HEXAGON TRANSPORTATION CONSULTANTS, INC.

1325 Old County Road Residential Development

Draft Transportation Impact Analysis

Prepared for:

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Executive Summary

This report presents the results of the transportation impact analysis conducted for the proposed residential development located at 1325 Old County Road in Belmont, California. The project would construct a four-story 250-unit multi-family residential building over below grade parking with 258 spaces. The project also includes 1,352 s.f. of free rental space for the community, which could be used for children's musical classes during the afterschool hours. The 2.09-acre site is currently occupied by a materials manufacturing building and its associated office buildings, a parking lot, small offices for film production, a printer and gelato maker, and an animal shelter facility. The materials manufacturing buildings on the site have been vacant for several months and all other buildings are occupied. The site currently has driveways on Oneill Avenue, Old County Road, and Karen Avenue. These would be replaced by a single driveway on Oneill Avenue.

Project Trip Generation

The proposed project would result in a net increase of 30 trips in the AM peak hour and 65 trips in the PM peak hour.

Intersection Levels of Service

The results of the intersection level of service analysis show that all study intersections would continue to operate at an acceptable level of service under both existing plus project and background plus project conditions during the AM and PM peak hours. Accordingly, none of the study intersections would be significantly impacted by the project. The intersection level of service results for all scenarios are summarized in Table ES-1.

Signal Warrant Analysis

A peak hour signal warrant analysis (*MUTCD 2010 Edition,* Part 4, Warrant 3) was performed for all the unsignalized study intersections to determine whether the project would produce an impact according to the City of Belmont impact criteria. The peak-hour signal warrant was checked for existing, background, and project conditions. The signal warrant analysis results show that the intersection at Ralston Avenue/Elmer Street is warranted for a traffic signal under existing and project conditions during the PM peak hour.

Proposed Mitigation

The *Final Ralston Avenue Corridor Study and Improvements Plan*, dated August 26, 2014, recommends the signalization of the intersection at Ralston Avenue and Elmer Street. Per the City of Belmont traffic impact guidelines, contribution of a fair share toward the cost of a traffic signal would mitigate the significant impact caused by the project. Under cumulative conditions, this project is expected to add 9 trips during the AM peak hour and 26 trips during the PM peak hour (see Figure 9), which represents an average of 2% of the cumulative traffic growth at this intersection (see Table 10).

Table ES-1
Intersections Level of Service Summary

					Existing		Existing Plus Project				Background		Background Plus Project					2035 Cumulative + Project [2]	
Int. #	Study Intersection	Peak Hour	Control[3]	Count Date	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. In Avg. Delay (sec)	Incr. In Crit. V/C (sec)	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS	Incr. In Avg. Delay (sec)	Incr. In Crit. V/C (sec)	Project Trips	Avg. Delay (sec)[1]	LOS
1	Old County Road & Oneill Avenue	AM	TWSC	03/23/17	10.2	B	10.7	B	0.5	-	10.4	B	10.9	B	0.5	-	16	**17.7**	**C**
		PM		03/23/17	12.8	B	13.5	B	0.7	-	13.3	B	13.9	B	0.6	-	40	**28.5**	**D**
2	Old County Road & Karen Road	AM	OWSC	01/17/18	10.1	B	10.1	B	0.0	-	10.2	B	10.2	B	0.0	-	6	N/A	N/A
		PM		01/17/18	12.4	B	12.6	B	0.2	-	12.8	B	12.9	B	0.1	-	13	N/A	N/A
3	Old County Road & Harbor Boulevard	AM	Signal	12/09/14	20.3	C	20.3	C	0.0	0.000	20.3	C	20.4	C	0.1	0.000	6	42.6	D
		PM		12/09/14	23.0	C	23.0	C	0.0	0.009	23.3	C	23.3	C	0.0	0.009	13	**59.6**	**E**
4	El Camino Real & Harbor Boulevard	AM	Signal	12/09/14	26.0	C	26.0	C	0.0	0.001	25.7	C	25.8	C	0.1	0.001	7	26.6	C
		PM		12/09/14	25.5	C	25.6	C	0.1	0.003	25.8	C	26.0	C	0.2	0.003	15	**45.6**	**D**
5	Industrial Road & Harbor Boulevard	AM	Signal	01/17/18	24.8	C	24.9	C	0.1	0.003	25.1	C	25.2	C	0.1	0.003	6	N/A	N/A
		PM		01/17/18	21.9	C	21.9	C	0.0	0.000	21.9	C	21.9	C	0.0	0.000	7	N/A	N/A
6	El Camino Real & Ralston Avenue*	AM	Signal	10/26/17	49.1	D	48.9	D	-0.2	0.000	52.6	D	52.5	D	-0.1	0.000	12	**90.3**	**F**
		PM		10/26/17	63.3	E	63.7	E	0.4	0.005	66.6	E	67.1	E	0.5	0.004	25	**>120**	**F**
7	Old County Road & Ralston Avenue	AM	Signal	10/26/17	34.0	C	34.1	C	0.1	-0.004	34.4	C	34.5	C	0.1	-0.005	10	**41.5**	**D**
		PM		10/26/17	37.6	D	37.6	D	0.0	0.000	38.4	D	38.4	D	0.0	0.000	27	**57.2**	**E**
8	Elmer Street & Ralston Avenue	AM	TWSC	03/23/17	10.2	B	10.3	B	0.1	-	10.3	B	10.4	B	0.1	-	9	52.4	D
		PM		03/23/17	17.0	C	17.3	C	0.3	-	18.1	C	18.5	C	0.4	-	26	54.3	D
9	Old County Road & Masonic Way	AM	AWSC	03/23/17	18.4	C	18.4	C	0.0	-	18.7	C	18.7	C	0.0	-	0	15.1	C
		PM		03/23/17	23.4	C	23.4	C	0.0	-	25.7	D	25.7	D	0.0	-	0	12.4	B
10	Elmer Street & Oneill Avenue	AM	AWSC	01/23/18	7.5	A	7.6	A	0.1	-	7.6	A	7.6	A	0.0	-	14	N/A	N/A
		PM		01/23/18	13.8	B	14.1	B	0.3	-	14.1	B	14.4	B	0.3	-	25	N/A	N/A
11	Elmer Street & Harbor Boulevard	AM	OWSC	01/17/18	11.9	B	12.2	B	0.3	-	12.3	B	12.7	B	0.4	-	6	N/A	N/A
		PM		01/17/18	21.5	C	21.9	C	0.4	-	23.4	C	23.9	C	0.5	-	7	N/A	N/A
12	Hiller Street & Ralston Avenue	AM	Signal	10/26/17	30.0	C	29.9	C	-0.1	0.006	30.5	C	30.4	C	-0.1	0.007	9	22.2	C
		PM		10/26/17	31.7	C	31.8	C	0.1	0.007	31.2	C	31.3	C	0.1	0.008	26	22.4	C
13	US 101 SB Ramps & Ralston Avenue	AM	Signal	10/26/17	14.8	B	14.8	B	0.0	0.004	15.1	B	15.1	B	0.0	0.004	6	13.1	B
		PM		10/26/17	17.4	B	17.4	B	0.0	0.001	17.4	B	17.4	B	0.0	0.001	26	23.2	C
14	US 101 NB Ramps/ Island Pkwy & Ralston Avenue	AM	Signal	10/26/17	27.9	C	27.8	C	-0.1	-0.001	28.0	C	27.8	C	-0.2	-0.001	9	33.2	C
		PM		10/26/17	32.5	C	32.7	C	0.2	0.006	32.6	C	32.9	C	0.3	0.007	20	34.0	C

Notes:
* denotes CMP intersection
[1] For TWSC and OWSC, the average Delay and LOS is reported for the worst movement.
[2] Cumulative 2035 LOS from Belmont General Plan EIR (Chapter 4 - Transportation). The Elmer Street/Ralston Avenue and Old County Road/Masonic Way intersections are signalized under these conditions.
[3] Intersection control type definitions: TWSC = Two-way-stop-control; OWSC = One-way-stop-control; AWSC = All-way-stop-control
Bold indicates substandard level of service

1. Introduction

This report presents the results of the transportation impact analysis conducted for the proposed residential development located at 1325 Old County Road in Belmont, California (see Figure 1). The project would construct a four-story 250-unit multi-family residential building over below grade parking with 258 spaces (see Figure 2). The project also includes 1,352 s.f. of free rental space for the community, which could be used for children's musical classes during the afterschool hours. The 2.09-acre site is currently occupied by a materials manufacturing building and its associated office buildings, a parking lot, small offices for film production, a printer and gelato maker, and an animal shelter facility. The materials manufacturing buildings on the site have been vacant for several months and other buildings are occupied. The site currently has driveways on Oneill Avenue, Old County Road, and Karen Avenue. These would be replaced by a single driveway on Oneill Avenue.

Scope of Study

This study was conducted for the purpose of identifying the potential transportation impacts related to the project. The potential impacts of the project were evaluated in accordance with the standards set forth by the City of Belmont, and the San Mateo County Congestion Management Program (CMP). The traffic analysis was based on level of service for 8 signalized intersections, and 6 unsignalized intersections, for a total of 14 study intersections. One study intersection in the City of Belmont is a CMP intersection. The study intersections are identified below.

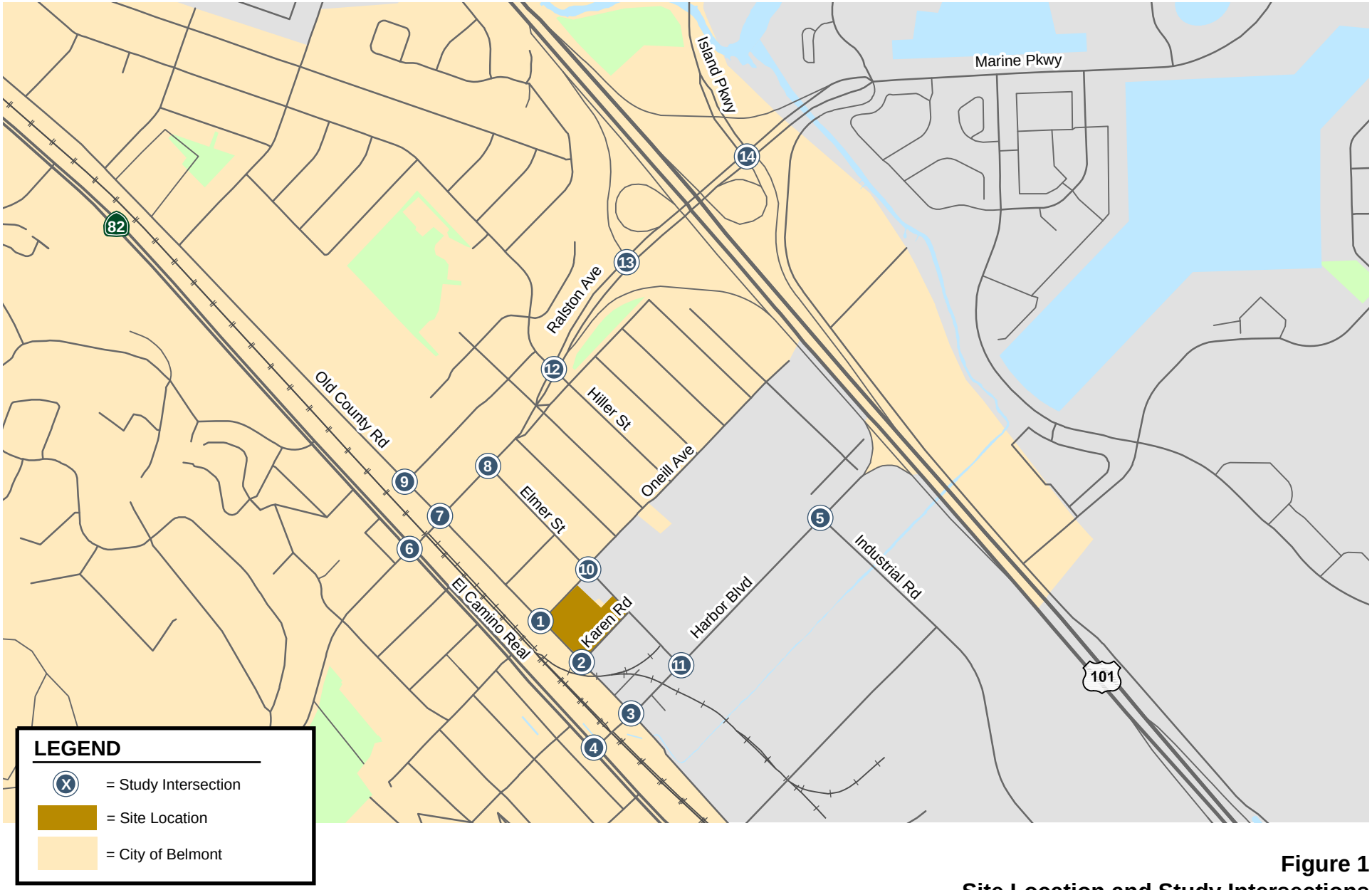

Figure 1
Site Location and Study Intersections

NORTH
Not to Scale

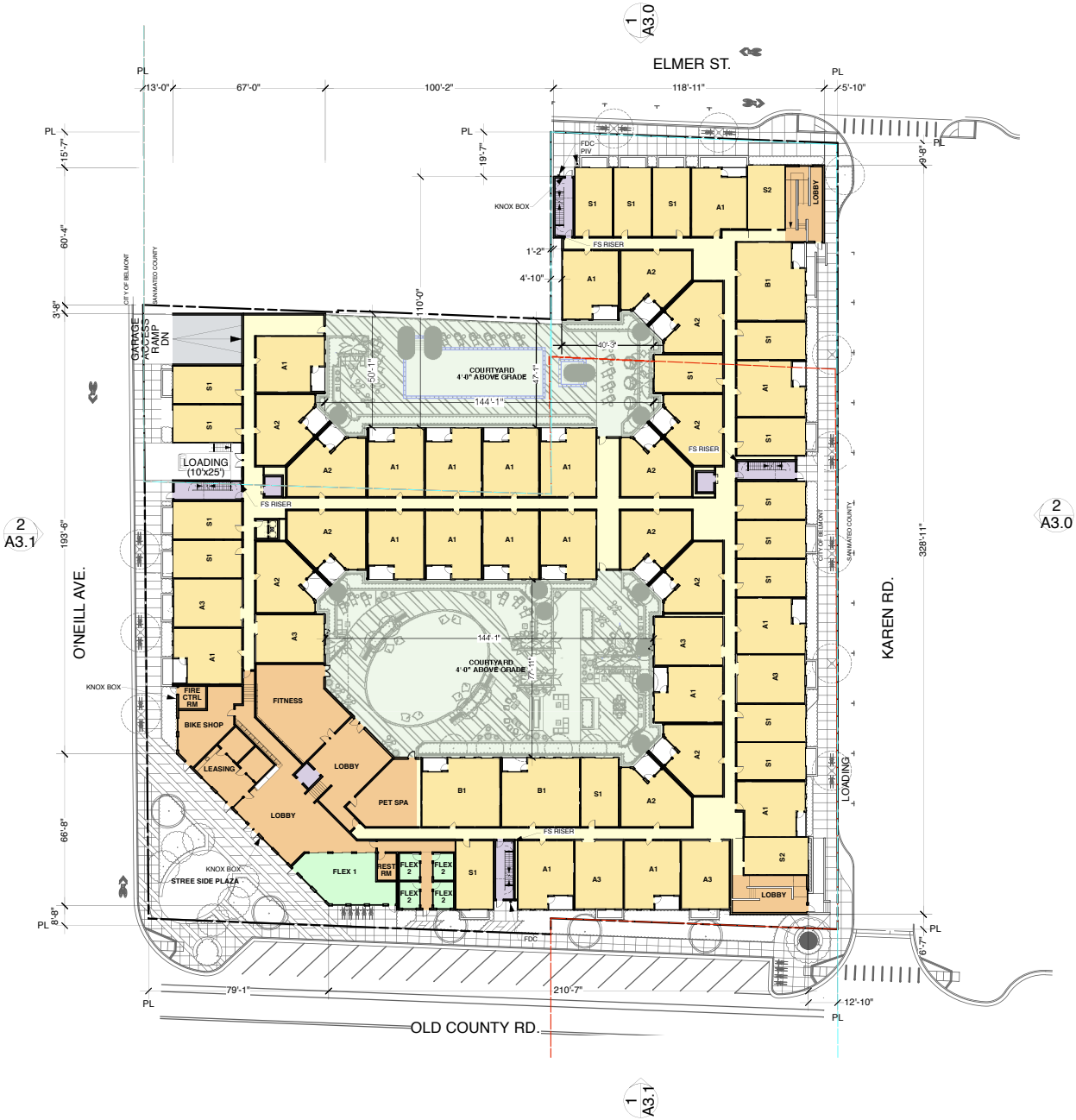

Figure 2
Project Site Plan

NORTH
Not to Scale

City of Belmont Intersections

1. Old County Road and Oneill Avenue (unsignalized)
2. Old County Road and Karen Road (unsignalized)
3. Old County Road and Harbor Boulevard
4. El Camino Real and Harbor Boulevard (North)
5. Industrial Road and Harbor Boulevard
6. El Camino Real and Ralston Avenue*
7. Old County Road and Ralston Avenue
8. Elmer Street and Ralston Avenue (unsignalized)
9. Old County Road and Masonic Way (unsignalized)
10. Oneill Avenue and Elmer Street (unsignalized)
11. Harbor Boulevard and Elmer Street (unsignalized)
12. Hiller Street and Ralston Avenue
13. US-101 SB ramps and Ralston Avenue
14. US-101 NB ramps - Island Parkway and Ralston Avenue

* Denotes CMP Intersection

Per CMP technical guidelines, a freeway segment level of service analysis is required when a project would add trips greater than one percent of a segment's capacity. The project is not expected to generate trips more than one percent of the capacity on any freeway segments in the area (see Table 1). A freeway analysis for the CMP is therefore not necessary. Trip generation for the project is discussed in Chapter 4.

Table 1
Freeway Capacity Check

Freeway	Segment	Direction	# of Mixed Flow Lanes	Capacity[1] (vph)	1% of Capacity	Peak Hour	LOS Mixed Flow Lanes	Proposed Expansion
US 101	Holly Street to Ralston Avenue	NB	4	9200	92	AM	F	-5
						PM	F	11
US 101	Ralston Avenue/Harbor Boulevard to Holly Street/Brittan Avenue	SB	4	9200	92	AM	F	11
						PM	F	1
US 101	Ralston Avenue to E Hillsdale Boulevard	NB	4	9200	92	AM	F	11
						PM	F	2
US 101	E Hillsdale Boulevard to Ralston Avenue/Harbor Boulevard	SB	4	9200	92	AM	F	-5
						PM	F	12

Notes:
1. Capacity was based on the ideal capacity cited in the *2000 Highway Capacity Manual.*

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour is expected to occur between 7:00 AM and 9:00 AM, and the PM peak hour between 4:00 PM and 6:00 PM on a typical weekday. These are the hours during which most traffic congestion occurs on the roadways.

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing weekday AM (7:00 – 9:00 AM) and PM (4:00 – 6:00 PM) peak-hour traffic volumes were obtained from the City of Belmont. New manual peak-hour turning movement counts were conducted in January 2018 for the intersections where the available count data was outdated (more than two years old).

Scenario 2: *Background Conditions.* Background traffic volumes were estimated by adding to existing volumes the projected volumes from approved but not yet completed developments in the project area. A list of such projects was provided by the City of Belmont and the City of San Carlos.

Scenario 3: *Existing Plus Project Conditions.* Existing Plus Project peak hour traffic volumes were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus project conditions were evaluated relative to existing conditions to determine the effects the project would have on the existing roadway network.

Scenario 4: *Background Plus Project Conditions.* Background plus Project traffic volumes were estimated by adding to background traffic volumes the additional traffic generated by the project. Project conditions were evaluated relative to background conditions to determine potential project impacts.

Scenario 4: *Cumulative Conditions.* The proposed project is consistent with the General Plan, and the trip generation assumptions in the Environmental Impact Report (EIR) prepared for the Plan. Furthermore, the total development proposed within the Plan area to date, including the proposed project, does not exceed the land use totals evaluated in the General Plan EIR. Therefore, a separate cumulative conditions analysis was not conducted as part of this report. The cumulative conditions analysis contained in the EIR is discussed in the Cumulative Conditions chapter.

Methodology

This section presents the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from the City of Belmont, the City of San Carlos, field observations, and new traffic counts. The following data were obtained from these sources:

- existing peak-hour intersection turning-movement volumes,
- existing lane configurations,
- signal timing and phasing,
- existing bicycle and pedestrian volumes, and
- list of approved projects.

Analysis Methodologies and Level of Service Standards

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The correlation between average control delay and level of service is shown in Table 2. The various analysis methods are described below.

City of Belmont Signalized Intersections

The City of Belmont level of service methodology for signalized intersections is the 2000 *Highway Capacity Manual* (HCM) method. The *2000 Highway Capacity Manual* methodology estimates the average control delay per vehicle in seconds. *Control delay* is the amount of delay that is attributed to the particular traffic control device at the intersection, and includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average delay can then be correlated to a level of service. This method was applied using the SYNCHRO software. The City of Belmont level of service standard for signalized intersections varies according to the existing intersection level of service.

Table 2
Signalized Intersection Level of Service Definition

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lenghts, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p10-16.

City of Belmont Unsignalized Intersections

For the unsignalized study intersections, the level of service that is reported in this traffic study corresponds to the average control delay for all stop-controlled approaches. This method is applicable for both side street stop-controlled and all-way stop-controlled intersections. The City of Belmont level of service standard for unsignalized intersections varies according to the existing intersection level of service. The delay and corresponding level of service at the unsignalized and stop-controlled intersections are presented in Table 3.

Table 3
Unsignalized Intersection Level of Service Definition

Level of Service	Description	Average Control Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p17-2.

CMP Study Intersection

The study intersection of El Camino Real (SR 82) and Ralston Avenue is a CMP intersection. The CMP level of service standard for CMP intersections within the City of Belmont is LOS E or better. However, since the City of Belmont has a more conservative level of service standard that is based on the existing intersection LOS, this intersection was analyzed based on the more stringent City of Belmont standards.

Impact Criteria

Criteria are used to establish what constitutes an impact. For this analysis, the criteria used to determine significant impacts are based on the City of Belmont impact criteria as detailed in the *City of Belmont Guidelines for Traffic Impact Studies*, August 2014.

Intersection LOS Impact Criteria

For the purpose of this study, the project is said to create a potentially significant impact on traffic conditions at a signalized, all-way stop-controlled, or side-street stop-controlled intersection in the City of Belmont if for either peak hour the project meets the corresponding criteria shown in Table 4, or 5. For criteria pertinent to side-street stop-controlled intersections, the City guidelines state that the criteria do not apply to low volume roadways, but do not define what constitutes a “low volume roadway”.

Table 4
Signalized Intersection Significant Impact Criteria

If the base case (without project) LOS is:	Then the corresponding average control delay is:	The project Impact is considered potentially significant if the increase in delay due to the project is:	And the Volume-to-Capacity ratio increases by more than:
A	10.0 or less	10.0 seconds	0.02
B	10.1 to 20.0	10.0 seconds	0.02
C	20.1 to 35.0	7.5 seconds	0.02
D	35.1 to 55.0	4.0 seconds	0.01
E	55.1 to 80.0	4.0 seconds [1]	0.01
F	greater than 80.0	4.0 seconds [1]	0.01

Notes:

1. If the addition of project traffic results in a reduction in intersection control delay, then a project impact is considered potentially significant if 35 or more project vehicle trips are added to an intersection operating at LOS E, or 20 or more project vehicle trips are added to an intersection operating at LOS F.

Table 5
Unsignalized Intersection Significant Impact Criteria

If the base case (without project) LOS is:	Then the existing average control delay experienced by all drivers entering the intersection is:	The project Impact is considered potentially significant if the increase in average control delay due to the project is:
A	10.0 or less	10.0 seconds
B	10.1 to 15.0	5.0 seconds
C	15.1 to 25.0	5.0 seconds
D	25.1 to 35.0	4.0 seconds
E	35.1 to 50.0	4.0 seconds [1]
F	greater than 50.0	4.0 seconds [1]

Notes:

1. If the addition of project traffic results in a reduction in intersection control delay, then a project impact is considered potentially significant if 25 or more project vehicle trips are added to an intersection operating at LOS E, or 15 or more project vehicle trips are added to an intersection operating at LOS F.

Other Intersection-Level Impact Criteria

In addition to the intersection-LOS impact criteria, the *Guidelines for Traffic Impact Studies* also identifies the following intersection-level non-LOS potentially significant impact criteria:

- Signal Warrants: The project traffic causes an intersection to meet or exceed Caltrans signal warrant criteria. For locations where base case volumes already exceed signal warrant criteria levels, traffic increases the demand to capacity ratio (V/C) by 0.01.
- Turn Lanes: The project traffic increases volumes to a level meeting or exceeding criteria for provision of a right or left turn lane on an intersection approach. For locations where base case volumes already exceed turn lane warrant criteria levels, project traffic increases peak hour volume by more than 1%.

- Sight Lines: The project creates an unsignalized intersection or the project adds to an existing unsignalized intersection approach that does not have adequate sight lines based upon Caltrans criteria for state highway intersections and/or criteria for City roadway intersections.
- Vehicle Queues: The project traffic creates vehicle queues exceeding turn lane capacity or causing problematic back-ups of traffic on driveways or roadways on or off the project site. For intersections where base case volumes already create vehicle queues exceeding turn lane capacity, project traffic increases vehicle queues by 1%.

Other Transportation Impact Criteria

The project would have a potentially significant traffic impact if it results in any of the following conditions:

- On-site Roads and Frontage Improvements: The proposed on-site circulation would not meet the City's minimum standards for roadway or driveway design, or, in the opinion of the registered traffic engineer conducting the study, result in safety hazards to pedestrians, bicyclists or vehicles.
- Parking: The proposed on-site vehicle or bicycle parking supply would not be adequate to accommodate parking demand based upon City code criteria.
- Emergency Access: The project site would have inadequate emergency access.
- Policies and Plans: The project would conflict with adopted policies, plans, or programs.
- Road Hazards: The project would substantially increase hazards to pedestrians, bicyclists or vehicles due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses.

Mitigation of Potentially Significant Impacts

In the event any potentially significant effects are identified in the Transportation Impact Analysis, alternative mitigation measures shall be evaluated to determine whether they adequately mitigate the potentially significant impacts. The proposed mitigation measures may be suggested by the applicant or the City and shall be evaluated by the Director of Community Development and the Director of Public Works. Mitigation measures may include, but are not limited to, measures such as the following:

1. Installation of physical improvements at the affected intersection or roadway segment;
2. Installation of physical improvements at another intersection or roadway segment that will improve traffic flow within the transportation corridor (such as the Ralston Avenue Corridor);
3. Contribution of a fair share toward transportation improvements planned by the City and included in its capital improvement program or otherwise planned for construction;
4. Contribution of a fair share toward transit improvements or operations to relieve traffic congestion;
5. Modifications of the proposed land use or site design or operational measures to reduce trip generation.

Report Organization

This report has a total of seven chapters. Chapter 2 describes existing conditions including the existing roadway network, transit service, bicycle and pedestrian facilities. Chapter 3 presents the traffic conditions in the study area under background conditions. Chapter 4 presents project conditions including descriptions of the method used to estimate project traffic, its impact on the transportation system, and any recommended mitigation measures. Chapter 5 presents the intersection operations under cumulative conditions. Chapter 6 provides an evaluation of other transportation-related issues, such as site access, on-site circulation, vehicle queuing, parking, as well as potential project impacts on bicycle, pedestrian, and transit facilities. Chapter 7 presents the study conclusions including a summary of recommended improvements.

2. Existing Conditions

This chapter describes the existing conditions for all of the major transportation facilities near the site, including the roadway network, transit service, and bicycle and pedestrian facilities.

Existing Roadway Network

Regional access to the project is provided via US 101, and I-280, which are described below.

> *US 101* is a north/south freeway that extends from north of San Francisco to south of San Jose. In the project vicinity, US 101 has eight mixed-flow lanes. US 101 provides access to the project site via the interchange at Ralston Avenue. A bicycle/pedestrian bridge crosses US-101 just north of the Ralston Avenue interchanges, providing access to the Bay Trail multiuse path.
>
> *I-280* is a north/south freeway that extends from San Francisco to downtown San Jose. In the project vicinity, I-280 has eight mixed-flow lanes. I-280 provides access to the project site via Ralston Avenue by way of SR-92. Bicycle/pedestrian facilities are available at the Ralston Avenue/SR-92 interchange, providing access to the Ralston Avenue Bike Trail.

Local access to the project site is provided by El Camino Real, Ralston Avenue, Harbor Boulevard, Old County Road, Elmer Street, Oneill Avenue, Hiller Street, Industrial Road, Island Parkway and Karen Road. These roadways are described below.

> *El Camino Real* is a north-south four-lane arterial roadway that runs parallel to US-101 between San Francisco and San Jose and provides alternative regional access to the proposed project site. The posted speed limit on El Camino Real is 35 mph. On-street parking is provided on both sides of the street in most locations within the study area.
>
> *Ralston Avenue* is an east-west divided arterial that extends from I-280 in the west to US 101 in the east. Ralston Avenue is two- to four-lanes wide and has a posted speed limit of 30 mph in the project vicinity. Ralston Avenue provides access to the project site through Old County Road and Oneill Avenue.
>
> *Harbor Boulevard* is an east-west two- to four- lane roadway that extends from El Camino Real in the west to US 101 in the east and has a posted speed limit of 35 mph in the project vicinity.

Harbor Boulevard provides access to the project site through Old County Road and Oneill Avenue.

Old County Road is a north-south two-lane roadway that runs parallel to US-101 and El Camino Real through the study area. The posted speed limit on Old County Road is 30 mph. Old County Road provides access to the project through Oneill Avenue.

Elmer Street is a two-lane north-south roadway that extends from Harbor Boulevard in the south to Ralston Avenue in the north. Elmer Street provides access to the project site through Oneill Avenue. The speed limit on Elmer Street is 25 mph.

Oneill Avenue is a two-lane east-west roadway that extends from Old County Road in the west to Dairy Lane in the east. Oneill Avenue provides direct access to the project site. Oneill Avenue is a local street with a speed limit of 25mph.

Karen Road is a one-lane east-west alley way that connects Elmer Street and Old County Road. Karen Road is directly adjacent to the project site and provides access to the entrance through Old County Road and Elmer Street. The speed limit on Karen Road is 25 mph.

Existing Bicycle Facilities

Bicycle facilities include bike paths, bike lanes, and bike routes. Bike paths (Class I facilities) are pathways, separate from roadways that are designated for use by bicycles. Often, these pathways also allow pedestrian access. Bike lanes (Class II facilities) are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes (Class III) are existing rights-of-way that accommodate bicycles but are not separate from the existing travel lanes. Routes are typically designated only with signs.

There exists a Class I bike/pedestrian overpass over US 101 (see Figure 3). The overpass begins at the northeast corner of the intersection at Hiller Street and Ralston Avenue, runs along the northern side of Ralston Avenue and US 101 SB off-ramp, and connects to Marine Parkway in the Redwood Shores district. At the Hiller Street terminus of the overpass, the bicycle network is connected to a short segment of shared pedestrian/bike sidewalk on the west side of Hiller Street extending to Masonic Way. At Masonic Way, there exist Class II bike lanes on both sides of the street extending west to Old County Road. Masonic Way ends at Old County Road, but the Belmont Station underpass furthers the bicycle network to El Camino Real (SR 82). Between El Camino Real (SR 82) and South Road, Ralston Avenue provides a Class III bike route on both sides of the street. There exists a Class III bike route on Old Country Road, south of the project vicinity and continuing north until the intersection of Old County Road and Ralston Avenue. A bicycle path on the west side of Old County Road between Masonic Way and Ralston Ave also exists. Local roads such as Oneill Avenue, Elmer Street, Furlong Street, Granada Street, and Hiller Street carry low traffic volumes and are conducive for bicyclists.

Existing Pedestrian Facilities

Pedestrian facilities consist mostly of sidewalks along both the commercial and residential streets in the vicinity of the project site, except Karen Road. Oneill Avenue provides a sidewalk only on the south side of the street. Crosswalks with pedestrian signal heads and push buttons are located at most of the signalized intersections in the study area. However, crosswalks with pedestrian signal heads and push buttons are present only on the north and east leg of the intersection of El Camino Real and Harbor Boulevard. Crosswalks are not present at the unsignalized intersections of Oneill Avenue/Elmer Street, Elmer Street/Karen Road and Old County Road/Karen Road.

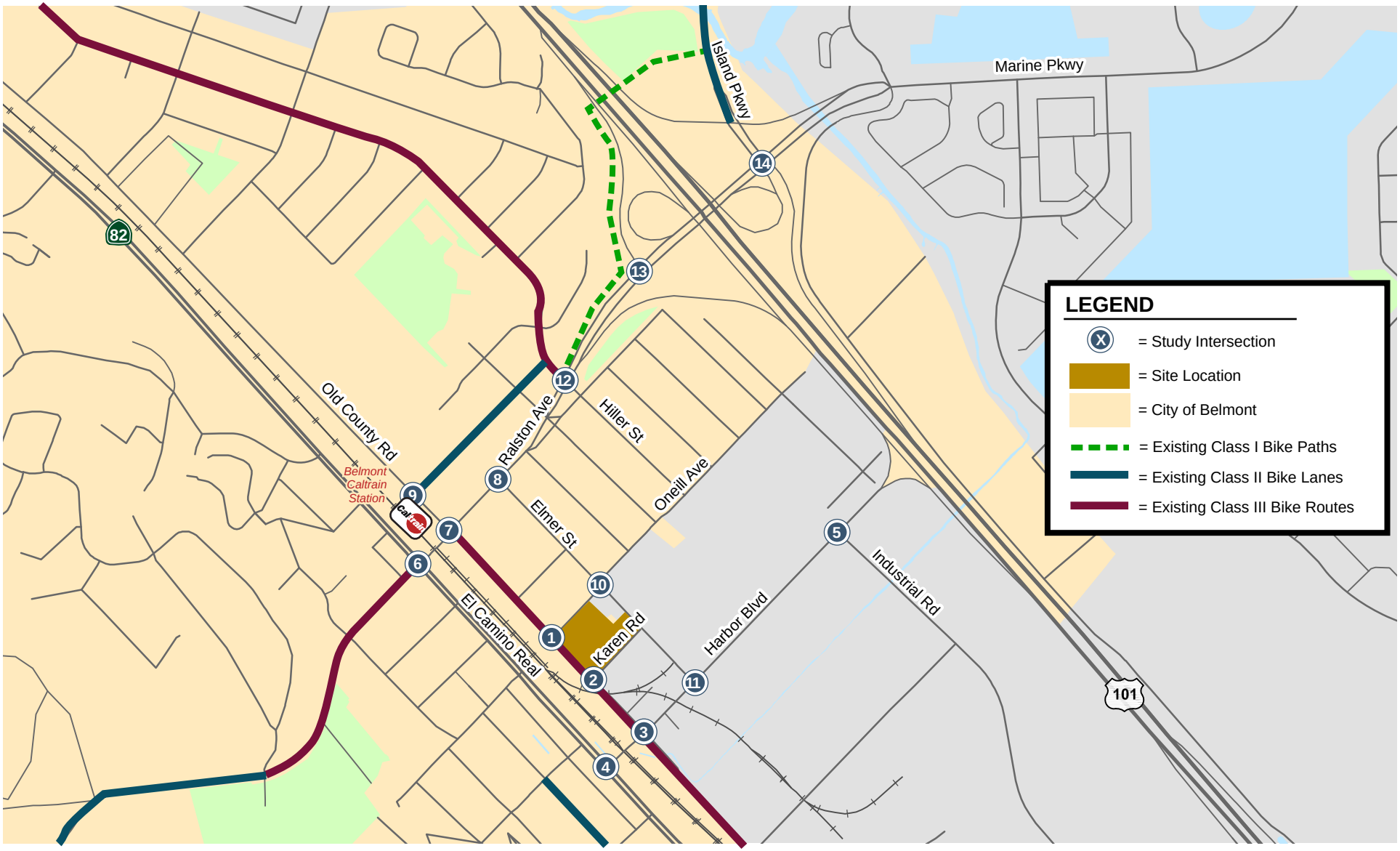

Figure 3
Existing Bicycle Facilities

NORTH
Not to Scale

Existing Transit Service

Existing transit service to the study area is provided by SamTrans and Caltrain. The SamTrans bus services and the Caltrain services are described below and shown on Figure 4.

