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City of Agoura Hills

Derry Avenue/Canwood Street Retail Project

Traffic Impact Analysis (Revised)

This report contains the revised traffic impact analysis for the Derry Avenue/Canwood Street Retail Project. The project site is located in the northwest corner of the Derry Avenue/Canwood Street intersection in the City of Agoura Hills. The proposed development consists of 20,661 square feet of specialty retail.

The traffic report contains documentation of existing traffic conditions, traffic generated by the project, distribution of the project traffic to roads outside the project, an analysis of Opening Year (2009) traffic conditions without and with the project, and an analysis of cumulative traffic conditions without and with the project.

Each of these topics is contained in a separate section of the report. The first section is "Findings", and subsequent sections expand upon the findings. In this way, information on any particular aspect of the study can be easily located by the reader.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided within Appendix A.

I. Findings

This section summarizes the existing traffic conditions, project traffic impacts, and the proposed mitigation measures.

A. Existing Traffic Conditions

1. The project site is currently vacant and not generating significant traffic.

2. The study area includes the following intersections:

   Kanan Road (NS) at:
   - SR-101 Freeway NB Ramps/Canwood Street (EW)
   - SR-101 Freeway SB Ramps/Roadside Drive (EW)

   Clareton Drive (NS) at:
   - Canwood Street (EW)

   Project Driveway (NS) at:
   - Canwood Street (EW)

   Derry Avenue (NS) at:
   - Project Driveway (EW)
   - Canwood Street (EW)

   Colodny Drive (NS) at:
   - Canwood Street (EW)

   Chesebro Road/Canwood Street (NS) at:
   - Driver Avenue/Palo Comado Canyon Road (EW)
   - SR-101 Freeway NB Ramps (EW)

3. The study area intersections currently operate at Level of Service D or better during the peak hours for existing traffic conditions, except for the following intersection that operates at Level of Service F during the evening peak hour (see Table 1).

   Chesebro Road (NS) at:
   - SR-101 Freeway NB Ramps (EW)

B. Traffic Impacts

1. The proposed development consists of 20,661 square feet of specialty retail. The project site will have access to Derry Avenue and Canwood Street.

2. The proposed development is projected to generate approximately 916 daily vehicle trips, 28 of which will occur during the morning peak hour and 56 of which will occur during the evening peak hour.

3. The study area intersections are projected to operate at Level of Service D or better during the peak hours for Opening Year (2009) without project traffic conditions, except for the following intersection that operates at Level of Service F during the evening peak hour (see Table 3):

   Chesebro Road (NS) at:
   SR-101 Freeway NB Ramps (EW)

4. The study area intersections are projected to operate at Level of Service D or better during the peak hours for Opening Year (2009) with project traffic conditions, except for the following intersection that operates at Level of Service F during the evening peak hour (see Table 4):

   Chesebro Road (NS) at:
   SR-101 Freeway NB Ramps (EW)

5. The project traffic does not significantly impact the study area intersections for Opening Year (2009) traffic conditions. Therefore, no traffic mitigation measures are necessary (see Table 5).

6. The study area intersections are projected to operate at Level of Service D or better during the peak hours for Cumulative without project traffic conditions, except for the following intersections that operate at Level of Service F during the evening peak hour (see Table 6):

   Kanan Road (NS) at:
   SR-101 Freeway SB Ramps/Roadside Drive (EW)

   Chesebro Road (NS) at:
   SR-101 Freeway NB Ramps (EW)

7. The study area intersections are projected to operate at Level of Service D or better during the peak hours for Cumulative with project traffic conditions, , except for the following intersections that operate at Level of Service F during the evening peak hour (see Table 7):

   Kanan Road (NS) at:
   SR-101 Freeway SB Ramps/Roadside Drive (EW)

   Chesebro Road (NS) at:
   SR-101 Freeway NB Ramps (EW)

8. The project traffic does not significantly impact the study area intersections for Cumulative traffic conditions. Therefore, no traffic mitigation measures are necessary (see Table 8).

C. Recommendations

The following measures are recommended traffic conditions for the project:

1. Site-specific circulation and access recommendations are depicted on Figure 24.

2. Sufficient on-site parking shall be provided to meet City of Agoura Hills parking code requirements.

3. Sight distance at the project access should be reviewed with respect to California Department of Transportation/City of Agoura Hills standards in conjunction with the preparation of final grading, landscaping, and street improvement plans.

4. On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

5. As is the case for any roadway design, the City of Agoura Hills should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

II. Congestion Management Program Methodology

This section discusses the County Congestion Management Program. The purpose, prescribed methodology, and definition of a significant traffic impact are discussed.

A. County Congestion Management Program

The Congestion Management Program is a result of Proposition 111 which was a statewide initiative approved by the voters in June 1990. The proposition allowed for a nine cent per gallon state gasoline tax increase over a five-year period.

Proposition 111 explicitly stated that the new gas tax revenues were to be used to fix existing traffic problems and was not to be used to promote future development. For a city to get its share of the Proposition 111 gas tax, it has to follow certain procedures specified by the State Legislature. The legislation requires that a Traffic Impact Analysis be prepared for new development. The traffic impact analysis is prepared to monitor and fix traffic problems caused by new development.

The Legislature requires that adjacent jurisdictions use a standard methodology for conducting a traffic impact analysis. To assure that adjacent jurisdictions use a standard methodology in preparing traffic impact analyses, one common procedure is that all cities within a county, and the county agency itself, adopt and use one standard methodology for conducting traffic impact analyses.

Although each county has developed standards for preparing traffic impact analyses, traffic impact analysis requirements do vary in detail from one county to another, but not in overall intent or concept. The general approach selected by each county for conducting traffic impact analyses has common elements.

The general approach for conducting a traffic impact analysis is that existing weekday peak hour traffic is counted and the percent of roadway capacity currently used is determined. Then growth in traffic is accounted for and added to existing traffic and the percent of roadway capacity used is again determined. Then the project traffic is added and the percent of roadway capacity used is again determined. If the new project adds traffic to an overcrowded facility, then the new project has to mitigate the traffic impact so that the facility operates at a level that is no worse than before the project traffic was added.

If the project size is below a certain minimum threshold level, then a project does not have to have a traffic impact analysis prepared, once it is shown or agreed that the project is below the minimum threshold. If a project is bigger than the minimum threshold size, then a traffic impact analysis is required.

B. Prescribed Methodology for a Traffic Impact Analysis

The traffic impact analysis must include all monitored intersections to which the project adds traffic above a certain minimum amount. In Los Angeles County, the monitored intersections are contained in Appendix A of the Congestion Management Program for the County of Los Angeles.

If a project adds more traffic than the minimum threshold amount to an intersection, then that intersection has to be analyzed for deficiencies.

If the intersection has to be analyzed for deficiencies, then mitigation is required if the existing traffic plus anticipated traffic growth plus project traffic does cause the Intersection Capacity Utilization/Delay to go above a certain point.

In the City of Agoura Hills, a significant impact would occur when a proposed project increases 2% of capacity (V/C increase > 0.02) at a facility that would operate at Level of Service D or worse with project added traffic volumes. For unsignalized intersections, the threshold is a 2% increase in entering volumes.

An intersection mitigation measure shall either fix the deficiency, or reduce the Intersection Capacity Utilization/Delay so that it is below the level that occurs without the project.

In the City of Agoura Hills, the signalized intersection analysis technique used to calculate Intersection Capacity Utilization is as follows. Lane capacity is 1,600 vehicles per lane per hour for all through and turn lanes and 2,880 total for dual turn lanes. A total yellow clearance time of 0.10 is added.

The technique used to assess the operation of a signalized intersection is known as Intersection Capacity Utilization, as described in Appendix C. To calculate an Intersection Capacity Utilization value, the volume of traffic using the intersection is compared with the capacity of the intersection. The Intersection Capacity Utilization represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

The technique used to assess the capacity needs of an unsignalized intersection is known as the Intersection Delay Method (see Appendix C). To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection.

Project traffic is generated using rates and procedures contained in the Institute of Transportation Engineers, Trip Generation manual and San Diego Association of Governments, Traffic Generators, April 2002. The project traffic distribution is provided by the reviewing agency or is agreed to in advance of the traffic impact analysis being prepared. The traffic impact analysis has to be prepared by a licensed Traffic Engineer.

This traffic analysis has been prepared in accordance with the traffic impact analysis requirements except as noted. The traffic impact analysis not only examined the Congestion Management Program system of roads and intersections, but also other roads and intersections.

The project-generated traffic was added to intersections, and a full intersection analysis was conducted, even when the project added traffic failed to meet the minimum thresholds that require an intersection analysis.

C. Mitigation Measures

If a project is large enough to require that a traffic impact analysis be prepared, and if the project adds traffic to an intersection above a minimum threshold, and if the intersection is operating at above an acceptable level of operation, then the project must mitigate its traffic impact.

Traffic mitigation can be in many forms including adding lanes. Lanes can sometimes be obtained through restriping or elimination of parking, and sometimes require spot roadway widening.

III. Project Description

This section discusses the project's location and proposed development. Figure 1 shows the project location map. Figure 2 illustrates the site plan.

A. Location

The project site is located in the northwest corner of the Derry Avenue/ Canwood Street intersection in the City of Agoura Hills.

B. Proposed Development

The proposed development consists of 20,661 square feet of specialty retail. The project site will have access to Derry Avenue and Canwood Street.

Figure 1
Project Location Map

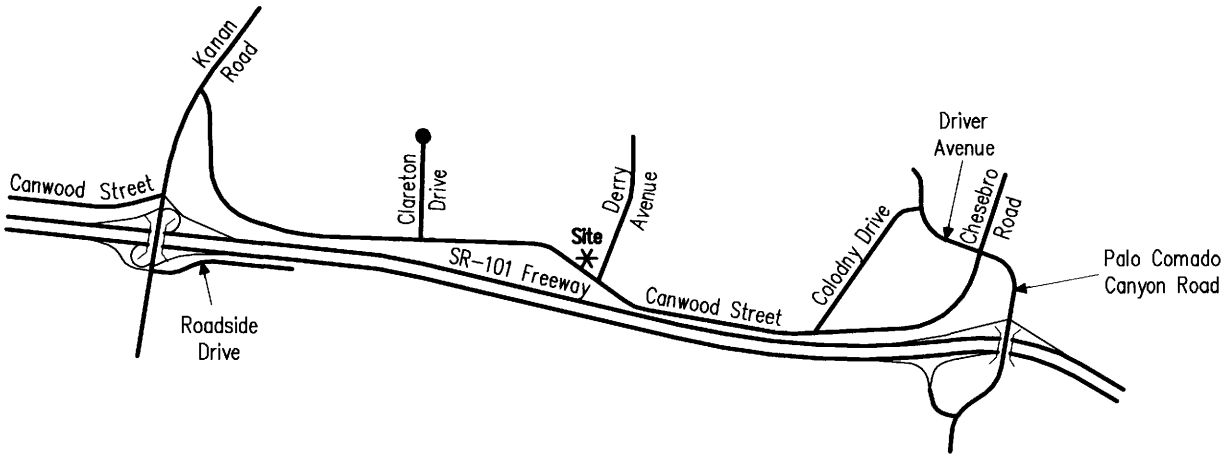

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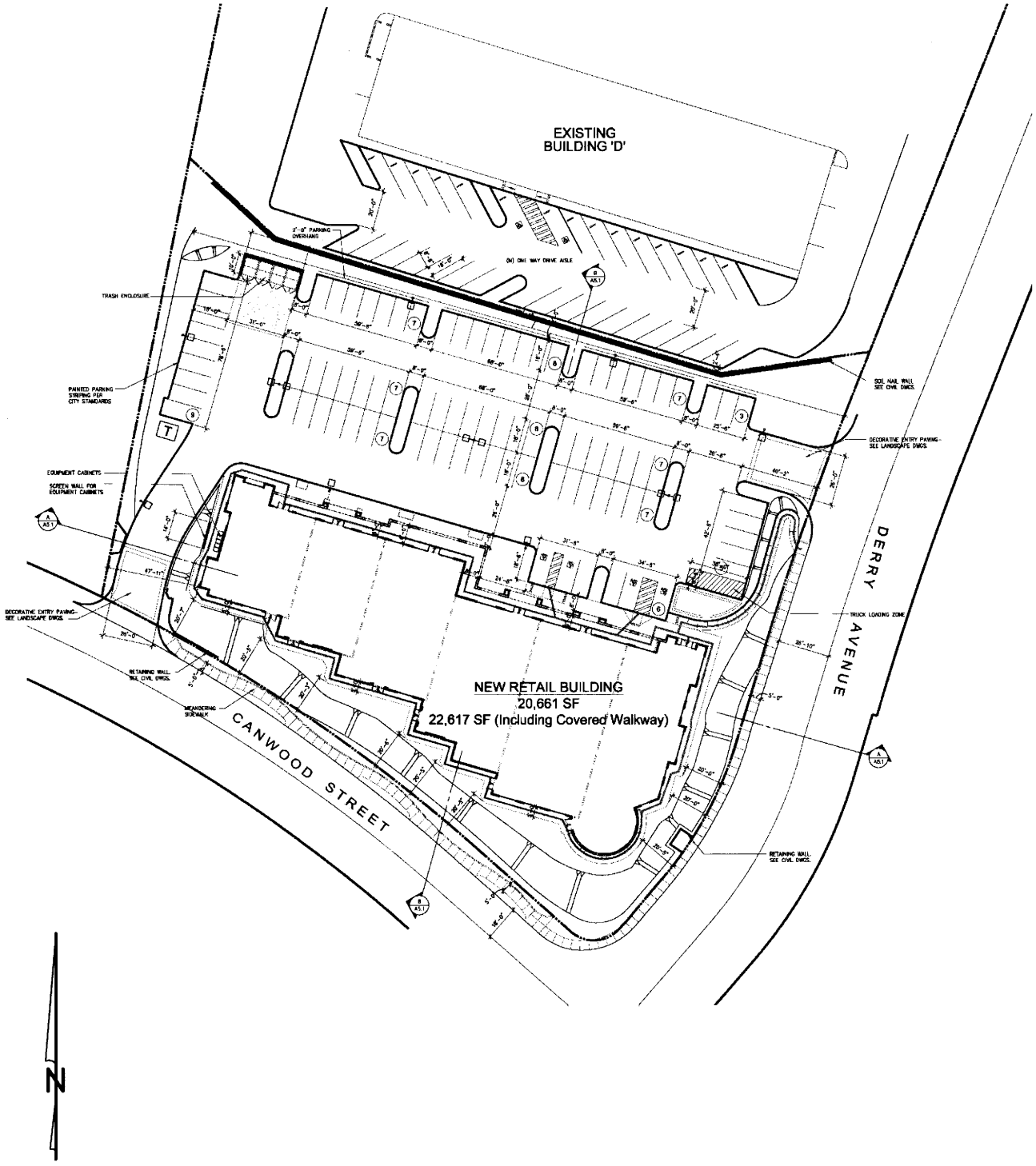
Figure 2
Site Plan



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IV. Existing Traffic Conditions

The traffic conditions as they exist today are discussed below and illustrated on Figures 3 to 6.

A. Surrounding Street System

Study area roadways that will be utilized by the development include Driver Avenue, Canwood Street, Roadside Drive, Kanan Road, Clareton Drive, Derry Avenue, Colodny Drive, and Chesebro Road.

Driver Avenue: This east-west roadway currently is two lanes undivided in the study area. Driver Avenue currently carries approximately 6,100 to 10,300 vehicles per day in the study area.

Canwood Street: This east-west roadway currently is two lanes undivided in the study area. It is classified as a Local Arterial on the City of Agoura Hills General Plan Circulation Element. Canwood Street currently carries approximately 4,300 to 7,000 vehicles per day in the study area.

Roadside Drive: This east-west roadway currently is two lanes undivided in the study area. Roadside Drive currently carries approximately 5,900 vehicles per day in the study area.

Kanan Road: This north-south roadway currently is four lanes divided to 5 lanes divided in the study area. Kanan Road currently carries approximately 27,600 to 36,400 vehicles per day in the study area.

Clareton Drive: This north-south roadway currently is two lanes undivided in the study area. It is not classified on the City of Agoura Hills General Plan Circulation Element on the City of Agoura Hills General Plan Circulation Element. Clareton Drive currently carries approximately 5,800 vehicles per day in the study area.

Derry Avenue: This north-south roadway currently is two lanes undivided in the study area. It is not classified on the City of Agoura Hills General Plan Circulation Element. Derry Avenue currently carries approximately 4,200 vehicles per day in the study area.

Colodny Drive: This north-south roadway currently is two lanes undivided in the study area. It is not classified on the City of Agoura Hills General Plan Circulation Element. Colodny Drive currently carries approximately 900 vehicles per day in the study area.

Chesebro Road: This north-south roadway currently is two lanes undivided in the study area. Chesebro Road currently carries approximately 1,100 to 4,300 vehicles per day in the study area.

B. Existing Travel Lanes and Intersection Controls

Figure 3 identifies the existing roadway conditions for study area roadways. The number of through lanes for existing roadways and the existing intersection controls are identified.

C. Existing Average Daily Traffic Volumes

Figure 4 depicts the existing average daily traffic volumes. The existing average daily traffic volumes have been obtained from the 2007 Traffic Volumes on California State Highways by the California Department of Transportation and factored from peak hour counts obtained by Kunzman Associates in May/August 2007 (see Appendix B) using the following formula for each intersection leg:

PM Peak Hour (Approach Volume + Exit Volume) x 10 = Leg Volume.

D. Existing Levels of Service

The technique used to assess the operation of a signalized intersection is known as Intersection Capacity Utilization, as described in Appendix C. To calculate an Intersection Capacity Utilization value, the volume of traffic using the intersection is compared with the capacity of the intersection. The Intersection Capacity Utilization represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

The technique used to assess the capacity needs of an unsignalized intersection is known as the Intersection Delay Method (see Appendix C). To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection.

The Intersection Capacity Utilization/Delay for the existing traffic conditions have been calculated and are shown in Table 1. Existing Intersection Capacity Utilization/Delay are based upon manual morning and evening peak hour intersection turning movement counts made for Kunzman Associates in May/August 2007 (see Figures 5 and 6). Traffic count worksheets are provided in Appendix B.

There are two peak hours in a weekday. The morning peak hour is between 7:00 AM and 9:00 AM, and the evening peak hour is between 4:00 PM and 6:00 PM. The actual peak hour within the two-hour interval is the four consecutive 15-minute periods with the highest total volume when all

movements are added together. Thus, the evening peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15-minute periods have the highest combined volume.

The study area intersections currently operate at Level of Service D or better during the peak hours for existing traffic conditions, except for the following intersection that operates at Level of Service F during the evening peak hour (see Table 1):

Chesebro Road (NS) at:
SR-101 Freeway NB Ramps (EW)

Existing Intersection Capacity Utilization/Delay worksheets are provided in Appendix C.

Table 1

Existing Levels of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour V/C/Delay[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Kanan Road (NS) at:															
SR-101 Freeway NB Ramps/Canwood Street (EW)	TS	1	2	1>	0	3	1	1	0	1	1.5	0.5	2	0.700-C	0.823-D
SR-101 Freeway SB Ramps/Roadside Drive (EW)	TS	0	2	1	1	2	1>	1.3	0.4	1.3	1	0	1	0.659-B	0.869-D
Clareton Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	13.0-B	18.0-C
Derry Avenue (NS) at:															
Canwood Street (EW)	CSS	0	0	0	1	0	1	1	1	0	0	1	0	11.2-B	11.8-B
Clolodny Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	1	1	0	0	1	0	11.0-B	10.3-B
Chesebro Road/Canwood Street (NS) at:															
Driver Avenue/Palo Comado Canyon Road (EW)	AWS	1	1	0	0	1	0	0	1	1	1	1	0	10.5-B	14.8-B
SR-101 Freeway NB Ramps (EW)	CSS	0	1	0	0	1	1	0	0	0	1	0	1	16.4-C	99.9-F[4]

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.

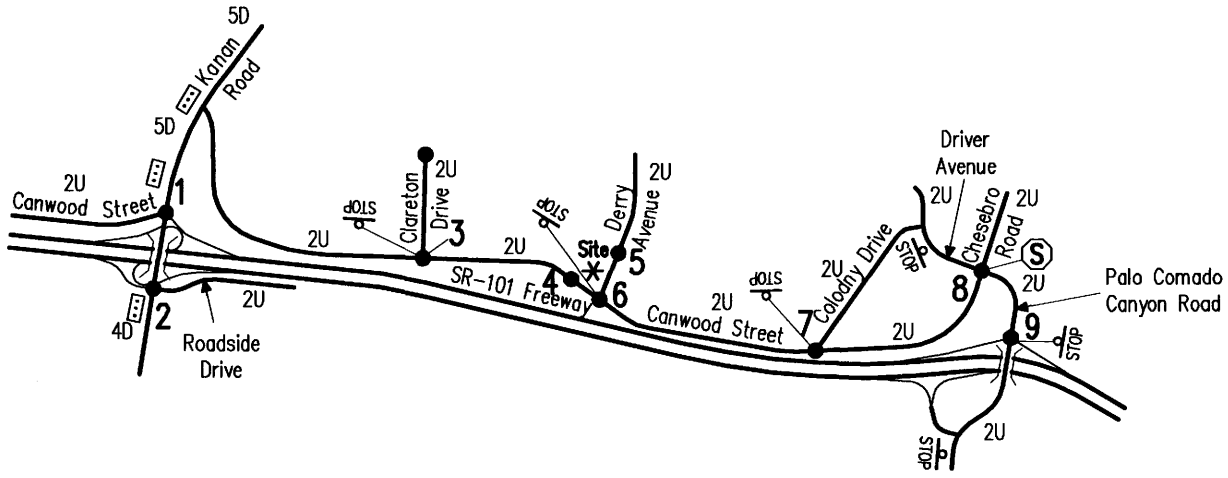
L = Left; T = Through; R = Right; > = Right Turn Overlap

[2] V/C/Delay has been calculated using the following analysis software: Traffix, Version 7.9.0215 (2008). Per the 2000 Highway Capacity Manual, for intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop; AWS = All Way Stop

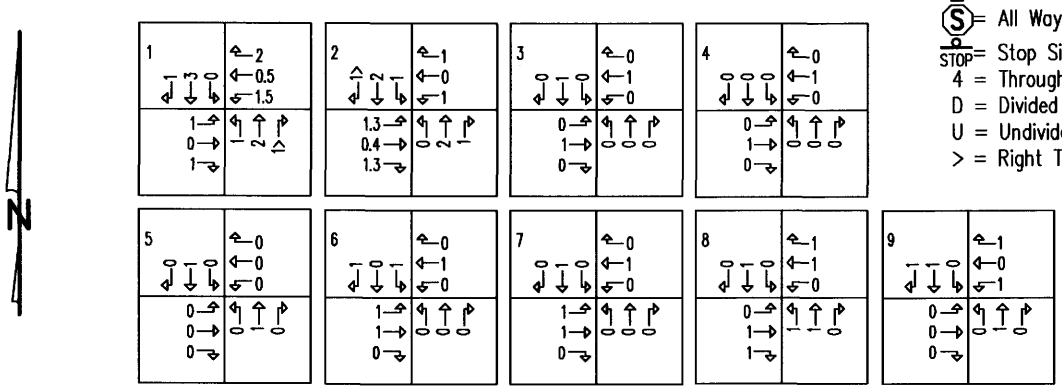
[4] 99.9-F = Delay High, Intersection Unstable, Level of Service F.

Figure 3
Existing Through Travel Lanes and Intersection Controls



Legend

- = Traffic Signal
- (S) = All Way Stop
- STOP = Stop Sign
- 4 = Through Travel Lanes
- D = Divided
- U = Undivided
- > = Right Turn Overlap



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Intersection reference numbers are in upper left corner of turning movement boxes.

