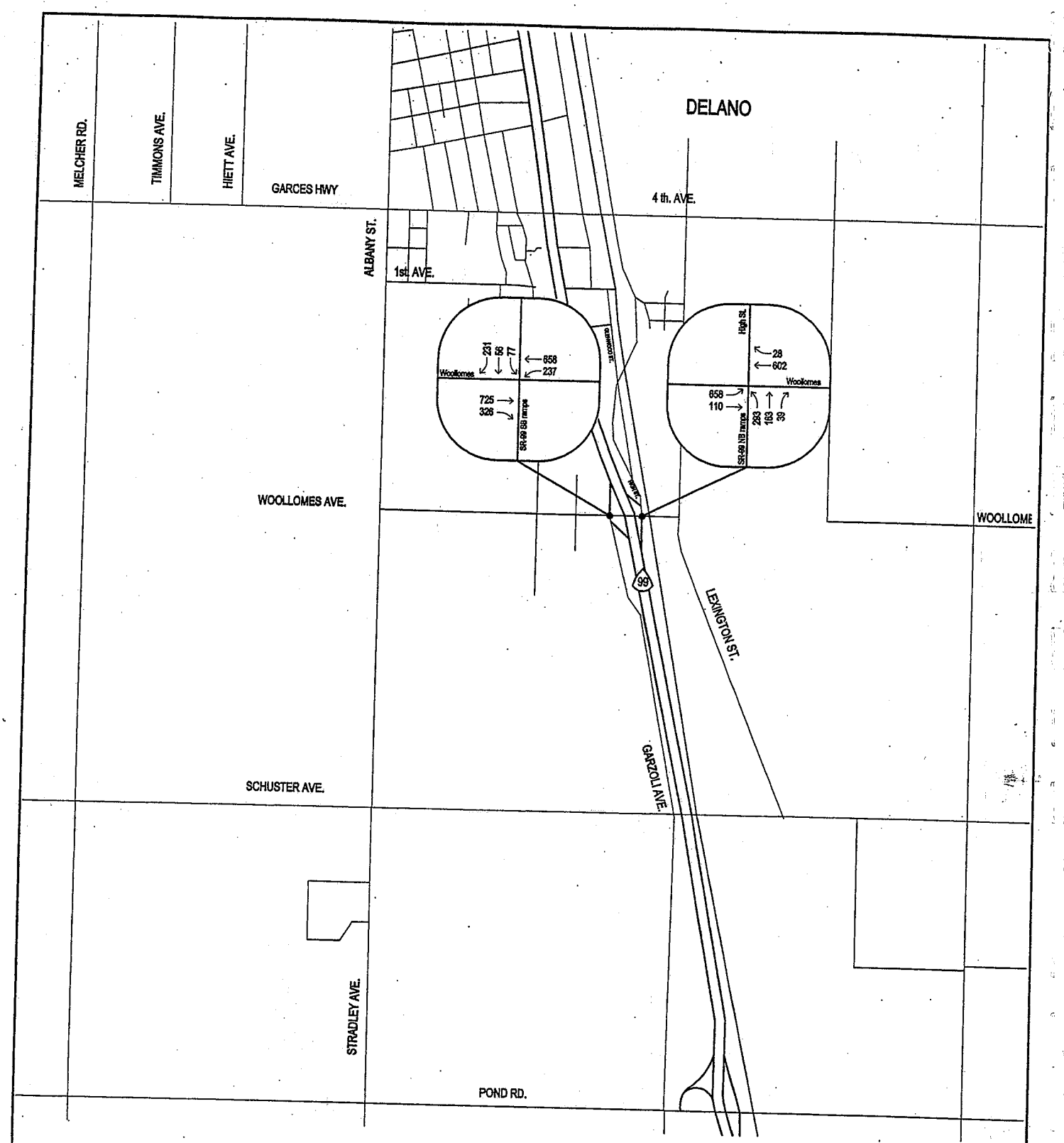
Proposed Market Place I Development
Redistributed Near-Term Plus Approved Projects Plus Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale



Proposed Market Place I Development
Redistributed Saturday Near-Term Plus Approved Projects Plus Project Traffic Volumes
Delano, California

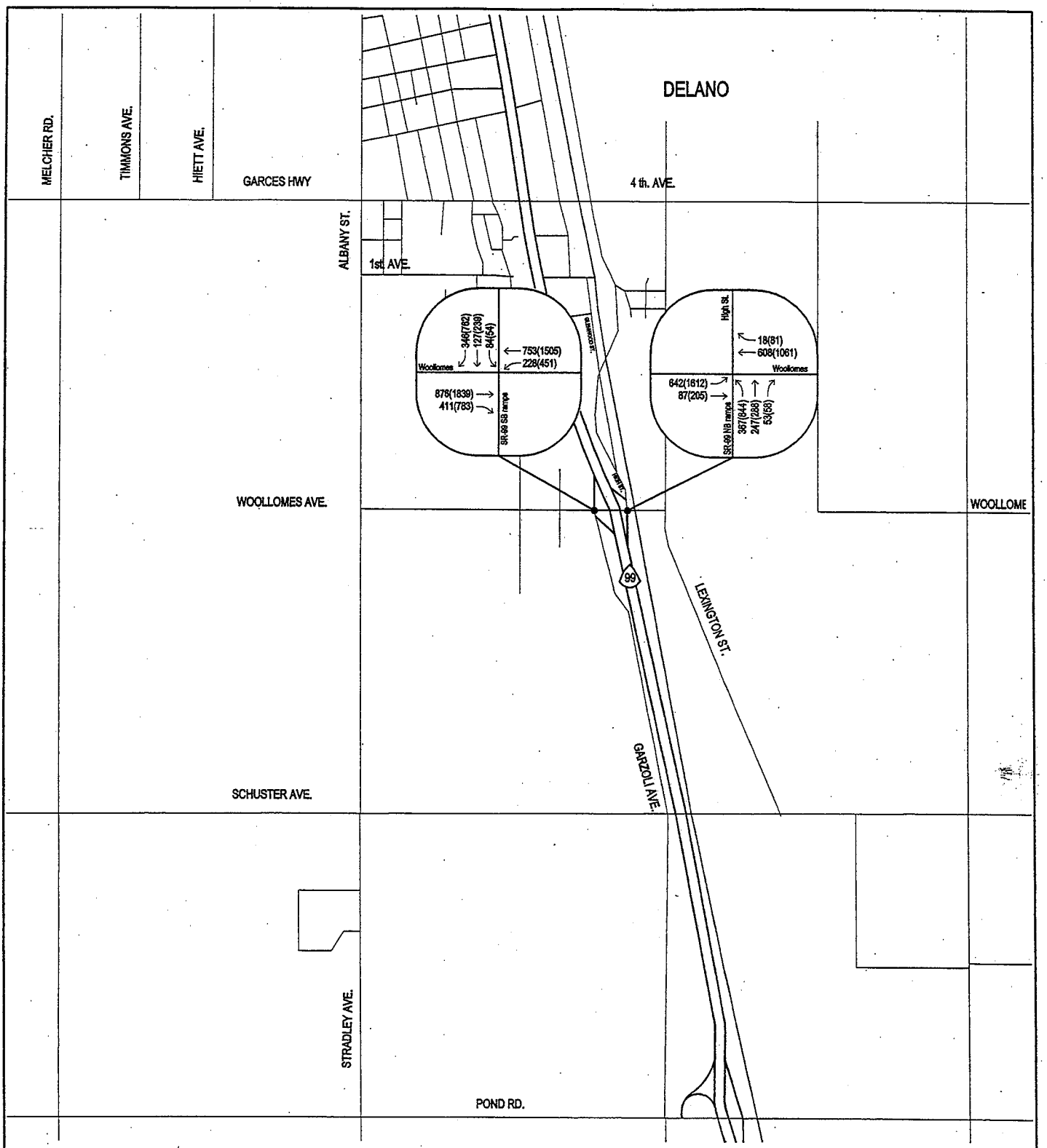
LEGEND

20-Saturday Peak Hour Volumes

Not to Scale

PETERS ENGINEERING GROUP

Figure 4



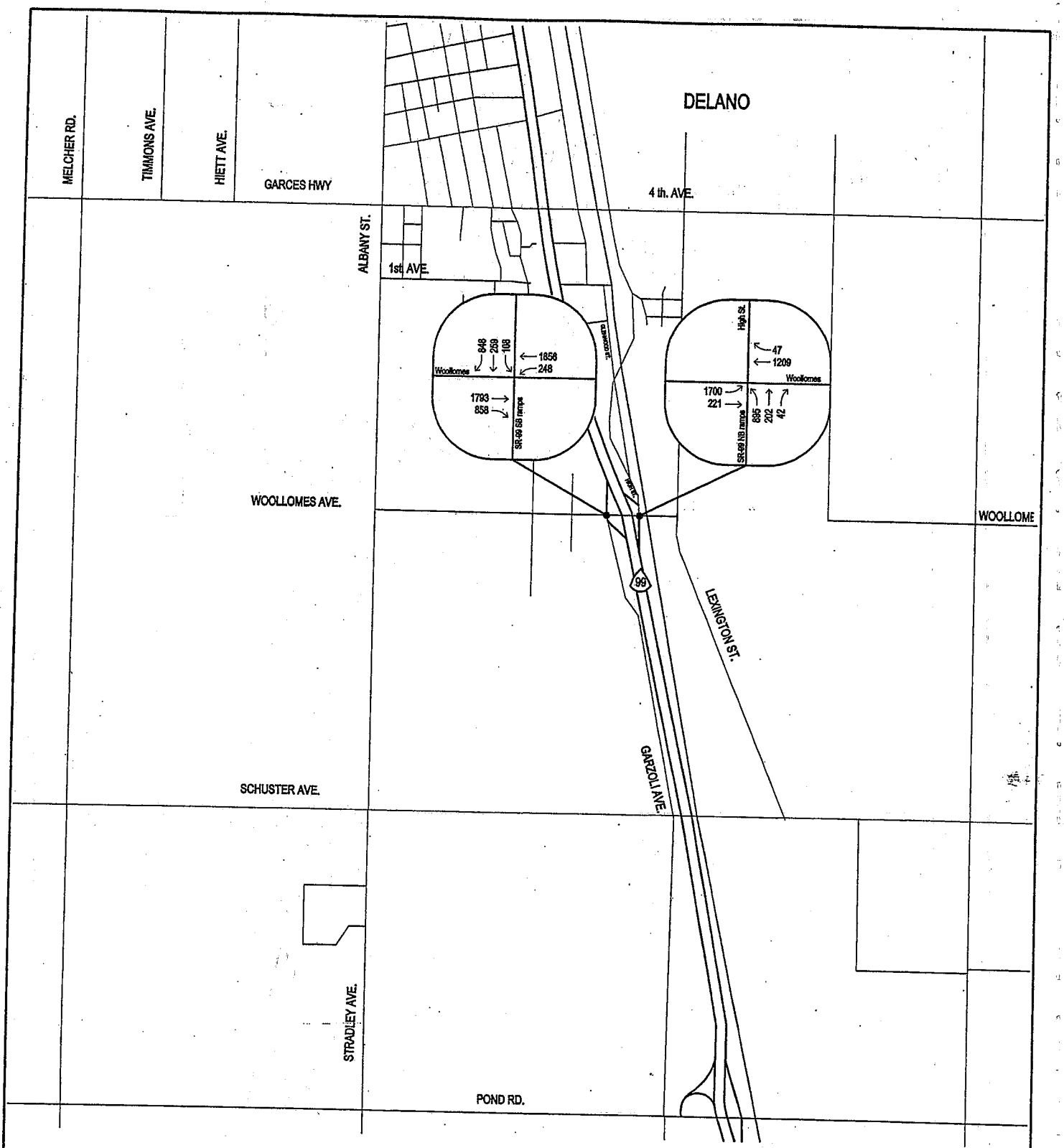
Proposed Market Place I Development
Redistributed Cumulative Year 2030 With Project Traffic Volumes
Delano, California

LEGEND

20-AM Peak Hour Volumes

(20)-PM Peak Hour Volumes

Not to Scale



Proposed Market Place I Development
Redistributed Saturday Cumulative Year 2030 With Project Traffic Volumes
Delano, California