SamTrans Services

- Route 60 provides school-day only service on Ralston Avenue between Ralston Middle School and the Bridge/Bowsprit intersection between 7:15 AM to 9:15 AM during the AM peak hour and 12:45 PM to 3:45 PM during the school PM peak hour. The closest bus stop is located at Ralston Avenue and Old County Road, which is approximately 1,200 feet from the project site.
- Route 62 provides school-day only bus service on Ralston Avenue between Carlmont High School and the Dale View/Old County Road intersection between 8:15 AM to 9:15 AM during the AM peak hour and 3:15 PM to 4:00 PM during the school PM peak hour. The closest bus stop is located at Ralston Avenue and Old County Road, which is approximately 1,200 feet from the project site.
- Route 67 provides school-day only bus service on Ralston Avenue between Ralston Middle School and the Bridge Parkway/Bowsprit intersection. Route 67 provides westbound service between 7:30 AM and 7:45 AM during the AM peak hour and eastbound service between 12:45 PM to 3:30 PM during the school PM peak hour. The closest bus stop is located at Ralston Avenue and Old County Road, which is approximately 1,200 feet from the project site.
- Route 260 provides bus service on Ralston Avenue between the San Carlos Caltrain station and the College of San Mateo. Route 260 provides bus service between 6:00 AM and 7:15 PM with 17 to 70-minute headway. Route 260 also stops at Ralston Avenue and Old County Road, which is 1,200 feet from the project site.
- Express and Multi-City Route 397 is a limited overnight service between San Francisco and the Palo Alto Transit Center via San Francisco Airport. Route 397 operates from 12:45 AM to 6:30 AM with 60-minute headways. The closest bus stop is located at El Camino Real and Harbor Boulevard, which is approximately 1,000 feet from the project site.
- Express and Multi-City Route 398 provides bus service between the San Bruno BART station and the Redwood City Transit Center via San Francisco Airport, the Hillsdale Caltrain Station, the Belmont Caltrain Station and the San Carlos Caltrain Station. Route 398 operates between 5:00 AM and 12:00 AM during weekdays with 60 to 75-minute headways. The closest bus stop is located at El Camino Real and Harbor Boulevard, which is approximately 1,000 feet from the project site.
- Express and Multi-City Route ECR runs about every 15 minutes on weekdays and 20 minutes on weekends along El Camino Real from the Palo Alto Transit Center to Daly City. Route ECR operates between 4:00 AM and 2:10 AM connecting major transit centers and Caltrain stations. Route ECR stops at El Camino Real and Harbor Boulevard, which is approximately 1,000 feet from the project site.
- Express and Multi-City Route KX provides bus service between San Francisco and the Redwood City Transit Center via San Francisco Airport. Route KX provides northbound service between 5:00 AM and 9:35 AM and southbound service between 3:30 PM and 8:15 PM with headways from 50 minutes to 75 minutes. Route KX stops at El Camino Real and Harbor Boulevard, which is approximately 1,000 feet from the project site.

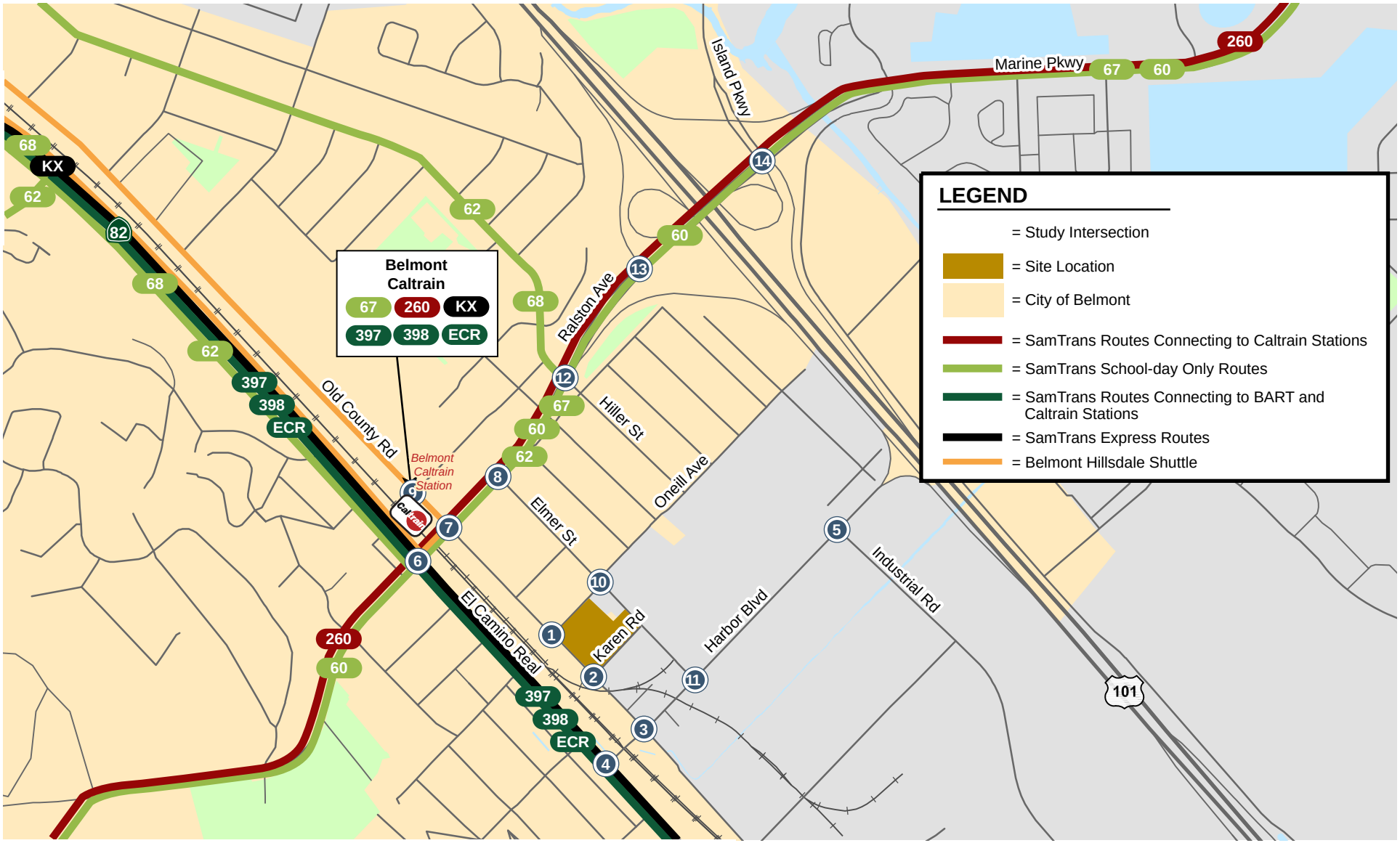

Figure 4
Existing Transit Services

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Not to Scale

Caltrain Services

Commuter rail service between San Francisco and Gilroy is provided by Caltrain. The project site is located approximately 1,300 feet south of the Belmont Caltrain Station. The Belmont Caltrain Station generally is served by one train each hour in the northbound and southbound directions.

There is a public Caltrain shuttle providing service between the Belmont Caltrain Station and the Hillsdale Caltrain Station. The Hillsdale Caltrain Station is served by Baby Bullet Trains. Therefore, residents could ride the shuttle from the Belmont Station to take the baby bullet train at the Hillsdale Station.

Existing Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections were obtained from field observations and are shown on Figure 5. Existing AM and PM peak-hour traffic volumes were obtained from the City of Belmont and new 2018 manual turning-movement counts. The City provided traffic counts from the year 2014 that were factored to year 2017 for use in the General Plan EIR based on the growth in traffic. The existing peak-hour intersection volumes are shown on Figure 6. Intersection turning-movement counts conducted for this analysis are presented in Appendix A.

Existing Intersection Levels of Service

The results of the level of service analysis under existing conditions show that all the study intersections are operating at acceptable levels during both the AM and PM peak hours (see Table 6).

The level of service calculation sheets are included in Appendix B.

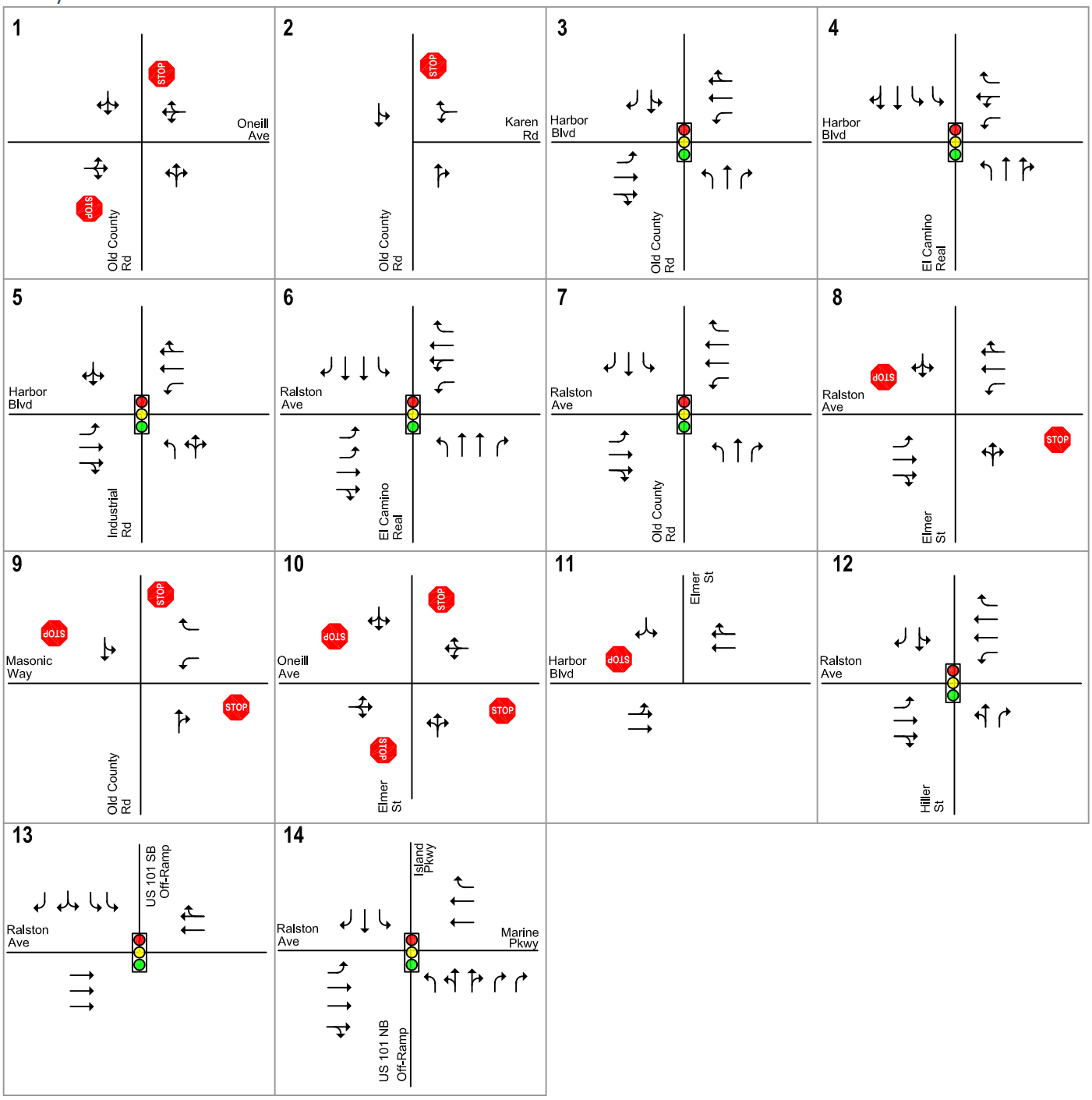

Figure 5
Existing Lane Configurations

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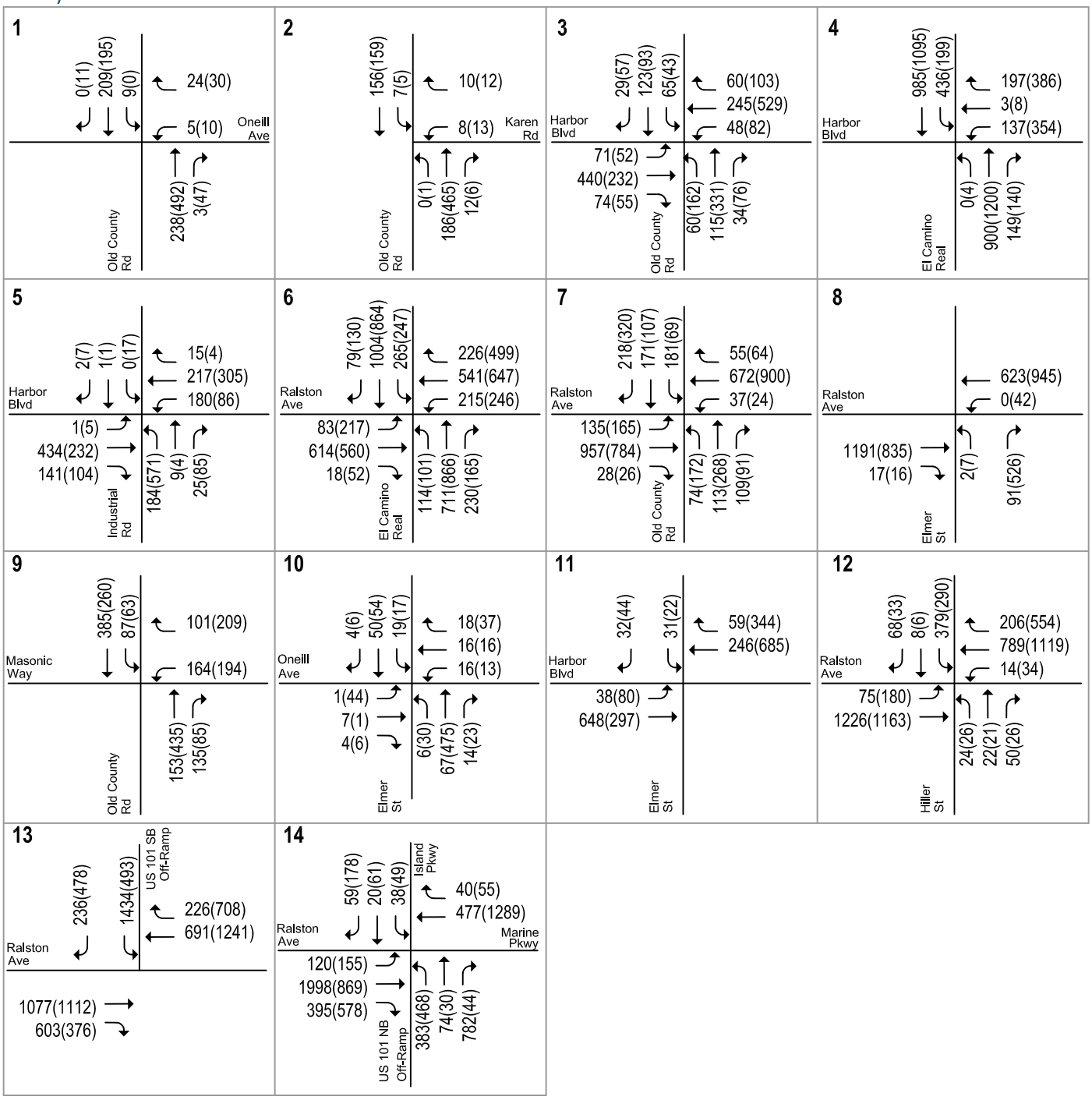
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 6
Existing Traffic Volumes

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Not to Scale

Table 6
Existing Intersection Levels of Service Summary

Number	Study Intersection	Peak Hour	Control Type[1]	Count Date	Avg. Delay (sec)	LOS
1	Old County Road & Oneill Avenue	AM	TWSC	03/23/17	10.2	B
		PM		03/23/17	12.8	B
2	Old County Road & Karen Road	AM	OWSC	01/17/18	10.1	B
		PM		01/17/18	12.4	B
3	Old County Road & Harbor Boulevard	AM	Signal	12/09/14	20.3	C
		PM		12/09/14	23.0	C
4	El Camino Real & Harbor Boulevard	AM	Signal	12/09/14	26.0	C
		PM		12/09/14	25.5	C
5	Industrial Road & Harbor Boulevard	AM	Signal	01/17/18	24.8	C
		PM		01/17/18	21.9	C
6	El Camino Real & Ralston Avenue*	AM	Signal	10/26/17	49.1	D
		PM		10/26/17	63.3	E
7	Old County Road & Ralston Avenue	AM	Signal	10/26/17	34.0	C
		PM		10/26/17	37.6	D
8	Elmer Street & Ralston Avenue	AM	TWSC	03/23/17	10.2	B
		PM		03/23/17	17.0	C
9	Old County Road & Masonic Way	AM	AWSC	03/23/17	18.4	C
		PM		03/23/17	23.4	C
10	Elmer Street & Oneill Avenue	AM	AWSC	01/23/18	7.5	A
		PM		01/23/18	13.8	B
11	Elmer Street & Harbor Boulevard	AM	OWSC	01/17/18	11.9	B
		PM		01/17/18	21.5	C
12	Hiller Street & Ralston Avenue	AM	Signal	10/26/17	30.0	C
		PM		10/26/17	31.7	C
13	US 101 SB Ramps & Ralston Avenue	AM	Signal	10/26/17	14.8	B
		PM		10/26/17	17.4	B
14	US 101 NB Ramps/ Island Pkwy & Ralston Avenue	AM	Signal	10/26/17	27.9	C
		PM		10/26/17	32.5	C

Notes:
* denotes CMP intersection
[1] Intersection control type definitions: TWSC = Two-way-stop-control; OWSC = One-way-stop-control; AWSC = All-way-stop-control
[2] For TWSC and OWSC, the average Delay and LOS is reported for the worst movement.

Observed Existing Traffic Conditions

Traffic conditions in the field were observed in order to identify existing operational deficiencies and to confirm the accuracy of calculated intersection levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect existing traffic conditions. Below is a description of the existing field conditions that were observed at the study intersections.

Old County Road and Harbor Boulevard

During the AM and PM peak hours, Hexagon observed that eastbound through vehicles on Harbor Boulevard occasionally required two signal cycles to clear the intersection because of the extremely short green time given to the eastbound through movement. When the pedestrian phase was activated, the green time was increased, and the vehicles were able to clear. During the PM peak hour, westbound vehicles from the El Camino Real/Harbor Boulevard intersection backed up to the Old County Road/Harbor Boulevard intersection, blocking the westbound movements. Westbound movements occasionally required two signal cycles to clear the intersection.

El Camino Real and Harbor Boulevard

During the AM peak hour, some southbound left turning vehicles required two signal cycles to clear the intersection. This briefly happened whenever eastbound vehicles at the Old County Road/Harbor Boulevard intersection extended back to the El Camino Real/Harbor Boulevard intersection.

El Camino Real and Ralston Avenue

The Old County Road/Ralston Avenue intersection and El Camino Real/Ralston Avenue intersection are spaced less than 200 feet apart. During the AM and PM peak hours, some southbound left turning vehicles spilled out of the turn pocket and required two signal cycles to clear the intersection. This occasionally happened whenever eastbound vehicles at the Old County Road/Ralston Avenue intersection extended back to the El Camino Real/Ralston Avenue intersection. Also, eastbound through movements on Ralston Avenue occasionally needed two signal cycles to clear the intersection during AM and PM peak hours.

Old County Road and Ralston Avenue

During AM peak hour, southbound left turning vehicles required two cycles to clear the intersection. The southbound queues extended up to Masonic Way. During the PM peak hour, northbound traffic was heavy. Occasionally, northbound through vehicles required two signal cycles to clear the intersection.

Elmer Street and Ralston Avenue

During the PM peak hour, northbound traffic was heavy. Occasionally, northbound vehicles required 50 to 70 seconds to clear the stop-controlled intersection.

Old County Road and Masonic Way

During the AM peak hour, southbound traffic was heavy. During the peak 15 minutes, southbound vehicles required 75 seconds to clear the stop-controlled intersection.

Hiller Street and Ralston Avenue

During the AM peak hour, southbound left turning vehicles occasionally required two signal cycles to clear the intersection. The southbound queues extended past Masonic Way.

US 101 Northbound Ramps/Island Parkway and Ralston Avenue

During the AM peak hour, eastbound traffic was heavy, and vehicles from the Oracle Parkway/Ralston Avenue intersection backed up to the US 101 northbound ramps. Occasionally eastbound through vehicles required two signal cycles to clear the intersection.

3. Background Conditions

This chapter presents background traffic conditions without the project. Traffic volumes for background conditions comprise volumes from existing traffic counts plus traffic generated by other approved developments in the vicinity of the site. This chapter describes the procedure used to determine background traffic volumes and the resulting traffic conditions. The background scenario predicts a realistic baseline traffic condition that would occur as approved development gets built and occupied.

Transportation Network under Background Conditions

It is assumed in this analysis that the transportation network under background conditions, including roadways and intersection lane configurations, would be the same as that described under existing conditions at all study intersections.

Background Traffic Volumes

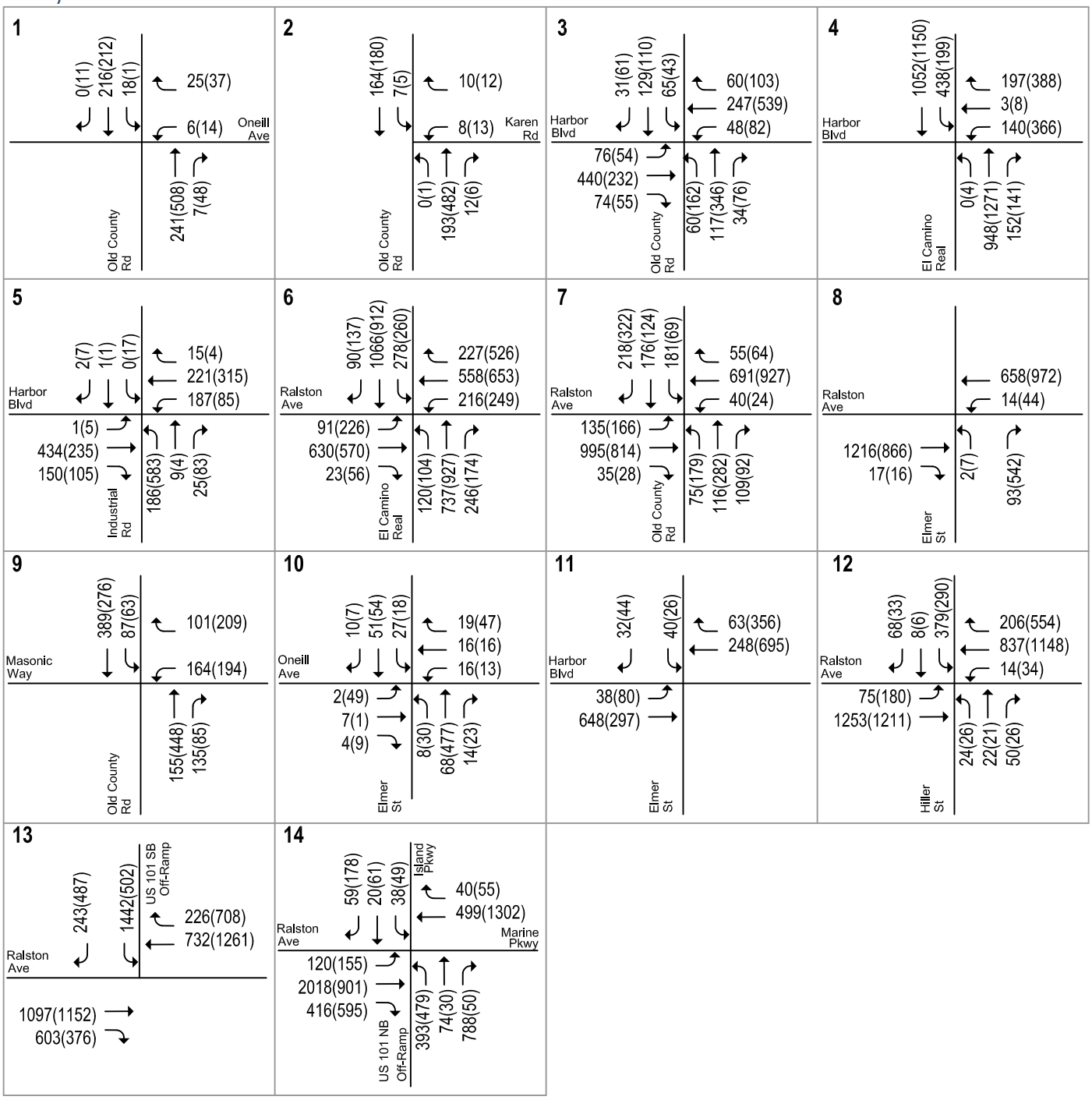
Background conditions traffic volumes were estimated by adding to the existing traffic volumes the traffic estimated to be generated by the approved but not yet constructed projects within the City of Belmont and City of San Carlos. Background traffic also assumes full occupancy of the existing vacant buildings on the site. A list of approved projects was provided by the City of Belmont's website and City of San Carlos staff. Based on a review of traffic studies prepared for these projects, the types and sizes of these developments, and their distance from the project site, the following approved developments are expected to add traffic to at least one of the study intersections during at least one of the peak hour periods:

1. 490 El Camino Real, Belmont – demolish existing commercial buildings and construct 73 residential units with 4,990 s.f. of retail space
2. 576 - 600 El Camino Real, Belmont - demolish existing residential and commercial buildings and construct 32 condominium units with 11,700 s.f. of retail space
3. Hilton Homewood Suites Hotel (1201 Shoreway Road, Belmont) – demolish existing on-site structures and surface parking area and construct 96-room hotel
4. Merry Moppet & Belmont Oaks (2200 Carlmont Drive, Belmont) – demolish existing four classroom buildings and construct 12,150 s.f. six-classroom building
5. Transit Village (333 El Camino Real, San Carlos) – 202 new multi-family dwelling units and 25,800 s.f. of commercial space

6. Wheeler Plaza (57 El Camino Real, San Carlos) – demolish existing commercial buildings and construct 9,855 s.f. of retail space, 4,000 s.f. of office space, 4,500 s.f. of restaurant and 139 multi-family residential units
7. Landmark Hotel (northeast corner of Industrial Road and East San Carlos Avenue, San Carlos) – 204-room hotel
8. Meridian 25 (887 Industrial Road, San Carlos) – demolish existing industrial buildings and construct 528,520 s.f. of office space
9. 777 Industrial Road, San Carlos – 47,220 s.f. of automobile sales and service facility
10. 1091 Industrial Road, San Carlos – demolish existing commercial building and construct 162-room hotel
11. 644-678 Laurel Street, San Carlos – addition of 6,996 s.f. of retail space
12. 520 El Camino Real, San Carlos – 9 condominium units and 1,730 s.f. of retail space
13. 26 El Camino Real, San Carlos – demolish existing 29-room hotel and construct 104 room-hotel

Trip generation estimates for the approved projects were based on traffic impact studies conducted for each of the projects, if available. For projects that did not require a traffic study (due to their small size), trips were estimated based on ITE trip rates. The estimated trips from the approved projects were distributed and assigned to the project study area roadways based on the trip distribution assumptions present in the traffic studies, if available, or knowledge of the study area.

Trips generated by the approved projects were added to existing traffic volumes to estimate background traffic volumes. The AM and PM peak-hour intersection traffic volumes under background conditions are shown on Figure 7. The trips assigned to the study intersections are tabulated in Appendix C.



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 7
Background Traffic Volumes

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Background Intersection Levels of Service

The results of the level of service analysis under background conditions show that all the study intersections are operating at acceptable levels during both the AM and PM peak hours (see Table 7). At the intersections of El Camino Real/Harbor Boulevard and Hiller Street/Ralston Avenue, the delay under background conditions is lower than that of existing conditions during the AM and/or PM peak hour. This occurs because the intersection delay is a weighted average of all intersection movements. The addition of project traffic to movements with delays lower than the average intersection delay (such as right turns) can pull the average delay for the entire intersection lower. The level of service calculation sheets are included in Appendix B.

Table 7
Background Signalized Intersection Levels of Service

			Existing		Background	
Number	Study Intersection	Peak Hour	Avg. Delay (sec)[1]	LOS	Avg. Delay (sec)[1]	LOS
1	Old County Road & Oneill Avenue	AM	10.2	B	10.4	B
		PM	12.8	B	13.3	B
2	Old County Road & Karen Road	AM	10.1	B	10.2	B
		PM	12.4	B	12.8	B
3	Old County Road & Harbor Boulevard	AM	20.3	C	20.3	C
		PM	23.0	C	23.3	C
4	El Camino Real & Harbor Boulevard	AM	26.0	C	25.7	C
		PM	25.5	C	25.8	C
5	Industrial Road & Harbor Boulevard	AM	24.8	C	25.1	C
		PM	21.9	C	21.9	C
6	El Camino Real & Ralston Avenue*	AM	49.1	D	52.6	D
		PM	63.3	E	66.6	E
7	Old County Road & Ralston Avenue	AM	34.0	C	34.4	C
		PM	37.6	D	38.4	D
8	Elmer Street & Ralston Avenue	AM	10.2	B	10.3	B
		PM	17.0	C	18.1	C
9	Old County Road & Masonic Way	AM	18.4	C	18.7	C
		PM	23.4	C	25.7	D
10	Elmer Street & Oneill Avenue	AM	7.5	A	7.6	A
		PM	13.8	B	14.1	B
11	Elmer Street & Harbor Boulevard	AM	11.9	B	12.3	B
		PM	21.5	C	23.4	C
12	Hiller Street & Ralston Avenue	AM	30.0	C	30.5	C
		PM	31.7	C	31.2	C
13	US 101 SB Ramps & Ralston Avenue	AM	14.8	B	15.1	B
		PM	17.4	B	17.4	B
14	US 101 NB Ramps/ Island Pkwy & Ralston Avenue	AM	27.9	C	28.0	C
		PM	32.5	C	32.6	C

Notes:
* denotes CMP intersection
[1] For TWSC and OWSC, the average Delay and LOS is reported for the worst movement.

4. Project Conditions

This chapter describes project traffic conditions. First is a description of the transportation system under project conditions. Project traffic estimates are then described. Included in this chapter is a summary of project traffic conditions, as well as any impacts caused by the project.

Transportation Network under Project Conditions

It is assumed in this analysis that the transportation network under project conditions, including roadways and intersection lane configurations, would be the same as that described under existing and background conditions at all study intersections.

Project Description

The project site is located on the 1.47-acre site at 1325 Old County Road in Belmont. The project would construct a four-story 250-unit multi-family residential building over below grade parking with 258 spaces. The project also includes 1,352 s.f. of free rental space for the community, which could be used for children's musical classes during afterschool hours. The project site is currently occupied by a materials manufacturing building and its associated office buildings, and a parking lot, small offices for film production, a printer and gelato maker, and an animal shelter. The materials manufacturing buildings on the site have been vacant for several months and all other buildings are occupied. Access to the project would be provided via a driveway on Oneill Avenue.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: 1) trip generation, 2) trip distribution, and 3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Trip Generation

The trip estimate for the proposed use is based on trip rates for Mid-Rise Multifamily Housing (Land Use Code 221) and Day Care Center (Land Use Code 565) published in the ITE *Trip Generation Manual, 10th Edition*. There is no separate category for community musical class in the ITE manual. Although the gross area of rental space is very small (only 1,352 s.f.), a good, representative ITE category is “Day Care Center” which includes pre-school and after school care for children. The project is estimated to generate 90 trips during the AM peak hour (23 in and 67 out), and 125 trips during the PM peak hour (74 in and 51 out).

Trips associated with the existing uses on the project site were subtracted from the road system. The trips generated by the existing buildings on the site were estimated based on trip rates for General Light Industrial (110), Small Office Building (712) and Animal Hospital/Veterinary Clinic (640) published in the ITE *Trip Generation Manual, 10th Edition.* The existing buildings on site are estimated to generate 60 trips during the AM peak hour and 60 trips during the PM peak hour. These trips were deducted from the estimated number of trips generated by the proposed new development, which results in a net increase of 30 trips in the AM peak hour and 65 trips in the PM peak hour (see Table 8). The trips generated by the plastic fabrication building were not included in the existing intersection counts, since the project site is currently vacant. However, these trips were added to the analysis under background conditions.

The project site is located in an area that is connected and in close proximity to existing transit, Caltrain, bicycle and pedestrian facilities. Connectivity and proximity to these facilities encourages alternative travel modes. As per the BVSP requirements, the proposed project is also planning to include various transportation demand management (TDM) measures as per the TDM report prepared by Nelson Nygaard. All this would contribute to further reduction in project trips. But to be conservative with the analysis, this report does not include those reductions in estimating the trip generation.

Trip Distribution

The trip distribution pattern for the proposed project was estimated based on existing travel patterns of the surrounding roadway system and the locations of complementary land uses (See Figure 8).

