Attachment 10

Development at Portola Drive/38th Avenue Santa Cruz County, CA

TRAFFIC IMPACT STUDY

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Prepared For:

Hamilton Swift and Associates
500 Chestnut Street, Suite 100
Santa Cruz, CA 95060

Prepared By:

Kimley»Horn

100 West San Fernando Street, Suite 250
San Jose, CA 95113

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INTRODUCTION

This traffic study presents the findings of the traffic analysis for the proposed specialized mixed use residential, office and retail project, which will be located on the southeast corner of Portola Drive and 38th Avenue in Santa Cruz County. A vacant warehouse building is currently located on the site. The building was previously a retail lumber and hardware sales facility owned by Pleasure Point Lumber Company, which began operations on the site in 1948. The site has in the recent past been used by Wellington Energy for storing and processing SMART gas meters for installation in the area. Various other tenants have also occupied the site since it was last used for lumber and hardware sales. The site currently has a full access driveway onto Portola Avenue and one onto 38th Avenue.

The proposed project will accommodate on-site parking for both bicycles and passenger vehicles and have one full access driveway from both Portola Drive and one full access driveway from 38th Avenue. The project includes a specialized retail/local market development with residential units that operates on a day to day basis and will be occupied by several vendor types seven days a week between the hours of 8:00 AM and 5:00 PM for office uses, 9:00 AM and 8:00 PM for retail uses, and 7:00 AM and 10:00 PM for restaurants, cafes, and wine bars, depending on the specific use. The new building to be on site is proposed to include the following uses:

- 3,200 square feet of food service uses such as coffee house, craft beer, wine bar, ice cream shop, or restaurant uses.
- 3,200 square feet of retail non-food services uses such as clothing/skin care product or art gallery uses, and retail food related uses such as candy or chocolate shop, butcher shop, wine shop, flower shop, or fruit and vegetable stands.
- 3,200 square feet of office and service commercial uses such as beauty salon, computer repair, or pet grooming uses.
- Eight (8) residential condominium units of two bedrooms each.

Figure 1 illustrates the location of the project site in relation to other streets in Santa Cruz County.

This traffic study was prepared based on discussions with Santa Cruz County, as well as on comments provided by County Staff on the project application. It also complies with traffic impact study guidelines and criteria set forth by Santa Cruz County.

STUDY METHODOLOGY

DEVELOPMENT CONDITIONS

This traffic impact study was based on the following development conditions:

- Existing (2014) Conditions – Based on current traffic counts taken in October 2014 and existing roadway geometry and traffic control.
- Existing (2014) plus Proposed Project Conditions – Based on existing traffic volumes, existing roadway geometry and traffic control and traffic generated by the proposed project.
- Near-Term/Background (2016) Conditions – Based on future year traffic forecasts estimated for developments anticipated to occur at the time the project is constructed in approximately the year 2016. These forecasts were found by applying an historic average annual percent growth rate for

two years out from year 2014. The growth rate was determined using Santa Cruz County Regional Transportation Commission (SCCRTC) historic ADT data.

- Near-Term (2016) plus Proposed Project Conditions – Proposed Project traffic was added to the 2016 base year/Background traffic.
- Cumulative (2035) Conditions – Future year traffic forecasts estimated for developments anticipated to occur through the year 2035. These forecasts were calculated by applying an average annual percent growth rate from year 2014 through year 2035, utilizing historic growth rates on Portola Drive and 41st Avenue.
- Cumulative (2035) plus Proposed Project Conditions – The proposed project traffic was added to the base Cumulative year traffic volumes.

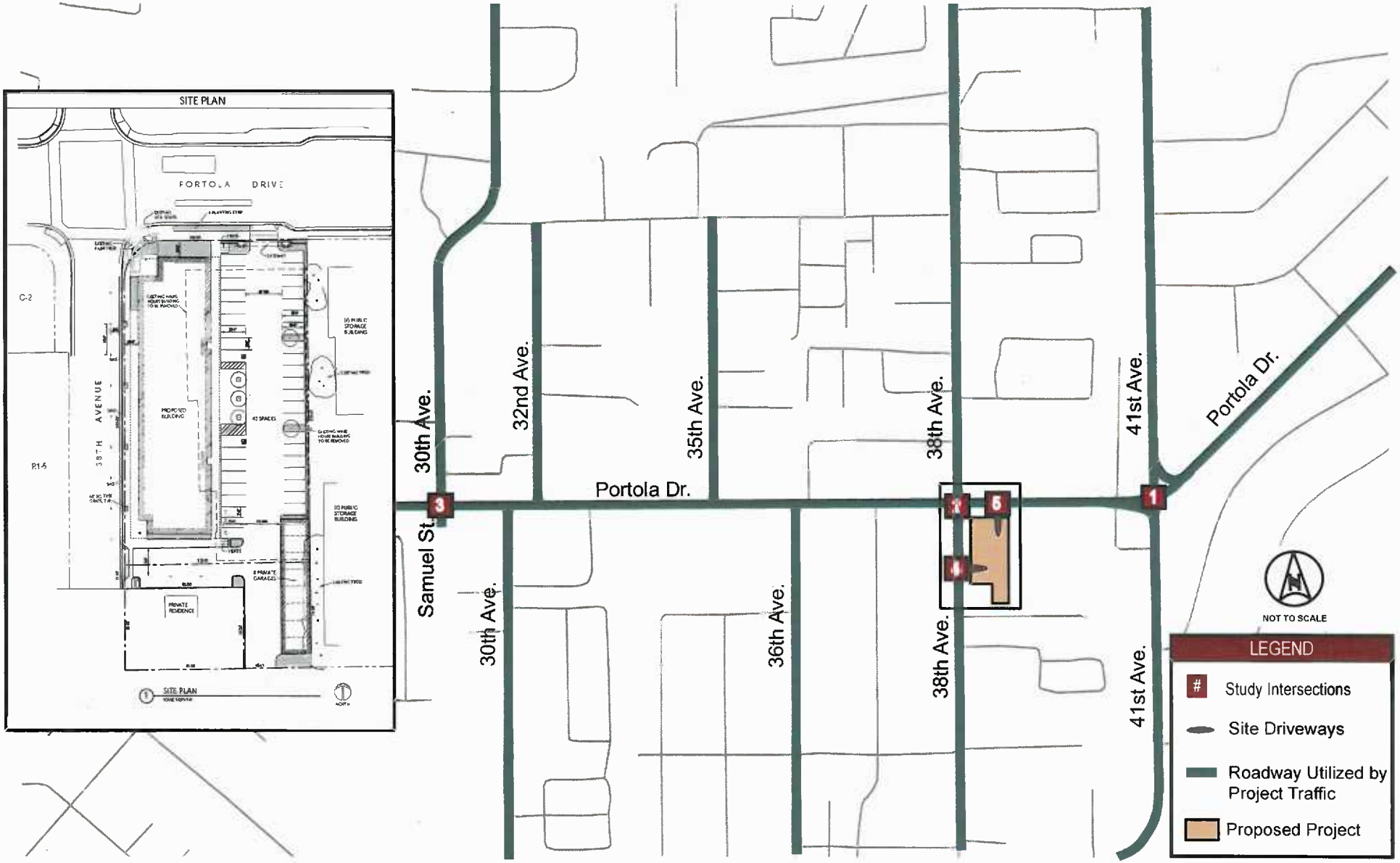

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FIGURE 1
Project Vicinity Map & Site Plan

OPERATING CONDITIONS AND CRITERIA FOR INTERSECTIONS

Analysis of potential environmental impacts at intersections is based on the concept of Level of Service (LOS). The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual, 2010* (HCM) and Synchro 8 traffic analysis software.

The HCM 2010 methodologies included procedures for analyzing side-street stop-controlled (SSSC), all-way stop-controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole. **Table 1** relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections.

Table 1 – Intersection Level of Service Definitions

Level of Service	Description	Signalized (Avg. control delay per vehicle sec/veh.)	Unsignalized (Avg. control delay per vehicle sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	< 10	≤ 10
B	Stable traffic. Traffic flows smoothly with few delays.	> 10 – 20	> 10 – 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	> 20 – 35	> 15 – 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	> 35 – 55	> 25 – 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	> 55 – 80	> 35 – 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	> 80	> 50

Sources: Transportation Research Board, *Highway Capacity Manual 2010*, National Research Council,

Project impacts are determined by comparing conditions without the proposed project to those with the proposed project. Significant impacts for intersections are created when traffic from the proposed project causes the LOS to fall below the County LOS threshold and causes any impacted intersections to deteriorate further per the criteria indicated below.

Consistent with the significant impact criteria documented in the Santa Cruz County General Plan, the County considers LOS C as the objective, but accepts LOS D as the minimum acceptable at signalized and unsignalized study intersections (where costs, right-of-way requirements, or environmental impacts of maintaining LOS under this policy are excessive, capacity enhancement may be considered infeasible). Therefore the following conditions would result in a significant impact at a County intersection:

1. If the intersection operates at an acceptable LOS (i.e. LOS A, B, C or D) without the project during the weekday peak hour and degrades to an unacceptable LOS (i.e. LOS E or F) with the project during the weekday peak hour, then it is a significant impact.
2. If the intersection operates at an unacceptable LOS (i.e. LOS D, E, or F) without the project during the weekday peak hour, and the volume/capacity (v/c) ratio of the sum of all critical movements at the intersection increases by 1%, then it is a significant impact.

STUDY INTERSECTIONS INCLUDED IN ANALYSIS

The proposed project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess changes in traffic conditions associated with the proposed project, the following intersections, listed with the applicable jurisdiction, were selected by Santa Cruz County for evaluation in this traffic study:

1. Portola Drive / 41st Avenue (All-Way Stop Controlled)
2. Portola Drive / 38th Avenue (All-Way Stop Controlled)
3. Portola Drive / 30th Avenue (*north leg*) (All-Way Stop Controlled)

These study intersections are illustrated in **Figure 1**.

EXISTING CONDITIONS

EXISTING ROADWAY NETWORK

Below is a description of the principal roadways included in this study:

Portola Drive

Portola Drive is a four-lane east-west arterial roadway that connects 17th Avenue from the west to 41st Avenue in the east. It serves as the local connector of many residential, retail, and commercial land uses. The posted speed limit in the project vicinity is 30 miles per hour.

41st Avenue

41st Avenue is a north-south arterial roadway with one to three lanes in each direction that spans from Soquel Drive in the City of Capitola in the north to Portola Drive as well as to East Cliff Drive in the south, which runs along the coast. 41st Avenue also provides interchange access to SR-1 and connects many residential, retail, and commercial land uses. Between the SR-1 interchange and Reposa Avenue, 41st Avenue has three lanes in each direction and a posted speed limit of 35 miles per hour. South of Reposa Avenue and within the project vicinity, 41st Avenue has one through lane in each direction and the posted speed limit in the project vicinity is 30 miles per hour.

38th Avenue

38th Avenue is a two-lane north-south collector connecting Brommer Street in the north to East Cliff Drive in the south, which runs along the coast. 38th Avenue connects the residential uses in the neighborhood to various commercial and retail land uses near the study area. The posted speed limit on 38th Avenue is 25 miles per hour.

30th Avenue

30th Avenue is is a two-lane north-south collector that connects Capitola Road in the north to Portola Drive in the south. East of this intersection with Portola Drive, it continues south and ends at East Cliff Drive along the coast. 30th Avenue connects the residential uses in the neighborhood to various commercial and retail land uses near the study area. The posted speed limit on 30th Avenue is 25 miles per hour.

Existing Study Intersections

1. **Portola Drive / 41st Avenue** is an all-way stop controlled (AWSC) intersection with marked crosswalks on all four legs. It has one shared left, through, and right lane in the northbound direction; one shared left and through lane and one right lane in the southbound direction; one left lane, one through lane, and one channelized right lane in the eastbound direction; and one shared left and through lane and one channelized right lane in the westbound direction.
2. **Portola Drive / 38th Avenue** is an all-way stop controlled (AWSC) intersection with marked crosswalks on all four legs. It has one shared left, through, and right lane in both the northbound and southbound directions; and one shared left and through lane and one shared through and right lane in both the eastbound and westbound directions.

3. **Portola Drive / 30th Avenue (north leg)** is an all-way stop controlled (AWSC) intersection with marked crosswalks on all four legs. The southern leg, Samuel Street, is a private driveway. It has one shared left, through, and right lane in the southbound direction; and one shared left and through lane and one shared through and right lane in both the eastbound and westbound directions.

These intersections were selected based on the low project trip generation and potential resultant impacts on the street network.

EXISTING PEAK-HOUR TURNING MOVEMENT VOLUMES

Weekday intersection turning movement volumes for the three existing study intersections, not including the future project driveways, were collected in October 2014. These counts include vehicles, bicycles, and pedestrians. Volumes for Intersections were collected during the AM and PM peak periods of 6:00-8:00 AM and 4:30-6:30 PM, respectively. These traffic counts were taken in the weekday when local schools were in session and the weather was fair. Existing turning movements are shown in **Figure 3.** Intersection volume data sheets for all traffic counts are provided in **Appendix A**.

EXISTING TRANSIT FACILITIES

The Santa Cruz Metropolitan Transit District (METRO) provides transit services throughout Santa Cruz County and between the Cities of Santa Cruz, Capitola, Watsonville, and Scotts Valley. The vicinity of the proposed project lies within the Live Oak service region, which provides three transit lines that operate along Portola Drive, 38th Avenue, and 41st Avenue. The descriptions of the three routes are described below:

1. The ***Live Oak via 17th Route (Route 66)*** operates along Front Street, Water Street, Soquel Avenue, 7th Avenue, Brommer Street, and 17th Avenue to the west and along Portola Drive, 41st Avenue, Capitola Road, Brommer Street, and 38th Avenue, and continues along Portola Drive, 38th Avenue, and 41st Avenue to the east and north of the proposed project. In the vicinity of the proposed project, this service route has a bus stop on 38th Avenue north of Avis Lane in the northbound direction, which is within 500 feet of the project site and within walking distance. Another bus stop lies along Portola Drive just west of 37th Avenue in the westbound direction, which is also within 500 feet of the project site and is within walking distance. There is also a bus stop at this location in the eastbound direction. The route operates on a frequency of 60- to 65-minute headways from Monday through Friday, and up to 75-minute headways from Saturday to Sunday.
2. The ***Live Oak via 17th Night Route (Route 66N)*** operates along Front Street, Soquel Avenue, 7th Avenue, Brommer Street, and 17th Avenue to the west and along Portola Drive, 38th Avenue, and 41st Avenue to the east and north of the proposed project. In the vicinity of the proposed project, this service route has a bus stop on 38th Avenue north of Avis Lane in the northbound direction, which is within 500 feet of the project site and within walking distance. Another bus stop lies along Portola Drive just west of 37th Avenue in the westbound direction, which is within 500 feet of the project site and is within walking distance. The route operates only once per night Monday through Friday, and operates twice per night Saturday to Sunday with a 65- to 70-minute headway.

3. The ***Live Oak via Broadway/Portola Route (Route 68)*** operates along San Lorenzo Boulevard, Broadway Street, Seabright Avenue, 7th Avenue, and East Cliff Drive/Portola Drive to the west, and along 41st Avenue to the east of the proposed project. In the vicinity of the proposed project, this service route has a bus stop on Portola Drive west of 40th Avenue in both the westbound and eastbound directions, which is within 500 feet of the project site and within walking distance. Another bus stop lies on Portola Drive west of 37th Avenue in both the westbound and eastbound directions, which is within 500 feet of the project site and within walking distance. The route operates on a frequency of 60- to 75-minute headways Monday through Sunday.

Sheltered bus stops are provided just west of 41St Avenue on Portola Drive, approximately 450 feet from the project site. The close proximity to the bus stops and the public bus system will provide opportunities for transit users to travel to and from the site.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

Pedestrians: In the immediate project vicinity, there are currently sidewalks located on both sides of Portola Drive. Along the project frontage the sidewalk is not Americans with Disabilities Act (ADA) compliant. On the west side of 38th Avenue immediately south of Portola Drive, sidewalk is provided along one property frontage. Sidewalks do not currently exist further south along 38th Avenue. North on 30th Avenue, sidewalks only continue north of Avis Lane. The intersection closest to the project, Portola Drive / 38th Street (Intersection #2) is all-way stop controlled (AWSC) and has stamped concrete crosswalks and striping on all four legs of the intersection. ADA ramps at the intersection are non-compliant. The project will provide ADA sidewalk facilities as part of it street frontage improvements.

Bicycles: Class II bicycle facilities (bicycle lanes) are striped and signed along Portola Drive and 41st Avenue, in both directions. The Santa Cruz County Bike Map (2010) also identifies these streets with bicycle lanes present. 38th Avenue is not a bicycle facility, though bicycles are present along this arterial and approach the proposed project site intersection with approximately 54 bicycles heading westbound and 35 bicycles heading eastbound along Portola Drive.

EXISTING LEVEL OF SERVICE AT STUDY INTERSECTIONS

Traffic operations were evaluated at the study intersections under existing traffic conditions. Results of the analysis are presented in **Table 2**. As shown in **Table 2**, the intersection of Portola Drive/41st Avenue currently operates at LOS E during the PM peak hour and does not meet the County criteria for acceptable operations.

Analysis sheets are provided in **Appendix C**.

Table 2 – Existing (2014) Intersection Level of Service Summary

#	Intersection	Control Type	Weekday Peak			
			AM		PM	
			Delay	LOS	Delay	LOS
1	Portola Drive / 41st Avenue	AWSC	14.0	B	**36.1**	**E**
2	Portola Drive / 38th Avenue	AWSC	12.0	B	19.8	C
3	Portola Drive / 30th Avenue (North Leg)	AWSC	14.5	B	18.2	C

Notes:

1. Analysis performed using HCM 2010 methodologies.
2. Delay indicated in seconds/vehicle.
3. Overall level of service (LOS) standard for the County is D.
4. Intersections that fall below County standard are shown in **bold**.

PROPOSED PROJECT

PROPOSED SITE USE

The proposed project will comprise a mixed use development consisting of residential, office and retail uses. All the activities will be located in one building. The retail space will include typical small shops and "market" type vendors. The retail space will operate during normal business hours and not be a farmers market set up, which operates once or twice a week for only a few hours of retail activity, but instead generate typical specialty retail traffic flow to and from the site, consistent with ITE trip generation rates. The unique features of the project, such as the market, will attract local residents, which may choose to bike or walk to the site. The proposed project will be located on the southeast corner of Portola Drive and 38th Avenue and replace the existing building (previously a retail lumber and hardware sales facility). Though the site is no longer in use, it has been frequently occupied by other tenants over the past few years and has continued to generate traffic to the site. The proposed project site will contain on-site parking for 50 vehicles (2 ADA spaces) and 20 bicycles (in racks and in garages), private garages, and one building which is proposed to include the following uses:

- 3,200 square feet of food service uses such as coffee house, craft beer, wine bar, ice cream shop, or restaurant uses.
- 3,200 square feet of retail non-food services uses such as clothing/skin care product or art gallery uses, and retail food related uses such as candy or chocolate shop, butcher shop, wine shop, flower shop, or fruit and vegetable stands.
- 3,200 square feet of office and service commercial uses such as beauty salon, computer repair, or pet grooming uses.
- Eight (8) residential condominium units of two bedrooms each.

Hours of operation for the above uses would vary, with office uses expected to operate between 8:00 AM and 5:00 PM, retail uses between 9:00 AM and 8:00PM, and restaurants, cafes, and wine bars between 7:00 AM and 10:00 PM depending on the specific use.

The project would have one stop - controlled driveway onto 38th Avenue, and a stop- controlled "gateway" driveway on Portola Drive, the latter of which would be the project's main driveway. The project site plan is presented in **Figure 1.** The project assumes 8 on-street spaces along the 38th Avenue frontage, which will be used to offset 4 residential spaces.

As part of the proposed project, frontage improvements will be constructed along Portola Drive and 38th Avenue. These improvements will include construction of one project driveway along 38th Avenue and one project "gateway" driveway along Portola Drive as illustrated in the site plan shown in **Figure 1**. The proposed project driveway on Portola Drive will be located along the easterly boundary of the site, which is an improvement from the exiting wide driveway, which extends along the entire frontage along Portola Drive. The stop-controlled intersection of Portola Drive/38th Avenue will provide gaps for vehicles to enter and exit the site.

PROJECT TRIP GENERATION

Trip generation for the project was selected based on the description above and was calculated using the Institute of Transportation Engineer's publication, *Trip Generation 9th Edition.*[1] *Trip Generation* is a standard reference, which is used by jurisdictions throughout the county for the estimation of trip generation. The retail activities will either be located in a store or street market type format with shopping counters facing the outsides of the building where shoppers would buy goods. The stores will have typical shopping hours as mentioned (9:00 AM to 8:00 PM) and will not generate specific peak traffic such as that for a farmers market, which has significantly different trip generation characteristics. In addition, the small vendors and specialty retail items will attract local residents who may walk or bike to the site.

A trip is defined in *Trip Generation* as a single or one-directional vehicle movement with either the origin or destination at the project site. In other words, a trip can be either "to" or "from" the site. In addition, a single customer visit to a site is counted as two trips (i.e., one to and one from the site).

For purposes of determining the worst-case impacts of traffic on the surrounding street network, the trips generated by a proposed development are typically estimated between the hours of 7:00-9:00 AM and 4:00-6:00 PM on a weekday. While the project itself may generate more traffic during some other time of the day such as around noon, the peak of "adjacent street traffic" represents the time period when the uses generally contribute to the greatest amount of congestion, with the PM peak commonly being the greatest congestion period.

Marquez Transportation Engineering conducted the trip generation study for this proposed project and used the general breakdown of uses listed in the previous section. The memorandum prepared for Hamilton Swift and Associates, which details the trip generation analysis, can be found in **Appendix B.** Kimley-Horn reviewed the trip generation estimate prepared by Marquez Transportation Engineering and found it to be appropriate for the site.

Trip generation calculations prepared per ITE methodology are based on gross floor area of the building. Gross floor area includes the sum of the floor area in square feet "including any cellars, basements, mezzanines, penthouses, corridors, lobbies, stores and offices that are within the principle outside faces of exterior walls." ITE specifies that "unroofed areas and unenclosed roofed-over spaces, except those contained within the principle out-side faces of exterior walls, should be excluded from the area calculations."[2]

Internal capture reductions were considered to account for the interaction of separate uses within a multi-use/mixed use development. A key characteristic of such development is that trips among the various land uses can be made on-site, thus resulting in internal trips that would not affect the offsite roadway network. Internal capture calculations were conducted following ITE methodologies contained in *Trip Generation Handbook*[3] for the proposed office service commercial and residential condominium uses

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[1] *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[2] *Trip Generation, 9th Edition*, Institute of Transportation Engineers, 2012.

[3] *Trip Generation Handbook, 2nd Edition*, Institute of Transportation Engineers, June 2004.

during the AM peak hour, PM peak hour, and daily periods. The internal capture rates utilizing ITE methodologies resulted in an internal capture rate of 11 percent for each of these uses.

Linked trip reductions were considered to account for trips that can be made to access more than one use at the site with a single stop. The nonresidential uses (non-food retail and office service commercial) may be reduced by 25 percent due to linked trips.

Pass-by trip reductions are typically considered to account for trips that will already be on the road and will likely stop as they pass by the site. This reduction was applied only to food service commercial uses proposed for the site and results in a 20 percent reduction.