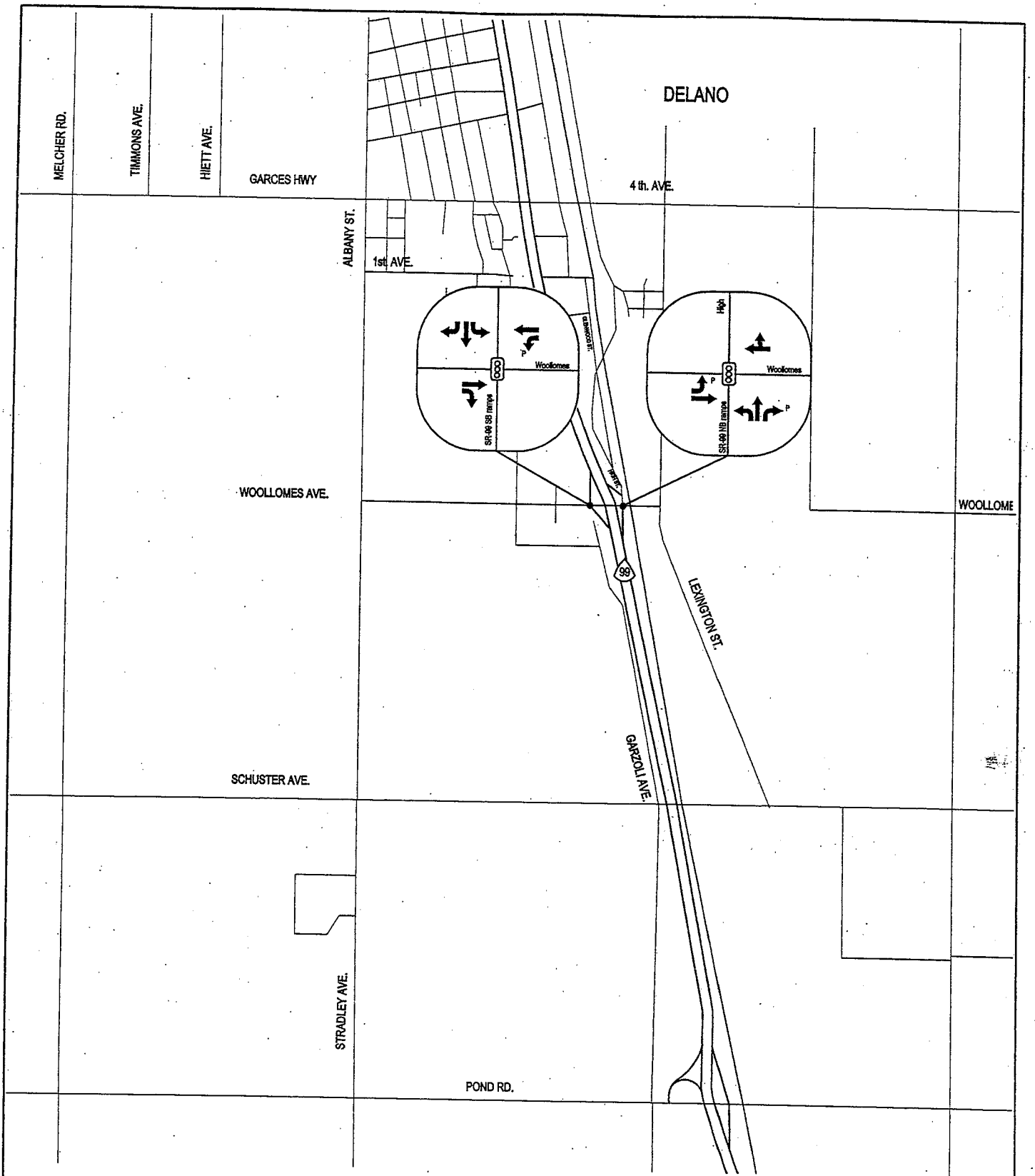
LEGEND

20-Saturday Peak Hour Volumes

Not to Scale

PETERS ENGINEERING GROUP

Figure 6



Proposed Market Place I Development
Opening Day/Near-Term With Project Mitigated Lane Configurations
Delano, California

LEGEND

- SIGNALIZED INTERSECTION
- STOP SIGN
- DIRECTION OF TRAVEL
- P PROTECTED TURN PHASE

Not to Scale

Intersection: 1: Woollomes Avenue & Site Access

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	47	23
Average Queue (ft)	30	21
95th Queue (ft)	44	24
Link Distance (ft)	300	300
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	28
95th Queue (ft)	56
Link Distance (ft)	3185
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	WB	NB
Directions Served	T	LT	LR
Maximum Queue (ft)	50	32	52
Average Queue (ft)	10	6	27
95th Queue (ft)	43	27	55
Link Distance (ft)	768	31	424
Upstream Blk Time (%)		2	
Queuing Penalty (veh)		3	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	SB	SB
Directions Served	TR	LT	R
Maximum Queue (ft)	46	23	29
Average Queue (ft)	14	5	28
95th Queue (ft)	44	20	30
Link Distance (ft)	31	1028	1028
Upstream Blk Time (%)	7		
Queuing Penalty (veh)	12		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB
Directions Served	LT
Maximum Queue (ft)	243
Average Queue (ft)	168
95th Queue (ft)	319
Link Distance (ft)	224
Upstream Blk Time (%)	40
Queuing Penalty (veh)	52
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	NB	NB	B20	SB
Directions Served	T	LT	R	T	R
Maximum Queue (ft)	35	561	562	31	49
Average Queue (ft)	28	136	386	6	36
95th Queue (ft)	34	487	643	27	52
Link Distance (ft)	26	506	506	355	743
Upstream Blk Time (%)	78	2	0		
Queuing Penalty (veh)	40	0	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	LT	T	TR
Maximum Queue (ft)	55	31	32	32	32
Average Queue (ft)	21	11	25	19	24
95th Queue (ft)	65	35	46	44	44
Link Distance (ft)	496	496	409	1669	1669
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 29: Woollomes Avenue &

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	73	503	14
Average Queue (ft)	51	326	3
95th Queue (ft)	69	545	12
Link Distance (ft)	45	496	79
Upstream Blk Time (%)	83	9	
Queuing Penalty (veh)	181	14	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Nework Summary

Network wide Queuing Penalty: 302

Intersection: 1: Woollomes Avenue & Site Access

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	45	21
Average Queue (ft)	18	4
95th Queue (ft)	47	18
Link Distance (ft)	300	300
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB
Directions Served	LR
Maximum Queue (ft)	56
Average Queue (ft)	22
95th Queue (ft)	57
Link Distance (ft)	3185
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	415	393	32	223
Average Queue (ft)	185	79	25	138
95th Queue (ft)	471	338	45	270
Link Distance (ft)	768	768	30	210
Upstream Blk Time (%)			58	24
Queuing Penalty (veh)			111	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	46	235	171	50
Average Queue (ft)	28	142	90	35
95th Queue (ft)	56	295	187	58
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	62	37		
Queuing Penalty (veh)	169	127		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	226	32
Average Queue (ft)	191	12
95th Queue (ft)	303	37
Link Distance (ft)	224	26
Upstream Blk Time (%)	62	10
Queuing Penalty (veh)	147	39
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	WB	NB	NB	B20	B20	SB	SB
Directions Served	T	TR	LT	R	T	T	L	R
Maximum Queue (ft)	37	53	572	571	140	148	21	51
Average Queue (ft)	28	11	344	430	47	42	6	36
95th Queue (ft)	35	46	754	690	146	138	19	56
Link Distance (ft)	26	45	506	506	355	355	743	743
Upstream Blk Time (%)	82	4	43	39				
Queuing Penalty (veh)	75	8	0	0				
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	76	29	178	135	32	264
Average Queue (ft)	15	6	81	40	25	102
95th Queue (ft)	65	25	175	121	46	243
Link Distance (ft)	496	496	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 29: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	53	498
Average Queue (ft)	47	395
95th Queue (ft)	52	618
Link Distance (ft)	45	496
Upstream Blk Time (%)	88	46
Queuing Penalty (veh)	252	105
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 1033

Intersection: 1: Woollomes Avenue & Site Access

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	27	39
Average Queue (ft)	20	12
95th Queue (ft)	37	39
Link Distance (ft)	300	300
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	70	480
Average Queue (ft)	67	362
95th Queue (ft)	69	535
Link Distance (ft)	66	476
Upstream Blk Time (%)	81	21
Queuing Penalty (veh)	163	35
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	27
95th Queue (ft)	65
Link Distance (ft)	3185
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	WB	NB
Directions Served	T	LT	LR
Maximum Queue (ft)	176	31	71
Average Queue (ft)	63	12	36
95th Queue (ft)	178	37	75
Link Distance (ft)	768	30	210
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		2	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	46	20	130	28
Average Queue (ft)	27	7	51	6
95th Queue (ft)	52	23	122	25
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	41			
Queuing Penalty (veh)	73			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB
Directions Served	LT
Maximum Queue (ft)	239
Average Queue (ft)	174
95th Queue (ft)	303
Link Distance (ft)	224
Upstream Blk Time (%)	49
Queuing Penalty (veh)	109
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	LT	R	L	R
Maximum Queue (ft)	41	38	17	52	224	44	49
Average Queue (ft)	8	28	3	41	111	21	34
95th Queue (ft)	35	37	15	60	228	50	51
Link Distance (ft)	26	26	66	534	534	743	743
Upstream Blk Time (%)	2	78					
Queuing Penalty (veh)	2	59					
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	54	31	32	31	32	181
Average Queue (ft)	17	6	32	6	25	67
95th Queue (ft)	53	27	32	27	45	162
Link Distance (ft)	476	476	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 443

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	SB	SB
Directions Served	L	T	L	R
Maximum Queue (ft)	32	30	26	23
Average Queue (ft)	6	6	22	18
95th Queue (ft)	27	26	32	32
Link Distance (ft)	542	542	300	300
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	32	55
Average Queue (ft)	25	17
95th Queue (ft)	46	54
Link Distance (ft)	2588	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	32
Average Queue (ft)	25
95th Queue (ft)	45
Link Distance (ft)	620
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	WB	NB
Directions Served	T	LT	LR
Maximum Queue (ft)	177	31	222
Average Queue (ft)	58	6	81
95th Queue (ft)	180	27	198
Link Distance (ft)	768	30	210
Upstream Blk Time (%)		0	3
Queuing Penalty (veh)		1	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	44	88	151	50
Average Queue (ft)	21	25	65	32
95th Queue (ft)	50	79	151	47
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	40			
Queuing Penalty (veh)	92			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	242	31
Average Queue (ft)	171	12
95th Queue (ft)	321	37
Link Distance (ft)	224	26
Upstream Blk Time (%)	48	1
Queuing Penalty (veh)	84	3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	T	TR	LT	R	R
Maximum Queue (ft)	22	34	17	542	495	69
Average Queue (ft)	4	28	3	211	295	38
95th Queue (ft)	19	33	15	590	555	65
Link Distance (ft)	26	26	45	534	534	743
Upstream Blk Time (%)	3	79		5		
Queuing Penalty (veh)	2	54		0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	LT	T	TR
Maximum Queue (ft)	31	52	54	32	52
Average Queue (ft)	12	10	30	25	35
95th Queue (ft)	35	44	58	45	49
Link Distance (ft)	496	496	409	1669	1669
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 31: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	52	508
Average Queue (ft)	46	335
95th Queue (ft)	51	588
Link Distance (ft)	45	496
Upstream Blk Time (%)	89	5
Queuing Penalty (veh)	216	9
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 460

Intersection: 1: Woollomes Avenue & Site Access

Movement	SB	SB
Directions Served	L	R
Maximum Queue (ft)	48	22
Average Queue (ft)	25	20
95th Queue (ft)	51	24
Link Distance (ft)	300	300
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB
Directions Served	LR
Maximum Queue (ft)	56
Average Queue (ft)	41
95th Queue (ft)	61
Link Distance (ft)	2588
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	56
Average Queue (ft)	45
95th Queue (ft)	63
Link Distance (ft)	620
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	504	545	32	221
Average Queue (ft)	265	201	24	141
95th Queue (ft)	620	609	44	279
Link Distance (ft)	768	768	30	210
Upstream Blk Time (%)			4	26
Queuing Penalty (veh)			11	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	44	40	168	50
Average Queue (ft)	27	12	88	35
95th Queue (ft)	51	38	197	52
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	62			
Queuing Penalty (veh)	238			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	226	32
Average Queue (ft)	180	6
95th Queue (ft)	328	28
Link Distance (ft)	224	26
Upstream Blk Time (%)	63	0
Queuing Penalty (veh)	198	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	NB	NB	SB
Directions Served	L	T	LT	R	R
Maximum Queue (ft)	26	38	506	537	29
Average Queue (ft)	10	28	198	295	28
95th Queue (ft)	29	36	507	552	29
Link Distance (ft)	26	26	506	506	743
Upstream Blk Time (%)	1	80	1	9	
Queuing Penalty (veh)	2	93	0	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	75	31	92	50	32	352
Average Queue (ft)	21	11	53	10	25	159
95th Queue (ft)	70	35	98	43	45	360
Link Distance (ft)	446	446	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 31: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	96	458
Average Queue (ft)	96	381
95th Queue (ft)	96	568
Link Distance (ft)	96	446
Upstream Blk Time (%)	82	49
Queuing Penalty (veh)	266	130
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 938

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	29	26	46
Average Queue (ft)	6	20	27
95th Queue (ft)	25	37	43
Link Distance (ft)	542	300	300
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	72	486
Average Queue (ft)	61	381
95th Queue (ft)	70	595
Link Distance (ft)	56	486
Upstream Blk Time (%)	87	36
Queuing Penalty (veh)	212	65
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	100	29
Average Queue (ft)	49	12
95th Queue (ft)	94	35
Link Distance (ft)	2588	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	54
Average Queue (ft)	34
95th Queue (ft)	66
Link Distance (ft)	620
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	WB	NB
Directions Served	T	LT	LR
Maximum Queue (ft)	431	32	222
Average Queue (ft)	188	13	114
95th Queue (ft)	459	38	238
Link Distance (ft)	768	30	210
Upstream Blk Time (%)		0	15
Queuing Penalty (veh)		1	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	44	60	110	52
Average Queue (ft)	31	27	45	28
95th Queue (ft)	42	72	101	55
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	58			
Queuing Penalty (veh)	172			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	244	32
Average Queue (ft)	186	12
95th Queue (ft)	340	38
Link Distance (ft)	224	26
Upstream Blk Time (%)	60	1
Queuing Penalty (veh)	185	3
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	LT	R	L	R
Maximum Queue (ft)	22	37	70	514	455	23	49
Average Queue (ft)	9	23	14	220	262	11	34
95th Queue (ft)	26	43	60	563	506	21	50
Link Distance (ft)	26	26	56	534	534	743	743
Upstream Blk Time (%)	1	68	1	0			
Queuing Penalty (veh)	1	71	3	0			
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	32	27	97	29	32	119
Average Queue (ft)	12	5	38	6	25	54
95th Queue (ft)	37	23	91	25	46	109
Link Distance (ft)	486	486	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 713