The project trips were assigned to the roadway network and study intersections based on the directions of approach and departure, the roadway network connections, and the location of project driveway (Figure 9).

Table 8
Trip Generation Summary

Land Use	Size		Daily Rate	Daily Trips	AM Peak Hour Pk-Hr Rate	AM In	AM Out	AM Total	PM Peak Hour Pk-Hr Rate	PM In	PM Out	PM Total
Proposed Uses												
Multifamily Housing (Mid-Rise)[1]	250	d.u.	5.44	1,360	0.36	23	67	90	0.44	67	43	110
Day Care Center[2]	1.352	ksf	47.62	64					11.12	7	8	15
Total Trips				**1,424**		**23**	**67**	**90**		**74**	**51**	**125**
Existing Land Use												
Plastic Fabrication Building[3]	34.361	ksf	4.96	(170)	0.70	(21)	(3)	(24)	0.63	(3)	(19)	(22)
Office[4]	6.535	ksf	16.19	(106)	1.92	(11)	(2)	(13)	2.45	(5)	(11)	(16)
Animal Shelter Facility[5]	6.300	ksf	21.50	(135)	3.64	(15)	(8)	(23)	3.53	(9)	(13)	(22)
Total Trips				**(411)**		**(47)**	**(13)**	**(60)**		**(17)**	**(43)**	**(60)**
Net New Trips:				**1,013**		**(24)**	**54**	**30**		**57**	**8**	**65**

Notes: d.u. - dwelling units ksf - 1,000 square feet gross leasable area

[1] Mid-Rise Multifamily Housing (Land Use 221), *ITE Trip Generation Manual, 10th Edition (2017)* , average rates for General Urban/Suburban settings are used.

[2] Day Care Center (Land Use 565), *ITE Trip Generation Manual, 10th Edition (2017)* , average rates are used. The center would generate trips only during PM peak period (after school hours).

[3] General Light Industrial (Land Use 110), *ITE Trip Generation Manual, 10th Edition (2017)* , average rates are used.

[4] Small Office Building (Land Use 712), *ITE Trip Generation Manual, 10th Edition (2017)* , average rates are used.

[5] Animal Hospital/Veterinary Clinic (Land Use 640), *ITE Trip Generation Manual, 10th Edition (2017)* , average rates are used.

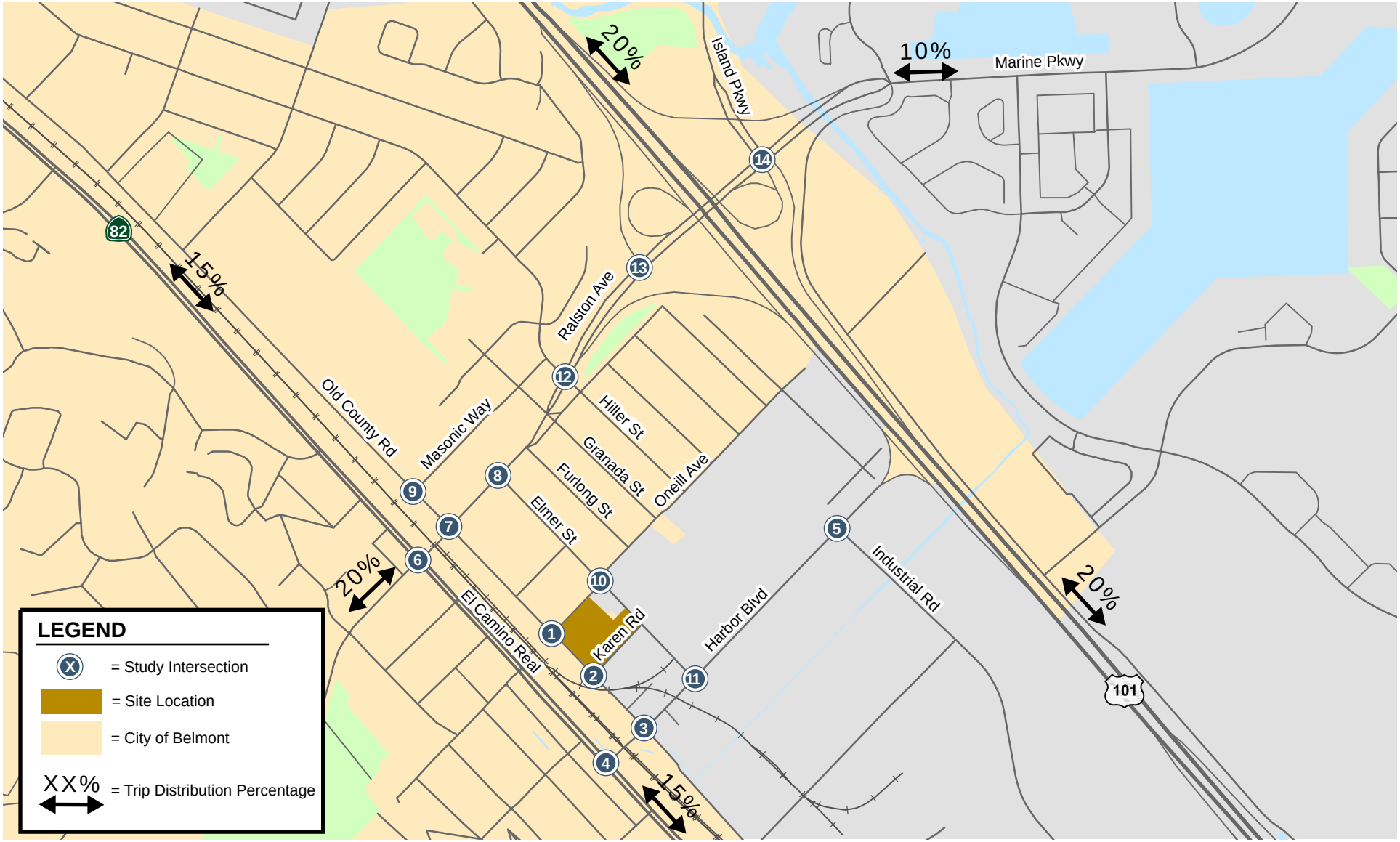
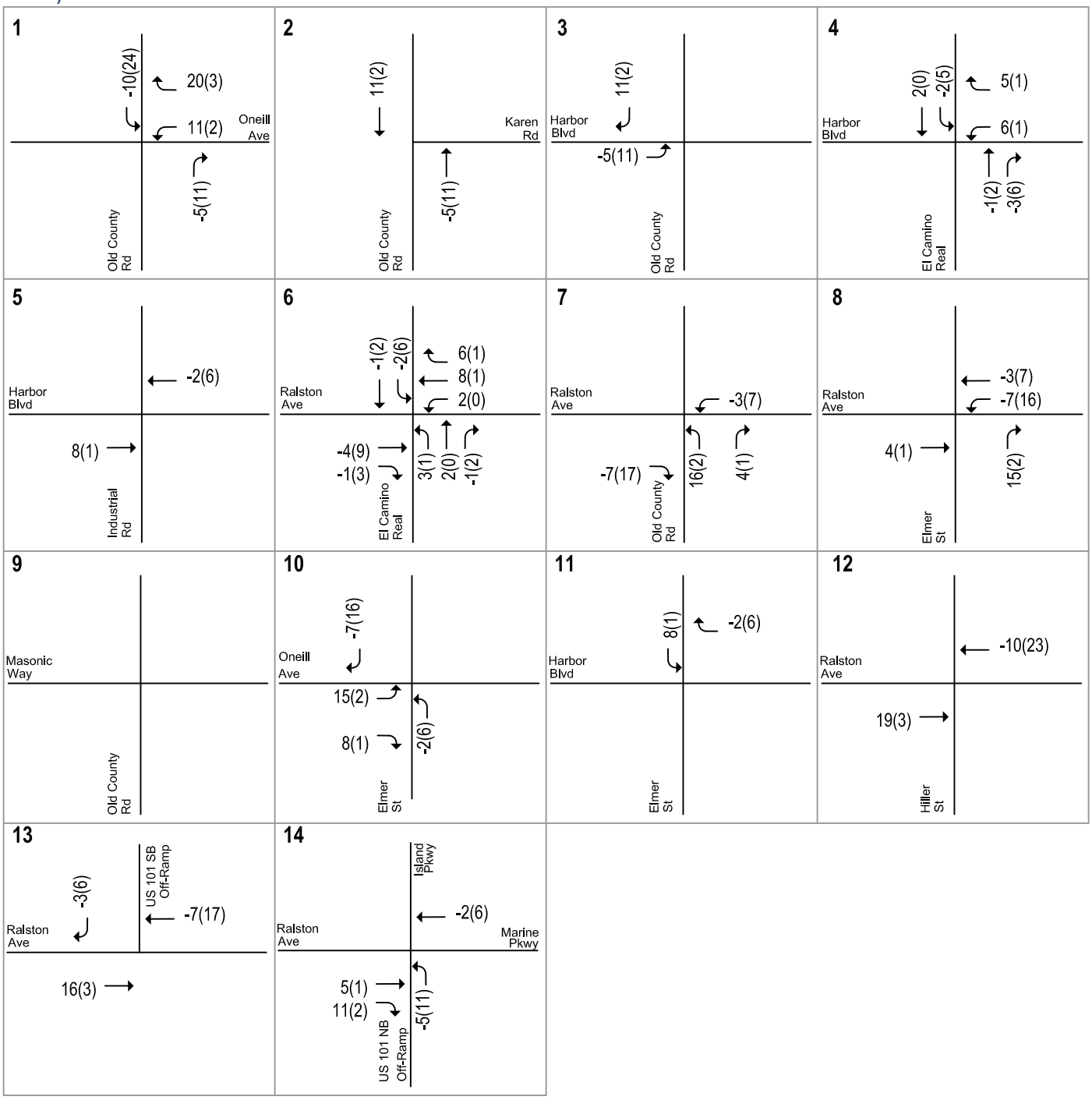


Figure 8
Project Trip Distribution

NORTH
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Trips

Figure 9
Project Trip Assignment

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Not to Scale

CMP Compliance

As the Congestion Management Agency for San Mateo County, the City/County Association of Governments (C/CAG) is responsible for maintaining the performance and standards of the Congestion Management Program (CMP) roadway network. The CMP requires new development projected to add 100 or more peak hour trips to the CMP roadway network to implement Travel Demand Management (TDM) measures that would reduce project impacts. In the vicinity of the project site, facilities that are part of the CMP network include El Camino Real (SR 82), I-280, SR 92, and US 101.

The proposed project would not add more than 100 peak hour trips to the CMP facilities in the vicinity of the project site. Therefore, an analysis based on the requirements of C/CAG, the administering agency for the CMP, is not necessary.

Project Conditions Intersection Levels of Service

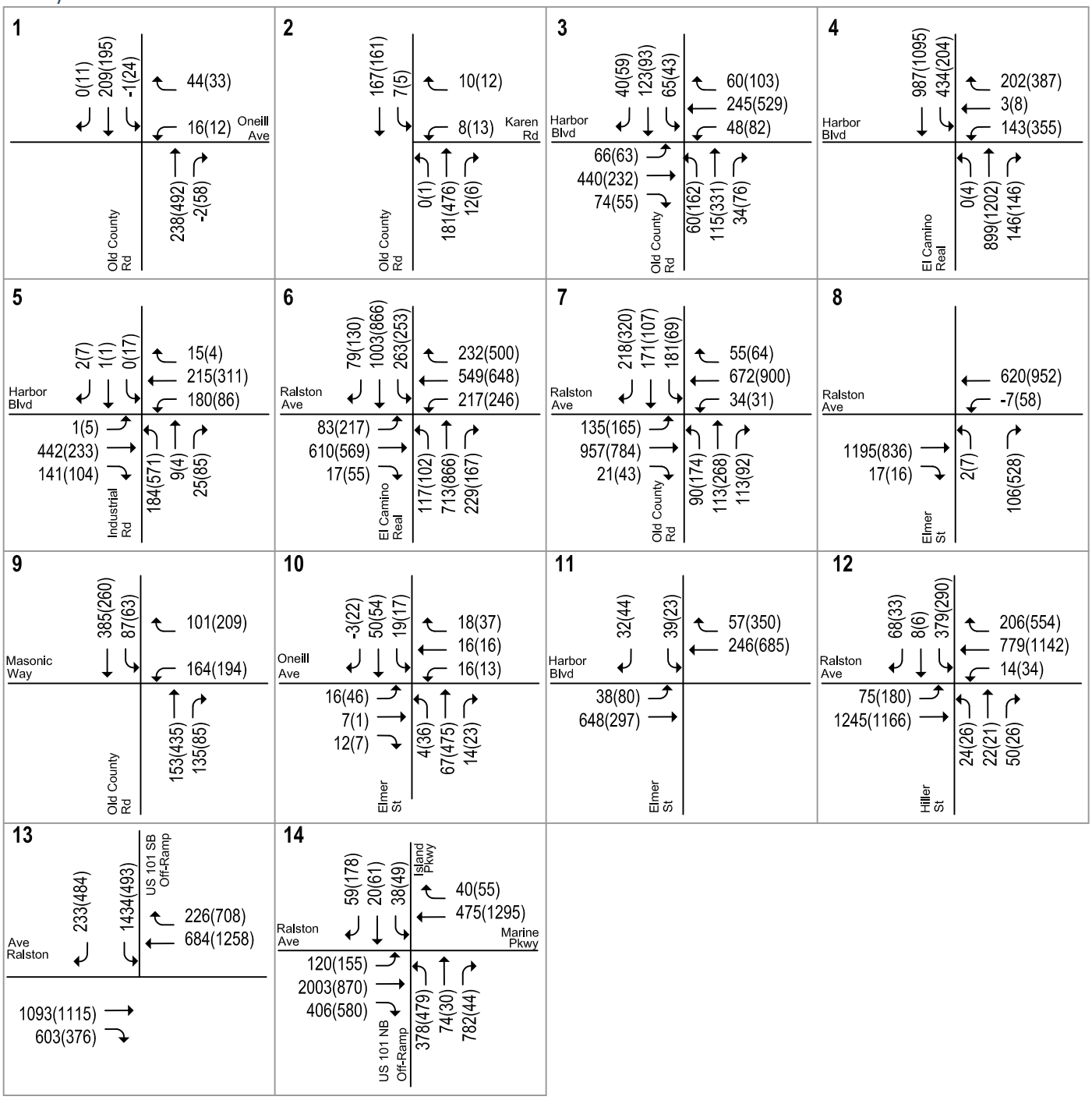
The results of the intersection LOS analysis under existing plus project and background plus project conditions show that all the study intersections would operate at an acceptable level during both the AM and PM peak hours of traffic when measured against the applicable municipal and CMP level of service standards (see Table 9).

Figures 10 and 11 shows the intersection turning-movement volumes under existing plus project and background plus project conditions, respectively. The volume summary table is included in Appendix C. LOS calculation sheets of each study intersection are included in Appendix B.

Table 9
Project Levels of Service

Number	Study Intersection	Peak Hour	Existing Avg. Delay (sec)[1]	Existing LOS	Existing Plus Project Avg. Delay (sec)[1]	Existing Plus Project LOS	Existing Plus Project Incr. In Avg. Delay (sec)	Existing Plus Project Incr. In Crit. V/C (sec)	Background Avg. Delay (sec)[1]	Background LOS	Background Plus Project Avg. Delay (sec)[1]	Background Plus Project LOS	Background Plus Project Incr. In Avg. Delay (sec)	Background Plus Project Incr. In Crit. V/C (sec)	Project Trips
1	Old County Road & Oneill Avenue	AM	10.2	B	10.7	B	0.5	-	10.4	B	10.9	B	0.5	-	16
		PM	12.8	B	13.5	B	0.7	-	13.3	B	13.9	B	0.6	-	40
2	Old County Road & Karen Road	AM	10.1	B	10.1	B	0.0	-	10.2	B	10.2	B	0.0	-	6
		PM	12.4	B	12.6	B	0.2	-	12.8	B	12.9	B	0.1	-	13
3	Old County Road & Harbor Boulevard	AM	20.3	C	20.3	C	0.0	0.000	20.3	C	20.4	C	0.1	0.000	6
		PM	23.0	C	23	C	0.0	0.009	23.3	C	23.3	C	0.0	0.009	13
4	El Camino Real & Harbor Boulevard	AM	26.0	C	26.0	C	0.0	0.001	25.7	C	25.8	C	0.1	0.001	7
		PM	25.5	C	25.6	C	0.1	0.003	25.8	C	26.0	C	0.2	0.003	15
5	Industrial Road & Harbor Boulevard	AM	24.8	C	24.9	C	0.1	0.003	25.1	C	25.2	C	0.1	0.003	6
		PM	21.9	C	21.9	C	0.0	0.000	21.9	C	21.9	C	0.0	0.000	7
6	El Camino Real & Ralston Avenue*	AM	49.1	D	48.9	D	-0.2	0.000	52.6	D	52.5	D	-0.1	0.000	12
		PM	63.3	E	63.7	E	0.4	0.005	66.6	E	67.1	E	0.5	0.004	25
7	Old County Road & Ralston Avenue	AM	34.0	C	34.1	C	0.1	-0.004	34.4	C	34.5	C	0.1	-0.005	10
		PM	37.6	D	37.6	D	0.0	0.000	38.4	D	38.4	D	0.0	0.000	27
8	Elmer Street & Ralston Avenue	AM	10.2	B	10.3	B	0.1	-	10.3	B	10.4	B	0.1	-	9
		PM	17.0	C	17.3	C	0.3	-	18.1	C	18.5	C	0.4	-	26
9	Old County Road & Masonic Way	AM	18.4	C	18.4	C	0.0	-	18.7	C	18.7	C	0.0	-	0
		PM	23.4	C	23.4	C	0.0	-	25.7	D	25.7	D	0.0	-	0
10	Elmer Street & Oneill Avenue	AM	7.5	A	7.6	A	0.1	-	7.6	A	7.6	A	0.0	-	14
		PM	13.8	B	14.1	B	0.3	-	14.1	B	14.4	B	0.3	-	25
11	Elmer Street & Harbor Boulevard	AM	11.9	B	12.2	B	0.3	-	12.3	B	12.7	B	0.4	-	6
		PM	21.5	C	21.9	C	0.4	-	23.4	C	23.9	C	0.5	-	7
12	Hiller Street & Ralston Avenue	AM	30.0	C	29.9	C	-0.1	0.006	30.5	C	30.4	C	-0.1	0.007	9
		PM	31.7	C	31.8	C	0.1	0.007	31.2	C	31.3	C	0.1	0.008	26
13	US 101 SB Ramps & Ralston Avenue	AM	14.8	B	14.8	B	0.0	0.004	15.1	B	15.1	B	0.0	0.004	6
		PM	17.4	B	17.4	B	0.0	0.001	17.4	B	17.4	B	0.0	0.001	26
14	US 101 NB Ramps/ Island Pkwy & Ralston Avenue	AM	27.9	C	27.8	C	-0.1	-0.001	28.0	C	27.8	C	-0.2	-0.001	9
		PM	32.5	C	32.7	C	0.2	0.006	32.6	C	32.9	C	0.3	0.007	20

Notes:
* denotes CMP intersection
[1] For TWSC and OWSC, the average Delay and LOS is reported for the worst movement.



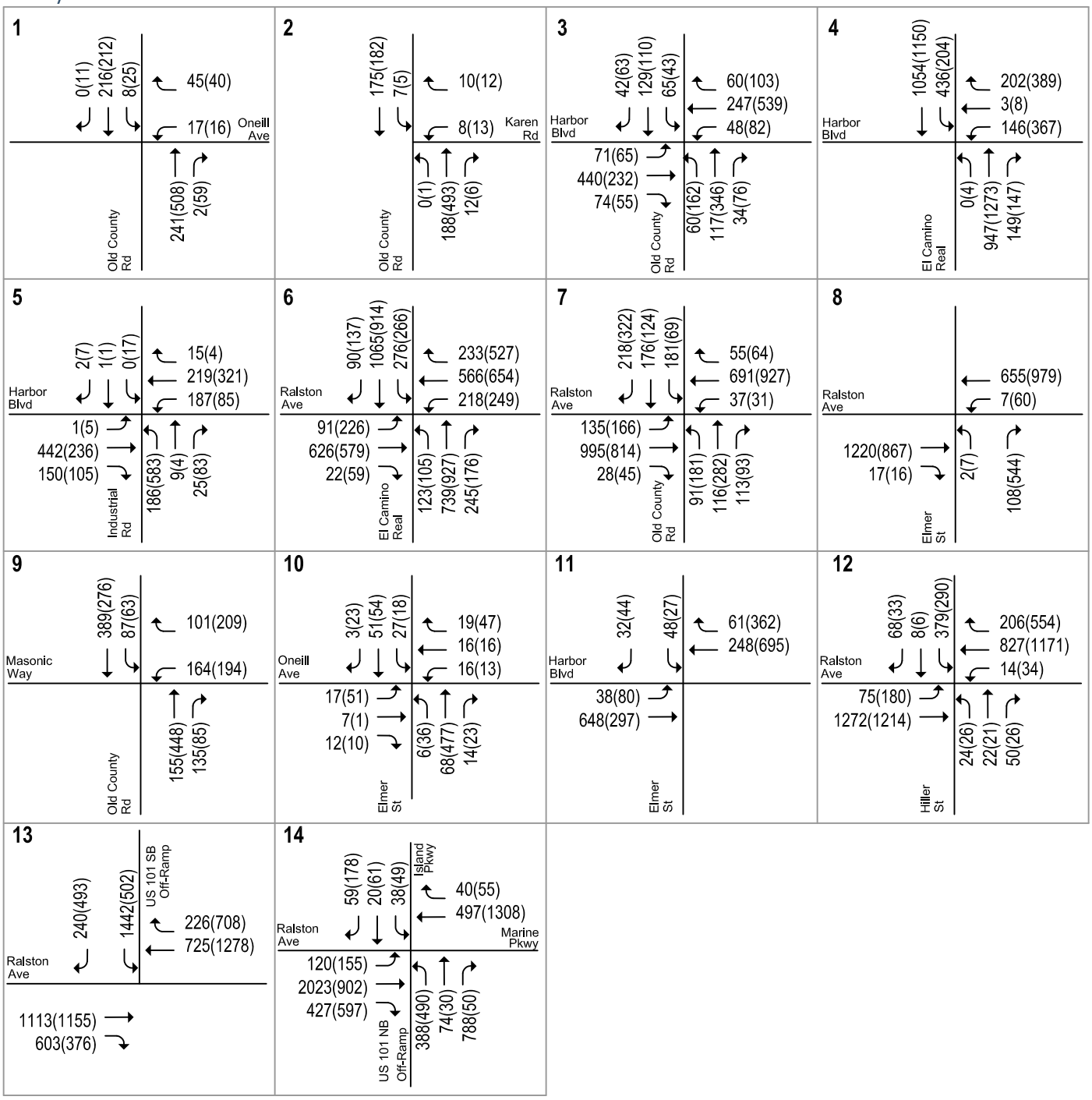
LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 10
Existing Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 11
Background Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

5. Cumulative Conditions

This chapter describes cumulative traffic conditions in the year 2035 with the proposed project and other developments permitted under the Environmental Impact Report for the Belmont General Plan Update, Phase I Interim Zoning, Belmont Village Specific Plan and Climate Action Plan. The proposed project is consistent with the Belmont Village Specific plan land use and the trip generation assumptions in the Environmental Impact Report (EIR) conducted for the General Plan. Therefore, a separate cumulative conditions analysis was not conducted as part of this report. Instead, the analysis of cumulative conditions presented in this chapter is based on the cumulative conditions analysis contained in the EIR.

Ten of the study intersections were analyzed in the General Plan EIR. Recent intersection turning movement counts used in this TIA were compared to the existing and future traffic volumes presented in the General Plan EIR to determine whether the transportation impact conclusions from the EIR are still valid. Table 10 shows that recent traffic counts (2018) used in this TIA are higher than the existing traffic counts contained in the General Plan EIR, except for the PM peak hour volume for the El Camino Real and Ralston Avenue intersection. The peak hour volume at all the intersections are still well below the 2035 volume forecasts except for the US 101 SB Ramps and Ralston Avenue intersection, which is currently operating at LOS B. Thus, it can be concluded that there are no changes in traffic conditions within the project vicinity that could result in new significant impacts that were not evaluated in the General Plan EIR.

The analysis of intersection levels of service contained in the General Plan EIR shows that the following study intersections would operate at unacceptable levels: Old County Road/ Oneill Avenue, Old County Road/Harbor Boulevard, El Camino Real/Harbor Boulevard, El Camino Real/Ralston Avenue and Old County Road/Ralston Avenue. To address below-standard intersection operations within Belmont under cumulative conditions, the General Plan EIR proposed mitigation measures for all the intersections. Those improvements require coordination and approval from Caltrans and San Mateo County. Implementation of the General Plan policies, the Belmont Village Specific Plan policies, and the Climate Action policies may partially mitigate the impact. Therefore, the impacts would remain significant and unavoidable according to the City of Belmont General Plan EIR.

Table 10
General Plan EIR Cumulative LOS and Intersection Operations Assessment

Number	Study Intersection	Peak Hour	Existing Volume	EIR Existing Volume	Cum 2035 + EIR Project Volume	Cumulative 2035 Avg. Delay[1]	Cumulative 2035 LOS
1	Old County Road & Oneill Avenue	AM	488	488	1008	**17.7**	**C**
		PM	785	785	1356	**28.5**	**D**
3	Old County Road & Harbor Boulevard	AM	1364	1364	1955	42.6	D
		PM	1815	1815	3273	**59.6**	**E**
4	El Camino Real & Harbor Boulevard	AM	2807	2807	3399	26.6	C
		PM	3386	3386	4828	**45.6**	**D**
6	El Camino Real & Ralston Avenue*	AM	4100	3998	5618	**90.3**	**F**
		PM	4594	4806	6878	**>120**	**F**
7	Old County Road & Ralston Avenue	AM	2750	2562	3862	**41.5**	**D**
		PM	2990	2847	4207	**57.2**	**E**
8	Elmer Street & Ralston Avenue	AM	1924	1924	2827	52.4	D
		PM	2371	2371	3279	54.3	D
9	Old County Road & Masonic Way	AM	1025	1025	1461	15.1	C
		PM	1246	1246	1561	12.4	B
12	Hiller Street & Ralston Avenue	AM	2861	2617	3436	22.2	C
		PM	3452	3366	3983	22.4	C
13	US 101 SB Ramps & Ralston Avenue	AM	4267	3441	4128	13.1	B
		PM	4408	4034	4267	23.2	C
14	US 101 NB Ramps/ Island Pkwy & Ralston Avenue	AM	4386	3990	4926	33.2	C
		PM	3776	3691	4245	34.0	C

Notes:
*denotes CMP intersection
[1] For Side-Street Stop Controlled intersections, the average Delay and LOS is reported for the worst movement.
Bold indicates substandard Level of Service

6. Other Transportation Issues

This chapter presents an analysis of other transportation issues associated with project site, including:

- Vehicular site access and on-site circulation
- Parking demand
- Sight distance
- Potential impacts to transit, bicycle and pedestrian facilities
- Vehicle queuing
- Signal Warrant Analysis

Unlike the level of service impact methodology, which is adopted by the City council, the analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

Project Impact on Bicycle, Pedestrian, and Transit Facilities

The project site is fairly-well served by existing bicycle facilities. There is an existing Class II bike lane on Masonic Way. There exists a Class I bike/pedestrian overpass over US 101. Old County Road along the project frontage is a designated Class III bike route. According to the Belmont Village Specific Plan (BVSP), additional portions of Old County Road, El Camino Real, and Oneill Avenue are identified as future Class III bicycle routes, which will improve bicycle connectivity. The Bicycle Plan shows Class II Bike Lanes along Old County Road where there is sufficient width. The proposed project is planning to implement the Class II bike lanes along its frontage. It also is planning to change the on-street parking to back-in angled parking.

There are an existing 19 on-street parking spaces along the project frontage on Old County Road. Currently these spaces are head-in angled spaces. At the City's request, the project is proposing to change the on-street parking to 19 back-in angled spaces. The benefit of back-in spaces is that they allow motorists to see bicycles when they are exiting the space. Thus, the back-in spaces provide a safer environment for bicycles, and Old County Road is a bicycle route.

Pedestrian activity could occur between the site and retail centers located along El Camino Real, as well as the closest bus stops and Caltrain Station. There are existing sidewalks on Oneill Avenue, Old County Road, Harbor Boulevard and Ralston Avenue that connect the site to the bus stops and to the shopping areas. Oneill Avenue provides a sidewalk only on the south side of the street; however, the project does not need a sidewalk on the north side. Crosswalks with pedestrian signal heads and push buttons are located at most of the signalized intersections in the study area. In accordance with the BVSP, the project voluntarily proposes to make various improvements along its frontage to enhance pedestrian and bicycle safety. These include a curb extension at Old County Road/Karen Road and Elmer Street/Karen Road and a minimum six-foot sidewalk along Elmer Street, Karen Road, and Old County Road. Also, the proposed project is planning to provide crosswalks on Karen Road at Elmer Street and at Old County Road. The proposed improvements will enhance pedestrian safety in the immediate project vicinity.

There is transit service on El Camino Real and Ralston Avenue. It is not expected that the proposed project would generate a significant amount of transit ridership or create a significant impact to intersection levels of service along transit routes. Therefore, the project would not significantly impact transit facilities and transit travel times.

Queuing Analysis

City of Belmont impact criteria state that the project could have a significant impact if project-generated traffic creates vehicle queues that exceed existing turn lane capacity or causes problematic backups of traffic on driveways or roadways on or off the project site. For selected high-demand movements at key intersections, the estimated maximum vehicle queues were compared to the existing or planned storage capacity to determine if the project would generate a significant impact based on queuing.

Vehicle queues were calculated using a Poisson probability distribution, which estimates the probability of “n” vehicles for a vehicle movement using the following formula:

$$P(x = n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

Where:

$P(x = n)$ = probability of “n” vehicles in queue per lane

n = number of vehicles in the queue per lane

λ = Average number of vehicles in the queue per lane (vehicles per hour per lane/signal cycles per hour)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement. The following movements were selected for evaluation (see Table 11):

- Old County Road and Harbor Boulevard – eastbound left turn
- Old County Road and Ralston Avenue – northbound left turn

Old County Road and Harbor Boulevard

The left-turn pocket on eastbound Harbor Boulevard at Old County Road has approximately 100 feet of storage capacity, which is adequate for about four vehicles. The queuing analysis shows that the existing left-turn storage would be adequate under all scenarios during both AM and PM peak hours.

Table 11
Queuing Analysis Results

	Old County Raod / Harbor Boulevard		Old County Raod / Ralston Avenue	
Measurement	EBL AM	EBL PM	NBL AM	NBL PM
Existing				
Cycle Length[1] (sec)	70	70	130	130
Volume (vphpl)	71	52	74	172
95th %. Queue (veh)	4	3	6	11
95th %. Queue (ft.)	100	75	150	275
Storage (ft./ ln.)	100	100	100	100
Adequate (Y/N)	**Y**	**Y**	**N**	**N**
Background				
Cycle Length[1] (sec)	70	70	130	130
Volume (vphpl)	76	54	75	179
95th %. Queue (veh)	4	3	6	11
95th %. Queue (ft.)	100	75	150	275
Storage (ft./ ln.)	100	100	100	100
Adequate (Y/N)	**Y**	**Y**	**N**	**N**
Existing + Project				
Cycle Length[1] (sec)	70	70	130	130
Volume (vphpl)	66	63	90	174
95th %. Queue (veh)	3	3	6	11
95th %. Queue (ft.)	75	75	150	275
Storage (ft./ ln.)	100	100	100	100
Adequate (Y/N)	**Y**	**Y**	**N**	**N**
Background + Project				
Cycle Length[1] (sec)	70	70	130	130
Volume (vphpl)	71	65	91	181
95th %. Queue (veh)	4	3	7	11
95th %. Queue (ft.)	100	75	175	275
Storage (ft./ ln.)	100	100	100	100
Adequate (Y/N)	**Y**	**Y**	**N**	**N**

[1] Vehicle queue calculations based on cycle length for signalized intersections.

[2] Assumes 25 feet per vehicle queued.

Old County and Ralston Avenue

There is approximately 100 feet of storage capacity for the left-turn lane on northbound Old County Road at Ralston Avenue, which is adequate for approximately four vehicles. The queuing analysis shows this left-turn pocket to be inadequate during both the AM and PM peak hours under existing and background conditions. Field observations did not show queues blocking the through vehicles during the AM peak hour but did show blockage during the PM peak hour. The queuing analysis indicates that the project would not increase the maximum left-turn queue during the AM and PM peak hour compared to existing and background conditions except for the background plus project scenario during the AM peak hour. The left turn queues would increase by only one vehicle. Since field observations showed no queuing problems during the AM peak hour, and the project would increase the queue length by only one vehicle, the queuing impact is considered less than signficant.

Signal Warrant Analysis

A peak hour signal warrant analysis (*MUTCD 2010 Edition,* Part 4, Warrant 3) was performed for all the unsignalized study intersections to determine whether the project would produce an intersection non-level of service impact according to the City of Belmont potentially significant impact criteria. The peak-hour signal warrant was checked for existing, background and project conditions. The signal warrant analysis results show that the intersections at Ralston Avenue/Elmer Street and Old County Road/Masonic Way are warranted for a traffic signal under existing conditions during the PM peak hour. According to the City of Belmont impact criteria, for intersections that are warranted for a traffic signal under the base case (background conditions), the project is considered to produce a potentially significant impact if the project increases the demand to capacity ratio (V/C) by 0.01.

Table 12
Signal Warrant Analysis Results

			Existing Conditions		Existing + Project Conditions			Background Conditions		Background + Project Conditions		
#	Intersection	Peak Period	Warrant Met	V/C	Warrant Met	V/C	Inc. in V/C	Warrant Met	V/C	Warrant Met	V/C	Inc. in V/C
1	Old County Road & Oneill Avenue	AM	No	-	No	-	-	No	-	No	-	-
		PM	No	-	No	-	-	No	-	No	-	-
2	Old County Road & Karen Road	AM	No	-	No	-	-	No	-	No	-	-
		PM	No	-	No	-	-	No	-	No	-	-
8	Elmer Street & Ralston Avenue	AM	No	0.12	No	0.14	0.02	**Yes**	**0.13**	**Yes**	**0.15**	**0.02**
		PM	Yes	0.66	Yes	0.66	0.00	**Yes**	**0.68**	**Yes**	**0.69**	**0.01**
9	Old County Road & Masonic Way[1]	AM	No	-	No	-	-	No	-	No	-	-
		PM	Yes	-	Yes	-	-	Yes	-	Yes	-	-
10	Elmer Street & Oneill Avenue	AM	No	-	No	-	-	No	-	No	-	-
		PM	No	-	No	-	-	No	-	No	-	-
11	Elmer Street & Harbor Boulevard	AM	No	-	No	-	-	No	-	No	-	-
		PM	No	-	No	-	-	No	-	No	-	-

Notes:
[1] The project does not add any trips to this intersection.
BOLD indicates a potentially signficant impact according to the City of Belmont's signal warrant impact criteria.