This initial trip generation was calculated based on the previous discussions. **Table 3** presents the trip generation for the proposed project, while **Table 4** presents the reductions due to internal capture, linked trips, and pass-by trips. Additional reductions were also taken into account and are reflected in the table as well, and are as follows:

- Reductions are assumed for trips taken to and from the site via walking and bicycling because of the nature of the retail activities and the location to the adjacent residential areas. As noted in **Table 3**, the project will generate approximately 41 trips in the AM and 41 trips in the PM peak once adjusted using the reductions in **Table 4**. Bicycle and pedestrian reductions account for 10% of these adjusted AM and PM trips, or 4 trips per peak hour period.
- Reductions are also assumed when accounting for trip credits associated with the site's most recent tenant use. The site, though currently vacant, was previously a retail lumber and hardware sales facility, and has in the recent past been used by Wellington Energy for storing and processing SMART gas meters for installation in the area. Various other tenants have also occupied the site since it was last used for lumber and hardware sales. The Wellington Energy use corresponds with the Light Industrial ITE land use code 110 and results in a trip credit of 13 trips in the AM and 15 trips in the PM.
- It should be noted that if a retail lumber/hardware facility trip credit would be applied, the corresponding ITE land use code would be code 812 (Building Materials and Lumber Store). The trip reduction therefore would have been much greater, resulting in 36 trips in the AM and 62 trips in the PM. Given the historical presence of the Pleasure Point Lumber Company, these trips have been part of the traffic pattern in the Pleasure Point and Live Oak area for over 53 years.

With all described reductions considered, the project would generate 24 net new trips in the AM peak hour and 22 net new trips in the PM peak hour.

Table 3 - Project Trip Generation

TRIP GENERATION RATES[1]	ITE Land Use Code	Project Size		WEEKDAY Daily Trips Rate	AM PEAK HOUR Total Peak Hour	% Of ADT	IN / OUT	PM PEAK HOUR Total Peak Hour	% Of ADT	IN / OUT
Proposed Project Uses										
Food Service Commercial	932			127.5	10.81	8%	55% / 45%	9.85	8%	60% / 40%
Non-Food Retail	826			44.32	2	5%	48% / 52%	2.71	6%	44% / 56%
Office Service Commercial	715			11.65	1.8	15%	89% / 11%	1.74	15%	15% / 85%
Residential Condominiums	231			7.4	0.67	9%	25% / 75%	0.78	11%	58% / 42%
Pre-Project Use[2]										
Light Industrial	110			6.97	0.92	13%	88% / 12%	0.97	14%	12% / 88%
PROJECT TRIPS										
Food Service Commercial	932	3.2	KSF	408	35	9%	19 / 16	32	8%	19 / 13
Non-Food Retail	826	3.2	KSF	142	6	4%	3 / 3	9	6%	5 / 4
Office Service Commercial	715	3.2	KSF	37	6	16%	3 / 3	6	16%	4 / 2
Residential Condominiums	231	8	DU	59	5	8%	3 / 2	6	11%	4 / 2
Food Service Commercial Trip Reductions	0	3.2	KSF	(82)	(7)	9%	(4) / (3)	(6)	8%	(4) / (2)
Non-Food Retail Trip Reductions	932	3.2	KSF	(36)	(2)	4%	(1) / (1)	(2)	6%	(1) / (1)
Office Service Commercial Trip Reductions	826	3.2	KSF	(13)	(2)	16%	(1) / (1)	(2)	16%	(1) / (1)
Residential Condominiums Trip Reductions	715	8	DU	(6)	(1)	8%	0 / (1)	(1)	12%	0 / (1)
Adjusted Trips[3]				**509**	**41**		**22** / **19**	**41**		**25** / **16**
Credit for Bike/Pedestrian Trips (10% of Adjusted AM/PM Trips)	----	----	----	----	(4)		(3) / (1)	(4)		(3) / **(1)**
Credit for Trip Gen for Pre-Project Use (Light Industrial)	110	13.9	KSF	(97)	(13)		(11) / (2)	(15)		(2) / **(13)**
Net New Trips[4]				**412**	**24**		**8** / **16**	**22**		**20** / **2**

Notes:

1. Trip generation rates published by Institute of Transportation Engineers (ITE), "Trip Generation," 9th Edition, 2012.
2. Most recent pre-project use is considered light industrial; site was previously occupied by Wellington Energy.
3. Trips are adjusted due to Internal Reduction, Linked Trip Reduction, and Pass-By Trip Reduction by land use, per ITE "Trip Generation Handbook," 2nd Edition. Refer to Table 4 for trip reduction rates applied.
4. Net new trips refers to the number of AM and PM peak project trips after bike/pedestrian trip and pre-project use credits. Distribution of trips going in and out of the site are based only on the proposed project uses.

Table 4 - Project Trip Reductions by Land Use

Proposed Project Uses	ITE Land Use Code	Trip Reduction Rates		
		Internal Reduction	Linked Trip Reduction	Pass-by Trip Reduction
Food Service Commercial	932	0%	0%	20%
Non-Food Retail	826	0%	25%	0%
Office Service Commercial	715	11%	25%	0%
Residential Condominiums	231	11%	0%	0%

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Because of the unique nature of the development, most customers to the office, commercial and retail stores are expected to travel predominantly from the local Santa Cruz County area and from the residential neighborhoods. Existing travel patterns during the AM and PM peak hours at the study intersections were used to determine the trip distribution and assignment. Applying the directional distribution of ITE Land Use Codes for the office, residential and retail trips, the gross trips to and from the site were calculated. Approximately 50% of the project trips would distribute westwards along Portola Drive and 34% eastwards, redistributing at 41st Avenue, and 8% of the project trips would distribute north and south respectively on 38th Avenue. In the morning peak 24 peak hour trips will be generated, of which 8 trips will enter the site and 16 trips exit the site. In the afternoon peak hour 22 trips will be generated, of which 20 trips will enter the site and 2 trips will exit the site. **Figure 2** presents the traffic distribution and assignment for this analysis.

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FIGURE 2
Project Trip Distribution

EXISTING PLUS PROJECT LEVEL OF SERVICE AT STUDY INTERSECTIONS

Traffic operations were evaluated at the study intersections under existing conditions plus traffic generated by the project as seen on **Figure 3**. Results of the analysis are presented in **Table 5**. Locations operating unacceptably are bolded.

As shown in **Table 5**, Intersection #1 – Portola Drive / 41st Avenue will continue to operate at unacceptable LOS E. The addition of the project trips increases the v/c by 0.89%, which is less that the County threshold of 1%, and therefore is not considered a significant impact by the County.

The other study intersections will continue to operate at acceptable LOS per the County threshold.

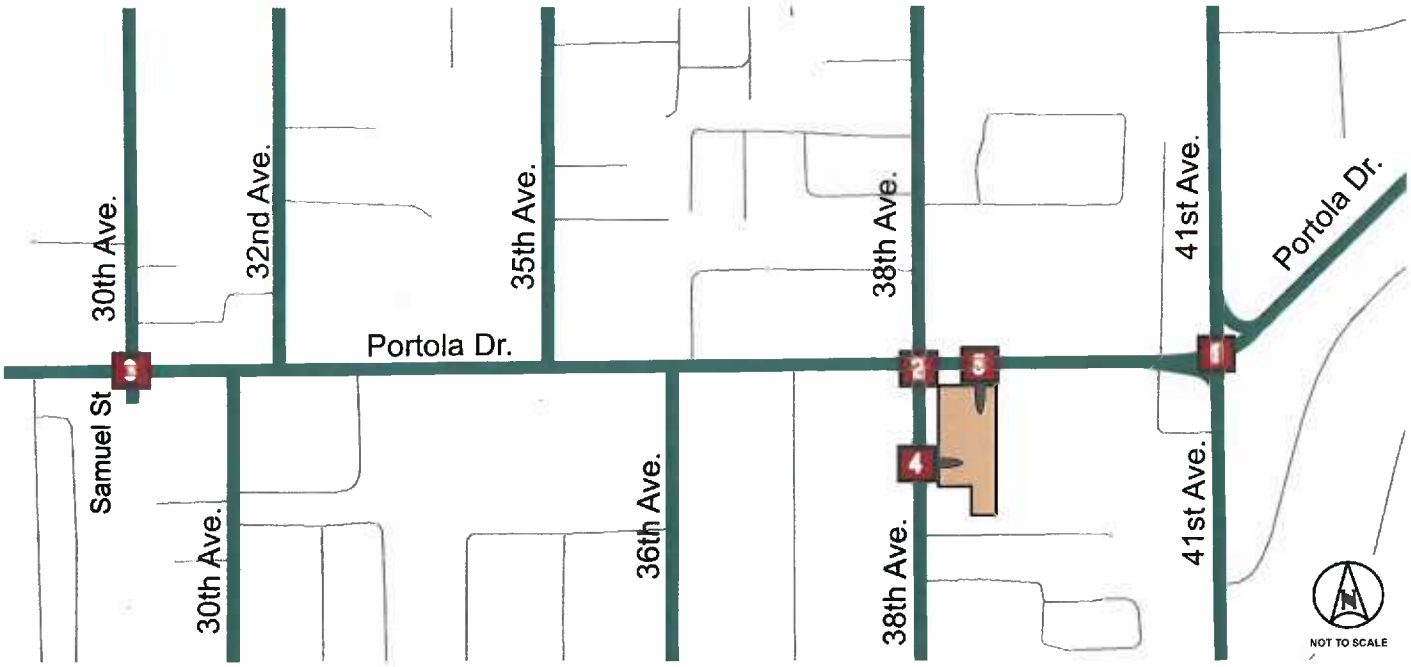
Intersection v/c for the Portola Drive / 41st Avenue intersection were determined using Traffix software. Analysis sheets from Synchro and from Traffix are provided in **Appendix D and Appendix J**.

Table 5 – Existing (2014) Plus Project Intersection Level of Service Summary

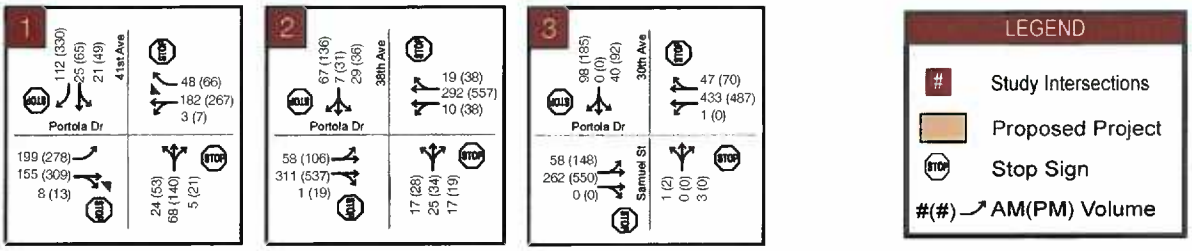
#	Intersection	Control Type	Movement	Existing Conditions					Existing Plus Project Conditions							% Increase v/c	
				AM Peak Hour		PM Peak Hour			AM Peak Hour			PM Peak Hour				AM Peak Hour	PM Peak Hour
				Delay	LOS	Delay	LOS	V/C	Direction	Delay	LOS	Direction	Delay	LOS	V/C		
1	Portola Drive / 41st Avenue	AWSC	Overall	14.0	B	**36.1**	E	0.900	-	14.2	B	-	**37.1**	E	0.908		0.89%
2	Portola Drive / 38th Avenue	AWSC	Overall	12.0	B	19.8	C		-	12.2	B	-	20.3	C			
3	Portola Drive / 30th Avenue	AWSC	Overall	14.5	B	18.2	C		-	14.7	B	-	18.4	C			
4	38th Avenue / Driveway 1	SSSC	Overall	-	-	-	-		-	1.3	-	-	0.5	-			
			Worst Approach	-	-	-	-		WB	8.7	A	WB	8.7	A			
5	Portola Drive / Gateway	SSSC	Overall	-	-	-	-		-	0.1	-	-	0.1	-			
			Worst Approach	-	-	-	-		NB	11.5	B	NB	20.1	C			

Notes:

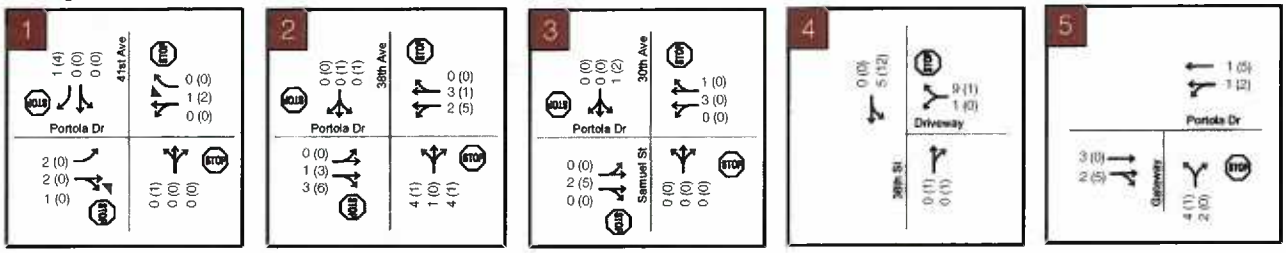
1. Analysis performed using HCM 2010 methodologies.
2. Delay indicated in seconds/vehicle.
3. Overall level of service (LOS) standard for the County is D.
4. Intersections that fall below County standard are shown in **bold**.



Existing Volumes



Project Volumes



Existing Plus Project Volumes

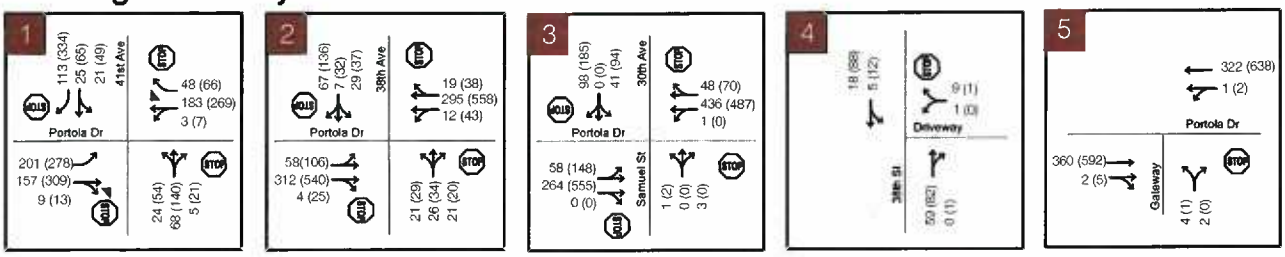


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FIGURE 3

Intersection Lane Geometry & Peak Hour Vehicular Volumes

Existing (2014) & Existing Plus Project Conditions

NEAR-TERM (2016) CONDITIONS

PLANNED ROADWAY PROJECTS IN VICINITY OF SITE

Per discussion with the County, and as documented in the County's Regional Transportation Plan (RTP)[4], there are no programmed network improvements in the project study area and intersections expected to be constructed prior to opening the project that have not already been completed. **Figure 4** illustrates the intersection geometry and traffic control assumed in the Near-Term 2016 analysis, which are the same as existing conditions. Also, no future signalization is planned for any of the study intersections.

APPROVED & PENDING DEVELOPMENT PROJECTS IN VICINITY OF SITE/NEAR TERM CONDITIONS

Near Term conditions usually describes the conditions when the project would open its doors to the public. For purposes of this analysis it was assumed to be in year 2016. Near term conditions can either be calculated by assuming that approved but not yet constructed projects would add traffic to the road network by 2016 or future volumes could be estimated by assuming some growth in traffic volumes, based on historical and future projections. Kimley-Horn coordinated with County staff to determine if there were any development projects in the vicinity of the project site that are in various stages of planning, approval, or development. No specific projects were provided by County Staff that included land uses, project size, or date of completion or operation. Therefore, average daily volumes (ADTs) obtained from the Santa Cruz County Regional Transportation Commission (SCCRTC) were used to estimate the growth from potential projects for the Near-Term 2016 conditions as discussed below. Calculations to support this volume growth estimate can be found in **Appendix I**.

The most recent bi-directional ADTs, whose years vary across roadway segments in the County, were compared against the oldest ADTs of each pertinent roadway. Year 2016 turning movement volumes were calculated by adding the growth increment to the current year (2014) traffic count to calculate the final adjusted roadway link forecast volume. Under these methods, it was calculated that volumes along Portola Drive within the vicinity of the project would increase by 0.66% per annum, while volumes along 41st Avenue would increase by 0.13% per annum.

[4] *Santa Cruz County Regional Transportation Commission (SCCRTC) 2014 Regional Transportation Plan (RTP)*, Santa Cruz County Regional Transportation Commission, June 2014.

NEAR-TERM (2016) TRAFFIC CONDITIONS

Traffic operations were evaluated under the following development conditions:

- Near-Term Conditions
- Near-Term plus Project Conditions

Near-term (2016) volumes were calculated by using the annual growth rates between the existing volumes and the 2035 volumes calculated from the provided SCCRTC average daily traffic volumes. Growth rates were determined only for the through movements along Portola Drive and along 41st Avenue. All other movements along other segments were kept constant at existing volumes since land use along these roadways segments is assumed to be already built out. The growth rates were applied to the existing counts in 2014 and grown to 2016.

NEAR-TERM INTERSECTION LEVEL OF SERVICE

Year 2016 volumes were evaluated at the study intersections and are presented in **Figure 4**. Results are presented in **Table 6**. As shown in **Table 6**, Intersection #1 – Portola Drive / 41st Avenue would continue to operate at unacceptable LOS E. Analysis sheets are provided in **Appendix E**.

Table 6 – Near-Term (2016) Intersection Level of Service Summary

#	Intersection	Control Type	Weekday Peak			
			AM		PM	
			Delay	LOS	Delay	LOS
1	Portola Drive / 41st Avenue	AWSC	14.1	B	**37.8**	**E**
2	Portola Drive / 38th Avenue	AWSC	12.1	B	20.0	C
3	Portola Drive / 30th Avenue (North Leg)	AWSC	14.7	B	18.5	C

Notes:

1. Analysis performed using HCM 2010 methodologies.
2. Delay indicated in seconds/vehicle.
3. Overall level of service (LOS) standard for the County is D.
4. Intersections that fall below County standard are shown in **bold**.

NEAR-TERM PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections under near-term conditions plus traffic generated by the project as seen on **Figure 4**. Results of the analysis are presented in **Table 7**. Locations operating unacceptably are bolded.

As shown in **Table 7**, Intersection #1 – Portola Drive / 41st Avenue would operate unacceptably with a LOS E in the Near-Term Project Conditions. The addition of the project trips increases the v/c by 0.87%, which is less that the County threshold of 1%, and therefore is not considered a significant impact by the County.

Analysis sheets from Synchro and from Traffix are provided in **Appendix F and Appendix J**.

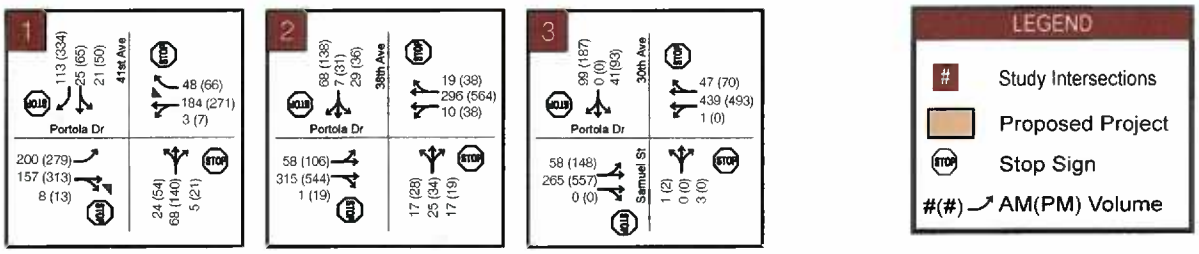
Table 7 – Near-Term (2016) Plus Project Intersection Level of Service Summary

#	Intersection	Control Type	Movement	Near-Term (2016) Conditions					Near-Term (2016) Plus Project Conditions							% Increase v/c	
				AM Peak Hour		PM Peak Hour			AM Peak Hour			PM Peak Hour				AM Peak Hour	PM Peak Hour
				Delay	LOS	Delay	LOS	V/C	Direction	Delay	LOS	Direction	Delay	LOS	V/C		
1	Portola Drive / 41st	AWSC	Overall	14.1	B	**37.8**	**E**	0.915	-	14.2	B	-	**38.9**	**E**	0.923		0.87%
2	Portola Drive / 38th	AWSC	Overall	12.1	B	20.0	C		-	12.3	B	-	20.7	C			
3	Portola Drive / 30th	AWSC	Overall	14.7	B	18.5	C		-	14.9	B	-	18.8	C			
4	38th Avenue / Driveway 1	SSSC	Overall	-	-	-	-		-	1.3	-	-	0.5	-			
			Worst Approach	-	-	-	-		WB	8.7	A	WB	8.7	A			
5	Portola Drive / Gateway	SSSC	Overall	-	-	-	-		-	0.1	-	-	0.1	-			
			Worst Approach	-	-	-	-		NB	11.9	B	NB	20.3	C			

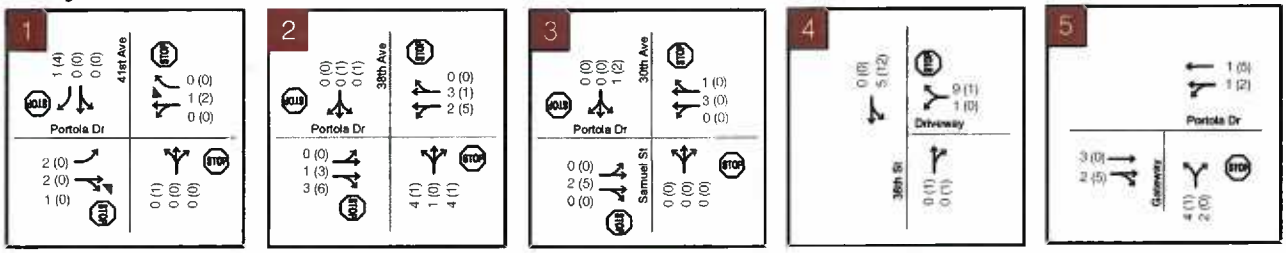
Notes:

1. Analysis performed using HCM 2010 methodologies
2. Delay indicated in seconds/vehicle
3. Overall level of service (LOS) standard for the County is D
4. Intersections that fall below County standard are shown in **bold**.

Near-Term Volumes



Project Volumes



Near-Term Plus Project Volumes

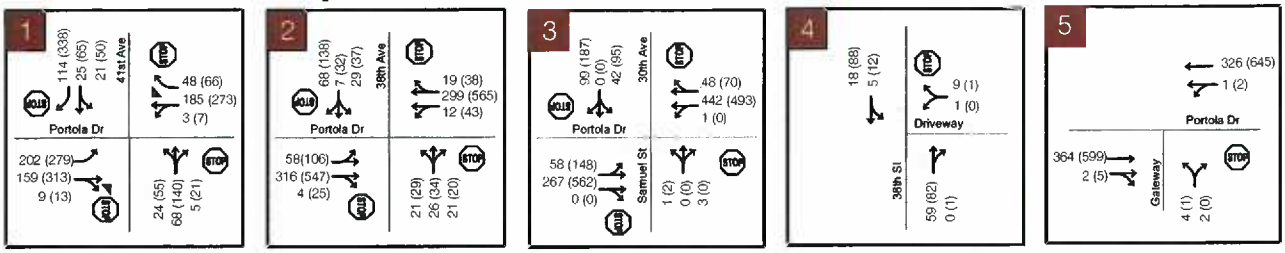


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FIGURE 4

Intersection Lane Geometry & Peak Hour Vehicular Volumes

Near-Term (2016) & Near-Term Plus Project Conditions

CUMULATIVE (2035) CONDITIONS

CUMULATIVE LANE CONFIGURATIONS AND TRAFFIC CONTROL

Per the County's Regional Transportation Plan (RTP)[5] no future roadway improvements or other programmed network improvements in the immediate project area and study intersections have been identified that are expected to be completed by 2035. **Figure 5** illustrates the intersection geometry and traffic control assumed in the Cumulative (2035) analysis. Thus for cumulative (with no project) conditions, the roadway geometry and control is assumed to remain the same as for existing conditions.