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	WB	NB	NB	SB	SB
Directions Served	L	L	L	TR	L	TR
Maximum Queue (ft)	32	47	55	51	26	30
Average Queue (ft)	12	34	49	39	20	23
95th Queue (ft)	37	45	64	55	36	43
Link Distance (ft)	529	767	247	247	287	287
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	55	31
Average Queue (ft)	45	12
95th Queue (ft)	64	37
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	TR
Maximum Queue (ft)	25	16	42	52	26	44
Average Queue (ft)	10	15	26	38	10	28
95th Queue (ft)	30	17	39	57	30	55
Link Distance (ft)	529	244	244	244	601	601
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	WB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	767	740	32	225
Average Queue (ft)	441	359	12	154
95th Queue (ft)	897	868	36	281
Link Distance (ft)	767	767	30	210
Upstream Blk Time (%)	7		2	52
Queuing Penalty (veh)	17		10	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	IB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	44	38	175	50
Average Queue (ft)	33	8	66	32
95th Queue (ft)	42	33	159	47
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	76			
Queuing Penalty (veh)	410			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB
Directions Served	LT
Maximum Queue (ft)	243
Average Queue (ft)	230
95th Queue (ft)	242
Link Distance (ft)	224
Upstream Blk Time (%)	80
Queuing Penalty (veh)	321
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	T	TR	LT	R	R
Maximum Queue (ft)	41	35	49	543	455	179
Average Queue (ft)	12	28	13	241	287	52
95th Queue (ft)	39	34	44	639	556	161
Link Distance (ft)	26	26	35	534	534	743
Upstream Blk Time (%)	1	85	1	21		
Queuing Penalty (veh)	2	122	3	0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	31	51	153	32	51	494
Average Queue (ft)	12	16	75	13	22	233
95th Queue (ft)	37	50	156	39	55	533
Link Distance (ft)	506	506	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 34: Woollomes Avenue &

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	52	515	26
Average Queue (ft)	39	443	5
95th Queue (ft)	50	660	22
Link Distance (ft)	35	506	75
Upstream Blk Time (%)	88	63	
Queuing Penalty (veh)	303	181	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Nework Summary

Network wide Queuing Penalty: 1369

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	L	T	L	TR	L	TR
Maximum Queue (ft)	32	352	55	30	99	262	133	30
Average Queue (ft)	12	108	28	6	75	117	59	21
95th Queue (ft)	37	332	68	26	121	253	130	40
Link Distance (ft)	529	529	767	767	247	247	287	287
Upstream Blk Time (%)						17		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	93	55
Average Queue (ft)	69	23
95th Queue (ft)	100	57
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	WB	NB	NB	NB	SB	SB
Directions Served	L	L	T	R	L	TR
Maximum Queue (ft)	46	40	23	53	50	44
Average Queue (ft)	23	20	22	34	38	31
95th Queue (ft)	47	36	24	50	58	49
Link Distance (ft)	529	244	244	244	601	601
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	757	774	32	225
Average Queue (ft)	499	441	25	205
95th Queue (ft)	997	1039	45	243
Link Distance (ft)	767	767	30	210
Upstream Blk Time (%)	0	35	8	77
Queuing Penalty (veh)	1	109	64	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	43	227	150	116
Average Queue (ft)	35	181	61	64
95th Queue (ft)	45	286	159	112
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	77	26		
Queuing Penalty (veh)	673	199		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	238	32
Average Queue (ft)	218	24
95th Queue (ft)	253	45
Link Distance (ft)	224	26
Upstream Blk Time (%)	78	25
Queuing Penalty (veh)	526	206
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB
Directions Served	L	T	TR	LT	R	R
Maximum Queue (ft)	22	37	48	545	498	302
Average Queue (ft)	4	28	10	317	309	104
95th Queue (ft)	19	35	41	645	606	271
Link Distance (ft)	26	26	45	534	534	743
Upstream Blk Time (%)	1	85	4	26		
Queuing Penalty (veh)	3	200	16	0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	32	50	415	50	32	516
Average Queue (ft)	13	16	190	29	25	268
95th Queue (ft)	38	51	425	56	45	596
Link Distance (ft)	496	496	409	409	1669	1669
Upstream Blk Time (%)			5			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 34: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	51	498
Average Queue (ft)	46	455
95th Queue (ft)	50	594
Link Distance (ft)	45	496
Upstream Blk Time (%)	88	64
Queuing Penalty (veh)	432	273
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 2701

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	L	TR	L	TR
Maximum Queue (ft)	418	529	529	72	262	262	211	71
Average Queue (ft)	96	239	110	43	210	224	92	35
95th Queue (ft)	363	588	456	70	382	343	203	65
Link Distance (ft)	529	529	529	767	247	247	287	287
Upstream Blk Time (%)		4	1		61	33		
Queuing Penalty (veh)		6	2		0	0		
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	51	506
Average Queue (ft)	39	454
95th Queue (ft)	49	628
Link Distance (ft)	35	506
Upstream Blk Time (%)	88	69
Queuing Penalty (veh)	438	311
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	95	55
Average Queue (ft)	75	24
95th Queue (ft)	113	59
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	NE	NE	NB	SB	SB
Directions Served	LTR	L	L	T	R	L	TR
Maximum Queue (ft)	73	47	57	84	112	89	193
Average Queue (ft)	19	34	32	43	62	37	120
95th Queue (ft)	65	51	59	92	108	87	222
Link Distance (ft)	2576	529	244	244	244	601	601
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	779	649	50	220
Average Queue (ft)	622	440	22	189
95th Queue (ft)	1042	870	54	251
Link Distance (ft)	767	767	30	210
Upstream Blk Time (%)	56		3	74
Queuing Penalty (veh)	237		34	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	45	232	231	151
Average Queue (ft)	33	151	153	77
95th Queue (ft)	43	308	293	139
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	83	21		
Queuing Penalty (veh)	867	212		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	242	32
Average Queue (ft)	232	19
95th Queue (ft)	240	44
Link Distance (ft)	224	26
Upstream Blk Time (%)	82	21
Queuing Penalty (veh)	708	214
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	WB	NB	NB	SB
Directions Served	T	TR	LT	R	R
Maximum Queue (ft)	38	47	306	325	236
Average Queue (ft)	28	9	198	211	146
95th Queue (ft)	36	40	350	382	269
Link Distance (ft)	26	35	534	534	743
Upstream Blk Time (%)	87	4			
Queuing Penalty (veh)	248	16			
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	54	51	114	32	850	904
Average Queue (ft)	21	17	60	18	361	489
95th Queue (ft)	64	52	111	43	922	997
Link Distance (ft)	506	506	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 3292

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	L	L	TR	LR
Maximum Queue (ft)	114	198	54	71	92	52	91	30	75	74
Average Queue (ft)	58	133	22	31	39	27	56	6	57	51
95th Queue (ft)	106	228	56	69	89	65	98	26	84	85
Link Distance (ft)	512	512	512	751	751	751	240	240	240	282
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	NB
Directions Served	LR	TR
Maximum Queue (ft)	136	29
Average Queue (ft)	62	6
95th Queue (ft)	129	25
Link Distance (ft)	2576	178
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	138	68	128	21	81	45	48	47	85
Average Queue (ft)	109	28	68	19	48	27	35	29	46
95th Queue (ft)	136	64	135	22	92	42	51	44	81
Link Distance (ft)	2576	512	512	512	243	243	243	600	600
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	54	504
Average Queue (ft)	54	435
95th Queue (ft)	54	628
Link Distance (ft)	54	490
Upstream Blk Time (%)	89	61
Queuing Penalty (veh)	316	215
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	L	T	L	TR
Maximum Queue (ft)	558	427	50	53	25	4	40
Average Queue (ft)	189	110	22	23	5	1	25
95th Queue (ft)	535	373	54	57	21	3	38
Link Distance (ft)	751	751			462	554	554
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			113	113			
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	L	TR
Maximum Queue (ft)	436	466	67	541	541
Average Queue (ft)	284	350	27	141	411
95th Queue (ft)	585	569	70	474	689
Link Distance (ft)		462	54	526	526
Upstream Blk Time (%)		34	4	0	45
Queuing Penalty (veh)		137	13	0	0
Storage Bay Dist (ft)	410				
Storage Blk Time (%)		42			
Queuing Penalty (veh)		86			

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	TR
Maximum Queue (ft)	94	26	114	32	569	658
Average Queue (ft)	25	5	56	13	133	283
95th Queue (ft)	85	23	105	38	494	668
Link Distance (ft)	490	490	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 767

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	L	L	TR	LR
Maximum Queue (ft)	92	523	51	95	92	95	95	51	254	221
Average Queue (ft)	53	313	21	35	44	24	80	26	133	86
95th Queue (ft)	103	601	53	94	94	84	107	64	260	200
Link Distance (ft)	512	512	512	751	751	751	240	240	240	282
Upstream Blk Time (%)		21							13	
Queuing Penalty (veh)		44							0	
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	128	75
Average Queue (ft)	75	15
95th Queue (ft)	123	65
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	31	348	85	110	42	78	86	258	152	211
Average Queue (ft)	15	162	48	66	23	42	65	105	110	72
95th Queue (ft)	37	334	84	141	38	84	95	232	149	194
Link Distance (ft)	2576	2576	512	512	512	243	243	243	600	600
Upstream Blk Time (%)								7		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	54	501	12
Average Queue (ft)	54	457	2
95th Queue (ft)	54	577	10
Link Distance (ft)	54	491	68
Upstream Blk Time (%)	89	66	
Queuing Penalty (veh)	450	352	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	L	T	L	TR
Maximum Queue (ft)	777	776	52	95	74	49	129
Average Queue (ft)	482	331	16	55	29	23	76
95th Queue (ft)	940	921	51	103	88	56	142
Link Distance (ft)	751	751			462	554	554
Upstream Blk Time (%)	34	33					
Queuing Penalty (veh)	139	134					
Storage Bay Dist (ft)			116	113			
Storage Blk Time (%)				0			
Queuing Penalty (veh)				0			

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB	E20	E20
Directions Served	L	T	TR	L	TR	T	T
Maximum Queue (ft)	433	482	54	571	490	342	342
Average Queue (ft)	91	393	16	395	382	112	106
95th Queue (ft)	374	594	51	684	594	348	336
Link Distance (ft)		462	54	498	498	327	327
Upstream Blk Time (%)		59	7	36	40	7	5
Queuing Penalty (veh)		400	37	0	0	0	0
Storage Bay Dist (ft)	410						
Storage Blk Time (%)		60					
Queuing Penalty (veh)		204					

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	TR
Maximum Queue (ft)	74	30	178	32	570	779
Average Queue (ft)	15	11	76	18	136	346
95th Queue (ft)	63	33	200	43	495	808
Link Distance (ft)	491	491	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 1761

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	68	504	50	134	131	94	29	135	113	246	136
Average Queue (ft)	48	269	35	99	95	37	11	84	55	149	76
95th Queue (ft)	69	469	47	146	133	91	32	144	117	274	145
Link Distance (ft)	512	512	512	751	751	751	751	240	240	240	282
Upstream Blk Time (%)		0								21	
Queuing Penalty (veh)		1								0	
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	121	76
Average Queue (ft)	89	32
95th Queue (ft)	130	81
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	52	266	132	130	63	96	149	74	110	209
Average Queue (ft)	29	211	90	70	48	69	94	56	87	141
95th Queue (ft)	56	343	151	131	60	102	147	84	125	202
Link Distance (ft)	2576	2576	512	512	512	243	243	243	600	600
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	94	479
Average Queue (ft)	87	450
95th Queue (ft)	93	502
Link Distance (ft)	85	460
Upstream Blk Time (%)	84	75
Queuing Penalty (veh)	412	438
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	L	T	L	TR
Maximum Queue (ft)	736	764	57	94	29	89	190
Average Queue (ft)	408	320	11	39	6	63	136
95th Queue (ft)	874	909	49	85	25	97	226
Link Distance (ft)	751	751			462	554	554
Upstream Blk Time (%)	0	29					
Queuing Penalty (veh)	1	146					
Storage Bay Dist (ft)			113	113			
Storage Blk Time (%)				0			
Queuing Penalty (veh)				0			

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	L	TR
Maximum Queue (ft)	74	481	90	525	540
Average Queue (ft)	32	358	40	333	348
95th Queue (ft)	82	626	106	589	646
Link Distance (ft)		462	85	525	525
Upstream Blk Time (%)		56	9	28	32
Queuing Penalty (veh)		424	58	0	0
Storage Bay Dist (ft)	410				
Storage Blk Time (%)		57			
Queuing Penalty (veh)		203			

Intersection: 14: Woollomes Avenue & Lexington

Movement	NB	NB	SB	SE
Directions Served	L	T	T	TR
Maximum Queue (ft)	268	32	1202	1215
Average Queue (ft)	119	10	528	719
95th Queue (ft)	277	31	1315	1347
Link Distance (ft)	409	409	1669	1669
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Nework Summary