Elmer Street and Ralston Avenue

Analysis results show that during the AM and PM peak periods when signalization is warranted, the project would increase the V/C ratio by 0.01 in comparison to the background conditions. The

project thus produces a potentially significant impact at the intersection of Elmer Street and Ralston Avenue (see Table 12).

The *Final Ralston Avenue Corridor Study and Improvements Plan*, dated August 26, 2014, recommends the signalization of the intersection at Ralston Avenue and Elmer Street. The signal warrant impact occurs with the addition of approximately 9 trips during AM peak hour and 26 trips during PM peak hour. Per the City of Belmont traffic impact guidelines, contribution of a fair share toward the cost of the traffic signal would mitigate the significant impact caused by the project. Under cumulative conditions, this project is expected to add 9 trips during the AM peak hour and 26 trips during the PM peak hour (see Figure 9), which represents an average of 2% of the cumulative traffic growth at this intersection (see Table 13).

Table 13
Fair Share Calculation

Number	Study Intersection	Peak Hour	Existing Volume	Cum 2035 EIR Volume	Difference (A)	Windy Hill Project Trips (B)	Fair Share % (B / A)
8	Elmer Street & Ralston Avenue	AM	1924	2818	894	9	1.0%
		PM	2371	3253	882	26	2.9%
						Average	**2.0%**

Old County Road and Masonic Way

Analysis results show that the Old County Road and Masonic Way intersection is warranted for signalization during the PM peak period. The project would not add trips to this intersection. Thus, the project thus does not cause a potentially significant impact at the intersection of Old County Road and Masonic Way.

Site Access and On-Site Circulation

This section describes the site access and circulation for the proposed project. This review is based on the project site plans prepared by BDE Architecture dated September 07, 2018 (see Figure 2).

Site Access

Site access was evaluated to determine the adequacy of site driveway with regard to corner sight distance and traffic volume. The project proposes to have one driveway on Oneill Avenue, which would provide full access to the project site. The proposed driveway location is the same as one of the existing driveways to the animal shelter site. The driveway would lead to an underground parking garage with 258 spaces. As per City of Belmont standards, driveways that serve more than 15 parking spaces shall have a width of nine feet to 10 feet for a one-way driveway and 18 feet to 20 feet for a two-way driveway. The proposed driveway is 21 feet wide, which meets the City's standard.

The project driveway should be free and clear of any obstructions to optimize sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on adjacent roadways. Any landscaping and signage should be located in such a way as to ensure an unobstructed view for drivers entering and exiting the site. Adequate corner sight distance (sight distance triangles) should be provided at all site access points in accordance with the City's standards. Sight distance triangles should be measured approximately 15 feet back

from the traveled way. Sight distance requirements vary depending on the roadway speeds. The speed limit on Oneill Avenue near the project vicinity is 25 mph. The Caltrans recommended stopping sight distance for Oneill Avenue is 150 feet. Since no parking is allowed on Oneill Avenue, the necessary sight distance is available. Also, the proposed project is planning to remove the three existing trees near the project entrance, which would improve sight distance.

The driveway is projected to serve a maximum of 23 inbound and 67 outbound vehicles during the AM peak hour, which is one inbound vehicle every three minute and one outbound vehicle every one minute. During the PM peak hour, the driveway is projected to serve a maximum of 74 inbound vehicles and 51 outbound vehicles, which is one inbound and one outbound vehicle every one minute. Therefore, the driveway is not expected to create any operational issues.

The width of Oneill Avenue is 20 feet with one eastbound and one westbound lane. Due to the low volume on Oneill Avenue during the AM (38 vehicles) and PM (103 vehicles) peak hours, the vehicles entering the project site are not expected to block through traffic. The vehicles exiting the site at this driveway would not experience excessive delay and would be able to find sufficient gaps.

On-Site Circulation

All driveway and drive-aisle widths are shown to be at least 24 feet wide and comply with the minimum requirements established in the Belmont Village Specific Plan (BVSP) Ordinances Section 31.6.4. All the standard parking stalls within the parking lot are shown to be 18 feet in length and 8 feet 6 inches in width, and compact parking stalls are 16 feet in length and 8 feet 6 inches or 8 feet in width, which meet the City's requirements. The project proposes to provide 41 compact spaces in the parking garage for residents, which is less than the 25 percent of the required spaces. The parking spaces near the north and east side along the parking garage walls have a dead-end aisle, where the last two parking stalls (one on each side of the drive aisle) are right next to the garage wall. It would be difficult for drivers to exit this parking aisle if they were unable to find a parking place. Some of those dead-end aisles have backup space. Therefore, the developer is planning to assign those parking spaces to specific residents. There are building entrances and stairwells shown along the project frontage on Elmer Street, Karen Road, and Old County Road. These will provide easy access for pedestrians.

Loading Spaces

As per the BVSP zoning ordinance, multi-family developments with more than 150 units are required to provide two small loading spaces. Small loading spaces must have a width of no less than 10 feet and length of 25 feet. The project site plan shows one loading area along the project driveway entrance in Oneill Avenue and other along Karen Road, which meet the City's requirement.

Parking

For residential use in the Belmont Village district, the Zoning Ordinance requires parking to be provided at the rate of a minimum of 0.5 parking space per studio, one parking space per one-bedroom unit, and 1.5 parking spaces per two-bedroom unit. The project proposes 67 studio units, 141 one-bedroom units and 42 two-bedroom units. Thus, the project is required to provide 238 parking spaces. As per the code, the community musical room requires parking to be provided at the rate of a minimum of two parking spaces per 1,000 square feet of gross floor area, which calculates to three parking spaces for 1,352 square feet. Thus, the project is required by code to provide 240 parking spaces minimum. The project site plan shows 248 parking spaces for

residents, 6 spaces for residential guests, and 4 parking spaces for the community musical room, which exceeds the minimum City code requirement, but is less than the maximum allowed. The residential guest spaces are proposed to be shared with the musical room uses.

As per the California Building Code (CBC) requirements, when assigned parking spaces are provided for residents, at least 2 percent of the assigned parking spaces serving covered multifamily dwelling units shall be accessible in each type of parking facility. Therefore, the proposed project is required to provide six accessible parking spaces. As shown on the site plan, the project is planning to provide six accessible parking spaces including three van accessible spaces, which meets the California Building Code requirements. As per the Zoning Ordinance, parking facilities containing 20 or more spaces serving Multi-Unit Residential uses should provide at least five percent of parking spaces for electric vehicle (EV) charging stations. Thus, the proposed project needs to provide at least 14 electric vehicle charging stations. As per the proposed site plan, the project is planning to provide 14 EV charging stations, which meets the City's requirement.

Based on the Zoning Ordinance bicycle parking requirements, the project should provide two short term bicycle parking spaces and 13 long term bicycle parking spaces for residential use and two short term bicycle parking spaces for the community musical space. According to the site plan dated 03/01/19, the project is proposing a total of 288 bicycle parking spaces for residential and community use, including 216 long-term parking spaces in three secured bike rooms and 50 short-term bicycle parking spaces at the sidewalks along the project frontage. The project also includes an additional 22 long-term bicycle spaces for resident use in the form of bike racks mounted to the garage walls. Therefore, the bicycle parking proposed by the project would exceed the City's requirement.

7. Conclusions

This report presents the results of the transportation impact analysis conducted for the proposed residential development located at 1325 Old County Road in Belmont, California. The project would construct a four-story 250-unit multi-family residential building over below grade parking with 258 spaces. The project also includes 1,352 s.f. of free rental space for the community, which could be used for children's musical classes during the afterschool hours. The 2.09-acre site is currently occupied by a materials manufacturing building and its associated office buildings, a parking lot, small offices for film production, a printer and gelato maker, and an animal shelter facility. The materials manufacturing buildings on the site have been vacant for several months and all other buildings are occupied. The site currently has driveways on Oneill Avenue, Old County Road, and Karen Avenue. These would be replaced by a single driveway on Oneill Avenue.

Intersection Levels of Service

The results of the intersection level of service analysis show that all study intersections would continue to operate at an acceptable level of service under both existing plus project and background plus project conditions during the AM and PM peak hours. Accordingly, none of the study intersections would be significantly impacted by the project.

Operational Analysis

Operational issues are not considered CEQA impacts. They are included for informational purposes. A vehicle queuing analysis was conducted for the left-turn movements at signalized intersections where the project would maximum traffic to the left-turn queue. The queuing analysis at Harbor Boulevard and Old County Road intersection shows that the existing left-turn storage would be adequate under all scenarios during both AM and PM peak hours.

The queuing analysis at Old County Road and Ralston Avenue shows that northbound left-turn pocket is inadequate during both the AM and PM peak hours under existing and background conditions. The queuing analysis indicates that the project would not increase the maximum left-turn queue during the AM and PM peak hour compared to existing and background conditions. According to the City of Belmont vehicle queuing criteria, the project would not create a significant vehicle queuing impact for this movement at this intersection.

Signal Warrant Analysis

A peak hour signal warrant analysis (*MUTCD 2010 Edition,* Part 4, Warrant 3) was performed for all the unsignalized study intersections to determine whether the project would produce an impact according to the City of Belmont impact criteria. The peak-hour signal warrant was checked for existing, background and project conditions. The signal warrant analysis results show that the intersection at Ralston Avenue/Elmer Street is warranted for a traffic signal under existing and project conditions during the PM peak hour.

Proposed Mitigation

The *Final Ralston Avenue Corridor Study and Improvements Plan*, dated August 26, 2014, recommends the signalization of the intersection at Ralston Avenue and Elmer Street. Per the City of Belmont traffic impact guidelines, contribution of a fair share toward the cost of a traffic signal would mitigate the significant impact caused by the project. Under cumulative conditions, this project is expected to add 9 trips during the AM peak hour and 26 trips during the PM peak hour (see Figure 9), which represents an average of 0.6% of the cumulative traffic volume at this intersection (see Table 10).

Project Impact on Bicycle, Pedestrian, and Transit Facilities

The project site is well served by existing bicycle facilities. There is an existing Class II bike lane on Masonic Way. Nearby bicycle facilities within the project vicinity include Class III bike routes on Old County Road, Ralston Avenue between El Camino Real and South Road. There exists a Class I bike/pedestrian overpass over US 101. As per the Belmont Village Specific Plan (BVSP), Old County Road, El Camino Real and Oneill Avenue are identified as future Class III bicycle routes, which will improve bicycle connectivity. The proposed project is planning to implement the improvements for Class II bike lanes, on-street parking and sidewalks along the project frontage on Old County Road.

Pedestrian activity could occur between the site and retail centers located along El Camino Real, as well as the closest bus stops and Caltrain Station. There are existing sidewalks on Oneill Avenue, Old County Road, Harbor Boulevard and Ralston Avenue that connect the site to the bus stops and to the shopping areas. In accordance with the BVSP, the project voluntarily proposes to make various improvements along its frontage to enhance pedestrian and bicycle safety. These include a curb extension at Old County Road/Karen Road and Elmer Street/Karen Road and a minimum six-foot sidewalk along Elmer Street, Karen Road, and Old County Road. Also, the proposed project is planning to provide crosswalks on Karen Road at Elmer Street and at Old County Road. The proposed improvements will enhance pedestrian safety in the immediate project vicinity.

There is transit service on El Camino Real and Ralston Avenue. It is not expected that the proposed project would generate a significant amount of transit ridership or create a significant impact to intersection levels of service along transit routes. Therefore, the project would not significantly impact transit facilities and transit travel times.

Site Access and On-Site Circulation

Site Access

Site access was evaluated to determine the adequacy of site driveway with regard to corner sight distance and traffic volume. The project proposes to have one driveway on Oneill Avenue, which would provide full access to the project site. The proposed driveway location is the same as one of the existing driveways to the animal shelter site. The driveway would lead to an underground parking garage with 258 spaces. As per City of Belmont standards, driveways that serve more than 15 parking spaces shall have a width of nine feet to 10 feet for a one-way driveway and 18 feet to 20 feet for a two-way driveway. The proposed driveway is 21 feet wide, which meets the City's standard.

The project driveway should be free and clear of any obstructions to optimize sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on adjacent roadways. Any landscaping and signage should be located in such a way as to ensure an unobstructed view for drivers entering and exiting the site. Adequate corner sight distance (sight distance triangles) should be provided at all site access points in accordance with the City's standards. Sight distance triangles should be measured approximately 15 feet back from the traveled way. Sight distance requirements vary depending on the roadway speeds. The speed limit on Oneill Avenue near the project vicinity is 25 mph. The Caltrans recommended stopping sight distance for Oneill Avenue is 150 feet. Since no parking is allowed on Oneill Avenue, the necessary sight distance is available. Also, the proposed project is planning to remove the three existing trees near the project entrance, which would improve sight distance.

The driveway is projected to serve a maximum of 23 inbound and 67 outbound vehicles during the AM peak hour, which is one inbound vehicle every three minute and one outbound vehicle every one minute. During the PM peak hour, the driveway is projected to serve a maximum of 74 inbound vehicles and 51 outbound vehicles, which is one inbound and one outbound vehicle every one minute. Therefore, the driveway is not expected to create any operational issues.

The width of Oneill Avenue is 20 feet with one eastbound and one westbound lane. Due to the low volume on Oneill Avenue during the AM (38 vehicles) and PM (103 vehicles) peak hours, the vehicles entering the project site are not expected to block through traffic. The vehicles exiting the site at this driveway would not experience excessive delay and would be able to find sufficient gaps.

On-Site Circulation

All driveway and drive-aisle widths are shown to be at least 24 feet wide and comply with the minimum requirements established in the Belmont Village Specific Plan (BVSP) Ordinances Section 31.6.4. All the standard parking stalls within the parking lot are shown to be 18 feet in length and 8 feet 6 inches in width, and compact parking stalls are 16 feet in length and 8 feet 6 inches or 8 feet in width, which meet the City's requirements. The project proposes to provide 41 compact spaces in the parking garage for residents, which is less than the 25 percent of the required spaces. The parking spaces near the north and east side along the parking garage walls have a dead-end aisle, where the last two parking stalls (one on each side of the drive aisle) are right next to the garage wall. It would be difficult for drivers to exit this parking aisle if they were unable to find a parking place. Some of those dead-end aisles have backup space. Therefore, the developer is planning to assign those parking spaces to specific residents. There are building entrances and stairwells shown along the project frontage on Elmer Street, Karen Road, and Old County Road. These will provide easy access for pedestrians.

Loading Spaces

As per the BVSP zoning ordinance, multi-family developments with more than 150 units are required to provide two small loading spaces. Small loading spaces must have a width of no less than 10 feet and length of 25 feet. The project site plan shows one loading area along the project driveway entrance in Oneill Avenue and other along Karen Road, which meet the City's requirement.

Parking

For residential use in the Belmont Village district, the Zoning Ordinance requires parking to be provided at the rate of a minimum of 0.5 parking space per studio, one parking space per one-bedroom unit, and 1.5 parking spaces per two-bedroom unit. The project proposes 67 studio units, 141 one-bedroom units and 42 two-bedroom units. Thus, the project is required to provide 238 parking spaces. As per the code, the community musical room requires parking to be provided at the rate of a minimum of two parking spaces per 1,000 square feet of gross floor area, which calculates to three parking spaces for 1,352 square feet. Thus, the project is required by code to provide 240 parking spaces minimum. The project site plan shows 248 parking spaces for residential use,6 spaces for residential guests, and 4 parking spaces for the community musical room, which exceeds the minimum the City code requirement, but is less than the maximum allowed. The residential guest spaces are proposed to be shared with the musical room uses.

As per the California Building Code (CBC) requirements, when assigned parking spaces are provided for residents, at least 2 percent of the assigned parking spaces serving covered multifamily dwelling units shall be accessible in each type of parking facility. Therefore, the proposed project is required to provide six accessible parking spaces. As shown on the site plan, the project is planning to provide six accessible parking spaces including three van accessible spaces, which meets the California Building Code requirements. As per the Zoning Ordinance, parking facilities containing 20 or more spaces serving Multi-Unit Residential uses should provide at least five percent of parking spaces for electric vehicle (EV) charging stations. Thus, the proposed project needs to provide at least 14 electric vehicle charging stations. As per the proposed site plan, the project is planning to provide 14 EV charging stations, which meet the City's requirement.

Based on the Zoning Ordinance bicycle parking requirements, the project should provide two short term bicycle parking spaces and 13 long term bicycle parking spaces for residential use and two short term bicycle parking spaces for the community musical space. According to the site plan dated 03/01/19, the project is proposing a total of 288 bicycle parking spaces for residential and community use, including 216 long-term parking spaces in three secured bike rooms and 50 short-term bicycle parking spaces at the sidewalks along the project frontage. The project also includes an additional 22 long-term bicycle spaces for resident use in the form of bike racks mounted to the garage walls. Therefore, the bicycle parking proposed by the project would exceed the City's requirement.

1325 Old County Road Residential Development

Draft TIA

Technical Appendices

Appendix A

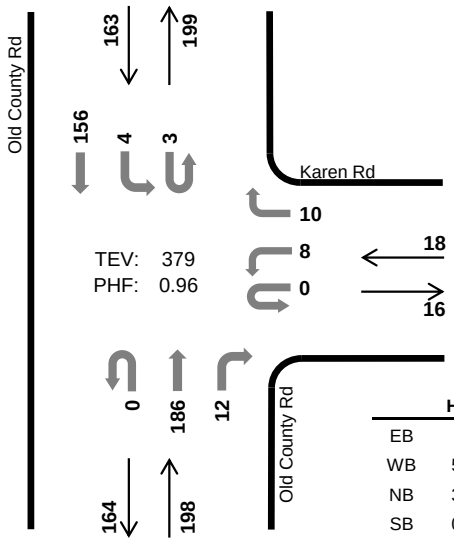
Traffic Counts

Old County Rd
Karen Rd

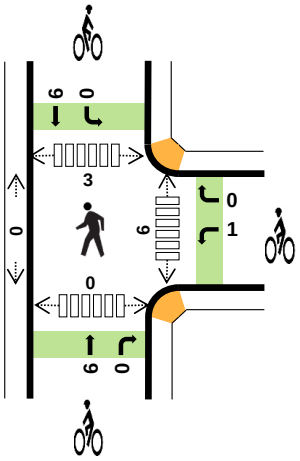
Date: 01-17-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

N

Peak Hour



	HV %:	PHF
EB	-	-
WB	5.6%	0.64
NB	3.0%	0.95
SB	0.6%	0.91
TOTAL	2.1%	0.96



Two-Hour Count Summaries

Interval Start		0				Karen Rd				Old County Rd				Old County Rd				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	0	0	0	0	0	1	0	0	27	1	0	3	25	0	57	0
7:15 AM		0	0	0	0	0	4	0	4	0	0	38	6	0	0	36	0	88	0
7:30 AM		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**49**	**3**	**1**	**1**	**43**	**0**	**99**	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**48**	**3**	**2**	**0**	**39**	**0**	**97**	341
8:00 AM		**0**	**0**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**43**	**3**	**0**	**3**	**37**	**0**	**93**	377
8:15 AM		**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**46**	**3**	**0**	**0**	**37**	**0**	**90**	**379**
8:30 AM		0	0	0	0	0	0	0	0	0	0	53	1	0	3	28	0	85	365
8:45 AM		0	0	0	0	0	0	0	0	0	0	47	5	0	0	51	0	103	371
Count Total		0	0	0	0	0	12	0	15	0	0	351	25	3	10	296	0	712	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**10**	**0**	**0**	**186**	**12**	**3**	**4**	**156**	**0**	**379**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**1**	**0**	**8**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**13%**	**-**	**0%**	**-**	**-**	**3%**	**0%**	**0%**	**0%**	**1%**	**-**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	4	*4*	0	0	3	1	*4*	2	0	1	0	*3*
7:15 AM	0	0	0	4	*4*	0	0	1	0	*1*	1	0	0	0	*1*
7:30 AM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**1**	**2**	***3***	**1**	**0**	**1**	**0**	*2*
7:45 AM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**2**	**1**	***3***	**5**	**0**	**0**	**0**	*5*
8:00 AM	**0**	**0**	**2**	**1**	***3***	**0**	**0**	**3**	**2**	***5***	**0**	**0**	**2**	**0**	*2*
8:15 AM	**0**	**1**	**0**	**0**	***1***	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	***0***
8:30 AM	0	0	3	1	*4*	0	0	2	1	*3*	0	0	0	0	*0*
8:45 AM	0	0	1	2	*3*	0	0	0	1	*1*	0	0	0	0	*0*
Count Total	0	1	10	12	*23*	0	1	12	9	*22*	9	0	4	0	*13*
Peak Hr	**0**	**1**	**6**	**1**	***8***	**0**	**1**	**6**	**6**	***13***	**6**	**0**	**3**	**0**	***9***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				Karen Rd				Old County Rd				Old County Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	12
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**3**	11
8:15 AM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**8**
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	10
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	11
Count Total	0	0	0	0	0	1	0	0	0	0	10	0	0	0	12	0	23	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**1**	**0**	**8**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	0			Karen Rd			Old County Rd			Old County Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	3	0	0	1	0	4	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**3**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**3**	11
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**2**	**0**	**5**	12
8:15 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**13**
8:30 AM	0	0	0	0	0	0	0	2	0	0	1	0	3	13
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	11
Count Total	0	0	0	1	0	0	0	12	0	0	9	0	22	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**6**	**0**	**0**	**6**	**0**	**13**	**0**

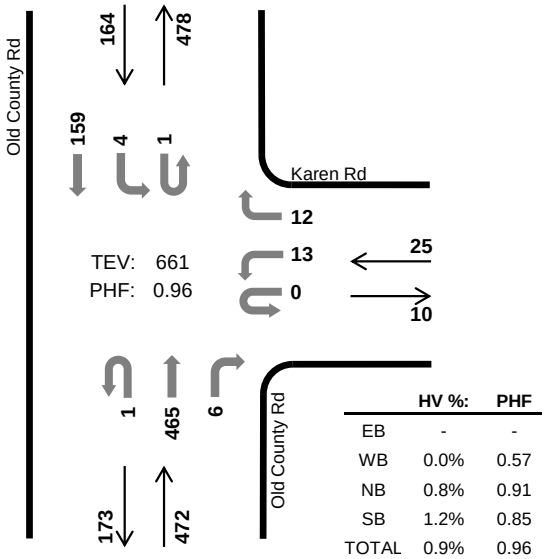
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Old County Rd
Karen Rd

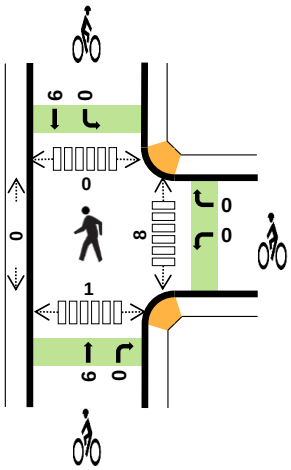
Date: 01-17-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM

N

Peak Hour



	HV %:	PHF
EB	-	-
WB	0.0%	0.57
NB	0.8%	0.91
SB	1.2%	0.85
TOTAL	0.9%	0.96



Two-Hour Count Summaries

Interval Start	0				Karen Rd				Old County Rd				Old County Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	86	1	1	0	38	0	127	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**4**	**0**	**0**	**121**	**3**	**1**	**3**	**37**	**0**	**173**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**4**	**0**	**0**	**106**	**0**	**0**	**0**	**48**	**0**	**165**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**1**	**0**	**108**	**3**	**0**	**1**	**43**	**0**	**161**	626
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**130**	**0**	**0**	**0**	**31**	**0**	**162**	**661**
5:15 PM	0	0	0	0	0	4	0	4	0	0	124	6	0	2	32	0	172	660
5:30 PM	0	0	0	0	0	8	0	7	0	0	81	5	0	0	36	0	137	632
5:45 PM	0	0	0	0	0	1	0	4	0	0	91	13	0	4	36	0	149	620
Count Total	0	0	0	0	0	26	0	28	1	0	847	31	2	10	301	0	1,246	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**12**	**1**	**0**	**465**	**6**	**1**	**4**	**159**	**0**	**661**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**	**6**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**0%**	**-**	**0%**	**0%**	**-**	**1%**	**0%**	**0%**	**0%**	**1%**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	3	2	*5*	0	0	2	0	*2*	0	0	0	1	*1*
4:15 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	***1***	**3**	**0**	**0**	**0**	*3*
4:30 PM	**0**	**0**	**1**	**2**	***3***	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**4**	**0**	***4***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**4**	***5***	**5**	**0**	**0**	**1**	***6***
5:15 PM	0	0	1	0	*1*	0	0	3	4	*7*	1	0	1	0	*2*
5:30 PM	0	0	0	0	*0*	0	0	4	0	*4*	2	0	0	0	*2*
5:45 PM	0	0	1	0	*1*	0	0	4	0	*4*	1	0	0	0	*1*
Count Total	0	0	9	4	*13*	0	0	19	10	*29*	12	0	1	2	*15*
Peak Hr	**0**	**0**	**4**	**2**	***6***	**0**	**0**	**6**	**6**	***12***	**8**	**0**	**0**	**1**	***9***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	0				Karen Rd				Old County Rd				Old County Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0	5	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**3**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	11
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	6
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
Count Total	0	0	0	0	0	0	0	0	0	0	8	1	0	0	4	0	13	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**2**	**0**	**6**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	0			Karen Rd			Old County Rd			Old County Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	2	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	9
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**4**	**0**	**5**	**12**
5:15 PM	0	0	0	0	0	0	0	3	0	0	4	0	7	18
5:30 PM	0	0	0	0	0	0	0	4	0	0	0	0	4	20
5:45 PM	0	0	0	0	0	0	0	4	0	0	0	0	4	20
Count Total	0	0	0	0	0	0	0	19	0	0	10	0	29	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**6**	**0**	**12**	**0**

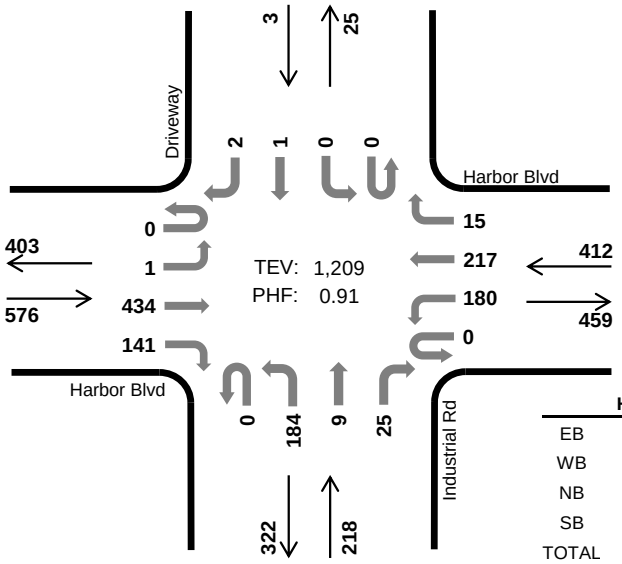
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

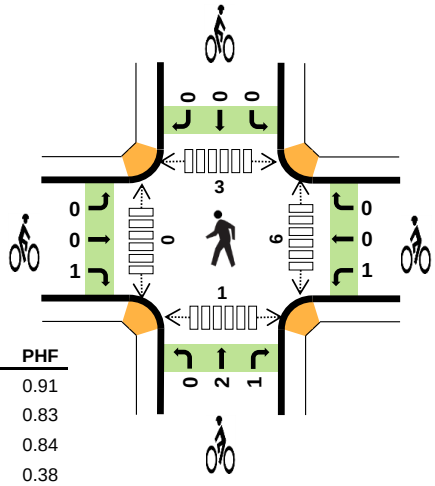
Industrial Rd
Harbor Blvd

Date: 01-17-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM

N

Peak Hour





	HV %:	PHF
EB	1.2%	0.91
WB	2.4%	0.83
NB	6.4%	0.84
SB	0.0%	0.38
TOTAL	2.6%	0.91

Two-Hour Count Summaries

Interval Start		Harbor Blvd Eastbound				Harbor Blvd Westbound				Industrial Rd Northbound				Driveway Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	1	43	24	0	48	52	4	0	20	2	1	0	0	0	1	196	0
7:15 AM		0	0	83	27	0	48	53	5	0	31	0	0	0	1	0	0	248	0
7:30 AM		**0**	**0**	**96**	**25**	**0**	**46**	**41**	**4**	**0**	**53**	**4**	**8**	**0**	**0**	**0**	**1**	**278**	0
7:45 AM		**0**	**0**	**102**	**40**	**0**	**49**	**50**	**5**	**0**	**53**	**2**	**6**	**0**	**0**	**0**	**0**	**307**	1,029
8:00 AM		**0**	**0**	**111**	**43**	**0**	**55**	**65**	**4**	**0**	**50**	**1**	**2**	**0**	**0**	**1**	**1**	**333**	1,166
8:15 AM		**0**	**1**	**125**	**33**	**0**	**30**	**61**	**2**	**0**	**28**	**2**	**9**	**0**	**0**	**0**	**0**	**291**	**1,209**
8:30 AM		0	0	113	27	0	33	44	5	0	42	0	8	0	0	0	0	272	1,203
8:45 AM		0	1	107	40	0	35	48	1	0	39	3	4	0	2	1	0	281	1,177
Count Total		0	3	780	259	0	344	414	30	0	316	14	38	0	3	2	3	2,206	0
Peak Hour	**All**	**0**	**1**	**434**	**141**	**0**	**180**	**217**	**15**	**0**	**184**	**9**	**25**	**0**	**0**	**1**	**2**	**1,209**	**0**
	HV	**0**	**0**	**5**	**2**	**0**	**5**	**5**	**0**	**0**	**10**	**1**	**3**	**0**	**0**	**0**	**0**	**31**	**0**
	HV%	**-**	**0%**	**1%**	**1%**	**-**	**3%**	**2%**	**0%**	**-**	**5%**	**11%**	**12%**	**-**	**-**	**0%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	1	0	0	*3*	0	0	0	0	*0*	0	0	2	0	*2*
7:15 AM	4	3	0	0	*7*	1	1	0	0	*2*	1	0	0	0	*1*
7:30 AM	**3**	**0**	**0**	**0**	***3***	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
7:45 AM	**1**	**4**	**4**	**0**	***9***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**0**	*2*
8:00 AM	**2**	**3**	**5**	**0**	***10***	**1**	**0**	**1**	**0**	***2***	**2**	**0**	**1**	**1**	*4*
8:15 AM	**1**	**3**	**5**	**0**	***9***	**0**	**0**	**2**	**0**	***2***	**2**	**0**	**1**	**0**	***3***
8:30 AM	3	5	1	0	*9*	1	0	0	0	*1*	0	0	0	0	*0*
8:45 AM	3	4	2	1	*10*	0	0	0	0	*0*	0	0	3	0	*3*
Count Total	19	23	17	1	*60*	3	2	3	0	*8*	7	0	8	1	*16*
Peak Hour	**7**	**10**	**14**	**0**	***31***	**1**	**1**	**3**	**0**	***5***	**6**	**0**	**3**	**1**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harbor Blvd				Harbor Blvd				Industrial Rd				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	3	0
7:15 AM	0	0	3	1	0	0	3	0	0	0	0	0	0	0	0	0	7	0
7:30 AM	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
7:45 AM	**0**	**0**	**1**	**0**	**0**	**2**	**2**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**9**	22
8:00 AM	**0**	**0**	**1**	**1**	**0**	**2**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	29
8:15 AM	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**2**	**1**	**2**	**0**	**0**	**0**	**0**	**9**	**31**
8:30 AM	0	0	1	2	0	3	2	0	0	1	0	0	0	0	0	0	9	37
8:45 AM	0	0	3	0	0	1	3	0	0	2	0	0	0	0	1	0	10	38
Count Total	0	0	13	6	0	9	14	0	0	13	1	3	0	0	1	0	60	0
Peak Hour	**0**	**0**	**5**	**2**	**0**	**5**	**5**	**0**	**0**	**10**	**1**	**3**	**0**	**0**	**0**	**0**	**31**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Harbor Blvd			Harbor Blvd			Industrial Rd			Driveway			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	1	0	0	0	0	0	0	0	0	2	0
7:30 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**5**
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	5
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	0	3	2	0	0	0	2	1	0	0	0	8	0
Peak Hour	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**5**	**0**

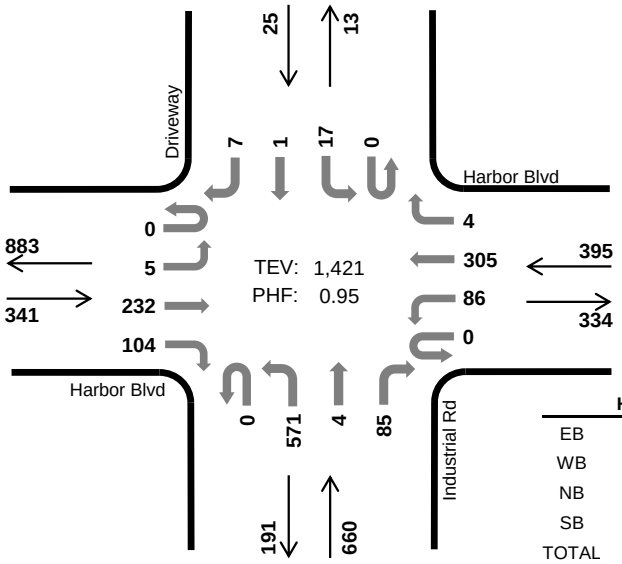
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Industrial Rd
Harbor Blvd

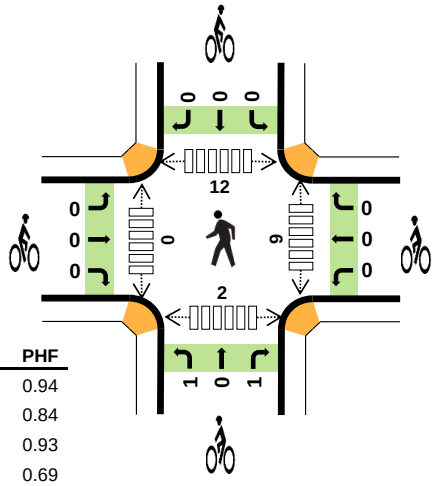
Date: 01-17-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