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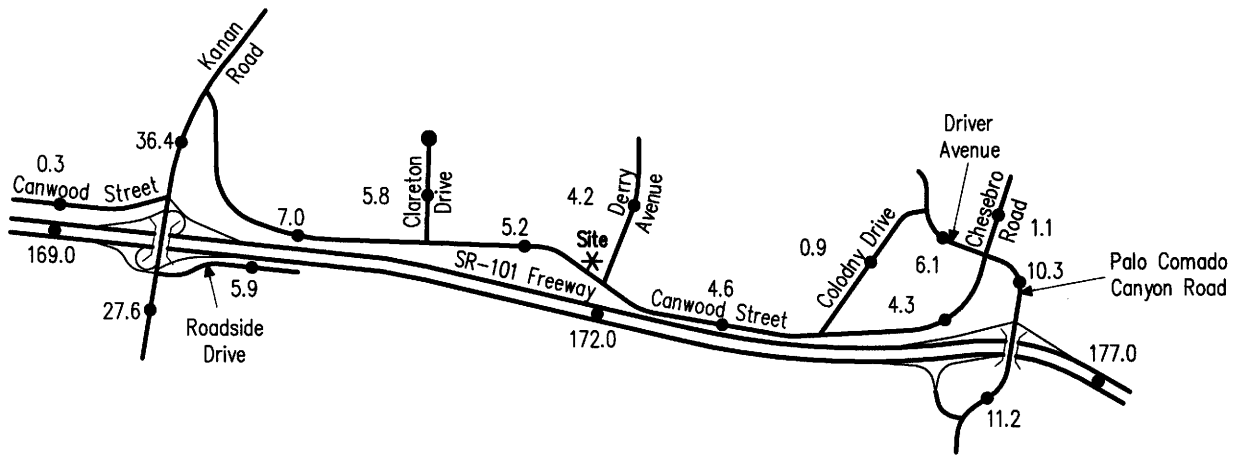
Figure 4
Existing Average Daily Traffic Volumes



Legend

11.2 = Vehicles Per Day (1000's)

N

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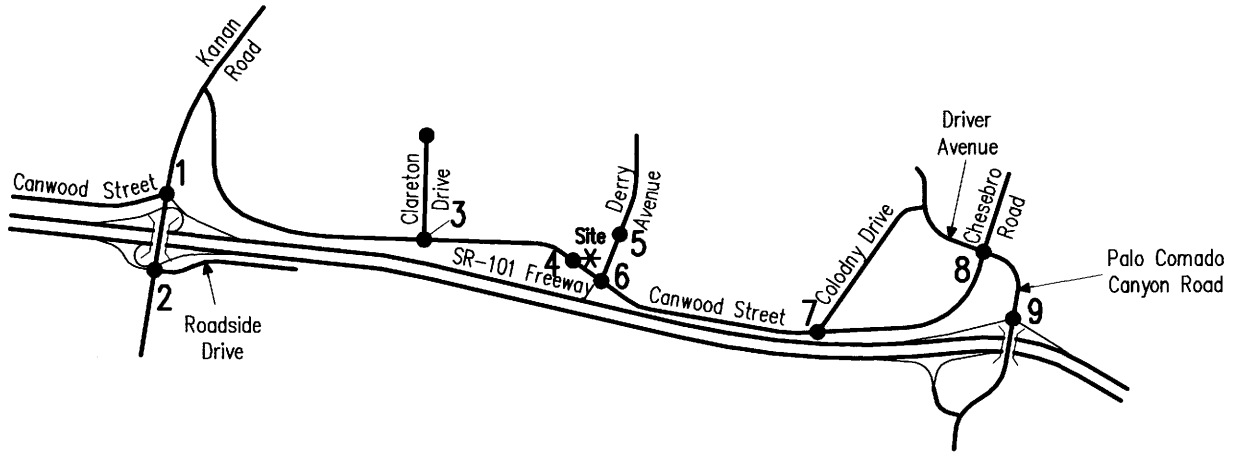
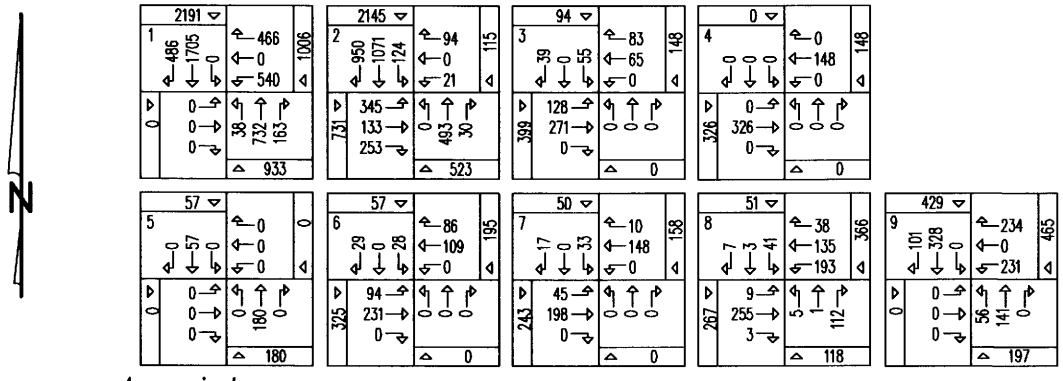
Figure 5
Existing Morning Peak Hour Intersection Turning Movement Volumes





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Intersection reference numbers are in upper left corner of turning movement boxes.

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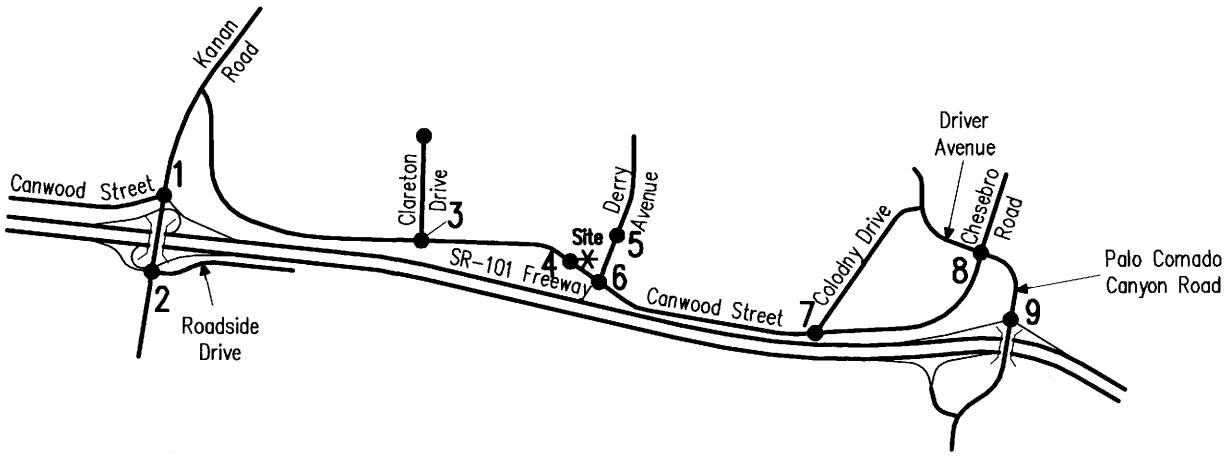
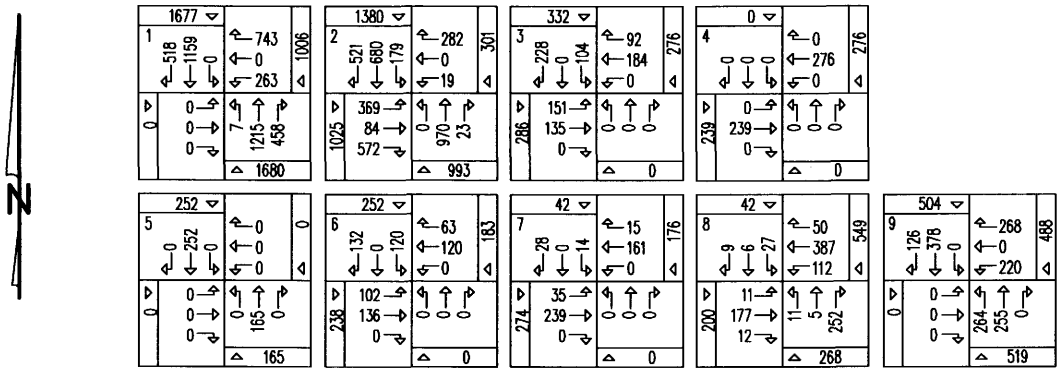
Figure 6
Existing Evening Peak Hour Intersection Turning Movement Volumes





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Intersection reference numbers are in upper left corner of turning movement boxes.

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V. Project Traffic

The proposed development consists of 20,661 square feet of specialty retail. The project site will have access to Derry Avenue and Canwood Street.

A. Trip Generation

The traffic generated by the project is determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and our life styles remain similar to what we know today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily traffic, morning peak hour inbound and outbound traffic, and evening peak hour inbound and outbound traffic for the proposed land use. By multiplying the traffic generation rates by the land use quantity, the traffic volumes are determined. Table 2 exhibits the traffic generation rates and peak hour volumes and project daily traffic volumes. The traffic generation rates are from the Institute of Transportation Engineers, Trip Generation, 7th Edition, 2003 and San Diego Association of Governments, Traffic Generators, April 2002.

The proposed development is projected to generate approximately 916 daily vehicle trips, 28 of which will occur during the morning peak hour and 56 of which will occur during the evening peak hour.

B. Trip Distribution

Figures 7 and 8 contain the directional distributions of the project traffic for the proposed land use. To determine the traffic distributions for the proposed project, peak hour traffic counts of the existing directional distribution of traffic for existing areas in the vicinity of the site, and other additional information on future development and traffic impacts in the area were reviewed.

C. Trip Assignment

Based on the identified traffic generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 9. Morning and evening peak hour intersection turning movement volumes expected from the project are shown on Figures 10 and 11, respectively.

Table 2

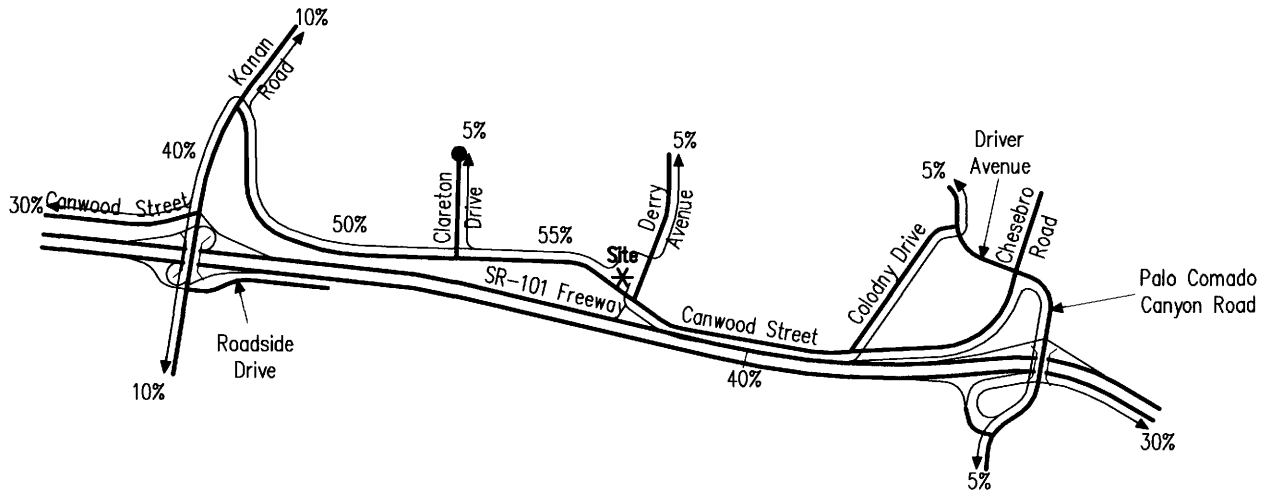
Project Traffic Generation[1]

Land Use	Quantity	Units[2]	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
Trip Generation Rates									
Specialty Retail	20.661	TSF	0.80	0.53	1.33	1.19	1.52	2.71	44.32
Trips Generated									
Specialty Retail	20.661	TSF	17	11	28	25	31	56	916

[1] Source: Institute of Transportation Engineers, Trip Generation, 7th Edition, 2003, Land Use Category 814 and San Diego Association of Governments, Traffic Generators, April 2002.

[2] TSF = Thousand Sqaure Feet

Figure 7
Project Outbound Traffic Distribution



Legend

10% = Percent From Project

N

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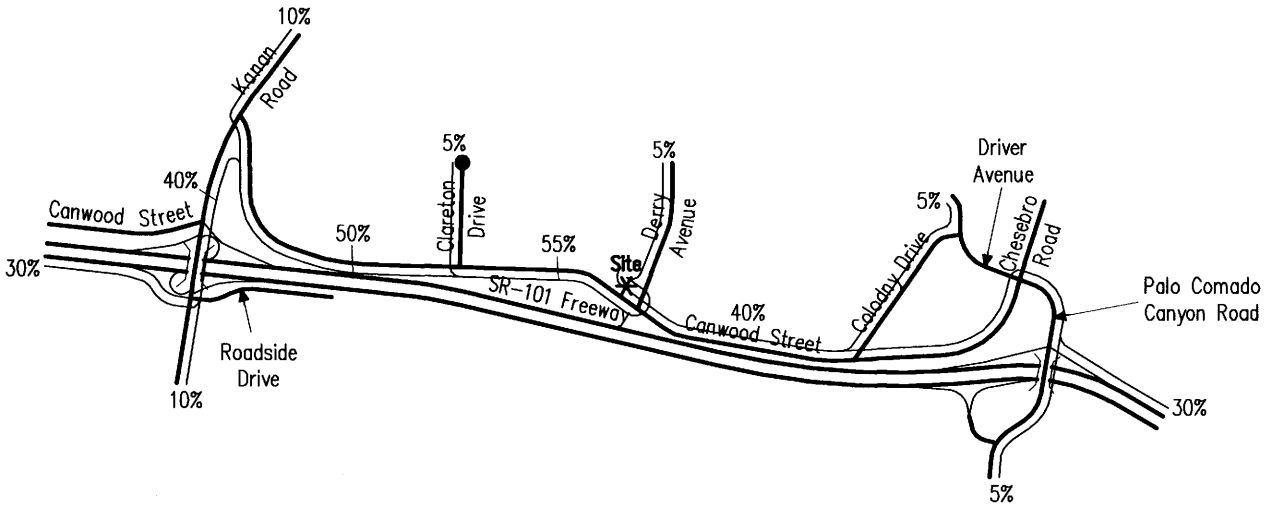
Figure 8
Project Inbound Traffic Distribution



Legend

10% = Percent To Project

N

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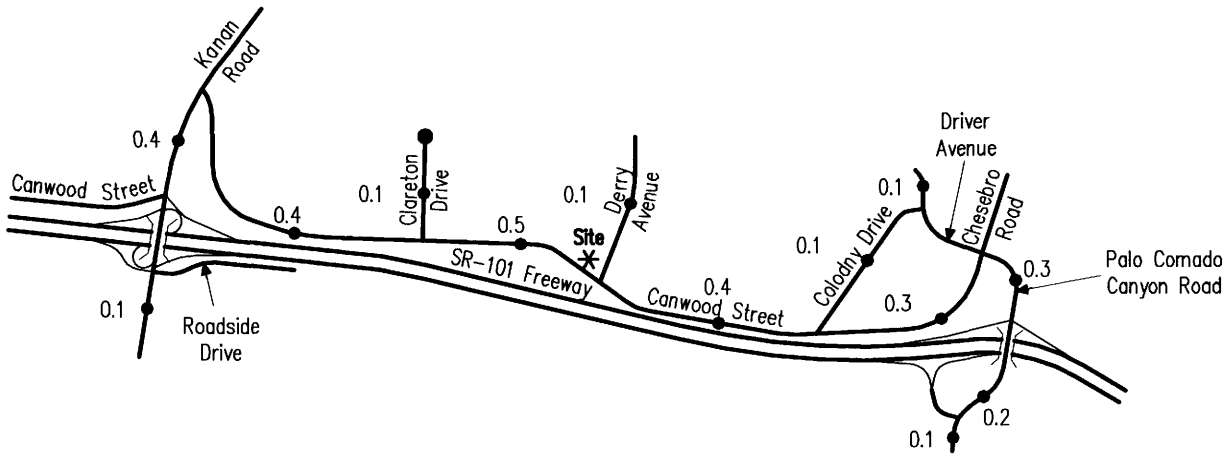
Figure 9
Project Average Daily Traffic Volumes



Legend

0.1 = Vehicles Per Day (1000's)

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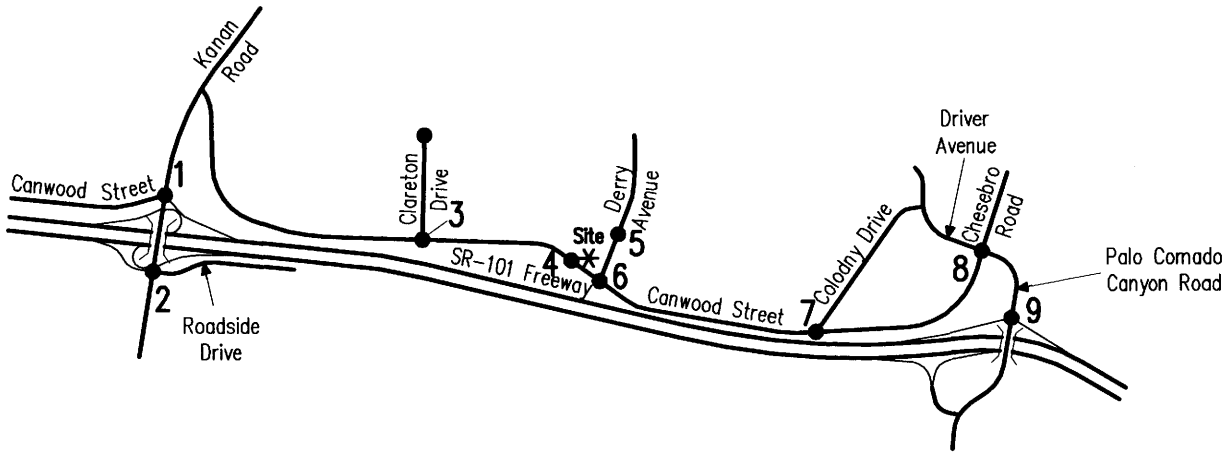
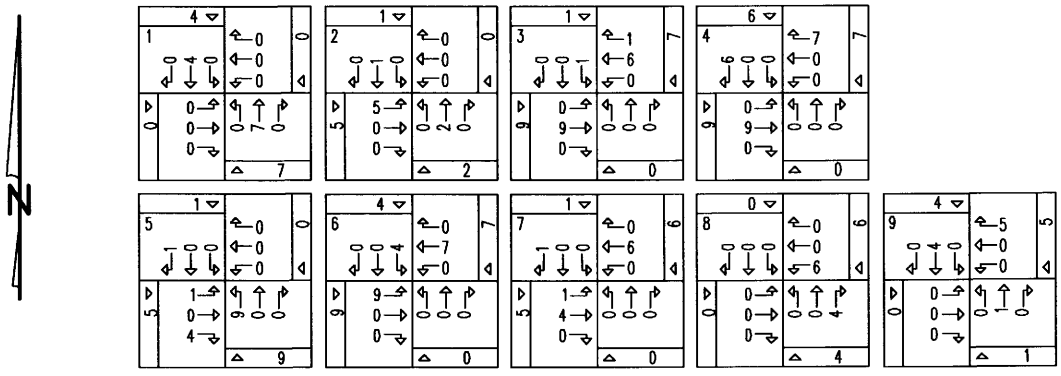
Figure 10
Project Morning Peak Hour Intersection Turning Movement Volumes





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Intersection reference numbers are in upper left corner of turning movement boxes.

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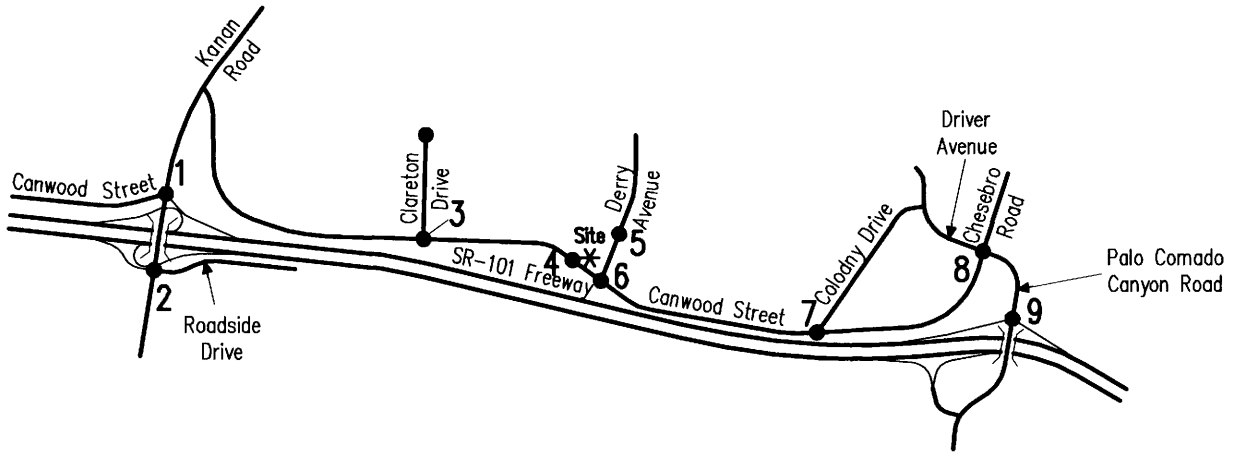
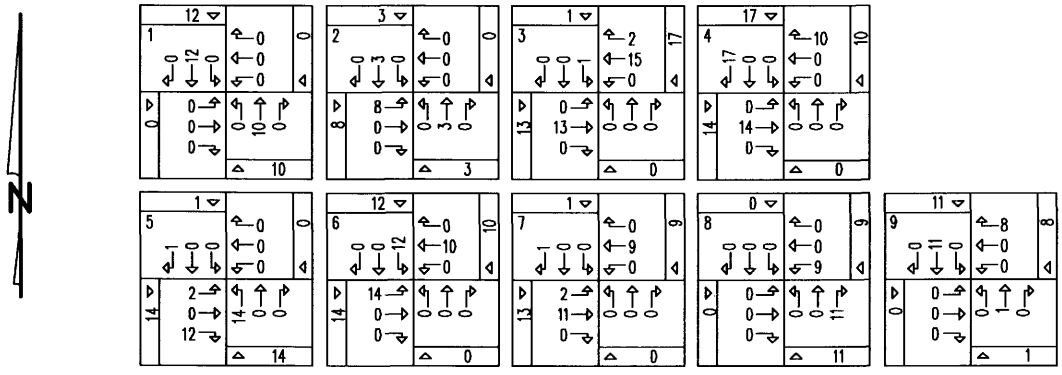
Figure 11
Project Evening Peak Hour Intersection Turning Movement Volumes





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Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

VI. Opening Year (2009) Traffic Conditions

In this section, Opening Year (2009) traffic conditions without and with the project are discussed. Figures 12 to 17 depict the Opening Year (2009) traffic conditions.

A. Method of Projection

To account for areawide growth on roadways, Opening Year (2009) traffic volumes have been calculated based on a two (2) percent annual growth rate of existing traffic volumes over a two (2) year period. The areawide growth rate has been obtained from a previous traffic study provided by City of Agoura Hills staff.

Areawide growth has been added to daily and peak hour traffic volumes on surrounding roadways, in addition to traffic generated by the project.

B. Opening Year (2009) Average Daily Traffic Volumes

Opening Year (2009) without project average daily traffic volumes are as illustrated on Figure 12. The Opening Year (2009) with project average daily traffic volumes are as illustrated on Figure 13.

C. Opening Year (2009) Levels of Service

The technique used to assess the operation of a signalized intersection is known as Intersection Capacity Utilization, as described in Appendix C. To calculate an Intersection Capacity Utilization value, the volume of traffic using the intersection is compared with the capacity of the intersection. The Intersection Capacity Utilization represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

The technique used to assess the capacity needs of an unsignalized intersection is known as the Intersection Delay Method (see Appendix C). To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection.

The Intersection Capacity Utilization/Delay for the Opening Year (2009) without project traffic conditions have been calculated and are shown in Table 4. Opening Year (2009) without project morning and evening peak hour intersection turning movement volumes are shown on Figures 14 and 15, respectively.