Network wide Queuing Penalty	1683

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	29	42	23
Average Queue (ft)	6	29	23
95th Queue (ft)	25	40	23
Link Distance (ft)	542	300	300
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	69	500
Average Queue (ft)	58	324
95th Queue (ft)	67	592
Link Distance (ft)	55	486
Upstream Blk Time (%)	90	20
Queuing Penalty (veh)	252	41
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB
Directions Served	LR
Maximum Queue (ft)	32
Average Queue (ft)	25
95th Queue (ft)	46
Link Distance (ft)	2588
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	32
Average Queue (ft)	31
95th Queue (ft)	34
Link Distance (ft)	620
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	WB	NB
Directions Served	T	LT	LR
Maximum Queue (ft)	226	32	159
Average Queue (ft)	60	13	66
95th Queue (ft)	204	38	157
Link Distance (ft)	768	30	223
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		4	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	44	108	87	72
Average Queue (ft)	21	37	39	36
95th Queue (ft)	50	100	92	66
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	44			
Queuing Penalty (veh)	122			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB
Directions Served	LT
Maximum Queue (ft)	242
Average Queue (ft)	176
95th Queue (ft)	325
Link Distance (ft)	224
Upstream Blk Time (%)	47
Queuing Penalty (veh)	97
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	T	LT	R	L	R
Maximum Queue (ft)	43	36	543	549	61	43
Average Queue (ft)	9	26	238	318	19	26
95th Queue (ft)	37	36	634	645	55	49
Link Distance (ft)	26	26	534	534	743	743
Upstream Blk Time (%)	2	72	12	16		
Queuing Penalty (veh)	2	57	0	0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	55	32	32	31	32	117
Average Queue (ft)	22	6	25	6	12	57
95th Queue (ft)	67	27	46	27	37	113
Link Distance (ft)	486	486	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 575

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	30	26	23
Average Queue (ft)	12	24	12
95th Queue (ft)	35	26	30
Link Distance (ft)	542	300	300
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	53	504
Average Queue (ft)	47	356
95th Queue (ft)	52	574
Link Distance (ft)	45	496
Upstream Blk Time (%)	89	25
Queuing Penalty (veh)	329	77
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	54	71
Average Queue (ft)	44	20
95th Queue (ft)	64	66
Link Distance (ft)	2588	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	30	32
Average Queue (ft)	6	23
95th Queue (ft)	26	43
Link Distance (ft)	2588	620
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	WB	NB
Directions Served	T	LT	LR
Maximum Queue (ft)	568	55	238
Average Queue (ft)	228	21	133
95th Queue (ft)	584	64	276
Link Distance (ft)	768	30	223
Upstream Blk Time (%)		4	30
Queuing Penalty (veh)		14	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	43	128	88	49
Average Queue (ft)	32	42	47	36
95th Queue (ft)	42	117	94	51
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	54			
Queuing Penalty (veh)	235			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	246	32
Average Queue (ft)	185	6
95th Queue (ft)	339	28
Link Distance (ft)	224	26
Upstream Blk Time (%)	55	0
Queuing Penalty (veh)	196	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	NB	NB	SB
Directions Served	T	LT	R	R
Maximum Queue (ft)	38	540	540	71
Average Queue (ft)	28	234	340	40
95th Queue (ft)	36	569	590	69
Link Distance (ft)	26	534	534	743
Upstream Blk Time (%)	81	3	3	
Queuing Penalty (veh)	107	0	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	56	54	75	32	32	244
Average Queue (ft)	22	17	45	6	31	94
95th Queue (ft)	67	52	73	28	33	230
Link Distance (ft)	496	496	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 957

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	SB	SB
Directions Served	L	L	R
Maximum Queue (ft)	32	48	36
Average Queue (ft)	18	30	22
95th Queue (ft)	42	45	36
Link Distance (ft)	542	300	300
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	55	501
Average Queue (ft)	55	352
95th Queue (ft)	55	593
Link Distance (ft)	55	486
Upstream Blk Time (%)	87	25
Queuing Penalty (veh)	241	51
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	74	53
Average Queue (ft)	49	17
95th Queue (ft)	76	52
Link Distance (ft)	2588	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	SB
Directions Served	LR
Maximum Queue (ft)	51
Average Queue (ft)	39
95th Queue (ft)	55
Link Distance (ft)	620
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	626	626	32	219
Average Queue (ft)	326	215	13	146
95th Queue (ft)	691	659	38	278
Link Distance (ft)	768	768	30	210
Upstream Blk Time (%)			2	45
Queuing Penalty (veh)			5	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	43	192	239	48
Average Queue (ft)	33	55	152	33
95th Queue (ft)	42	172	263	45
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	70			
Queuing Penalty (veh)	240			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	NB
Directions Served	LT	TR
Maximum Queue (ft)	224	32
Average Queue (ft)	221	6
95th Queue (ft)	234	28
Link Distance (ft)	224	26
Upstream Blk Time (%)	77	0
Queuing Penalty (veh)	273	2
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	T	LT	R	L	R
Maximum Queue (ft)	26	35	417	516	21	51
Average Queue (ft)	5	28	177	302	5	38
95th Queue (ft)	22	34	451	573	19	56
Link Distance (ft)	26	26	534	534	743	743
Upstream Blk Time (%)	3	84		0		
Queuing Penalty (veh)	3	99		0		
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	32	31	52	31	32	161
Average Queue (ft)	12	11	29	6	25	62
95th Queue (ft)	35	34	56	27	45	145
Link Distance (ft)	486	486	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 914

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	L	TR	L	TR
Maximum Queue (ft)	54	31	32	31	21	138	74	48	30
Average Queue (ft)	29	6	6	24	7	73	52	28	29
95th Queue (ft)	57	27	27	45	23	148	82	57	31
Link Distance (ft)	529	529	529	767	767	247	247	287	287
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	76	51
Average Queue (ft)	65	20
95th Queue (ft)	81	61
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	L	T	R	L	TR
Maximum Queue (ft)	31	47	38	23	51	26	41
Average Queue (ft)	6	24	15	9	40	25	22
95th Queue (ft)	27	58	39	27	57	29	43
Link Distance (ft)	2576	529	244	244	244	601	601
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	795	750	32	225
Average Queue (ft)	343	251	13	127
95th Queue (ft)	835	775	39	251
Link Distance (ft)	767	767	30	210
Upstream Blk Time (%)	3	0	2	35
Queuing Penalty (veh)	6	0	14	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	46	40	23	70
Average Queue (ft)	28	12	10	47
95th Queue (ft)	53	38	27	73
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	56			
Queuing Penalty (veh)	330			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	249	32
Average Queue (ft)	199	12
95th Queue (ft)	304	37
Link Distance (ft)	224	26
Upstream Blk Time (%)	58	1
Queuing Penalty (veh)	251	7
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	SB	SB
Directions Served	L	T	R	R	L	TR
Maximum Queue (ft)	54	570	277	55	264	53
Average Queue (ft)	17	359	55	11	165	22
95th Queue (ft)	53	759	238	47	297	56
Link Distance (ft)	529	529	529	767	287	287
Upstream Blk Time (%)		45				
Queuing Penalty (veh)		277				
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	1414	53	639
Average Queue (ft)	885	19	473
95th Queue (ft)	1456	51	736
Link Distance (ft)	2576	190	2625
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	R	L	T	R	L	TR
Maximum Queue (ft)	2116	44	11	256	278	151	613	616
Average Queue (ft)	1066	20	2	180	258	62	603	584
95th Queue (ft)	2114	49	9	261	282	156	619	659
Link Distance (ft)	2576	529	529	244	244	244	601	601
Upstream Blk Time (%)				0	87		86	45
Queuing Penalty (veh)				0	0		0	0
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	NB	NB	SB
Directions Served	L	T	LT	R	R
Maximum Queue (ft)	43	38	546	469	75
Average Queue (ft)	9	26	239	297	55
95th Queue (ft)	37	38	633	544	72
Link Distance (ft)	26	26	534	534	743
Upstream Blk Time (%)	2	71	19		
Queuing Penalty (veh)	2	109	0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	32	28	180	32	455	543
Average Queue (ft)	13	11	84	6	115	222
95th Queue (ft)	38	33	174	28	396	562
Link Distance (ft)	476	476	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 34: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	72	483
Average Queue (ft)	67	395
95th Queue (ft)	71	611
Link Distance (ft)	65	476
Upstream Blk Time (%)	86	50
Queuing Penalty (veh)	329	156
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty	1205

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	L	L	TR	L	TR
Maximum Queue (ft)	28	543	54	70	260	26	30
Average Queue (ft)	6	180	17	49	138	23	17
95th Queue (ft)	24	533	53	72	279	26	40
Link Distance (ft)	529	529	767	247	247	287	287
Upstream Blk Time (%)		4			18		
Queuing Penalty (veh)		5			0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	92	55
Average Queue (ft)	61	42
95th Queue (ft)	96	67
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	R	L	T	R	L	TR
Maximum Queue (ft)	52	25	11	42	41	49	50	108
Average Queue (ft)	14	19	2	21	26	37	25	47
95th Queue (ft)	48	35	9	38	39	53	52	100
Link Distance (ft)	2576	529	529	244	244	244	601	601
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	WB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	767	755	54	238
Average Queue (ft)	575	430	35	231
95th Queue (ft)	1004	1011	51	237
Link Distance (ft)	767	767	30	223
Upstream Blk Time (%)	8	0	90	87
Queuing Penalty (veh)	27	1	741	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	46	235	664	680
Average Queue (ft)	34	228	271	396
95th Queue (ft)	44	236	707	760
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	82	84		
Queuing Penalty (veh)	770	706		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	240	32
Average Queue (ft)	230	28
95th Queue (ft)	238	33
Link Distance (ft)	224	26
Upstream Blk Time (%)	83	84
Queuing Penalty (veh)	602	759
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	LT	R	L	R
Maximum Queue (ft)	26	38	70	549	549	681	724
Average Queue (ft)	5	28	28	510	402	348	527
95th Queue (ft)	22	36	84	574	704	831	765
Link Distance (ft)	26	26	55	534	534	743	743
Upstream Blk Time (%)	0	89	10	45	43		0
Queuing Penalty (veh)	0	223	46	0	0		0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	105	53	421	373	797	897
Average Queue (ft)	36	11	216	98	392	464
95th Queue (ft)	111	46	428	326	914	1014
Link Distance (ft)	486	486	409	409	1669	1669
Upstream Blk Time (%)			5			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 34: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	55	486
Average Queue (ft)	55	446
95th Queue (ft)	55	579
Link Distance (ft)	55	486
Upstream Blk Time (%)	89	71
Queuing Penalty (veh)	482	334
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 4696

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	L	TR	L	TR
Maximum Queue (ft)	444	561	605	516	308	260	126	390	30
Average Queue (ft)	184	283	211	218	62	235	78	215	28
95th Queue (ft)	521	678	613	502	265	285	123	331	33
Link Distance (ft)	529	529	529	767	767	247	247	287	287
Upstream Blk Time (%)		21				68		17	
Queuing Penalty (veh)		35				0		0	
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	71	500
Average Queue (ft)	60	462
95th Queue (ft)	69	554
Link Distance (ft)	55	486
Upstream Blk Time (%)	90	74
Queuing Penalty (veh)	478	354
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	76	56
Average Queue (ft)	54	39
95th Queue (ft)	77	75
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	R	L	T	R	L	TR
Maximum Queue (ft)	338	47	11	60	48	144	69	108
Average Queue (ft)	86	29	2	25	41	65	59	60
95th Queue (ft)	298	44	10	54	56	132	76	108
Link Distance (ft)	2576	529	529	244	244	244	601	601
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	789	634	32	222
Average Queue (ft)	608	493	6	210
95th Queue (ft)	1046	901	27	220
Link Distance (ft)	767	767	30	210
Upstream Blk Time (%)	59		6	87
Queuing Penalty (veh)	256		63	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	44	167	306	308
Average Queue (ft)	33	49	167	237
95th Queue (ft)	42	149	321	357
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	81			
Queuing Penalty (veh)	888			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	238	51
Average Queue (ft)	227	23
95th Queue (ft)	236	56
Link Distance (ft)	224	26
Upstream Blk Time (%)	81	4
Queuing Penalty (veh)	737	37
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	LT	R	L	R
Maximum Queue (ft)	42	35	53	549	398	44	160
Average Queue (ft)	8	28	11	373	288	21	98
95th Queue (ft)	36	34	46	619	470	47	173
Link Distance (ft)	26	26	55	534	534	743	743
Upstream Blk Time (%)	2	89	0	22			
Queuing Penalty (veh)	5	267	2	0			
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	LT	T	TR
Maximum Queue (ft)	32	30	328	810	899
Average Queue (ft)	13	12	174	382	508
95th Queue (ft)	38	36	350	943	992
Link Distance (ft)	486	486	409	1669	1669
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Nework Summary