N

Peak Hour



	HV %:	PHF
EB	2.1%	0.94
WB	3.0%	0.84
NB	0.5%	0.93
SB	0.0%	0.69
TOTAL	1.5%	0.95



Two-Hour Count Summaries

Interval Start		Harbor Blvd Eastbound UT	LT	TH	RT	Harbor Blvd Westbound UT	LT	TH	RT	Industrial Rd Northbound UT	LT	TH	RT	Driveway Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	0	72	27	0	23	65	2	0	128	3	30	0	9	0	1	360	0
4:15 PM		0	2	53	36	0	21	68	0	0	114	1	27	0	2	1	4	329	0
4:30 PM		0	0	61	32	0	26	64	1	0	126	1	27	0	6	0	2	346	0
4:45 PM		**0**	**0**	**55**	**28**	**0**	**17**	**67**	**0**	**0**	**143**	**2**	**21**	**0**	**3**	**0**	**2**	**338**	1,373
5:00 PM		**0**	**1**	**60**	**24**	**0**	**20**	**72**	**1**	**0**	**131**	**2**	**23**	**0**	**6**	**1**	**2**	**343**	1,356
5:15 PM		**0**	**1**	**55**	**26**	**0**	**22**	**78**	**1**	**0**	**152**	**0**	**25**	**0**	**4**	**0**	**1**	**365**	1,392
5:30 PM		**0**	**3**	**62**	**26**	**0**	**27**	**88**	**2**	**0**	**145**	**0**	**16**	**0**	**4**	**0**	**2**	**375**	**1,421**
5:45 PM		0	1	41	18	0	30	69	0	0	128	1	24	0	2	0	2	316	1,399
Count Total		0	8	459	217	0	186	571	7	0	1,067	10	193	0	36	2	16	2,772	0
Peak Hour	**All**	**0**	**5**	**232**	**104**	**0**	**86**	**305**	**4**	**0**	**571**	**4**	**85**	**0**	**17**	**1**	**7**	**1,421**	**0**
	HV	**0**	**0**	**2**	**5**	**0**	**5**	**7**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**22**	**0**
	HV%	**-**	**0%**	**1%**	**5%**	**-**	**6%**	**2%**	**0%**	**-**	**0%**	**0%**	**1%**	**-**	**0%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	3	5	1	0	*9*	2	0	2	0	*4*	3	0	3	1	*7*
4:15 PM	4	6	2	0	*12*	0	0	0	0	*0*	0	0	2	0	*2*
4:30 PM	3	2	3	0	*8*	0	1	1	0	*2*	3	0	2	0	*5*
4:45 PM	**2**	**1**	**2**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**2**	**0**	*4*
5:00 PM	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**1**	**0**	***1***	**4**	**0**	**3**	**0**	*7*
5:15 PM	**0**	**5**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**3**	**1**	*6*
5:30 PM	**4**	**5**	**1**	**0**	***10***	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**4**	**1**	***6***
5:45 PM	2	2	0	0	*4*	0	0	1	0	*1*	4	0	2	1	*7*
Count Total	19	27	9	0	*55*	2	1	6	0	*9*	19	0	21	4	*44*
Peak Hour	**7**	**12**	**3**	**0**	***22***	**0**	**0**	**2**	**0**	***2***	**9**	**0**	**12**	**2**	***23***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harbor Blvd				Harbor Blvd				Industrial Rd				Driveway				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	2	0	3	2	0	0	1	0	0	0	0	0	0	9	0
4:15 PM	0	0	1	3	0	3	3	0	0	1	1	0	0	0	0	0	12	0
4:30 PM	0	0	1	2	0	0	2	0	0	2	0	1	0	0	0	0	8	0
4:45 PM	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	34
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	27
5:15 PM	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	20
5:30 PM	**0**	**0**	**2**	**2**	**0**	**2**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**22**
5:45 PM	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	4	21
Count Total	0	0	6	13	0	11	16	0	0	6	1	2	0	0	0	0	55	0
Peak Hour	**0**	**0**	**2**	**5**	**0**	**5**	**7**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**22**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Harbor Blvd			Harbor Blvd			Industrial Rd			Driveway			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	1	0	1	0	0	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	1	0	0	0	0	0	2	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	3
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	3
Count Total	0	0	2	1	0	0	4	0	2	0	0	0	9	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**2**	**0**

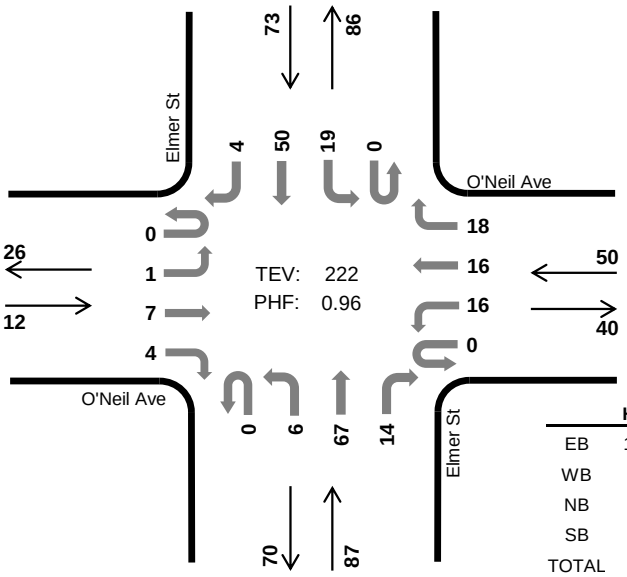
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Elmer St
O'Neil Ave

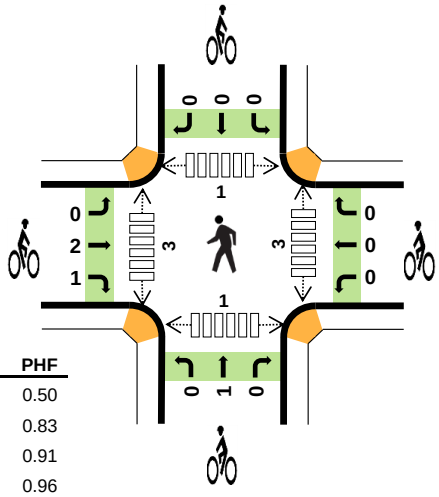
Date: 01-23-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM

N

Peak Hour



	HV %:	PHF
EB	16.7%	0.50
WB	2.0%	0.83
NB	1.1%	0.91
SB	1.4%	0.96
TOTAL	2.3%	0.96



Two-Hour Count Summaries

Interval Start		O'Neil Ave Eastbound UT	LT	TH	RT	O'Neil Ave Westbound UT	LT	TH	RT	Elmer St Northbound UT	LT	TH	RT	Elmer St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM		0	0	0	0	0	4	6	4	0	0	14	5	1	13	10	1	58	0
7:15 AM		0	2	1	0	0	5	4	8	1	2	8	5	0	8	11	1	56	0
7:30 AM		0	0	1	3	0	2	2	5	0	0	16	3	1	3	8	2	46	0
7:45 AM		**0**	**0**	**2**	**0**	**0**	**5**	**2**	**3**	**0**	**2**	**17**	**5**	**0**	**8**	**10**	**1**	**55**	215
8:00 AM		**0**	**0**	**3**	**3**	**0**	**2**	**3**	**7**	**0**	**2**	**14**	**6**	**0**	**4**	**13**	**1**	**58**	215
8:15 AM		**0**	**0**	**2**	**0**	**0**	**4**	**5**	**6**	**0**	**1**	**17**	**2**	**0**	**4**	**14**	**0**	**55**	214
8:30 AM		**0**	**1**	**0**	**1**	**0**	**5**	**6**	**2**	**0**	**1**	**19**	**1**	**0**	**3**	**13**	**2**	**54**	**222**
8:45 AM		0	0	3	0	0	2	4	5	0	1	19	4	0	5	10	0	53	220
Count Total		0	3	12	7	0	29	32	40	1	9	124	31	2	48	89	8	435	0
Peak Hour	**All**	**0**	**1**	**7**	**4**	**0**	**16**	**16**	**18**	**0**	**6**	**67**	**14**	**0**	**19**	**50**	**4**	**222**	**0**
	HV	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**5**	**0**
	HV%	**-**	**0%**	**29%**	**0%**	**-**	**0%**	**6%**	**0%**	**-**	**0%**	**1%**	**0%**	**-**	**0%**	**2%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	0	1	0	0	*1*	0	0	0	0	*0*	1	0	0	2	*3*
7:15 AM	0	0	0	0	*0*	0	0	0	0	*0*	1	0	3	0	*4*
7:30 AM	1	0	1	0	*2*	0	0	0	0	*0*	0	3	0	1	*4*
7:45 AM	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***	**2**	**2**	**0**	**0**	*4*
8:00 AM	**2**	**1**	**1**	**0**	***4***	**1**	**0**	**0**	**0**	***1***	**1**	**1**	**0**	**1**	*3*
8:15 AM	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**1**	**0**	*1*
8:30 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
8:45 AM	0	0	2	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	3	2	4	1	*10*	3	0	1	0	*4*	5	6	4	4	*19*
Peak Hour	**2**	**1**	**1**	**1**	***5***	**3**	**0**	**1**	**0**	***4***	**3**	**3**	**1**	**1**	***8***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	O'Neil Ave				O'Neil Ave				Elmer St				Elmer St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**4**	6
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**5**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	7
Count Total	0	0	2	1	0	1	1	0	0	0	2	2	0	0	1	0	10	0
Peak Hour	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**5**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	O'Neil Ave			O'Neil Ave			Elmer St			Elmer St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	1
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	2	1	0	0	0	0	1	0	0	0	0	4	0
Peak Hour	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**0**

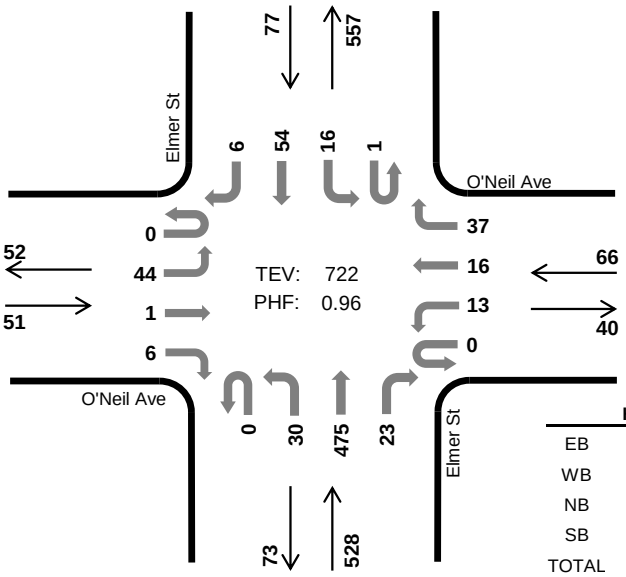
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Elmer St
O'Neil Ave

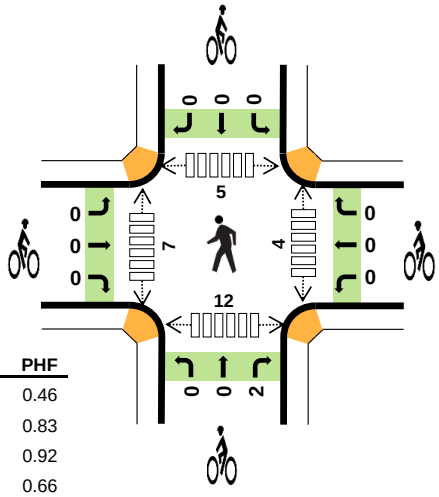
Date: 01-23-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

N

Peak Hour



	HV %:	PHF
EB	0.0%	0.46
WB	0.0%	0.83
NB	1.3%	0.92
SB	0.0%	0.66
TOTAL	1.0%	0.96



Two-Hour Count Summaries

Interval Start		O'Neil Ave Eastbound UT	LT	TH	RT	O'Neil Ave Westbound UT	LT	TH	RT	Elmer St Northbound UT	LT	TH	RT	Elmer St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	4	2	2	0	2	1	4	0	6	84	4	0	6	7	1	123	0
4:15 PM		0	7	1	1	0	2	3	5	0	4	98	4	0	1	9	1	136	0
4:30 PM		**0**	**5**	**0**	**0**	**0**	**4**	**4**	**12**	**0**	**6**	**132**	**6**	**0**	**2**	**15**	**3**	**189**	0
4:45 PM		**0**	**23**	**1**	**4**	**0**	**5**	**5**	**6**	**0**	**10**	**93**	**7**	**0**	**7**	**21**	**1**	**183**	631
5:00 PM		**0**	**8**	**0**	**2**	**0**	**2**	**6**	**8**	**0**	**7**	**122**	**4**	**0**	**4**	**6**	**1**	**170**	678
5:15 PM		**0**	**8**	**0**	**0**	**0**	**2**	**1**	**11**	**0**	**7**	**128**	**6**	**1**	**3**	**12**	**1**	**180**	**722**
5:30 PM		0	3	0	2	1	2	4	4	0	12	122	2	0	4	7	0	163	696
5:45 PM		0	4	1	1	0	2	3	3	0	7	86	1	0	3	5	0	116	629
Count Total		0	62	5	12	1	21	27	53	0	59	865	34	1	30	82	8	1,260	0
Peak Hour	**All**	**0**	**44**	**1**	**6**	**0**	**13**	**16**	**37**	**0**	**30**	**475**	**23**	**1**	**16**	**54**	**6**	**722**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**7**	**0**
	HV%	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**1%**	**0%**	**0%**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	0	7	0	*7*	0	1	0	2	*3*	1	4	1	1	*7*
4:15 PM	0	0	1	1	*2*	0	1	0	0	*1*	0	3	0	1	*4*
4:30 PM	**0**	**0**	**4**	**0**	***4***	**0**	**0**	**1**	**0**	***1***	**2**	**2**	**1**	**0**	*5*
4:45 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**4**	*4*
5:00 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**1**	**5**	**3**	**6**	*15*
5:15 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**2**	***4***
5:30 PM	1	0	2	0	*3*	0	1	0	0	*1*	0	4	0	0	*4*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	0	3	*5*
Count Total	1	0	17	1	*19*	0	3	2	2	*7*	5	20	6	17	*48*
Peak Hour	**0**	**0**	**7**	**0**	***7***	**0**	**0**	**2**	**0**	***2***	**4**	**7**	**5**	**12**	***28***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	O'Neil Ave				O'Neil Ave				Elmer St				Elmer St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	7	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	14
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	8
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**7**
5:30 PM	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	3	6
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Count Total	0	0	0	1	0	0	0	0	0	1	15	1	0	0	1	0	19	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**7**	**0**

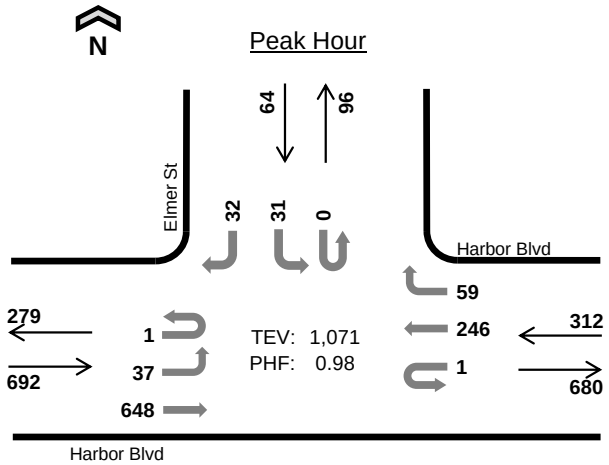
Two-Hour Count Summaries - Bikes

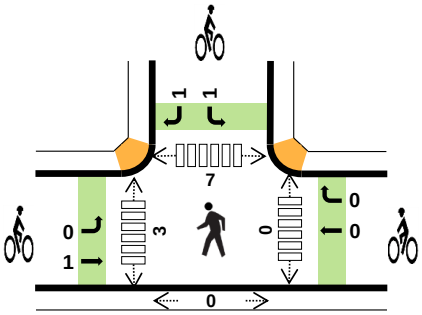
Interval Start	O'Neil Ave			O'Neil Ave			Elmer St			Elmer St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	0	0	1	1	0	3	0
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	6
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	1	0	2	0	0	2	1	1	0	7	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Elmer St
Harbor Blvd

Date: 01-17-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM





	HV %:	PHF
EB	0.6%	0.90
WB	5.8%	0.90
NB	-	0.75
SB	6.3%	0.94
TOTAL	2.4%	0.98

Two-Hour Count Summaries

Interval Start	Harbor Blvd Eastbound UT	LT	TH	RT	Harbor Blvd Westbound UT	LT	TH	RT	0 Northbound UT	LT	TH	RT	Elmer St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	1	7	70	0	0	3	35	11	0	0	0	0	0	6	0	1	134	0
7:15 AM	0	8	113	0	0	0	46	15	0	0	0	0	0	11	0	6	199	0
7:30 AM	0	5	129	3	1	0	58	16	0	0	0	0	0	11	0	9	232	0
7:45 AM	0	6	161	3	0	2	65	14	0	0	0	0	0	8	0	10	269	834
8:00 AM	**0**	**9**	**154**	**2**	**0**	**1**	**60**	**22**	**0**	**1**	**0**	**0**	**0**	**9**	**0**	**7**	**265**	965
8:15 AM	**0**	**8**	**182**	**2**	**0**	**4**	**54**	**6**	**0**	**0**	**0**	**1**	**0**	**6**	**1**	**8**	**272**	1,038
8:30 AM	**0**	**13**	**154**	**1**	**0**	**1**	**62**	**15**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**8**	**263**	1,069
8:45 AM	**1**	**7**	**158**	**1**	**1**	**0**	**70**	**16**	**0**	**0**	**0**	**1**	**0**	**7**	**0**	**9**	**271**	**1,071**
Count Total	2	63	1,121	12	2	11	450	115	0	0	0	0	0	67	1	58	1,902	0
Peak Hour All	**1**	**37**	**648**	**6**	**1**	**6**	**246**	**59**	**0**	**0**	**0**	**0**	**0**	**31**	**1**	**32**	**1,068**	**0**
Peak Hour HV	**0**	**0**	**4**	**0**	**0**	**2**	**14**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**26**	**0**
Peak Hour HV%	**0%**	**0%**	**1%**	**0%**	**0%**	**33%**	**6%**	**3%**	**-**	**-**	**-**	**-**	**-**	**10%**	**0%**	**3%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	1	1	0	0	*2*	0	0	0	0	*0*	0	2	1	0	*3*
7:15 AM	4	3	0	0	*7*	0	0	0	1	*1*	0	0	2	0	*2*
7:30 AM	1	0	0	2	*3*	1	0	0	0	*1*	1	0	4	0	*5*
7:45 AM	1	5	0	0	*6*	0	0	0	0	*0*	0	1	3	0	*4*
8:00 AM	**2**	**4**	**0**	**0**	***6***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**1**	**0**	*1*
8:15 AM	**0**	**4**	**0**	**2**	***6***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**4**	**0**	*5*
8:30 AM	**1**	**3**	**0**	**1**	***5***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**1**	**0**	*2*
8:45 AM	**1**	**7**	**0**	**1**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**0**	***2***
Count Total	11	27	0	6	*44*	2	0	0	3	*5*	1	6	17	0	*24*
Peak Hr	**4**	**18**	**0**	**4**	***26***	**1**	**0**	**0**	**2**	***3***	**0**	**3**	**7**	**0**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harbor Blvd				Harbor Blvd				0				Elmer St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	0	4	0	0	0	2	1	0	0	0	0	0	0	0	0	7	0
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	3	0
7:45 AM	0	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	6	18
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	22
8:15 AM	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**6**	21
8:30 AM	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	23
8:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**10**	**27**
Count Total	0	0	11	0	0	2	22	3	0	0	0	0	0	4	0	2	44	0
Peak Hour	**0**	**0**	**4**	**0**	**0**	**2**	**14**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**1**	**26**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Harbor Blvd			Harbor Blvd			0			Elmer St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	3
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	3
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
Count Total	0	2	0	0	0	0	0	0	0	2	0	1	5	0
Peak Hour	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**3**	**0**

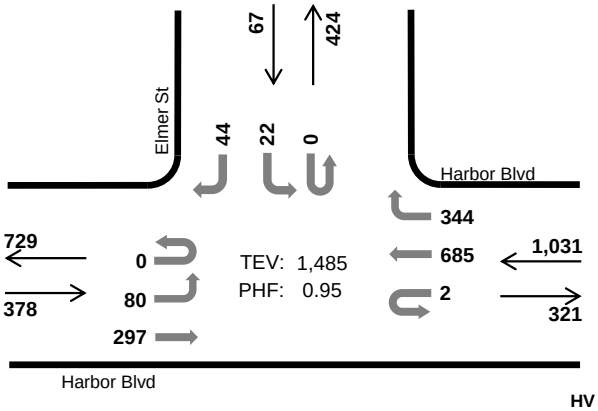
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

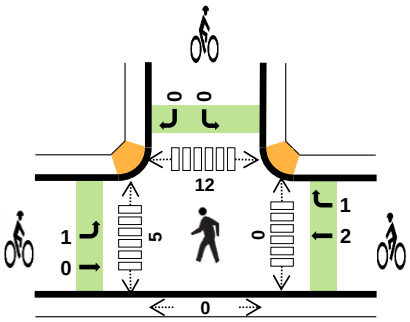
Elmer St
Harbor Blvd

Date: 01-17-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

N

Peak Hour





	HV %:	PHF
EB	1.9%	0.91
WB	1.0%	0.94
NB	-	0.56
SB	4.5%	0.70
TOTAL	1.4%	0.95

Two-Hour Count Summaries

Interval Start		Harbor Blvd Eastbound UT	LT	TH	RT	Harbor Blvd Westbound UT	LT	TH	RT	0 Northbound UT	LT	TH	RT	Elmer St Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
4:00 PM		0	14	92	1	0	0	148	72	0	1	1	2	0	8	0	8	347	0
4:15 PM		0	20	64	0	0	0	149	63	0	0	2	0	0	11	0	13	322	0
4:30 PM		**0**	**13**	**90**	**1**	**1**	**0**	**159**	**80**	**0**	**0**	**0**	**1**	**0**	**8**	**0**	**16**	**369**	0
4:45 PM		**0**	**15**	**66**	**0**	**1**	**0**	**165**	**79**	**0**	**1**	**1**	**2**	**0**	**1**	**1**	**7**	**339**	1,377
5:00 PM		**0**	**25**	**68**	**0**	**0**	**0**	**185**	**90**	**0**	**0**	**2**	**1**	**0**	**4**	**0**	**13**	**388**	1,418
5:15 PM		**0**	**27**	**73**	**0**	**0**	**0**	**176**	**95**	**0**	**0**	**0**	**1**	**0**	**9**	**0**	**8**	**389**	**1,485**
5:30 PM		0	34	66	0	0	0	142	92	0	0	0	0	0	8	0	13	355	1,471
5:45 PM		0	34	52	0	0	0	159	80	0	0	0	0	0	7	0	11	343	1,475
Count Total		0	182	571	2	2	0	1,283	651	0	0	0	0	0	56	1	89	2,837	0
Peak Hour	**All**	**0**	**80**	**297**	**1**	**2**	**0**	**685**	**344**	**0**	**0**	**0**	**0**	**0**	**22**	**1**	**44**	**1,476**	**0**
	HV	**0**	**1**	**5**	**1**	**0**	**0**	**6**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**20**	**0**
	HV%	**-**	**1%**	**2%**	**100%**	**0%**	**-**	**1%**	**1%**	**-**	**-**	**-**	**-**	**-**	**0%**	**100%**	**5%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	4	2	0	0	*6*	0	2	0	0	*2*	0	1	1	0	*2*
4:15 PM	3	4	0	1	*8*	1	1	0	0	*2*	0	1	5	0	*6*
4:30 PM	**3**	**2**	**0**	**2**	***7***	**0**	**2**	**0**	**0**	***2***	**0**	**1**	**2**	**0**	*3*
4:45 PM	**2**	**2**	**0**	**1**	***5***	**1**	**1**	**0**	**0**	***2***	**0**	**1**	**3**	**0**	*4*
5:00 PM	**2**	**3**	**0**	**0**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**5**	**0**	*7*
5:15 PM	**0**	**3**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**2**	**0**	***3***
5:30 PM	1	3	0	1	*5*	1	0	0	0	*1*	0	1	4	0	*5*
5:45 PM	1	2	0	1	*4*	0	1	0	0	*1*	0	0	1	0	*1*
Count Total	16	21	0	6	*43*	3	7	0	0	*10*	0	8	23	0	*31*
Peak Hr	**7**	**10**	**0**	**3**	***20***	**1**	**3**	**0**	**0**	***4***	**0**	**5**	**12**	**0**	***17***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Harbor Blvd				Harbor Blvd				0				Elmer St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	3	1	0	0	2	0	0	0	0	0	0	0	0	0	6	0
4:15 PM	0	0	3	0	0	0	2	2	0	0	0	0	0	0	0	1	8	0
4:30 PM	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**7**	0
4:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**6**	27
5:00 PM	**0**	**1**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	26
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**21**
5:30 PM	0	0	1	0	0	0	1	2	0	0	0	0	0	1	0	0	5	19
5:45 PM	0	0	1	0	0	0	1	1	0	0	0	0	0	1	0	0	4	17
Count Total	0	1	13	2	0	0	12	9	0	0	0	0	0	2	1	3	43	0
Peak Hour	**0**	**1**	**5**	**1**	**0**	**0**	**6**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**20**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Harbor Blvd			Harbor Blvd			0			Elmer St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	0
4:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	2	0
4:30 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:45 PM	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	8
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	3
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	2
Count Total	3	0	0	0	6	1	0	0	0	0	0	0	10	0
Peak Hour	**1**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

National Data and Surveying Services

City of Belmont
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7878-010 El Camino Real & Ralston Ave
Date : 10/26/2017

Unshifted Count = All Vehicles & Uturns

	El Camino Real Southbound					Ralston Ave Westbound					El Camino Real Northbound					Ralston Ave 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	Uturns Total
7:30	68	230	39	0	337	33	163	38	0	234	38	150	38	0	226	25	168	2	0	195	992	0
7:45	60	221	29	0	310	42	150	28	0	220	45	183	35	0	263	30	170	7	0	207	1000	0
8:00	67	246	21	0	334	51	135	55	0	241	37	171	46	0	254	24	172	6	0	202	1031	0
8:15	67	248	16	0	331	60	149	61	0	270	28	165	65	0	258	25	140	3	0	168	1027	0
Total	262	945	105	0	1312	186	597	182	0	965	148	669	184	0	1001	104	650	18	0	772	4050	0
8:30	68	253	20	0	341	44	148	54	0	246	22	189	59	0	270	16	143	3	0	162	1019	0
8:45	63	257	22	0	342	60	109	56	0	225	27	186	60	0	273	18	159	6	0	183	1023	0
9:00	64	237	22	0	323	50	88	44	0	182	28	157	58	0	243	26	147	5	0	178	926	0
9:15	62	191	21	0	274	50	90	40	0	180	29	136	38	0	203	33	135	19	0	187	844	0
Total	257	938	85	0	1280	204	435	194	0	833	106	668	215	0	989	93	584	33	0	710	3812	0
14:00	62	143	32	0	237	52	131	52	0	235	30	154	55	0	239	54	120	13	0	187	898	0
14:15	50	118	22	0	190	46	123	59	0	228	31	168	52	0	251	28	97	19	0	144	813	0
14:30	54	167	41	0	262	37	128	54	0	219	45	190	47	0	282	35	130	16	0	181	944	0
14:45	50	173	38	0	261	52	175	58	0	285	34	172	45	0	251	49	122	11	0	182	979	0
Total	216	601	133	0	950	187	557	223	0	967	140	684	199	0	1023	166	469	59	0	694	3634	0
15:00	54	173	29	0	256	56	149	66	0	271	40	222	63	0	325	52	125	13	0	190	1042	0
15:15	63	166	27	0	256	54	141	61	0	256	41	221	57	0	319	35	133	4	0	172	1003	0
15:30	57	183	32	0	272	53	115	72	0	240	25	218	58	0	301	38	142	11	0	191	1004	0
15:45	57	206	32	0	295	86	108	89	0	283	28	221	67	0	316	36	138	7	0	181	1075	0
Total	231	728	120	0	1079	249	513	288	0	1050	134	882	245	0	1261	161	538	35	0	734	4124	0
17:00	64	223	25	0	312	72	155	115	0	342	28	214	41	0	283	55	146	10	0	211	1148	0
17:15	65	209	30	0	304	59	154	128	0	341	26	214	37	0	277	56	142	12	0	210	1132	0
17:30	56	201	32	0	289	61	179	127	0	367	22	220	43	0	285	50	135	15	0	200	1141	0
17:45	62	231	43	0	336	54	159	129	0	342	25	218	44	0	287	56	137	15	0	208	1173	0
Total	247	864	130	0	1241	246	647	499	0	1392	101	866	165	0	1132	217	560	52	0	829	4594	0
18:00	68	235	40	0	343	61	153	134	0	348	26	203	35	0	264	39	142	5	0	186	1141	0
18:15	63	208	49	0	320	56	160	128	0	344	16	214	36	0	266	54	129	10	0	193	1123	0
18:30	63	208	44	0	315	45	156	128	0	329	16	216	29	0	261	43	130	22	0	195	1100	0
18:45	64	134	31	0	229	50	146	111	0	307	30	230	56	0	316	51	140	13	0	204	1056	0
Total	258	785	164	0	1207	212	615	501	0	1328	88	863	156	0	1107	187	541	50	0	778	4420	0
Grand Total	1471	4861	737	0	7069	1284	3364	1887	0	6535	717	4632	1164	0	6513	928	3342	247	0	4517	24634	0
Apprch %	20.8%	68.8%	10.4%	0.0%		19.6%	51.5%	28.9%	0.0%		11.0%	71.1%	17.9%	0.0%		20.5%	74.0%	5.5%	0.0%			
Total %	6.0%	19.7%	3.0%	0.0%	28.7%	5.2%	13.7%	7.7%	0.0%	26.5%	2.9%	18.8%	4.7%	0.0%	26.4%	3.8%	13.6%	1.0%	0.0%	18.3%	100.0%	

AM PEAK HOUR	El Camino Real Southbound					Ralston Ave Westbound					El Camino Real Northbound					Ralston Ave 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 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	67	246	21	0	334	51	135	55	0	241	37	171	46	0	254	24	172	6	0	202	1031
8:15	67	248	16	0	331	60	149	61	0	270	28	165	65	0	258	25	140	3	0	168	1027
8:30	68	253	20	0	341	44	148	54	0	246	22	189	59	0	270	16	143	3	0	162	1019
8:45	63	257	22	0	342	60	109	56	0	225	27	186	60	0	273	18	159	6	0	183	1023
Total Volume	265	1004	79	0	1348	215	541	226	0	982	114	711	230	0	1055	83	614	18	0	715	4100
% App Total	19.7%	74.5%	5.9%	0.0%		21.9%	55.1%	23.0%	0.0%		10.8%	67.4%	21.8%	0.0%		11.6%	85.9%	2.5%	0.0%		
PHF	.974	.977	.898	.000	.985	.896	.908	.926	.000	.909	.770	.940	.885	.000	.966	.830	.892	.750	.000	.885	.994

NOON PEAK	El Camino Real Southbound					Ralston Ave Westbound					El Camino Real Northbound					Ralston Ave 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 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	54	173	29	0	256	56	149	66	0	271	40	222	63	0	325	52	125	13	0	190	1042
15:15	63	166	27	0	256	54	141	61	0	256	41	221	57	0	319	35	133	4	0	172	1003
15:30	57	183	32	0	272	53	115	72	0	240	25	218	58	0	301	38	142	11	0	191	1004
15:45	57	206	32	0	295	86	108	89	0	283	28	221	67	0	316	36	138	7	0	181	1075
Total Volume	231	728	120	0	1079	249	513	288	0	1050	134	882	245	0	1261	161	538	35	0	734	4124
% App Total	21.4%	67.5%	11.1%	0.0%		23.7%	48.9%	27.4%	0.0%		10.6%	69.9%	19.4%	0.0%		21.9%	73.3%	4.8%	0.0%		
PHF	.917	.883	.938	.000	.914	.724	.861	.809	.000	.928	.817	.993	.914	.000	.970	.774	.947	.673	.000	.961	.959

PM PEAK HOUR	El Camino Real Southbound					Ralston Ave Westbound					El Camino Real Northbound					Ralston Ave 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 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	64	223	25	0	312	72	155	115	0	342	28	214	41	0	283	55	146	10	0	211	1148
17:15	65	209	30	0	304	59	154	128	0	341	26	214	37	0	277	56	142	12	0	210	1132
17:30	56	201	32	0	289	61	179	127	0	367	22	220	43	0	285	50	135	15	0	200	1141
17:45	62	231	43	0	336	54	159	129	0	342	25	218	44	0	287	56	137	15	0	208	1173
Total Volume	247	864	130	0	1241	246	647	499	0	1392	101	866	165	0	1132	217	560	52	0	829	4594
% App Total	19.9%	69.6%	10.5%	0.0%		17.7%	46.5%	35.8%	0.0%		8.9%	76.5%	14.6%	0.0%		26.2%	67.6%	6.3%	0.0%		
PHF	.950	.935	.756	.000	.923	.854	.904	.967	.000	.948	.902	.984	.938	.000	.986	.969	.959	.867	.000	.982	.979

National Data and Surveying Services

City of Belmont
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7878-012 Hiller St & Ralston Ave
Date : 10/26/2017