The study area intersections are projected to operate at Level of Service D or better during the peak hours for Opening Year (2009) without project traffic

conditions, except for the following intersection that operates at Level of Service F during the evening peak hour (see Table 4):

Chesebro Road (NS) at:
SR-101 Freeway NB Ramps (EW)

Opening Year (2009) without project Intersection Capacity Utilization/Delay worksheets are provided in Appendix C.

The Intersection Capacity Utilization/Delay for the Opening Year (2009) with project traffic conditions have been calculated and are shown in Table 5. Opening Year (2009) with project morning and evening peak hour intersection turning movement volumes are shown on Figures 16 and 17, respectively.

The study area intersections are projected to operate at Level of Service D or better during the peak hours for Opening Year (2009) with project traffic conditions, except for the following intersection that operates at Level of Service F during the evening peak hour (see Table 5):

Chesebro Road (NS) at:
SR-101 Freeway NB Ramps (EW)

Opening Year (2009) with project Intersection Capacity Utilization/Delay worksheets are provided in Appendix C.

D. Significant Transportation Impact

In the City of Agoura Hills, a significant impact would occur when a proposed project increases 2% of capacity (V/C increase > 0.02) at a facility that would operate at Level of Service D or worse with project added traffic volumes. For unsignalized intersections, the threshold is a 2% increase in entering volumes.

Table 5 depicts the Opening Year (2009) project traffic contribution at the study area intersections. The project site does not significantly impact the study area intersections (see Table 6).

Table 3

Opening Year (2009) Without Project Levels of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour V/C or Delay[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Kanan Road (NS) at:															
SR-101 Freeway NB Ramps/Canwood Street (EW)	TS	1	2	1>	0	3	1	1	0	1	1.5	0.5	2	0.724-C	0.852-D
SR-101 Freeway SB Ramps/Roadside Drive (EW)	TS	0	2	1	1	2	1>	1.3	0.4	1.3	1	0	1	0.682-B	0.899-D
Clareton Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	13.4-B	19.5-C
Derry Avenue (NS) at:															
Canwood Street (EW)	CSS	0	0	0	1	0	1	1	1	0	0	1	0	11.4-B	12.1-B
Clolodny Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	1	1	0	0	1	0	11.2-B	10.4-B
Chesebro Road/Canwood Street (NS) at:															
Driver Avenue/Palo Comado Canyon Road (EW)	AWS	1	1	0	0	1	0	0	1	1	1	1	0	10.7-B	15.8-C
SR-101 Freeway NB Ramps (EW)	CSS	0	1	0	0	1	1	0	0	0	1	0	1	17.6-C	99.9-F[4]

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right Turn Overlap; 1 = Improvement

[2] V/C/Delay has been calculated using the following analysis software: Traffix, Version 7.9.0215 (2008). Per the 2000 Highway Capacity Manual, for intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop; AWS = All Way Stop

[4] 99.9-F = Delay High, Intersection Unstable, Level of Service F.

Table 4

Opening Year (2009) With Project Levels of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour V/C or Delay[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Kanan Road (NS) at:															
SR-101 Freeway NB Ramps/Canwood Street (EW)	TS	1	2	1>	0	3	1	1	0	1	1.5	0.5	2	0.725-C	0.855-D
SR-101 Freeway SB Ramps/Roadside Drive (EW)	TS	0	2	1	1	2	1>	1.3	0.4	1.3	1	0	1	0.684-B	0.904-E
Clareton Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	13.7-B	20.7-C
Project Driveway (NS) at:															
Canwood Street (EW)	**CSS**	0	0	0	0	0	1	0	1	0	0	1	0	9.1-A	9.9-A
Derry Avenue (NS) at:															
Project Driveway (EW)	**CSS**	0	1	0	0	1	0	0	1	0	0	0	0	8.9-A	10.0-A
Canwood Street (EW)	CSS	0	0	0	1	0	1	1	1	0	0	1	0	11.8-B	12.8-B
Clolodny Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	1	1	0	0	1	0	11.3-B	10.5-B
Chesebro Road/Canwood Street (NS) at:															
Driver Avenue/Palo Comado Canyon Road (EW)	AWS	1	1	0	0	1	0	0	1	1	1	1	0	10.8-B	16.1-C
SR-101 Freeway NB Ramps (EW)	CSS	0	1	0	0	1	1	0	0	0	1	0	1	17.7-C	99.9-F[4]

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right Turn Overlap; 1 = Improvement

[2] V/C/Delay has been calculated using the following analysis software: Traffix, Version 7.8.0115 (2006). Per the 2000 Highway Capacity Manual, for intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop; AWS = All Way Stop

[4] 99.9-F = Delay High, Intersection Unstable, Level of Service F.

Table 5

Opening Year (2009) Project Traffic Contribution

Intersection	Peak Hour	Opening Year (2008) Without Project V/C/Delay	LOS	Project Volume Impact[1]	Opening Year (2008) With Project: Without Mitigation V/C or Delay	LOS	V/C Increase	Significant Impact[2]	With Mitigation V/C or Delay	LOS	V/C Increase	Significant Impact
Kanan Road (NS) at:												
SR-101 Freeway NB Ramps/Canwood Street (EW)	Morning	0.724	C	N/A[3]	0.725	C	0.001	No				
	Evening	0.852	D	N/A	0.855	D	0.003	No				
SR-101 Freeway SB Ramps/Roadside Drive (EW)	Morning	0.682	B	N/A	0.684	B	0.002	No				
	Evening	0.899	D	N/A	0.904	E	0.005	No				
Clareton Drive (NS) at:												
Canwood Street (EW)	Morning	13.4	B	2.5%	13.7	B	N/A[4]	No				
	Evening	19.5	C	3.3%	20.7	C	N/A	No				
Derry Avenue (NS) at:												
Canwood Street (EW)	Morning	11.4	B	3.2%	11.8	B	N/A	No				
	Evening	12.1	B	5.0%	12.8	B	N/A	No				
Clolodny Drive (NS) at:												
Canwood Street (EW)	Morning	11.2	B	4.7%	11.3	B	N/A	No				
	Evening	10.4	B	1.9%	10.5	B	N/A	No				
Chesebro Road/Canwood Street (NS) at:												
Driver Avenue/Palo Comado Canyon Road (EW)	Morning	10.7	B	1.2%	10.8	B	N/A	No				
	Evening	15.8	C	1.8%	16.1	C	N/A	No				
SR-101 Freeway NB Ramps (EW)	Morning	17.6	C	0.9%	17.7	C	N/A	No				
	Evening	99.9	F	1.3%	99.9	F	N/A	No				

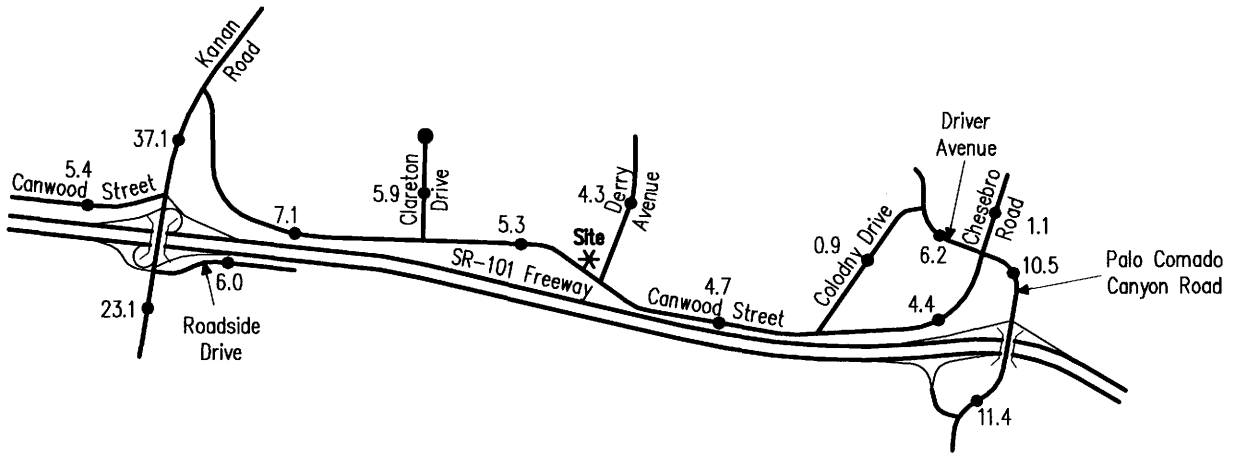
[1] Project volume impact is calculated by project related entering volume divided by total future volume.

[2] In the City of Agoura Hills, a significant impact for signalized intersections would occur when a proposed project increases 2% of capacity (V/C increase > 0.02) at a facility that would operate at Level of Service D or worse with project added traffic volumes. For unsignalized intersections, the threshold is a 2% increase in entering volumes.

[3] Project volume Impact analysis is not applicable for signalized intersections for which the V/C values are available.

[4] V/C Increase is not applicable for unsignalized intersection delay calculation.

Figure 12
Opening Year (2009) Without Project Average Daily Traffic Volumes



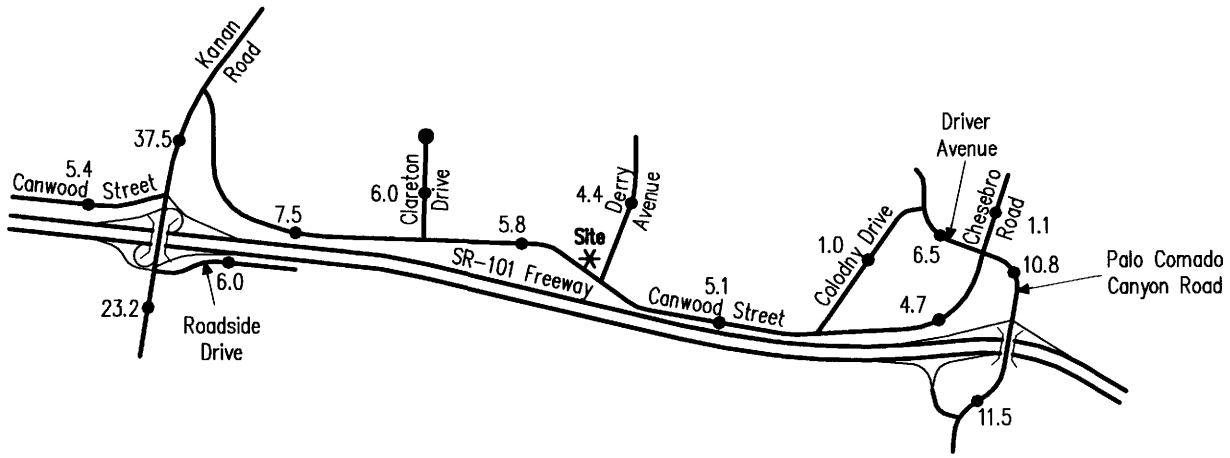
Legend

11.4 = Vehicles Per Day (1000's)

Kunzman Associates

3902c/12

Figure 13
Opening Year (2009) With Project Average Daily Traffic Volumes



Legend

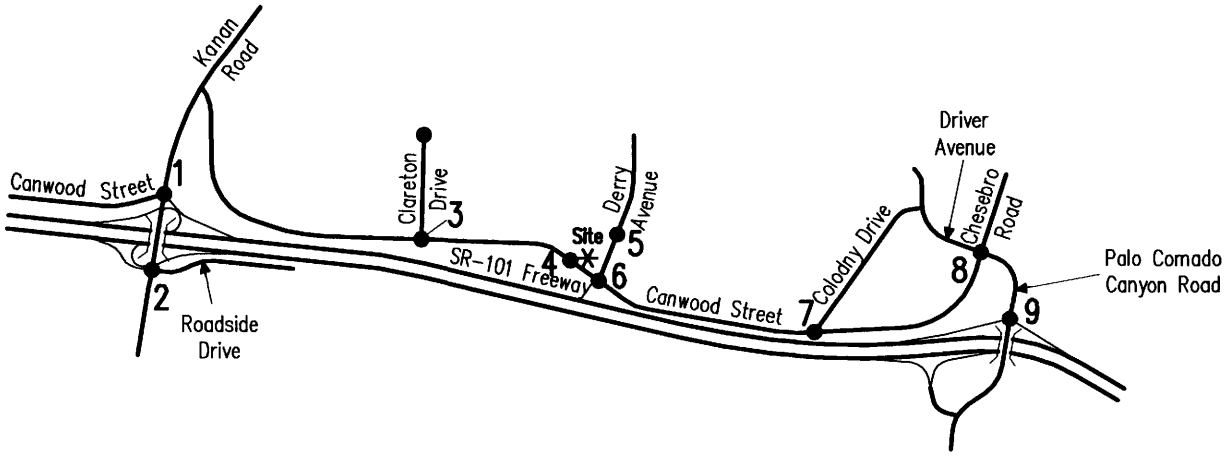
11.5 = Vehicles Per Day (1000's)

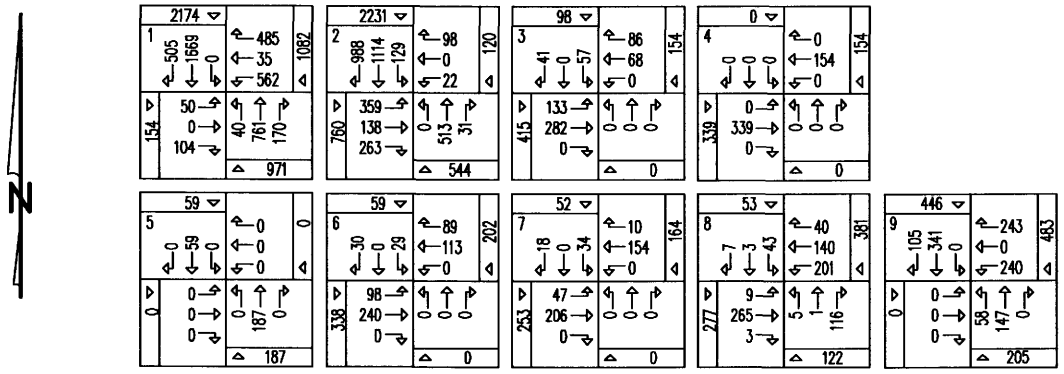
N

Kunzman Associates

3902c/13

Figure 14
Opening Year (2009) Without Project
Morning Peak Hour Intersection Turning Movement Volumes



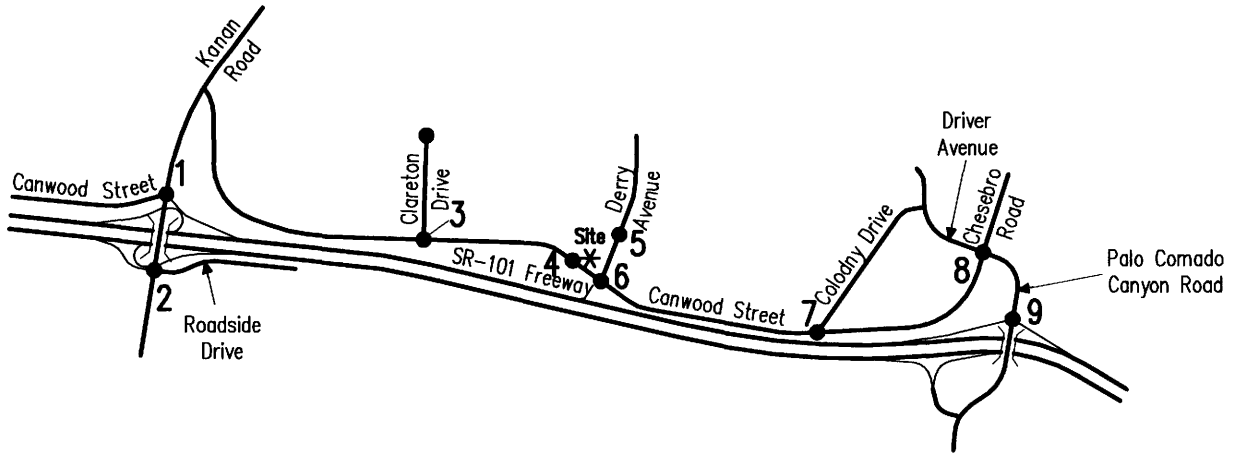


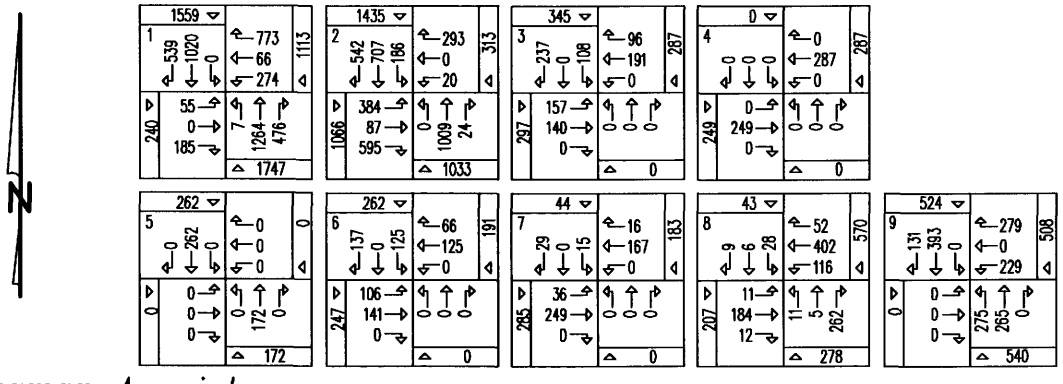
Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

Figure 15
Opening Year (2009) Without Project
Evening Peak Hour Intersection Turning Movement Volumes



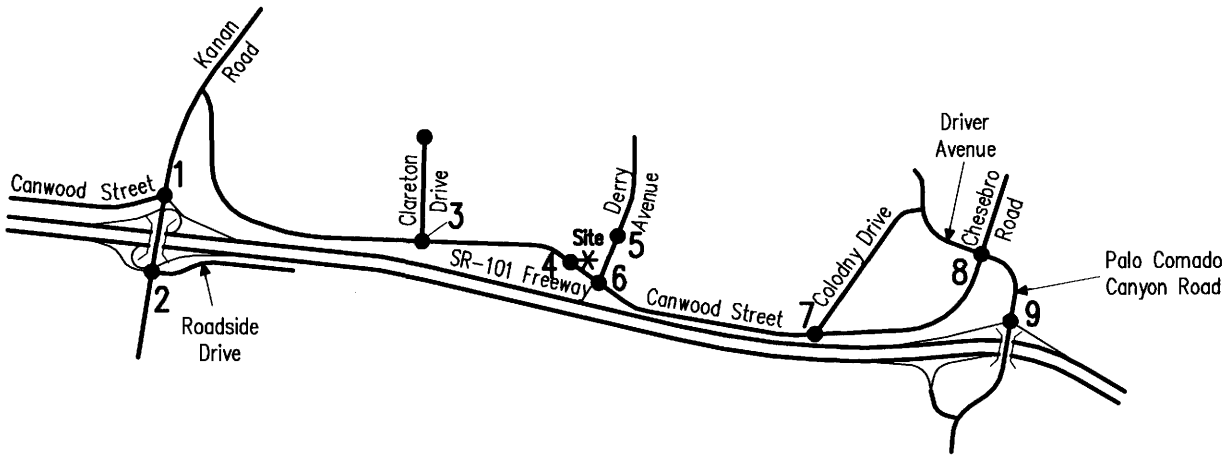


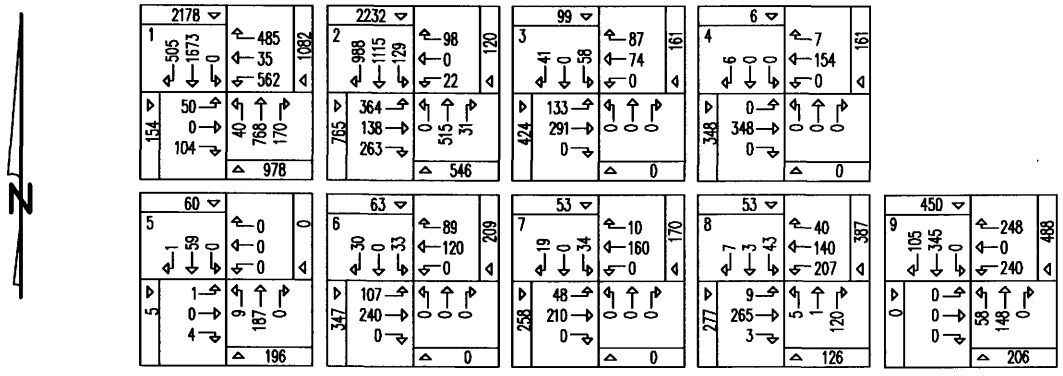
Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

Figure 16
Opening Year (2009) With Project
Morning Peak Hour Intersection Turning Movement Volumes



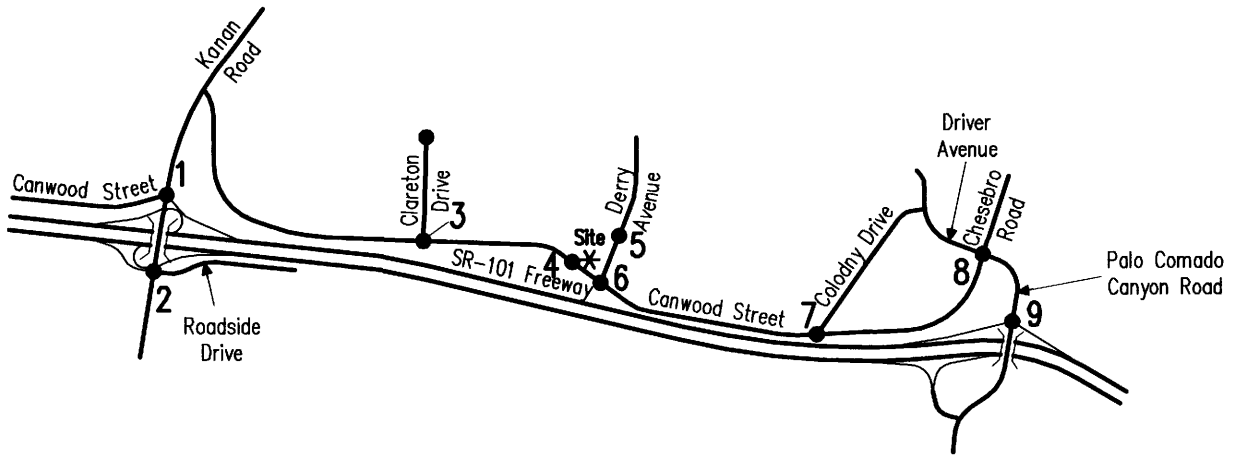


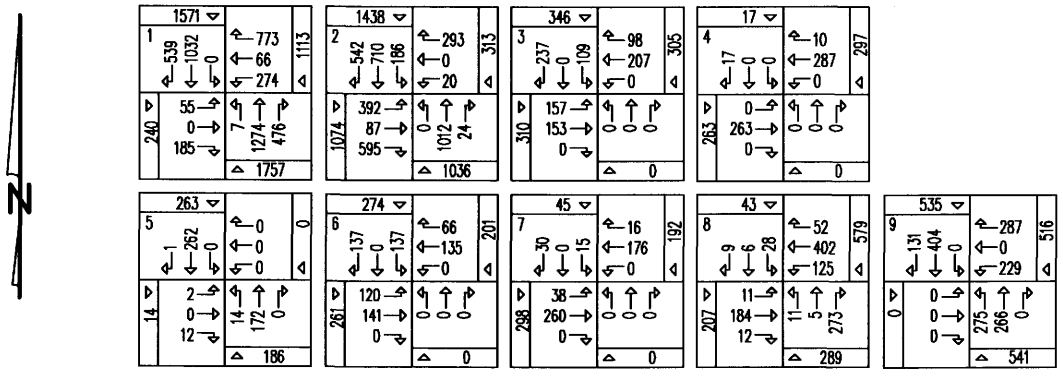
Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

Figure 17
Opening Year (2009) With Project
Evening Peak Hour Intersection Turning Movement Volumes





Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

VII. Cumulative Traffic Conditions

In this section, cumulative traffic conditions without and with the project are discussed. Figures 18 to 24 depict the cumulative traffic conditions.