Network wide Queuing Penalty: 3123

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	89	112	70	50	52	68	26	95	30	73	89
Average Queue (ft)	67	99	41	35	45	44	5	53	6	52	53
95th Queue (ft)	98	126	68	57	58	82	22	90	26	74	86
Link Distance (ft)	512	512	512	751	751	751	751	240	240	240	282
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB
Directions Served	L	R
Maximum Queue (ft)	29	99
Average Queue (ft)	6	62
95th Queue (ft)	25	93
Link Distance (ft)	2576	2576
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	31	199	45	66	22	40	63	111	75	70
Average Queue (ft)	6	90	29	44	12	29	28	63	43	47
95th Queue (ft)	27	181	43	75	28	47	58	108	73	73
Link Distance (ft)	2576	2576	512	512	512	243	243	243	601	601
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	71	482
Average Queue (ft)	66	456
95th Queue (ft)	70	539
Link Distance (ft)	64	481
Upstream Blk Time (%)	80	76
Queuing Penalty (veh)	317	294
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	L	T	L	TR
Maximum Queue (ft)	95	32	49	74	32	25	46
Average Queue (ft)	77	32	21	51	6	13	35
95th Queue (ft)	92	32	53	75	27	29	52
Link Distance (ft)	751	751			462	554	554
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			113	113			
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	L	TR
Maximum Queue (ft)	430	469	72	73	539
Average Queue (ft)	97	256	19	64	334
95th Queue (ft)	373	506	65	92	656
Link Distance (ft)		462	64	526	526
Upstream Blk Time (%)		4	2		23
Queuing Penalty (veh)		14	7		0
Storage Bay Dist (ft)	410				
Storage Blk Time (%)		9			
Queuing Penalty (veh)		16			

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	NB	NB	SE	SE
Directions Served	L	L	T	T	TR
Maximum Queue (ft)	75	117	28	720	716
Average Queue (ft)	25	73	6	248	399
95th Queue (ft)	78	122	24	744	799
Link Distance (ft)	481	409	409	1669	1669
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Nework Summary

Network wide Queuing Penalty: 648

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	68	306	50	98	75	112	26	115	92	200	135
Average Queue (ft)	46	246	28	57	61	71	5	96	49	95	61
95th Queue (ft)	75	330	54	101	89	119	22	123	98	201	138
Link Distance (ft)	512	512	512	751	751	751	751	240	240	240	282
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB
Directions Served	L	R
Maximum Queue (ft)	32	58
Average Queue (ft)	19	55
95th Queue (ft)	44	58
Link Distance (ft)	2576	2576
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	31	266	110	66	43	81	108	96	113	95
Average Queue (ft)	24	125	70	52	33	50	48	68	79	63
95th Queue (ft)	34	245	110	70	50	79	100	103	138	98
Link Distance (ft)	2576	2576	512	512	512	243	243	243	601	601
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	75	496
Average Queue (ft)	66	486
95th Queue (ft)	73	495
Link Distance (ft)	64	481
Upstream Blk Time (%)	90	88
Queuing Penalty (veh)	497	515
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	L	T	L	TR
Maximum Queue (ft)	759	779	54	71	95	86	84
Average Queue (ft)	351	294	35	57	40	36	44
95th Queue (ft)	845	812	68	78	105	89	81
Link Distance (ft)	751	751			462	554	554
Upstream Blk Time (%)	12	15					
Queuing Penalty (veh)	50	66					
Storage Bay Dist (ft)			113	113			
Storage Blk Time (%)					0		
Queuing Penalty (veh)					0		

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	L	TR
Maximum Queue (ft)	26	478	64	204	539
Average Queue (ft)	5	363	18	153	427
95th Queue (ft)	22	588	59	282	647
Link Distance (ft)		462	64	526	526
Upstream Blk Time (%)		48	7		44
Queuing Penalty (veh)		269	41		0
Storage Bay Dist (ft)	410				
Storage Blk Time (%)		48			
Queuing Penalty (veh)		153			

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	TR
Maximum Queue (ft)	94	26	418	31	1296	1435
Average Queue (ft)	30	5	315	12	710	826
95th Queue (ft)	93	23	492	37	1485	1599
Link Distance (ft)	481	481	409	409	1669	1669
Upstream Blk Time (%)			39			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 1592

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	90	518	473	117	115	138	27	118	74	244	298
Average Queue (ft)	49	390	206	89	101	50	5	75	31	154	135
95th Queue (ft)	96	587	556	119	130	128	24	142	79	285	299
Link Distance (ft)	512	512	512	751	751	751	751	240	240	240	282
Upstream Blk Time (%)		22								28	19
Queuing Penalty (veh)		54								0	0
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (ft)	55	76	55
Average Queue (ft)	36	58	24
95th Queue (ft)	52	73	59
Link Distance (ft)	2576	2576	2613
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	28	391	130	84	43	145	108	258	462	433
Average Queue (ft)	9	242	76	47	25	80	87	119	266	155
95th Queue (ft)	28	384	141	102	40	136	105	240	445	389
Link Distance (ft)	2576	2576	512	512	512	243	243	243	601	601
Upstream Blk Time (%)								6		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	78	481
Average Queue (ft)	67	481
95th Queue (ft)	76	481
Link Distance (ft)	64	481
Upstream Blk Time (%)	90	87
Queuing Penalty (veh)	472	547
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB
Directions Served	T	R	L	L	T	L	TR
Maximum Queue (ft)	761	657	51	70	32	151	292
Average Queue (ft)	555	401	23	42	19	52	168
95th Queue (ft)	970	898	56	69	44	151	289
Link Distance (ft)	751	751			462	554	554
Upstream Blk Time (%)	42						
Queuing Penalty (veh)	222						
Storage Bay Dist (ft)			113	113			
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB
Directions Served	L	T	TR	L	TR
Maximum Queue (ft)	75	464	69	541	541
Average Queue (ft)	27	398	27	349	392
95th Queue (ft)	82	612	80	594	646
Link Distance (ft)		462	64	526	526
Upstream Blk Time (%)		64	9	20	28
Queuing Penalty (veh)		516	55	0	0
Storage Bay Dist (ft)	410				
Storage Blk Time (%)		68			
Queuing Penalty (veh)		257			

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	119	32	414	50	32	1219	1233
Average Queue (ft)	24	6	244	19	6	695	769
95th Queue (ft)	103	27	454	51	27	1344	1322
Link Distance (ft)	481	481	409	409	409	1669	1669
Upstream Blk Time (%)			5				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Nework Summary

Network wide Queuing Penalty: 2123

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	SB	SB
Directions Served	L	T	L	TR
Maximum Queue (ft)	32	548	66	30
Average Queue (ft)	22	174	36	28
95th Queue (ft)	42	546	67	31
Link Distance (ft)	529	529	287	287
Upstream Blk Time (%)		10		
Queuing Penalty (veh)		20		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	95	56	99
Average Queue (ft)	70	17	79
95th Queue (ft)	95	54	105
Link Distance (ft)	2576	190	2625
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	L	T	R	L	TR
Maximum Queue (ft)	159	25	98	109	69	152	105
Average Queue (ft)	74	25	59	74	36	67	88
95th Queue (ft)	154	26	100	122	64	143	126
Link Distance (ft)	2576	529	244	244	244	601	601
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	777	631	32	329
Average Queue (ft)	502	367	19	146
95th Queue (ft)	966	861	45	334
Link Distance (ft)	767	767	31	422
Upstream Blk Time (%)	32		6	
Queuing Penalty (veh)	104		55	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	46	82	147	114
Average Queue (ft)	36	25	81	74
95th Queue (ft)	48	73	166	115
Link Distance (ft)	31	224	1028	1028
Upstream Blk Time (%)	70			
Queuing Penalty (veh)	507			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	266	32
Average Queue (ft)	218	24
95th Queue (ft)	339	45
Link Distance (ft)	224	26
Upstream Blk Time (%)	70	3
Queuing Penalty (veh)	494	21
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	WB	NB	NB	SB
Directions Served	T	TR	LT	R	R
Maximum Queue (ft)	36	54	549	549	50
Average Queue (ft)	26	11	336	392	32
95th Queue (ft)	37	47	696	641	47
Link Distance (ft)	26	54	534	534	743
Upstream Blk Time (%)	73	0	29	32	
Queuing Penalty (veh)	108	2	0	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	LT	T	TR
Maximum Queue (ft)	96	96	70	432	540
Average Queue (ft)	26	25	48	116	278
95th Queue (ft)	87	87	73	377	598
Link Distance (ft)	487	487	409	1669	1669
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 34: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	54	501
Average Queue (ft)	54	437
95th Queue (ft)	54	614
Link Distance (ft)	54	487
Upstream Blk Time (%)	88	62
Queuing Penalty (veh)	345	199
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 1855

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	776	758	56	435
Average Queue (ft)	648	563	41	373
95th Queue (ft)	1022	1030	60	505
Link Distance (ft)	767	767	31	426
Upstream Blk Time (%)	59	0	14	44
Queuing Penalty (veh)	551	2	254	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	42	234	789	879
Average Queue (ft)	33	59	667	830
95th Queue (ft)	40	209	777	897
Link Distance (ft)	31	224	1028	1028
Upstream Blk Time (%)	81	5		
Queuing Penalty (veh)	1547	77		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	248	31
Average Queue (ft)	236	13
95th Queue (ft)	246	38
Link Distance (ft)	224	26
Upstream Blk Time (%)	82	5
Queuing Penalty (veh)	1233	81
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	LT	R	L	R
Maximum Queue (ft)	28	38	68	563	561	754	758
Average Queue (ft)	10	28	19	529	472	535	667
95th Queue (ft)	31	36	62	566	584	990	791
Link Distance (ft)	26	26	55	534	534	743	743
Upstream Blk Time (%)	4	86	2	23	21	0	30
Queuing Penalty (veh)	16	323	11	0	0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	71	54	268	285	1218	1262
Average Queue (ft)	24	21	152	128	572	647
95th Queue (ft)	75	64	305	302	1365	1373
Link Distance (ft)	486	486	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 34: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	72	500
Average Queue (ft)	61	475
95th Queue (ft)	70	526
Link Distance (ft)	55	486
Upstream Blk Time (%)	89	77
Queuing Penalty (veh)	736	488
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 5595

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	WB	WB	SB	SB
Directions Served	L	T	T	R	L	TR
Maximum Queue (ft)	53	578	89	28	237	73
Average Queue (ft)	27	319	18	6	155	47
95th Queue (ft)	57	737	77	24	255	82
Link Distance (ft)	529	529	767	767	287	287
Upstream Blk Time (%)		39				
Queuing Penalty (veh)		216				
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	72	497
Average Queue (ft)	61	482
95th Queue (ft)	70	507
Link Distance (ft)	55	486
Upstream Blk Time (%)	87	79
Queuing Penalty (veh)	652	535
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	1800	22	2237
Average Queue (ft)	1043	4	1408
95th Queue (ft)	1823	19	2300
Link Distance (ft)	2576	190	2625
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	R	L	T	L	TR
Maximum Queue (ft)	1897	47	11	88	278	614	616
Average Queue (ft)	988	29	4	52	253	591	609
95th Queue (ft)	2013	56	13	102	278	626	618
Link Distance (ft)	2576	529	529	244	244	601	601
Upstream Blk Time (%)					100	81	89
Queuing Penalty (veh)					0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	773	733	77	222
Average Queue (ft)	597	532	55	169
95th Queue (ft)	1070	996	80	257
Link Distance (ft)	767	767	30	210
Upstream Blk Time (%)	49		10	43
Queuing Penalty (veh)	465		181	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	46	257	1044	1061
Average Queue (ft)	34	206	802	909
95th Queue (ft)	44	307	1102	1132
Link Distance (ft)	30	224	1028	1028
Upstream Blk Time (%)	79	45	0	11
Queuing Penalty (veh)	1537	703	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	249	32
Average Queue (ft)	237	24
95th Queue (ft)	247	44
Link Distance (ft)	224	26
Upstream Blk Time (%)	79	45
Queuing Penalty (veh)	1160	777
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	LT	R	L	R
Maximum Queue (ft)	26	35	68	568	563	758	758
Average Queue (ft)	10	28	27	552	521	596	676
95th Queue (ft)	29	34	82	565	588	867	789
Link Distance (ft)	26	26	55	534	534	743	743
Upstream Blk Time (%)	1	87	9	91	3	14	21
Queuing Penalty (veh)	4	303	57	0	0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	54	32	197	32	1475	1500
Average Queue (ft)	21	12	110	18	810	921
95th Queue (ft)	63	37	205	43	1613	1604
Link Distance (ft)	486	486	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 6590

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	L	L	TR	L	TR
Maximum Queue (ft)	32	544	53	152	262	130	30
Average Queue (ft)	30	244	29	115	129	52	24
95th Queue (ft)	34	644	57	153	285	116	43
Link Distance (ft)	529	529	767	247	247	287	287
Upstream Blk Time (%)		24			19		
Queuing Penalty (veh)		62			0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	247	29	164
Average Queue (ft)	160	6	110
95th Queue (ft)	269	25	160
Link Distance (ft)	2576	190	2625
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	R	L	T	R	L	TR
Maximum Queue (ft)	627	46	13	259	259	91	514	514
Average Queue (ft)	202	36	5	212	151	45	293	311
95th Queue (ft)	554	54	15	307	262	86	550	590
Link Distance (ft)	2576	529	529	244	244	244	601	601
Upstream Blk Time (%)				36	0			
Queuing Penalty (veh)				0	0			
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	778	759	32	455
Average Queue (ft)	547	407	24	436
95th Queue (ft)	1050	959	44	469
Link Distance (ft)	767	767	31	421
Upstream Blk Time (%)	50	0	9	70
Queuing Penalty (veh)	239	2	106	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	WB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	44	237	572	592
Average Queue (ft)	33	206	358	424
95th Queue (ft)	43	292	743	751
Link Distance (ft)	31	224	1028	1028
Upstream Blk Time (%)	77	52		
Queuing Penalty (veh)	825	570		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	251	55
Average Queue (ft)	223	29
95th Queue (ft)	276	58
Link Distance (ft)	224	26
Upstream Blk Time (%)	77	53
Queuing Penalty (veh)	735	571
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	LT	R	L	R
Maximum Queue (ft)	43	38	70	568	549	63	308
Average Queue (ft)	9	28	20	550	526	17	152
95th Queue (ft)	37	37	65	566	567	57	301
Link Distance (ft)	26	26	54	534	534	743	743
Upstream Blk Time (%)	3	85	4	55	7		
Queuing Penalty (veh)	6	199	19	0	0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	LT	T	TR
Maximum Queue (ft)	32	31	242	628	628
Average Queue (ft)	13	6	146	145	334
95th Queue (ft)	38	27	281	544	702
Link Distance (ft)	487	487	409	1669	1669
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 34: Woollomes Avenue &