YEAR 2035 FORECAST MODEL VOLUMES

Year 2035 roadway link volumes were calculated in a similar method to the Near-term 2016 volumes. The most recent bi-directional ADTs, whose years vary across roadway segments in the County, were compared against the oldest ADTs of each pertinent roadway. Year 2035 turning movement volumes were calculated by adding the growth increment to the current year (2014) traffic count to calculate the final adjusted roadway link forecast volume. Under these methods, it was again assumed that volumes along Portola Drive within the vicinity of the project would increase by 0.66% per annum, while volumes along 41st Avenue in the vicinity of Portola Drive would increase by 0.13% per annum. The growth assumption is based on historic data. The County General Plan does not indicate any major future development in this area that would result in increased volumes that would result in growth of 1% per annum, or approximately 20% through 2035.

[5] *Santa Cruz County Regional Transportation Commission (SCCRTC) 2014 Regional Transportation Plan (RTP)*, Santa Cruz County Regional Transportation Commission, June 2014.

CUMULATIVE (2035) TRAFFIC CONDITIONS

Traffic operations were evaluated under the following cumulative conditions:

- Cumulative (2035) Conditions
- Cumulative (2035) plus Project Conditions

Results of the analysis are presented in **Table 8**. Additional detail is provided in **Appendix G**.

CUMULATIVE INTERSECTION LEVEL OF SERVICE

Cumulative traffic volumes were evaluated at study intersections and are presented in **Figure 5**. As shown in **Table 8**, Intersection #1 – Portola Drive / 41st Avenue would operate at unacceptable LOS F. Analysis sheets are provided in **Appendix G**.

Table 8 – Cumulative (2035) Intersection Level of Service Summary

#	Intersection	Control Type	Weekday Peak			
			AM		PM	
			Delay	LOS	Delay	LOS
1	Portola Drive / 41st Avenue	AWSC	15.9	C	**55.0**	**F**
2	Portola Drive / 38th Avenue	AWSC	13.5	B	27.9	D
3	Portola Drive / 30th Avenue	AWSC	17.9	C	24.7	C

Notes:

1. Analysis performed using HCM 2010 methodologies
2. Delay indicated in seconds/vehicle
3. Overall level of service (LOS) standard for the County is D
4. Intersections that fall below County standard are shown in **bold**.

CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE

The project traffic was added to the cumulative conditions traffic at the study intersections and analyzed. The Cumulative plus traffic generated by the project as seen on **Figure 5**. Results of the analysis are presented in **Table 9**. Locations operating unacceptably are bolded.

As shown in **Table 9**, Intersection #1 – Portola Drive / 41st Avenue would operate unacceptably with a LOS E in the Near Term project conditions. The addition of the project trips increases the v/c by 0.85%, which is less that the County threshold of 1%, and therefore is not considered a significant impact by the County.

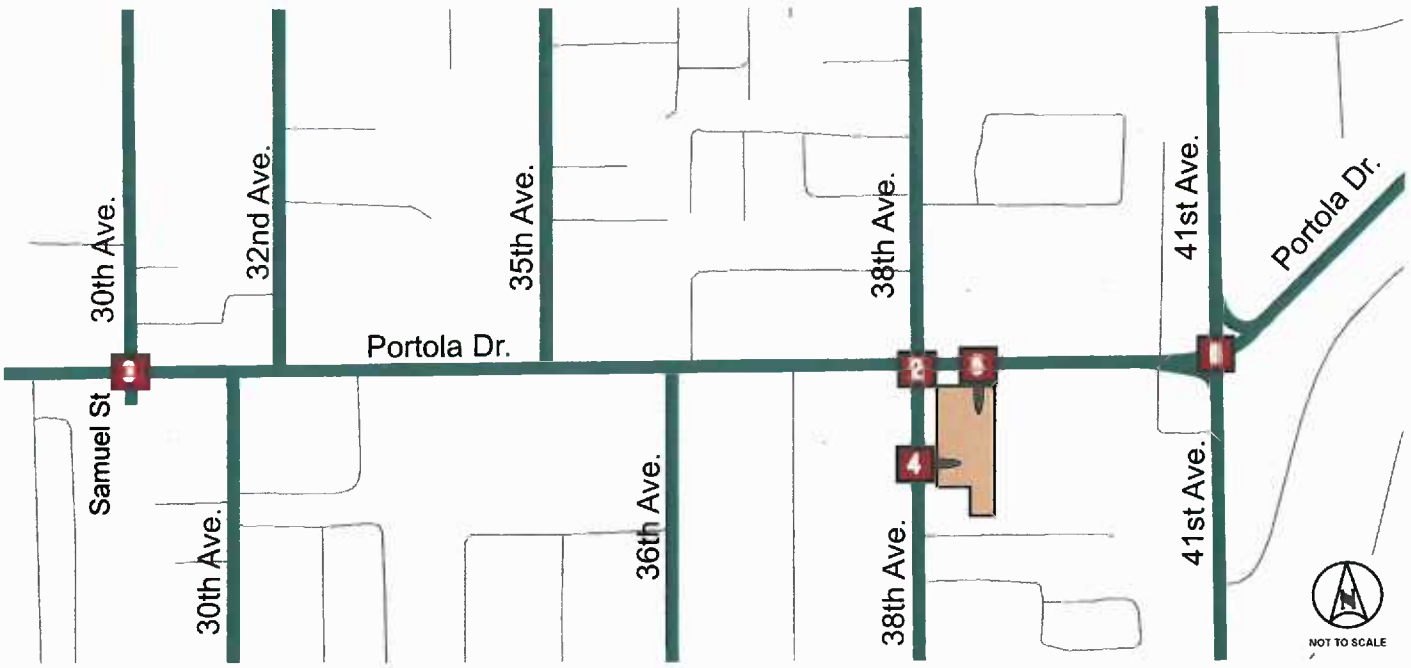
Analysis sheets from Synchro and from Traffix are provided in **Appendix H and Appendix J**.

Table 9 – Cumulative (2035) Plus Project Intersection Level of Service Summary

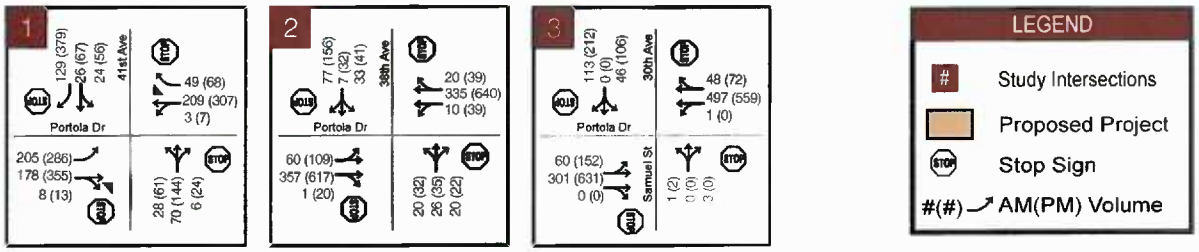
#	Intersection	Control Type	Movement	Cumulative (2035) Conditions					Cumulative Plus Project Conditions							% Increase v/c	
				AM Peak		PM Peak Hour			AM Peak Hour			PM Peak Hour				AM Peak Hour	PM Peak Hour
				Delay	LOS	Delay	LOS	V/C	Direction	Delay	LOS	Direction	Delay	LOS	V/C		
1	Portola Drive / 41st Avenue	AWSC	Overall	15.9	C	**55.0**	F	1.065	-	16.1	C	-	**55.9**	F	1.074		0.85%
2	Portola Drive / 38th Avenue	AWSC	Overall	13.5	B	27.9	D		-	13.8	B	-	28.9	D			
3	Portola Drive / 30th Avenue	AWSC	Overall	17.9	C	24.7	C		-	18.2	C	-	25.1	D			
4	38th Avenue / Driveway 1	SSSC	Overall	-	-	-	-		-	1.3	-	-	0.5	-			
			Worst Approach	-	-	-	-		WB	8.7	A	WB	8.8	A			
5	Portola Drive / Gateway	SSSC	Overall	-	-	-	-		-	0.1	-	-	0.1	-			
			Worst Approach	-	-	-	-		NB	12.6	B	NB	23.7	C			

Notes:

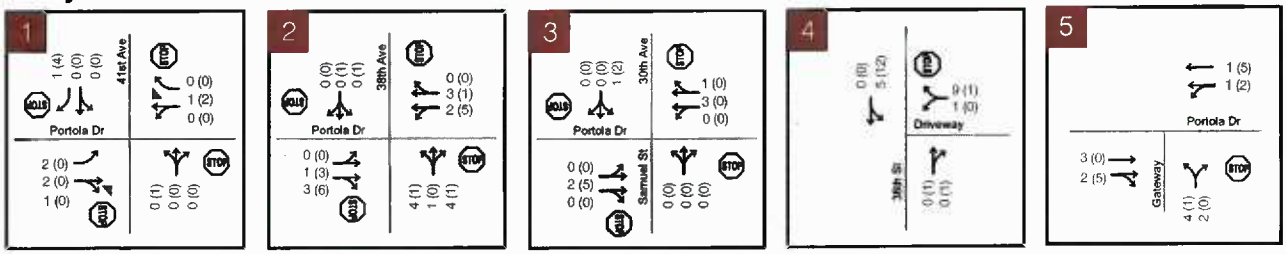
1. Analysis performed using HCM 2010 methodologies
2. Delay indicated in seconds/vehicle
3. Overall level of service (LOS) standard for the County is D
4. Intersections that fall below County standard are shown in **bold**.



Cumulative Volumes



Project Volumes



Cumulative Plus Project Volumes

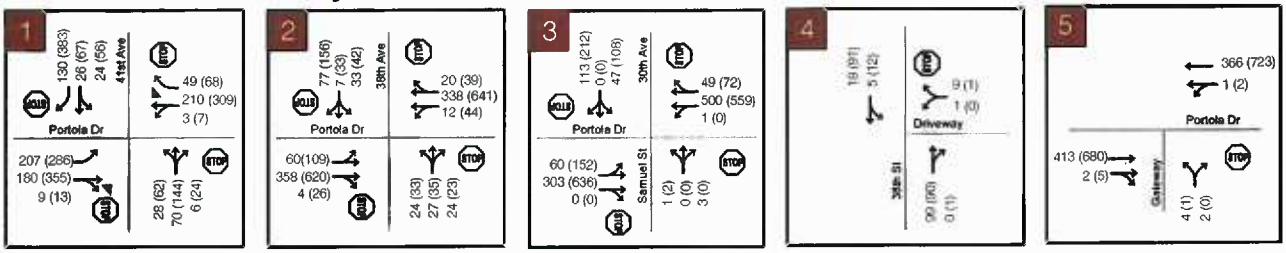


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FIGURE 5

Intersection Lane Geometry & Peak Hour Vehicular Volumes

Cumulative (2035) & Cumulative Plus Project Conditions

POTENTIAL EFFECTS ON TRANSIT, BICYCLE, AND PEDESTRIAN MOBILITY

The proposed project was evaluated to determine if it would adversely affect adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) or generate pedestrian, bicycle, or transit travel demand that would not be accommodated by transit, bicycle, or pedestrian facilities and plans.

Patrons to the development have the option of driving, taking transit, walking, or bicycling. Those patrons that choose to take transit have the option of three transit services that operate along Portola Drive, 38th Street and 41st Street with bus stops near the project site. According to 2006-2010 U.S. Census data cited by the SCCRTC's Regional Transportation Plan, approximately 3% of Santa Cruz County residents use transit to travel to work. This typically represents the highest level of transit ridership during the day, with other periods being lower such as when shoppers commonly travel to the store. If it is conservatively assumed (from the standpoint of transit demand) that 3% percent of the patrons and employees of the development will use transit during the peak hours of the day, it represents approximately one passenger both in the weekday AM peak period and weekday PM peak period, which has negligible adverse impact on transit mobility, accessibility, or safety at any of the study intersections. Bus stops are located within 500 feet from the project site.

Patrons choosing to walk to the site would also have negligible adverse impact on pedestrian mobility, accessibility, or safety at the study intersections once frontage improvements are constructed. Only up to two pedestrian and/or bicycle trips both in the weekday AM peak period and weekday PM peak period are anticipated for the project. Per the current site plan, sidewalks will be installed along the 38th Avenue frontage. There is existing curb on the proposed frontage along Portola Avenue. The proposed frontage improvements, which include sidewalks, driveways, and landscaping such as planting strips and tree grates, would extend the existing sidewalk along the south side of Portola Drive to the east side of 38th Avenue up to the southerly project limit, which abuts a private residence.

Internal pedestrian connections would link the proposed site's entrance with the parking areas, the Portola Drive and 38th Avenue frontages. These sidewalks would be installed along the east and south perimeter of the proposed building. These on-site elements will allow patrons, condominium residents and employees to conveniently walk from nearby destinations.

Patrons choosing to bike to the site would also have negligible adverse impact on bicyclist mobility, accessibility, or safety. Only up to two pedestrian and/or bicycle trips both in the weekday AM peak period and weekday PM peak period are anticipated for the project. Class II bicycle facilities along Portola Drive provides bicycle access to the site. The intersection of 38th Avenue/Portola Drive provides crossings for pedestrian on all four corners.

Given these circumstances, the site plan in **Figure 1** indicates the construction of the necessary on-site sidewalks, walkways, bicycle parking, and other amenities in compliance with adopted policies, plans and programs; thus, the project's impact on transit, pedestrian or bicycle facilities is determined to be less than significant.

SITE ACCESS AND CIRCULATION

On site circulation was evaluated at the project's two driveways, which are along the 38th Avenue frontage (Intersection #4) and along the Portola Drive frontage (Intersection #5).

The driveway along 38th Avenue (Intersection #4) would provide ease of entry to the site primarily for patrons visiting from the neighboring residences and would accommodate a majority of the project trips (64%) as indicated in **Figure 2**.

An existing speed hump is located on 38th Avenue where the proposed project driveway (Intersection #4) would be located. This hump will impact vehicle maneuvers in and out of the site. It will affect the entering and exit speeds of vehicles in and out of the driveway and also result in discomfort for turning vehicles due to the skew angle of these vehicles when driving over it. This hump should be relocated, preferable to just north of the driveway, but without impacting other driveways and drainage. The small relocation is not anticipated to impact the rate of reduction of the speeds of through traffic on 38th Avenue. This relocation may have to be coordinated with the neighbors.

The "gateway" driveway along Portola Drive (Intersection #5) would provide adequate entry to the proposed site via an eastbound right (EBR) or a westbound left (WBL) movement. However, the driveway may pose difficulties on exiting the site via a northbound left (NBL) movement. While still feasible, it is for this reason that fewer project trips (36%) are anticipated to use this driveway.

TRAFFIC IMPACT FEES

Because the project adds traffic to the County wide roadway system, it will be required to pay the County Traffic Impact Fees. The Fee will be based on the net trip generation.

SUMMARY OF IMPACTS

Based on the results of the traffic analysis and evaluation of the proposed site plan, Intersection #1 – Portola Drive / 41st Avenue is the only intersection that operates at an unacceptable level of service in existing conditions and continues to operate at unacceptable conditions during the PM peak hours in the near-term and cumulative conditions. However, the project traffic does not increase the critical v/c by more than 1%. Therefore, the addition of the project traffic does not cause a significant impact that should be mitigated.

APPENDIX

A: TURNING MOVEMENT VOLUMES

B: TRIP GENERATION MEMO – MARQUEZ TRANSPORTATION ENGINEERING

C: EXISTING TRAFFIC CONDITIONS ANALYSIS SHEETS

D: EXISTING PLUS PROJECT TRAFFIC CONDITIONS ANALYSIS SHEETS

E: NEAR-TERM (2016) TRAFFIC CONDITIONS ANALYSIS SHEETS

F: NEAR-TERM (2016) PLUS PROPOSED PROJECT TRAFFIC CONDITIONS ANALYSIS SHEETS

G: CUMULATIVE (2035) TRAFFIC CONDITIONS ANALYSIS SHEETS

H: CUMULATIVE (2035) PLUS PROPOSED PROJECT TRAFFIC CONDITIONS ANALYSIS SHEETS

I: CALCULATION OF NEAR-TERM AND CUMULATIVE CONDITION VOLUMES

J: TRAFFIX ANALYSIS SHEETS (FOR IMPACTED INTERSECTIONS ONLY)

A: TURNING MOVEMENT VOLUMES

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-003 41st Avenue-Portola Drive.ppd
Date : 10/16/2014

Unshifted Count = All Vehicles

	41st Avenue Southbound					Portola Drive Westbound					41st Avenue Northbound					Portola Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Ulum Total
06:00	2	2	10	0	14	0	8	2	0	10	4	10	3	0	17	23	5	1	0	29	70	0
06:15	0	2	8	0	10	1	7	2	0	10	1	11	1	0	13	23	6	0	0	29	62	0
06:30	4	4	29	0	37	1	14	6	0	21	2	10	0	0	12	37	6	0	0	43	113	0
06:45	4	5	22	0	31	0	32	4	0	36	6	12	4	0	22	29	13	1	0	43	132	0
Total	10	13	69	0	92	2	61	14	0	77	13	43	8	0	64	112	30	2	0	144	377	0
07:00	1	6	34	0	41	0	25	10	0	35	3	12	1	0	16	42	27	0	0	69	161	0
07:15	6	3	24	0	33	1	40	9	0	50	2	15	0	0	17	33	38	4	0	75	175	0
07:30	7	11	34	0	52	1	55	13	0	69	8	12	2	0	22	53	37	1	0	91	234	0
07:45	7	5	20	0	32	1	62	16	0	79	11	29	2	0	42	71	53	3	0	127	280	0
Total	21	25	112	0	158	3	182	48	0	233	24	68	5	0	97	199	155	8	0	362	850	0
16:30	11	17	81	0	109	0	61	17	0	78	12	39	7	0	58	70	69	2	0	141	386	0
16:45	13	14	85	0	112	2	76	18	0	96	17	32	8	0	57	66	81	3	0	150	415	0
17:00	16	11	79	0	106	2	59	12	0	73	12	28	4	0	44	63	82	3	0	148	371	0
17:15	9	23	85	0	117	3	71	19	0	93	12	41	2	0	55	79	77	5	0	161	426	0
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18:00	15	8	84	0	107	3	55	18	0	76	13	23	4	0	40	62	58	1	0	121	344	0
18:15	8	10	64	0	82	2	46	9	0	57	14	35	3	0	52	49	37	6	0	92	283	0
Total	51	42	279	0	372	6	208	57	0	271	48	124	11	0	183	228	215	19	0	462	1288	0
Grand Total	131	145	790	0	1066	18	718	185	0	921	138	375	45	0	558	817	709	42	0	1568	4113	0
Apprch %	12.3%	13.6%	74.1%	0.0%		2.0%	78.0%	20.1%	0.0%		24.7%	67.2%	8.1%	0.0%		52.1%	45.2%	2.7%	0.0%			
Total %	3.2%	3.5%	19.2%	0.0%	25.9%	0.4%	17.5%	4.5%	0.0%	22.4%	3.4%	9.1%	1.1%	0.0%	13.6%	19.9%	17.2%	1.0%	0.0%	38.1%	100.0%	

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-003 41st Avenue-Portola Drive.ppd
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AM PEAK HOUR	41st Avenue Southbound					Portola Drive Westbound					41st Avenue Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
07:00	1	6	34	0	41	0	25	10	0	35	3	12	1	0	16	42	27	0	0	69	161
07:15	6	3	24	0	33	1	40	9	0	50	2	15	0	0	17	33	38	4	0	75	175
07:30	7	11	34	0	52	1	55	13	0	69	8	12	2	0	22	53	37	1	0	91	234
07:45	7	5	20	0	32	1	62	16	0	79	11	29	2	0	42	71	53	3	0	127	280
Total Volume	21	25	112	0	158	3	182	48	0	233	24	68	5	0	97	199	155	8	0	362	850
% App Total	13.3%	15.8%	70.9%	0.0%		1.3%	78.1%	20.6%	0.0%		24.7%	70.1%	5.2%	0.0%		55.0%	42.8%	2.2%	0.0%		
PHF	.750	.568	.824	.000	.760	.750	.734	.750	.000	.737	.545	.586	.625	.000	.577	.701	.731	.500	.000	.713	.759

PM PEAK HOUR	41st Avenue Southbound					Portola Drive Westbound					41st Avenue Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	11	17	81	0	109	0	61	17	0	78	12	39	7	0	58	70	69	2	0	141	386
16:45	13	14	85	0	112	2	76	18	0	96	17	32	8	0	57	66	81	3	0	150	415
17:00	16	11	79	0	106	2	59	12	0	73	12	28	4	0	44	63	82	3	0	148	371
17:15	9	23	85	0	117	3	71	19	0	93	12	41	2	0	55	79	77	5	0	161	426
Total Volume	49	65	330	0	444	7	267	66	0	340	53	140	21	0	214	278	309	13	0	600	1598
% App Total	11.0%	14.6%	74.3%	0.0%		2.1%	78.5%	19.4%	0.0%		24.8%	65.4%	9.8%	0.0%		46.3%	51.5%	2.2%	0.0%		
PHF	.766	.707	.971	.000	.949	.583	.878	.868	.000	.885	.779	.854	.656	.000	.922	.880	.942	.650	.000	.932	.938

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-003 41st Avenue-Portola Drive.ppd
Date : 10/16/2014

Bank 1 Count = Peds & Bikes

	41st Avenue Southbound					Portola Drive Westbound					41st Avenue Northbound					Portola Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Ped Total
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	1	1
06:30	0	0	0	0	0	0	1	0	2	1	0	0	0	1	0	0	0	0	1	0	1	4
06:45	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	0	0	1	2	1
Total	0	0	0	0	0	0	2	0	3	2	0	1	0	1	1	1	0	0	2	1	4	6
07:00	0	0	0	1	0	0	0	0	1	0	0	1	0	1	1	0	0	0	1	0	1	4
07:15	0	2	0	0	2	0	2	0	2	2	0	0	0	2	0	0	1	0	0	1	5	4
07:30	0	1	0	1	1	0	2	0	1	2	0	1	0	1	1	0	3	0	0	3	7	3
07:45	0	0	0	2	0	0	2	0	3	2	0	0	0	2	0	1	4	1	1	6	8	8
Total	0	3	0	4	3	0	6	0	7	6	0	2	0	6	2	1	8	1	2	10	21	19
16:30	0	2	3	11	5	0	2	0	8	2	1	0	0	5	1	3	2	0	7	5	13	31
16:45	2	2	0	7	4	0	2	0	16	2	0	1	0	9	1	0	1	0	4	1	8	36
17:00	1	3	3	1	7	0	0	1	8	1	1	3	0	5	4	0	1	0	1	1	13	15
17:15	0	1	6	5	7	0	5	0	14	5	2	0	0	4	2	0	0	2	7	2	16	30
Total	3	8	12	24	23	0	9	1	46	10	4	4	0	23	8	3	4	2	19	9	50	112
17:30	0	5	1	4	6	1	1	0	12	2	0	2	1	3	3	0	0	0	2	0	11	21
17:45	0	1	0	3	1	3	5	1	5	9	1	1	2	9	4	1	2	0	10	3	17	27
18:00	0	2	0	2	2	0	0	0	14	0	0	1	0	5	1	0	3	0	5	3	6	26
18:15	0	5	0	2	5	0	0	0	9	0	0	1	0	4	1	0	1	1	9	2	8	24
Total	0	13	1	11	14	4	6	1	40	11	1	5	3	21	9	1	6	1	26	8	42	98
Grand Total	3	24	13	39	40	4	23	2	96	29	5	12	3	51	20	6	18	4	49	28	117	235
Apprch %	7.5%	60.0%	32.5%			13.8%	79.3%	6.9%			25.0%	60.0%	15.0%			21.4%	64.3%	14.3%				
Total %	2.6%	20.5%	11.1%		34.2%	3.4%	19.7%	1.7%		24.8%	4.3%	10.3%	2.6%		17.1%	5.1%	15.4%	3.4%		23.9%	100.0%	