A. Method of Projection

To account for areawide growth on roadways, cumulative traffic forecasts were developed from existing traffic volumes plus two (2) percent annual growth rate over a two (2) year period plus the approved and pending project tracking list, plus traffic generated by the Heschel School proposed in the County area just northeast of U.S. 101/Palo Camado Canyon Road. Table 6 lists the proposed land uses for the other development (see Figure 18).

B. Cumulative Average Daily Traffic Volumes

Cumulative without project average daily traffic volumes are as illustrated on Figure 19. The cumulative with project average daily traffic volumes are as illustrated on Figure 20.

C. Cumulative Levels of Service

The technique used to assess the operation of a signalized intersection is known as Intersection Capacity Utilization, as described in Appendix C. To calculate an Intersection Capacity Utilization value, the volume of traffic using the intersection is compared with the capacity of the intersection. The Intersection Capacity Utilization represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

The technique used to assess the capacity needs of an unsignalized intersection is known as the Intersection Delay Method (see Appendix C). To calculate delay, the volume of traffic using the intersection is compared with the capacity of the intersection.

The Intersection Capacity Utilization/Delay for the cumulative without project traffic conditions have been calculated and are shown in Table 7. Cumulative without project morning and evening peak hour intersection turning movement volumes are shown on Figures 21 and 22, respectively.

The study area intersections are projected to operate at Level of Service D or better during the peak hours for cumulative without project traffic conditions, except for the following intersections that operate at Level of Service F during the evening peak hour (see Table 7).

Kanan Road (NS) at:
SR-101 Freeway SB Ramps/Roadside Drive (EW)

Chesebro Road (NS) at:
SR-101 Freeway NB Ramps (EW)

Cumulative without project Intersection Capacity Utilization/Delay worksheets are provided in Appendix C.

The Intersection Capacity Utilization/Delay for the cumulative with project traffic conditions have been calculated and are shown in Table 8. Cumulative with project morning and evening peak hour intersection turning movement volumes are shown on Figures 23 and 24, respectively.

The study area intersections are projected to operate at Level of Service D or better during the peak hours for cumulative with project traffic conditions, with improvements, except for the following intersections that operate at Level of Service F during the evening peak hour (see Table 8):

Kanan Road (NS) at:
SR-101 Freeway SB Ramps/Roadside Drive (EW)

Chesebro Road (NS) at:
SR-101 Freeway NB Ramps (EW)

Cumulative with project Intersection Capacity Utilization/Delay worksheets are provided in Appendix C.

D. Significant Transportation Impact

In the City of Agoura Hills, a significant impact would occur when a proposed project increases 2% of capacity (V/C increase > 0.02) at a facility that would operate at Level of Service D or worse with project added traffic volumes. For unsignalized intersections, the threshold is a 2% increase in entering volumes.

Table 9 depicts the cumulative project traffic contribution at the study area intersections. The project site does not significantly impact the study area intersections (see Table 9).

Table 6

Other Development Traffic Generation[1]

Traffic Analysis Zone[2]	Project	Land Use[3]	Quantity	Units[4]	Peak Hour						Daily
					Morning			Evening			
					Inbound	Outbound	Total	Inbound	Outbound	Total	
1	--[5]	--	--	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--	--	--	--
3	--	--	--	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	--	--	--	--
5	Sunbelt Enterprises	Single-Tenant Office	25.2	TSF	40	5	45	7	37	44	292
	Center Court Plaza/Silagi	Single-Tenant Office	49.4	TSF	79	10	89	13	73	86	571
	Agoura Detailing Center	Automotive Shop	10.333	TSF	20	11	31	17	17	34	620
	Subtotal				139	26	165	37	127	164	1,483
6	Danari Oak Creek LLC	Specialty Retail	14.42	TSF	12	8	20	17	22	39	639
		High Turnover (Sit-Do	20.24	TSF	121	112	233	135	86	221	2,574
	Shirvanian Family Investment	Light Industrial	103.0	TSF	83	11	94	12	89	101	718
	Rhombold	Multi-Family Attached	19	DU	1	7	8	7	3	10	111
	Stockton	Apartments	4	DU	0	2	2	2	1	3	27
	Subtotal				217	140	357	173	201	374	4,069
7	--	--	--	--	--	--	--	--	--	--	--
8	David Myers/Ware Malcomb	Specialty Retail	38	TSF	30	20	50	45	58	103	1,684
	Agoura Landmark, LP	General Office	128.863	TSF	202	28	230	38	185	223	1,622
	Realty Bancorp Equities	Commercial Retail	76.75	TSF	81	52	133	252	273	525	5,718
	HQ Development Co.	General Office	92.215	TSF	155	21	176	31	151	182	1,253
	Subtotal				468	121	589	366	667	1,033	10,277
9	Wildmari Design, LLC	Commercial Retail	21.59	TSF	38	24	62	109	118	227	2,507
	Agoura Medical Partners, LLC	Single-Tenant Office	40.733	TSF	65	8	73	11	60	71	471
	BBA Properties LLC	Single-Tenant Office	9.44	TSF	15	2	17	2	14	16	109
	Subtotal				118	34	152	122	192	314	3,087
10	27489 Agoura Road LLC	Single-Tenant Office	30.0	TSF	48	6	54	8	44	52	347
	Rasmussen Larry	General Office	45.0	TSF	87	12	99	22	107	129	721
	Alesco Development	Single-Tenant Office	63.208	TSF	101	13	114	16	93	109	731
	Subtotal				236	31	267	46	244	290	1,799
11	Heathcote for Buckley	Single-Tenant Office	14.075	TSF	23	3	26	4	21	25	163
	Carlos Khantzis	Senior Attached Hous	46	DU	2	2	4	3	2	5	160
	Agoura-Kanan, LLC	Multi-Family Attached	107	DU	7	40	47	37	18	55	627
		Commercial Retail	167.0	TSF	130	83	213	422	457	879	9,478
	Vinod & Chanresh Gupta Trust	Single-Tenant Office	12.7	TSF	20	3	23	3	19	22	147
	Scheu	General Office	81.0	TSF	139	19	158	29	141	170	1,134
	Scheu Development	General Office	71.844	TSF	127	17	144	27	132	159	1,034
	Carlos Khantzis and Steve Rice	Multi-Family Attached	46	DU	3	17	20	16	8	24	270
	Subtotal				451	184	635	541	798	1,339	13,013
12	Cornerstone	Specialty Retail	26	TSF	21	14	35	31	40	71	1,152
		Single-Tenant Office	18	TSF	29	4	33	5	26	31	208
		Multi-Family Attached	41	DU	3	15	18	14	7	21	240
	Agoura Village Mixed Use	Mixed Use			466	338	804	791	842	1,633	17,593
	Cornerstone Heathcote & Associates	Specialty Retail	67.155	TSF	54	36	90	80	102	182	2,976
		Multi-Family Attached	35	DU	2	13	15	12	6	18	205
	Agile Ventures, LLC	Single-Tenant Office	17.249	TSF	28	3	31	4	25	29	200
	Sherlie Bermann	Commercial Retail	24.22	TSF	41	26	67	118	128	246	2,702
	Monte Verde Development	Single-Family Detach	16	DU	3	9	12	10	6	16	153
	Subtotal				647	458	1,105	1,065	1,182	2,247	25,429
13	Riopharm 2	Single-Family Detach	14	DU	3	8	11	9	5	14	134
	Riopharm USA, Inc	Single-Family Detach	13	DU	2	7	9	8	5	13	124
	Subtotal				5	15	20	17	10	27	258
Total					2,281	1,009	3,290	2,367	3,421	5,788	59,415

[1] ITE = Institute of Transportation Engineers, Trip Generation, 7th Edition, 2003

[2] Traffic Analysis Zone boundaries have been provided by the City of Agoura Hills Planning Department.

[3] Best-fit curve equation has been used for general office land use and commercial retail land use.

[4] DU = Dwelling Unit; TSF = Thousand Square Feet

[5] -- = Not Applicable

Table 7

Cumulative Without Project Levels of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour V/C/Delay[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Kanan Road (NS) at:															
SR-101 Freeway NB Ramps/Canwood Street (EW)	TS	1	2	1>	0	3	1	1	0	1	1.5	0.5	2	0.890-D	0.957-E
SR-101 Freeway SB Ramps/Roadside Drive (EW)	TS	0	2	1	1	2	1>	1.3	0.4	1.3	1	0	1	0.968-E	1.598-F
Clareton Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	14.0-B	23.0-C
Derry Avenue (NS) at:															
Canwood Street (EW)	CSS	0	0	0	1	0	1	1	1	0	0	1	0	11.7-B	13.1-B
Clolodny Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	1	1	0	0	1	0	12.4-B	11.5-B
Chesebro Road/Canwood Street (NS) at:															
Driver Avenue/Palo Comado Canyon Road (EW)	AWS	0	1	1	0	1	0	0	1	0	1	1	0	12.0-B	20.4-C
SR-101 Freeway NB Ramps (EW)	CSS	0	1	0	0	1	1	0	0	0	1	0	1	32.3-D	99.9-F[4]

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right Turn Overlap; 1 = Improvement

[2] V/C/Delay has been calculated using the following analysis software: Traffix, Version 7.9.0215 (2008). Per the 2000 Highway Capacity Manual, for intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop; AWS = All Way Stop

[4] 99.9-F = Delay High, Intersection Unstable, Level of Service F.

Table 8

Cumulative With Project Levels of Service

Intersection	Traffic Control[3]	Intersection Approach Lanes[1]												Peak Hour V/C/Delay[2]	
		Northbound			Southbound			Eastbound			Westbound				
		L	T	R	L	T	R	L	T	R	L	T	R	Morning	Evening
Kanan Road (NS) at:															
SR-101 Freeway NB Ramps/Canwood Street (EW)	TS	1	2	1>	0	3	1	1	0	1	1.5	0.5	2	0.891-D	0.960-E
SR-101 Freeway SB Ramps/Roadside Drive (EW)	TS	0	2	1	1	2	1>	1.3	0.4	1.3	1	0	1	0.969-E	1.599-F
Clareton Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	0	1	0	0	1	0	14.3-B	24.7-C
Project Driveway (NS) at:															
Canwood Street (EW)	**CSS**	0	0	0	0	0	**1**	0	1	0	0	1	0	9.2-A	10.2-B
Derry Avenue (NS) at:															
Project Driveway (EW)	**CSS**	0	1	0	0	1	0	0	**1**	0	0	0	0	8.9-A	10.0-A
Canwood Street (EW)	CSS	0	0	0	1	0	1	1	1	0	0	1	0	12.2-B	14.1-B
Clolodny Drive (NS) at:															
Canwood Street (EW)	CSS	0	0	0	0	1	0	1	1	0	0	1	0	12.5-B	11.6-B
Chesebro Road/Canwood Street (NS) at:															
Driver Avenue/Palo Comado Canyon Road (EW)	AWS	0	1	1	0	1	0	0	1	0	1	1	0	12.1-B	21.0-C
SR-101 Freeway NB Ramps (EW)	CSS	0	1	0	0	1	1	0	0	0	1	0	1	32.6-D	99.9-F[4]

[1] When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane, there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; > = Right Turn Overlap; **1** = Improvement

[2] V/C/Delay has been calculated using the following analysis software: Traffix, Version 7.9.0215 (2008). Per the 2000 Highway Capacity Manual, for intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal; CSS = Cross Street Stop; AWS = All Way Stop

[4] 99.9-F = Delay High, Intersection Unstable, Level of Service F.

Table 9

Cumulative Project Traffic Contribution

Intersection	Peak Hour	Cumulative Analysis Without Project V/C/Delay	Cumulative Analysis Without Project LOS	Cumulative Analysis With Project: Project Volume Impact[1]	Without Mitigation: V/C/ Delay	Without Mitigation: LOS	Without Mitigation: V/C Increase	Without Mitigation: Significant Impact[2]	With Mitigation: V/C Delay	With Mitigation: LOS	With Mitigation: V/C Increase	With Mitigation: Significant Impact
Kanan Road (NS) at:												
SR-101 Freeway NB Ramps/Canwood Street (EW)	Morning	0.890	D	N/A[3]	0.891	D	0.001	No				
	Evening	0.957	E	N/A	0.960	E	0.003	No				
SR-101 Freeway SB Ramps/Roadside Drive (EW)	Morning	0.968	E	N/A	0.969	F	0.001	No				
	Evening	1.598	F	N/A	1.599	F	0.001	No				
Clareton Drive (NS) at:												
Canwood Street (EW)	Morning	14.0	B	2.3%	14.3	B	N/A	No				
	Evening	23.0	C	3.0%	24.7	C	N/A	No				
Derry Avenue (NS) at:												
Canwood Street (EW)	Morning	11.7	B	3.0%	12.2	B	N/A[4]	No				
	Evening	13.1	B	4.5%	14.1	B	N/A	No				
Clolodny Drive (NS) at:												
Canwood Street (EW)	Morning	12.4	B	3.7%	12.5	B	N/A	No				
	Evening	11.5	B	1.4%	11.6	B	N/A	No				
Chesebro Road/Canwood Street (NS) at:												
Driver Avenue/Palo Comado Canyon Road (EW)	Morning	12.0	B	1.0%	12.1	B	N/A	No				
	Evening	20.4	C	1.5%	21.0	C	N/A	No				
SR-101 Freeway NB Ramps (EW)	Morning	32.3	D	0.8%	32.6	D	N/A	No				
	Evening	99.9	F	1.1%	99.9	F	N/A	No				

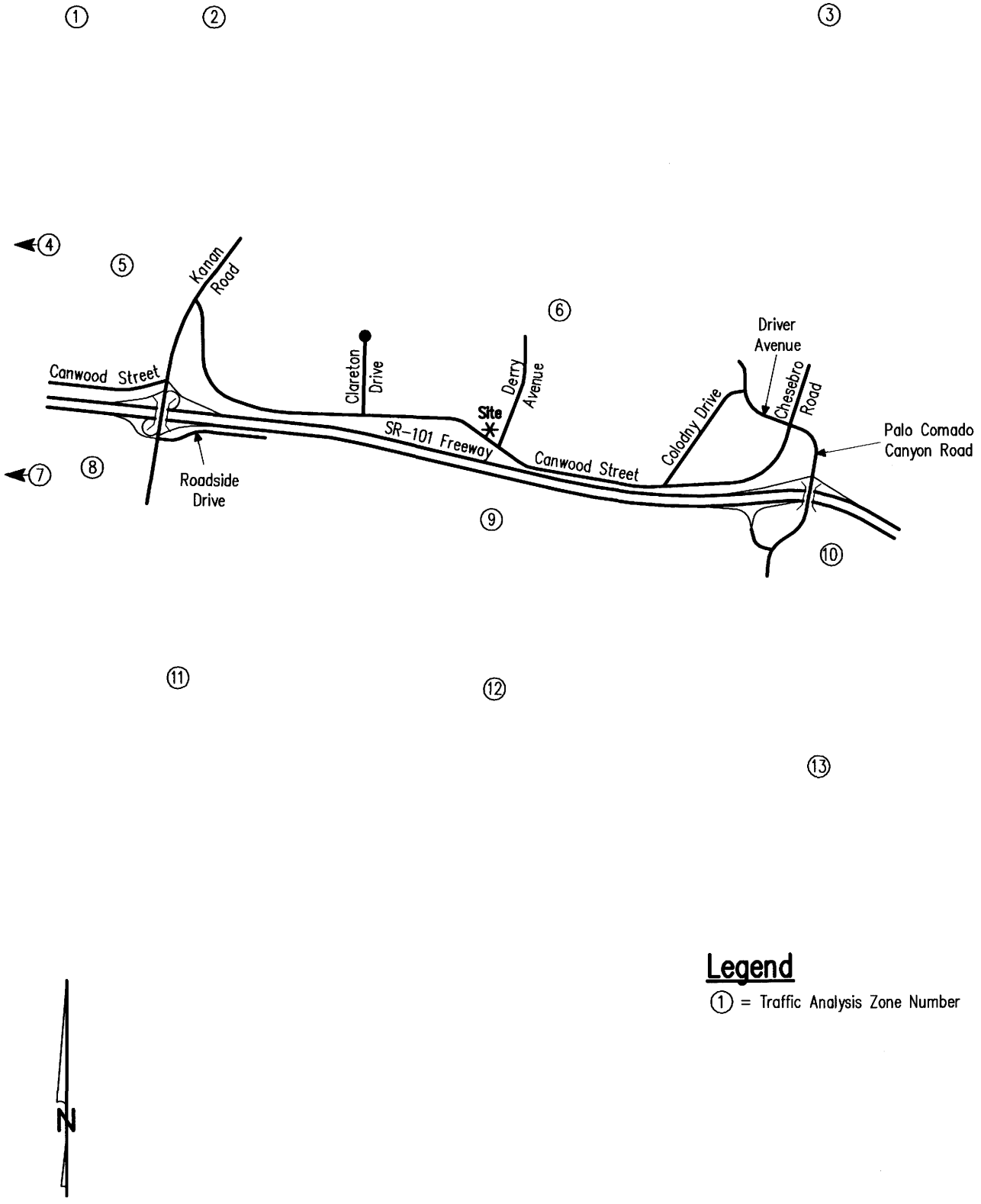
[1] Project volume impact is calculated by project related entering volume divided by total future volume.

[2] In the City of Agoura Hills, a significant impact for signalized intersections would occur when a proposed project increases 2% of capacity (V/C increase > 0.02) at a facility that would operate at Level of Service D or worse with project added traffic volumes. For unsignalized intersections, the threshold is a 2% increase in entering volumes.

[3] Project volume Impact analysis is not applicable for signalized intersections for which the V/C values are available.

[4] V/C Increase is not applicable for unsignalized intersection delay calculation.

Figure 18
Other Development Traffic Analysis Zone Map



Legend

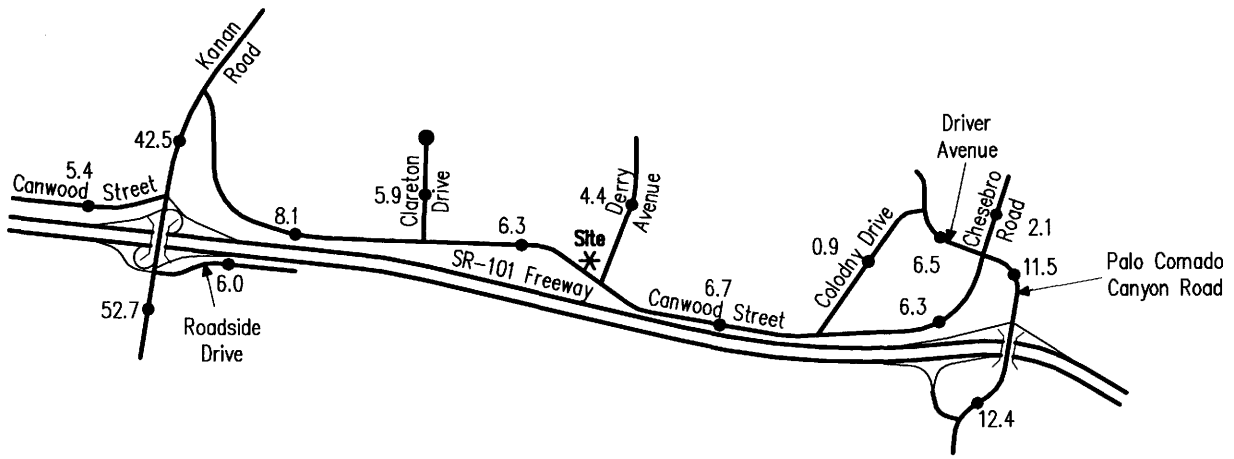
① = Traffic Analysis Zone Number

Kunzman Associates

Source: City of Agura Hills

3902c/18

Figure 19
Cumulative Without Project Average Daily Traffic Volumes



Legend

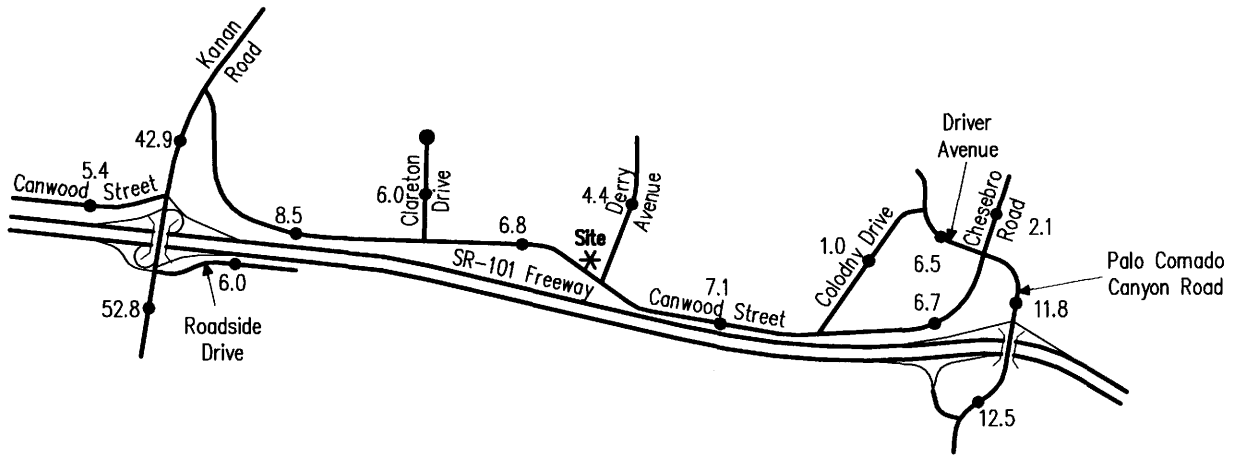
12.4 = Vehicles Per Day (1000's)

N

Kunzman Associates

3902c/19

Figure 20
Cumulative With Project Average Daily Traffic Volumes



Legend

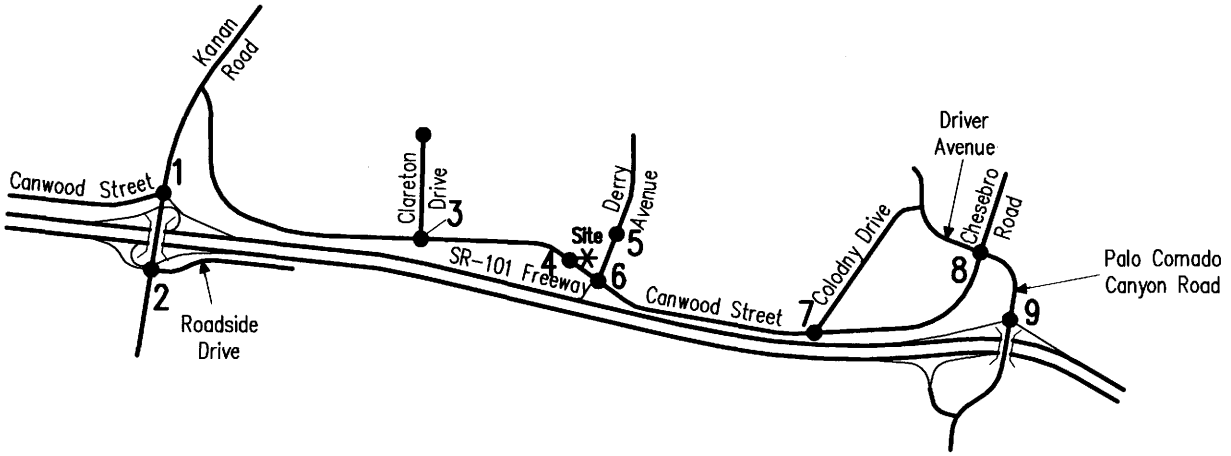
12.5 = Vehicles Per Day (1000's)