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	71	498	15
Average Queue (ft)	59	442	3
95th Queue (ft)	69	600	13
Link Distance (ft)	54	487	80
Upstream Blk Time (%)	88	66	
Queuing Penalty (veh)	448	298	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Nework Summary

Network wide Queuing Penalty: 4080

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	L	TR	L	TR
Maximum Queue (ft)	26	548	404	53	93	262	281	302	46
Average Queue (ft)	5	492	237	11	19	259	228	219	26
95th Queue (ft)	23	645	556	46	80	267	355	350	50
Link Distance (ft)	529	529	529	767	767	247	247	287	287
Upstream Blk Time (%)		70				90	55	23	
Queuing Penalty (veh)		479				0	0	0	
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	867	199	979
Average Queue (ft)	530	46	617
95th Queue (ft)	941	174	1266
Link Distance (ft)	2576	190	2625
Upstream Blk Time (%)		7	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	LTR	L	R	L	T	R	L	TR
Maximum Queue (ft)	2587	47	30	259	264	259	615	616
Average Queue (ft)	1616	19	11	215	260	218	604	600
95th Queue (ft)	3095	49	29	264	263	307	613	613
Link Distance (ft)	2576	529	529	244	244	244	601	601
Upstream Blk Time (%)	17			1	98	30	87	85
Queuing Penalty (veh)	149			0	0	0	0	0
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 6: Woollomes Avenue & Garzoli Avenue

Movement	EB	EB	WB	NB
Directions Served	T	R	LT	LR
Maximum Queue (ft)	810	759	73	437
Average Queue (ft)	778	562	48	426
95th Queue (ft)	805	827	74	435
Link Distance (ft)	767	767	31	434
Upstream Blk Time (%)	85	0	36	91
Queuing Penalty (veh)	995	4	854	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 7: Woollomes Avenue & SR-99-SB ramps

Movement	EB	NB	SB	SB
Directions Served	TR	LT	LT	R
Maximum Queue (ft)	46	261	1044	1060
Average Queue (ft)	34	146	1004	1038
95th Queue (ft)	44	336	1130	1067
Link Distance (ft)	31	224	1028	1028
Upstream Blk Time (%)	88	28	49	83
Queuing Penalty (veh)	2153	550	0	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	250	51
Average Queue (ft)	236	22
95th Queue (ft)	247	54
Link Distance (ft)	224	26
Upstream Blk Time (%)	90	29
Queuing Penalty (veh)	1707	603
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	WB	NB	NB	SB	SB
Directions Served	T	TR	LT	R	L	R
Maximum Queue (ft)	36	70	549	558	752	758
Average Queue (ft)	28	25	548	486	560	668
95th Queue (ft)	35	76	552	700	738	792
Link Distance (ft)	26	55	534	534	743	743
Upstream Blk Time (%)	85	4	90	29	20	26
Queuing Penalty (veh)	428	37	0	0	0	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	LT	T	T	TR
Maximum Queue (ft)	32	31	422	32	1559	1666
Average Queue (ft)	12	12	231	31	963	1075
95th Queue (ft)	37	36	451	33	1662	1697
Link Distance (ft)	487	487	409	409	1669	1669
Upstream Blk Time (%)			12			0
Queuing Penalty (veh)			0			0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 34: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	55	499
Average Queue (ft)	55	489
95th Queue (ft)	55	497
Link Distance (ft)	55	487
Upstream Blk Time (%)	88	82
Queuing Penalty (veh)	889	668
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Nework Summary

Network wide Queuing Penalty: 9517

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	R	L	T	L	TR	L	TR
Maximum Queue (ft)	451	626	492	31	31	261	133	302	29
Average Queue (ft)	370	554	290	17	6	250	51	262	17
95th Queue (ft)	632	614	680	41	27	259	155	329	40
Link Distance (ft)	529	529	529	767	767	247	247	287	287
Upstream Blk Time (%)		63				82		53	
Queuing Penalty (veh)		419				0		0	
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 2: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	70	502
Average Queue (ft)	59	492
95th Queue (ft)	68	501
Link Distance (ft)	54	487
Upstream Blk Time (%)	88	81
Queuing Penalty (veh)	890	781
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	1697	33	2640
Average Queue (ft)	888	26	2066
95th Queue (ft)	1712	35	2964
Link Distance (ft)	2576	190	2625
Upstream Blk Time (%)			21
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: Woollomes Avenue & SR-99-NB-on ramp

Movement	EB	WB
Directions Served	LT	TR
Maximum Queue (ft)	250	51
Average Queue (ft)	236	23
95th Queue (ft)	248	56
Link Distance (ft)	224	26
Upstream Blk Time (%)	88	5
Queuing Penalty (veh)	1806	118
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Woollomes Avenue & High St. / SR-99-NB-off ramp

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	T	TR	LT	R	L	R
Maximum Queue (ft)	23	36	68	568	560	758	758
Average Queue (ft)	9	28	27	548	543	451	644
95th Queue (ft)	27	35	81	578	562	991	906
Link Distance (ft)	26	26	54	534	534	743	743
Upstream Blk Time (%)	3	88	4	96	59	11	16
Queuing Penalty (veh)	16	475	41	0	0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	NB	NB	SB	SB
Directions Served	L	LT	T	T	TR
Maximum Queue (ft)	111	288	135	1676	1682
Average Queue (ft)	28	151	55	1000	1113
95th Queue (ft)	100	301	141	1971	2058
Link Distance (ft)	487	409	409	1669	1669
Upstream Blk Time (%)				13	21
Queuing Penalty (veh)				0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Nework Summary

Network wide Queuing Penalty: 8396

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	R	L	L	T	T	T	R	L
Maximum Queue (ft)	88	131	133	191	54	71	49	27	67	90	27	68
Average Queue (ft)	50	108	100	125	38	28	39	5	42	68	10	43
95th Queue (ft)	84	143	142	185	56	67	71	23	80	106	30	68
Link Distance (ft)	493	493	493	493	493	725	725	725	725	725	725	202
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: Woollomes Avenue & Site Access

Movement	NB	NB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	28	137	76
Average Queue (ft)	15	65	62
95th Queue (ft)	36	131	79
Link Distance (ft)	202	202	245
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	R	L	L	T
Maximum Queue (ft)	65	70	139	53	136	121	92
Average Queue (ft)	33	52	118	33	90	91	67
95th Queue (ft)	69	79	161	65	147	130	107
Link Distance (ft)	2526	2526	131	131	2613	2613	2613
Upstream Blk Time (%)			8				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	45	47	46	62	190	59	47	83	68	47	40	21
Average Queue (ft)	25	18	14	50	112	25	38	56	56	27	17	15
95th Queue (ft)	49	47	45	75	179	53	52	82	73	56	40	28
Link Distance (ft)	2526	2526	2526	2526	2526	2526	493	493	493	493	493	493
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	66	64	70	72	161	106	82	57	54	32
Average Queue (ft)	48	41	52	53	88	94	24	34	28	9
95th Queue (ft)	75	66	77	80	153	122	77	57	59	28
Link Distance (ft)	214	214	214	214	214	570	570	570	570	570
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	EB	EB	WB	WB	WB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	25	27	30	420	439	481
Average Queue (ft)	25	25	26	352	365	412
95th Queue (ft)	25	27	29	485	512	559
Link Distance (ft)	25	25	25	481	481	481
Upstream Blk Time (%)	88	88	90			43
Queuing Penalty (veh)	155	154	157			79
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB	SB	SB
Directions Served	T	T	T	L	L	T	T	T	L	T	R	R
Maximum Queue (ft)	198	158	150	48	66	51	65	132	83	92	43	46
Average Queue (ft)	57	45	31	15	35	33	38	73	38	49	35	20
95th Queue (ft)	181	142	130	48	61	58	65	133	83	101	50	49
Link Distance (ft)	725	725	725			453	453	453	527	527	527	527
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				113	113							
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	L	T	T	T	T	T	T	L	L	L
Maximum Queue (ft)	51	51	71	453	460	475	32	28	46	75	74	96
Average Queue (ft)	22	26	53	263	267	249	11	8	14	52	53	65
95th Queue (ft)	54	53	98	523	526	541	34	26	45	83	75	109
Link Distance (ft)				453	453	453	25	25	25	493	493	493
Upstream Blk Time (%)				13	13	12	8	8	7			
Queuing Penalty (veh)				41	41	39	12	13	12			
Storage Bay Dist (ft)	410	410	410									
Storage Blk Time (%)				15								
Queuing Penalty (veh)				62								

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	NB	NB
Directions Served	T	R
Maximum Queue (ft)	52	504
Average Queue (ft)	39	318
95th Queue (ft)	56	557
Link Distance (ft)	493	493
Upstream Blk Time (%)		14
Queuing Penalty (veh)		0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	TR
Maximum Queue (ft)	47	74	54	181	51	609	673
Average Queue (ft)	16	21	11	86	17	153	332
95th Queue (ft)	48	69	47	171	51	530	728
Link Distance (ft)	481	481	481	403	403	1639	1639
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Nework Summary

Network wide Queuing Penalty: 765

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	R	L	L	T	T	T	R	L
Maximum Queue (ft)	89	517	405	398	31	156	156	129	242	306	25	87
Average Queue (ft)	30	368	324	338	29	105	104	47	175	225	5	62
95th Queue (ft)	81	500	432	421	32	171	184	119	284	347	21	102
Link Distance (ft)	493	493	493	493	493	725	725	725	725	725	725	202
Upstream Blk Time (%)		2										
Queuing Penalty (veh)		8										
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: Woollomes Avenue & Site Access

Movement	NB	NB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	49	162	134
Average Queue (ft)	18	94	79
95th Queue (ft)	48	173	143
Link Distance (ft)	202	202	245
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	R	L	L	T
Maximum Queue (ft)	112	217	146	115	221	139	91
Average Queue (ft)	91	149	107	78	154	129	64
95th Queue (ft)	140	246	160	128	221	147	97
Link Distance (ft)	2526	2526	131	131	2613	2613	2613
Upstream Blk Time (%)			10	0			
Queuing Penalty (veh)			0	0			
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	112	128	483	591	620	501	90	66	258	252	216	103
Average Queue (ft)	100	91	362	475	488	151	69	50	214	196	181	66
95th Queue (ft)	128	134	530	639	603	443	92	64	260	244	218	107
Link Distance (ft)	2526	2526	2526	2526	2526	2526	493	493	493	493	493	493
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	127	90	134	155	229	585	604	562	158	52
Average Queue (ft)	91	68	118	109	183	580	426	177	80	35
95th Queue (ft)	125	99	148	164	261	598	763	498	167	49
Link Distance (ft)	214	214	214	214	214	570	570	570	570	570
Upstream Blk Time (%)					17	71	11	0		
Queuing Penalty (veh)					0	0	0	0		
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	EB	EB	WB	WB	WB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	25	25	30	482	462	478
Average Queue (ft)	25	25	26	446	393	444
95th Queue (ft)	25	25	30	561	476	524
Link Distance (ft)	25	25	25	481	481	481
Upstream Blk Time (%)	82	87	82	71	0	70
Queuing Penalty (veh)	258	273	258	226	0	225
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB L	EB T	EB T	EB R	EB R	WB L	WB L	WB T	WB T	WB T	SB L	SB T
Directions Served	T	T	T	R	R	L	L	T	T	T	L	T
Maximum Queue (ft)	774	733	725	544	547	139	148	300	24	94	66	136
Average Queue (ft)	555	343	204	131	121	65	71	60	5	24	18	94
95th Queue (ft)	928	793	670	474	474	132	139	258	21	84	60	150
Link Distance (ft)	725	725	725	725	725			453	453	453	527	527
Upstream Blk Time (%)	14	4	1									
Queuing Penalty (veh)	73	19	3									
Storage Bay Dist (ft)						113	113					
Storage Blk Time (%)						7	13					
Queuing Penalty (veh)						37	67					

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	SB R	SB R
Directions Served	R	R
Maximum Queue (ft)	362	101
Average Queue (ft)	153	63
95th Queue (ft)	331	106
Link Distance (ft)	527	527
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	L	T	T	T	T	T	T	R	L	L
Maximum Queue (ft)	28	53	444	471	453	472	32	30	46	8	163	159
Average Queue (ft)	11	22	185	342	337	337	11	11	16	2	139	112
95th Queue (ft)	33	56	528	591	577	585	35	35	48	7	172	163
Link Distance (ft)				453	453	453	25	25	25	25	465	465
Upstream Blk Time (%)			0	30	36	32	9	8	10	0		
Queuing Penalty (veh)			0	187	228	203	25	23	27	1		
Storage Bay Dist (ft)	410	410	410									
Storage Blk Time (%)			0	40								
Queuing Penalty (veh)			0	431								