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-003 41st Avenue-Portola Drive.ppd
Date : 10/16/2014

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	41st Avenue Southbound					Portola Drive Westbound					41st Avenue Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
07:00	0	0	0	1	0	0	0	0	1	0	0	1	0	1	1	0	0	0	1	0	1
07:15	0	2	0	0	2	0	2	0	2	2	0	0	0	2	0	0	1	0	0	1	5
07:30	0	1	0	1	1	0	2	0	1	2	0	1	0	1	1	0	3	0	0	3	7
07:45	0	0	0	2	0	0	2	0	3	2	0	0	0	2	0	1	4	1	1	6	8
Total Volume	0	3	0	4	3	0	6	0	7	6	0	2	0	6	2	1	8	1	2	10	21
% App Total	0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			10.0%	80.0%	10.0%			
PHF	.000	.375	.000		.375	.000	.750	.000		.750	.000	.500	.000		.500	.250	.500	.250		.417	.656

PM PEAK HOUR	41st Avenue Southbound					Portola Drive Westbound					41st Avenue Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	2	3	11	5	0	2	0	8	2	1	0	0	5	1	3	2	0	7	5	13
16:45	2	2	0	7	4	0	2	0	16	2	0	1	0	9	1	0	1	0	4	1	8
17:00	1	3	3	1	7	0	0	1	8	1	1	3	0	5	4	0	1	0	1	1	13
17:15	0	1	6	5	7	0	5	0	14	5	2	0	0	4	2	0	0	2	7	2	16
Total Volume	3	8	12	24	23	0	9	1	46	10	4	4	0	23	8	3	4	2	19	9	50
% App Total	13.0%	34.8%	52.2%			0.0%	90.0%	10.0%			50.0%	50.0%	0.0%			33.3%	44.4%	22.2%			
PHF	.375	.667	.500		.821	.000	.450	.250		.500	.500	.333	.000		.500	.250	.500	.250		.450	.781

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-002 38th Avenue-Potrola Drive.ppd
Date : 10/16/2014

Unshifted Count = All Vehicles

	38th Avenue Southbound					Portola Drive Westbound					38th Avenue Northbound					Portola Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
06:00	3	0	0	0	3	0	19	3	0	22	1	4	5	0	10	5	22	0	0	27	62	0
06:15	0	0	8	0	8	0	15	0	0	15	4	1	1	0	6	3	28	1	0	32	61	0
06:30	3	0	4	0	7	1	39	6	0	46	2	5	2	0	9	6	39	1	0	46	108	0
06:45	3	0	9	0	12	2	47	6	0	55	2	6	2	0	10	9	33	0	0	42	119	0
Total	9	0	21	0	30	3	120	15	0	138	9	16	10	0	35	23	122	2	0	147	350	0
07:00	4	1	9	0	14	2	57	4	0	63	2	3	4	0	9	16	54	0	0	70	156	0
07:15	4	1	11	0	16	1	62	3	0	66	4	7	5	0	16	12	66	1	0	79	177	0
07:30	10	2	15	0	27	1	83	5	0	89	6	8	4	0	18	15	84	0	0	99	233	0
07:45	11	3	32	0	46	6	90	7	0	103	5	7	4	0	16	15	107	0	0	122	287	0
Total	29	7	67	0	103	10	292	19	0	321	17	25	17	0	59	58	311	1	0	370	853	0
16:30	14	13	45	0	72	11	136	11	0	158	6	13	9	0	28	24	127	2	0	153	411	0
16:45	4	5	27	0	36	10	145	7	0	162	8	8	4	0	20	26	133	9	0	168	386	0
17:00	12	5	29	0	46	8	121	7	0	136	9	9	4	0	22	28	140	3	0	171	375	0
17:15	6	8	35	0	49	9	155	13	0	177	5	4	2	0	11	28	137	5	0	170	407	0
Total	36	31	136	0	203	38	557	38	0	633	28	34	19	0	81	106	537	19	0	662	1579	0
17:30	6	9	19	0	34	1	117	9	0	127	3	11	1	0	15	17	105	5	0	127	303	0
17:45	3	7	22	0	32	9	103	7	0	119	5	3	2	0	10	24	94	4	0	122	283	0
18:00	10	6	28	0	44	7	116	9	0	132	4	4	8	0	16	21	92	3	0	116	308	0
18:15	7	1	33	0	41	8	102	6	0	116	4	10	1	0	15	28	78	2	0	108	280	0
Total	26	23	102	0	151	25	438	31	0	494	16	28	12	0	56	90	369	14	0	473	1174	0
Grand Total	100	61	326	0	487	76	1407	103	0	1586	70	103	58	0	231	277	1339	36	0	1652	3956	0
Apprch %	20.5%	12.5%	66.9%	0.0%		4.8%	88.7%	6.5%	0.0%		30.3%	44.6%	25.1%	0.0%		16.8%	81.1%	2.2%	0.0%			
Total %	2.5%	1.5%	8.2%	0.0%	12.3%	1.9%	35.6%	2.6%	0.0%	40.1%	1.8%	2.6%	1.5%	0.0%	5.8%	7.0%	33.8%	0.9%	0.0%	41.8%	100.0%	

ALL TRAFFIC DATA

(916) 771-8700
orders@atdtraffic.com

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

File Name : 14-7679-002 38th Avenue-Potrola Drive.ppd
Date : 10/16/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	38th Avenue Southbound					Portola Drive Westbound					38th Avenue Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
07:00	4	1	9	0	14	2	57	4	0	63	2	3	4	0	9	16	54	0	0	70	156
07:15	4	1	11	0	16	1	62	3	0	66	4	7	5	0	16	12	66	1	0	79	177
07:30	10	2	15	0	27	1	83	5	0	89	6	8	4	0	18	15	84	0	0	99	233
07:45	11	3	32	0	46	6	90	7	0	103	5	7	4	0	16	15	107	0	0	122	287
Total Volume	29	7	67	0	103	10	292	19	0	321	17	25	17	0	59	58	311	1	0	370	853
% App Total	28.2%	6.8%	65.0%	0.0%		3.1%	91.0%	5.9%	0.0%		28.8%	42.4%	28.8%	0.0%		15.7%	84.1%	0.3%	0.0%		
PHF	.659	.583	.523	.000	.560	.417	.811	.679	.000	.779	.708	.781	.850	.000	.819	.906	.727	.250	.000	.758	.743

PM PEAK HOUR	38th Avenue Southbound					Portola Drive Westbound					38th Avenue Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	14	13	45	0	72	11	136	11	0	158	6	13	9	0	28	24	127	2	0	153	411
16:45	4	5	27	0	36	10	145	7	0	162	8	8	4	0	20	26	133	9	0	168	386
17:00	12	5	29	0	46	8	121	7	0	136	9	9	4	0	22	28	140	3	0	171	375
17:15	6	8	35	0	49	9	155	13	0	177	5	4	2	0	11	28	137	5	0	170	407
Total Volume	36	31	136	0	203	38	557	38	0	633	28	34	19	0	81	106	537	19	0	662	1579
% App Total	17.7%	15.3%	67.0%	0.0%		6.0%	88.0%	6.0%	0.0%		34.6%	42.0%	23.5%	0.0%		16.0%	81.1%	2.9%	0.0%		
PHF	.643	.596	.756	.000	.705	.864	.898	.731	.000	.894	.778	.654	.528	.000	.723	.946	.959	.528	.000	.968	.960

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-002 38th Avenue-Potrola Drive.ppd
Date : 10/16/2014

Bank 1 Count = Peds & Bikes

	38th Avenue Southbound					Portola Drive Westbound					38th Avenue Northbound					Portola Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Ped Total
06:00	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	3
06:15	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
06:30	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
06:45	0	0	0	1	0	0	1	0	0	1	0	0	0	2	0	0	0	0	1	0	1	4
Total	0	0	0	5	0	0	2	0	0	2	0	0	0	2	0	0	1	0	2	1	3	9
07:00	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	1	1	3	1
07:15	0	1	0	1	1	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	3	2
07:30	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6	0
07:45	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	9	0
Total	0	1	0	1	1	0	8	0	0	8	0	1	0	1	1	0	11	0	1	11	21	3
16:30	2	0	0	3	2	0	8	0	3	8	0	2	0	2	2	0	3	0	2	3	15	10
16:45	0	1	1	1	2	0	2	1	1	3	0	2	0	1	2	0	2	0	5	2	9	8
17:00	0	4	0	0	4	0	3	1	0	4	0	3	0	4	3	0	3	0	2	3	14	6
17:15	1	3	0	3	4	0	11	2	3	13	1	4	0	1	5	0	2	0	8	2	24	15
Total	3	8	1	7	12	0	24	4	7	28	1	11	0	8	12	0	10	0	17	10	62	39
17:30	0	0	0	4	0	0	3	0	0	3	1	0	0	3	1	0	2	1	4	3	7	11
17:45	0	0	0	1	0	0	6	0	0	6	0	1	0	2	1	0	3	0	8	3	10	11
18:00	2	0	2	0	4	0	3	0	0	3	3	0	0	2	3	0	1	1	10	2	12	12
18:15	1	1	0	4	2	0	0	1	0	1	0	0	0	4	0	0	1	1	8	2	5	16
Total	3	1	2	9	6	0	12	1	0	13	4	1	0	11	5	0	7	3	30	10	34	50
Grand Total	6	10	3	22	19	0	46	5	7	51	5	13	0	22	18	0	29	3	50	32	120	101
Apprch %	31.6%	52.6%	15.8%			0.0%	90.2%	9.8%			27.8%	72.2%	0.0%			0.0%	90.6%	9.4%				
Total %	5.0%	8.3%	2.5%		15.8%	0.0%	38.3%	4.2%		42.5%	4.2%	10.8%	0.0%		15.0%	0.0%	24.2%	2.5%		26.7%	100.0%	

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-002 38th Avenue-Potrola Drive.ppd
Date : 10/16/2014

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	38th Avenue Southbound					Portola Drive Westbound					38th Avenue Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
07:00	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	1	1	3
07:15	0	1	0	1	1	0	2	0	0	2	0	0	0	1	0	0	0	0	0	0	3
07:30	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
07:45	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	9
Total Volume	0	1	0	1	1	0	8	0	0	8	0	1	0	1	1	0	11	0	1	11	21
% App Total	0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.000	.250	.000		.250	.000	.667	.000		.667	.000	.250	.000		.250	.000	.458	.000		.458	.583

PM PEAK HOUR	38th Avenue Southbound					Portola Drive Westbound					38th Avenue Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	2	0	0	3	2	0	8	0	3	8	0	2	0	2	2	0	3	0	2	3	15
16:45	0	1	1	1	2	0	2	1	1	3	0	2	0	1	2	0	2	0	5	2	9
17:00	0	4	0	0	4	0	3	1	0	4	0	3	0	4	3	0	3	0	2	3	14
17:15	1	3	0	3	4	0	11	2	3	13	1	4	0	1	5	0	2	0	8	2	24
Total Volume	3	8	1	7	12	0	24	4	7	28	1	11	0	8	12	0	10	0	17	10	62
% App Total	25.0%	66.7%	8.3%			0.0%	85.7%	14.3%			8.3%	91.7%	0.0%			0.0%	100.0%	0.0%			
PHF	.375	.500	.250		.750	.000	.545	.500		.538	.250	.688	.000		.600	.000	.833	.000		.833	.646

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

Counts taken by Kimley-Horn & Associates

File Name : KHA_PortolaDr./30th Ave
Date : 10/29 (PM) 10/30 (AM)

Unshifted Count = All Vehicles

	30th Avenue Southbound					Portola Drive Westbound					Samuel Street (driveway) Northbound					Portola Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Utum Total
06:45	1	0	15	0	16	1	46	5	0	52	0	0	1	0	1	6	38	0	0	44	113	0
07:00	6	0	8	0	14	0	54	4	0	58	0	1	0	0	1	3	58	1	0	62	135	0
07:15	9	0	6	0	15	0	42	4	0	46	0	0	1	0	1	9	5	0	0	14	76	0
07:30	9	0	18	0	27	0	105	15	0	120	0	0	0	0	0	8	64	0	0	72	219	0
Total	25	0	47	0	72	1	247	28	0	276	0	1	2	0	3	26	165	1	0	192	543	0
07:00	6	0	8	0	14	0	54	4	0	58	0	1	0	0	1	3	58	1	0	62	135	0
07:15	9	0	6	0	15	0	42	4	0	46	0	0	1	0	1	9	5	0	0	14	76	0
07:30	9	0	18	0	27	0	105	15	0	120	0	0	0	0	0	8	64	0	0	72	219	0
07:45	7	0	21	0	28	0	133	14	0	147	0	0	0	0	0	19	109	0	0	128	303	0
Total	31	0	53	0	84	0	334	37	0	371	0	1	1	0	2	39	236	1	0	276	733	0
07:15	9	0	6	0	15	0	42	4	0	46	0	0	1	0	1	9	5	0	0	14	76	0
07:30	9	0	18	0	27	0	105	15	0	120	0	0	0	0	0	8	64	0	0	72	219	0
07:45	7	0	21	0	28	0	133	14	0	147	0	0	0	0	0	19	109	0	0	128	303	0
08:00	15	0	53	0	68	1	153	14	0	168	1	0	2	0	3	22	84	0	0	106	345	0
Total	40	0	98	0	138	1	433	47	0	481	1	0	3	0	4	58	262	0	0	320	943	0
16:15	27	2	49	0	78	2	84	17	0	103	0	0	0	0	0	29	84	0	0	113	294	0
16:30	23	0	53	0	76	3	136	12	0	151	0	0	0	0	0	33	104	0	0	137	364	0
16:45	21	0	55	0	76	0	118	22	0	140	0	0	0	0	0	45	126	0	0	171	387	0
17:00	31	0	37	0	68	0	122	19	0	141	0	0	0	0	0	20	134	0	0	154	363	0
Total	102	2	194	0	298	5	460	70	0	535	0	0	0	0	0	127	448	0	0	575	1408	0
16:30	23	0	53	0	76	3	136	12	0	151	0	0	0	0	0	33	104	0	0	137	364	0
16:45	21	0	55	0	76	0	118	22	0	140	0	0	0	0	0	45	126	0	0	171	387	0
17:00	31	0	37	0	68	0	122	19	0	141	0	0	0	0	0	20	134	0	0	154	363	0
17:15	22	0	48	0	70	0	135	11	0	146	0	0	0	0	0	39	140	0	0	179	395	0
Total	97	0	193	0	290	3	511	64	0	578	0	0	0	0	0	137	504	0	0	641	1509	0
16:45	21	0	55	0	76	0	118	22	0	140	0	0	0	0	0	45	126	0	0	171	387	0
17:00	31	0	37	0	68	0	122	19	0	141	0	0	0	0	0	20	134	0	0	154	363	0
17:15	22	0	48	0	70	0	135	11	0	146	0	0	0	0	0	39	140	0	0	179	395	0
17:30	18	0	45	0	63	0	112	18	0	130	0	2	0	0	2	44	150	0	0	194	389	0
Total	92	0	185	0	277	0	487	70	0	557	0	2	0	0	2	148	550	0	0	698	1534	0
Grand Total	387	2	770	0	1159	10	2472	316	0	2798	1	4	6	0	11	535	2165	2	0	2702	6670	0
Apprch %	33.4%	0.2%	66.4%	0.0%		0.4%	88.3%	11.3%	0.0%		9.1%	36.4%	54.5%	0.0%		19.8%	80.1%	0.1%	0.0%			
Total %	5.8%	0.0%	11.5%	0.0%	17.4%	0.1%	37.1%	4.7%	0.0%	41.9%	0.0%	0.1%	0.1%	0.0%	0.2%	8.0%	32.5%	0.0%	0.0%	40.5%	100.0%	

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

Counts taken by Kimley-Horn & Associates

File Name : KHA_PortolaDr./30th Ave
Date : 10/29 (PM) 10/30 (AM)

Unshifted Count = All Vehicles

AM PEAK HOUR	30th Avenue Southbound					Portola Drive Westbound					Samuel Street (driveway) Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	9	0	6	0	15	0	42	4	0	46	0	0	1	0	1	9	5	0	0	14	76
07:30	9	0	18	0	27	0	105	15	0	120	0	0	0	0	0	8	64	0	0	72	219
07:45	7	0	21	0	28	0	133	14	0	147	0	0	0	0	0	19	109	0	0	128	303
08:00	15	0	53	0	68	1	153	14	0	168	1	0	2	0	3	22	84	0	0	106	345
Total Volume	40	0	98	0	138	1	433	47	0	481	1	0	3	0	4	58	262	0	0	320	943
% App Total	29.0%	0.0%	71.0%	0.0%		0.2%	90.0%	9.8%	0.0%		25.0%	0.0%	75.0%	0.0%		18.1%	81.9%	0.0%	0.0%		
PHF	.667	.000	.462	.000	.507	.250	.708	.783	.000	.716	.250	.000	.375	.000	.333	.659	.601	.000	.000	.625	.683

PM PEAK HOUR	30th Avenue Southbound					Portola Drive Westbound					Samuel Street (driveway) Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	21	0	55	0	76	0	118	22	0	140	0	0	0	0	0	45	126	0	0	171	387
17:00	31	0	37	0	68	0	122	19	0	141	0	0	0	0	0	20	134	0	0	154	363
17:15	22	0	48	0	70	0	135	11	0	146	0	0	0	0	0	39	140	0	0	179	395
17:30	18	0	45	0	63	0	112	18	0	130	0	2	0	0	2	44	150	0	0	194	389
Total Volume	92	0	185	0	277	0	487	70	0	557	0	2	0	0	2	148	550	0	0	698	1534
% App Total	33.2%	0.0%	66.8%	0.0%		0.0%	87.4%	12.6%	0.0%		0.0%	100.0%	0.0%	0.0%		21.2%	78.8%	0.0%	0.0%		
PHF	.742	.000	.841	.000	.911	.000	.902	.795	.000	.954	.000	.250	.000	.000	.250	.822	.917	.000	.000	.899	.971

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-001 30th Avenue-Portola Drive.ppd
Date : 10/29/2014

Bank 1 Count = Peds & Bikes

	30th Ave Southbound					Portola Drive Westbound					Samuel St. Northbound					Portola Drive Eastbound						
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total	Ped Total
06:45	0	0	0	4	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3	4
07:00	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15	0	0	0	9	0	0	2	1	0	3	0	0	0	0	0	0	2	0	2	2	5	11
07:30	1	0	0	3	1	0	1	1	0	2	0	1	0	1	1	0	1	0	0	1	5	4
Total	1	0	0	18	1	0	6	2	1	8	0	1	0	1	1	0	3	0	2	3	13	22
07:00	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3
07:15	0	0	0	9	0	0	2	1	0	3	0	0	0	0	0	0	2	0	2	2	5	11
07:30	1	0	0	3	1	0	1	1	0	2	0	1	0	1	1	0	1	0	0	1	5	4
07:45	0	0	2	17	2	0	4	0	0	4	0	0	0	0	0	0	3	0	6	3	9	23
Total	1	0	2	31	3	0	7	2	1	9	0	1	0	1	1	0	6	0	8	6	19	41
07:15	0	0	0	9	0	0	2	1	0	3	0	0	0	0	0	0	2	0	2	2	5	11
07:30	1	0	0	3	1	0	1	1	0	2	0	1	0	1	1	0	1	0	0	1	5	4
07:45	0	0	2	17	2	0	4	0	0	4	0	0	0	0	0	0	3	0	6	3	9	23
08:00	0	0	0	2	0	0	2	0	2	2	0	0	0	0	0	0	0	0	3	0	2	7
Total	1	0	2	31	3	0	9	2	2	11	0	1	0	1	1	0	6	0	11	6	21	45
16:15	0	0	0	0	0	0	3	2	0	5	0	0	0	0	0	0	4	0	0	4	9	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
16:45	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	7	0	0	7	7	4
17:00	0	0	1	4	1	0	0	0	0	0	1	0	0	0	1	2	0	0	3	2	4	7
Total	0	0	1	4	1	0	3	2	4	5	1	0	0	0	1	2	11	0	8	13	20	16
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
16:45	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	7	0	0	7	7	4
17:00	0	0	1	4	1	0	0	0	0	0	1	0	0	0	1	2	0	0	3	2	4	7
17:15	2	0	0	0	2	0	5	0	3	5	0	1	0	0	1	0	2	0	6	2	10	9
Total	2	0	1	4	3	0	5	0	7	5	1	1	0	0	2	2	9	0	14	11	21	25
16:45	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	7	0	0	7	7	4
17:00	0	0	1	4	1	0	0	0	0	0	1	0	0	0	1	2	0	0	3	2	4	7
17:15	2	0	0	0	2	0	5	0	3	5	0	1	0	0	1	0	2	0	6	2	10	9
17:30	0	1	2	0	3	0	1	0	0	1	0	0	0	1	0	0	5	0	4	5	9	5
Total	2	1	3	4	6	0	6	0	7	6	1	1	0	1	2	2	14	0	13	16	30	25
Grand Total	7	1	9	92	17	0	36	8	22	44	3	5	0	4	8	6	49	0	56	55	124	174
Apprch %	41.2%	5.9%	52.9%			0.0%	81.8%	18.2%			37.5%	62.5%	0.0%			10.9%	89.1%	0.0%				
Total %	5.6%	0.8%	7.3%		13.7%	0.0%	29.0%	6.5%		35.5%	2.4%	4.0%	0.0%		6.5%	4.8%	39.5%	0.0%		44.4%	100.0%	

ALL TRAFFIC DATA

City of Santa Cruz
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Nothing on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7679-001 30th Avenue-Portola Drive.ppd
Date : 10/29/2014

Bank 1 Count = Peds & Bikes

AM PEAK HOUR	30th Ave Southbound					Portola Drive Westbound					Samuel St. Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 07:15 to 08:15																					
Peak Hour For Entire Intersection Begins at 07:15																					
07:15	0	0	0	9	0	0	2	1	0	3	0	0	0	0	0	0	2	0	2	2	5
07:30	1	0	0	3	1	0	1	1	0	2	0	1	0	1	1	0	1	0	0	1	5
07:45	0	0	2	17	2	0	4	0	0	4	0	0	0	0	0	0	3	0	6	3	9
08:00	0	0	0	2	0	0	2	0	2	2	0	0	0	0	0	0	0	0	3	0	2
Total Volume	1	0	2	31	3	0	9	2	2	11	0	1	0	1	1	0	6	0	11	6	21
% App Total	33.3%	0.0%	66.7%			0.0%	81.8%	18.2%			0.0%	100.0%	0.0%			0.0%	100.0%	0.0%			
PHF	.250	.000	.250		.375	.000	.563	.500		.688	.000	.250	.000		.250	.000	.500	.000		.500	.583

PM PEAK HOUR	30th Ave Southbound					Portola Drive Westbound					Samuel St. Northbound					Portola Drive Eastbound					
START TIME	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	LEFT	THRU	RIGHT	PEDS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	7	0	0	7	7
17:00	0	0	1	4	1	0	0	0	0	0	1	0	0	0	1	2	0	0	3	2	4
17:15	2	0	0	0	2	0	5	0	3	5	0	1	0	0	1	0	2	0	6	2	10
17:30	0	1	2	0	3	0	1	0	0	1	0	0	0	1	0	0	5	0	4	5	9
Total Volume	2	1	3	4	6	0	6	0	7	6	1	1	0	1	2	2	14	0	13	16	30
% App Total	33.3%	16.7%	50.0%			0.0%	100.0%	0.0%			50.0%	50.0%	0.0%			12.5%	87.5%	0.0%			
PHF	.250	.250	.375		.500	.000	.300	.000		.300	.250	.250	.000		.500	.250	.500	.000		.571	.750

B: TRIP GENERATION MEMO – MARQUEZ TRANSPORTATION ENGINEERING

Marquez Transportation Engineering

July 17, 2014

John Swift
Hamilton Swift and Associates
500 Chestnut Street Suite 100
Santa Cruz, CA 95060

Re: Portola Dr and 38th Avenue Project Trip Generation

Dear John:

This letter documents my findings and conclusions for trip generation study for the proposed mixed use project at the intersection of Portola Drive and 38th Avenue in the Live Oak Area of Santa Cruz County. The objective of this analysis is to estimate the trip generation for the new project and that of the pre-project use on the site. The trip generation estimated will be used to identify the number of trips to the respective access points to the proposal for both AM and PM peak hour periods.