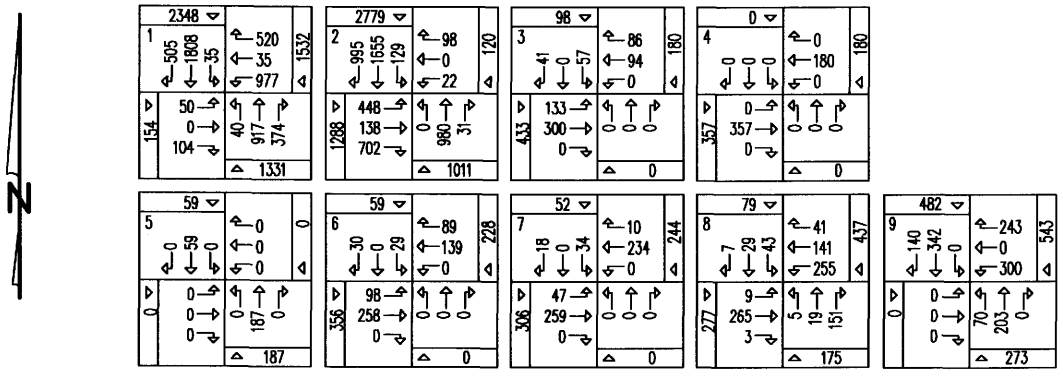
N

Kunzman Associates

3902c/20

Figure 21
Cumulative Without Project
Morning Peak Hour Intersection Turning Movement Volumes



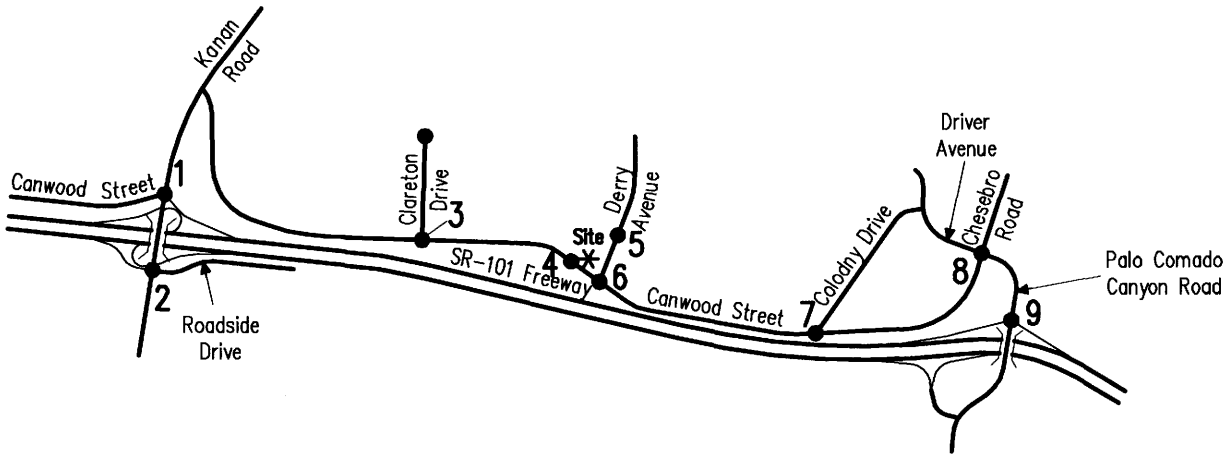


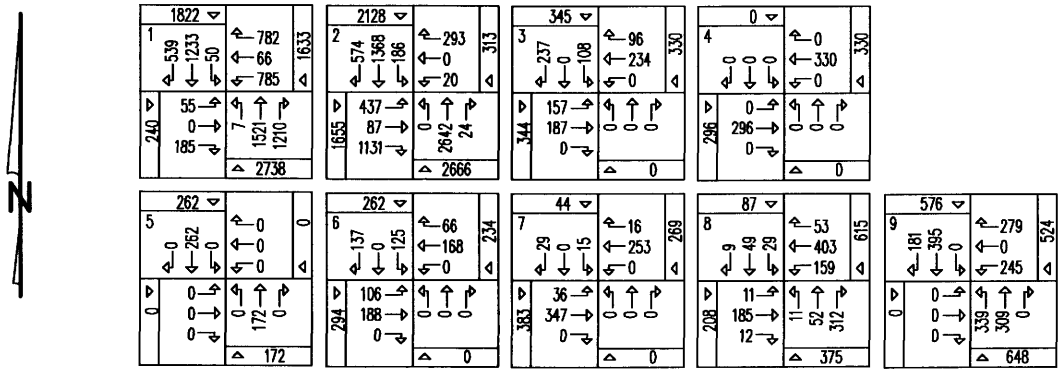
Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

Figure 22
Cumulative Without Project
Evening Peak Hour Intersection Turning Movement Volumes



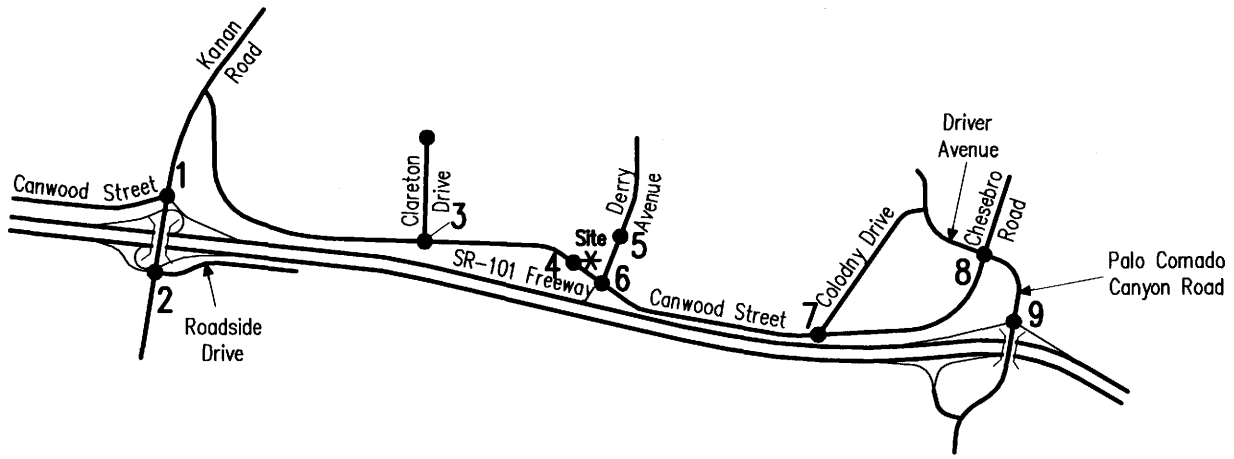


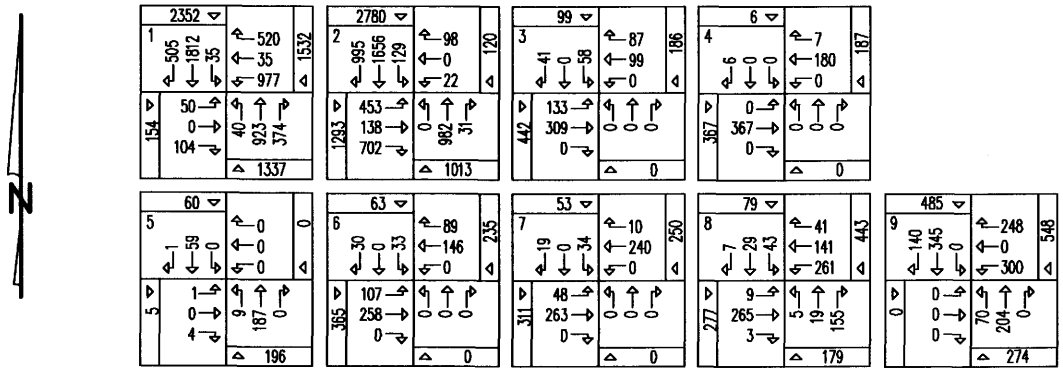
Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

Figure 23
Cumulative With Project
Morning Peak Hour Intersection Turning Movement Volumes



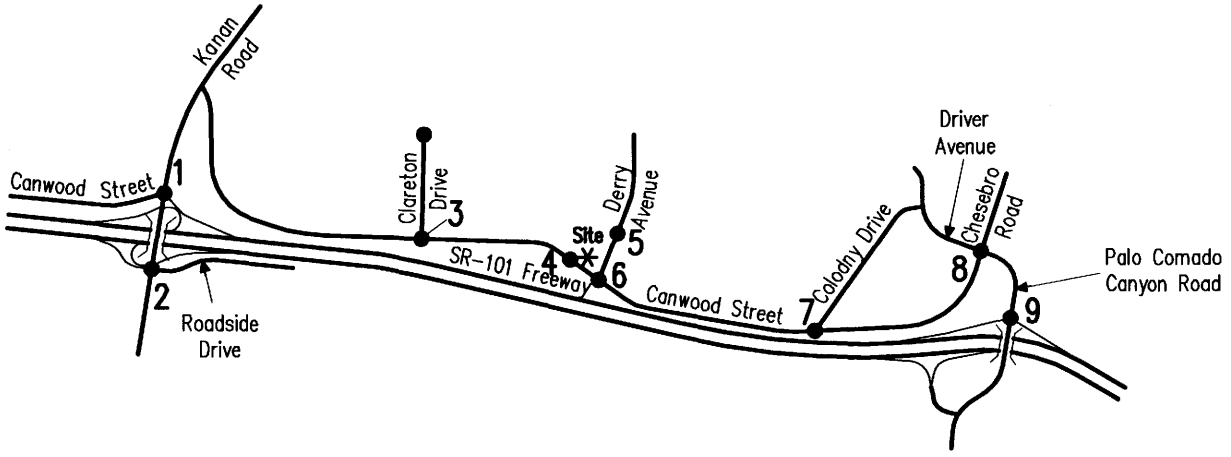


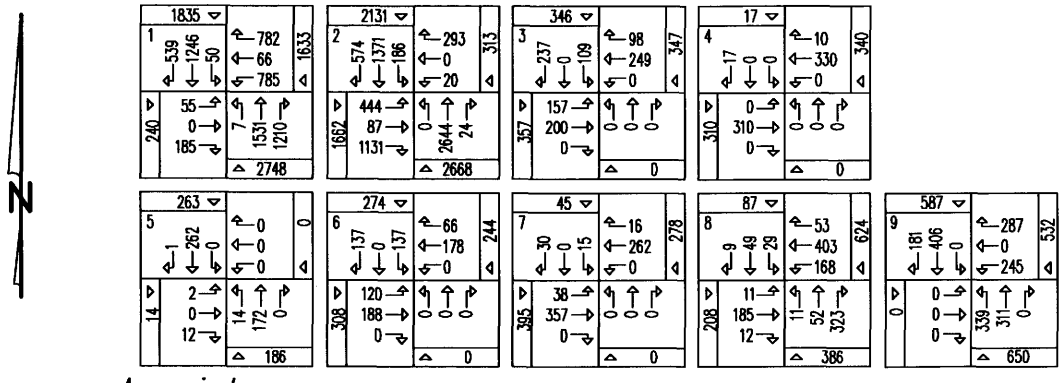
Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

Figure 24
Cumulative With Project
Evening Peak Hour Intersection Turning Movement Volumes





Kunzman Associates

Intersection reference numbers are in upper left corner of turning movement boxes.

3902c/bbas

VIII. Recommendations

A. Site Access

The project site will have access to Derry Avenue and Canwood Street.

B. Suggested Traffic Conditions

1. On- Site

Site-specific circulation and access recommendations are depicted on Figure 24.

Sufficient on-site parking shall be provided to meet City of Agoura Hills parking code requirements.

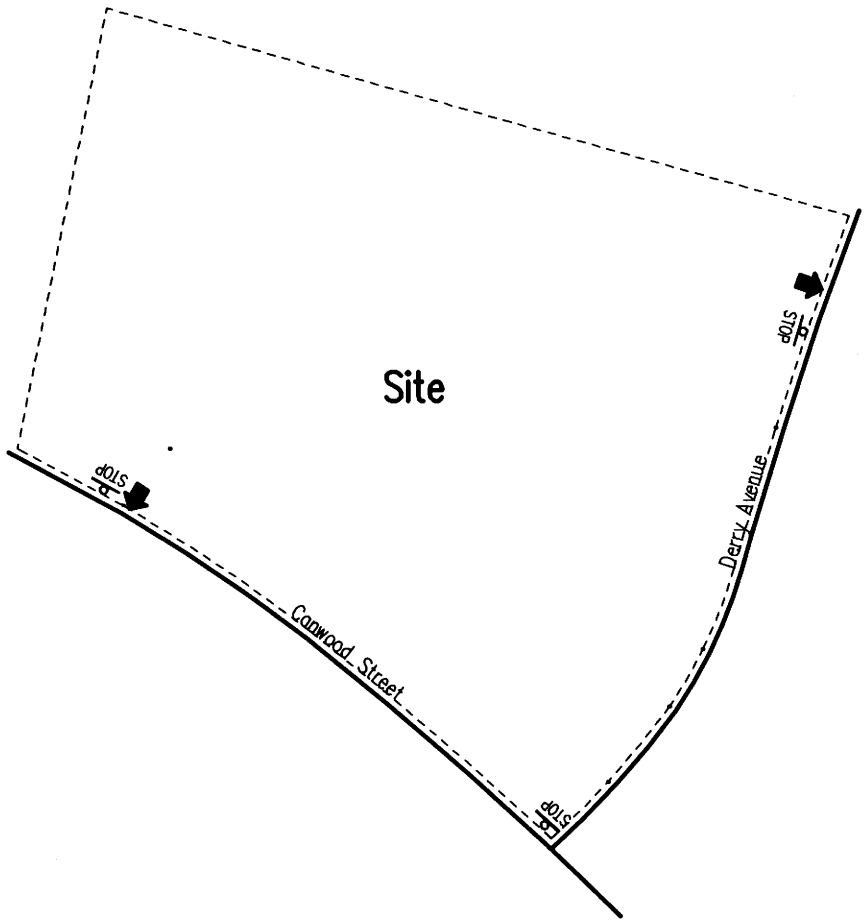
Sight distance at the project access should be reviewed with respect to California Department of Transportation/City of Agoura Hills standards in conjunction with the preparation of final grading, landscaping, and street improvement plans.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

2. Off-Site

As is the case for any roadway design, the City of Agoura Hills should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Figure 25
Circulation Recommendations



Sufficient on-site parking shall be provided to meet City of Agoura Hills parking code requirements.

Sight distance at the project access should be reviewed with respect to California Department of Transportation/City of Agoura Hills standards in conjunction with the preparation of final grading, landscaping, and street improvement plans.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

As is the case for any roadway design, the City of Agoura Hills should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

N

Legend

STOP = Stop Sign
= Full Access Driveway
= Right Turns In/Out Only Access Driveway

Kunzman Associates

3902c/25

Appendices

Appendix A – Glossary of Transportation Terms

Appendix B – Traffic Count Worksheets

Appendix C – Explanation and Calculation of Intersection Capacity Utilization/Delay

APPENDIX A

Glossary of Transportation Terms

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination; i.e. each trip has two trip-ends. A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quality of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

Traffic Count Worksheets

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Kanan Rd DATE: 8/7/2007 LOCATION: City of Agoura Hills

E-W STREET: I-101 Freeway NB Ramps DAY: TUESDAY PROJECT# 07-2380-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 0	ST 2	SR 2	EL 1	ET 0	ER 1	WL 2	WT 1	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	3	78	34		203	77	12		27	107	4	100	645
7:15 AM	8	111	63		307	115	18		31	120	7	111	891
7:30 AM	9	126	69		318	128	21		37	127	9	105	949
7:45 AM	10	145	49		340	123	19		35	130	7	120	978
8:00 AM	12	174	42		363	132	16		29	131	5	115	1019
8:15 AM	10	203	50		423	127	12		26	140	10	109	1110
8:30 AM	9	185	43		426	122	9		24	142	7	107	1074
8:45 AM	7	170	28		393	105	11		21	127	12	135	1009
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 68	NT 1192	NR 378	SL 0	ST 2773	SR 929	EL 118	ET 0	ER 230	WL 1024	WT 61	WR 902	TOTAL 7675

AM Peak Hr Begins at: 800 AM

PEAK VOLUMES =	38	732	163	0	1605	486	48	0	100	540	34	466	4212
PEAK HR. FACTOR:		0.887			0.950			0.822			0.949		0.949

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Kanan Rd DATE: 8/7/2007 LOCATION: City of Agoura Hills

E-W STREET: I-101 Freeway NB Ramps DAY: TUESDAY PROJECT# 07-2380-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	0	2	2	1	0	1	2	1	1	
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	242	106		186	137	17		44	77	17	140	966
4:15 PM	6	230	139		205	131	14		41	80	15	126	987
4:30 PM	1	261	111		212	125	18		38	65	19	171	1021
4:45 PM	1	300	119		320	124	16		42	76	14	180	1192
5:00 PM	3	299	100		258	130	16		43	60	18	192	1119
5:15 PM	1	311	131		180	135	13		46	57	16	191	1081
5:30 PM	2	305	108		223	129	8		47	70	15	180	1087
5:45 PM	1	300	97		249	124	9		39	71	11	176	1077
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	15	2248	911	0	1833	1035	111	0	340	556	125	1356	8530

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	7	1215	458	0	981	518	53	0	178	263	63	743	4479
PEAK HR. FACTOR:		0.948			0.844			0.979			0.990		0.939

CONTROL: Signalized

Intersection Turning Movement

Prepared by: National Data & Surveying Services

N-S STREET: Kanan Rd DATE: 8/7/2007 LOCATION: City of Agoura Hil

E-W STREET: I-101 Freeway SB Ramps DAY: TUESDAY PROJECT# 07-2380-002

	NORTHBOUND				SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	Onto roadside NR	Onto I-101 SB NRR	Onto roadside SL	ST	Onto I-101 SB SR	EL	Onto roadside ET	ER	WL	WT	WR	TOTAL
LANES:	0	1.5	0.5		1	2	1	1.5	0.5	1	1	0	1	
6:00 AM														
6:15 AM														
6:30 AM														
6:45 AM														
7:00 AM	0	53	2	18	21	174	242	39	23	74	3		17	648
7:15 AM	0	84	8	36	16	186	242	56	16	57	0		16	681
7:30 AM	0	116	4	50	31	192	296	71	25	63	6		26	830
7:45 AM	0	116	8	59	36	183	268	96	31	75	4		19	836
8:00 AM	0	101	3	58	36	207	238	80	38	51	6		19	779
8:15 AM	0	115	12	58	25	251	247	73	32	47	3		19	824
8:30 AM	0	139	11	67	26	292	239	92	25	75	7		37	943
8:45 AM	0	138	4	40	37	321	226	100	38	80	5		19	968
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	PEDS	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	862	52	386	228	1806	1998	607	228	522	34	0	172	6509

AM Peak Hr Begins at: 800 AM

PEAK VOLUMES =	NL	NT	NR	PEDS	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	493	30		124	1071	950	345	133	253	21	0	94	3514
PEAK HR. FACTOR:	0.000	0.887	0.625		0.838	0.834	0.962	0.863	0.875	0.791	0.750	0.000	0.635	
		0.872				0.918			0.838			0.653		0.908

CONTROL: Signalized

Intersection Turning Movement

Prepared by: National Data & Surveying Services

N-S STREET: Kanan Rd DATE: 8/7/2007 LOCATION: City of Agoura Hil

E-W STREET: I-101 Freeway SB Ramps DAY: TUESDAY PROJECT# 07-2380-002

	NORTHBOUND				SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	Onto roadside NR	Onto I-101 SB NRR	Onto roadside SL	ST	Onto I-101 SB SR	EL	Onto roadside ET	ER	WL	WT	WR	TOTAL
LANES:	0	1.5	0.5		1	2	1	1.5	0.5	1	1	0	1	
3:00 PM														
3:15 PM														
3:30 PM														
3:45 PM														
4:00 PM	0	231	5	70	49	188	132	80	16	161	8	0	63	933
4:15 PM	0	298	11	78	42	169	142	46	26	128	3	0	68	933
4:30 PM	0	240	16	60	32	161	107	60	18	103	5	0	70	812
4:45 PM	0	275	22	80	37	158	123	59	21	124	4	0	49	872
5:00 PM	0	240	8	72	47	167	154	75	20	122	3	0	65	901
5:15 PM	0	239	3	79	45	155	162	78	23	182	5	0	85	977
5:30 PM	0	255	7	80	37	161	85	81	19	137	7	0	70	859
5:45 PM	0	236	5	81	50	197	120	135	22	131	4	0	62	962
6:00 PM														
6:15 PM														
6:30 PM														
6:45 PM														
7:00 PM														
7:15 PM														

TOTAL VOLUMES =	NL	NT	NR	PEDS	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	2014	77	600	339	1356	1025	614	165	1088	39	0	532	7249

AM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	NL	NT	NR	PEDS	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	970	23		179	680	521	369	84	572	19	0	282	3699
PEAK HR. FACTOR:	0.000	0.951	0.719		0.895	0.863	0.804	0.683	0.913	0.786	0.679	0.000	0.388	
		0.948				0.938			0.890			0.836		0.947

CONTROL: Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Clareton Dr

E-W STREET: Canwood St

DATE: 5/15/2007

DAY: TUESDAY

LOCATION: City of Agoura Hills

PROJECT# 07-2246-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL 0	ST 1	SR 0	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				8		2	20	34			8	2	74
7:15 AM				5		8	29	48			9	24	123
7:30 AM				9		9	25	67			15	24	149
7:45 AM				7		8	30	60			16	22	143
8:00 AM				15		7	33	70			17	18	160
8:15 AM				24		15	40	74			17	19	189
8:30 AM				4		6	13	70			14	4	111
8:45 AM				8		6	18	63			15	7	117
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 80	ST 0	SR 61	EL 208	ET 486	ER 0	WL 0	WT 111	WR 120	TOTAL 1066

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	0	0	0	55	0	39	128	271	0	0	65	83	641
PEAK HR. FACTOR:		0.000			0.603			0.875			0.949		0.848

CONTROL:

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Clareton Dr

E-W STREET: Canwood St

DATE: 5/15/2007

DAY: TUESDAY

LOCATION: City of Agoura Hills

PROJECT# 07-2246-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL 0	ST 1	SR 0	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				19		57	41	36			41	16	210
4:15 PM				18		48	27	36			43	18	190
4:30 PM				20		51	35	37			45	18	206
4:45 PM				25		52	30	38			50	28	223
5:00 PM				27		54	41	39			60	26	247
5:15 PM				27		62	40	29			34	15	207
5:30 PM				25		60	40	29			40	23	217
5:45 PM				23		58	36	25			31	15	188
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 184	ST 0	SR 442	EL 290	ET 269	ER 0	WL 0	WT 344	WR 159	TOTAL 1688

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	0	0	0	104	0	228	151	135	0	0	184	92	894
PEAK HR. FACTOR:		0.000			0.933			0.894			0.802		0.905

CONTROL:

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Derry Ave

E-W STREET: Canwood St

DATE: 5/15/2007

DAY: TUESDAY

LOCATION: City of Agoura Hills

PROJECT# 07-2246-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	WT 1	WR 0	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	0	0	8	0	3	17	19	0	0	11	15	73
7:15 AM	0	0	1	4	0	4	18	34	0	0	27	12	100
7:30 AM	0	0	0	6	0	4	24	50	0	0	15	22	121
7:45 AM	0	0	0	1	0	6	33	44	0	0	26	25	135
8:00 AM	0	0	0	3	0	7	23	39	0	0	27	31	130
8:15 AM	0	0	0	12	0	6	25	61	0	0	32	23	159
8:30 AM	0	0	0	9	0	6	20	74	2	0	28	17	156
8:45 AM	0	0	1	4	0	10	26	57	0	1	22	15	136
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 2	SL 47	ST 0	SR 46	EL 186	ET 378	ER 2	WL 1	WT 188	WR 160	TOTAL 1010

AM Peak Hr Begins at: 800 AM

PEAK VOLUMES =	0	0	1	28	0	29	94	231	2	1	109	86	581
PEAK HR. FACTOR:		0.250			0.792			0.852			0.845		0.914

CONTROL:

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Derry Ave

E-W STREET: Canwood St

DATE: 5/15/2007

DAY: TUESDAY

LOCATION: City of Agoura Hills

PROJECT# 07-2246-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	ET 1	ER 0	WL 1	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	0	0	26	1	37	27	37	0	1	29	18	176
4:15 PM	0	0	1	28	0	30	42	22	1	1	35	20	180
4:30 PM	1	0	1	36	0	44	17	45	2	1	28	11	186
4:45 PM	0	1	0	30	1	21	16	32	1	0	28	14	144
5:00 PM	1	0	0	39	0	47	5	35	0	0	31	12	170
5:15 PM	0	0	2	24	0	18	20	43	1	0	43	20	171
5:30 PM	2	0	1	33	0	33	10	39	0	1	28	13	160
5:45 PM	0	1	0	20	1	17	17	37	1	0	20	8	122
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 4	NT 2	NR 5	SL 236	ST 3	SR 247	EL 154	ET 290	ER 6	WL 4	WT 242	WR 116	TOTAL 1309

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	1	1	2	120	2	132	102	136	4	3	120	63	686
PEAK HR. FACTOR:		0.500			0.794			0.931			0.830		0.922

CONTROL:

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Colodny Dr

E-W STREET: Canwood St

DATE: 5/15/2007

DAY: TUESDAY

LOCATION: City of Agoura Hills

PROJECT# 07-2246-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL 0	ST 1	SR 0	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				4		3	5	36			29	3	80
7:15 AM				5		7	6	33			34	4	89
7:30 AM				3		3	5	33			39	3	86
7:45 AM				5		7	7	57			56	6	138
8:00 AM				3		1	17	52			29	1	103
8:15 AM				8		2	16	44			34	2	106
8:30 AM				17		7	5	45			29	1	104
8:45 AM				14		6	2	51			54	6	133
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 59	ST 0	SR 36	EL 63	ET 351	ER 0	WL 0	WT 304	WR 26	TOTAL 839

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	0	0	0	33	0	17	45	198	0	0	148	10	451
PEAK HR. FACTOR:		0.000			0.521			0.880			0.637		0.817

CONTROL:

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Colodny Dr

E-W STREET: Canwood St

DATE: 5/15/2007

DAY: TUESDAY

LOCATION: City of Agoura Hills

PROJECT# 07-2246-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL 0	ST 1	SR 0	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				5		10	8	45			35	6	109
4:15 PM				4		11	7	50			44	7	123
4:30 PM				4		12	7	48			40	7	118
4:45 PM				4		5	11	68			34	2	124
5:00 PM				4		5	8	61			39	4	121
5:15 PM				2		6	9	62			48	2	129
5:30 PM				2		6	9	60			29	3	109
5:45 PM				5		5	3	48			22	1	84
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 30	ST 0	SR 60	EL 62	ET 442	ER 0	WL 0	WT 291	WR 32	TOTAL 917

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	0	0	0	14	0	28	35	239	0	0	161	15	492
PEAK HR. FACTOR:		0.000			0.656			0.867			0.880		0.953

CONTROL:

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Chesebro Rd DATE: 8/7/2007 LOCATION: City of Agoura Hills

E-W STREET: Driver Ave DAY: TUESDAY PROJECT# 07-2380-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 1	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	1	0	20	6	0	5	3	37	2	24	18	6	122
7:15 AM	0	0	21	7	1	0	2	65	0	43	34	4	177
7:30 AM	1	2	22	6	0	1	1	40	0	35	21	3	132
7:45 AM	0	0	29	9	0	1	2	72	1	57	35	7	213
8:00 AM	3	0	32	12	0	3	4	67	2	59	48	16	246
8:15 AM	1	0	26	9	2	3	2	57	0	41	23	6	170
8:30 AM	1	1	25	11	1	0	1	59	0	36	29	9	173
8:45 AM	1	1	27	15	2	2	1	60	0	35	34	5	183
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 =	8	4	202	75	6	15	16	457	5	330	242	56	1416

AM Peak Hr Begins at: 745 AM

PEAK VOLUMES =	5	1	112	41	3	7	9	255	3	193	135	38	802
PEAK HR. FACTOR:		0.843			0.850			0.890			0.744		0.815

CONTROL: 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Chesebro Rd DATE: 8/7/2007 LOCATION: City of Agoura Hills

E-W STREET: Driver Ave DAY: TUESDAY PROJECT# 07-2380-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	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	2	0	65	11	2	4	2	38	1	25	47	12	209
4:15 PM	1	1	54	8	0	1	7	42	3	33	82	6	238
4:30 PM	2	1	69	9	0	0	4	63	3	37	81	12	281
4:45 PM	1	1	60	9	0	2	4	33	1	32	70	8	221
5:00 PM	3	0	82	4	4	1	2	46	5	28	76	13	264
5:15 PM	1	3	66	8	0	2	4	42	1	29	105	10	271
5:30 PM	4	2	50	5	2	1	3	44	3	31	113	11	269
5:45 PM	3	0	54	10	0	5	2	45	3	24	93	16	255
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 17	NT 8	NR 500	SL 64	ST 8	SR 16	EL 28	ET 353	ER 20	WL 239	WT 667	WR 88	TOTAL 2008

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	11	5	252	27	6	9	11	177	12	112	387	50	1059
PEAK HR. FACTOR:		0.788			0.700			0.943			0.885		0.977

CONTROL: 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Chesebro Rd DATE: 8/7/2007 LOCATION: City of Agoura Hills

E-W STREET: I-101 Freeway NB Ramps DAY: TUESDAY PROJECT# 07-2380-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	1	0	0	0	1	0.5	0.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	2	16			33	2				19		31	103
7:15 AM	6	24			68	15				45		44	202
7:30 AM	5	22			68	18				47		49	209
7:45 AM	9	28			83	22				49		55	246
8:00 AM	8	42			78	23				66		59	276
8:15 AM	17	36			88	26				59		68	294
8:30 AM	18	31			86	28				54		56	273
8:45 AM	13	32			76	24				52		51	248
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 =	78	231	0	0	580	158	0	0	0	391	0	413	1851
PEAK VOLUMES =	56	141	0	0	328	101	0	0	0	231	0	234	1091
PEAK HR. FACTOR:		0.929			0.941			0.000			0.915		0.928

AM Peak Hr Begins at: 800 AM

CONTROL: 1-Way Stop W

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

N-S STREET: Chesebro Rd DATE: 8/7/2007 LOCATION: City of Agoura Hills

E-W STREET: I-101 Freeway NB Ramps DAY: TUESDAY PROJECT# 07-2380-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	1	0	0	0	1	0.5	0.5	
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	22	49			54	25				46	0	56	252
4:15 PM	27	51			58	29				57	0	64	286
4:30 PM	31	60			97	32				58	0	61	339
4:45 PM	44	50			94	30				57	0	70	345
5:00 PM	67	64			105	30				54	0	67	387
5:15 PM	65	62			95	32				59	0	68	381
5:30 PM	70	69			91	33				54	0	68	385
5:45 PM	62	60			87	31				53	0	65	358
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	388	465	0	0	681	242	0	0	0	438	0	519	2733

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	264	255	0	0	378	126	0	0	0	220	0	268	1511
PEAK HR. FACTOR:		0.933			0.933			0.000			0.961		0.976

CONTROL: 1-Way Stop W

APPENDIX C

Explanation and Calculation of Intersection Capacity Utilization/Delay

EXPLANATION AND CALCULATION OF INTERSECTION CAPACITY UTILIZATION

Overview

The ability of a roadway to carry traffic is referred to as capacity. The capacity is usually greater between intersections and less at intersections because traffic flows continuously between them and only during the green phase at them. Capacity at intersections is best defined in terms of vehicles per lane per hour of green. If capacity is 1,600 vehicles per lane per hour of green, and if the green phase is 50 percent of the cycle and there are three lanes, then the capacity is 1,600 times 50 percent times 3 lanes, or 2,400 vehicles per hour for that approach.

The technique used to compare the volume and capacity at a signalized intersection is known as Intersection Capacity Utilization. Intersection Capacity Utilization, usually expressed as a percent, is the proportion of an hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity. If an intersection is operating at 80 percent of capacity (i.e., an Intersection Capacity Utilization of 80 percent), then 20 percent of the signal cycle is not used. The signal could show red on all indications 20 percent of the time and the signal would just accommodate approaching traffic.

Intersection Capacity Utilization analysis consists of (a) determining the proportion of signal time needed to serve each conflicting movement of traffic, (b) summing the times for the movements, and (c) comparing the total time required to the total time available. For example, if for north-south traffic the northbound traffic is 1,600 vehicles per hour, the southbound traffic is 1,200 vehicles per hour, and the capacity of either direction is 3,200 vehicles per hour, then the northbound traffic is critical and requires 1,600/3,200 or 50 percent of the signal time. If for east-west traffic, 30 percent of the signal time is required, then it can be seen that the Intersection Capacity Utilization is 50 plus 30, or 80 percent. When left turn arrows (left turn phasing) exist, they are incorporated into the analysis. The critical movements are usually the heavy left turn movements and the opposing through movements.

The Intersection Capacity Utilization technique is an ideal tool to quantify existing as well as future intersection operation. The impact of adding a lane can be quickly determined by examining the effect the lane has on the Intersection Capacity Utilization.

Intersection Capacity Utilization Worksheets That Follow This Discussion

The Intersection Capacity Utilization worksheet table contains the following information:

1. Peak hour turning movement volumes.
2. Number of lanes that serve each movement.
3. For right turn lanes, whether the lane is a free right turn lane, whether it has a right turn arrow, and the percent of right turns on red that are assumed.
4. Capacity assumed per lane.
5. Capacity available to serve each movement (number of lanes times capacity per lane).
6. Volume to capacity ratio for each movement.
7. Whether the movement's volume to capacity ratio is critical and adds to the Intersection Capacity Utilization value.
8. The yellow time or clearance interval assumed.
9. Adjustments for right turn movements.
10. The Intersection Capacity Utilization and Level of Service.

The Intersection Capacity Utilization Worksheet also has two graphics on the same page. These two graphics show the following:

1. Peak hour turning movement volumes.
2. Number of lanes that serve each movement.

3. The approach and exit leg volumes.

4. The two-way leg volumes.

5. An estimate of daily traffic volumes that is fairly close to actual counts and is based strictly on the peak hour leg volumes multiplied by a factor.

6. Percent of daily traffic in peak hours.

7. Percent of peak hour leg volume that is inbound versus outbound.

A more detailed discussion of Intersection Capacity Utilization and Level of Service follows.

Level of Service

Level of Service is used to describe the quality of traffic flow. Levels of Service A to C operate quite well. Level of Service C is typically the standard to which rural roadways are designed.

Level of Service D is characterized by fairly restricted traffic flow. Level of Service D is the standard to which urban roadways are typically designed. Level of Service E is the maximum volume a facility can accommodate and will result in possible stoppages of momentary duration. Level of Service F occurs when a facility is overloaded and is characterized by stop-and-go traffic with stoppages of long duration.

A description of the various Levels of Service appears at the end of the Intersection Capacity Utilization description, along with the relationship between Intersection Capacity Utilization and Level of Service.

Signalized Intersections

Although calculating an Intersection Capacity Utilization value for an unsignalized intersection is invalid, the presumption is that a signal can be installed and the calculation shows whether the geometrics are capable of accommodating the expected volumes with a signal. A traffic signal becomes warranted before Level of Service D is reached for a signalized intersection.

Signal Timing

The Intersection Capacity Utilization calculation assumes that a signal is properly timed. It is possible to have an Intersection Capacity Utilization well below 100 percent, yet have severe traffic congestion. This would occur if one or more movements is not getting sufficient green time to satisfy its demand, and excess green time exists on other movements. This is an operational problem that should be remedied.

Lane Capacity

Capacity is often defined in terms of roadway width; however, standard lanes have approximately the same capacity whether they are 11 or 14 feet wide. Our data indicates a typical lane, whether a through lane or a left turn lane, has a capacity of approximately 1,750 vehicles per hour of green time, with nearly all locations showing a capacity greater than 1,600 vehicles per hour of green per lane. Right turn lanes have a slightly lower capacity; however 1,600 vehicles per hour is a valid capacity assumption for right turn lanes.

This finding is published in the August 1978 issue of Institute of Transportation Engineers Journal in the article entitled, "Another Look at Signalized Intersection Capacity" by William Kunzman. A capacity of 1,600 vehicles per hour per lane with no yellow time penalty, or 1,700 vehicles per hour with a 3 or 5 percent yellow time penalty is reasonable.

Yellow Time

The yellow time can either be assumed to be completely used and no penalty applied, or it can be assumed to be only partially usable. Total yellow time accounts for approximately 10 percent of a signal cycle, and a penalty of 3 to 5 percent is reasonable.

During peak hour traffic operation the yellow times are nearly completely used. If there is no left turn phasing, the left turn vehicles completely use the yellow time. Even if there is left turn phasing, the through traffic continues to enter the intersection on the yellow until just a split second before the red.

Shared Lanes

Shared lanes occur in many locations. A shared lane is often found at the end of an off ramp where the ramp forms an intersection with the cross street. Often at a diamond interchange off ramp, there are three lanes. In the case of a diamond interchange, the middle lane is sometimes shared, and the driver can turn left, go through, or turn right from that lane.

If one assumes a three lane off ramp as described above, and if one assumes that each lane has 1,600 capacity, and if one assumes that there are 1,000 left turns per hour, 500 right turns per hour, and 100 through vehicles per hour, then how should one assume that the three lanes operate. There are three ways that it is done.

One way is to just assume that all 1,600 vehicles (1,000 plus 500 plus 100) are served simultaneously by three lanes. When this is done, the capacity is 3 times 1,600 or 4,800, and the amount of green time needed to serve the ramp is 1,600 vehicles divided by 4,800 capacity or 33.3 percent. This assumption effectively assumes perfect lane distribution between the three lanes that is not realistic. It also means a left turn can be made from the right lane.

Another way is to equally split the capacity of a shared lane and in this case to assume there are 1.33 left turn lanes, 1.33 right turn lanes, and 0.33 through lanes. With this assumption, the critical movement is the left turns and the 1,000 left turns are served by a capacity of 1.33 times 1,600, or 2,133. The volume to capacity ratio of the critical move is 1,000 divided by 2,133 or 46.9 percent.

The first method results in a critical move of 33.3 percent and the second method results in a critical move of 46.9 percent. Neither is very accurate, and the difference in the calculated Level of Service will be approximately 1.5 Levels of Service (one Level of Service is 10 percent).

The way Kunzman Associates does it is to assign fractional lanes in a reasonable way. In this example, it would be assumed that there is 1.1 right turn lanes, 0.2 through lanes, and 1.7 left turn lanes. The volume to capacity ratios for each movement would be 31.3 percent for the through traffic, 28.4 percent for the right turn movement, and 36.8 percent for the

left turn movement. The critical movement would be the 36.8 percent for the left turns.

Right Turn on Red

Kunzman Associates' software treats right turn lanes in one of five different ways. Each right turn lane is classified into one of five cases. The five cases are (1) free right turn lane, (2) right turn lane with separate right turn arrow, (3) standard right turn lane with no right turns on red allowed, (4) standard right turn lane with a certain percentage of right turns on red allowed, and (5) separate right turn arrow and a certain percentage of right turns on red allowed.

Free Right Turn Lane

If it is a free right turn lane, then it is given a capacity of one full lane with continuous or 100 percent green time. A Free right turn lane occurs when there is a separate approach lane for right turning vehicles, there is a separate departure lane for the right turning vehicles after they turn and are exiting the intersection, and the through cross street traffic does not interfere with the vehicles after they turn right.

Separate Right Turn Arrow

If there is a separate right turn arrow, then it is assumed that vehicles are given a green indication and can proceed on what is known as the left turn overlap.

The left turn overlap for a northbound right turn is the westbound left turn. When the left turn overlap has a green indication, the right turn lane is also given a green arrow indication. Thus, if there is a northbound right turn arrow, then it can be turned green for the period of time that the westbound left turns are proceeding.

If there are more right turns than can be accommodated during the northbound through green and the time that the northbound right turn arrow is on, then an adjustment is made to the Intersection Capacity Utilization to account for the green time that needs to be added to the northbound through green to accommodate the northbound right turns.

Standard Right Turn Lane, No Right Turns on Red

A standard right turn lane, with no right turn on red assumed, proceeds only when there is a green indication displayed for the adjacent through movement. If additional green time is needed above that amount of time, then in the Intersection Capacity Utilization calculation a right turn adjustment green time is added above the green time that is needed to serve the adjacent through movement.

Standard Right Turn Lane, With Right Turns on Red

A standard right turn lane with say 20 percent of the right turns allowed to turn right on a red indication is calculated the same as the standard right turn case where there is no right turn on red allowed, except that the right turn adjustment is reduced to account for the 20 percent of the right turning vehicles that can logically turn right on a red light. The right turns on red are never allowed to exceed the time the overlap left turns take plus the unused part of the green cycle that the cross street traffic moving from left to right has.

As an example of how 20 percent of the cars are allowed to turn right on a red indication, assume that the northbound right turn volume needs 40 percent of the signal cycle to be satisfied. To allow 20 percent of the northbound right turns to turn right on red, then during 8 percent of the signal cycle (40 percent of signal cycle times 20 percent that can turn right on red) right turns on red will be allowed if it is feasible.

For this example, assume that 15 percent of the signal cycle is green for the northbound through traffic, and that means that 15 percent of the signal cycle is available to satisfy northbound right turns. After the northbound through traffic has received its green, 25 percent of the signal cycle is still needed to satisfy the northbound right turns (40 percent of the signal cycle minus the 15 percent of the signal cycle that the northbound through used).

Assume that the westbound left turns require a green time of 6 percent of the signal cycle. This 6 percent of the signal cycle is used by northbound right turns on red. After accounting for the northbound right turns that occur on the westbound overlap left turn, 19 percent of the signal cycle is still needed for the northbound right turns (25 percent of the cycle was needed after the northbound through green time was

accounted for [see above paragraph], and 6 percent was served during the westbound left turn overlap). Also, at this point 6 percent of the signal cycle has been used for northbound right turns on red, and still 2 percent more of the right turns will be allowed to occur on the red if there is unused eastbound through green time.

For purpose of this example, assume that the westbound through green is critical, and that 15 percent of the signal cycle is unused by eastbound through traffic. Thus, 2 percent more of the signal cycle can be used by the northbound right turns on red since there is 15 seconds of unused green time being given to the eastbound through traffic.

At this point, 8 percent of the signal cycle was available to serve northbound right turning vehicles on red, and 15 percent of the signal cycle was available to serve right turning vehicles on the northbound through green. So 23 percent of the signal cycle has been available for northbound right turns.

Because 40 percent of the signal cycle is needed to serve northbound right turns, there is still a need for 17 percent more of the signal cycle to be available for northbound right turns. What this means is the northbound through traffic green time is increased by 17 percent of the cycle length to serve the unserved right turn volume, and a 17 percent adjustment is added to the Intersection Capacity Utilization to account for the northbound right turns that were not served on the northbound through green time or when right turns on red were assumed.

Separate Right Turn Arrow, With Right Turns on Red

A right turn lane with a separate right turn arrow, plus a certain percentage of right turns allowed on red is calculated the same way as a standard right turn lane with a certain percentage of right turns allowed on red, except the turns which occur on the right turn arrow are not counted as part of the percentage of right turns that occur on red.

Critical Lane Method

Intersection Capacity Utilization parallels another calculation procedure known as the Critical Lane Method with one exception. Critical Lane Method dimensions capacity in terms of standardized vehicles per hour per lane. A Critical Lane Method result of 800 vehicles per hour means

that the intersection operates as though 800 vehicles were using a single lane continuously. If one assumes a lane capacity of 1,600 vehicles per hour, then a Critical Lane Method calculation resulting in 800 vehicles per hour is the same as an Intersection Capacity Utilization calculation of 50 percent since 800/1,600 is 50 percent. It is our opinion that the Critical Lane Method is inferior to the Intersection Capacity Utilization method simply because a statement such as "The Critical Lane Method value is 800 vehicles per hour" means little to most persons, whereas a statement such as "The Intersection Capacity Utilization is 50 percent" communicates clearly. Critical Lane Method results directly correspond to Intersection Capacity Utilization results. The correspondence is as follows, assuming a lane capacity of 1,600 vehicles per hour and no clearance interval.

Critical Lane Method Result	**Intersection Capacity Utilization Result**
800 vehicles per hour	50 percent
960 vehicles per hour	60 percent
1,120 vehicles per hour	70 percent
1,280 vehicles per hour	80 percent
1,440 vehicles per hour	90 percent
1,600 vehicles per hour	100 percent
1,760 vehicles per hour	110 percent

INTERSECTION CAPACITY UTILIZATION
LEVEL OF SERVICE DESCRIPTION[1]

Level of Service	Description	Volume to Capacity Ratio
A	Level of Service A occurs when progression is extremely favorable and vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0.600 and below
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average delay.	0.601 to 0.700
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	0.701 to 0.800
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	0.801 to 0.900
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent.	0.901 to 1.000
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs when oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	1.001 and up

[1]Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council Washington D.C., 2000.

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The levels of service at the unsignalized intersections are calculated using the delay methodology in the 2000 Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane times 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking

7. Bus stops at intersections

8. Area type (CBD or other)

9. Right turns

10. Left turns

11. Pedestrian activity

12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the 2000 Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay method and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the 2000 Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length

2. Amount of red time faced by a lane group

3. Amount of yellow time for that lane group

4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the 2000 Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached.

DELAY LEVEL OF SERVICE DESCRIPTION[1]

Level of Service	Description	Average Total Delay Per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

[1] Source: Highway Capacity Manual Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2000.