Unshifted Count = All Vehicles & Uturns

	Hiller St Southbound					Ralston Ave Westbound					Hiller St Northbound					Ralston Ave 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	Uturns Total
7:30	84	1	9	0	94	1	214	43	1	259	9	6	15	0	30	5	302	0	0	307	690	1
7:45	77	1	7	0	85	3	174	54	0	231	4	6	13	0	23	11	314	0	3	328	667	3
8:00	93	0	10	0	103	2	197	52	1	252	6	9	12	0	27	23	259	0	1	283	665	2
8:15	103	5	16	0	124	1	217	79	3	300	5	9	12	0	26	25	296	0	0	321	771	3
Total	357	7	42	0	406	7	802	228	5	1042	24	30	52	0	106	64	1171	0	4	1239	2793	9
8:30	101	1	24	0	126	3	205	35	0	243	6	2	11	0	19	12	335	0	3	350	738	3
8:45	82	2	18	0	102	3	170	40	1	214	7	2	15	0	24	7	336	0	4	347	687	5
9:00	83	1	5	0	89	0	158	22	0	180	5	2	16	0	23	8	303	0	2	313	605	2
9:15	65	1	13	0	79	0	149	18	4	171	7	2	9	0	18	5	265	0	2	272	540	6
Total	331	5	60	0	396	6	682	115	5	808	25	8	51	0	84	32	1239	0	11	1282	2570	16
14:00	57	0	9	0	66	3	224	71	4	302	3	4	11	0	18	14	243	0	4	261	647	8
14:15	55	0	9	0	64	4	217	50	3	274	5	1	7	0	13	20	214	0	3	237	588	6
14:30	51	0	16	0	67	3	224	52	3	282	3	4	8	0	15	14	266	0	5	285	649	8
14:45	66	2	9	0	77	3	236	72	2	313	3	5	7	0	15	20	239	0	1	260	665	3
Total	229	2	43	0	274	13	901	245	12	1171	14	14	33	0	61	68	962	0	13	1043	2549	25
15:00	51	1	17	0	69	5	231	88	4	328	1	6	9	0	16	15	272	0	1	288	701	5
15:15	83	2	14	0	99	6	218	71	2	297	2	4	5	0	11	24	289	0	3	316	723	5
15:30	65	2	16	0	83	1	220	71	1	293	6	0	13	0	19	18	282	1	5	306	701	6
15:45	58	2	10	0	70	7	260	96	4	367	4	4	9	0	17	19	267	0	2	288	742	6
Total	257	7	57	0	321	19	929	326	11	1285	13	14	36	0	63	76	1110	1	11	1198	2867	22
17:00	79	1	10	0	90	7	298	105	0	410	4	2	9	0	15	37	315	0	7	359	874	7
17:15	71	4	9	0	84	5	271	149	3	428	6	3	7	0	16	39	311	0	3	353	881	6
17:30	64	0	8	0	72	5	296	153	3	457	9	9	7	0	25	40	267	0	3	310	864	6
17:45	76	1	6	0	83	8	254	147	3	412	7	7	3	0	17	49	270	0	2	321	833	5
Total	290	6	33	0	329	25	1119	554	9	1707	26	21	26	0	73	165	1163	0	15	1343	3452	24
18:00	71	3	8	0	82	3	258	112	4	377	5	3	5	0	13	42	295	0	3	340	812	7
18:15	63	2	11	0	76	5	293	106	3	407	2	4	6	0	12	25	255	0	5	285	780	8
18:30	66	1	12	0	79	2	253	83	1	339	4	5	15	0	24	28	232	1	5	266	708	6
18:45	55	4	9	0	68	10	254	81	4	349	5	2	2	0	9	20	253	0	5	278	704	9
Total	255	10	40	0	305	20	1058	382	12	1472	16	14	28	0	58	115	1035	1	18	1169	3004	30
Grand Total	1719	37	275	0	2031	90	5491	1850	54	7485	118	101	226	0	445	520	6680	2	72	7274	17235	126
Apprch %	84.6%	1.8%	13.5%	0.0%		1.2%	73.4%	24.7%	0.7%		26.5%	22.7%	50.8%	0.0%		7.1%	91.8%	0.0%	1.0%			
Total %	10.0%	0.2%	1.6%	0.0%	11.8%	0.5%	31.9%	10.7%	0.3%	43.4%	0.7%	0.6%	1.3%	0.0%	2.6%	3.0%	38.8%	0.0%	0.4%	42.2%	100.0%	

AM PEAK HOUR	Hiller St Southbound					Ralston Ave Westbound					Hiller St Northbound					Ralston Ave 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 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	93	0	10	0	103	2	197	52	1	252	6	9	12	0	27	23	259	0	1	283	665
8:15	103	5	16	0	124	1	217	79	3	300	5	9	12	0	26	25	296	0	0	321	771
8:30	101	1	24	0	126	3	205	35	0	243	6	2	11	0	19	12	335	0	3	350	738
8:45	82	2	18	0	102	3	170	40	1	214	7	2	15	0	24	7	336	0	4	347	687
Total Volume	379	8	68	0	455	9	789	206	5	1009	24	22	50	0	96	67	1226	0	8	1301	2861
% App Total	83.3%	1.8%	14.9%	0.0%		0.9%	78.2%	20.4%	0.5%		25.0%	22.9%	52.1%	0.0%		5.1%	94.2%	0.0%	0.6%		
PHF	.920	.400	.708	.000	.903	.750	.909	.652	.417	.841	.857	.611	.833	.000	.889	.670	.912	.000	.500	.929	.928

NOON PEAK	Hiller St Southbound					Ralston Ave Westbound					Hiller St Northbound					Ralston Ave 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 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	51	1	17	0	69	5	231	88	4	328	1	6	9	0	16	15	272	0	1	288	701
15:15	83	2	14	0	99	6	218	71	2	297	2	4	5	0	11	24	289	0	3	316	723
15:30	65	2	16	0	83	1	220	71	1	293	6	0	13	0	19	18	282	1	5	306	701
15:45	58	2	10	0	70	7	260	96	4	367	4	4	9	0	17	19	267	0	2	288	742
Total Volume	257	7	57	0	321	19	929	326	11	1285	13	14	36	0	63	76	1110	1	11	1198	2867
% App Total	80.1%	2.2%	17.8%	0.0%		1.5%	72.3%	25.4%	0.9%		20.6%	22.2%	57.1%	0.0%		6.3%	92.7%	0.1%	0.9%		
PHF	.774	.875	.838	.000	.811	.679	.893	.849	.688	.875	.542	.583	.692	.000	.829	.792	.960	.250	.550	.948	.966

PM PEAK HOUR	Hiller St Southbound					Ralston Ave Westbound					Hiller St Northbound					Ralston Ave 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 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	79	1	10	0	90	7	298	105	0	410	4	2	9	0	15	37	315	0	7	359	874
17:15	71	4	9	0	84	5	271	149	3	428	6	3	7	0	16	39	311	0	3	353	881
17:30	64	0	8	0	72	5	296	153	3	457	9	9	7	0	25	40	267	0	3	310	864
17:45	76	1	6	0	83	8	254	147	3	412	7	7	3	0	17	49	270	0	2	321	833
Total Volume	290	6	33	0	329	25	1119	554	9	1707	26	21	26	0	73	165	1163	0	15	1343	3452
% App Total	88.1%	1.8%	10.0%	0.0%		1.5%	65.6%	32.5%	0.5%		35.6%	28.8%	35.6%	0.0%		12.3%	86.6%	0.0%	1.1%		
PHF	.918	.375	.825	.000	.914	.781	.939	.905	.750	.934	.722	.583	.722	.000	.730	.842	.923	.000	.536	.935	.980

National Data and Surveying Services

City of Belmont
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7878-014 Island Pkwy & Ralston Ave/Marine Pkwy
Date : 10/26/2017

Unshifted Count = All Vehicles & Uturns

	Island Pkwy Southbound					Ralston Ave/Marine Pkwy Westbound					Island Pkwy Northbound					Ralston Ave/Marine Pkwy 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	Uturns Total
7:30	4	6	12	0	22	0	165	1	0	166	104	12	113	0	229	15	300	126	0	441	858	0
7:45	12	10	13	0	35	0	117	9	0	126	82	21	112	0	215	26	364	105	0	495	871	0
8:00	12	9	18	0	39	0	141	8	0	149	107	29	124	0	260	28	407	82	0	517	965	0
8:15	9	6	20	0	35	0	167	8	0	175	114	24	153	0	291	27	432	102	0	561	1062	0
Total	37	31	63	0	131	0	590	26	0	616	407	86	502	0	995	96	1503	415	0	2014	3756	0
8:30	18	6	12	0	36	0	129	9	0	138	108	23	225	0	356	33	483	100	0	616	1146	0
8:45	4	1	11	0	16	0	99	17	0	116	77	17	216	0	310	35	566	99	0	700	1142	0
9:00	7	7	16	0	30	0	82	6	0	88	84	10	188	0	282	25	517	94	0	636	1036	0
9:15	9	4	10	0	23	0	110	8	0	118	72	16	190	0	278	30	451	96	0	577	996	0
Total	38	18	49	0	105	0	420	40	0	460	341	66	819	0	1226	123	2017	389	0	2529	4320	0
14:00	3	3	22	0	28	0	150	9	0	159	108	5	22	0	135	12	161	135	0	308	630	0
14:15	1	6	20	0	27	0	134	6	0	140	121	10	15	0	146	7	167	121	0	295	608	0
14:30	5	8	27	0	40	0	145	8	0	153	96	7	37	0	140	12	148	148	0	308	641	0
14:45	4	6	26	0	36	0	198	11	0	209	111	9	20	0	140	14	160	135	0	309	694	0
Total	13	23	95	0	131	0	627	34	0	661	436	31	94	0	561	45	636	539	0	1220	2573	0
15:00	8	16	18	0	42	0	225	6	0	231	93	6	13	0	112	15	149	158	0	322	707	0
15:15	5	15	15	0	35	0	200	6	0	206	96	4	12	0	112	13	160	158	0	331	684	0
15:30	7	10	20	0	37	0	209	10	0	219	109	7	10	0	126	20	190	157	0	367	749	0
15:45	8	15	22	0	45	0	200	13	0	213	124	9	17	0	150	20	182	141	0	343	751	0
Total	28	56	75	0	159	0	834	35	0	869	422	26	52	0	500	68	681	614	0	1363	2891	0
17:00	14	20	47	0	81	0	362	13	0	375	105	10	6	0	121	46	192	165	0	403	980	0
17:15	8	11	48	0	67	0	296	18	0	314	130	6	13	0	149	51	195	154	0	400	930	0
17:30	18	21	52	0	91	0	323	15	0	338	126	8	12	0	146	29	233	139	0	401	976	0
17:45	9	9	31	0	49	0	308	9	0	317	107	6	13	0	126	29	249	120	0	398	890	0
Total	49	61	178	0	288	0	1289	55	0	1344	468	30	44	0	542	155	869	578	0	1602	3776	0
18:00	12	17	34	0	63	0	319	10	0	329	107	6	18	0	131	21	251	155	0	427	950	0
18:15	9	8	11	0	28	0	284	15	0	299	126	4	9	0	139	31	214	129	0	374	840	0
18:30	11	16	30	0	57	0	251	12	0	263	130	6	8	0	144	32	169	128	0	329	793	0
18:45	11	10	38	0	59	0	272	9	0	281	123	8	14	0	145	31	198	123	0	352	837	0
Total	43	51	113	0	207	0	1126	46	0	1172	486	24	49	0	559	115	832	535	0	1482	3420	0
Grand Total	208	240	573	0	1021	0	4886	236	0	5122	2560	263	1560	0	4383	602	6538	3070	0	10210	20736	0
Apprch %	20.4%	23.5%	56.1%	0.0%		0.0%	95.4%	4.6%	0.0%		58.4%	6.0%	35.6%	0.0%		5.9%	64.0%	30.1%	0.0%			
Total %	1.0%	1.2%	2.8%	0.0%	4.9%	0.0%	23.6%	1.1%	0.0%	24.7%	12.3%	1.3%	7.5%	0.0%	21.1%	2.9%	31.5%	14.8%	0.0%	49.2%	100.0%	

AM PEAK HOUR	Island Pkwy Southbound					Ralston Ave/Marine Pkwy Westbound					Island Pkwy Northbound					Ralston Ave/Marine Pkwy 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 08:15 to 09:15																					
Peak Hour For Entire Intersection Begins at 08:15																					
8:15	9	6	20	0	35	0	167	8	0	175	114	24	153	0	291	27	432	102	0	561	1062
8:30	18	6	12	0	36	0	129	9	0	138	108	23	225	0	356	33	483	100	0	616	1146
8:45	4	1	11	0	16	0	99	17	0	116	77	17	216	0	310	35	566	99	0	700	1142
9:00	7	7	16	0	30	0	82	6	0	88	84	10	188	0	282	25	517	94	0	636	1036
Total Volume	38	20	59	0	117	0	477	40	0	517	383	74	782	0	1239	120	1998	395	0	2513	4386
% App Total	32.5%	17.1%	50.4%	0.0%		0.0%	92.3%	7.7%	0.0%		30.9%	6.0%	63.1%	0.0%		4.8%	79.5%	15.7%	0.0%		
PHF	.528	.714	.738	.000	.813	.000	.714	.588	.000	.739	.840	.771	.869	.000	.870	.857	.883	.968	.000	.898	.957

NOON PEAK	Island Pkwy Southbound					Ralston Ave/Marine Pkwy Westbound					Island Pkwy Northbound					Ralston Ave/Marine Pkwy 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 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	8	16	18	0	42	0	225	6	0	231	93	6	13	0	112	15	149	158	0	322	707
15:15	5	15	15	0	35	0	200	6	0	206	96	4	12	0	112	13	160	158	0	331	684
15:30	7	10	20	0	37	0	209	10	0	219	109	7	10	0	126	20	190	157	0	367	749
15:45	8	15	22	0	45	0	200	13	0	213	124	9	17	0	150	20	182	141	0	343	751
Total Volume	28	56	75	0	159	0	834	35	0	869	422	26	52	0	500	68	681	614	0	1363	2891
% App Total	17.6%	35.2%	47.2%	0.0%		0.0%	96.0%	4.0%	0.0%		84.4%	5.2%	10.4%	0.0%		5.0%	50.0%	45.0%	0.0%		
PHF	.875	.875	.852	.000	.883	.000	.927	.673	.000	.940	.851	.722	.765	.000	.833	.850	.896	.972	.000	.928	.962

PM PEAK HOUR	Island Pkwy Southbound					Ralston Ave/Marine Pkwy Westbound					Island Pkwy Northbound					Ralston Ave/Marine Pkwy 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 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	14	20	47	0	81	0	362	13	0	375	105	10	6	0	121	46	192	165	0	403	980
17:15	8	11	48	0	67	0	296	18	0	314	130	6	13	0	149	51	195	154	0	400	930
17:30	18	21	52	0	91	0	323	15	0	338	126	8	12	0	146	29	233	139	0	401	976
17:45	9	9	31	0	49	0	308	9	0	317	107	6	13	0	126	29	249	120	0	398	890
Total Volume	49	61	178	0	288	0	1289	55	0	1344	468	30	44	0	542	155	869	578	0	1602	3776
% App Total	17.0%	21.2%	61.8%	0.0%		0.0%	95.9%	4.1%	0.0%		86.3%	5.5%	8.1%	0.0%		9.7%	54.2%	36.1%	0.0%		
PHF	.681	.726	.856	.000	.791	.000	.890	.764	.000	.896	.900	.750	.846	.000	.909	.760	.872	.876	.000	.994	.963

National Data and Surveying Services

City of Belmont
All Vehicles & Uturns On Unshifted
Peds & Bikes On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7878-011 Old County Rd & Ralston Ave
Date : 10/26/2017

Unshifted Count = All Vehicles & Uturns

	Old County Rd Southbound					Ralston Ave Westbound					Old County Rd Northbound					Ralston Ave 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	Uturns Total
7:30	34	34	69	0	137	5	158	2	0	165	12	19	20	0	51	18	236	11	0	265	618	0
7:45	34	56	77	0	167	7	122	8	0	137	16	34	30	0	80	19	231	9	0	259	643	0
8:00	43	40	41	0	124	9	170	9	0	188	21	29	20	0	70	34	232	9	0	275	657	0
8:15	42	35	73	0	150	4	174	16	0	194	18	30	30	0	78	52	224	5	0	281	703	0
Total	153	165	260	0	578	25	624	35	0	684	67	112	100	0	279	123	923	34	0	1080	2621	0
8:30	47	43	57	0	147	16	164	19	0	199	19	32	34	0	85	21	250	7	0	278	709	0
8:45	49	53	47	0	149	8	164	11	0	183	16	22	25	0	63	28	251	7	0	286	681	0
9:00	38	34	40	0	112	6	143	14	0	163	10	24	19	0	53	33	226	9	0	268	596	0
9:15	38	27	27	0	92	11	143	4	0	158	14	23	25	0	62	34	193	7	0	234	546	0
Total	172	157	171	0	500	41	614	48	0	703	59	101	103	0	263	116	920	30	0	1066	2532	0
14:00	15	21	32	0	68	14	186	30	0	230	11	35	28	0	74	39	186	8	1	234	606	1
14:15	20	25	23	0	68	11	191	16	0	218	14	34	24	0	72	44	150	7	0	201	559	0
14:30	20	18	38	0	76	13	165	20	0	198	15	45	36	0	96	42	176	6	0	224	594	0
14:45	16	22	69	0	107	3	182	18	0	203	19	43	33	0	95	46	178	12	0	236	641	0
Total	71	86	162	0	319	41	724	84	0	849	59	157	121	0	337	171	690	33	1	895	2400	1
15:00	14	28	62	0	104	6	183	15	0	204	21	66	37	0	124	48	190	7	0	245	677	0
15:15	16	31	47	0	94	11	185	17	0	213	18	59	41	0	118	44	204	9	0	257	682	0
15:30	16	20	44	0	80	14	192	25	0	231	18	43	33	0	94	51	202	3	0	256	661	0
15:45	16	23	45	0	84	25	221	17	0	263	21	63	32	0	116	56	194	10	0	260	723	0
Total	62	102	198	0	362	56	781	74	0	911	78	231	143	0	452	199	790	29	0	1018	2743	0
17:00	20	29	81	0	130	10	227	21	0	258	37	63	25	0	125	46	189	4	2	241	754	2
17:15	14	27	70	0	111	2	227	15	0	244	44	67	13	0	124	37	199	7	0	243	722	0
17:30	12	26	89	0	127	11	238	10	0	259	46	66	21	0	133	45	185	3	0	233	752	0
17:45	22	29	97	0	148	4	206	14	0	224	30	71	20	0	121	39	197	11	0	247	740	0
Total	68	111	337	0	516	27	898	60	0	985	157	267	79	0	503	167	770	25	2	964	2968	2
18:00	21	25	64	0	110	7	229	25	0	261	52	64	37	0	153	44	203	5	0	252	776	0
18:15	17	20	67	0	104	6	222	22	0	250	46	60	21	0	127	48	188	5	0	241	722	0
18:30	15	22	59	0	96	4	224	24	0	252	45	64	24	0	133	49	172	5	0	226	707	0
18:45	18	22	49	0	89	7	223	18	0	248	40	60	40	0	140	45	201	4	0	250	727	0
Total	71	89	239	0	399	24	898	89	0	1011	183	248	122	0	553	186	764	19	0	969	2932	0
Grand Total	597	710	1367	0	2674	214	4539	390	0	5143	603	1116	668	0	2387	962	4857	170	3	5992	16196	3
Apprch %	22.3%	26.6%	51.1%	0.0%		4.2%	88.3%	7.6%	0.0%		25.3%	46.8%	28.0%	0.0%		16.1%	81.1%	2.8%	0.1%			
Total %	3.7%	4.4%	8.4%	0.0%	16.5%	1.3%	28.0%	2.4%	0.0%	31.8%	3.7%	6.9%	4.1%	0.0%	14.7%	5.9%	30.0%	1.0%	0.0%	37.0%	100.0%	

AM PEAK HOUR	Old County Rd Southbound					Ralston Ave Westbound					Old County Rd Northbound					Ralston Ave 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 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	43	40	41	0	124	9	170	9	0	188	21	29	20	0	70	34	232	9	0	275	657
8:15	42	35	73	0	150	4	174	16	0	194	18	30	30	0	78	52	224	5	0	281	703
8:30	47	43	57	0	147	16	164	19	0	199	19	32	34	0	85	21	250	7	0	278	709
8:45	49	53	47	0	149	8	164	11	0	183	16	22	25	0	63	28	251	7	0	286	681
Total Volume	181	171	218	0	570	37	672	55	0	764	74	113	109	0	296	135	957	28	0	1120	2750
% App Total	31.8%	30.0%	38.2%	0.0%		4.8%	88.0%	7.2%	0.0%		25.0%	38.2%	36.8%	0.0%		12.1%	85.4%	2.5%	0.0%		
PHF	.923	.807	.747	.000	.950	.578	.966	.724	.000	.960	.881	.883	.801	.000	.871	.649	.953	.778	.000	.979	.970

NOON PEAK	Old County Rd Southbound					Ralston Ave Westbound					Old County Rd Northbound					Ralston Ave 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 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	14	28	62	0	104	6	183	15	0	204	21	66	37	0	124	48	190	7	0	245	677
15:15	16	31	47	0	94	11	185	17	0	213	18	59	41	0	118	44	204	9	0	257	682
15:30	16	20	44	0	80	14	192	25	0	231	18	43	33	0	94	51	202	3	0	256	661
15:45	16	23	45	0	84	25	221	17	0	263	21	63	32	0	116	56	194	10	0	260	723
Total Volume	62	102	198	0	362	56	781	74	0	911	78	231	143	0	452	199	790	29	0	1018	2743
% App Total	17.1%	28.2%	54.7%	0.0%		6.1%	85.7%	8.1%	0.0%		17.3%	51.1%	31.6%	0.0%		19.5%	77.6%	2.8%	0.0%		
PHF	.969	.823	.798	.000	.870	.560	.883	.740	.000	.866	.929	.875	.872	.000	.911	.888	.968	.725	.000	.979	.948

PM PEAK HOUR	Old County Rd Southbound					Ralston Ave Westbound					Old County Rd Northbound					Ralston Ave 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 17:15 to 18:15																					
Peak Hour For Entire Intersection Begins at 17:15																					
17:15	14	27	70	0	111	2	227	15	0	244	44	67	13	0	124	37	199	7	0	243	722
17:30	12	26	89	0	127	11	238	10	0	259	46	66	21	0	133	45	185	3	0	233	752
17:45	22	29	97	0	148	4	206	14	0	224	30	71	20	0	121	39	197	11	0	247	740
18:00	21	25	64	0	110	7	229	25	0	261	52	64	37	0	153	44	203	5	0	252	776
Total Volume	69	107	320	0	496	24	900	64	0	988	172	268	91	0	531	165	784	26	0	975	2990
% App Total	13.9%	21.6%	64.5%	0.0%		2.4%	91.1%	6.5%	0.0%		32.4%	50.5%	17.1%	0.0%		16.9%	80.4%	2.7%	0.0%		
PHF	.784	.922	.825	.000	.838	.545	.945	.640	.000	.946	.827	.944	.615	.000	.868	.917	.966	.591	.000	.967	.963

National Data and Surveying Services

City of Belmont
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Nothing On Bank 2

(323) 782-0090
info@ndsdata.com

File Name : 17-7878-013 US 101 SB Off Ramp & Ralston Ave
Date : 10/26/2017

Unshifted Count = All Vehicles & Uturns

	US 101 SB Off Ramp Southbound					Ralston Ave Westbound					US 101 SB Off Ramp Northbound					Ralston Ave 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	Uturns Total
7:30	213	0	45	0	258	0	225	69	0	294	0	0	0	0	0	0	213	189	0	402	954	0
7:45	261	0	56	0	317	0	160	53	0	213	0	0	0	0	0	0	239	177	0	416	946	0
8:00	294	0	59	0	353	0	193	65	0	258	0	0	0	0	0	0	221	142	0	363	974	0
8:15	323	0	69	0	392	0	218	69	0	287	0	0	0	0	0	0	241	167	0	408	1087	0
Total	1091	0	229	0	1320	0	796	256	0	1052	0	0	0	0	0	0	914	675	0	1589	3961	0
8:30	364	0	51	0	415	0	186	55	0	241	0	0	0	0	0	0	274	165	0	439	1095	0
8:45	399	0	70	0	469	0	150	50	0	200	0	0	0	0	0	0	298	121	0	419	1088	0
9:00	348	0	46	0	394	0	137	52	0	189	0	0	0	0	0	0	264	150	0	414	997	0
9:15	332	0	46	0	378	0	119	60	0	179	0	0	0	0	0	0	229	126	0	355	912	0
Total	1443	0	213	0	1656	0	592	217	0	809	0	0	0	0	0	0	1065	562	0	1627	4092	0
14:00	98	0	103	0	201	0	196	85	0	281	0	0	0	0	0	0	213	119	0	332	814	0
14:15	96	0	101	0	197	0	177	94	0	271	0	0	0	0	0	0	196	86	0	282	750	0
14:30	93	0	118	0	211	0	161	91	0	252	0	0	0	0	0	0	208	122	0	330	793	0
14:45	97	0	102	0	199	0	211	132	0	343	0	0	0	0	0	0	202	105	0	307	849	0
Total	384	0	424	0	808	0	745	402	0	1147	0	0	0	0	0	0	819	432	0	1251	3206	0
15:00	90	0	136	0	226	0	185	144	0	329	0	0	0	0	0	0	235	102	0	337	892	0
15:15	83	0	111	0	194	0	194	142	0	336	0	0	0	0	0	0	249	112	0	361	891	0
15:30	102	0	110	0	212	0	189	147	0	336	0	0	0	0	0	0	263	108	0	371	919	0
15:45	95	0	145	0	240	0	215	115	0	330	0	0	0	0	0	0	250	91	0	341	911	0
Total	370	0	502	0	872	0	783	548	0	1331	0	0	0	0	0	0	997	413	0	1410	3613	0
17:00	105	0	104	0	209	0	317	208	0	525	0	0	0	0	0	0	316	95	0	411	1145	0
17:15	107	0	126	0	233	0	302	174	0	476	0	0	0	0	0	0	286	113	0	399	1108	0
17:30	140	0	126	0	266	0	335	158	0	493	0	0	0	0	0	0	262	78	0	340	1099	0
17:45	141	0	122	0	263	0	287	168	0	455	0	0	0	0	0	0	248	90	0	338	1056	0
Total	493	0	478	0	971	0	1241	708	0	1949	0	0	0	0	0	0	1112	376	0	1488	4408	0
18:00	139	0	96	0	235	0	289	165	0	454	0	0	0	0	0	0	289	79	0	368	1057	0
18:15	125	0	112	0	237	0	289	129	0	418	0	0	0	0	0	0	245	85	0	330	985	0
18:30	121	0	92	0	213	0	258	142	0	400	0	0	0	0	0	0	215	105	0	320	933	0
18:45	113	0	86	0	199	0	266	159	0	425	0	0	0	0	0	0	230	84	0	314	938	0
Total	498	0	386	0	884	0	1102	595	0	1697	0	0	0	0	0	0	979	353	0	1332	3913	0
Grand Total	4279	0	2232	0	6511	0	5259	2726	0	7985	0	0	0	0	0	0	5886	2811	0	8697	23193	0
Apprch %	65.7%	0.0%	34.3%	0.0%		0.0%	65.9%	34.1%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	67.7%	32.3%	0.0%			
Total %	18.4%	0.0%	9.6%	0.0%	28.1%	0.0%	22.7%	11.8%	0.0%	34.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	25.4%	12.1%	0.0%	37.5%	100.0%	

AM PEAK HOUR	US 101 SB Off Ramp Southbound					Ralston Ave Westbound					US 101 SB Off Ramp Northbound					Ralston Ave 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 08:15 to 09:15																					
Peak Hour For Entire Intersection Begins at 08:15																					
8:15	323	0	69	0	392	0	218	69	0	287	0	0	0	0	0	0	241	167	0	408	1087
8:30	364	0	51	0	415	0	186	55	0	241	0	0	0	0	0	0	274	165	0	439	1095
8:45	399	0	70	0	469	0	150	50	0	200	0	0	0	0	0	0	298	121	0	419	1088
9:00	348	0	46	0	394	0	137	52	0	189	0	0	0	0	0	0	264	150	0	414	997
Total Volume	1434	0	236	0	1670	0	691	226	0	917	0	0	0	0	0	0	1077	603	0	1680	4267
% App Total	85.9%	0.0%	14.1%	0.0%		0.0%	75.4%	24.6%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	64.1%	35.9%	0.0%		
PHF	.898	.000	.843	.000	.890	.000	.792	.819	.000	.799	.000	.000	.000	.000	.000	.000	.904	.903	.000	.957	.974

NOON PEAK	US 101 SB Off Ramp Southbound					Ralston Ave Westbound					US 101 SB Off Ramp Northbound					Ralston Ave 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 15:00 to 16:00																					
Peak Hour For Entire Intersection Begins at 15:00																					
15:00	90	0	136	0	226	0	185	144	0	329	0	0	0	0	0	0	235	102	0	337	892
15:15	83	0	111	0	194	0	194	142	0	336	0	0	0	0	0	0	249	112	0	361	891
15:30	102	0	110	0	212	0	189	147	0	336	0	0	0	0	0	0	263	108	0	371	919
15:45	95	0	145	0	240	0	215	115	0	330	0	0	0	0	0	0	250	91	0	341	911
Total Volume	370	0	502	0	872	0	783	548	0	1331	0	0	0	0	0	0	997	413	0	1410	3613
% App Total	42.4%	0.0%	57.6%	0.0%		0.0%	58.8%	41.2%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	70.7%	29.3%	0.0%		
PHF	.907	.000	.866	.000	.908	.000	.910	.932	.000	.990	.000	.000	.000	.000	.000	.000	.948	.922	.000	.950	.983

PM PEAK HOUR	US 101 SB Off Ramp Southbound					Ralston Ave Westbound					US 101 SB Off Ramp Northbound					Ralston Ave 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 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	105	0	104	0	209	0	317	208	0	525	0	0	0	0	0	0	316	95	0	411	1145
17:15	107	0	126	0	233	0	302	174	0	476	0	0	0	0	0	0	286	113	0	399	1108
17:30	140	0	126	0	266	0	335	158	0	493	0	0	0	0	0	0	262	78	0	340	1099
17:45	141	0	122	0	263	0	287	168	0	455	0	0	0	0	0	0	248	90	0	338	1056
Total Volume	493	0	478	0	971	0	1241	708	0	1949	0	0	0	0	0	0	1112	376	0	1488	4408
% App Total	50.8%	0.0%	49.2%	0.0%		0.0%	63.7%	36.3%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	74.7%	25.3%	0.0%		
PHF	.874	.000	.948	.000	.913	.000	.926	.851	.000	.928	.000	.000	.000	.000	.000	.000	.880	.832	.000	.905	.962

Appendix B

Intersection Level of Service Calculations

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	5	0	24	0	238	3	9	209	0
Future Volume (Veh/h)	0	0	0	5	0	24	0	238	3	9	209	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	5	0	25	0	248	3	9	218	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								797			872	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	510	487	218	486	486	250	218			251		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	454	429	145	428	428	250	145			251		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	97	100			99		
cM capacity (veh/h)	470	487	854	506	488	789	1360			1314		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	30	251	227
Volume Left	0	5	0	9
Volume Right	0	25	3	0
cSH	1700	722	1360	1314
Volume to Capacity	0.00	0.04	0.00	0.01
Queue Length 95th (ft)	0	3	0	1
Control Delay (s)	0.0	10.2	0.0	0.4
Lane LOS	A	B		A
Approach Delay (s)	0.0	10.2	0.0	0.4
Approach LOS	A	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	10	186	12	7	156
Future Volume (Veh/h)	8	10	186	12	7	156
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	8	10	194	13	7	163
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			447			1222
pX, platoon unblocked	1.00	1.00			1.00	
vC, conflicting volume	378	200			207	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	377	200			207	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	621	841			1364	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	207	170
Volume Left	8	0	7
Volume Right	10	13	0
cSH	726	1700	1364
Volume to Capacity	0.02	0.12	0.01
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.1	0.0	0.4
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	0.4
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	440	74	48	245	60	60	115	34	65	123	29
Future Volume (vph)	71	440	74	48	245	60	60	115	34	65	123	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	1770	3467		1770	3434		1770	1863	1583		1831	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.51	1.00	1.00		0.85	1.00
Satd. Flow (perm)	1770	3467		1770	3434		947	1863	1583		1582	1583
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	79	489	77	50	255	62	62	120	35	68	128	30
RTOR Reduction (vph)	0	13	0	0	43	0	0	0	28	0	0	24
Lane Group Flow (vph)	79	553	0	50	275	0	63	120	7	0	196	6
Turn Type	Split	NA		Split	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	32.7	32.7		11.1	11.1		14.2	14.2	14.2		14.2	14.2
Effective Green, g (s)	32.7	32.7		11.1	11.1		14.2	14.2	14.2		14.2	14.2
Actuated g/C Ratio	0.47	0.47		0.16	0.16		0.20	0.20	0.20		0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	826	1619		280	544		192	377	321		320	321
v/s Ratio Prot	0.04	c0.16		0.03	c0.08			0.06				
v/s Ratio Perm							0.07		0.00		c0.12	0.00
v/c Ratio	0.10	0.34		0.18	0.51		0.33	0.32	0.02		0.61	0.02
Uniform Delay, d1	10.4	11.8		25.5	26.9		23.8	23.8	22.3		25.4	22.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.6		0.3	0.7		1.0	0.5	0.0		3.5	0.0
Delay (s)	10.6	12.4		25.8	27.7		24.8	24.3	22.4		28.8	22.3
Level of Service	B	B		C	C		C	C	C		C	C
Approach Delay (s)		12.2			27.4			24.1			28.0	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	137	3	197	0	900	149	436	985	0
Future Volume (vph)	0	0	0	137	3	197	0	900	149	436	985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95	1.00		0.95		0.97	0.95	
Frt				1.00	1.00	0.85		0.98		1.00	1.00	
Flt Protected				0.95	0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1681	1688	1583		3464		3433	3539	
Flt Permitted				0.95	0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1681	1688	1583		3464		3433	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	152	3	219	0	1000	166	484	1094	0
RTOR Reduction (vph)	0	0	0	0	0	199	0	11	0	0	0	0
Lane Group Flow (vph)	0	0	0	78	77	20	0	1155	0	484	1094	0
Turn Type				Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases				8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)				11.6	11.6	11.6		53.4		53.0	110.4	
Effective Green, g (s)				11.6	11.6	11.6		53.4		53.0	110.4	
Actuated g/C Ratio				0.09	0.09	0.09		0.41		0.41	0.85	
Clearance Time (s)				4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)				3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				149	150	141		1422		1399	3005	
v/s Ratio Prot				c0.05	0.05			c0.33		0.14	c0.31	
v/s Ratio Perm						0.01						
v/c Ratio				0.52	0.51	0.14		0.81		0.35	0.36	
Uniform Delay, d1				56.6	56.5	54.6		33.9		26.5	2.1	
Progression Factor				1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2				3.3	2.9	0.5		3.7		0.7	0.3	
Delay (s)				59.9	59.5	55.0		37.5		27.2	2.5	
Level of Service				E	E	E		D		C	A	
Approach Delay (s)		0.0			57.0			37.5			10.1	
Approach LOS		A			E			D			B	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	434	141	180	217	15	184	9	25	0	1	2
Future Volume (vph)	1	434	141	180	217	15	184	9	25	0	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.97			0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97			1.00	
Satd. Flow (prot)	1770	3409		1770	3506		1681	1652			1695	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.83			1.00	
Satd. Flow (perm)	1770	3409		1770	3506		1338	1413			1695	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	1	477	155	198	238	16	202	10	27	0	1	2
RTOR Reduction (vph)	0	36	0	0	6	0	0	11	0	0	1	0
Lane Group Flow (vph)	1	596	0	198	248	0	121	107	0	0	2	0
Turn Type	Prot	NA		Prot	NA		Perm	NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.2	22.9		13.6	31.3		33.4	33.4			33.4	
Effective Green, g (s)	5.2	22.9		13.6	31.3		33.4	33.4			33.4	
Actuated g/C Ratio	0.06	0.28		0.17	0.38		0.41	0.41			0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	112	953		293	1339		545	576			691	
v/s Ratio Prot	0.00	c0.17		c0.11	0.07						0.00	
v/s Ratio Perm							c0.09	0.08				
v/c Ratio	0.01	0.63		0.68	0.19		0.22	0.19			0.00	
Uniform Delay, d1	35.9	25.8		32.1	16.8		15.8	15.5			14.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.3		6.0	0.1		0.9	0.7			0.0	
Delay (s)	36.0	27.0		38.1	16.9		16.7	16.2			14.4	
Level of Service	D	C		D	B		B	B			B	
Approach Delay (s)		27.1			26.2			16.5			14.4	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	81.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	614	18	215	541	226	114	711	230	265	1004	79
Future Volume (vph)	83	614	18	215	541	226	114	711	230	265	1004	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3524		1610	3384	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3524		1610	3384	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	84	620	18	217	546	228	115	718	232	268	1014	80
RTOR Reduction (vph)	0	2	0	0	0	175	0	0	132	0	0	51
Lane Group Flow (vph)	84	636	0	195	568	53	115	718	100	268	1014	29
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	30.0	30.0		30.0	30.0	30.0	11.0	37.0	37.0	17.0	43.0	43.0
Effective Green, g (s)	30.0	30.0		30.0	30.0	30.0	11.0	37.0	37.0	17.0	43.0	43.0
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.23	0.08	0.28	0.28	0.13	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	792	813		371	780	365	149	1007	450	231	1170	523
v/s Ratio Prot	0.02	c0.18		0.12	c0.17		0.06	0.20		c0.15	c0.29	
v/s Ratio Perm						0.03			0.06			0.02
v/c Ratio	0.11	0.78		0.53	0.73	0.14	0.77	0.71	0.22	1.16	0.87	0.06
Uniform Delay, d1	39.4	46.9		43.8	46.2	39.8	58.3	41.7	35.5	56.5	40.8	29.7
Progression Factor	1.00	1.00		0.32	0.32	0.17	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	7.4		4.2	4.7	0.7	31.3	4.3	1.1	109.3	8.7	0.2
Delay (s)	39.7	54.4		18.0	19.3	7.5	89.6	46.0	36.6	165.8	49.5	29.9
Level of Service	D	D		B	B	A	F	D	D	F	D	C
Approach Delay (s)		52.7			16.3			48.7			71.3	
Approach LOS		D			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	957	28	37	672	55	74	113	109	181	171	218
Future Volume (vph)	135	957	28	37	672	55	74	113	109	181	171	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3524		1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.53	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	1770	3524		1770	3539	1583	988	1863	1583	1179	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	139	987	29	38	693	57	76	116	112	187	176	225
RTOR Reduction (vph)	0	2	0	0	0	32	0	0	82	0	0	142
Lane Group Flow (vph)	139	1014	0	38	693	25	76	116	30	187	176	83
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			2			6	
Permitted Phases						4	2		2	6		6
Actuated Green, G (s)	51.3	51.3		31.6	31.6	31.6	35.1	35.1	35.1	35.1	35.1	35.1
Effective Green, g (s)	51.3	51.3		31.6	31.6	31.6	35.1	35.1	35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.39	0.39		0.24	0.24	0.24	0.27	0.27	0.27	0.27	0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	698	1390		430	860	384	266	503	427	318	503	427
v/s Ratio Prot	0.08	c0.29		0.02	c0.20			0.06			0.09	
v/s Ratio Perm						0.02	0.08		0.02	c0.16		0.05
v/c Ratio	0.20	0.73		0.09	0.81	0.07	0.29	0.23	0.07	0.59	0.35	0.20
Uniform Delay, d1	25.9	33.5		38.1	46.3	37.8	37.5	36.9	35.3	41.2	38.3	36.6
Progression Factor	0.57	0.57		0.85	0.91	1.26	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.1		0.1	5.0	0.1	2.7	1.1	0.3	7.8	1.9	1.0
Delay (s)	15.0	21.0		32.6	47.3	47.8	40.2	38.0	35.6	48.9	40.2	37.6
Level of Service	B	C		C	D	D	D	D	D	D	D	D
Approach Delay (s)		20.3			46.6			37.7			42.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1191	17	0	623	0	2	0	91	0	0	0
Future Volume (Veh/h)	0	1191	17	0	623	0	2	0	91	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	1241	18	0	649	0	2	0	95	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)		397			728							
pX, platoon unblocked	0.86			0.76			0.82	0.82	0.76	0.82	0.82	0.86
vC, conflicting volume	649			1259			1574	1899	630	1364	1908	324
vC1, stage 1 conf vol							1250	1250		649	649	
vC2, stage 2 conf vol							324	649		716	1259	
vCu, unblocked vol	279			698			528	922	0	273	932	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	88	100	100	100
cM capacity (veh/h)	1107			676			298	321	820	569	317	937