Trip Generation Previous Use

The previous use of the site was a lumber yard with a total site are of approximately 30,500 square feet and a building of 13, 900 square feet. For purposes of estimating the trip generation for this facility Land Use Code 812 for Building Materials and Lumber Store from the Institute of Transportation Engineers "Trip Generation" 9th Edition was used. The average weekday trip generation rate for this land use is 45.16 trips per day per 1,000 square feet of gross floor area. The am peak hour rate is 2.60 trips per hour. The pm peak hour rate is 4.49 trips per hour. The peak hour time periods analyzed are from between 7 and 9 am and between 4 and 6 pm. Using these trip rates the previous use of the site generated 628 trips per day, 36 trips during the am peak and 62 trips during the pm peak hour.

Trip Generation Proposed Use

For purposes of estimating the trip generation for the proposed project the following general breakdown of uses was assumed;

- 3200 square feet of food service uses such as coffee house, craft beer, wine bar, ice cream shop or restaurant uses
- 3200 square feet of retail non food service uses such as clothing/skin care products, art gallery, retail food related use such as candy or chocolate shop, butcher shop, wine shop, flower shop, fruit and vegetable stand.
- 3200 square feet of office and service commercial such beauty salon, computer repair, or pet grooming.
- Eight residential condominium units of two bedrooms each.

Once again the Institute of Transportation Engineers reference mentioned above was used to estimate the trip generation for each use. For the food service category restaurant use rates were used (Land Use 932). For the retail non food service use the land use category of specialty retail (Land Use 826) was used. And single

970 Clubhouse Drive, Aptos, Ca, 95003 831.688.4500 cell 831.566.8728

tenant office use (Land Use 715) rate was used for the office and service commercial category. These land use categories should provide a conservatively high estimate of the trip generation potential for the site. Potential trip generation could be less depending on the specific uses finally identified for the site. The residential units were evaluated as low rise residential condo/townhouses (Land Use 231). The daily trip generation rate for condominiums was extrapolated to be proportional with single family units.

A mixed use development provides opportunities for reduced trip generation due to internal trip capture. Internal trips are made from uses within the site to other uses within the site. Internal trip capture would reduce trips for office uses and residential uses. From the "Trip Generation Handbook" Second Edition an estimated 11% of these trips could be reduced. Another opportunity for trip reduction comes from linked trips or trips made to more than one use at the site with a single stop. The non residential trip generation may be reduced by 25% for these linked trips. For this analysis only the specialty retail and office uses were reduced. Finally pass by trips or trips attracted to the site that are currently on the road will reduce the estimate of new trips primarily for the food service commercial. The average pass-by percentage rate for a restaurant is 6.4% per 1,000 square feet of gross floor area. This reduction will apply only to the food service commercial uses proposed for the site.

The following table presents the trip generation estimated for the subject site.

	Size	Units	Daily Trip Rate	Daily Trips	AM Peak Hr Rate	AM Trips	PM Peak HR Rate	PM trips	Internal Trip Reduction	Linked Trip Reduction	Pass-by Trip Reduction	Adjusted Daily Trips	Adjusted AM Trips	Adjusted PM Trips
Pre-Project Use														
Lumber Yard	13,900	k sq. ft.	45.16	628	2.6	36	4.49	62	0%	0%	0%	628	36	**62**
Proposed Project Uses														
Food Service Commercial	3200	k sq. ft.	127.5	408	10.81	35	9.85	32	0%	0%	20%	324	28	25
Non Food Retail	3200	k sq. ft.	44.32	142	2	6	2.71	9	0%	25%	0%	106	5	7
Office Service Commercial	3200	k sq. ft.	11.65	37	1.8	6	1.74	6	11%	25%	0%	24	4	4
Residential Condominuims	8	d.u.	7.4	59	0.67	5	0.78	6	11%	0%	0%	53	5	6
Totals for Project				**646**		**52**		**52**				**507**	**41**	**41**

Based on this analysis the daily trip generation and pm peak hour trip generation would be less than the pre-project use. Assuming the access points are used equally approximately 11 trips in and 10 trips out would use each of the driveways to the site in the morning and evening peak hours.

Let me know if you have any questions.

Sincerely,

Ron Marquez, P.E

C: EXISTING TRAFFIC CONDITIONS ANALYSIS SHEETS

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	199	155	8	3	182	48	24	68	5	21	25	112
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	262	204	11	4	239	63	32	89	7	28	33	147
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	14.1	16.3	12.7	11.2
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	25%	100%	0%	1%	46%	0%
Vol Thru, %	70%	0%	95%	78%	54%	0%
Vol Right, %	5%	0%	5%	21%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	199	163	233	46	112
LT Vol	68	0	155	182	25	0
Through Vol	5	0	8	48	0	112
RT Vol	24	199	0	3	21	0
Lane Flow Rate	128	262	214	307	61	147
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.255	0.483	0.363	0.533	0.122	0.258
Departure Headway (Hd)	7.187	6.641	6.099	6.264	7.246	6.297
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	496	539	588	573	492	567
Service Time	5.276	4.408	3.866	4.333	5.027	4.078
HCM Lane V/C Ratio	0.258	0.486	0.364	0.536	0.124	0.259
HCM Control Delay	12.7	15.5	12.3	16.3	11	11.3
HCM Lane LOS	B	C	B	C	B	B
HCM 95th-tile Q	1	2.6	1.7	3.1	0.4	1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	58	311	1	10	292	19	17	25	17	29	7	67
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	420	1	14	395	26	23	34	23	39	9	91
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	12.9	11.7	10.4	10.7
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	29%	27%	0%	6%	0%	28%
Vol Thru, %	42%	73%	99%	94%	88%	7%
Vol Right, %	29%	0%	1%	0%	12%	65%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	59	214	157	156	165	103
LT Vol	25	156	156	146	146	7
Through Vol	17	0	1	0	19	67
RT Vol	17	58	0	10	0	29
Lane Flow Rate	80	289	211	211	223	139
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.139	0.474	0.339	0.345	0.358	0.229
Departure Headway (Hd)	6.29	5.917	5.775	5.9	5.786	5.915
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	568	609	622	609	622	605
Service Time	4.343	3.654	3.512	3.639	3.525	3.962
HCM Lane V/C Ratio	0.141	0.475	0.339	0.346	0.359	0.23
HCM Control Delay	10.4	13.9	11.5	11.7	11.7	10.7
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	0.5	2.5	1.5	1.5	1.6	0.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	14.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	58	262	0	1	433	47	1	0	3	40	0	98
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	385	0	1	637	69	1	0	4	59	0	144
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13.2	16.1	9.7	12.1
HCM LOS	B	C	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	25%	40%	0%	0%	0%	29%
Vol Thru, %	0%	60%	100%	100%	82%	0%
Vol Right, %	75%	0%	0%	0%	18%	71%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	145	175	218	264	138
LT Vol	0	87	175	217	217	0
Through Vol	3	0	0	0	47	98
RT Vol	1	58	0	1	0	40
Lane Flow Rate	6	214	257	320	388	203
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.011	0.374	0.435	0.519	0.615	0.339
Departure Headway (Hd)	6.609	6.298	6.096	5.839	5.71	6.01
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	539	571	591	617	632	599
Service Time	4.675	4.044	3.842	3.578	3.449	4.052
HCM Lane V/C Ratio	0.011	0.375	0.435	0.519	0.614	0.339
HCM Control Delay	9.7	12.8	13.5	14.7	17.2	12.1
HCM Lane LOS	A	B	B	B	C	B
HCM 95th-tile Q	0	1.7	2.2	3	4.2	1.5

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	36.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	278	309	13	7	267	66	53	140	21	49	65	330
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	296	329	14	7	284	70	56	149	22	52	69	351
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	36.2	49.8	26.5	30
HCM LOS	E	E	D	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	25%	100%	0%	2%	43%	0%
Vol Thru, %	65%	0%	96%	79%	57%	0%
Vol Right, %	10%	0%	4%	19%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	214	278	322	340	114	330
LT Vol	140	0	309	267	65	0
Through Vol	21	0	13	66	0	330
RT Vol	53	278	0	7	49	0
Lane Flow Rate	228	296	343	362	121	351
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.606	0.741	0.806	0.88	0.304	0.787
Departure Headway (Hd)	9.586	9.023	8.475	8.762	9.026	8.075
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	376	399	425	412	398	449
Service Time	7.664	6.795	6.247	6.829	6.787	5.836
HCM Lane V/C Ratio	0.606	0.742	0.807	0.879	0.304	0.782
HCM Control Delay	26.5	33.7	38.3	49.8	15.7	34.9
HCM Lane LOS	D	D	E	E	C	D
HCM 95th-tile Q	3.8	5.9	7.3	8.9	1.3	7

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	19.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	106	537	19	38	557	38	28	34	19	36	31	136
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	559	20	40	580	40	29	35	20	38	32	142
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	22.6	19.7	12.3	14.2
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	28%	0%	12%	0%	18%
Vol Thru, %	42%	72%	93%	88%	88%	15%
Vol Right, %	23%	0%	7%	0%	12%	67%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	375	288	317	317	203
LT Vol	34	269	269	279	279	31
Through Vol	19	0	19	0	38	136
RT Vol	28	106	0	38	0	36
Lane Flow Rate	84	390	299	330	330	211
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.179	0.74	0.552	0.623	0.609	0.394
Departure Headway (Hd)	7.616	6.831	6.639	6.798	6.651	6.836
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	473	531	545	534	544	531
Service Time	5.643	4.553	4.361	4.519	4.372	4.836
HCM Lane V/C Ratio	0.178	0.734	0.549	0.618	0.607	0.397
HCM Control Delay	12.3	26.6	17.3	20.1	19.2	14.2
HCM Lane LOS	B	D	C	C	C	B
HCM 95th-tile Q	0.6	6.3	3.3	4.2	4.1	1.9

Notes

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Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	148	550	0	0	487	70	2	0	0	92	0	185
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	153	567	0	0	502	72	2	0	0	95	0	191
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	20.4	16.8	11	15.5
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	45%	0%	0%	0%	33%
Vol Thru, %	0%	55%	100%	100%	70%	0%
Vol Right, %	0%	0%	0%	0%	30%	67%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	331	367	325	232	277
LT Vol	0	183	367	325	162	0
Through Vol	0	0	0	0	70	185
RT Vol	2	148	0	0	0	92
Lane Flow Rate	2	342	378	335	240	286
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.005	0.624	0.666	0.608	0.421	0.498
Departure Headway (Hd)	7.989	6.572	6.344	6.543	6.328	6.284
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	451	547	567	549	565	571
Service Time	5.989	4.338	4.11	4.314	4.098	4.34
HCM Lane V/C Ratio	0.004	0.625	0.667	0.61	0.425	0.501
HCM Control Delay	11	19.7	21	19	13.7	15.5
HCM Lane LOS	B	C	C	C	B	C
HCM 95th-tile Q	0	4.3	4.9	4	2.1	2.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

D: EXISTING PLUS PROJECT TRAFFIC CONDITIONS ANALYSIS SHEETS

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	201	157	9	3	183	48	24	68	5	21	25	113
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	264	207	12	4	241	63	32	89	7	28	33	149
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	14.3	16.5	12.8	11.2
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	25%	100%	0%	1%	46%	0%
Vol Thru, %	70%	0%	95%	78%	54%	0%
Vol Right, %	5%	0%	5%	21%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	201	166	234	46	113
LT Vol	68	0	157	183	25	0
Through Vol	5	0	9	48	0	113
RT Vol	24	201	0	3	21	0
Lane Flow Rate	128	264	218	308	61	149
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.256	0.489	0.37	0.537	0.122	0.261
Departure Headway (Hd)	7.21	6.652	6.106	6.28	7.267	6.318
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	495	540	585	573	491	565
Service Time	5.303	4.421	3.874	4.351	5.051	4.102
HCM Lane V/C Ratio	0.259	0.489	0.373	0.538	0.124	0.264
HCM Control Delay	12.8	15.7	12.5	16.5	11.1	11.3
HCM Lane LOS	B	C	B	C	B	B
HCM 95th-tile Q	1	2.7	1.7	3.2	0.4	1

Notes

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Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	58	312	4	12	295	19	21	26	21	29	7	67
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	422	5	16	399	26	28	35	28	39	9	91
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13.1	12	10.6	10.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	27%	0%	8%	0%	28%
Vol Thru, %	38%	73%	97%	92%	89%	7%
Vol Right, %	31%	0%	3%	0%	11%	65%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	214	160	160	167	103
LT Vol	26	156	156	148	148	7
Through Vol	21	0	4	0	19	67
RT Vol	21	58	0	12	0	29
Lane Flow Rate	92	289	216	216	225	139
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.161	0.481	0.35	0.357	0.366	0.231
Departure Headway (Hd)	6.322	5.982	5.827	5.969	5.85	5.986
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	566	602	616	601	614	599
Service Time	4.379	3.723	3.568	3.713	3.594	4.04
HCM Lane V/C Ratio	0.163	0.48	0.351	0.359	0.366	0.232
HCM Control Delay	10.6	14.2	11.7	12	12	10.8
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	0.6	2.6	1.6	1.6	1.7	0.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	58	264	0	1	436	48	1	0	3	41	0	98
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	388	0	1	641	71	1	0	4	60	0	144
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13.3	16.3	9.8	12.2
HCM LOS	B	C	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	25%	40%	0%	0%	0%	29%
Vol Thru, %	0%	60%	100%	100%	82%	0%
Vol Right, %	75%	0%	0%	0%	18%	71%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	146	176	219	266	139
LT Vol	0	88	176	218	218	0
Through Vol	3	0	0	0	48	98
RT Vol	1	58	0	1	0	41
Lane Flow Rate	6	215	259	322	391	204
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.011	0.377	0.439	0.523	0.622	0.342
Departure Headway (Hd)	6.632	6.314	6.113	5.851	5.721	6.028
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	538	569	588	615	630	597
Service Time	4.698	4.059	3.858	3.59	3.46	4.07
HCM Lane V/C Ratio	0.011	0.378	0.44	0.524	0.621	0.342
HCM Control Delay	9.8	12.9	13.6	14.9	17.5	12.2
HCM Lane LOS	A	B	B	B	C	B
HCM 95th-tile Q	0	1.7	2.2	3	4.3	1.5

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	9	59	0	5	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	10	64	0	5	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	94	64	0	0	64	0
Stage 1	64	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	906	1000	-	-	1538	-
Stage 1	959	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	903	1000	-	-	1538	-
Mov Capacity-2 Maneuver	903	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	990	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1.6
HCM LOS	A		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	989	1538	-
HCM Lane V/C Ratio	-	-	0.011	0.004	-
HCM Control Delay (s)	-	-	8.7	7.349	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.033	0.011	-

Notes

~ : Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	360	2	1	322	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	391	2	1	350	4	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	393	0	569	197
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	177	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	1162	-	452	811
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	836	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1162	-	452	811
Mov Capacity-2 Maneuver	-	-	-	-	452	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	835	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	-	-	1162	-
HCM Lane V/C Ratio	0.012	-	-	0.001	-
HCM Control Delay (s)	11.9	-	-	8.101	0
HCM Lane LOS	B			A	A
HCM 95th %tile Q(veh)	0.037	-	-	0.003	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	37.1
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	278	309	13	7	269	66	54	140	21	49	65	334
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	296	329	14	7	286	70	57	149	22	52	69	355
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	36.8	51.7	26.9	31.1
HCM LOS	E	F	D	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	25%	100%	0%	2%	43%	0%
Vol Thru, %	65%	0%	96%	79%	57%	0%
Vol Right, %	10%	0%	4%	19%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	278	322	342	114	334
LT Vol	140	0	309	269	65	0
Through Vol	21	0	13	66	0	334
RT Vol	54	278	0	7	49	0
Lane Flow Rate	229	296	343	364	121	355
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.612	0.745	0.811	0.89	0.305	0.8
Departure Headway (Hd)	9.635	9.071	8.522	8.803	9.057	8.106
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	373	399	425	411	397	448
Service Time	7.718	6.846	6.297	6.873	6.82	5.868
HCM Lane V/C Ratio	0.614	0.742	0.807	0.886	0.305	0.792
HCM Control Delay	26.9	34.2	39.1	51.7	15.8	36.3
HCM Lane LOS	D	D	E	F	C	E
HCM 95th-tile Q	3.9	5.9	7.4	9.2	1.3	7.2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	20.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	106	540	25	43	558	38	29	34	20	37	32	136
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	563	26	45	581	40	30	35	21	39	33	142
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	23.1	20.2	12.4	14.4
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	28%	0%	13%	0%	18%
Vol Thru, %	41%	72%	92%	87%	88%	16%
Vol Right, %	24%	0%	8%	0%	12%	66%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	376	295	322	317	205
LT Vol	34	270	270	279	279	32
Through Vol	20	0	25	0	38	136
RT Vol	29	106	0	43	0	37
Lane Flow Rate	86	392	307	335	330	214
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.184	0.747	0.569	0.638	0.614	0.4
Departure Headway (Hd)	7.655	6.87	6.665	6.846	6.692	6.876
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	470	529	544	530	542	527
Service Time	5.682	4.592	4.387	4.569	4.415	4.876
HCM Lane V/C Ratio	0.183	0.741	0.564	0.632	0.609	0.406
HCM Control Delay	12.4	27.2	17.8	20.9	19.5	14.4
HCM Lane LOS	B	D	C	C	C	B
HCM 95th-tile Q	0.7	6.4	3.5	4.5	4.1	1.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	18.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	148	555	0	0	487	70	2	0	0	94	0	185
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	153	572	0	0	502	72	2	0	0	97	0	191
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	20.7	16.9	11.1	15.6
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	44%	0%	0%	0%	34%
Vol Thru, %	0%	56%	100%	100%	70%	0%
Vol Right, %	0%	0%	0%	0%	30%	66%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	333	370	325	232	279
LT Vol	0	185	370	325	162	0
Through Vol	0	0	0	0	70	185
RT Vol	2	148	0	0	0	94
Lane Flow Rate	2	343	381	335	240	288
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.005	0.628	0.674	0.61	0.422	0.503
Departure Headway (Hd)	8.012	6.585	6.358	6.562	6.347	6.296
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	449	546	565	549	565	572
Service Time	6.012	4.351	4.124	4.334	4.119	4.352
HCM Lane V/C Ratio	0.004	0.628	0.674	0.61	0.425	0.503
HCM Control Delay	11.1	19.9	21.4	19.2	13.7	15.6
HCM Lane LOS	B	C	C	C	B	C
HCM 95th-tile Q	0	4.3	5.1	4.1	2.1	2.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	1	82	1	12	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	89	1	13	96

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	212	90	0	0	90	0
Stage 1	90	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	776	968	-	-	1505	-
Stage 1	934	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	769	968	-	-	1505	-
Mov Capacity-2 Maneuver	769	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.9
HCM LOS	A		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	968	1505	-
HCM Lane V/C Ratio	-	-	0.001	0.009	-
HCM Control Delay (s)	-	-	8.7	7.413	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.003	0.026	-

Notes

~: Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error: Computation Not Defined

Intersection	
Intersection Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	592	5	2	638	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	643	5	2	693	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	649	0	997	324
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	351	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	933	-	241	672
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	684	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	933	-	240	672
Mov Capacity-2 Maneuver	-	-	-	-	240	-
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	682	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.1
HCM LOS			C

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	240	-	-	933	-
HCM Lane V/C Ratio	0.005	-	-	0.002	-
HCM Control Delay (s)	20.1	-	-	8.868	0
HCM Lane LOS	C			A	A
HCM 95th %tile Q(veh)	0 014	-	-	0.007	-

Notes
~: Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error: Computation Not Defined

E: NEAR-TERM (2016) TRAFFIC CONDITIONS ANALYSIS SHEETS

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	200	157	8	3	184	48	24	68	5	21	25	113
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	263	207	11	4	242	63	32	89	7	28	33	149
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	14.2	16.5	12.8	11.2
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	25%	100%	0%	1%	46%	0%
Vol Thru, %	70%	0%	95%	78%	54%	0%
Vol Right, %	5%	0%	5%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	200	165	235	46	113
LT Vol	68	0	157	184	25	0
Through Vol	5	0	8	48	0	113
RT Vol	24	200	0	3	21	0
Lane Flow Rate	128	263	217	309	61	149
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.256	0.486	0.369	0.539	0.122	0.261
Departure Headway (Hd)	7.209	6.654	6.112	6.278	7.265	6.317
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	495	539	586	572	491	565
Service Time	5.302	4.423	3.88	4.348	5.049	4.1
HCM Lane V/C Ratio	0.259	0.488	0.37	0.54	0.124	0.264
HCM Control Delay	12.8	15.6	12.4	16.5	11.1	11.3
HCM Lane LOS	B	C	B	C	B	B
HCM 95th-tile Q	1	2.6	1.7	3.2	0.4	1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	58	315	1	10	296	19	17	25	17	29	7	68
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	426	1	14	400	26	23	34	23	39	9	92
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13	11.9	10.4	10.8
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	29%	27%	0%	6%	0%	28%
Vol Thru, %	42%	73%	99%	94%	89%	7%
Vol Right, %	29%	0%	1%	0%	11%	65%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	59	216	159	158	167	104
LT Vol	25	158	158	148	148	7
Through Vol	17	0	1	0	19	68
RT Vol	17	58	0	10	0	29
Lane Flow Rate	80	291	214	214	226	141
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.14	0.48	0.344	0.351	0.364	0.232
Departure Headway (Hd)	6.317	5.931	5.79	5.915	5.802	5.936
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	566	609	621	609	618	603
Service Time	4.374	3.671	3.53	3.657	3.544	3.985
HCM Lane V/C Ratio	0.141	0.478	0.345	0.351	0.366	0.234
HCM Control Delay	10.4	14.1	11.6	11.8	11.9	10.8
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	0.5	2.6	1.5	1.6	1.7	0.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	58	265	0	1	439	47	1	0	3	41	0	99
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	390	0	1	646	69	1	0	4	60	0	146
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13.3	16.4	9.8	12.2
HCM LOS	B	C	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	25%	40%	0%	0%	0%	29%
Vol Thru, %	0%	60%	100%	100%	82%	0%
Vol Right, %	75%	0%	0%	0%	18%	71%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	146	177	221	267	140
LT Vol	0	88	177	220	220	0
Through Vol	3	0	0	0	47	99
RT Vol	1	58	0	1	0	41
Lane Flow Rate	6	215	260	324	392	206
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.011	0.378	0.442	0.528	0.624	0.345
Departure Headway (Hd)	6.647	6.325	6.124	5.861	5.734	6.033
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	536	568	587	616	631	595
Service Time	4.713	4.072	3.87	3.601	3.473	4.076
HCM Lane V/C Ratio	0.011	0.379	0.443	0.526	0.621	0.346
HCM Control Delay	9.8	12.9	13.7	15	17.6	12.2
HCM Lane LOS	A	B	B	B	C	B
HCM 95th-tile Q	0	1.8	2.3	3.1	4.3	1.5