Existing

Derry Avenue / Canwood Street Retail (Revised)
Existing
Morning Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Kanan Road (NS) / SR-101 NB Ramps/Canwood Street (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.700
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	0 0	3	0 1	1 0	0	0 1	1 1	0	0 2
Volume Module:												
Base Vol:	38	732	163	0	1605	486	48	0	100	540	34	466
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	732	163	0	1605	486	48	0	100	540	34	466
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	38	732	163	0	1605	486	48	0	100	540	34	466
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	38	732	163	0	1605	486	48	0	100	540	34	466
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	38	732	163	0	1605	486	48	0	100	540	34	466
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	0.00	3.00	1.00	1.00	0.00	1.00	1.88	0.12	2.00
Final Sat.:	1600	3200	1600	0	4800	1600	1600	0	1600	3010	190	3200
Capacity Analysis Module:												
Vol/Sat:	0.02	0.23	0.10	0.00	0.33	0.30	0.03	0.00	0.06	0.18	0.18	0.15
OvlAdjV/S:			0.00									
Crit Moves:	****				****				****	****		

Derry Avenue / Canwood Street Retail (Revised)
Existing
Evening Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Kanan Road (NS) / SR-101 NB Ramps/Canwood Street (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.823
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:		Ovl			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	0 0	3 0	1	1 0	0 0	1	1 1	0 0	2
Volume Module:												
Base Vol:	7	1215	458	0	981	518	53	0	178	263	63	743
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	1215	458	0	981	518	53	0	178	263	63	743
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	1215	458	0	981	518	53	0	178	263	63	743
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	1215	458	0	981	518	53	0	178	263	63	743
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	1215	458	0	981	518	53	0	178	263	63	743
OvlAdjVol:			87									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	0.00	3.00	1.00	1.00	0.00	1.00	1.61	0.39	2.00
Final Sat.:	1600	3200	1600	0	4800	1600	1600	0	1600	2582	618	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.38	0.29	0.00	0.20	0.32	0.03	0.00	0.11	0.10	0.10	0.23
OvlAdjV/S:			0.05									
Crit Moves:		****							****			****

Derry Avenue / Canwood Street Retail (Revised)
Existing
Morning Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Kanan Road (NS) / SR-101 SB Ramps/Roadside Drive (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.659
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	2	0 1	1 0	2	0 1	1 0	1!	0 1	1 0	0	0 1
Volume Module:												
Base Vol:	0	493	30	124	1071	950	345	133	253	21	0	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	493	30	124	1071	950	345	133	253	21	0	94
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	493	30	124	1071	950	345	133	253	21	0	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	493	30	124	1071	950	345	133	253	21	0	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	493	30	124	1071	950	345	133	253	21	0	94
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	493	30	124	1071	950	345	133	253	21	0	94
OvlAdjVol:						685						
Saturation Flow Module:								1.3	0.4	1.3		
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	1.00	~~1.42~~	~~0.54~~	~~1.04~~	1.00	0.00	1.00
Final Sat.:	0	3200	1600	1600	3200	1600	2080	640	2080	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.15	0.02	0.08	0.33	0.59	0.17	0.21	0.12	0.01	0.00	0.06
OvlAdjV/S:						0.43						
Crit Moves:					****			****				****

Derry Avenue / Canwood Street Retail (Revised)
Existing
Evening Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Kanan Road (NS) / SR-101 SB Ramps/Roadside Drive (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.869
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	2 0	1	1 0	2 0	1	1 0	1! 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	970	23	179	680	521	369	84	572	19	0	282
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	970	23	179	680	521	369	84	572	19	0	282
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	970	23	179	680	521	369	84	572	19	0	282
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	970	23	179	680	521	369	84	572	19	0	282
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	970	23	179	680	521	369	84	572	19	0	282
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	970	23	179	680	521	369	84	572	19	0	282
OvlAdjVol:						237						
Saturation Flow Module:							1.3	0.4	1.3			
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	1.00	~~1.08~~	~~0.25~~	~~1.67~~	1.00	0.00	1.00
Final Sat.:	0	3200	1600	1600	3200	1600	2080	640	2080	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.30	0.01	0.11	0.21	0.33	0.18	0.13	0.28	0.01	0.00	0.18
OvlAdjV/S:						0.15						
Crit Moves:		****			****			****				****

Derry Avenue / Canwood Street Retail (Revised)
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Clareton Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: B[13.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	55	0	39	128	271	0	0	65	83
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	55	0	39	128	271	0	0	65	83
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	55	0	39	128	271	0	0	65	83
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	55	0	39	128	271	0	0	65	83
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	634	634	107	148	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	447	399	953	1446	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	414	361	953	1446	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.13	0.00	0.04	0.09	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	541	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	13.0	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			13.0			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Clareton Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 8.1 Worst Case Level Of Service: C[18.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	104	0	228	151	135	0	0	184	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	104	0	228	151	135	0	0	184	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	104	0	228	151	135	0	0	184	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	104	0	228	151	135	0	0	184	92
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	667	667	230	276	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	427	382	814	1299	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	386	334	814	1299	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.27	0.00	0.28	0.12	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	604	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	3.3	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	18.0	xxxxx	8.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			18.0			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 Derry Avenue (NS) / Canwood Street (EW)

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: B[11.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		1 0 0	0 1		1 0 1	0 0		0 0 0	1 0	
Volume Module:												
Base Vol:	0	0	0	28	0	29	94	231	0	0	109	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	28	0	29	94	231	0	0	109	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	28	0	29	94	231	0	0	109	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	28	0	29	94	231	0	0	109	86
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	571	xxxx	152	195	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	486	xxxx	900	1390	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	461	xxxx	900	1390	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.06	xxxx	0.03	0.07	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	0.1	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	13.3	xxxx	9.1	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	A	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.2			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #6 Derry Avenue (NS) / Canwood Street (EW)

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Average Delay (sec/veh): 5.6 Worst Case Level Of Service: B[11.8]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 0 1 0		
Volume Module:												
Base Vol:	0	0	0	120	0	132	102	136	0	0	120	63
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	120	0	132	102	136	0	0	120	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	120	0	132	102	136	0	0	120	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	120	0	132	102	136	0	0	120	63
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	492	xxxx	152	183	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	540	xxxx	900	1404	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	510	xxxx	900	1404	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.24	xxxx	0.15	0.07	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.9	xxxx	0.5	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	14.2	xxxx	9.7	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	A	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.8			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

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Note: Queue reported is the number of cars per lane.

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Derry Avenue / Canwood Street Retail (Revised)
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Colodny Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	33	0	17	45	198	0	0	148	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	33	0	17	45	198	0	0	148	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	33	0	17	45	198	0	0	148	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	33	0	17	45	198	0	0	148	10
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	441	441	153	158	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	577	513	898	1434	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	564	497	898	1434	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.06	0.00	0.02	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR		RT	LT - LTR		RT	LT - LTR		RT	LT - LTR		RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	645	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	11.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.0			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

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Intersection #7 Colodny Drive (NS) / Canwood Street (EW)

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Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[10.3]

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0 1!	0 0	0	1 0 1	0 0	0	0 0 0	1 0	0
Volume Module:												
Base Vol:	0	0	0	14	0	28	35	239	0	0	161	15
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	14	0	28	35	239	0	0	161	15
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	14	0	28	35	239	0	0	161	15
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	14	0	28	35	239	0	0	161	15
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	478	478	169	176	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	550	490	881	1412	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	540	478	881	1412	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	0.00	0.03	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR		RT	LT - LTR		RT	LT - LTR		RT	LT - LTR		RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	728	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	10.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			10.3			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

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Note: Queue reported is the number of cars per lane.

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Derry Avenue / Canwood Street Retail (Revised)
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #8 Chesebro Road (NS) / Driver Avenue (EW)

Cycle (sec): 0 Critical Vol./Cap.(X): 0.404
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 0 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:		Include				Include				Include				Include		
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0 0	1	0	0	0	1!	0 0	0	1	0 0	1	1	0	0 1	0
Volume Module:																
Base Vol:	5	1	112		41	3	7		9	255	3		193	135	38	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	5	1	112		41	3	7		9	255	3		193	135	38	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Volume:	5	1	112		41	3	7		9	255	3		193	135	38	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	5	1	112		41	3	7		9	255	3		193	135	38	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
FinalVolume:	5	1	112		41	3	7		9	255	3		193	135	38	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Lanes:	1.00	0.01	0.99		0.80	0.06	0.14		0.03	0.97	1.00		1.00	0.78	0.22	
Final Sat.:	510	5	610		425	31	73		22	631	743		614	538	152	
Capacity Analysis Module:																
Vol/Sat:	0.01	0.18	0.18		0.10	0.10	0.10		0.40	0.40	0.00		0.31	0.25	0.25	
Crit Moves:			****		****					****			****			
Delay/Veh:	9.4	9.2	9.2		9.9	9.9	9.9		11.5	11.5	7.4		11.0	9.4	9.4	
Delay Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	9.4	9.2	9.2		9.9	9.9	9.9		11.5	11.5	7.4		11.0	9.4	9.4	
LOS by Move:	A	A	A		A	A	A		B	B	A		B	A	A	
ApproachDel:		9.2				9.9				11.5				10.2		
Delay Adj:		1.00				1.00				1.00				1.00		
ApprAdjDel:		9.2				9.9				11.5				10.2		
LOS by Appr:		A				A				B				B		
AllWayAvgQ:	0.0	0.2	0.2		0.1	0.1	0.1		0.6	0.6	0.0		0.4	0.3	0.3	

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

****

Intersection #8 Chesebro Road (NS) / Driver Avenue (EW)

****

Cycle (sec): 0 Critical Vol./Cap.(X): 0.692
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 14.8
Optimal Cycle: 0 Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	11	5	252	27	6	9	11	177	12	112	387	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	11	5	252	27	6	9	11	177	12	112	387	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	5	252	27	6	9	11	177	12	112	387	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	5	252	27	6	9	11	177	12	112	387	50
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	5	252	27	6	9	11	177	12	112	387	50
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	0.65	0.14	0.21	0.06	0.94	1.00	1.00	0.89	0.11
Final Sat.:	488	11	576	304	67	101	33	530	628	568	559	72
Capacity Analysis Module:												
Vol/Sat:	0.02	0.44	0.44	0.09	0.09	0.09	0.33	0.33	0.02	0.20	0.69	0.69
Crit Moves:			****		****			****			****	
Delay/Veh:	9.8	12.5	12.5	10.5	10.5	10.5	11.7	11.7	8.2	10.3	19.4	19.4
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.8	12.5	12.5	10.5	10.5	10.5	11.7	11.7	8.2	10.3	19.4	19.4
LOS by Move:	A	B	B	B	B	B	B	B	A	B	C	C
ApproachDel:		12.4			10.5			11.5			17.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		12.4			10.5			11.5			17.5	
LOS by Appr:		B			B			B			C	
AllWayAvgQ:	0.0	0.7	0.7	0.1	0.1	0.1	0.4	0.4	0.0	0.2	1.9	1.9

****

Note: Queue reported is the number of cars per lane.

****

Derry Avenue / Canwood Street Retail (Revised)
Existing
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 Chesebro Road (NS) / SR-101 NB Ramps (EW)

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: C[16.4]

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	1	0	0	0		0	0	1	0	1		0	0	0	0	0		1	0	0	0	1	
Volume Module:																								
Base Vol:	56	141		0			0		328		101		0		0		0		231		0		234	
Growth Adj:	1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	56	141		0			0		328		101		0		0		0		231		0		234	
User Adj:	1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Volume:	56	141		0			0		328		101		0		0		0		231		0		234	
Reduct Vol:	0	0		0			0		0		0		0		0		0		0		0		0	
FinalVolume:	56	141		0			0		328		101		0		0		0		231		0		234	
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										6.4	xxxx			6.2	
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										3.5	xxxx			3.3	
Capacity Module:																								
Cnflict Vol:	429	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx										632	xxxx			141	
Potent Cap.:	1141	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx										448	xxxx			912	
Move Cap.:	1141	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx										431	xxxx			912	
Volume/Cap:	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx										0.54	xxxx			0.26	
Level Of Service Module:																								
2Way95thQ:	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx										3.1	xxxx			1.0	
Control Del:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										22.6	xxxx			10.3	
LOS by Move:	A	*		*		*	*		*										C	*			B	
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx			
SharedQueue:	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shrd ConDel:	8.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shared LOS:	A	*		*		*	*		*										*	*			*	
ApproachDel:	xxxxxx			xxxxxx			xxxxxx												16.4					
ApproachLOS:	*			*			*												C					

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Existing
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #9 Chesebro Road (NS) / SR-101 NB Ramps (EW)

****

Average Delay (sec/veh): 44.0 Worst Case Level Of Service: F[131.2]

****

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	0	1	0	0	0		0	0	1	0	1		0	0	0	0	0		1	0	0	0	1	
Volume Module:																								
Base Vol:	264	255		0			0	378		126			0	0		0			220		0		268	
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00	
Initial Bse:	264	255		0			0	378		126			0	0		0			220		0		268	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00	
PHF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00	
PHF Volume:	264	255		0			0	378		126			0	0		0			220		0		268	
Reduct Vol:	0	0		0			0	0		0			0	0		0			0		0		0	
FinalVolume:	264	255		0			0	378		126			0	0		0			220		0		268	
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										6.4	xxxx			6.2	
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										3.5	xxxx			3.3	
Capacity Module:																								
Cnflict Vol:	504	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx								1224	xxxx			255	
Potent Cap.:	1071	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx								200	xxxx			789	
Move Cap.:	1071	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx								155	xxxx			789	
Volume/Cap:	0.25	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx								1.42	xxxx			0.34	
Level Of Service Module:																								
2Way95thQ:	1.0	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx								14.0	xxxx			1.5	
Control Del:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										276.5	xxxx			11.9	
LOS by Move:	A	*		*		*		*		*			*		*		*		F	*			B	
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx								xxxx	xxxx	xxxxx			
SharedQueue:	1.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										xxxxx	xxxx	xxxxx			
Shrd ConDel:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx										xxxxx	xxxx	xxxxx			
Shared LOS:	A	*		*		*		*		*			*		*		*		*		*			
ApproachDel:	xxxxxx			xxxxxx			xxxxxx												131.2					
ApproachLOS:	*			*			*												F					

****

Note: Queue reported is the number of cars per lane.

****

Opening Year (2009) Without Project

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Morning Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Kanan Road (NS) / SR-101 NB Ramps/Canwood Street (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.724
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:		Ovl			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	0 0	3	0 1	1 0	0	0 1	1 1	0	0 2
Volume Module:												
Base Vol:	38	732	163	0	1605	486	48	0	100	540	34	466
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	40	761	170	0	1669	505	50	0	104	562	35	485
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	761	170	0	1669	505	50	0	104	562	35	485
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	761	170	0	1669	505	50	0	104	562	35	485
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	761	170	0	1669	505	50	0	104	562	35	485
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	761	170	0	1669	505	50	0	104	562	35	485
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	0.00	3.00	1.00	1.00	0.00	1.00	1.88	0.12	2.00
Final Sat.:	1600	3200	1600	0	4800	1600	1600	0	1600	3010	190	3200
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.11	0.00	0.35	0.32	0.03	0.00	0.07	0.19	0.19	0.15
OvlAdjV/S:			0.00									
Crit Moves:	****				****				****	****		

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Evening Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Kanan Road (NS) / SR-101 NB Ramps/Canwood Street (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.852
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:		Ovl			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	0 0	3 0	1	1 0	0 0	1	1 1	0 0	2
Volume Module:												
Base Vol:	7	1215	458	0	981	518	53	0	178	263	63	743
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	7	1264	476	0	1020	539	55	0	185	274	66	773
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	1264	476	0	1020	539	55	0	185	274	66	773
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	1264	476	0	1020	539	55	0	185	274	66	773
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	1264	476	0	1020	539	55	0	185	274	66	773
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	1264	476	0	1020	539	55	0	185	274	66	773
OvlAdjVol:			90									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	0.00	3.00	1.00	1.00	0.00	1.00	1.61	0.39	2.00
Final Sat.:	1600	3200	1600	0	4800	1600	1600	0	1600	2582	618	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.39	0.30	0.00	0.21	0.34	0.03	0.00	0.12	0.11	0.11	0.24
OvlAdjV/S:			0.06									
Crit Moves:		****							****			****

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Morning Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Kanan Road (NS) / SR-101 SB Ramps/Roadside Drive (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.682
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	2 0	1	1 0	2 0	1	1 0	1! 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	493	30	124	1071	950	345	133	253	21	0	94
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	513	31	129	1114	988	359	138	263	22	0	98
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	513	31	129	1114	988	359	138	263	22	0	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	513	31	129	1114	988	359	138	263	22	0	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	513	31	129	1114	988	359	138	263	22	0	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	513	31	129	1114	988	359	138	263	22	0	98
OvlAdjVol:						712						
Saturation Flow Module:							1.3	0.4	1.3			
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	1.00	1.42	0.54	1.04	1.00	0.00	1.00
Final Sat.:	0	3200	1600	1600	3200	1600	2080	640	2080	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.02	0.08	0.35	0.62	0.17	0.22	0.13	0.01	0.00	0.06
OvlAdjV/S:						0.45						
Crit Moves:					****			****				****

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Evening Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Kanan Road (NS) / SR-101 SB Ramps/Roadside Drive (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.899
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	2 0	1	1 0	2 0	1	1 0	1! 0	1	1 0	0 0	1
Volume Module:												
Base Vol:	0	970	23	179	680	521	369	84	572	19	0	282
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	1009	24	186	707	542	384	87	595	20	0	293
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1009	24	186	707	542	384	87	595	20	0	293
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1009	24	186	707	542	384	87	595	20	0	293
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1009	24	186	707	542	384	87	595	20	0	293
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1009	24	186	707	542	384	87	595	20	0	293
OvlAdjVol:						247						
Saturation Flow Module:							1.3	0.4	1.3			
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	1.00	~~1.08~~	~~0.25~~	~~1.67~~	1.00	0.00	1.00
Final Sat.:	0	3200	1600	1600	3200	1600	2080	640	2080	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.01	0.12	0.22	0.34	0.18	0.14	0.29	0.01	0.00	0.18
OvlAdjV/S:						0.15						
Crit Moves:		****			****			****				****

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Clareton Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: B[13.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		0 0 1!	0 0		0 1	0 0 0		0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	55	0	39	128	271	0	0	65	83
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	57	0	41	133	282	0	0	68	86
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	57	0	41	133	282	0	0	68	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	57	0	41	133	282	0	0	68	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	57	0	41	133	282	0	0	68	86
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	659	659	111	154	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	432	386	948	1439	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	399	348	948	1439	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.14	0.00	0.04	0.09	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	525	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	13.4	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			13.4			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Clareton Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 8.6 Worst Case Level Of Service: C[19.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0 1!	0 0	0	0 1 0	0 0	0	0 0 0	1 0	
Volume Module:												
Base Vol:	0	0	0	104	0	228	151	135	0	0	184	92
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	108	0	237	157	140	0	0	191	96
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	108	0	237	157	140	0	0	191	96
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	108	0	237	157	140	0	0	191	96
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	108	0	237	157	140	0	0	191	96
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	694	694	239	287	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	412	369	805	1287	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	370	320	805	1287	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.29	0.00	0.29	0.12	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	588	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	3.8	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	19.5	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			19.5			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Derry Avenue (NS) / Canwood Street (EW)

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: B[11.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 0 1 0		
Volume Module:												
Base Vol:	0	0	0	28	0	29	94	231	0	0	109	86
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	29	0	30	98	240	0	0	113	89
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	29	0	30	98	240	0	0	113	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	29	0	30	98	240	0	0	113	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	29	0	30	98	240	0	0	113	89
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	594	xxxx	158	203	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	471	xxxx	893	1381	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	446	xxxx	893	1381	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.07	xxxx	0.03	0.07	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.2	xxxx	0.1	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	13.6	xxxx	9.2	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	A	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.4			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #6 Derry Avenue (NS) / Canwood Street (EW)

****

Average Delay (sec/veh): 5.7 Worst Case Level Of Service: B[12.1]

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 0 1 0		
Volume Module:												
Base Vol:	0	0	0	120	0	132	102	136	0	0	120	63
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	125	0	137	106	141	0	0	125	66
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	125	0	137	106	141	0	0	125	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	125	0	137	106	141	0	0	125	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	125	0	137	106	141	0	0	125	66
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	511	xxxx	158	190	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	526	xxxx	893	1396	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	495	xxxx	893	1396	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.25	xxxx	0.15	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	1.0	xxxx	0.5	0.2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	14.7	xxxx	9.8	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	A	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			12.1			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

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Note: Queue reported is the number of cars per lane.

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Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Colodny Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	33	0	17	45	198	0	0	148	10
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	34	0	18	47	206	0	0	154	10
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	34	0	18	47	206	0	0	154	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	34	0	18	47	206	0	0	154	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	34	0	18	47	206	0	0	154	10
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	459	459	159	164	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	564	502	891	1426	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	550	485	891	1426	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.06	0.00	0.02	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	632	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	11.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.2			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Colodny Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[10.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	14	0	28	35	239	0	0	161	15
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	15	0	29	36	249	0	0	167	16
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	15	0	29	36	249	0	0	167	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	15	0	29	36	249	0	0	167	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	15	0	29	36	249	0	0	167	16
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	497	497	175	183	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	536	478	873	1404	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	526	465	873	1404	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	0.00	0.03	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	716	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	10.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			10.4			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 Chesebro Road (NS) / Driver Avenue (EW)

Cycle (sec): 0 Critical Vol./Cap.(X): 0.424
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.7
Optimal Cycle: 0 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	5	1	112	41	3	7	9	255	3	193	135	38
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	5	1	116	43	3	7	9	265	3	201	140	40
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	1	116	43	3	7	9	265	3	201	140	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	1	116	43	3	7	9	265	3	201	140	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1	116	43	3	7	9	265	3	201	140	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1	116	43	3	7	9	265	3	201	140	40
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.01	0.99	0.80	0.06	0.14	0.03	0.97	1.00	1.00	0.78	0.22
Final Sat.:	503	5	602	420	31	72	22	625	736	609	534	150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.19	0.19	0.10	0.10	0.10	0.42	0.42	0.00	0.33	0.26	0.26
Crit Moves:			****	****				****		****		
Delay/Veh:	9.4	9.4	9.4	10.0	10.0	10.0	11.9	11.9	7.4	11.2	9.6	9.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.4	9.4	9.4	10.0	10.0	10.0	11.9	11.9	7.4	11.2	9.6	9.6
LOS by Move:	A	A	A	A	A	A	B	B	A	B	A	A
ApproachDel:	9.4			10.0			11.9			10.4		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	9.4			10.0			11.9			10.4		
LOS by Appr:	A			A			B			B		
AllWayAvgQ:	0.0	0.2	0.2	0.1	0.1	0.1	0.7	0.7	0.0	0.5	0.3	0.3

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 Chesebro Road (NS) / Driver Avenue (EW)

Cycle (sec): 0 Critical Vol./Cap.(X): 0.727
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 0 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	11	5	252	27	6	9	11	177	12	112	387	50
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	11	5	262	28	6	9	11	184	12	116	402	52
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	5	262	28	6	9	11	184	12	116	402	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	5	262	28	6	9	11	184	12	116	402	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	5	262	28	6	9	11	184	12	116	402	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	5	262	28	6	9	11	184	12	116	402	52
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	0.65	0.14	0.21	0.06	0.94	1.00	1.00	0.89	0.11
Final Sat.:	482	11	569	298	66	99	32	522	618	562	553	72
Capacity Analysis Module:												
Vol/Sat:	0.02	0.46	0.46	0.09	0.09	0.09	0.35	0.35	0.02	0.21	0.73	0.73
Crit Moves:		****		****				****			****	
Delay/Veh:	9.9	13.0	13.0	10.6	10.6	10.6	12.1	12.1	8.3	10.5	21.3	21.3
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.9	13.0	13.0	10.6	10.6	10.6	12.1	12.1	8.3	10.5	21.3	21.3
LOS by Move:	A	B	B	B	B	B	B	B	A	B	C	C
ApproachDel:		12.9			10.6			11.8			19.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		12.9			10.6			11.8			19.1	
LOS by Appr:		B			B			B			C	
AllWayAvgQ:	0.0	0.7	0.7	0.1	0.1	0.1	0.5	0.5	0.0	0.2	2.3	2.3

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Chesebro Road (NS) / SR-101 NB Ramps (EW)

Average Delay (sec/veh): 7.9 Worst Case Level Of Service: C[17.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0	0	0 0 1	0	1	0 0 0	0	0	1 0 0	0	1
Volume Module:												
Base Vol:	56 141	0		0 328	101		0	0	0	231	0	234
Growth Adj:	1.04 1.04	1.04		1.04 1.04	1.04		1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	58 147	0		0 341	105		0	0	0	240	0	243
Added Vol:	0 0	0		0 0	0		0	0	0	0	0	0
PasserByVol:	0 0	0		0 0	0		0	0	0	0	0	0
Initial Fut:	58 147	0		0 341	105		0	0	0	240	0	243
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	58 147	0		0 341	105		0	0	0	240	0	243
Reduct Vol:	0 0	0		0 0	0		0	0	0	0	0	0
FinalVolume:	58 147	0		0 341	105		0	0	0	240	0	243
Critical Gap Module:												
Critical Gp:	4.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		6.4 xxxx		6.2
FollowUpTim:	2.2 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		3.5 xxxx		3.3
Capacity Module:												
Cnflict Vol:	446 xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		657 xxxx		147
Potent Cap.:	1125 xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		433 xxxx		906
Move Cap.:	1125 xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		415 xxxx		906
Volume/Cap:	0.05 xxxx	xxxx		xxxx xxxx	xxxx		xxxx xxxx	xxxx		0.58 xxxx		0.27
Level Of Service Module:												
2Way95thQ:	0.2 xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		3.5 xxxx		1.1
Control Del:	8.4 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		24.9 xxxx		10.4
LOS by Move:	A	*		*	*		*	*		C	*	B
Movement:	LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT	
Shared Cap.:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx		xxxxx
SharedQueue:	0.2 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx		xxxxx
Shrd ConDel:	8.4 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx		xxxxx
Shared LOS:	A	*		*	*		*	*		*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			17.6		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) Without Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Chesebro Road (NS) / SR-101 NB Ramps (EW)

Average Delay (sec/veh): 56.3 Worst Case Level Of Service: F[169.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0	0	0 0 1	0	1	0 0 0	0	0	1 0 0	0	1
Volume Module:												
Base Vol:	264 255	0	0	378	126		0	0	0	220	0	268
Growth Adj:	1.04 1.04	1.04	1.04	1.04	1.04		1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	275 265	0	0	393	131		0	0	0	229	0	279
Added Vol:	0 0	0	0	0	0		0	0	0	0	0	0
PasserByVol:	0 0	0	0	0	0		0	0	0	0	0	0
Initial Fut:	275 265	0	0	393	131		0	0	0	229	0	279
User Adj:	1.00 1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275 265	0	0	393	131		0	0	0	229	0	279
Reduct Vol:	0 0	0	0	0	0		0	0	0	0	0	0
FinalVolume:	275 265	0	0	393	131		0	0	0	229	0	279
Critical Gap Module:												
Critical Gp:	4.1 xxxx xxxxx	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx		6.4 xxxx		6.2
FollowUpTim:	2.2 xxxx xxxxx	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx		3.5 xxxx		3.3
Capacity Module:												
Cnflict Vol:	524 xxxx xxxxx	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx		1273 xxxx		265
Potent Cap.:	1053 xxxx xxxxx	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx		187 xxxx		778
Move Cap.:	1053 xxxx xxxxx	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx		142 xxxx		778
Volume/Cap:	0.26 xxxx xxxx	xxxx	xxxx	xxxx	xxxx		xxxx	xxxx		1.61 xxxx		0.36
Level Of Service Module:												
2Way95thQ:	1.0 xxxx xxxxx	xxxx	xxxx	xxxxx	xxxx		xxxx	xxxxx		16.2 xxxx		1.6
Control Del:	9.6 xxxx xxxxx	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx		360.6 xxxx		12.2
LOS by Move:	A *	*	*	*	*		*	*		F *		B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx xxxxx			xxxx xxxx xxxxx			xxxx xxxx xxxxx			xxxx xxxx xxxxx		
SharedQueue:	1.0 xxxx xxxxx	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx		xxxxx xxxx xxxxx		
Shrd ConDel:	9.6 xxxx xxxxx	xxxxx	xxxx	xxxxx	xxxxx		xxxx	xxxxx		xxxxx xxxx xxxxx		
Shared LOS:	A *	*	*	*	*		*	*		* *		*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			169.2		
ApproachLOS:	*			*			*			F		

Note: Queue reported is the number of cars per lane.