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	NB	NB	NB	B20	B20	B20
Directions Served	L	T	R	T	T	T
Maximum Queue (ft)	220	520	543	299	313	246
Average Queue (ft)	184	253	377	60	77	70
95th Queue (ft)	247	608	651	257	277	229
Link Distance (ft)	465	465	465	298	298	298
Upstream Blk Time (%)		38	27	2	0	
Queuing Penalty (veh)		0	0	0	0	
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	TR
Maximum Queue (ft)	31	70	50	414	53	31	1357	1563
Average Queue (ft)	11	20	16	228	31	6	669	880
95th Queue (ft)	34	66	51	476	59	27	1585	1654
Link Distance (ft)	481	481	481	403	403	403	1639	1639
Upstream Blk Time (%)				22				
Queuing Penalty (veh)				0				
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Nework Summary

Network wide Queuing Penalty: 2573

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	L	L	TR	LR
Maximum Queue (ft)	70	160	31	73	52	71	52	31	70	31
Average Queue (ft)	40	110	17	46	42	43	46	6	47	29
95th Queue (ft)	68	172	41	73	60	72	62	26	73	32
Link Distance (ft)	512	512	512	740	740	740	240	240	240	282
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB
Directions Served	LR
Maximum Queue (ft)	55
Average Queue (ft)	50
95th Queue (ft)	65
Link Distance (ft)	2576
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	136	64	45	37	38	154	50	66	63
Average Queue (ft)	85	24	35	19	32	64	33	33	46
95th Queue (ft)	133	60	51	38	46	144	47	69	73
Link Distance (ft)	2576	512	512	512	243	243	243	600	600
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	53	502
Average Queue (ft)	44	457
95th Queue (ft)	52	577
Link Distance (ft)	42	490
Upstream Blk Time (%)	87	63
Queuing Penalty (veh)	84	222
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	R	L	L	T	L	T	R
Maximum Queue (ft)	144	47	29	81	31	1	117	26
Average Queue (ft)	84	29	6	30	18	0	35	24
95th Queue (ft)	161	57	25	32	42	1	105	28
Link Distance (ft)	740	740			462	560	560	560
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			113	113				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB	NB
Directions Served	L	T	TR	L	T	R
Maximum Queue (ft)	219	113	44	135	161	70
Average Queue (ft)	112	71	17	69	78	37
95th Queue (ft)	202	120	52	133	151	75
Link Distance (ft)		462	42	498	498	498
Upstream Blk Time (%)			2			
Queuing Penalty (veh)			6			
Storage Bay Dist (ft)	410					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	SE	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	70	50	239	661	727
Average Queue (ft)	52	33	127	228	352
95th Queue (ft)	73	47	266	673	802
Link Distance (ft)	490	490	409	1669	1669
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Nework Summary

Network wide Queuing Penalty: 312

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	109	308	31	113	111	30	29	93	31	94	94
Average Queue (ft)	57	199	17	67	68	21	6	69	27	67	71
95th Queue (ft)	102	303	41	108	109	40	25	94	37	94	102
Link Distance (ft)	512	512	512	740	740	740	740	240	240	240	282
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	99	55
Average Queue (ft)	73	11
95th Queue (ft)	102	47
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	32	179	68	109	43	43	130	74	109	125
Average Queue (ft)	12	116	24	78	34	35	45	51	59	83
95th Queue (ft)	36	194	65	125	52	50	118	85	105	140
Link Distance (ft)	2576	2576	512	512	512	243	243	243	600	600
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	53	498
Average Queue (ft)	44	492
95th Queue (ft)	51	497
Link Distance (ft)	42	491
Upstream Blk Time (%)	89	82
Queuing Penalty (veh)	151	437
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	R	L	L	T	L	T	R
Maximum Queue (ft)	147	40	57	58	29	23	55	50
Average Queue (ft)	64	20	20	26	12	5	30	30
95th Queue (ft)	159	40	56	58	35	20	55	47
Link Distance (ft)	740	740			462	560	560	560
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			113	113				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB	NB
Directions Served	L	T	TR	L	T	R
Maximum Queue (ft)	138	344	49	174	155	137
Average Queue (ft)	81	207	18	118	95	108
95th Queue (ft)	155	345	55	197	173	146
Link Distance (ft)		462	42	498	498	498
Upstream Blk Time (%)			8			
Queuing Penalty (veh)			46			
Storage Bay Dist (ft)	410					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	TR
Maximum Queue (ft)	260	48	355	32	1086	1265
Average Queue (ft)	128	34	234	24	556	704
95th Queue (ft)	242	45	394	43	1295	1367
Link Distance (ft)	491	491	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 634

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	68	176	31	72	71	110	29	69	29	54	114
Average Queue (ft)	48	126	30	42	53	56	6	50	9	44	60
95th Queue (ft)	69	197	32	72	71	103	25	72	28	61	112
Link Distance (ft)	512	512	512	740	740	740	740	240	240	240	282
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (ft)	31	56	54
Average Queue (ft)	6	50	17
95th Queue (ft)	27	65	54
Link Distance (ft)	2576	2576	2613
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	116	66	85	22	39	41	52	53	153
Average Queue (ft)	81	41	45	11	26	22	42	38	64
95th Queue (ft)	117	68	96	26	42	45	60	72	139
Link Distance (ft)	2576	512	512	512	243	243	243	601	601
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	52	481
Average Queue (ft)	52	424
95th Queue (ft)	52	562
Link Distance (ft)	52	481
Upstream Blk Time (%)	87	57
Queuing Penalty (veh)	93	219
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	R	L	L	T	L	T	R
Maximum Queue (ft)	84	44	71	53	54	23	31	49
Average Queue (ft)	68	29	24	37	23	5	15	34
95th Queue (ft)	94	48	74	70	56	19	32	54
Link Distance (ft)	740	740			462	560	560	560
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			113	113				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB	NB
Directions Served	L	T	TR	L	T	R
Maximum Queue (ft)	136	242	66	136	159	119
Average Queue (ft)	99	133	28	80	85	57
95th Queue (ft)	150	263	71	153	161	122
Link Distance (ft)		462	52	498	498	498
Upstream Blk Time (%)			4			
Queuing Penalty (veh)			17			
Storage Bay Dist (ft)	410					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	TR
Maximum Queue (ft)	77	32	286	30	763	788
Average Queue (ft)	68	30	119	6	287	358
95th Queue (ft)	86	34	281	25	833	852
Link Distance (ft)	481	481	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 329

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	68	308	31	69	89	73	30	115	51	72	135
Average Queue (ft)	54	243	30	42	50	50	21	72	28	43	89
95th Queue (ft)	71	312	32	69	94	80	39	143	55	69	150
Link Distance (ft)	512	512	512	740	740	740	740	240	240	240	282
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (ft)	32	79	77
Average Queue (ft)	32	59	32
95th Queue (ft)	32	86	83
Link Distance (ft)	2576	2576	2613
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	31	120	46	86	22	102	79	113	93	94
Average Queue (ft)	23	92	32	53	20	72	50	73	76	61
95th Queue (ft)	42	145	62	87	25	105	81	124	99	103
Link Distance (ft)	2576	2576	512	512	512	243	243	243	601	601
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	52	492
Average Queue (ft)	52	465
95th Queue (ft)	52	528
Link Distance (ft)	52	481
Upstream Blk Time (%)	82	75
Queuing Penalty (veh)	155	439
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	R	L	L	T	L	T	R
Maximum Queue (ft)	258	45	52	52	29	21	13	48
Average Queue (ft)	133	30	22	32	11	5	8	34
95th Queue (ft)	264	60	55	63	33	19	18	52
Link Distance (ft)	740	740			462	560	560	560
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)			113	113				
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB	NB
Directions Served	L	T	TR	L	T	R
Maximum Queue (ft)	369	325	66	139	115	220
Average Queue (ft)	214	176	22	81	85	144
95th Queue (ft)	422	370	69	131	121	255
Link Distance (ft)		462	52	498	498	498
Upstream Blk Time (%)			5			
Queuing Penalty (veh)			31			
Storage Bay Dist (ft)	410					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	SB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	227	74	416	1004	1015
Average Queue (ft)	131	45	239	445	569
95th Queue (ft)	216	85	477	1094	1144
Link Distance (ft)	481	481	409	1669	1669
Upstream Blk Time (%)			20		
Queuing Penalty (veh)			0		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Nework Summary

Network wide Queuing Penalty: 625

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	R	L	L	T	T	T	R	L
Maximum Queue (ft)	91	249	174	192	32	79	92	25	51	88	24	65
Average Queue (ft)	46	148	94	151	24	59	71	10	32	55	9	49
95th Queue (ft)	99	258	164	196	44	82	105	30	48	91	28	75
Link Distance (ft)	493	493	493	493	493	725	725	725	725	725	725	202
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: Woollomes Avenue & Site Access

Movement	NB	NB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	28	54	93
Average Queue (ft)	27	40	71
95th Queue (ft)	28	58	93
Link Distance (ft)	202	202	245
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	R	L	L	T
Maximum Queue (ft)	66	70	146	57	96	97	115
Average Queue (ft)	42	47	111	34	77	51	40
95th Queue (ft)	70	71	168	54	103	93	104
Link Distance (ft)	2526	2526	131	131	2613	2613	2613
Upstream Blk Time (%)			2				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	49	48	105	105	103	80	43	44	85	65	82	42
Average Queue (ft)	39	26	39	77	77	31	17	14	65	51	46	24
95th Queue (ft)	56	44	106	104	110	76	44	41	88	69	78	39
Link Distance (ft)	2526	2526	2526	2526	2526	2526	493	493	493	493	493	493
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	129	84	109	51	118	233	41	55	74	33
Average Queue (ft)	94	57	73	46	93	143	17	25	24	9
95th Queue (ft)	141	98	111	61	134	231	41	57	71	29
Link Distance (ft)	214	214	214	214	214	570	570	570	570	570
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	EB	EB	WB	WB	WB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	42	25	28	369	473	487
Average Queue (ft)	25	20	20	253	280	341
95th Queue (ft)	47	36	38	469	519	559
Link Distance (ft)	25	25	25	481	481	481
Upstream Blk Time (%)	58	70	65		0	32
Queuing Penalty (veh)	27	33	31		0	59
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	R	R	L	L	T	T	T	L	T
Maximum Queue (ft)	116	27	4	42	63	28	28	27	67	176	71	75
Average Queue (ft)	63	8	1	9	16	16	27	21	46	124	36	65
95th Queue (ft)	111	24	3	36	56	38	28	38	77	172	68	80
Link Distance (ft)	725	725	725	725	725			453	453	453	527	527
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)						113	113					
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	82	27
Average Queue (ft)	52	20
95th Queue (ft)	88	37
Link Distance (ft)	527	527
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	L	T	T	T	T	T	T	L	L	L
Maximum Queue (ft)	74	116	136	120	134	75	32	48	25	95	84	112
Average Queue (ft)	60	94	114	62	74	45	12	15	10	61	58	60
95th Queue (ft)	89	118	145	133	152	89	37	47	30	97	89	110
Link Distance (ft)				453	453	453	25	25	25	465	465	465
Upstream Blk Time (%)							13	4	4			
Queuing Penalty (veh)							20	6	6			
Storage Bay Dist (ft)	410	410	410									
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	NB	NB
Directions Served	T	R
Maximum Queue (ft)	140	312
Average Queue (ft)	113	156
95th Queue (ft)	164	351
Link Distance (ft)	465	465
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	EB	NB	SB	SB
Directions Served	L	L	R	L	T	TR
Maximum Queue (ft)	72	94	32	156	561	568
Average Queue (ft)	56	50	24	92	126	254
95th Queue (ft)	81	103	44	158	486	598
Link Distance (ft)	481	481	481	403	1639	1639
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 184

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	R	L	L	T	T	T	R	L
Maximum Queue (ft)	110	557	520	485	32	112	112	111	337	361	23	128
Average Queue (ft)	53	522	472	341	18	77	78	64	159	238	5	74
95th Queue (ft)	121	590	585	547	42	119	119	129	324	357	19	136
Link Distance (ft)	493	493	493	493	493	725	725	725	725	725	725	202
Upstream Blk Time (%)		39	4	1								
Queuing Penalty (veh)		176	19	2								
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: Woollomes Avenue & Site Access