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	37.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	279	313	13	7	271	66	54	140	21	50	65	334
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	297	333	14	7	288	70	57	149	22	53	69	355
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	37.9	53	27.1	31.3
HCM LOS	E	F	D	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	25%	100%	0%	2%	43%	0%
Vol Thru, %	65%	0%	96%	79%	57%	0%
Vol Right, %	10%	0%	4%	19%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	215	279	326	344	115	334
LT Vol	140	0	313	271	65	0
Through Vol	21	0	13	66	0	334
RT Vol	54	279	0	7	50	0
Lane Flow Rate	229	297	347	366	122	355
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.614	0.75	0.823	0.897	0.309	0.802
Departure Headway (Hd)	9.669	9.093	8.546	8.824	9.084	8.13
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	373	398	423	410	395	444
Service Time	7.751	6.867	6.319	6.892	6.847	5.892
HCM Lane V/C Ratio	0.614	0.746	0.82	0.893	0.309	0.8
HCM Control Delay	27.1	34.7	40.6	53	15.9	36.6
HCM Lane LOS	D	D	E	F	C	E
HCM 95th-tile Q	3.9	6	7.6	9.4	1.3	7.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	106	544	19	38	564	38	28	34	19	36	31	138
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	567	20	40	588	40	29	35	20	38	32	144
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	22.6	20.1	12.3	14.3
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	28%	0%	12%	0%	18%
Vol Thru, %	42%	72%	93%	88%	88%	15%
Vol Right, %	23%	0%	7%	0%	12%	67%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	378	291	320	320	205
LT Vol	34	272	272	282	282	31
Through Vol	19	0	19	0	38	138
RT Vol	28	106	0	38	0	36
Lane Flow Rate	84	394	303	333	333	214
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.179	0.739	0.553	0.632	0.618	0.399
Departure Headway (Hd)	7.653	6.876	6.687	6.823	6.677	6.844
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	471	528	543	533	543	530
Service Time	5.667	4.576	4.387	4.529	4.384	4.844
HCM Lane V/C Ratio	0.178	0.746	0.558	0.625	0.613	0.404
HCM Control Delay	12.3	26.6	17.3	20.5	19.6	14.3
HCM Lane LOS	B	D	C	C	C	B
HCM 95th-tile Q	0.6	6.2	3.3	4.4	4.2	1.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	148	557	0	0	493	70	2	0	0	93	0	187
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	153	574	0	0	508	72	2	0	0	96	0	193
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	20.8	17.1	11.1	15.7
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	44%	0%	0%	0%	33%
Vol Thru, %	0%	56%	100%	100%	70%	0%
Vol Right, %	0%	0%	0%	0%	30%	67%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	334	371	329	234	280
LT Vol	0	186	371	329	164	0
Through Vol	0	0	0	0	70	187
RT Vol	2	148	0	0	0	93
Lane Flow Rate	2	344	383	339	242	289
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.005	0.63	0.678	0.618	0.427	0.505
Departure Headway (Hd)	8.034	6.598	6.373	6.571	6.358	6.304
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	448	547	567	546	563	572
Service Time	6.034	4.365	4.139	4.343	4.13	4.36
HCM Lane V/C Ratio	0.004	0.629	0.675	0.621	0.43	0.505
HCM Control Delay	11.1	20	21.6	19.5	13.8	15.7
HCM Lane LOS	B	C	C	C	B	C
HCM 95th-tile Q	0	4.4	5.1	4.2	2.1	2.8

Notes

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F: NEAR-TERM (2016) PLUS PROPOSED PROJECT TRAFFIC CONDITIONS ANALYSIS SHEETS

Intersection	
Intersection Delay, s/veh	14.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	202	159	9	3	185	48	24	68	5	21	25	114
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	266	209	12	4	243	63	32	89	7	28	33	150
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	14.3	16.7	12.8	11.3
HCM LOS	B	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	25%	100%	0%	1%	46%	0%
Vol Thru, %	70%	0%	95%	78%	54%	0%
Vol Right, %	5%	0%	5%	20%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	202	168	236	46	114
LT Vol	68	0	159	185	25	0
Through Vol	5	0	9	48	0	114
RT Vol	24	202	0	3	21	0
Lane Flow Rate	128	266	221	311	61	150
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.257	0.492	0.376	0.543	0.122	0.264
Departure Headway (Hd)	7.235	6.664	6.118	6.293	7.286	6.338
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	540	586	571	489	563
Service Time	5.328	4.435	3.888	4.366	5.073	4.123
HCM Lane V/C Ratio	0.26	0.493	0.377	0.545	0.125	0.266
HCM Control Delay	12.8	15.8	12.6	16.7	11.1	11.4
HCM Lane LOS	B	C	B	C	B	B
HCM 95th-tile Q	1	2.7	1.7	3.2	0.4	1.1

Notes

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Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	58	316	4	12	299	19	21	26	21	29	7	68
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	78	427	5	16	404	26	28	35	28	39	9	92
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13.2	12.1	10.6	10.9
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	27%	0%	7%	0%	28%
Vol Thru, %	38%	73%	98%	93%	89%	7%
Vol Right, %	31%	0%	2%	0%	11%	65%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	216	162	162	169	104
LT Vol	26	158	158	150	150	7
Through Vol	21	0	4	0	19	68
RT Vol	21	58	0	12	0	29
Lane Flow Rate	92	292	219	218	228	141
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.162	0.486	0.355	0.363	0.371	0.234
Departure Headway (Hd)	6.349	5.998	5.844	5.986	5.869	6.006
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	563	601	615	600	613	596
Service Time	4.407	3.739	3.586	3.73	3.612	4.061
HCM Lane V/C Ratio	0.163	0.486	0.356	0.363	0.372	0.237
HCM Control Delay	10.6	14.3	11.8	12.1	12.1	10.9
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	0.6	2.7	1.6	1.7	1.7	0.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	14.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	58	267	0	1	442	48	1	0	3	42	0	99
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	85	393	0	1	650	71	1	0	4	62	0	146
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	13.4	16.7	9.8	12.3
HCM LOS	B	C	A	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	25%	39%	0%	0%	0%	30%
Vol Thru, %	0%	61%	100%	100%	82%	0%
Vol Right, %	75%	0%	0%	0%	18%	70%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	147	178	222	269	141
LT Vol	0	89	178	221	221	0
Through Vol	3	0	0	0	48	99
RT Vol	1	58	0	1	0	42
Lane Flow Rate	6	216	262	326	396	207
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.011	0.381	0.446	0.533	0.631	0.349
Departure Headway (Hd)	6.67	6.341	6.14	5.874	5.745	6.051
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	534	566	586	614	629	593
Service Time	4.739	4.09	3.889	3.615	3.487	4.093
HCM Lane V/C Ratio	0.011	0.382	0.447	0.531	0.63	0.349
HCM Control Delay	9.8	13	13.8	15.2	17.9	12.3
HCM Lane LOS	A	B	B	C	C	B
HCM 95th-tile Q	0	1.8	2.3	3.1	4.4	1.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	9	59	0	5	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	10	64	0	5	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	94	64	0	0	64	0
Stage 1	64	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	906	1000	-	-	1538	-
Stage 1	959	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	903	1000	-	-	1538	-
Mov Capacity-2 Maneuver	903	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	990	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1.6
HCM LOS	A		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	989	1538	-
HCM Lane V/C Ratio	-	-	0.011	0.004	-
HCM Control Delay (s)	-	-	8.7	7.349	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.033	0.011	-

Notes

~ : Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	364	2	1	326	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	396	2	1	354	4	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	398	0	576	199
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	179	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	1157	-	448	809
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	834	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1157	-	448	809
Mov Capacity-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	833	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	526	-	-	1157	-
HCM Lane V/C Ratio	0.012	-	-	0.001	-
HCM Control Delay (s)	11.9	-	-	8.114	0
HCM Lane LOS	B			A	A
HCM 95th %tile Q(veh)	0.038	-	-	0.003	-

Notes
~ Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	38.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	279	313	13	7	273	66	55	140	21	50	65	338
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	297	333	14	7	290	70	59	149	22	53	69	360
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	38.6	54.9	27.5	32.5
HCM LOS	E	F	D	D

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	25%	100%	0%	2%	43%	0%
Vol Thru, %	65%	0%	96%	79%	57%	0%
Vol Right, %	10%	0%	4%	19%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	216	279	326	346	115	338
LT Vol	140	0	313	273	65	0
Through Vol	21	0	13	66	0	338
RT Vol	55	279	0	7	50	0
Lane Flow Rate	230	297	347	368	122	360
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.62	0.754	0.828	0.907	0.31	0.815
Departure Headway (Hd)	9.719	9.141	8.593	8.867	9.115	8.161
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	370	395	420	409	394	442
Service Time	7.805	6.918	6.37	6.936	6.879	5.925
HCM Lane V/C Ratio	0.622	0.752	0.826	0.9	0.31	0.814
HCM Control Delay	27.5	35.3	41.4	54.9	15.9	38.2
HCM Lane LOS	D	E	E	F	C	E
HCM 95th-tile Q	4	6.1	7.7	9.6	1.3	7.6

Notes

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Intersection	
Intersection Delay, s/veh	20.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	106	547	25	43	565	38	29	34	20	37	32	138
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	110	570	26	45	589	40	30	35	21	39	33	144
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	23.7	20.7	12.5	14.5
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	35%	28%	0%	13%	0%	18%
Vol Thru, %	41%	72%	92%	87%	88%	15%
Vol Right, %	24%	0%	8%	0%	12%	67%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	380	299	326	321	207
LT Vol	34	274	274	283	283	32
Through Vol	20	0	25	0	38	138
RT Vol	29	106	0	43	0	37
Lane Flow Rate	86	395	311	339	334	216
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.185	0.757	0.578	0.647	0.623	0.405
Departure Headway (Hd)	7.692	6.896	6.693	6.874	6.721	6.897
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	468	526	541	526	538	526
Service Time	5.719	4.618	4.415	4.596	4.443	4.897
HCM Lane V/C Ratio	0.184	0.751	0.575	0.644	0.621	0.411
HCM Control Delay	12.5	28.1	18.2	21.4	19.9	14.5
HCM Lane LOS	B	D	C	C	C	B
HCM 95th-tile Q	0.7	6.6	3.6	4.6	4.2	1.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	148	562	0	0	493	70	2	0	0	95	0	187
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	153	579	0	0	508	72	2	0	0	98	0	193
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	21.2	17.2	11.1	15.8
HCM LOS	C	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	44%	0%	0%	0%	34%
Vol Thru, %	0%	56%	100%	100%	70%	0%
Vol Right, %	0%	0%	0%	0%	30%	66%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	335	375	329	234	282
LT Vol	0	187	375	329	164	0
Through Vol	0	0	0	0	70	187
RT Vol	2	148	0	0	0	95
Lane Flow Rate	2	346	386	339	242	291
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.005	0.635	0.685	0.62	0.428	0.51
Departure Headway (Hd)	8.057	6.608	6.383	6.589	6.375	6.315
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	447	543	564	546	563	570
Service Time	6.057	4.378	4.153	4.363	4.15	4.372
HCM Lane V/C Ratio	0.004	0.637	0.684	0.621	0.43	0.511
HCM Control Delay	11.1	20.3	22	19.6	13.9	15.8
HCM Lane LOS	B	C	C	C	B	C
HCM 95th-tile Q	0	4.4	5.3	4.2	2.1	2.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	1	82	1	12	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	89	1	13	96

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	212	90	0	0	90	0
Stage 1	90	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	776	968	-	-	1505	-
Stage 1	934	-	-	-	-	-
Stage 2	903	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	769	968	-	-	1505	-
Mov Capacity-2 Maneuver	769	-	-	-	-	-
Stage 1	934	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.9
HCM LOS	A		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	968	1505	-
HCM Lane V/C Ratio	-	-	0.001	0.009	-
HCM Control Delay (s)	-	-	8.7	7.413	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.003	0.026	-

Notes
~: Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error: Computation Not Defined

Intersection	
Intersection Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	599	5	2	645	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	651	5	2	701	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	657	0	1009	328
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	355	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	926	-	237	668
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	681	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	926	-	236	668
Mov Capacity-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	678	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.3
HCM LOS			C

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	236	-	-	926	-
HCM Lane V/C Ratio	0.005	-	-	0.002	-
HCM Control Delay (s)	20.3	-	-	8.897	0
HCM Lane LOS	C			A	A
HCM 95th %tile Q(veh)	0.014	-	-	0.007	-

Notes
~ : Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error : Computation Not Defined

G: CUMULATIVE (2035) TRAFFIC CONDITIONS ANALYSIS SHEETS

Intersection	
Intersection Delay, s/veh	15.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	205	178	8	3	209	49	28	70	6	24	26	129
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	270	234	11	4	275	64	37	92	8	32	34	170
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	15.6	19.9	13.8	12.2
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	27%	100%	0%	1%	48%	0%
Vol Thru, %	67%	0%	96%	80%	52%	0%
Vol Right, %	6%	0%	4%	19%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	104	205	186	261	50	129
LT Vol	70	0	178	209	26	0
Through Vol	6	0	8	49	0	129
RT Vol	28	205	0	3	24	0
Lane Flow Rate	137	270	245	343	66	170
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.291	0.517	0.433	0.622	0.14	0.315
Departure Headway (Hd)	7.659	7.023	6.483	6.637	7.648	6.684
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	471	518	558	546	471	540
Service Time	5.67	4.723	4.183	4.637	5.356	4.392
HCM Lane V/C Ratio	0.291	0.521	0.439	0.628	0.14	0.315
HCM Control Delay	13.8	17	14	19.9	11.6	12.4
HCM Lane LOS	B	C	B	C	B	B
HCM 95th-tile Q	1.2	2.9	2.2	4.2	0.5	1.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	60	357	1	10	335	20	20	26	20	33	7	77
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	482	1	14	453	27	27	35	27	45	9	104
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	14.8	13.2	11	11.6
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	30%	25%	0%	6%	0%	28%
Vol Thru, %	39%	75%	99%	94%	89%	6%
Vol Right, %	30%	0%	1%	0%	11%	66%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	239	180	178	188	117
LT Vol	26	179	179	168	168	7
Through Vol	20	0	1	0	20	77
RT Vol	20	60	0	10	0	33
Lane Flow Rate	89	322	243	240	253	158
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.164	0.551	0.405	0.41	0.425	0.273
Departure Headway (Hd)	6.63	6.15	6.018	6.149	6.045	6.207
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	538	583	597	583	593	576
Service Time	4.706	3.907	3.775	3.909	3.804	4.274
HCM Lane V/C Ratio	0.165	0.552	0.407	0.412	0.427	0.274
HCM Control Delay	11	16.3	12.8	13.2	13.2	11.6
HCM Lane LOS	B	C	B	B	B	B
HCM 95th-tile Q	0.6	3.3	2	2	2.1	1.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	17.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	60	301	0	1	497	48	1	0	3	46	0	113
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	443	0	1	731	71	1	0	4	68	0	166
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15.3	20.9	10.2	13.5
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	25%	37%	0%	0%	0%	29%
Vol Thru, %	0%	63%	100%	100%	84%	0%
Vol Right, %	75%	0%	0%	0%	16%	71%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	160	201	250	297	159
LT Vol	0	100	201	249	249	0
Through Vol	3	0	0	0	48	113
RT Vol	1	60	0	1	0	46
Lane Flow Rate	6	236	295	367	436	234
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.012	0.432	0.525	0.622	0.725	0.406
Departure Headway (Hd)	7.038	6.596	6.406	6.101	5.984	6.244
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	505	545	561	591	602	575
Service Time	5.125	4.359	4.169	3.855	3.738	4.293
HCM Lane V/C Ratio	0.012	0.433	0.526	0.621	0.724	0.407
HCM Control Delay	10.2	14.3	16.1	18.4	23	13.5
HCM Lane LOS	B	B	C	C	C	B
HCM 95th-tile Q	0	2.2	3	4.3	6.1	2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	55
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	286	355	13	7	307	68	61	144	24	56	67	379
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	304	378	14	7	327	72	65	153	26	60	71	403
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	55.5	77.4	31.9	47.7
HCM LOS	F	F	D	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	27%	100%	0%	2%	46%	0%
Vol Thru, %	63%	0%	96%	80%	54%	0%
Vol Right, %	10%	0%	4%	18%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	229	286	368	382	123	379
LT Vol	144	0	355	307	67	0
Through Vol	24	0	13	68	0	379
RT Vol	61	286	0	7	56	0
Lane Flow Rate	244	304	391	406	131	403
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.678	0.796	0.967	1	0.337	0.935
Departure Headway (Hd)	10.021	9.422	8.896	9.392	9.274	8.347
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	361	383	407	390	389	435
Service Time	8.081	7.192	6.666	7.392	7.022	6.094
HCM Lane V/C Ratio	0.676	0.794	0.961	1.041	0.337	0.926
HCM Control Delay	31.9	40.5	67.1	77.4	16.7	57.7
HCM Lane LOS	D	E	F	F	C	F
HCM 95th-tile Q	4.7	6.9	11.3	12	1.5	10.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	27.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	109	617	20	39	640	39	32	35	22	41	32	156
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	643	21	41	667	41	33	36	23	43	33	163
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	33.5	27.6	13.2	16.3
HCM LOS	D	D	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	36%	26%	0%	11%	0%	18%
Vol Thru, %	39%	74%	94%	89%	89%	14%
Vol Right, %	25%	0%	6%	0%	11%	68%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	89	418	329	359	359	229
LT Vol	35	309	309	320	320	32
Through Vol	22	0	20	0	39	156
RT Vol	32	109	0	39	0	41
Lane Flow Rate	93	435	342	374	374	239
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.208	0.872	0.669	0.747	0.733	0.471
Departure Headway (Hd)	8.078	7.217	7.04	7.187	7.054	7.113
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	445	504	513	505	512	508
Service Time	6.122	4.958	4.781	4.928	4.795	5.147
HCM Lane V/C Ratio	0.209	0.863	0.667	0.741	0.73	0.47
HCM Control Delay	13.2	41.8	22.9	28.3	26.9	16.3
HCM Lane LOS	B	E	C	D	D	C
HCM 95th-tile Q	0.8	9.4	4.9	6.3	6.1	2.5

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	24.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	152	631	0	0	559	72	2	0	0	106	0	212
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	157	651	0	0	576	74	2	0	0	109	0	219
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	29.1	22.4	11.6	18.7
HCM LOS	D	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	42%	0%	0%	0%	33%
Vol Thru, %	0%	58%	100%	100%	72%	0%
Vol Right, %	0%	0%	0%	0%	28%	67%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	362	421	373	258	318
LT Vol	0	210	421	373	186	0
Through Vol	0	0	0	0	72	212
RT Vol	2	152	0	0	0	106
Lane Flow Rate	2	374	434	384	266	328
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.005	0.718	0.808	0.737	0.496	0.593
Departure Headway (Hd)	8.556	6.921	6.707	6.908	6.708	6.515
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	421	519	538	519	533	554
Service Time	6.556	4.703	4.489	4.695	4.496	4.57
HCM Lane V/C Ratio	0.005	0.721	0.807	0.74	0.499	0.592
HCM Control Delay	11.6	25.6	32.1	26.8	16	18.7
HCM Lane LOS	B	D	D	D	C	C
HCM 95th-tile Q	0	5.8	7.8	6.2	2.7	3.8

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

H: CUMULATIVE (2035) PLUS PROPOSED PROJECT TRAFFIC CONDITIONS ANALYSIS SHEETS

Intersection	
Intersection Delay, s/veh	16.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	207	180	9	3	210	49	28	70	6	24	26	130
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	272	237	12	4	276	64	37	92	8	32	34	171
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	15.8	20.1	13.8	12.3
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	27%	100%	0%	1%	48%	0%
Vol Thru, %	67%	0%	95%	80%	52%	0%
Vol Right, %	6%	0%	5%	19%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	104	207	189	262	50	130
LT Vol	70	0	180	210	26	0
Through Vol	6	0	9	49	0	130
RT Vol	28	207	0	3	24	0
Lane Flow Rate	137	272	249	345	66	171
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.292	0.523	0.44	0.626	0.14	0.319
Departure Headway (Hd)	7.685	7.037	6.494	6.656	7.67	6.706
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	469	515	557	545	470	539
Service Time	5.697	4.737	4.194	4.656	5.378	4.414
HCM Lane V/C Ratio	0.292	0.528	0.447	0.633	0.14	0.317
HCM Control Delay	13.8	17.2	14.2	20.1	11.6	12.5
HCM Lane LOS	B	C	B	C	B	B
HCM 95th-tile Q	1.2	3	2.2	4.3	0.5	1.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	60	358	4	12	338	20	24	27	24	33	7	77
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	484	5	16	457	27	32	36	32	45	9	104
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15.1	13.5	11.3	11.8
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	32%	25%	0%	7%	0%	28%
Vol Thru, %	36%	75%	98%	93%	89%	6%
Vol Right, %	32%	0%	2%	0%	11%	66%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	75	239	183	181	189	117
LT Vol	27	179	179	169	169	7
Through Vol	24	0	4	0	20	77
RT Vol	24	60	0	12	0	33
Lane Flow Rate	101	323	247	245	255	158
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.188	0.558	0.418	0.423	0.434	0.276
Departure Headway (Hd)	6.663	6.221	6.078	6.224	6.115	6.285
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	535	578	591	575	587	569
Service Time	4.746	3.984	3.841	3.99	3.881	4.358
HCM Lane V/C Ratio	0.189	0.559	0.418	0.426	0.434	0.278
HCM Control Delay	11.3	16.6	13.2	13.5	13.5	11.8
HCM Lane LOS	B	C	B	B	B	B
HCM 95th-tile Q	0.7	3.4	2.1	2.1	2.2	1.1

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	60	303	0	1	500	49	1	0	3	47	0	113
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	88	446	0	1	735	72	1	0	4	69	0	166
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	15.5	21.3	10.2	13.6
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	25%	37%	0%	0%	0%	29%
Vol Thru, %	0%	63%	100%	100%	84%	0%
Vol Right, %	75%	0%	0%	0%	16%	71%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	161	202	251	299	160
LT Vol	0	101	202	250	250	0
Through Vol	3	0	0	0	49	113
RT Vol	1	60	0	1	0	47
Lane Flow Rate	6	237	297	369	440	235
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.012	0.435	0.53	0.627	0.732	0.409
Departure Headway (Hd)	7.06	6.612	6.422	6.113	5.995	6.259
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	504	542	558	591	602	574
Service Time	5.147	4.375	4.185	3.869	3.75	4.308
HCM Lane V/C Ratio	0.012	0.437	0.532	0.624	0.731	0.409
HCM Control Delay	10.2	14.4	16.3	18.7	23.5	13.6
HCM Lane LOS	B	B	C	C	C	B
HCM 95th-tile Q	0	2.2	3.1	4.3	6.2	2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	9	66	0	5	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	10	72	0	5	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	72	0	0	72	0
Stage 1	72	-	-	-	-	-
Stage 2	30	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	896	990	-	-	1528	-
Stage 1	951	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	893	990	-	-	1528	-
Mov Capacity-2 Maneuver	893	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	990	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1.6
HCM LOS	A		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	979	1528	-
HCM Lane V/C Ratio	-	-	0.011	0.004	-
HCM Control Delay (s)	-	-	8.7	7.364	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.034	0.011	-

Notes

~ : Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	413	2	1	366	4	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	449	2	1	398	4	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	451	0	651	226
Stage 1	-	-	-	-	450	-
Stage 2	-	-	-	-	201	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	1106	-	401	777
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	813	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	1106	-	401	777
Mov Capacity-2 Maneuver	-	-	-	-	401	-
Stage 1	-	-	-	-	609	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	478	-	-	1106	-
HCM Lane V/C Ratio	0.014	-	-	0.001	-
HCM Control Delay (s)	12.6	-	-	8.258	0
HCM Lane LOS	B			A	A
HCM 95th %tile Q(veh)	0.041	-	-	0.003	-