Opening Year (2009) With Project

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Kanan Road (NS) / SR-101 NB Ramps/Canwood Street (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.725
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:		Ovl			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	0 0	3 0	1	1 0	0 0	1	1 1	0 0	2
Volume Module:												
Base Vol:	38	732	163	0	1605	486	48	0	100	540	34	466
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	40	761	170	0	1669	505	50	0	104	562	35	485
Added Vol:	0	7	0	0	4	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	768	170	0	1673	505	50	0	104	562	35	485
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	768	170	0	1673	505	50	0	104	562	35	485
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	768	170	0	1673	505	50	0	104	562	35	485
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	768	170	0	1673	505	50	0	104	562	35	485
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	0.00	3.00	1.00	1.00	0.00	1.00	1.88	0.12	2.00
Final Sat.:	1600	3200	1600	0	4800	1600	1600	0	1600	3010	190	3200
Capacity Analysis Module:												
Vol/Sat:	0.02	0.24	0.11	0.00	0.35	0.32	0.03	0.00	0.07	0.19	0.19	0.15
OvlAdjV/S:			0.00									
Crit Moves:	****				****				****	****		

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Kanan Road (NS) / SR-101 NB Ramps/Canwood Street (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.855
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:	Ovl			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2	0 1		0 0 3	0 1		1 0 0	0 1		1 1	0 0 2	
Volume Module:												
Base Vol:	7	1215	458	0	981	518	53	0	178	263	63	743
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	7	1264	476	0	1020	539	55	0	185	274	66	773
Added Vol:	0	10	0	0	12	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	7	1274	476	0	1032	539	55	0	185	274	66	773
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	7	1274	476	0	1032	539	55	0	185	274	66	773
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	7	1274	476	0	1032	539	55	0	185	274	66	773
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	7	1274	476	0	1032	539	55	0	185	274	66	773
OvlAdjVol:			90									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	0.00	3.00	1.00	1.00	0.00	1.00	1.61	0.39	2.00
Final Sat.:	1600	3200	1600	0	4800	1600	1600	0	1600	2582	618	3200
Capacity Analysis Module:												
Vol/Sat:	0.00	0.40	0.30	0.00	0.22	0.34	0.03	0.00	0.12	0.11	0.11	0.24
OvlAdjV/S:			0.06									
Crit Moves:		****							****			****

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Kanan Road (NS) / SR-101 SB Ramps/Roadside Drive (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.684
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	2	0 1	1 0	2	0 1	1 0	1!	0 1	1 0	0	0 1
Volume Module:												
Base Vol:	0	493	30	124	1071	950	345	133	253	21	0	94
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	513	31	129	1114	988	359	138	263	22	0	98
Added Vol:	0	2	0	0	1	0	5	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	515	31	129	1115	988	364	138	263	22	0	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	515	31	129	1115	988	364	138	263	22	0	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	515	31	129	1115	988	364	138	263	22	0	98
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	515	31	129	1115	988	364	138	263	22	0	98
OvlAdjVol:						708						
Saturation Flow Module:							1.3	0.4	1.3			
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	1.00	~~1.43~~	~~0.54~~	~~1.03~~	1.00	0.00	1.00
Final Sat.:	0	3200	1600	1600	3200	1600	2080	640	2080	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.16	0.02	0.08	0.35	0.62	0.17	0.22	0.13	0.01	0.00	0.06
OvlAdjV/S:						0.44						
Crit Moves:					****			****				****

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Kanan Road (NS) / SR-101 SB Ramps/Roadside Drive (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.904
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	2	0 1	1 0	2	0 1	1 0	1!	0 1	1 0	0	0 1
Volume Module:												
Base Vol:	0	970	23	179	680	521	369	84	572	19	0	282
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	1009	24	186	707	542	384	87	595	20	0	293
Added Vol:	0	3	0	0	3	0	8	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1012	24	186	710	542	392	87	595	20	0	293
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1012	24	186	710	542	392	87	595	20	0	293
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	1012	24	186	710	542	392	87	595	20	0	293
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	1012	24	186	710	542	392	87	595	20	0	293
OvlAdjVol:						240						
Saturation Flow Module:							1.3	0.4	1.3			
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	2.00	1.00	1.00	2.00	1.00	~~1.09~~	~~0.24~~	~~1.67~~	1.00	0.00	1.00
Final Sat.:	0	3200	1600	1600	3200	1600	2080	640	2080	1600	0	1600
Capacity Analysis Module:												
Vol/Sat:	0.00	0.32	0.01	0.12	0.22	0.34	0.19	0.14	0.29	0.01	0.00	0.18
OvlAdjV/S:						0.15						
Crit Moves:		****			****			****				****

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Clareton Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: B[13.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0 1!	0 0		0 1	0 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	55	0	39	128	271	0	0	65	83
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	57	0	41	133	282	0	0	68	86
Added Vol:	0	0	0	1	0	0	0	9	0	0	6	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	58	0	41	133	291	0	0	74	87
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	58	0	41	133	291	0	0	74	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	58	0	41	133	291	0	0	74	87
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	674	674	117	161	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	423	378	940	1430	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	390	340	940	1430	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.15	0.00	0.04	0.09	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	514	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	13.7	xxxxx	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			13.7			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Clareton Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 8.8 Worst Case Level Of Service: C[20.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0 1!	0 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	104	0	228	151	135	0	0	184	92
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	108	0	237	157	140	0	0	191	96
Added Vol:	0	0	0	1	0	0	0	13	0	0	16	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	109	0	237	157	153	0	0	207	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	109	0	237	157	153	0	0	207	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	109	0	237	157	153	0	0	207	98
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	724	724	256	305	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	396	355	787	1267	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	354	306	787	1267	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.31	0.00	0.30	0.12	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	569	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	4.1	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	20.7	xxxxx	8.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			20.7			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Project Driveway (NS) / Canwood Street (EW)

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: A[9.1]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0 0	0 1		0 0 1	0 0		0 0 0	1 0	
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	326	0	0	148	0
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	0	0	0	0	339	0	0	154	0
Added Vol:	0	0	0	0	0	6	0	9	0	0	0	7
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	6	0	348	0	0	154	7
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	6	0	348	0	0	154	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	6	0	348	0	0	154	7
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	157	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	893	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	893	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.0	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	A	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			9.1			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Project Driveway (NS) / Canwood Street (EW)

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: A[9.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0		0 0 0	0 1		0 0 1	0 0		0 0 0	1 0	
Volume Module:												
Base Vol:	0	0	0	0	0	0	0	239	0	0	276	0
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	0	0	0	0	249	0	0	287	0
Added Vol:	0	0	0	0	0	17	0	14	0	0	0	10
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	17	0	263	0	0	287	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	0	0	17	0	263	0	0	287	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	17	0	263	0	0	287	10
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	292	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	752	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	752	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.1	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	A	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			9.9			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Derry Avenue (NS) / Project Driveway (EW)

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: A[8.9]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0	0 0	0 0	0	1 0	0 0	1! 0	0	0 0	0	0 0
Volume Module:												
Base Vol:	0	180	0	0	57	0	0	0	0	0	0	0
Growth Adj:	1.04 1.04	1.04	1.04	1.04 1.04	1.04	1.04	1.04 1.04	1.04	1.04	1.04 1.04	1.04	1.04
Initial Bse:	0	187	0	0	59	0	0	0	0	0	0	0
Added Vol:	9	0	0	0	0	1	1	0	4	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	187	0	0	59	1	1	0	4	0	0	0
User Adj:	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00
PHF Volume:	9	187	0	0	59	1	1	0	4	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	9	187	0	0	59	1	1	0	4	0	0	0
Critical Gap Module:												
Critical Gp:	4.1 xxxx	xxxxx	xxxxx	xxxx xxxxx			6.4	6.5	6.2	xxxxx xxxx		xxxxx
FollowUpTim:	2.2 xxxx	xxxxx	xxxxx	xxxx xxxxx			3.5	4.0	3.3	xxxxx xxxx		xxxxx
Capacity Module:												
Cnflict Vol:	60 xxxx	xxxxx	xxxx	xxxx xxxxx			265	265	60	xxxx xxxx		xxxxx
Potent Cap.:	1556 xxxx	xxxxx	xxxx	xxxx xxxxx			728	644	1011	xxxx xxxx		xxxxx
Move Cap.:	1556 xxxx	xxxxx	xxxx	xxxx xxxxx			725	640	1011	xxxx xxxx		xxxxx
Volume/Cap:	0.01 xxxx	xxxx	xxxx	xxxx xxxx		xxxx	0.00	0.00	0.00	xxxx xxxx		xxxx
Level Of Service Module:												
2Way95thQ:	0.0 xxxx	xxxxx	xxxx	xxxx xxxxx			xxxx	xxxx	xxxxx	xxxx xxxx		xxxxx
Control Del:	7.3 xxxx	xxxxx	xxxxx	xxxx xxxxx			xxxxx	xxxx	xxxxx	xxxxx xxxx		xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR		- RT	LT - LTR		- RT	LT - LTR		- RT	LT - LTR		- RT
Shared Cap.:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx	937	xxxxx	xxxx xxxx		xxxxx
SharedQueue:	0.0 xxxx	xxxxx	xxxxx	xxxx xxxx	xxxxx	xxxxx	0.0	xxxxx	xxxxx	xxxx xxxx		xxxxx
Shrd ConDel:	7.3 xxxx	xxxxx	xxxxx	xxxx xxxx	xxxxx	xxxxx	8.9	xxxxx	xxxxx	xxxx xxxx		xxxxx
Shared LOS:	A	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.9			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Derry Avenue (NS) / Project Driveway (EW)

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: A[10.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1	0 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	0 0	0
Volume Module:												
Base Vol:	0	165	0	0	252	0	0	0	0	0	0	0
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	172	0	0	262	0	0	0	0	0	0	0
Added Vol:	14	0	0	0	0	1	2	0	12	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	14	172	0	0	262	1	2	0	12	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	14	172	0	0	262	1	2	0	12	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	14	172	0	0	262	1	2	0	12	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	263	xxxx	xxxxx	xxxx	xxxx	xxxxx	462	462	263	xxxx	xxxx	xxxxx
Potent Cap.:	1313	xxxx	xxxxx	xxxx	xxxx	xxxxx	561	500	781	xxxx	xxxx	xxxxx
Move Cap.:	1313	xxxx	xxxxx	xxxx	xxxx	xxxxx	557	494	781	xxxx	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	0.00	0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	738	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.0	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			10.0			xxxxxx		
ApproachLOS:	*			*			A			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Derry Avenue (NS) / Canwood Street (EW)

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: B[11.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 0 1 0		
Volume Module:												
Base Vol:	0	0	0	28	0	29	94	231	0	0	109	86
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	29	0	30	98	240	0	0	113	89
Added Vol:	0	0	0	4	0	0	9	0	0	0	7	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	33	0	30	107	240	0	0	120	89
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	33	0	30	107	240	0	0	120	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	33	0	30	107	240	0	0	120	89
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	619	xxxx	165	210	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	456	xxxx	885	1373	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	428	xxxx	885	1373	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	0.03	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	0.3	xxxx	0.1	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	14.1	xxxx	9.2	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	B	*	A	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.8			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Derry Avenue (NS) / Canwood Street (EW)

Average Delay (sec/veh): 6.1 Worst Case Level Of Service: B[12.8]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 1 0 0			0 0 0 1 0		
Volume Module:												
Base Vol:	0	0	0	120	0	132	102	136	0	0	120	63
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	125	0	137	106	141	0	0	125	66
Added Vol:	0	0	0	12	0	0	14	0	0	0	10	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	137	0	137	120	141	0	0	135	66
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	137	0	137	120	141	0	0	135	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	137	0	137	120	141	0	0	135	66
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	549	xxxx	168	200	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	500	xxxx	882	1384	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	467	xxxx	882	1384	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.29	xxxx	0.16	0.09	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	1.2	xxxx	0.5	0.3	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	15.9	xxxx	9.8	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	C	*	A	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			12.8			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Colodny Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: B[11.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	33	0	17	45	198	0	0	148	10
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	34	0	18	47	206	0	0	154	10
Added Vol:	0	0	0	0	0	1	1	4	0	0	6	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	34	0	19	48	210	0	0	160	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	34	0	19	48	210	0	0	160	10
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	34	0	19	48	210	0	0	160	10
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	471	471	165	170	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	555	494	885	1419	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	541	477	885	1419	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.06	0.00	0.02	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	627	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	11.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			11.3			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Colodny Drive (NS) / Canwood Street (EW)

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[10.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0	0 0	0	0 0 1!	0 0	0	1 0	1 0	0	0 0	0 1	0
Volume Module:												
Base Vol:	0	0	0	14	0	28	35	239	0	0	161	15
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	0	0	0	15	0	29	36	249	0	0	167	16
Added Vol:	0	0	0	0	0	1	2	11	0	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	15	0	30	38	260	0	0	176	16
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	15	0	30	38	260	0	0	176	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	15	0	30	38	260	0	0	176	16
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	6.5	6.2	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	4.0	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	521	521	184	192	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	519	463	863	1394	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	509	450	863	1394	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	0.00	0.03	0.03	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	703	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	10.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			10.5			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 Chesebro Road (NS) / Driver Avenue (EW)

Cycle (sec): 0 Critical Vol./Cap.(X): 0.426
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 10.8
Optimal Cycle: 0 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	5	1	112	41	3	7	9	255	3	193	135	38
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	5	1	116	43	3	7	9	265	3	201	140	40
Added Vol:	0	0	4	0	0	0	0	0	0	6	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	1	120	43	3	7	9	265	3	207	140	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	5	1	120	43	3	7	9	265	3	207	140	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	1	120	43	3	7	9	265	3	207	140	40
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	5	1	120	43	3	7	9	265	3	207	140	40
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.01	0.99	0.80	0.06	0.14	0.03	0.97	1.00	1.00	0.78	0.22
Final Sat.:	502	5	600	418	31	71	22	622	731	608	533	150
Capacity Analysis Module:												
Vol/Sat:	0.01	0.20	0.20	0.10	0.10	0.10	0.43	0.43	0.00	0.34	0.26	0.26
Crit Moves:			****	****			****			****		
Delay/Veh:	9.5	9.4	9.4	10.0	10.0	10.0	12.0	12.0	7.5	11.4	9.6	9.6
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.5	9.4	9.4	10.0	10.0	10.0	12.0	12.0	7.5	11.4	9.6	9.6
LOS by Move:	A	A	A	B	B	B	B	B	A	B	A	A
ApproachDel:		9.4			10.0			11.9			10.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		9.4			10.0			11.9			10.5	
LOS by Appr:		A			B			B			B	
AllWayAvgQ:	0.0	0.2	0.2	0.1	0.1	0.1	0.7	0.7	0.0	0.5	0.3	0.3

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #8 Chesebro Road (NS) / Driver Avenue (EW)

Cycle (sec): 0 Critical Vol./Cap.(X): 0.733
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 0 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	0 1	0	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0
Volume Module:												
Base Vol:	11	5	252	27	6	9	11	177	12	112	387	50
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	11	5	262	28	6	9	11	184	12	116	402	52
Added Vol:	0	0	11	0	0	0	0	0	0	9	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	11	5	273	28	6	9	11	184	12	125	402	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	11	5	273	28	6	9	11	184	12	125	402	52
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	11	5	273	28	6	9	11	184	12	125	402	52
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	11	5	273	28	6	9	11	184	12	125	402	52
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.02	0.98	0.65	0.14	0.21	0.06	0.94	1.00	1.00	0.89	0.11
Final Sat.:	481	11	568	296	66	99	32	517	611	558	549	71
Capacity Analysis Module:												
Vol/Sat:	0.02	0.48	0.48	0.09	0.09	0.09	0.36	0.36	0.02	0.22	0.73	0.73
Crit Moves:		****				****		****			****	
Delay/Veh:	9.9	13.4	13.4	10.7	10.7	10.7	12.2	12.2	8.4	10.8	21.8	21.8
Delay Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	9.9	13.4	13.4	10.7	10.7	10.7	12.2	12.2	8.4	10.8	21.8	21.8
LOS by Move:	A	B	B	B	B	B	B	B	A	B	C	C
ApproachDel:		13.3			10.7			12.0			19.4	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		13.3			10.7			12.0			19.4	
LOS by Appr:		B			B			B			C	
AllWayAvgQ:	0.0	0.8	0.8	0.1	0.1	0.1	0.5	0.5	0.0	0.3	2.3	2.3

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Morning Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Chesebro Road (NS) / SR-101 NB Ramps (EW)

Average Delay (sec/veh): 8.0 Worst Case Level Of Service: C[17.7]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0	0	0 0 1	0	1	0 0 0	0	0	1 0 0	0	1
Volume Module:												
Base Vol:	56 141	0		0 328	101		0 0	0		231	0	234
Growth Adj:	1.04 1.04	1.04		1.04 1.04	1.04		1.04 1.04	1.04		1.04 1.04	1.04	
Initial Bse:	58 147	0		0 341	105		0 0	0		240	0	243
Added Vol:	0 1	0		0 4	0		0 0	0		0	0	5
PasserByVol:	0 0	0		0 0	0		0 0	0		0	0	0
Initial Fut:	58 148	0		0 345	105		0 0	0		240	0	248
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
PHF Volume:	58 148	0		0 345	105		0 0	0		240	0	248
Reduct Vol:	0 0	0		0 0	0		0 0	0		0	0	0
FinalVolume:	58 148	0		0 345	105		0 0	0		240	0	248
Critical Gap Module:												
Critical Gp:	4.1 xxxx xxxxx	xxxxx		xxxx xxxxx	xxxxx		xxxx xxxxx	xxxxx		6.4 xxxx		6.2
FollowUpTim:	2.2 xxxx xxxxx	xxxxx		xxxx xxxxx	xxxxx		xxxx xxxxx	xxxxx		3.5 xxxx		3.3
Capacity Module:												
Cnflict Vol:	450 xxxx xxxxx	xxxx		xxxx xxxxx	xxxxx		xxxx xxxx	xxxxx		662 xxxx		148
Potent Cap.:	1121 xxxx xxxxx	xxxx		xxxx xxxxx	xxxxx		xxxx xxxx	xxxxx		430 xxxx		905
Move Cap.:	1121 xxxx xxxxx	xxxx		xxxx xxxxx	xxxxx		xxxx xxxx	xxxxx		412 xxxx		905
Volume/Cap:	0.05 xxxx xxxx	xxxx		xxxx xxxx	xxxx		xxxx xxxx	xxxx		0.58 xxxx		0.27
Level Of Service Module:												
2Way95thQ:	0.2 xxxx xxxxx	xxxx		xxxx xxxxx	xxxxx		xxxx xxxx	xxxxx		3.6 xxxx		1.1
Control Del:	8.4 xxxx xxxxx	xxxxx		xxxx xxxxx	xxxxx		xxxx xxxx	xxxxx		25.2 xxxx		10.5
LOS by Move:	A *	*		* *	*		* *	*		D *		B
Movement:	LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT	
Shared Cap.:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx		xxxxx
SharedQueue:	0.2 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx		xxxxx
Shrd ConDel:	8.4 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx		xxxxx
Shared LOS:	A *	*		* *	*		* *	*		* *		*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			17.7		
ApproachLOS:	*			*			*			C		

Note: Queue reported is the number of cars per lane.

Derry Avenue / Canwood Street Retail (Revised)
Opening Year (2009) With Project
Evening Peak Hour

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 Chesebro Road (NS) / SR-101 NB Ramps (EW)

Average Delay (sec/veh): 57.8 Worst Case Level Of Service: F[173.4]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 1 0	0	0	0	0 1 0	1	0	0 0 0	0	1	0 0	0 1
Volume Module:												
Base Vol:	264 255	0		0	378	126	0	0	0	220	0	268
Growth Adj:	1.04 1.04	1.04		1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	275 265	0		0	393	131	0	0	0	229	0	279
Added Vol:	0 1	0		0	11	0	0	0	0	0	0	8
PasserByVol:	0 0	0		0	0	0	0	0	0	0	0	0
Initial Fut:	275 266	0		0	404	131	0	0	0	229	0	287
User Adj:	1.00 1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	275 266	0		0	404	131	0	0	0	229	0	287
Reduct Vol:	0 0	0		0	0	0	0	0	0	0	0	0
FinalVolume:	275 266	0		0	404	131	0	0	0	229	0	287
Critical Gap Module:												
Critical Gp:	4.1 xxxx xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	2.2 xxxx xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	535 xxxx xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1285	xxxx	266
Potent Cap.:	1043 xxxx xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	183	xxxx	777
Move Cap.:	1043 xxxx xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	139	xxxx	777
Volume/Cap:	0.26 xxxx xxxx			xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1.64	xxxx	0.37
Level Of Service Module:												
2Way95thQ:	1.1 xxxx xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	16.4	xxxx	1.7
Control Del:	9.7 xxxx xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	375.3	xxxx	12.3
LOS by Move:	A	*	*	*	*	*	*	*	*	F	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx xxxxx			xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	1.1 xxxx xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	9.7 xxxx xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			173.4		
ApproachLOS:	*			*			*			F		

Note: Queue reported is the number of cars per lane.

Cumulative Without Project

Derry Avenue / Canwood Street Retail (Revised)
Cumulative Analysis Without Project
Morning Peak Hour

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Kanan Road (NS) / SR-101 NB Ramps/Canwood Street (EW)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.890
Loss Time (sec):	10 (Y+R=0.0 sec)	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	100	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Split Phase			Split Phase		
Rights:		Ovl			Include			Include			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	0 1	2	0 1	1 0	0	0 1	1 1	0	0 2
Volume Module:												
Base Vol:	38	732	163	0	1605	486	48	0	100	540	34	466
Growth Adj:	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Initial Bse:	40	761	170	0	1669	505	50	0	104	562	35	485
Added Vol:	0	156	204	35	139	0	0	0	0	415	0	35
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	917	374	35	1808	505	50	0	104	977	35	520
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	40	917	374	35	1808	505	50	0	104	977	35	520
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	40	917	374	35	1808	505	50	0	104	977	35	520
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	40	917	374	35	1808	505	50	0	104	977	35	520
OvlAdjVol:			0									
Saturation Flow Module:												
Sat/Lane:	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	0.06	2.94	1.00	1.00	0.00	1.00	1.93	0.07	2.00
Final Sat.:	1600	3200	1600	91	4709	1600	1600	0	1600	3088	112	3200
Capacity Analysis Module:												
Vol/Sat:	0.02	0.29	0.23	0.02	0.38	0.32	0.03	0.00	0.07	0.32	0.32	0.16
OvlAdjV/S:			0.00									
Crit Moves:	****				****				****	****		