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	827	432	0	433	216	97	0
Volume Left	0	0	0	0	0	0	2	0
Volume Right	0	0	18	0	0	0	95	0
cSH	1700	1700	1700	1700	1700	1700	792	1700
Volume to Capacity	0.00	0.49	0.25	0.00	0.25	0.13	0.12	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	10	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.2	0.0
Lane LOS							B	A
Approach Delay (s)	0.0			0.0			10.2	0.0
Approach LOS							B	A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	164	101	153	135	87	385
Future Volume (vph)	164	101	153	135	87	385
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	182	112	170	150	97	428

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	182	112	320	525
Volume Left (vph)	182	0	0	97
Volume Right (vph)	0	112	150	0
Hadj (s)	0.53	-0.67	-0.25	0.07
Departure Headway (s)	7.2	6.0	5.4	5.4
Degree Utilization, x	0.37	0.19	0.48	0.79
Capacity (veh/h)	456	552	630	655
Control Delay (s)	13.1	9.2	13.3	25.3
Approach Delay (s)	11.6		13.3	25.3
Approach LOS	B		B	D

Intersection Summary			
Delay	18.4		
Level of Service	C		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	7	4	16	16	18	6	67	14	19	50	4
Future Volume (vph)	1	7	4	16	16	18	6	67	14	19	50	4
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
Hourly flow rate (vph)	1	7	4	17	17	19	6	70	15	20	52	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	53	91	76
Volume Left (vph)	1	17	6	20
Volume Right (vph)	4	19	15	4
Hadj (s)	-0.15	-0.12	-0.05	0.06
Departure Headway (s)	4.2	4.2	4.1	4.2
Degree Utilization, x	0.01	0.06	0.10	0.09
Capacity (veh/h)	822	829	859	840
Control Delay (s)	7.2	7.4	7.5	7.6
Approach Delay (s)	7.2	7.4	7.5	7.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.5		
Level of Service		A		
Intersection Capacity Utilization		23.0%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	648	246	59	31	32
Future Volume (Veh/h)	38	648	246	59	31	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	39	661	251	60	32	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		434	1270			
pX, platoon unblocked					0.93	
vC, conflicting volume	311				690	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311				507	156
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				93	96
cM capacity (veh/h)	1246				444	862

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	259	441	167	144	65
Volume Left	39	0	0	0	32
Volume Right	0	0	0	60	33
cSH	1246	1700	1700	1700	589
Volume to Capacity	0.03	0.26	0.10	0.08	0.11
Queue Length 95th (ft)	2	0	0	0	9
Control Delay (s)	1.4	0.0	0.0	0.0	11.9
Lane LOS	A				B
Approach Delay (s)	0.5		0.0		11.9
Approach LOS					B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1226	0	14	789	206	24	22	50	379	8	68
Future Volume (vph)	75	1226	0	14	789	206	24	22	50	379	8	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1816	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.70	1.00		0.69	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1305	1583		1293	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	81	1318	0	15	848	222	26	24	54	408	9	73
RTOR Reduction (vph)	0	0	0	0	0	134	0	0	35	0	0	47
Lane Group Flow (vph)	81	1318	0	15	848	88	0	50	19	0	417	26
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	19.7	69.9		1.2	51.4	51.4		46.9	46.9		46.9	46.9
Effective Green, g (s)	19.7	69.9		1.2	51.4	51.4		46.9	46.9		46.9	46.9
Actuated g/C Ratio	0.15	0.54		0.01	0.40	0.40		0.36	0.36		0.36	0.36
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	268	1902		16	1399	625		470	571		466	571
v/s Ratio Prot	0.05	c0.37		0.01	c0.24							
v/s Ratio Perm						0.06		0.04	0.01		c0.32	0.02
v/c Ratio	0.30	0.69		0.94	0.61	0.14		0.11	0.03		0.89	0.05
Uniform Delay, d1	49.0	22.1		64.4	31.3	25.2		27.6	26.9		39.2	27.0
Progression Factor	1.45	0.59		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	1.7		191.7	2.0	0.5		0.1	0.0		19.3	0.0
Delay (s)	73.2	14.8		256.1	33.2	25.6		27.7	26.9		58.5	27.0
Level of Service	E	B		F	C	C		C	C		E	C
Approach Delay (s)		18.2			34.7			27.3			53.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1077	691	226	1434	236
Future Volume (vph)	0	1077	691	226	1434	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.91	0.95	1.00	0.94	0.86
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		5085	3539	1583	4995	1362
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		5085	3539	1583	4995	1362
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1110	712	233	1478	243
RTOR Reduction (vph)	0	0	0	0	2	39
Lane Group Flow (vph)	0	1110	712	233	1500	180
Turn Type		NA	NA	Free	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)		22.1	22.1	65.0	34.9	34.9
Effective Green, g (s)		22.1	22.1	65.0	34.9	34.9
Actuated g/C Ratio		0.34	0.34	1.00	0.54	0.54
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1728	1203	1583	2681	731
v/s Ratio Prot		c0.22	0.20		c0.30	
v/s Ratio Perm				0.15		0.13
v/c Ratio		0.64	0.59	0.15	0.56	0.25
Uniform Delay, d1		18.1	17.7	0.0	10.0	8.0
Progression Factor		1.00	1.19	1.00	1.00	1.00
Incremental Delay, d2		1.8	0.7	0.2	0.8	0.8
Delay (s)		20.0	21.8	0.2	10.8	8.8
Level of Service		B	C	A	B	A
Approach Delay (s)		20.0	16.5		10.6	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	1998	395	0	477	40	383	74	782	38	20	59
Future Volume (vph)	120	1998	395	0	477	40	383	74	782	38	20	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.95	1.00	0.91	0.81	0.86	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.92	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583		3539	1583	1610	2728	2723	1770	1863	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583		3539	1583	1610	2728	2723	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	125	2081	411	0	497	42	399	77	815	40	21	61
RTOR Reduction (vph)	0	0	132	0	0	31	0	134	230	0	0	58
Lane Group Flow (vph)	125	2081	279	0	497	11	259	352	316	40	21	3
Turn Type	Prot	NA	Perm		NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6			2		8	8		4	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	39.7	79.0	79.0		35.3	35.3	31.7	31.7	31.7	7.3	7.3	7.3
Effective Green, g (s)	39.7	79.0	79.0		35.3	35.3	31.7	31.7	31.7	7.3	7.3	7.3
Actuated g/C Ratio	0.31	0.61	0.61		0.27	0.27	0.24	0.24	0.24	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	540	3090	961		960	429	392	665	663	99	104	88
v/s Ratio Prot	0.07	c0.41			0.14		c0.16	0.13		c0.02	0.01	
v/s Ratio Perm			0.18			0.01			0.12			0.00
v/c Ratio	0.23	0.67	0.29		0.52	0.03	0.66	0.53	0.48	0.40	0.20	0.04
Uniform Delay, d1	33.7	16.9	12.1		40.1	34.7	44.3	42.7	42.1	59.2	58.6	58.0
Progression Factor	0.92	0.86	0.97		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.0	0.6		0.5	0.0	4.1	0.8	0.5	2.7	1.0	0.2
Delay (s)	31.3	15.6	12.4		40.6	34.8	48.4	43.4	42.6	61.9	59.5	58.2
Level of Service	C	B	B		D	C	D	D	D	E	E	E
Approach Delay (s)		15.9			40.2			44.1			59.7	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	10	0	30	0	492	47	0	195	11
Future Volume (Veh/h)	0	0	0	10	0	30	0	492	47	0	195	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	10	0	31	0	513	49	0	203	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								797			872	
pX, platoon unblocked	0.87	0.87	0.98	0.87	0.87	0.86	0.98			0.86		
vC, conflicting volume	777	770	208	746	752	538	214			562		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	623	616	184	588	594	385	190			413		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	97	100	95	100			100		
cM capacity (veh/h)	329	354	842	367	365	572	1358			989		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	41	562	214
Volume Left	0	10	0	0
Volume Right	0	31	49	11
cSH	1700	503	1358	989
Volume to Capacity	0.00	0.08	0.00	0.00
Queue Length 95th (ft)	0	7	0	0
Control Delay (s)	0.0	12.8	0.0	0.0
Lane LOS	A	B		
Approach Delay (s)	0.0	12.8	0.0	0.0
Approach LOS	A	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	12	465	6	5	159
Future Volume (Veh/h)	13	12	465	6	5	159
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	14	13	484	6	5	166
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			447			1222
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	663	487			490	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	506	297			300	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	98			100	
cM capacity (veh/h)	441	625			1061	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	27	490	171
Volume Left	14	0	5
Volume Right	13	6	0
cSH	514	1700	1061
Volume to Capacity	0.05	0.29	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	12.4	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	12.4	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	232	55	82	529	103	162	331	76	43	93	57
Future Volume (vph)	52	232	55	82	529	103	162	331	76	43	93	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	1770	3438		1770	3453		1770	1863	1583		1834	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.65	1.00	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3453		1209	1863	1583		1354	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	58	258	61	91	588	114	180	368	84	48	103	63
RTOR Reduction (vph)	0	29	0	0	23	0	0	0	53	0	0	43
Lane Group Flow (vph)	58	290	0	91	679	0	180	368	31	0	151	20
Turn Type	Split	NA		Split	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			6			2	
Permitted Phases							6		6	2		2
Actuated Green, G (s)	13.0	13.0		23.0	23.0		22.0	22.0	22.0		22.0	22.0
Effective Green, g (s)	13.0	13.0		23.0	23.0		22.0	22.0	22.0		22.0	22.0
Actuated g/C Ratio	0.19	0.19		0.33	0.33		0.31	0.31	0.31		0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	328	638		581	1134		379	585	497		425	497
v/s Ratio Prot	0.03	c0.08		0.05	c0.20			c0.20				
v/s Ratio Perm							0.15		0.02		0.11	0.01
v/c Ratio	0.18	0.45		0.16	0.60		0.47	0.63	0.06		0.36	0.04
Uniform Delay, d1	24.0	25.3		16.6	19.6		19.3	20.5	16.8		18.5	16.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	2.3		0.6	2.3		4.2	5.1	0.2		0.5	0.0
Delay (s)	25.2	27.7		17.2	22.0		23.6	25.6	17.0		19.0	16.7
Level of Service	C	C		B	C		C	C	B		B	B
Approach Delay (s)		27.3			21.4			23.9			18.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	354	8	386	4	1200	140	199	1095	0
Future Volume (vph)	0	0	0	354	8	386	4	1200	140	199	1095	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95		0.97	0.95	
Frt				1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)				1681	1689	1583	1770	3484		3433	3539	
Flt Permitted				0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)				1681	1689	1583	1770	3484		3433	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	393	9	429	4	1333	156	221	1217	0
RTOR Reduction (vph)	0	0	0	0	0	271	0	5	0	0	0	0
Lane Group Flow (vph)	0	0	0	200	202	158	4	1484	0	221	1217	0
Turn Type				Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases				8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)				23.8	23.8	23.8	2.0	80.5		13.7	92.2	
Effective Green, g (s)				23.8	23.8	23.8	2.0	80.5		13.7	92.2	
Actuated g/C Ratio				0.18	0.18	0.18	0.02	0.62		0.11	0.71	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)				307	309	289	27	2157		361	2509	
v/s Ratio Prot				0.12	c0.12		0.00	c0.43		c0.06	0.34	
v/s Ratio Perm						0.10						
v/c Ratio				0.65	0.65	0.55	0.15	0.69		0.61	0.49	
Uniform Delay, d1				49.3	49.3	48.2	63.2	16.4		55.6	8.4	
Progression Factor				1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2				4.9	4.9	2.1	2.5	1.8		7.5	0.7	
Delay (s)				54.1	54.2	50.3	65.7	18.2		63.2	9.1	
Level of Service				D	D	D	E	B		E	A	
Approach Delay (s)		0.0			52.2			18.4			17.4	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	232	104	86	305	4	571	4	85	17	1	7
Future Volume (vph)	5	232	104	86	305	4	571	4	85	17	1	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Frt	1.00	0.95		1.00	1.00		1.00	0.96			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.96			0.97	
Satd. Flow (prot)	1770	3375		1770	3533		1681	1640			1735	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	0.77			0.80	
Satd. Flow (perm)	1770	3375		1770	3533		1310	1307			1430	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	244	109	91	321	4	601	4	89	18	1	7
RTOR Reduction (vph)	0	49	0	0	1	0	0	11	0	0	4	0
Lane Group Flow (vph)	5	304	0	91	324	0	355	328	0	0	22	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.5	26.6		8.0	32.1		37.2	37.2			37.2	
Effective Green, g (s)	2.5	26.6		8.0	32.1		37.2	37.2			37.2	
Actuated g/C Ratio	0.03	0.32		0.10	0.38		0.44	0.44			0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	52	1071		168	1353		581	580			634	
v/s Ratio Prot	0.00	c0.09		c0.05	0.09							
v/s Ratio Perm							c0.27	0.25			0.02	
v/c Ratio	0.10	0.28		0.54	0.24		0.61	0.57			0.03	
Uniform Delay, d1	39.6	21.5		36.2	17.6		17.8	17.3			13.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.8	0.1		3.5	0.1		4.7	4.0			0.1	
Delay (s)	40.4	21.6		39.7	17.6		22.5	21.3			13.3	
Level of Service	D	C		D	B		C	C			B	
Approach Delay (s)		21.9			22.5			21.9			13.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	560	52	246	647	499	101	866	165	247	864	130
Future Volume (vph)	217	560	52	246	647	499	101	866	165	247	864	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3494		1610	3384	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3494		1610	3384	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	221	571	53	251	660	509	103	884	168	252	882	133
RTOR Reduction (vph)	0	5	0	0	0	256	0	0	80	0	0	65
Lane Group Flow (vph)	221	619	0	226	685	253	103	884	88	252	882	68
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	28.4	28.4		30.5	30.5	30.5	12.1	34.7	34.7	20.4	43.0	43.0
Effective Green, g (s)	28.4	28.4		30.5	30.5	30.5	12.1	34.7	34.7	20.4	43.0	43.0
Actuated g/C Ratio	0.22	0.22		0.23	0.23	0.23	0.09	0.27	0.27	0.16	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	749	763		377	793	371	164	944	422	277	1170	523
v/s Ratio Prot	0.06	c0.18		0.14	c0.20		0.06	c0.25		c0.14	0.25	
v/s Ratio Perm						0.16			0.06			0.04
v/c Ratio	0.30	0.81		0.60	0.86	0.68	0.63	0.94	0.21	0.91	0.75	0.13
Uniform Delay, d1	42.4	48.2		44.3	47.8	45.3	56.8	46.6	37.0	53.9	38.8	30.4
Progression Factor	1.00	1.00		1.38	1.36	2.31	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	9.1		1.9	7.4	3.8	7.3	16.0	0.2	31.1	4.5	0.5
Delay (s)	43.4	57.4		63.0	72.6	108.8	64.1	62.6	37.2	85.0	43.3	30.9
Level of Service	D	E		E	E	F	E	E	D	F	D	C
Approach Delay (s)		53.7			84.0			59.0			50.3	
Approach LOS		D			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	63.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	784	26	24	900	64	172	268	91	69	107	320
Future Volume (vph)	165	784	26	24	900	64	172	268	91	69	107	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3522		1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.64	1.00	1.00	0.35	1.00	1.00
Satd. Flow (perm)	1770	3522		1770	3539	1583	1191	1863	1583	661	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	172	817	27	25	938	67	179	279	95	72	111	333
RTOR Reduction (vph)	0	2	0	0	0	27	0	0	46	0	0	245
Lane Group Flow (vph)	172	842	0	25	938	40	179	279	49	72	111	88
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			2			6	
Permitted Phases						4	2		2	6		6
Actuated Green, G (s)	36.8	36.8		47.0	47.0	47.0	34.2	34.2	34.2	34.2	34.2	34.2
Effective Green, g (s)	36.8	36.8		47.0	47.0	47.0	34.2	34.2	34.2	34.2	34.2	34.2
Actuated g/C Ratio	0.28	0.28		0.36	0.36	0.36	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	501	996		639	1279	572	313	490	416	173	490	416
v/s Ratio Prot	0.10	c0.24		0.01	c0.27			0.15			0.06	
v/s Ratio Perm						0.03	c0.15		0.03	0.11		0.06
v/c Ratio	0.34	0.85		0.04	0.73	0.07	0.57	0.57	0.12	0.42	0.23	0.21
Uniform Delay, d1	37.0	43.9		26.9	36.1	27.2	41.5	41.5	36.4	39.6	37.5	37.4
Progression Factor	0.95	0.94		0.35	0.66	0.51	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	4.6		0.1	3.1	0.2	7.4	4.7	0.6	7.2	1.1	1.2
Delay (s)	35.5	46.0		9.6	27.0	14.0	48.9	46.3	37.0	46.9	38.6	38.5
Level of Service	D	D		A	C	B	D	D	D	D	D	D
Approach Delay (s)		44.2			25.8			45.5			39.7	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	835	16	42	945	0	7	0	526	0	0	0
Future Volume (Veh/h)	0	835	16	42	945	0	7	0	526	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	870	17	44	984	0	7	0	548	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)		397			728							
pX, platoon unblocked	0.79			0.78			0.89	0.89	0.78	0.89	0.89	0.79
vC, conflicting volume	984			887			1458	1950	444	2055	1959	492
vC1, stage 1 conf vol							878	878		1072	1072	
vC2, stage 2 conf vol							580	1072		983	887	
vCu, unblocked vol	433			303			186	738	0	855	748	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			96			99	100	35	100	100	100
cM capacity (veh/h)	882			983			632	369	850	113	363	852

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	580	307	44	656	328	555	0
Volume Left	0	0	0	44	0	0	7	0
Volume Right	0	0	17	0	0	0	548	0
cSH	1700	1700	1700	983	1700	1700	846	1700
Volume to Capacity	0.00	0.34	0.18	0.04	0.39	0.19	0.66	0.00
Queue Length 95th (ft)	0	0	0	4	0	0	126	0
Control Delay (s)	0.0	0.0	0.0	8.8	0.0	0.0	17.0	0.0
Lane LOS				A			C	A
Approach Delay (s)	0.0			0.4			17.0	0.0
Approach LOS							C	A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	194	209	435	85	63	260
Future Volume (vph)	194	209	435	85	63	260
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	204	220	458	89	66	274

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	204	220	547	340
Volume Left (vph)	204	0	0	66
Volume Right (vph)	0	220	89	0
Hadj (s)	0.53	-0.67	-0.06	0.07
Departure Headway (s)	7.5	6.3	5.7	6.2
Degree Utilization, x	0.43	0.38	0.87	0.58
Capacity (veh/h)	455	540	621	552
Control Delay (s)	14.7	11.9	34.9	17.5
Approach Delay (s)	13.3		34.9	17.5
Approach LOS	B		D	C

Intersection Summary			
Delay	23.4		
Level of Service	C		
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	44	1	6	13	16	37	30	475	23	17	54	6
Future Volume (vph)	44	1	6	13	16	37	30	475	23	17	54	6
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
Hourly flow rate (vph)	46	1	6	14	17	39	31	495	24	18	56	6

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	53	70	550	80
Volume Left (vph)	46	14	31	18
Volume Right (vph)	6	39	24	6
Hadj (s)	0.14	-0.26	0.02	0.03
Departure Headway (s)	5.6	5.2	4.4	4.9
Degree Utilization, x	0.08	0.10	0.67	0.11
Capacity (veh/h)	567	612	803	692
Control Delay (s)	9.1	8.8	15.6	8.5
Approach Delay (s)	9.1	8.8	15.6	8.5
Approach LOS	A	A	C	A

Intersection Summary			
Delay	13.8		
Level of Service	B		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	297	685	344	22	44
Future Volume (Veh/h)	80	297	685	344	22	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	84	313	721	362	23	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		434	1270			
pX, platoon unblocked					0.96	
vC, conflicting volume	1083				1226	542
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1083				1159	542
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	87				85	91
cM capacity (veh/h)	640				158	485

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	188	209	481	602	69
Volume Left	84	0	0	0	23
Volume Right	0	0	0	362	46
cSH	640	1700	1700	1700	287
Volume to Capacity	0.13	0.12	0.28	0.35	0.24
Queue Length 95th (ft)	11	0	0	0	23
Control Delay (s)	6.0	0.0	0.0	0.0	21.5
Lane LOS	A				C
Approach Delay (s)	2.8		0.0		21.5
Approach LOS					C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1163	0	34	1119	554	26	21	26	290	6	33
Future Volume (vph)	180	1163	0	34	1119	554	26	21	26	290	6	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1812	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.69	1.00		0.70	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1286	1583		1295	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	1187	0	35	1142	565	27	21	27	296	6	34
RTOR Reduction (vph)	0	0	0	0	0	252	0	0	20	0	0	25
Lane Group Flow (vph)	184	1187	0	35	1142	313	0	48	7	0	302	9
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	17.4	55.8		27.4	65.8	65.8		34.8	34.8		34.8	34.8
Effective Green, g (s)	17.4	55.8		27.4	65.8	65.8		34.8	34.8		34.8	34.8
Actuated g/C Ratio	0.13	0.43		0.21	0.51	0.51		0.27	0.27		0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	236	1519		373	1791	801		344	423		346	423
v/s Ratio Prot	0.10	c0.34		0.02	c0.32							
v/s Ratio Perm						0.20		0.04	0.00		c0.23	0.01
v/c Ratio	0.78	0.78		0.09	0.64	0.39		0.14	0.02		0.87	0.02
Uniform Delay, d1	54.4	31.9		41.3	23.4	19.8		36.2	35.0		45.5	35.1
Progression Factor	1.41	0.69		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	13.8	2.5		0.5	1.7	1.4		0.2	0.0		20.8	0.0
Delay (s)	90.7	24.5		41.8	25.2	21.2		36.4	35.0		66.2	35.1
Level of Service	F	C		D	C	C		D	D		E	D
Approach Delay (s)		33.4			24.2			35.9			63.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1112	1241	708	493	478
Future Volume (vph)	0	1112	1241	708	493	478
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.91	0.95	1.00	0.94	0.86
Frt		1.00	1.00	0.85	0.95	0.85
Flt Protected		1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)		5085	3539	1583	4833	1362
Flt Permitted		1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)		5085	3539	1583	4833	1362
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1158	1293	738	514	498
RTOR Reduction (vph)	0	0	0	0	35	35
Lane Group Flow (vph)	0	1158	1293	738	728	214
Turn Type		NA	NA	Free	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)		63.9	63.9	130.0	58.1	58.1
Effective Green, g (s)		63.9	63.9	130.0	58.1	58.1
Actuated g/C Ratio		0.49	0.49	1.00	0.45	0.45
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		2499	1739	1583	2159	608
v/s Ratio Prot		0.23	c0.37		0.15	
v/s Ratio Perm				c0.47		0.16
v/c Ratio		0.46	0.74	0.47	0.34	0.35
Uniform Delay, d1		21.8	26.5	0.0	23.4	23.6
Progression Factor		1.00	0.59	1.00	1.00	1.00
Incremental Delay, d2		0.1	2.2	0.7	0.4	1.6
Delay (s)		21.9	17.7	0.7	23.8	25.2
Level of Service		C	B	A	C	C
Approach Delay (s)		21.9	11.6		24.2	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	869	578	0	1289	55	468	30	44	49	61	178
Future Volume (vph)	155	869	578	0	1289	55	468	30	44	49	61	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.95	1.00	0.91	0.81	0.86	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583		3539	1583	1610	2884	2723	1770	1863	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583		3539	1583	1610	2884	2723	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	161	905	602	0	1343	57	488	31	46	51	64	185
RTOR Reduction (vph)	0	0	224	0	0	28	0	1	33	0	0	148
Lane Group Flow (vph)	161	905	378	0	1343	29	244	279	8	51	64	37
Turn Type	Prot	NA	Perm		NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6			2		8	8		4	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	11.0	81.6	81.6		66.6	66.6	25.9	25.9	25.9	10.5	10.5	10.5
Effective Green, g (s)	11.0	81.6	81.6		66.6	66.6	25.9	25.9	25.9	10.5	10.5	10.5
Actuated g/C Ratio	0.08	0.63	0.63		0.51	0.51	0.20	0.20	0.20	0.08	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	149	3191	993		1813	810	320	574	542	142	150	127
v/s Ratio Prot	c0.09	0.18			c0.38		c0.15	0.10		0.03	c0.03	
v/s Ratio Perm			0.24			0.02			0.00			0.02
v/c Ratio	1.08	0.28	0.38		0.74	0.04	0.76	0.49	0.02	0.36	0.43	0.29
Uniform Delay, d1	59.5	11.0	11.8		24.9	15.8	49.1	46.2	41.8	56.6	56.9	56.2
Progression Factor	0.85	0.80	1.61		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	94.9	0.0	0.2		2.8	0.1	10.3	0.7	0.0	1.6	1.9	1.3
Delay (s)	145.2	8.8	19.2		27.7	15.8	59.4	46.8	41.8	58.1	58.8	57.5
Level of Service	F	A	B		C	B	E	D	D	E	E	E
Approach Delay (s)		25.7			27.2			51.9			57.9	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: Old County Road & O'Neill Avenue