Notes
~ : Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	55.9
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	286	355	13	7	309	68	62	144	24	56	67	383
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	304	378	14	7	329	72	66	153	26	60	71	407
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	2
HCM Control Delay	56.3	77.6	32.3	49.5
HCM LOS	F	F	D	E

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	27%	100%	0%	2%	46%	0%
Vol Thru, %	63%	0%	96%	80%	54%	0%
Vol Right, %	10%	0%	4%	18%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	230	286	368	384	123	383
LT Vol	144	0	355	309	67	0
Through Vol	24	0	13	68	0	383
RT Vol	62	286	0	7	56	0
Lane Flow Rate	245	304	391	409	131	407
Geometry Grp	6	7	7	6	7	7
Degree of Util (X)	0.683	0.799	0.971	1	0.338	0.946
Departure Headway (Hd)	10.046	9.452	8.925	9.328	9.286	8.359
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	360	383	407	388	387	436
Service Time	8.103	7.22	6.694	7.427	7.034	6.106
HCM Lane V/C Ratio	0.681	0.794	0.961	1.054	0.339	0.933
HCM Control Delay	32.3	40.9	68.2	77.6	16.7	60
HCM Lane LOS	D	E	F	F	C	F
HCM 95th-tile Q	4.8	6.9	11.4	12	1.5	11

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	28.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	109	620	26	44	641	39	33	35	23	42	33	156
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	114	646	27	46	668	41	34	36	24	44	34	163
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	34.7	28.6	13.4	16.6
HCM LOS	D	D	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	36%	26%	0%	12%	0%	18%
Vol Thru, %	38%	74%	92%	88%	89%	14%
Vol Right, %	25%	0%	8%	0%	11%	68%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	419	336	365	360	231
LT Vol	35	310	310	321	321	33
Through Vol	23	0	26	0	39	156
RT Vol	33	109	0	44	0	42
Lane Flow Rate	95	436	350	380	374	241
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.214	0.88	0.687	0.763	0.738	0.478
Departure Headway (Hd)	8.113	7.258	7.069	7.237	7.097	7.151
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	443	498	511	501	509	505
Service Time	6.157	5	4.811	4.979	4.84	5.183
HCM Lane V/C Ratio	0.214	0.876	0.685	0.758	0.735	0.477
HCM Control Delay	13.4	43.2	24	29.7	27.4	16.6
HCM Lane LOS	B	E	C	D	D	C
HCM 95th-tile Q	0.8	9.6	5.2	6.6	6.2	2.5

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	25.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	152	636	0	0	559	72	2	0	0	108	0	212
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	157	656	0	0	576	74	2	0	0	111	0	219
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	29.7	22.5	11.6	18.9
HCM LOS	D	C	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	100%	42%	0%	0%	0%	34%
Vol Thru, %	0%	58%	100%	100%	72%	0%
Vol Right, %	0%	0%	0%	0%	28%	66%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	2	364	424	373	258	320
LT Vol	0	212	424	373	186	0
Through Vol	0	0	0	0	72	212
RT Vol	2	152	0	0	0	108
Lane Flow Rate	2	375	437	384	266	330
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.005	0.723	0.816	0.739	0.498	0.598
Departure Headway (Hd)	8.578	6.933	6.72	6.927	6.727	6.524
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	420	518	538	519	533	551
Service Time	6.578	4.717	4.503	4.715	4.515	4.58
HCM Lane V/C Ratio	0.005	0.724	0.812	0.74	0.499	0.599
HCM Control Delay	11.6	25.9	33	27	16.1	18.9
HCM Lane LOS	B	D	D	D	C	C
HCM 95th-tile Q	0	5.9	8	6.2	2.7	3.9

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	1	90	1	12	91
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	98	1	13	99

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	223	98	0	0	99	0
Stage 1	98	-	-	-	-	-
Stage 2	125	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	765	958	-	-	1494	-
Stage 1	926	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	758	958	-	-	1494	-
Mov Capacity-2 Maneuver	758	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	893	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0.9
HCM LOS	A		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	958	1494	-
HCM Lane V/C Ratio	-	-	0.001	0.009	-
HCM Control Delay (s)	-	-	8.8	7.431	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.003	0.026	-

Notes
~ : Volume Exceeds Capacity, $: Delay Exceeds 300 Seconds, Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	680	5	2	723	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	739	5	2	786	1	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	745	0	1139	372
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	397	-
Follow-up Headway	-	-	2.22	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	859	-	195	625
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	648	-
Time blocked-Platoon, %	-	-		-		
Mov Capacity-1 Maneuver	-	-	859	-	194	625
Mov Capacity-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	645	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.7
HCM LOS			C

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	194	-	-	859	-
HCM Lane V/C Ratio	0.006	-	-	0.003	-
HCM Control Delay (s)	23.7	-	-	9.202	0
HCM Lane LOS	C			A	A
HCM 95th %tile Q(veh)	0.017	-	-	0.008	-

Notes

~ Volume Exceeds Capacity, $ Delay Exceeds 300 Seconds, Error Computation Not Defined

I: CALCULATION OF NEAR-TERM AND CUMULATIVE CONDITION VOLUMES

Portola Drive/38th Avenue

Kimley-Horn, 2014.

Calculated Growth Rates by Roadway Segment

Roadway Segment		Most Recent		Oldest ADT		Growth Rate (taken over time period)	Annual Growth Rate	Average Annual Growth Rate
		Year	ADT	Year	ADT			
Portola Dr	W/O 37th Ave (June 1987-June 2005)	2005	16,852	1987	15,539	1.084	0.45%	0.66%
	E/O 41st Ave (July 1990-July 2004)	2004	8,130	1990	7,204	1.129	0.87%	
Portola Dr	E/O 38th Ave (Tube Count taken 10/29/14)	2014	13,228	-	-	-	-	-
41st St	N/O Portola Drive (Sept 1996-Oct 2008)	2008	13,006	1996	12,804	1.016	0.13%	0.13%

Note: All ADT volumes are bi-directional.
All ADT volumes from previous years are provided by the Santa Cruz County Regional Transportation Commission (SCCRTC) unless otherwise noted.
The ADT for the Portola Drive segment E/O 38th Avenue was taken from tube counts conducted by Kimley-Horn in October 2014.

Kimley-Horn, 2014.

Calculated Roadway Segment ADT

Roadway Segment	2014	2016	2035
Portola Dr. (assumed W/O 41st Ave.)	17,879	18,116	20,526
41st Ave. (assumed N/O Portola Dr.)	13,108	13,142	13,472
Portola Dr. (based on tube count taken E/O 38th Ave.)	13,228	13,403	15,186

J: TRAFFIX ANALYSIS SHEETS FOR IMPACTED INTERSECTIONS ONLY

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	E	35.7	0.900	E	35.7	0.900	+ 0.000 V/C
# 2	C	19.0	0.672	C	19.0	0.672	+ 0.000 V/C
# 3	C	17.7	0.671	C	17.7	0.671	+ 0.000 V/C

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	E	36.6	0.908	E	36.6	0.908	+ 0.000 V/C
# 2	C	19.5	0.685	C	19.5	0.685	+ 0.000 V/C
# 3	C	17.8	0.677	C	17.8	0.677	+ 0.000 V/C
# 4	A	9.5	0.098	A	9.5	0.098	+ 0.000 D/V
# 5	C	18.2	0.004	C	18.2	0.004	+ 0.000 D/V

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	E	37.3	0.915	E	37.3	0.915	+ 0.000 V/C
# 2	C	19.4	0.681	C	19.4	0.681	+ 0.000 V/C
# 3	C	18.0	0.680	C	18.0	0.680	+ 0.000 V/C

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	E	38.3	0.923	E	38.3	0.923	+ 0.000 V/C
# 2	C	19.9	0.694	C	19.9	0.694	+ 0.000 V/C
# 3	C	18.2	0.686	C	18.2	0.686	+ 0.000 V/C
# 4	A	9.5	0.098	A	9.5	0.098	+ 0.000 D/V
# 5	C	18.4	0.004	C	18.4	0.004	+ 0.000 D/V

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	F	61.0	1.065	F	61.0	1.065	+ 0.000 V/C
# 2	D	26.0	0.793	D	26.0	0.793	+ 0.000 V/C
# 3	C	23.3	0.786	C	23.3	0.786	+ 0.000 V/C

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	F	62.5	1.074	F	62.5	1.074	+ 0.000 V/C
# 2	D	27.0	0.805	D	27.0	0.805	+ 0.000 V/C
# 3	C	23.6	0.792	C	23.6	0.792	+ 0.000 V/C
# 4	A	9.5	0.101	A	9.5	0.101	+ 0.000 D/V
# 5	C	21.0	0.004	C	21.0	0.004	+ 0.000 D/V

Kimley»Horn

MEMORANDUM

From: Frederik Venter, Kimley-Horn and Associates

To: John Swift, Hamilton Swift and Associates

Date: May 12, 2015

Re: **Portola Drive / 38th Avenue Development – Response to Traffic Comments**

This memorandum is a response to comments from the County of Santa Cruz regarding the Traffic Impact Study prepared by Kimley-Horn dated January 14, 2015. The County has requested that we provide calculations for the determination of increase in v/c ratio for the sum of all critical movements at intersections with LOS E or F, wherein increases in this v/c ratio equaling or exceeding 1% must be mitigated.

Per the memorandum from Ken DeFrees (**Exhibit A**, attached), the previous project would have generated more trips for credits compared to what we have assumed in the TIS for both the AM and the PM peak hour. Based on DeFrees' assumptions, assuming 25 trucks (at minimum), the previous land use would have generated 32 AM peak hour trips, which includes 20 inbound-passenger cars (assuming some are due to shared driving) and 12 outbound trucks (with a vehicle occupancy of 2 persons per truck). The previous land use would have generated 32 PM peak hour trips (12 inbound and 20 outbound). Reductions are assumed in both peak hours; we have assumed a reduction of 13 trips in the AM and 15 trips in the PM.

This analysis takes the most conservative approach, applying trip credits that assumes the least number of trucks that were previously on-site based on the DeFrees memo. After trip credits, the net trip increase would then be 5 trips in the AM (-1 in and 6 out) and 5 trips (10 in and -5 out) in the PM.

The calculation worksheets for the v/c ratios are provided in **Exhibit B**. Analysis was completed using HCM 2010 methodology.

Exhibit A:

Memorandum from Ken DeFrees to John Swift
(via email, May 6, 2015)

MEMO: via email

May 6, 2015

To: John Swift
Hamilton-Swift

From: Ken DeFrees

Re: Prior Occupancy and Use
3800 Portola Dr.
Santa Cruz, Ca.

Dear John,

I have been unable to locate the my Lease with Wellington Energy. As you know, they occupied the property from the Spring of 2010 to the Fall of 2013.

Wellington Energy began operations with 25-30 small install trucks stored on site and used the building as a depot for inventory and equipment. The installers parked their personal cars and used the trucks during the day. The installers would periodically return during the day for more inventory. During the day larger trucks would deliver fresh inventory to the depot and others would collect the removed old items. The intensity of their use changed periodically during their occupancy. Feel free to contact me with any other questions.

Regards,
Ken DeFrees
Thank you,

Exhibit B:

V/C Calculations prepared by Kimley-Horn

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	E	35.7	0.900	E	35.7	0.900	+ 0.000 V/C
# 2	C	19.0	0.672	C	19.0	0.672	+ 0.000 V/C
# 3	C	17.7	0.671	C	17.7	0.671	+ 0.000 V/C

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

Intersection #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.900
Loss Time (sec):	0	Average Delay (sec/veh):	35.7
Optimal Cycle:	0	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:	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:	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	53	140	21	49	65	330	278	309	13	7	267	66
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:	53	140	21	49	65	330	278	309	13	7	267	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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	60	158	24	55	74	373	315	350	15	8	302	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	60	158	24	55	74	373	315	350	15	8	302	75
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:	60	158	24	55	74	373	315	350	15	8	302	75
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:	0.25	0.65	0.10	0.43	0.57	1.00	1.00	0.96	0.04	0.02	0.79	0.19
Final Sat.:	94	247	37	177	235	460	415	423	18	9	336	83
Capacity Analysis Module:												
Vol/Sat:	0.64	0.64	0.64	0.31	0.31	0.81	0.76	0.83	0.83	0.90	0.90	0.90
Crit Moves:		****				****		****				****
Delay/Veh:	25.3	25.3	25.3	15.1	15.1	34.3	33.5	38.4	38.4	49.6	49.6	49.6
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:	25.3	25.3	25.3	15.1	15.1	34.3	33.5	38.4	38.4	49.6	49.6	49.6
LOS by Move:	D	D	D	C	C	D	D	E	E	E	E	E
ApproachDel:		25.3			29.4			36.1			49.6	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		25.3			29.4			36.1			49.6	
LOS by Appr:		D			D			E			E	
AllWayAvgQ:	1.4	1.4	1.4	0.4	0.4	3.1	2.5	3.4	3.4	4.5	4.5	4.5

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

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

Intersection #2

Cycle (sec):	100	Critical Vol./Cap.(X):	0.672
Loss Time (sec):	0	Average Delay (sec/veh):	19.0
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:	0 0	1! 0	0	0 0	1! 0	0	0 1	0 1	0	0 1	0 1	0
Volume Module:												
Base Vol:	28	34	19	36	31	136	106	537	19	38	557	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:	28	34	19	36	31	136	106	537	19	38	557	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	37	21	39	34	148	115	583	21	41	604	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	37	21	39	34	148	115	583	21	41	604	41
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:	30	37	21	39	34	148	115	583	21	41	604	41
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:	0.35	0.42	0.23	0.18	0.15	0.67	0.32	1.62	0.06	0.12	1.76	0.12
Final Sat.:	158	192	107	94	81	354	171	882	32	65	956	66
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.42	0.42	0.42	0.67	0.66	0.65	0.64	0.63	0.63
Crit Moves:		****			****		****			****		
Delay/Veh:	11.8	11.8	11.8	13.8	13.8	13.8	21.6	20.8	20.2	19.9	19.5	19.0
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:	11.8	11.8	11.8	13.8	13.8	13.8	21.6	20.8	20.2	19.9	19.5	19.0
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
ApproachDel:		11.8			13.8			20.9			19.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.8			13.8			20.9			19.5	
LOS by Appr:		B			B			C			C	
AllWayAvgQ:	0.2	0.2	0.2	0.6	0.6	0.6	1.8	1.7	1.7	1.6	1.5	1.5

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

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

Intersection #3

Cycle (sec):	100	Critical Vol./Cap.(X):	0.671
Loss Time (sec):	0	Average Delay (sec/veh):	17.7
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	0 0	0	0 1!	0 0	0	1 0	1 0	0	1 0	1 0
Volume Module:												
Base Vol:	2	0	0	92	0	185	148	550	0	0	487	70
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:	2	0	0	92	0	185	148	550	0	0	487	70
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	2	0	0	98	0	197	157	585	0	0	518	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	0	0	98	0	197	157	585	0	0	518	74
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:	2	0	0	98	0	197	157	585	0	0	518	74
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	0.00	0.00	0.33	0.00	0.67	0.42	1.58	0.00	0.00	1.75	0.25
Final Sat.:	426	0	0	190	0	382	234	889	0	0	974	142
Capacity Analysis Module:												
Vol/Sat:	0.00	xxxx	xxxx	0.51	xxxx	0.51	0.67	0.66	xxxx	xxxx	0.53	0.52
Crit Moves:	****			****			****				****	
Delay/Veh:	10.6	0.0	0.0	15.1	0.0	15.1	21.0	20.0	0.0	0.0	15.8	15.4
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:	10.6	0.0	0.0	15.1	0.0	15.1	21.0	20.0	0.0	0.0	15.8	15.4
LOS by Move:	B	*	*	C	*	C	C	C	*	*	C	C
ApproachDel:	10.6			15.1			20.2			15.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.6			15.1			20.2			15.8		
LOS by Appr:	B			C			C			C		
AllWayAvgQ:	0.0	0.0	0.0	0.9	0.9	0.9	1.8	1.7	1.7	1.1	1.0	1.0

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

E+P

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	E	36.6	0.908	E	36.6	0.908	+ 0.000 V/C
# 2	C	19.5	0.685	C	19.5	0.685	+ 0.000 V/C
# 3	C	17.8	0.677	C	17.8	0.677	+ 0.000 V/C
# 4	A	9.5	0.098	A	9.5	0.098	+ 0.000 D/V
# 5	C	18.2	0.004	C	18.2	0.004	+ 0.000 D/V

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

Intersection #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.908
Loss Time (sec):	0	Average Delay (sec/veh):	36.6
Optimal Cycle:	0	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:	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:	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	54	140	21	49	65	334	278	309	13	7	269	66
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:	54	140	21	49	65	334	278	309	13	7	269	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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	61	158	24	55	74	378	315	350	15	8	304	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	158	24	55	74	378	315	350	15	8	304	75
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:	61	158	24	55	74	378	315	350	15	8	304	75
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:	0.25	0.65	0.10	0.43	0.57	1.00	1.00	0.96	0.04	0.02	0.79	0.19
Final Sat.:	95	246	37	177	234	459	413	422	18	9	335	82
Capacity Analysis Module:												
Vol/Sat:	0.64	0.64	0.64	0.31	0.31	0.82	0.76	0.83	0.83	0.91	0.91	0.91
Crit Moves:		****				****		****			****	
Delay/Veh:	25.6	25.6	25.6	15.1	15.1	35.7	33.9	39.1	39.1	51.3	51.3	51.3
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:	25.6	25.6	25.6	15.1	15.1	35.7	33.9	39.1	39.1	51.3	51.3	51.3
LOS by Move:	D	D	D	C	C	E	D	E	E	F	F	F
ApproachDel:		25.6			30.5			36.7			51.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		25.6			30.5			36.7			51.3	
LOS by Appr:		D			D			E			F	
AllWayAvgQ:	1.4	1.4	1.4	0.4	0.4	3.2	2.6	3.4	3.4	4.7	4.7	4.7

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

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

Intersection #2

Cycle (sec):	100	Critical Vol./Cap.(X):	0.685
Loss Time (sec):	0	Average Delay (sec/veh):	19.5
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:	0 0	1! 0	0	0 0	1! 0	0	0 1	0 1	0	0 1	0 1	0
Volume Module:												
Base Vol:	29	34	20	37	32	136	106	540	25	43	558	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:	29	34	20	37	32	136	106	540	25	43	558	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	31	37	22	40	35	148	115	586	27	47	605	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	37	22	40	35	148	115	586	27	47	605	41
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:	31	37	22	40	35	148	115	586	27	47	605	41
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:	0.35	0.41	0.24	0.18	0.16	0.66	0.32	1.61	0.07	0.13	1.75	0.12
Final Sat.:	159	187	110	95	82	348	168	872	41	72	943	65
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.20	0.42	0.42	0.42	0.68	0.67	0.66	0.65	0.64	0.64
Crit Moves:			****		****		****			****		
Delay/Veh:	11.9	11.9	11.9	14.0	14.0	14.0	22.3	21.4	20.7	20.5	20.0	19.5
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:	11.9	11.9	11.9	14.0	14.0	14.0	22.3	21.4	20.7	20.5	20.0	19.5
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
ApproachDel:		11.9			14.0			21.5			20.0	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.9			14.0			21.5			20.0	
LOS by Appr:		B			B			C			C	
AllWayAvgQ:	0.2	0.2	0.2	0.6	0.6	0.6	1.9	1.8	1.8	1.7	1.6	1.6

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

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

Intersection #3

Cycle (sec):	100	Critical Vol./Cap.(X):	0.677
Loss Time (sec):	0	Average Delay (sec/veh):	17.8
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	0 0	0	0 1!	0 0	0 1	0 1	0	0	1 0	1 0
Volume Module:												
Base Vol:	2	0	0	94	0	185	148	555	0	0	487	70
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:	2	0	0	94	0	185	148	555	0	0	487	70
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	2	0	0	100	0	197	157	590	0	0	518	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	0	0	100	0	197	157	590	0	0	518	74
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:	2	0	0	100	0	197	157	590	0	0	518	74
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	0.00	0.00	0.34	0.00	0.66	0.42	1.58	0.00	0.00	1.75	0.25
Final Sat.:	425	0	0	193	0	379	232	889	0	0	971	142
Capacity Analysis Module:												
Vol/Sat:	0.01	xxxx	xxxx	0.52	xxxx	0.52	0.68	0.66	xxxx	xxxx	0.53	0.52
Crit Moves:	****			****			****				****	
Delay/Veh:	10.6	0.0	0.0	15.2	0.0	15.2	21.3	20.3	0.0	0.0	15.9	15.5
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:	10.6	0.0	0.0	15.2	0.0	15.2	21.3	20.3	0.0	0.0	15.9	15.5
LOS by Move:	B	*	*	C	*	C	C	C	*	*	C	C
ApproachDel:	10.6			15.2			20.5			15.8		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.6			15.2			20.5			15.8		
LOS by Appr:	B			C			C			C		
AllWayAvgQ:	0.0	0.0	0.0	1.0	1.0	1.0	1.9	1.7	1.7	1.1	1.0	1.0

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

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

Intersection #4

Average Delay (sec/veh): 9.4 Worst Case Level Of Service: A[9.5]

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 1 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	82	1	12	88	0	0	0	0	0	0	1
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	82	1	12	88	0	0	0	0	0	0	1
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	82	1	12	88	0	0	0	0	0	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	82	1	12	88	0	0	0	0	0	0	1
Critical Gap Module:												
Critical Gp:	xxxxx	6.5	6.2	7.1	6.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	4.0	3.3	3.5	4.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	1	0	41	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	899	1091	968	900	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	899	1091	899	900	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	0.09	0.00	0.01	0.10	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	901	900	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	0.3	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	9.4	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	A	A	*	*	*	*	*	*	*	*
ApproachDel:	9.4			9.5			xxxxxx			xxxxxx		
ApproachLOS:	A			A			*			*		

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

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

Intersection #5

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: C[18.2]

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:	1 0	0	0 0	0	0 0	0 0	0	0 1	1 0	0	1 1	0 0
Volume Module:												
Base Vol:	1	0	0	0	0	0	0	592	5	2	638	0
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:	1	0	0	0	0	0	0	592	5	2	638	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:	1	0	0	0	0	0	0	592	5	2	638	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	0	0	0	0	0	0	592	5	2	638	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	918	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	597	xxxx	xxxxx
Potent Cap.:	275	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	989	xxxx	xxxxx
Move Cap.:	274	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	989	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	18.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx
LOS by Move:	C	*	*	*	*	*	*	*	*	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	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*
ApproachDel:		18.2			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	E	37.3	0.915	E	37.3	0.915	+ 0.000 V/C
# 2	C	19.4	0.681	C	19.4	0.681	+ 0.000 V/C
# 3	C	18.0	0.680	C	18.0	0.680	+ 0.000 V/C

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

Intersection #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.915
Loss Time (sec):	0	Average Delay (sec/veh):	37.3
Optimal Cycle:	0	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:	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:	0 0	1! 0	0	0	1 0	0 1	1	0 0	1 0	0	0 1!	0 0
Volume Module:												
Base Vol:	54	140	21	50	65	334	279	313	13	7	271	66
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:	54	140	21	50	65	334	279	313	13	7	271	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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	61	158	24	57	74	378	316	354	15	8	307	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	61	158	24	57	74	378	316	354	15	8	307	75
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:	61	158	24	57	74	378	316	354	15	8	307	75
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:	0.25	0.65	0.10	0.43	0.57	1.00	1.00	0.96	0.04	0.02	0.79	0.19
Final Sat.:	95	246	37	178	232	459	412	421	17	9	335	82
Capacity Analysis Module:												
Vol/Sat:	0.64	0.64	0.64	0.32	0.32	0.82	0.77	0.84	0.84	0.91	0.91	0.91
Crit Moves:			****			****		****			****	
Delay/Veh:	25.8	25.8	25.8	15.2	15.2	36.0	34.3	40.6	40.6	52.5	52.5	52.5
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:	25.8	25.8	25.8	15.2	15.2	36.0	34.3	40.6	40.6	52.5	52.5	52.5
LOS by Move:	D	D	D	C	C	E	D	E	E	F	F	F
ApproachDel:		25.8			30.7			37.7			52.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		25.8			30.7			37.7			52.5	
LOS by Appr:		D			D			E			F	
AllWayAvgQ:	1.4	1.4	1.4	0.4	0.4	3.3	2.6	3.6	3.6	4.9	4.9	4.9