Movement	NB	NB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	67	180	80
Average Queue (ft)	29	115	67
95th Queue (ft)	65	205	83
Link Distance (ft)	202	202	245
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	R	L	L	T
Maximum Queue (ft)	134	133	136	97	160	155	136
Average Queue (ft)	81	112	115	58	130	127	74
95th Queue (ft)	139	148	145	93	166	163	141
Link Distance (ft)	2526	2526	131	131	2613	2613	2613
Upstream Blk Time (%)			3				
Queuing Penalty (veh)			0				
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	90	88	726	1022	837	886	87	85	213	176	156	231
Average Queue (ft)	62	54	517	722	541	475	66	49	147	131	116	117
95th Queue (ft)	99	94	866	1155	910	950	98	88	206	191	176	218
Link Distance (ft)	2526	2526	2526	2526	2526	2526	493	493	493	493	493	493
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	227	229	158	156	248	585	517	522	508	115
Average Queue (ft)	146	138	122	111	244	558	227	149	132	30
95th Queue (ft)	250	258	158	150	257	613	508	460	448	102
Link Distance (ft)	214	214	214	214	214	570	570	570	570	570
Upstream Blk Time (%)	8	8			71	65				
Queuing Penalty (veh)	0	0			0	0				
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	EB	EB	WB	WB	WB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	25	25	30	31	472	481
Average Queue (ft)	20	25	26	20	175	481
95th Queue (ft)	37	25	29	29	420	481
Link Distance (ft)	25	25	25	481	481	481
Upstream Blk Time (%)	73	83	80		0	92
Queuing Penalty (veh)	64	73	71		1	292
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	R	R	L	L	T	T	L	T	R
Maximum Queue (ft)	769	708	26	21	21	130	130	66	45	23	118	134
Average Queue (ft)	740	522	6	4	11	59	69	26	9	9	78	108
95th Queue (ft)	799	924	22	18	27	123	133	63	39	26	129	144
Link Distance (ft)	725	725	725	725	725			453	453	527	527	527
Upstream Blk Time (%)	20	0										
Queuing Penalty (veh)	105	0										
Storage Bay Dist (ft)						113	113					
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						0	4					

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	SB
Directions Served	R
Maximum Queue (ft)	105
Average Queue (ft)	49
95th Queue (ft)	97
Link Distance (ft)	527
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	L	T	T	T	T	T	T	L	L	L
Maximum Queue (ft)	51	72	74	159	157	96	32	28	32	284	205	549
Average Queue (ft)	46	51	63	81	86	42	13	11	12	218	168	525
95th Queue (ft)	60	81	82	164	161	109	38	32	35	304	203	581
Link Distance (ft)				453	453	453	25	25	25	465	465	465
Upstream Blk Time (%)							3	7	8			59
Queuing Penalty (veh)							9	21	24			0
Storage Bay Dist (ft)	410	410	410									
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	NB	NB	B20
Directions Served	T	R	T
Maximum Queue (ft)	486	158	134
Average Queue (ft)	295	75	83
95th Queue (ft)	486	164	161
Link Distance (ft)	465	465	298
Upstream Blk Time (%)	2		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	TR
Maximum Queue (ft)	255	225	32	348	31	50	1652	1647
Average Queue (ft)	158	158	30	213	22	10	1387	1389
95th Queue (ft)	248	232	32	372	42	43	1958	1954
Link Distance (ft)	481	481	481	403	403	403	1639	1639
Upstream Blk Time (%)							42	44
Queuing Penalty (veh)							0	0
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Nework Summary

Network wide Queuing Penalty: 861

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	88	332	31	113	97	95	29	197	51	159	133
Average Queue (ft)	65	292	24	58	56	36	12	121	32	100	83
95th Queue (ft)	101	357	44	118	93	88	36	205	50	183	150
Link Distance (ft)	512	512	512	740	740	740	740	240	240	240	282
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	184	32
Average Queue (ft)	89	19
95th Queue (ft)	175	44
Link Distance (ft)	2576	2625
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	31	143	132	172	21	57	108	225	134	192
Average Queue (ft)	17	113	80	83	20	41	74	108	81	94
95th Queue (ft)	40	161	137	168	23	54	111	252	130	190
Link Distance (ft)	2576	2576	512	512	512	243	243	243	600	600
Upstream Blk Time (%)								0		
Queuing Penalty (veh)								0		
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	WB
Directions Served	T	T
Maximum Queue (ft)	74	474
Average Queue (ft)	73	463
95th Queue (ft)	73	472
Link Distance (ft)	73	460
Upstream Blk Time (%)	78	90
Queuing Penalty (veh)	107	528
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	R	L	L	L	T	R
Maximum Queue (ft)	230	34	57	71	64	75	51
Average Queue (ft)	154	22	25	48	39	23	36
95th Queue (ft)	232	33	57	76	74	67	55
Link Distance (ft)	740	740			560	560	560
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)			113	113			
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB	NB
Directions Served	L	T	TR	L	T	R
Maximum Queue (ft)	156	330	88	541	540	529
Average Queue (ft)	103	140	32	355	183	135
95th Queue (ft)	153	324	99	611	481	462
Link Distance (ft)		462	73	525	525	525
Upstream Blk Time (%)			9	9	0	0
Queuing Penalty (veh)			56	0	0	0
Storage Bay Dist (ft)	410					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (ft)	143	32	309	52	31	1146	1258
Average Queue (ft)	106	30	199	17	6	557	782
95th Queue (ft)	177	32	332	52	27	1356	1401
Link Distance (ft)	460	460	409	409	409	1669	1669
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Nework Summary

Network wide Queuing Penalty: 691

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	L	T	R	L	L	T	R	L	L	TR	LR
Maximum Queue (ft)	115	344	118	113	114	91	30	179	73	188	151
Average Queue (ft)	56	292	58	68	68	54	18	116	54	124	104
95th Queue (ft)	121	383	115	108	114	94	41	170	83	215	149
Link Distance (ft)	512	512	512	740	740	740	740	240	240	240	282
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)											
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	SB
Directions Served	L	R	LT
Maximum Queue (ft)	73	56	54
Average Queue (ft)	38	55	17
95th Queue (ft)	67	56	54
Link Distance (ft)	2576	2576	2613
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	180	110	88	43	169	131	95	235	179
Average Queue (ft)	123	74	52	24	95	95	63	154	136
95th Queue (ft)	187	111	95	49	163	150	93	238	194
Link Distance (ft)	2576	512	512	512	243	243	243	601	601
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 6: Woollomes Avenue &

Movement	EB	WB	SB
Directions Served	T	T	LR
Maximum Queue (ft)	52	496	14
Average Queue (ft)	52	486	3
95th Queue (ft)	53	494	12
Link Distance (ft)	52	481	69
Upstream Blk Time (%)	83	86	
Queuing Penalty (veh)	123	540	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	R	L	L	L	T	R
Maximum Queue (ft)	843	65	81	99	62	57	50
Average Queue (ft)	307	38	28	43	21	38	34
95th Queue (ft)	751	71	77	96	58	64	50
Link Distance (ft)	740	740			560	560	560
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	3						
Storage Bay Dist (ft)			113	113			
Storage Blk Time (%)				5			
Queuing Penalty (veh)				33			

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	WB	NB	NB	NB
Directions Served	L	T	TR	L	T	R
Maximum Queue (ft)	224	467	67	351	161	160
Average Queue (ft)	172	203	24	234	95	85
95th Queue (ft)	246	478	72	354	161	181
Link Distance (ft)		462	52	525	525	525
Upstream Blk Time (%)		3	9			
Queuing Penalty (veh)		21	56			
Storage Bay Dist (ft)	410					
Storage Blk Time (%)		6				
Queuing Penalty (veh)		37				

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	TR
Maximum Queue (ft)	178	54	202	32	1338	1434
Average Queue (ft)	142	29	133	6	858	967
95th Queue (ft)	182	57	240	27	1642	1667
Link Distance (ft)	481	481	409	409	1669	1669
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 813

Intersection: 1: Woollomes Avenue & Site Access

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	46	595	512	473	414	31	191	195	75	163	178	24
Average Queue (ft)	27	573	499	311	275	29	144	149	44	89	157	5
95th Queue (ft)	55	600	513	535	411	32	202	203	91	154	179	20
Link Distance (ft)	493	493	493	493	493	493	717	717	717	717	717	717
Upstream Blk Time (%)		7	20	0								
Queuing Penalty (veh)		28	77	0								
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 1: Woollomes Avenue & Site Access

Movement	NB	NB	NB	SB
Directions Served	L	L	TR	LR
Maximum Queue (ft)	214	212	236	202
Average Queue (ft)	136	84	220	174
95th Queue (ft)	247	191	235	218
Link Distance (ft)	202	202	202	246
Upstream Blk Time (%)	6	0	48	
Queuing Penalty (veh)	0	0	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Woollomes Avenue & Albany Street

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	R	T	R	L	L	T
Maximum Queue (ft)	238	394	203	121	271	247	93
Average Queue (ft)	152	279	103	76	192	189	65
95th Queue (ft)	239	444	189	138	265	248	99
Link Distance (ft)	2524	2524	327	327	2613	2613	2613
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	90	68	1252	1652	1802	1714	156	129	173	186	173	82
Average Queue (ft)	58	43	506	1097	1387	956	91	84	105	107	116	43
95th Queue (ft)	90	79	1483	1933	1842	2109	150	133	181	197	192	80
Link Distance (ft)	2524	2524	2524	2524	2524	2524	493	493	493	493	493	493
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 5: Woollomes Avenue & Dover Parkway

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R	L	L	T	T	R
Maximum Queue (ft)	144	145	218	211	218	604	577	271	271	53
Average Queue (ft)	125	110	138	108	218	545	344	131	126	24
95th Queue (ft)	151	152	206	199	218	679	615	288	288	64
Link Distance (ft)	203	203	203	203	203	570	570	570	570	570
Upstream Blk Time (%)			0	1	59	60	0			
Queuing Penalty (veh)			0	0	0	0	0			
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Woollomes Avenue &

Movement	EB	EB	EB	WB	WB	WB
Directions Served	T	T	T	T	T	T
Maximum Queue (ft)	25	25	28	204	306	481
Average Queue (ft)	20	25	26	192	273	454
95th Queue (ft)	37	25	28	203	350	542
Link Distance (ft)	25	25	25	481	481	481
Upstream Blk Time (%)	72	76	89			73
Queuing Penalty (veh)	63	67	79			232
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 7: Woollomes Avenue & SR-99 SB ramps / Garzoli

Movement	EB	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB	SB
Directions Served	T	T	T	R	L	L	T	T	L	T	R	R
Maximum Queue (ft)	749	785	2	20	49	56	69	131	61	201	279	53
Average Queue (ft)	491	157	1	4	37	47	23	40	26	132	214	33
95th Queue (ft)	837	675	3	17	68	61	72	126	58	214	284	51
Link Distance (ft)	717	717	717	717			452	452	527	527	527	527
Upstream Blk Time (%)	5	0										
Queuing Penalty (veh)	26	2										
Storage Bay Dist (ft)					113	113						
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	L	L	L	T	T	T	T	T	T	R	L	L
Maximum Queue (ft)	175	172	177	204	240	156	32	30	26	25	287	298
Average Queue (ft)	64	83	117	114	131	64	11	12	10	10	206	213
95th Queue (ft)	170	190	190	236	259	150	35	36	30	29	286	333
Link Distance (ft)				452	452	452	25	25	25	25	493	493
Upstream Blk Time (%)							18	15	21	7		
Queuing Penalty (veh)							57	48	64	22		
Storage Bay Dist (ft)	410	410	410									
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 8: Woollomes Avenue & High St. / SR-99-NB ramps

Movement	NB	NB	NB
Directions Served	L	T	R
Maximum Queue (ft)	415	216	52
Average Queue (ft)	310	118	33
95th Queue (ft)	416	203	53
Link Distance (ft)	493	493	493
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Schuster Road & Stradley Avenue

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	97	91	32	222	54	55
Average Queue (ft)	57	68	19	88	34	48
95th Queue (ft)	93	94	45	201	66	62
Link Distance (ft)	1022	4304	5182	5182	4712	4712
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 11: Schuster Road & Garzoli Avenue

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	70	135	93	435
Average Queue (ft)	51	64	57	231
95th Queue (ft)	77	128	97	459
Link Distance (ft)	4304	5179	5179	4681
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: Pond Road & Stradley Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	72	136	48	78
Average Queue (ft)	58	94	32	59
95th Queue (ft)	70	151	45	86
Link Distance (ft)	1565	4607	644	5182
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 13: Pond Road & Garzoli Avenue

Movement	EB	EB	WB	WB	WB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	TR	L	L	TR
Maximum Queue (ft)	29	117	48	175	96	153	200	112	86
Average Queue (ft)	11	68	23	136	79	94	104	76	51
95th Queue (ft)	34	141	49	187	120	153	190	113	90
Link Distance (ft)	4607	4607	436	436	436	623	5179	5179	5179
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 14: Woollomes Avenue & Lexington

Movement	EB	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T	TR
Maximum Queue (ft)	138	122	31	362	32	31	1471	1517
Average Queue (ft)	92	79	24	171	13	6	705	817
95th Queue (ft)	142	122	45	363	38	27	1636	1650
Link Distance (ft)	481	481	481	403	403	403	1639	1639
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 15: Pond Road & SR-99 SB ramps

Movement	EB	EB	EB	WB	SB	SB
Directions Served	L	L	T	TR	L	R
Maximum Queue (ft)	97	136	138	394	23	115
Average Queue (ft)	62	68	92	236	13	79
95th Queue (ft)	110	147	154	408	31	118
Link Distance (ft)	436	436	436	549	245	245
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 16: Pond Road & SR-99 NB ramps

Movement	EB	EB	WB	NE	NE	NB
Directions Served	L	T	TR	L	L	TR
Maximum Queue (ft)	113	158	242	118	108	51
Average Queue (ft)	67	76	145	86	75	21
95th Queue (ft)	143	152	254	122	119	53
Link Distance (ft)	549	549	683	294	294	294
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Nework Summary

Network wide Queuing Penalty: 767