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

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

Intersection #2

Cycle (sec):	100	Critical Vol./Cap.(X):	0.681
Loss Time (sec):	0	Average Delay (sec/veh):	19.4
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:	0 0	1!	0 0	0 0	1!	0 0	0 1	0 1	0	0 1	0 1	0
Volume Module:												
Base Vol:	28	34	19	36	31	138	106	544	19	38	564	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:	28	34	19	36	31	138	106	544	19	38	564	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	30	37	21	39	34	150	115	590	21	41	612	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	30	37	21	39	34	150	115	590	21	41	612	41
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:	30	37	21	39	34	150	115	590	21	41	612	41
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:	0.35	0.42	0.23	0.18	0.15	0.67	0.32	1.62	0.06	0.12	1.76	0.12
Final Sat.:	158	191	107	92	80	354	169	881	31	64	954	65
Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.42	0.42	0.42	0.68	0.67	0.66	0.65	0.64	0.63
Crit Moves:		****			****		****			****		
Delay/Veh:	11.9	11.9	11.9	13.9	13.9	13.9	22.1	21.3	20.6	20.4	19.9	19.5
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:	11.9	11.9	11.9	13.9	13.9	13.9	22.1	21.3	20.6	20.4	19.9	19.5
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
ApproachDel:		11.9			13.9			21.4			19.9	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.9			13.9			21.4			19.9	
LOS by Appr:		B			B			C			C	
AllWayAvgQ:	0.2	0.2	0.2	0.6	0.6	0.6	1.9	1.7	1.7	1.6	1.6	1.6

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

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

Intersection #3

Cycle (sec):	100	Critical Vol./Cap.(X):	0.680
Loss Time (sec):	0	Average Delay (sec/veh):	18.0
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 0	0	0	0 1!	0 0	0	1 0	1 0	0	1 0	1 0
Volume Module:												
Base Vol:	2	0	0	93	0	187	148	557	0	0	493	70
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:	2	0	0	93	0	187	148	557	0	0	493	70
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	2	0	0	99	0	199	157	592	0	0	524	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	0	0	99	0	199	157	592	0	0	524	74
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:	2	0	0	99	0	199	157	592	0	0	524	74
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	0.00	0.00	0.33	0.00	0.67	0.42	1.58	0.00	0.00	1.75	0.25
Final Sat.:	423	0	0	190	0	381	231	888	0	0	972	140
Capacity Analysis Module:												
Vol/Sat:	0.01	xxxx	xxxx	0.52	xxxx	0.52	0.68	0.67	xxxx	xxxx	0.54	0.53
Crit Moves:	****			****			****				****	
Delay/Veh:	10.7	0.0	0.0	15.3	0.0	15.3	21.5	20.5	0.0	0.0	16.1	15.6
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:	10.7	0.0	0.0	15.3	0.0	15.3	21.5	20.5	0.0	0.0	16.1	15.6
LOS by Move:	B	*	*	C	*	C	C	C	*	*	C	C
ApproachDel:	10.7			15.3			20.7			16.0		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	10.7			15.3			20.7			16.0		
LOS by Appr:	B			C			C			C		
AllWayAvgQ:	0.0	0.0	0.0	1.0	1.0	1.0	1.9	1.7	1.7	1.1	1.0	1.0

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

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1	E	38.3	0.923	E	38.3	0.923	+ 0.000 V/C
# 2	C	19.9	0.694	C	19.9	0.694	+ 0.000 V/C
# 3	C	18.2	0.686	C	18.2	0.686	+ 0.000 V/C
# 4	A	9.5	0.098	A	9.5	0.098	+ 0.000 D/V
# 5	C	18.4	0.004	C	18.4	0.004	+ 0.000 D/V

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

Intersection #1

Cycle (sec):	100	Critical Vol./Cap.(X):	0.923
Loss Time (sec):	0	Average Delay (sec/veh):	38.3
Optimal Cycle:	0	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:	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:	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	55	140	21	50	65	338	279	313	13	7	273	66
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:	55	140	21	50	65	338	279	313	13	7	273	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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	62	158	24	57	74	383	316	354	15	8	309	75
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	62	158	24	57	74	383	316	354	15	8	309	75
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:	62	158	24	57	74	383	316	354	15	8	309	75
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:	0.25	0.65	0.10	0.43	0.57	1.00	1.00	0.96	0.04	0.02	0.79	0.19
Final Sat.:	96	244	37	178	231	458	410	419	17	9	335	81
Capacity Analysis Module:												
Vol/Sat:	0.65	0.65	0.65	0.32	0.32	0.84	0.77	0.84	0.84	0.92	0.92	0.92
Crit Moves:	****					****		****		****		
Delay/Veh:	26.2	26.2	26.2	15.3	15.3	37.5	34.8	41.3	41.3	54.3	54.3	54.3
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:	26.2	26.2	26.2	15.3	15.3	37.5	34.8	41.3	41.3	54.3	54.3	54.3
LOS by Move:	D	D	D	C	C	E	D	E	E	F	F	F
ApproachDel:	26.2			31.9			38.3			54.3		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	26.2			31.9			38.3			54.3		
LOS by Appr:	D			D			E			F		
AllWayAvgQ:	1.5	1.5	1.5	0.4	0.4	3.4	2.7	3.7	3.7	5.1	5.1	5.1

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

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

Intersection #2

Cycle (sec):	100	Critical Vol./Cap.(X):	0.694
Loss Time (sec):	0	Average Delay (sec/veh):	19.9
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:	0 0	1! 0	0	0 0	1! 0	0	0 1	0 1	0	0 1	0 1	0
Volume Module:												
Base Vol:	29	34	20	37	32	138	106	547	25	43	565	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:	29	34	20	37	32	138	106	547	25	43	565	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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	31	37	22	40	35	150	115	594	27	47	613	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	31	37	22	40	35	150	115	594	27	47	613	41
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:	31	37	22	40	35	150	115	594	27	47	613	41
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:	0.35	0.41	0.24	0.18	0.15	0.67	0.31	1.62	0.07	0.13	1.75	0.12
Final Sat.:	159	186	110	94	81	350	166	871	40	71	941	64
Capacity Analysis Module:												
Vol/Sat:	0.20	0.20	0.20	0.43	0.43	0.43	0.69	0.68	0.67	0.66	0.65	0.64
Crit Moves:	****				****		****			****		
Delay/Veh:	12.0	12.0	12.0	14.1	14.1	14.1	22.9	21.9	21.2	21.0	20.5	20.0
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:	12.0	12.0	12.0	14.1	14.1	14.1	22.9	21.9	21.2	21.0	20.5	20.0
LOS by Move:	B	B	B	B	B	B	C	C	C	C	C	C
ApproachDel:		12.0			14.1			22.1			20.5	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		12.0			14.1			22.1			20.5	
LOS by Appr:		B			B			C			C	
AllWayAvgQ:	0.2	0.2	0.2	0.7	0.7	0.7	2.0	1.8	1.8	1.7	1.6	1.6

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

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

Intersection #3

Cycle (sec):	100	Critical Vol./Cap.(X):	0.686
Loss Time (sec):	0	Average Delay (sec/veh):	18.2
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	0	0	0	1 0	0	1	0 1	0	1	0 1 0
Volume Module:												
Base Vol:	2	0	0	95	0	187	148	562	0	0	493	70
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:	2	0	0	95	0	187	148	562	0	0	493	70
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	2	0	0	101	0	199	157	597	0	0	524	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	0	0	101	0	199	157	597	0	0	524	74
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:	2	0	0	101	0	199	157	597	0	0	524	74
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	0.00	0.00	0.34	0.00	0.66	0.42	1.58	0.00	0.00	1.75	0.25
Final Sat.:	422	0	0	192	0	378	229	888	0	0	969	140
Capacity Analysis Module:												
Vol/Sat:	0.01	xxxx	xxxx	0.53	xxxx	0.53	0.69	0.67	xxxx	xxxx	0.54	0.53
Crit Moves:	****			****			****				****	
Delay/Veh:	10.7	0.0	0.0	15.4	0.0	15.4	21.8	20.8	0.0	0.0	16.1	15.7
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:	10.7	0.0	0.0	15.4	0.0	15.4	21.8	20.8	0.0	0.0	16.1	15.7
LOS by Move:	B	*	*	C	*	C	C	C	*	*	C	C
ApproachDel:		10.7			15.4			21.0			16.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		10.7			15.4			21.0			16.1	
LOS by Appr:		B			C			C			C	
AllWayAvgQ:	0.0	0.0	0.0	1.0	1.0	1.0	1.9	1.8	1.8	1.1	1.0	1.0

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

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

Intersection #4

Average Delay (sec/veh): 9.4 Worst Case Level Of Service: A[9.5]

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 1 0			0 1 0 0 0			0 0 0 0 0			0 0 0 0 1		
Volume Module:												
Base Vol:	0	82	1	12	88	0	0	0	0	0	0	1
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	82	1	12	88	0	0	0	0	0	0	1
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	82	1	12	88	0	0	0	0	0	0	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	82	1	12	88	0	0	0	0	0	0	1
Critical Gap Module:												
Critical Gp:	xxxxx	6.5	6.2	7.1	6.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	4.0	3.3	3.5	4.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	1	0	41	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	899	1091	968	900	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	899	1091	899	900	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	0.09	0.00	0.01	0.10	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	901	900	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	0.3	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	9.4	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	A	A	*	*	*	*	*	*	*	*
ApproachDel:	9.4			9.5			xxxxxx			xxxxxx		
ApproachLOS:	A			A			*			*		

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

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

Intersection #5

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: C[18.4]

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:	1 0	0 0	0	0 0	0 0	0	0 0	1 1	0	0 1	1 0	0
Volume Module:												
Base Vol:	1	0	0	0	0	0	0	599	5	2	645	0
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:	1	0	0	0	0	0	0	599	5	2	645	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:	1	0	0	0	0	0	0	599	5	2	645	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	0	0	0	0	0	0	599	5	2	645	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	928	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	604	xxxx	xxxxx
Potent Cap.:	271	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	984	xxxx	xxxxx
Move Cap.:	270	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	984	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	18.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx
LOS by Move:	C	*	*	*	*	*	*	*	*	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	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*
ApproachDel:		18.4			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in V/C
# 1	F	61.0	1.065	F	61.0	1.065	+ 0.000
# 2	D	26.0	0.793	D	26.0	0.793	+ 0.000
# 3	C	23.3	0.786	C	23.3	0.786	+ 0.000

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

Intersection #1

Cycle (sec):	100	Critical Vol./Cap.(X):	1.065
Loss Time (sec):	0	Average Delay (sec/veh):	61.0
Optimal Cycle:	0	Level Of Service:	F

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:	0 0	1! 0	0	0 1	0 0	1	1 0	0 1	0	0 0	1! 0	0
Volume Module:												
Base Vol:	61	144	24	56	67	379	286	355	13	7	307	68
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:	61	144	24	56	67	379	286	355	13	7	307	68
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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	69	163	27	63	76	429	324	402	15	8	347	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	69	163	27	63	76	429	324	402	15	8	347	77
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:	69	163	27	63	76	429	324	402	15	8	347	77
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:	0.27	0.63	0.10	0.46	0.54	1.00	1.00	0.96	0.04	0.02	0.80	0.18
Final Sat.:	99	233	39	182	218	447	392	401	15	7	326	72
Capacity Analysis Module:												
Vol/Sat:	0.70	0.70	0.70	0.35	0.35	0.96	0.83	1.00	1.00	1.06	1.06	1.06
Crit Moves:		****				****			****		****	
Delay/Veh:	31.9	31.9	31.9	16.4	16.4	61.6	43.0	74.1	74.1	93.3	93.3	93.3
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:	31.9	31.9	31.9	16.4	16.4	61.6	43.0	74.1	74.1	93.3	93.3	93.3
LOS by Move:	D	D	D	C	C	F	E	F	F	F	F	F
ApproachDel:		31.9			50.5			60.5			93.3	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		31.9			50.5			60.5			93.3	
LOS by Appr:		D			F			F			F	
AllWayAvgQ:	2.0	2.0	2.0	0.5	0.5	6.3	3.4	7.2	7.2	9.2	9.2	9.2

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

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

Intersection #2

Cycle (sec):	100	Critical Vol./Cap.(X):	0.793
Loss Time (sec):	0	Average Delay (sec/veh):	26.0
Optimal Cycle:	0	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:	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:	0	0 1!	0	0	0 1!	0 0	0	1 0	1 0	0	1 0	1 0
Volume Module:												
Base Vol:	32	35	22	41	32	156	109	617	20	39	640	39
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:	32	35	22	41	32	156	109	617	20	39	640	39
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	35	38	24	44	35	169	118	669	22	42	694	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	35	38	24	44	35	169	118	669	22	42	694	42
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:	35	38	24	44	35	169	118	669	22	42	694	42
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:	0.36	0.39	0.25	0.18	0.14	0.68	0.29	1.66	0.05	0.11	1.78	0.11
Final Sat.:	159	174	109	92	72	351	149	858	28	56	924	57
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.48	0.48	0.48	0.79	0.78	0.77	0.76	0.75	0.74
Crit Moves:	****				****		****			****		
Delay/Veh:	12.6	12.6	12.6	15.6	15.6	15.6	31.0	29.6	28.5	27.9	27.1	26.4
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:	12.6	12.6	12.6	15.6	15.6	15.6	31.0	29.6	28.5	27.9	27.1	26.4
LOS by Move:	B	B	B	C	C	C	D	D	D	D	D	D
ApproachDel:		12.6			15.6			29.7			27.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		12.6			15.6			29.7			27.1	
LOS by Appr:		B			C			D			D	
AllWayAvgQ:	0.2	0.2	0.2	0.8	0.8	0.8	3.0	2.8	2.8	2.6	2.5	2.5

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

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

Intersection #3

Cycle (sec):	100	Critical Vol./Cap.(X):	0.786
Loss Time (sec):	0	Average Delay (sec/veh):	23.3
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	0 0	0	0	1! 0	0	1 0	1 0	0	1 0	1 0
Volume Module:												
Base Vol:	2	0	0	106	0	212	152	631	0	0	559	72
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:	2	0	0	106	0	212	152	631	0	0	559	72
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	2	0	0	113	0	225	162	671	0	0	594	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	0	0	113	0	225	162	671	0	0	594	77
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:	2	0	0	113	0	225	162	671	0	0	594	77
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	0.00	0.00	0.33	0.00	0.67	0.39	1.61	0.00	0.00	1.77	0.23
Final Sat.:	407	0	0	187	0	375	206	869	0	0	941	123
Capacity Analysis Module:												
Vol/Sat:	0.01	xxxx	xxxx	0.60	xxxx	0.60	0.79	0.77	xxxx	xxxx	0.63	0.62
Crit Moves:	****			****			****				****	
Delay/Veh:	11.1	0.0	0.0	18.0	0.0	18.0	29.6	28.0	0.0	0.0	19.9	19.3
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:	11.1	0.0	0.0	18.0	0.0	18.0	29.6	28.0	0.0	0.0	19.9	19.3
LOS by Move:	B	*	*	C	*	C	D	D	*	*	C	C
ApproachDel:		11.1			18.0			28.3			19.8	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		11.1			18.0			28.3			19.8	
LOS by Appr:		B			C			D			C	
AllWayAvgQ:	0.0	0.0	0.0	1.4	1.4	1.4	3.0	2.7	2.7	1.6	1.5	1.5

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

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

Intersection #1

Cycle (sec):	100	Critical Vol./Cap.(X):	1.074
Loss Time (sec):	0	Average Delay (sec/veh):	62.5
Optimal Cycle:	0	Level Of Service:	F

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:	0	0	1! 0	0	0	1	0	0	1	0	0	1! 0
Volume Module:												
Base Vol:	62	144	24	56	67	383	286	355	13	7	309	68
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:	62	144	24	56	67	383	286	355	13	7	309	68
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:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	70	163	27	63	76	433	324	402	15	8	350	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	70	163	27	63	76	433	324	402	15	8	350	77
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:	70	163	27	63	76	433	324	402	15	8	350	77
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:	0.27	0.63	0.10	0.46	0.54	1.00	1.00	0.96	0.04	0.02	0.80	0.18
Final Sat.:	100	232	39	182	218	446	391	400	15	7	326	72
Capacity Analysis Module:												
Vol/Sat:	0.70	0.70	0.70	0.35	0.35	0.97	0.83	1.00	1.00	1.07	1.07	1.07
Crit Moves:			****			****		****			****	
Delay/Veh:	32.3	32.3	32.3	16.4	16.4	64.1	43.3	74.8	74.8	96.1	96.1	96.1
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:	32.3	32.3	32.3	16.4	16.4	64.1	43.3	74.8	74.8	96.1	96.1	96.1
LOS by Move:	D	D	D	C	C	F	E	F	F	F	F	F
ApproachDel:		32.3			52.5			61.1			96.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		32.3			52.5			61.1			96.1	
LOS by Appr:		D			F			F			F	
AllWayAvgQ:	2.0	2.0	2.0	0.5	0.5	6.6	3.4	7.3	7.3	9.5	9.5	9.5

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

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

Intersection #2

Cycle (sec):	100	Critical Vol./Cap.(X):	0.805
Loss Time (sec):	0	Average Delay (sec/veh):	27.0
Optimal Cycle:	0	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:	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:	0	0 1!	0	0	0 1!	0	0	1 0	1 0	0	1 0	1 0
Volume Module:												
Base Vol:	33	35	23	42	33	156	109	620	26	44	641	39
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:	33	35	23	42	33	156	109	620	26	44	641	39
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:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	36	38	25	46	36	169	118	673	28	48	696	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	36	38	25	46	36	169	118	673	28	48	696	42
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:	36	38	25	46	36	169	118	673	28	48	696	42
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:	0.36	0.39	0.25	0.18	0.14	0.68	0.29	1.64	0.07	0.12	1.77	0.11
Final Sat.:	160	170	112	93	73	347	147	849	36	62	914	56
Capacity Analysis Module:												
Vol/Sat:	0.22	0.22	0.22	0.49	0.49	0.49	0.80	0.79	0.78	0.77	0.76	0.75
Crit Moves:	****			****			****			****		
Delay/Veh:	12.7	12.7	12.7	15.8	15.8	15.8	32.4	30.8	29.6	28.9	28.1	27.3
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:	12.7	12.7	12.7	15.8	15.8	15.8	32.4	30.8	29.6	28.9	28.1	27.3
LOS by Move:	B	B	B	C	C	C	D	D	D	D	D	D
ApproachDel:		12.7			15.8			31.0			28.1	
Delay Adj:		1.00			1.00			1.00			1.00	
ApprAdjDel:		12.7			15.8			31.0			28.1	
LOS by Appr:		B			C			D			D	
AllWayAvgQ:	0.2	0.2	0.2	0.9	0.9	0.9	3.2	2.9	2.9	2.7	2.6	2.6

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

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

Intersection #3

Cycle (sec):	100	Critical Vol./Cap.(X):	0.792
Loss Time (sec):	0	Average Delay (sec/veh):	23.6
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	0 0	0	0	1! 0	0	1	0 1	0	1	0 1 0
Volume Module:												
Base Vol:	2	0	0	108	0	212	152	636	0	0	559	72
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:	2	0	0	108	0	212	152	636	0	0	559	72
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:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	2	0	0	115	0	225	162	676	0	0	594	77
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	2	0	0	115	0	225	162	676	0	0	594	77
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:	2	0	0	115	0	225	162	676	0	0	594	77
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	0.00	0.00	0.33	0.01	0.66	0.39	1.61	0.00	0.00	1.77	0.23
Final Sat.:	406	0	0	189	0	372	204	869	0	0	939	123
Capacity Analysis Module:												
Vol/Sat:	0.01	xxxx	xxxx	0.61	0.00	0.61	0.79	0.78	xxxx	xxxx	0.63	0.62
Crit Moves:	****			****			****				****	
Delay/Veh:	11.1	0.0	0.0	18.2	18.2	18.2	30.1	28.5	0.0	0.0	20.0	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:	11.1	0.0	0.0	18.2	18.2	18.2	30.1	28.5	0.0	0.0	20.0	19.4
LOS by Move:	B	*	*	C	C	C	D	D	*	*	C	C
ApproachDel:	11.1			18.2			28.8			19.9		
Delay Adj:	1.00			1.00			1.00			1.00		
ApprAdjDel:	11.1			18.2			28.8			19.9		
LOS by Appr:	B			C			D			C		
AllWayAvgQ:	0.0	0.0	0.0	1.4	1.4	1.4	3.0	2.8	2.8	1.6	1.5	1.5

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

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

Intersection #4

Average Delay (sec/veh): 9.4 Worst Case Level Of Service: A[9.5]

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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Volume Module:																				
Base Vol:	0	90		1		12	91		0		0	0		0		0	0		0	1
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	1.00
Initial Bse:	0	90		1		12	91		0		0	0		0		0	0		0	1
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
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
PHF Volume:	0	90		1		12	91		0		0	0		0		0	0		0	1
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	0
FinalVolume:	0	90		1		12	91		0		0	0		0		0	0		0	1
Critical Gap Module:																				
Critical Gp:	xxxxx	6.5		6.2		7.1	6.5		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
FollowUpTim:	xxxxx	4.0		3.3		3.5	4.0		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Capacity Module:																				
Cnflict Vol:	xxxx	1		0		45	0		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
Potent Cap.:	xxxx	899		1091		962	900		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
Move Cap.:	xxxx	899		1091		887	900		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
Volume/Cap:	xxxx	0.10		0.00		0.01	0.10		xxxx		xxxx	xxxx		xxxx		xxxx	xxxx		xxxx	
Level Of Service Module:																				
2Way95thQ:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
Control Del:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
LOS by Move:	*	*		*		*	*		*		*	*		*		*	*		*	
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		901		899	xxxx	xxxxx			xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx	
SharedQueue:	xxxxx	xxxx		0.3		0.4	xxxx	xxxxx			xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shrd ConDel:	xxxxx	xxxx		9.4		9.5	xxxx	xxxxx			xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		A		A	*	*			*	*		*		*	*		*	
ApproachDel:		9.4					9.5					xxxxxx					xxxxxx			
ApproachLOS:		A					A					*					*			

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

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

Intersection #5

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: C[21.0]

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:	1 0	0	0 0	0 0	0	0 0	0 0	1	1 0	0 1	1	0 0
Volume Module:												
Base Vol:	1	0	0	0	0	0	0	680	5	2	723	0
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:	1	0	0	0	0	0	0	680	5	2	723	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:	1	0	0	0	0	0	0	680	5	2	723	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	1	0	0	0	0	0	0	680	5	2	723	0
Critical Gap Module:												
Critical Gp:	6.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1048	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	685	xxxx	xxxxx
Potent Cap.:	227	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	918	xxxx	xxxxx
Move Cap.:	226	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	918	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	0.0	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	21.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx
LOS by Move:	C	*	*	*	*	*	*	*	*	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	0.0	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*
ApproachDel:		21.0			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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

Scenario Report

Scenario:	Default Scenario
Command:	Existing
Volume:	Existing AM
Geometry:	Existing
Impact Fee:	Default Impact Fee
Trip Generation:	Default Trip Generation
Trip Distribution:	Default Trip Distribution
Paths:	Default Path
Routes:	Default Route
Configuration:	Default Configuration