07/26/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	16	0	44	0	238	0	0	209	0
Future Volume (Veh/h)	0	0	0	16	0	44	0	238	0	0	209	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	17	0	46	0	248	0	0	218	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								797			872	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	512	466	218	466	466	248	218			248		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	455	407	145	407	407	248	145			248		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	97	100	94	100			100		
cM capacity (veh/h)	459	505	854	525	505	791	1360			1318		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	63	248	218
Volume Left	0	17	0	0
Volume Right	0	46	0	0
cSH	1700	696	1360	1318
Volume to Capacity	0.00	0.09	0.00	0.00
Queue Length 95th (ft)	0	7	0	0
Control Delay (s)	0.0	10.7	0.0	0.0
Lane LOS	A	B		
Approach Delay (s)	0.0	10.7	0.0	0.0
Approach LOS	A	B		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	10	181	12	7	167
Future Volume (Veh/h)	8	10	181	12	7	167
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	8	10	189	13	7	174
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			447			1222
pX, platoon unblocked	1.00	1.00			1.00	
vC, conflicting volume	384	196			202	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	383	195			202	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	616	846			1370	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	202	181
Volume Left	8	0	7
Volume Right	10	13	0
cSH	726	1700	1370
Volume to Capacity	0.02	0.12	0.01
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.1	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	440	74	48	245	60	60	115	34	65	123	40
Future Volume (vph)	66	440	74	48	245	60	60	115	34	65	123	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	1770	3467		1770	3434		1770	1863	1583		1831	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.51	1.00	1.00		0.85	1.00
Satd. Flow (perm)	1770	3467		1770	3434		947	1863	1583		1582	1583
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	73	489	77	50	255	62	62	120	35	68	128	42
RTOR Reduction (vph)	0	13	0	0	43	0	0	0	28	0	0	33
Lane Group Flow (vph)	73	553	0	50	275	0	63	120	7	0	196	9
Turn Type	Split	NA		Split	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	32.7	32.7		11.1	11.1		14.2	14.2	14.2		14.2	14.2
Effective Green, g (s)	32.7	32.7		11.1	11.1		14.2	14.2	14.2		14.2	14.2
Actuated g/C Ratio	0.47	0.47		0.16	0.16		0.20	0.20	0.20		0.20	0.20
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	826	1619		280	544		192	377	321		320	321
v/s Ratio Prot	0.04	c0.16		0.03	c0.08			0.06				
v/s Ratio Perm							0.07		0.00		c0.12	0.01
v/c Ratio	0.09	0.34		0.18	0.51		0.33	0.32	0.02		0.61	0.03
Uniform Delay, d1	10.4	11.8		25.5	26.9		23.8	23.8	22.3		25.4	22.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.6		0.3	0.7		1.0	0.5	0.0		3.5	0.0
Delay (s)	10.6	12.4		25.8	27.7		24.8	24.3	22.4		28.8	22.4
Level of Service	B	B		C	C		C	C	C		C	C
Approach Delay (s)		12.2			27.4			24.1			27.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	143	3	202	0	899	146	434	987	0
Future Volume (vph)	0	0	0	143	3	202	0	899	146	434	987	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95	1.00		0.95		0.97	0.95	
Frt				1.00	1.00	0.85		0.98		1.00	1.00	
Flt Protected				0.95	0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1681	1688	1583		3465		3433	3539	
Flt Permitted				0.95	0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1681	1688	1583		3465		3433	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	159	3	224	0	999	162	482	1097	0
RTOR Reduction (vph)	0	0	0	0	0	203	0	11	0	0	0	0
Lane Group Flow (vph)	0	0	0	81	81	21	0	1150	0	482	1097	0
Turn Type				Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases				8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)				12.0	12.0	12.0		53.3		52.7	110.0	
Effective Green, g (s)				12.0	12.0	12.0		53.3		52.7	110.0	
Actuated g/C Ratio				0.09	0.09	0.09		0.41		0.41	0.85	
Clearance Time (s)				4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)				3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				155	155	146		1420		1391	2994	
v/s Ratio Prot				c0.05	0.05			c0.33		0.14	c0.31	
v/s Ratio Perm						0.01						
v/c Ratio				0.52	0.52	0.14		0.81		0.35	0.37	
Uniform Delay, d1				56.3	56.3	54.3		33.9		26.7	2.2	
Progression Factor				1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2				3.2	3.2	0.4		3.5		0.7	0.3	
Delay (s)				59.4	59.4	54.7		37.4		27.4	2.6	
Level of Service				E	E	D		D		C	A	
Approach Delay (s)		0.0			56.7			37.4			10.2	
Approach LOS		A			E			D			B	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	442	141	180	215	15	184	9	25	0	1	2
Future Volume (vph)	1	442	141	180	215	15	184	9	25	0	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.97			0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97			1.00	
Satd. Flow (prot)	1770	3411		1770	3506		1681	1652			1695	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.83			1.00	
Satd. Flow (perm)	1770	3411		1770	3506		1338	1413			1695	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	1	486	155	198	236	16	202	10	27	0	1	2
RTOR Reduction (vph)	0	35	0	0	6	0	0	11	0	0	1	0
Lane Group Flow (vph)	1	606	0	198	246	0	121	107	0	0	2	0
Turn Type	Prot	NA		Prot	NA		Perm	NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.3	23.4		13.6	31.7		33.4	33.4			33.4	
Effective Green, g (s)	5.3	23.4		13.6	31.7		33.4	33.4			33.4	
Actuated g/C Ratio	0.06	0.28		0.17	0.38		0.41	0.41			0.41	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	113	968		292	1348		542	572			687	
v/s Ratio Prot	0.00	c0.18		c0.11	0.07						0.00	
v/s Ratio Perm							c0.09	0.08				
v/c Ratio	0.01	0.63		0.68	0.18		0.22	0.19			0.00	
Uniform Delay, d1	36.1	25.7		32.3	16.8		16.0	15.8			14.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.3		6.1	0.1		1.0	0.7			0.0	
Delay (s)	36.1	27.0		38.5	16.8		17.0	16.5			14.6	
Level of Service	D	C		D	B		B	B			B	
Approach Delay (s)		27.0			26.4			16.7			14.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	82.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	610	17	217	549	232	117	713	229	263	1003	79
Future Volume (vph)	83	610	17	217	549	232	117	713	229	263	1003	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3525		1610	3384	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3525		1610	3384	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	84	616	17	219	555	234	118	720	231	266	1013	80
RTOR Reduction (vph)	0	2	0	0	0	180	0	0	132	0	0	51
Lane Group Flow (vph)	84	631	0	197	577	54	118	720	99	266	1013	29
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	30.0	30.0		30.0	30.0	30.0	11.0	37.0	37.0	17.0	43.0	43.0
Effective Green, g (s)	30.0	30.0		30.0	30.0	30.0	11.0	37.0	37.0	17.0	43.0	43.0
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.23	0.08	0.28	0.28	0.13	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	792	813		371	780	365	149	1007	450	231	1170	523
v/s Ratio Prot	0.02	c0.18		0.12	c0.17		0.07	0.20		c0.15	c0.29	
v/s Ratio Perm						0.03			0.06			0.02
v/c Ratio	0.11	0.78		0.53	0.74	0.15	0.79	0.71	0.22	1.15	0.87	0.06
Uniform Delay, d1	39.4	46.9		43.8	46.4	39.8	58.4	41.8	35.5	56.5	40.8	29.7
Progression Factor	1.00	1.00		0.32	0.33	0.20	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	7.2		4.3	5.0	0.7	33.8	4.3	1.1	106.2	8.7	0.2
Delay (s)	39.7	54.0		18.5	20.0	8.6	92.2	46.1	36.6	162.7	49.5	29.9
Level of Service	D	D		B	C	A	F	D	D	F	D	C
Approach Delay (s)		52.4			17.1			49.1			70.5	
Approach LOS		D			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	48.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	957	21	34	672	55	90	113	113	181	171	218
Future Volume (vph)	135	957	21	34	672	55	90	113	113	181	171	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3528		1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.53	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	1770	3528		1770	3539	1583	988	1863	1583	1179	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	139	987	22	35	693	57	93	116	116	187	176	225
RTOR Reduction (vph)	0	1	0	0	0	32	0	0	85	0	0	142
Lane Group Flow (vph)	139	1008	0	35	693	25	93	116	31	187	176	83
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			2			6	
Permitted Phases						4	2		2	6		6
Actuated Green, G (s)	51.3	51.3		31.6	31.6	31.6	35.1	35.1	35.1	35.1	35.1	35.1
Effective Green, g (s)	51.3	51.3		31.6	31.6	31.6	35.1	35.1	35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.39	0.39		0.24	0.24	0.24	0.27	0.27	0.27	0.27	0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	698	1392		430	860	384	266	503	427	318	503	427
v/s Ratio Prot	0.08	c0.29		0.02	c0.20			0.06			0.09	
v/s Ratio Perm						0.02	0.09		0.02	c0.16		0.05
v/c Ratio	0.20	0.72		0.08	0.81	0.07	0.35	0.23	0.07	0.59	0.35	0.20
Uniform Delay, d1	25.9	33.3		38.0	46.3	37.8	38.2	36.9	35.3	41.2	38.3	36.6
Progression Factor	0.57	0.57		0.85	0.92	1.27	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.1		0.1	5.0	0.1	3.6	1.1	0.3	7.8	1.9	1.0
Delay (s)	15.1	20.9		32.5	47.4	48.0	41.8	38.0	35.7	48.9	40.2	37.6
Level of Service	B	C		C	D	D	D	D	D	D	D	D
Approach Delay (s)		20.2			46.8			38.3			42.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1195	17	0	620	0	2	0	106	0	0	0
Future Volume (Veh/h)	0	1195	17	0	620	0	2	0	106	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	1245	18	0	646	0	2	0	110	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)		397			728							
pX, platoon unblocked	0.87			0.76			0.83	0.83	0.76	0.83	0.83	0.87
vC, conflicting volume	646			1263			1577	1900	632	1378	1909	323
vC1, stage 1 conf vol							1254	1254		646	646	
vC2, stage 2 conf vol							323	646		732	1263	
vCu, unblocked vol	280			710			544	936	0	304	946	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	87	100	100	100
cM capacity (veh/h)	1107			671			294	318	823	556	314	939

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	830	433	0	431	215	112	0
Volume Left	0	0	0	0	0	0	2	0
Volume Right	0	0	18	0	0	0	110	0
cSH	1700	1700	1700	1700	1700	1700	797	1700
Volume to Capacity	0.00	0.49	0.25	0.00	0.25	0.13	0.14	0.00
Queue Length 95th (ft)	0	0	0	0	0	0	12	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	10.3	0.0
Lane LOS							B	A
Approach Delay (s)	0.0			0.0			10.3	0.0
Approach LOS							B	A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	164	101	153	135	87	385
Future Volume (vph)	164	101	153	135	87	385
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	182	112	170	150	97	428

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	182	112	320	525
Volume Left (vph)	182	0	0	97
Volume Right (vph)	0	112	150	0
Hadj (s)	0.53	-0.67	-0.25	0.07
Departure Headway (s)	7.2	6.0	5.4	5.4
Degree Utilization, x	0.37	0.19	0.48	0.79
Capacity (veh/h)	456	552	630	655
Control Delay (s)	13.1	9.2	13.3	25.3
Approach Delay (s)	11.6		13.3	25.3
Approach LOS	B		B	D

Intersection Summary			
Delay	18.4		
Level of Service	C		
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	16	7	12	16	16	18	4	67	14	19	50	0
Future Volume (vph)	16	7	12	16	16	18	4	67	14	19	50	0
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
Hourly flow rate (vph)	17	7	13	17	17	19	4	70	15	20	52	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	37	53	89	72
Volume Left (vph)	17	17	4	20
Volume Right (vph)	13	19	15	0
Hadj (s)	-0.08	-0.12	-0.06	0.09
Departure Headway (s)	4.2	4.2	4.1	4.3
Degree Utilization, x	0.04	0.06	0.10	0.09
Capacity (veh/h)	814	825	845	818
Control Delay (s)	7.4	7.4	7.6	7.7
Approach Delay (s)	7.4	7.4	7.6	7.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	648	246	57	39	32
Future Volume (Veh/h)	38	648	246	57	39	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	39	661	251	58	40	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		434	1270			
pX, platoon unblocked					0.93	
vC, conflicting volume	309				688	154
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	309				506	154
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				91	96
cM capacity (veh/h)	1248				445	864

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	259	441	167	142	73
Volume Left	39	0	0	0	40
Volume Right	0	0	0	58	33
cSH	1248	1700	1700	1700	570
Volume to Capacity	0.03	0.26	0.10	0.08	0.13
Queue Length 95th (ft)	2	0	0	0	11
Control Delay (s)	1.4	0.0	0.0	0.0	12.2
Lane LOS	A				B
Approach Delay (s)	0.5		0.0		12.2
Approach LOS					B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1245	0	14	779	206	24	22	50	379	8	68
Future Volume (vph)	75	1245	0	14	779	206	24	22	50	379	8	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1816	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.70	1.00		0.69	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1305	1583		1293	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	81	1339	0	15	838	222	26	24	54	408	9	73
RTOR Reduction (vph)	0	0	0	0	0	134	0	0	35	0	0	47
Lane Group Flow (vph)	81	1339	0	15	838	88	0	50	19	0	417	26
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	19.7	69.9		1.2	51.4	51.4		46.9	46.9		46.9	46.9
Effective Green, g (s)	19.7	69.9		1.2	51.4	51.4		46.9	46.9		46.9	46.9
Actuated g/C Ratio	0.15	0.54		0.01	0.40	0.40		0.36	0.36		0.36	0.36
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	268	1902		16	1399	625		470	571		466	571
v/s Ratio Prot	0.05	c0.38		0.01	c0.24							
v/s Ratio Perm						0.06		0.04	0.01		c0.32	0.02
v/c Ratio	0.30	0.70		0.94	0.60	0.14		0.11	0.03		0.89	0.05
Uniform Delay, d1	49.0	22.4		64.4	31.1	25.2		27.6	26.9		39.2	27.0
Progression Factor	1.44	0.59		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4	1.8		191.7	1.9	0.5		0.1	0.0		19.3	0.0
Delay (s)	73.2	14.9		256.1	33.0	25.6		27.7	26.9		58.5	27.0
Level of Service	E	B		F	C	C		C	C		E	C
Approach Delay (s)		18.2			34.6			27.3			53.8	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1093	684	226	1434	233
Future Volume (vph)	0	1093	684	226	1434	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.91	0.95	1.00	0.94	0.86
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		5085	3539	1583	4995	1362
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		5085	3539	1583	4995	1362
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1127	705	233	1478	240
RTOR Reduction (vph)	0	0	0	0	2	40
Lane Group Flow (vph)	0	1127	705	233	1500	176
Turn Type		NA	NA	Free	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)		22.2	22.2	65.0	34.8	34.8
Effective Green, g (s)		22.2	22.2	65.0	34.8	34.8
Actuated g/C Ratio		0.34	0.34	1.00	0.54	0.54
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1736	1208	1583	2674	729
v/s Ratio Prot		c0.22	0.20		c0.30	
v/s Ratio Perm				0.15		0.13
v/c Ratio		0.65	0.58	0.15	0.56	0.24
Uniform Delay, d1		18.1	17.6	0.0	10.0	8.1
Progression Factor		1.00	1.19	1.00	1.00	1.00
Incremental Delay, d2		1.9	0.7	0.2	0.9	0.8
Delay (s)		20.0	21.6	0.2	10.9	8.8
Level of Service		C	C	A	B	A
Approach Delay (s)		20.0	16.3		10.6	
Approach LOS		C	B		B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	2003	406	0	475	40	378	74	782	38	20	59
Future Volume (vph)	120	2003	406	0	475	40	378	74	782	38	20	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.95	1.00	0.91	0.81	0.86	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.92	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583		3539	1583	1610	2727	2723	1770	1863	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583		3539	1583	1610	2727	2723	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	125	2086	423	0	495	42	394	77	815	40	21	61
RTOR Reduction (vph)	0	0	135	0	0	31	0	134	230	0	0	58
Lane Group Flow (vph)	125	2086	288	0	495	11	256	350	316	40	21	3
Turn Type	Prot	NA	Perm		NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6			2		8	8		4	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	39.9	79.1	79.1		35.2	35.2	31.6	31.6	31.6	7.3	7.3	7.3
Effective Green, g (s)	39.9	79.1	79.1		35.2	35.2	31.6	31.6	31.6	7.3	7.3	7.3
Actuated g/C Ratio	0.31	0.61	0.61		0.27	0.27	0.24	0.24	0.24	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	543	3094	963		958	428	391	662	661	99	104	88
v/s Ratio Prot	0.07	c0.41			0.14		c0.16	0.13		c0.02	0.01	
v/s Ratio Perm			0.18			0.01			0.12			0.00
v/c Ratio	0.23	0.67	0.30		0.52	0.03	0.65	0.53	0.48	0.40	0.20	0.04
Uniform Delay, d1	33.6	16.9	12.2		40.2	34.8	44.3	42.7	42.1	59.2	58.6	58.0
Progression Factor	0.92	0.86	0.97		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.0	0.7		0.5	0.0	3.9	0.8	0.5	2.7	1.0	0.2
Delay (s)	31.1	15.6	12.5		40.7	34.8	48.2	43.5	42.7	61.9	59.5	58.2
Level of Service	C	B	B		D	C	D	D	D	E	E	E
Approach Delay (s)		15.8			40.2			44.1			59.7	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: Old County Road & O'Neill Avenue

07/26/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	12	0	33	0	492	58	24	195	11
Future Volume (Veh/h)	0	0	0	12	0	33	0	492	58	24	195	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	13	0	34	0	513	60	25	203	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								797			872	
pX, platoon unblocked	0.87	0.87	0.98	0.87	0.87	0.86	0.98			0.86		
vC, conflicting volume	836	832	208	802	807	543	214			573		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	689	685	184	650	656	390	189			425		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	96	100	94	100			97		
cM capacity (veh/h)	289	315	842	327	327	568	1359			978		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	47	573	239
Volume Left	0	13	0	25
Volume Right	0	34	60	11
cSH	1700	471	1359	978
Volume to Capacity	0.00	0.10	0.00	0.03
Queue Length 95th (ft)	0	8	0	2
Control Delay (s)	0.0	13.5	0.0	1.1
Lane LOS	A	B		A
Approach Delay (s)	0.0	13.5	0.0	1.1
Approach LOS	A	B		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	12	476	6	5	161
Future Volume (Veh/h)	13	12	476	6	5	161
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	14	13	496	6	5	168
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			447			1222
pX, platoon unblocked	0.84	0.84			0.84	
vC, conflicting volume	677	499			502	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	522	311			314	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	98			100	
cM capacity (veh/h)	431	614			1049	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	27	502	173
Volume Left	14	0	5
Volume Right	13	6	0
cSH	503	1700	1049
Volume to Capacity	0.05	0.30	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	12.6	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	12.6	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	232	55	82	529	103	162	331	76	43	93	59
Future Volume (vph)	63	232	55	82	529	103	162	331	76	43	93	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	1770	3438		1770	3453		1770	1863	1583		1834	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.65	1.00	1.00		0.73	1.00
Satd. Flow (perm)	1770	3438		1770	3453		1209	1863	1583		1354	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	70	258	61	91	588	114	180	368	84	48	103	66
RTOR Reduction (vph)	0	29	0	0	23	0	0	0	53	0	0	45
Lane Group Flow (vph)	70	290	0	91	679	0	180	368	31	0	151	21
Turn Type	Split	NA		Split	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			6			2	
Permitted Phases							6		6	2		2
Actuated Green, G (s)	13.0	13.0		23.0	23.0		22.0	22.0	22.0		22.0	22.0
Effective Green, g (s)	13.0	13.0		23.0	23.0		22.0	22.0	22.0		22.0	22.0
Actuated g/C Ratio	0.19	0.19		0.33	0.33		0.31	0.31	0.31		0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	328	638		581	1134		379	585	497		425	497
v/s Ratio Prot	0.04	c0.08		0.05	c0.20			c0.20				
v/s Ratio Perm							0.15		0.02		0.11	0.01
v/c Ratio	0.21	0.45		0.16	0.60		0.47	0.63	0.06		0.36	0.04
Uniform Delay, d1	24.2	25.3		16.6	19.6		19.3	20.5	16.8		18.5	16.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	2.3		0.6	2.3		4.2	5.1	0.2		0.5	0.0
Delay (s)	25.6	27.7		17.2	22.0		23.6	25.6	17.0		19.0	16.7
Level of Service	C	C		B	C		C	C	B		B	B
Approach Delay (s)		27.3			21.4			23.9			18.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	355	8	387	4	1202	146	204	1095	0
Future Volume (vph)	0	0	0	355	8	387	4	1202	146	204	1095	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95		0.97	0.95	
Frt				1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)				1681	1689	1583	1770	3482		3433	3539	
Flt Permitted				0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)				1681	1689	1583	1770	3482		3433	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	394	9	430	4	1336	162	227	1217	0
RTOR Reduction (vph)	0	0	0	0	0	271	0	5	0	0	0	0
Lane Group Flow (vph)	0	0	0	201	202	159	4	1493	0	227	1217	0
Turn Type				Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases				8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)				23.8	23.8	23.8	2.0	80.3		13.9	92.2	
Effective Green, g (s)				23.8	23.8	23.8	2.0	80.3		13.9	92.2	
Actuated g/C Ratio				0.18	0.18	0.18	0.02	0.62		0.11	0.71	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)				307	309	289	27	2150		367	2509	
v/s Ratio Prot				0.12	c0.12		0.00	c0.43		c0.07	0.34	
v/s Ratio Perm						0.10						
v/c Ratio				0.65	0.65	0.55	0.15	0.69		0.62	0.49	
Uniform Delay, d1				49.3	49.3	48.2	63.2	16.6		55.5	8.4	
Progression Factor				1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2				5.0	4.9	2.1	2.5	1.9		7.6	0.7	
Delay (s)				54.2	54.2	50.4	65.7	18.5		63.1	9.1	
Level of Service				D	D	D	E	B		E	A	
Approach Delay (s)		0.0			52.2			18.6			17.6	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	233	104	86	311	4	571	4	85	17	1	7
Future Volume (vph)	5	233	104	86	311	4	571	4	85	17	1	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Frt	1.00	0.95		1.00	1.00		1.00	0.96			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.96			0.97	
Satd. Flow (prot)	1770	3376		1770	3533		1681	1640			1735	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	0.77			0.80	
Satd. Flow (perm)	1770	3376		1770	3533		1310	1307			1430	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	245	109	91	327	4	601	4	89	18	1	7
RTOR Reduction (vph)	0	49	0	0	1	0	0	11	0	0	4	0
Lane Group Flow (vph)	5	305	0	91	330	0	355	328	0	0	22	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.5	26.6		8.0	32.1		37.2	37.2			37.2	
Effective Green, g (s)	2.5	26.6		8.0	32.1		37.2	37.2			37.2	
Actuated g/C Ratio	0.03	0.32		0.10	0.38		0.44	0.44			0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	52	1071		168	1353		581	580			634	
v/s Ratio Prot	0.00	c0.09		c0.05	0.09							
v/s Ratio Perm							c0.27	0.25			0.02	
v/c Ratio	0.10	0.28		0.54	0.24		0.61	0.57			0.03	
Uniform Delay, d1	39.6	21.5		36.2	17.6		17.8	17.3			13.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.8	0.1		3.5	0.1		4.7	4.0			0.1	
Delay (s)	40.4	21.6		39.7	17.7		22.5	21.3			13.3	
Level of Service	D	C		D	B		C	C			B	
Approach Delay (s)		21.9			22.4			21.9			13.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	569	55	246	648	500	102	866	167	253	866	130
Future Volume (vph)	217	569	55	246	648	500	102	866	167	253	866	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3493		1610	3384	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3493		1610	3384	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	221	581	56	251	661	510	104	884	170	258	884	133
RTOR Reduction (vph)	0	5	0	0	0	256	0	0	80	0	0	65
Lane Group Flow (vph)	221	632	0	226	686	254	104	884	90	258	884	68
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	28.2	28.2		30.5	30.5	30.5	12.3	34.7	34.7	20.6	43.0	43.0
Effective Green, g (s)	28.2	28.2		30.5	30.5	30.5	12.3	34.7	34.7	20.6	43.0	43.0
Actuated g/C Ratio	0.22	0.22		0.23	0.23	0.23	0.09	0.27	0.27	0.16	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	744	757		377	793	371	167	944	422	280	1170	523
v/s Ratio Prot	0.06	c0.18		0.14	c0.20		0.06	c0.25		c0.15	0.25	
v/s Ratio Perm						0.16			0.06			0.04
v/c Ratio	0.30	0.83		0.60	0.87	0.69	0.62	0.94	0.21	0.92	0.76	0.13
Uniform Delay, d1	42.6	48.7		44.3	47.8	45.4	56.6	46.6	37.0	53.9	38.8	30.4
Progression Factor	1.00	1.00		1.38	1.36	2.30	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	10.5		1.9	7.5	3.9	7.0	16.0	0.3	33.7	4.6	0.5
Delay (s)	43.6	59.2		63.0	72.7	108.3	63.7	62.6	37.3	87.6	43.4	30.9
Level of Service	D	E		E	E	F	E	E	D	F	D	C
Approach Delay (s)		55.2			83.9			59.0			51.0	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	63.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	784	43	31	900	64	174	268	92	69	107	320
Future Volume (vph)	165	784	43	31	900	64	174	268	92	69	107	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3512		1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.64	1.00	1.00	0.35	1.00	1.00
Satd. Flow (perm)	1770	3512		1770	3539	1583	1190	1863	1583	655	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	172	817	45	32	938	67	181	279	96	72	111	333
RTOR Reduction (vph)	0	3	0	0	0	27	0	0	47	0	0	246
Lane Group Flow (vph)	172	859	0	32	938	40	181	279	49	72	111	87
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			2			6	
Permitted Phases						4	2		2	6		6
Actuated Green, G (s)	37.1	37.1		47.0	47.0	47.0	33.9	33.9	33.9	33.9	33.9	33.9
Effective Green, g (s)	37.1	37.1		47.0	47.0	47.0	33.9	33.9	33.9	33.9	33.9	33.9
Actuated g/C Ratio	0.29	0.29		0.36	0.36	0.36	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	505	1002		639	1279	572	310	485	412	170	485	412
v/s Ratio Prot	0.10	c0.24		0.02	c0.27			0.15			0.06	
v/s Ratio Perm						0.03	c0.15		0.03	0.11		0.05
v/c Ratio	0.34	0.86		0.05	0.73	0.07	0.58	0.58	0.12	0.42	0.23	0.21
Uniform Delay, d1	36.8	43.9		27.0	36.1	27.2	41.9	41.8	36.7	39.9	37.8	37.6
Progression Factor	0.95	0.94		0.35	0.66	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	4.9		0.1	3.0	0.2	7.8	4.9	0.6	7.6	1.1	1.2
Delay (s)	35.1	46.1		9.6	26.7	13.7	49.7	46.7	37.3	47.5	38.9	38.7
Level of Service	D	D		A	C	B	D	D	D	D	D	D
Approach Delay (s)		44.2			25.4			46.0			40.0	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	836	16	58	952	0	7	0	528	0	0	0
Future Volume (Veh/h)	0	836	16	58	952	0	7	0	528	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	871	17	60	992	0	7	0	550	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)		397			728							
pX, platoon unblocked	0.78			0.78			0.89	0.89	0.78	0.89	0.89	0.78
vC, conflicting volume	992			888			1496	1992	444	2098	2000	496
vC1, stage 1 conf vol							880	880		1112	1112	
vC2, stage 2 conf vol							616	1112		986	888	
vCu, unblocked vol	425			287			192	750	0	869	760	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			99	100	35	100	100	100
cM capacity (veh/h)	882			990			596	351	844	97	346	846

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	581	307	60	661	331	557	0
Volume Left	0	0	0	60	0	0	7	0
Volume Right	0	0	17	0	0	0	550	0
cSH	1700	1700	1700	990	1700	1700	840	1700
Volume to Capacity	0.00	0.34	0.18	0.06	0.39	0.19	0.66	0.00
Queue Length 95th (ft)	0	0	0	5	0	0	129	0
Control Delay (s)	0.0	0.0	0.0	8.9	0.0	0.0	17.3	0.0
Lane LOS				A			C	A
Approach Delay (s)	0.0			0.5			17.3	0.0
Approach LOS							C	A

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	194	209	435	85	63	260
Future Volume (vph)	194	209	435	85	63	260
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	204	220	458	89	66	274

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	204	220	547	340
Volume Left (vph)	204	0	0	66
Volume Right (vph)	0	220	89	0
Hadj (s)	0.53	-0.67	-0.06	0.07
Departure Headway (s)	7.5	6.3	5.7	6.2
Degree Utilization, x	0.43	0.38	0.87	0.58
Capacity (veh/h)	455	540	621	552
Control Delay (s)	14.7	11.9	34.9	17.5
Approach Delay (s)	13.3		34.9	17.5
Approach LOS	B		D	C

Intersection Summary			
Delay	23.4		
Level of Service	C		
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	46	1	7	13	16	37	36	475	23	17	54	22
Future Volume (vph)	46	1	7	13	16	37	36	475	23	17	54	22
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
Hourly flow rate (vph)	48	1	7	14	17	39	38	495	24	18	56	23

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	56	70	557	97
Volume Left (vph)	48	14	38	18
Volume Right (vph)	7	39	24	23
Hadj (s)	0.13	-0.26	0.02	-0.07
Departure Headway (s)	5.7	5.2	4.4	4.8
Degree Utilization, x	0.09	0.10	0.68	0.13
Capacity (veh/h)	560	602	797	703
Control Delay (s)	9.2	8.8	16.2	8.5
Approach Delay (s)	9.2	8.8	16.2	8.5
Approach LOS	A	A	C	A

Intersection Summary			
Delay	14.1		
Level of Service	B		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	297	685	350	23	44
Future Volume (Veh/h)	80	297	685	350	23	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	84	313	721	368	24	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		434	1270			
pX, platoon unblocked					0.96	
vC, conflicting volume	1089				1230	544
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1089				1162	544
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	87				85	90
cM capacity (veh/h)	636				157	483

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	188	209	481	608	70
Volume Left	84	0	0	0	24
Volume Right	0	0	0	368	46
cSH	636	1700	1700	1700	282
Volume to Capacity	0.13	0.12	0.28	0.36	0.25
Queue Length 95th (ft)	11	0	0	0	24
Control Delay (s)	6.0	0.0	0.0	0.0	21.9
Lane LOS	A				C
Approach Delay (s)	2.9		0.0		21.9
Approach LOS					C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1166	0	34	1142	554	26	21	26	290	6	33
Future Volume (vph)	180	1166	0	34	1142	554	26	21	26	290	6	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1812	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.69	1.00		0.70	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1286	1583		1295	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	1190	0	35	1165	565	27	21	27	296	6	34
RTOR Reduction (vph)	0	0	0	0	0	247	0	0	20	0	0	25
Lane Group Flow (vph)	184	1190	0	35	1165	318	0	48	7	0	302	9
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	17.4	55.9		27.3	65.8	65.8		34.8	34.8		34.8	34.8
Effective Green, g (s)	17.4	55.9		27.3	65.8	65.8		34.8	34.8		34.8	34.8
Actuated g/C Ratio	0.13	0.43		0.21	0.51	0.51		0.27	0.27		0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	236	1521		371	1791	801		344	423		346	423
v/s Ratio Prot	0.10	c0.34		0.02	c0.33							
v/s Ratio Perm						0.20		0.04	0.00		c0.23	0.01
v/c Ratio	0.78	0.78		0.09	0.65	0.40		0.14	0.02		0.87	0.02
Uniform Delay, d1	54.4	31.8		41.4	23.6	19.8		36.2	35.0		45.5	35.1
Progression Factor	1.41	0.69		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	13.8	2.5		0.5	1.8	1.5		0.2	0.0		20.8	0.0
Delay (s)	90.3	24.6		41.9	25.5	21.3		36.4	35.0		66.2	35.1
Level of Service	F	C		D	C	C		D	D		E	D
Approach Delay (s)		33.4			24.5			35.9			63.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1115	1258	708	493	484
Future Volume (vph)	0	1115	1258	708	493	484
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.91	0.95	1.00	0.94	0.86
Frt		1.00	1.00	0.85	0.95	0.85
Flt Protected		1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)		5085	3539	1583	4832	1362
Flt Permitted		1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)		5085	3539	1583	4832	1362
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1161	1310	738	514	504
RTOR Reduction (vph)	0	0	0	0	34	34
Lane Group Flow (vph)	0	1161	1310	738	732	218
Turn Type		NA	NA	Free	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)		64.7	64.7	130.0	57.3	57.3
Effective Green, g (s)		64.7	64.7	130.0	57.3	57.3
Actuated g/C Ratio		0.50	0.50	1.00	0.44	0.44
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		2530	1761	1583	2129	600
v/s Ratio Prot		0.23	c0.37		0.15	
v/s Ratio Perm				c0.47		0.16
v/c Ratio		0.46	0.74	0.47	0.34	0.36
Uniform Delay, d1		21.3	26.0	0.0	24.0	24.2
Progression Factor		1.00	0.59	1.00	1.00	1.00
Incremental Delay, d2		0.1	2.1	0.7	0.4	1.7
Delay (s)		21.4	17.4	0.7	24.4	25.9
Level of Service		C	B	A	C	C
Approach Delay (s)		21.4	11.4		24.8	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	870	580	0	1295	55	479	30	44	49	61	178
Future Volume (vph)	155	870	580	0	1295	55	479	30	44	49	61	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.95	1.00	0.91	0.81	0.86	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583		3539	1583	1610	2884	2723	1770	1863	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583		3539	1583	1610	2884	2723	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	161	906	604	0	1349	57	499	31	46	51	64	185
RTOR Reduction (vph)	0	0	227	0	0	28	0	1	33	0	0	146
Lane Group Flow (vph)	161	906	377	0	1349	29	249	285	8	51	64	39
Turn Type	Prot	NA	Perm		NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6			2		8	8		4	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	11.0	81.1	81.1		66.1	66.1	26.4	26.4	26.4	10.5	10.5	10.5
Effective Green, g (s)	11.0	81.1	81.1		66.1	66.1	26.4	26.4	26.4	10.5	10.5	10.5
Actuated g/C Ratio	0.08	0.62	0.62		0.51	0.51	0.20	0.20	0.20	0.08	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	149	3172	987		1799	804	326	585	552	142	150	127
v/s Ratio Prot	c0.09	0.18			c0.38		c0.15	0.10		0.03	c0.03	
v/s Ratio Perm			0.24			0.02			0.00			0.02
v/c Ratio	1.08	0.29	0.38		0.75	0.04	0.76	0.49	0.02	0.36	0.43	0.31
Uniform Delay, d1	59.5	11.2	12.1		25.4	16.0	48.9	45.8	41.4	56.6	56.9	56.3
Progression Factor	0.85	0.80	1.58		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	94.8	0.0	0.2		2.9	0.1	10.2	0.6	0.0	1.6	1.9	1.4
Delay (s)	145.5	9.0	19.3		28.3	16.1	59.0	46.5	41.4	58.1	58.8	57.7
Level of Service	F	A	B		C	B	E	D	D	E	E	E
Approach Delay (s)		25.9			27.8			51.5			58.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: Old County Road & O'Neill Avenue

08/02/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	6	0	25	0	241	7	18	216	0
Future Volume (Veh/h)	0	0	0	6	0	25	0	241	7	18	216	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	6	0	26	0	251	7	19	225	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								797			872	
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94					
vC, conflicting volume	544	521	225	518	518	254	225			258		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	484	460	146	456	456	254	146			258		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	99	100	97	100			99		
cM capacity (veh/h)	444	462	849	479	464	784	1352			1307		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	32	258	244
Volume Left	0	6	0	19
Volume Right	0	26	7	0
cSH	1700	700	1352	1307
Volume to Capacity	0.00	0.05	0.00	0.01
Queue Length 95th (ft)	0	4	0	1
Control Delay (s)	0.0	10.4	0.0	0.7
Lane LOS	A	B		A
Approach Delay (s)	0.0	10.4	0.0	0.7
Approach LOS	A	B		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	10	193	12	7	164
Future Volume (Veh/h)	8	10	193	12	7	164
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	8	10	201	13	7	171
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			447			1222
pX, platoon unblocked	1.00	1.00			1.00	
vC, conflicting volume	392	208			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	390	204			211	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	609	834			1356	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	214	178
Volume Left	8	0	7
Volume Right	10	13	0
cSH	717	1700	1356
Volume to Capacity	0.03	0.13	0.01
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.2	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	440	74	48	247	60	60	117	34	65	129	31
Future Volume (vph)	76	440	74	48	247	60	60	117	34	65	129	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	1770	3467		1770	3435		1770	1863	1583		1832	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.50	1.00	1.00		0.85	1.00
Satd. Flow (perm)	1770	3467		1770	3435		931	1863	1583		1589	1583
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	84	489	77	50	257	62	62	122	35	68	134	32
RTOR Reduction (vph)	0	13	0	0	42	0	0	0	28	0	0	25
Lane Group Flow (vph)	84	553	0	50	278	0	63	122	7	0	202	7
Turn Type	Split	NA		Split	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	32.4	32.4		11.1	11.1		14.5	14.5	14.5		14.5	14.5
Effective Green, g (s)	32.4	32.4		11.1	11.1		14.5	14.5	14.5		14.5	14.5
Actuated g/C Ratio	0.46	0.46		0.16	0.16		0.21	0.21	0.21		0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	819	1604		280	544		192	385	327		329	327
v/s Ratio Prot	0.05	c0.16		0.03	c0.08			0.07				
v/s Ratio Perm							0.07		0.00		c0.13	0.00
v/c Ratio	0.10	0.34		0.18	0.51		0.33	0.32	0.02		0.61	0.02
Uniform Delay, d1	10.6	12.0		25.5	27.0		23.6	23.5	22.1		25.2	22.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.6		0.3	0.8		1.0	0.5	0.0		3.4	0.0
Delay (s)	10.9	12.6		25.8	27.8		24.6	24.0	22.1		28.6	22.1
Level of Service	B	B		C	C		C	C	C		C	C
Approach Delay (s)		12.4			27.5			23.9			27.7	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	140	3	197	0	948	152	438	1052	0
Future Volume (vph)	0	0	0	140	3	197	0	948	152	438	1052	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95	1.00		0.95		0.97	0.95	
Frt				1.00	1.00	0.85		0.98		1.00	1.00	
Flt Protected				0.95	0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1681	1688	1583		3466		3433	3539	
Flt Permitted				0.95	0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1681	1688	1583		3466		3433	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	156	3	219	0	1053	169	487	1169	0
RTOR Reduction (vph)	0	0	0	0	0	199	0	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	80	79	20	0	1212	0	487	1169	0
Turn Type				Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases				8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)				11.9	11.9	11.9		55.3		50.8	110.1	
Effective Green, g (s)				11.9	11.9	11.9		55.3		50.8	110.1	
Actuated g/C Ratio				0.09	0.09	0.09		0.43		0.39	0.85	
Clearance Time (s)				4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)				3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				153	154	144		1474		1341	2997	
v/s Ratio Prot				c0.05	0.05			c0.35		0.14	c0.33	
v/s Ratio Perm						0.01						
v/c Ratio				0.52	0.51	0.14		0.82		0.36	0.39	
Uniform Delay, d1				56.3	56.3	54.3		33.0		28.1	2.3	
Progression Factor				1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2				3.2	2.9	0.4		3.8		0.8	0.4	
Delay (s)				59.5	59.2	54.8		36.8		28.9	2.7	
Level of Service				E	E	D		D		C	A	
Approach Delay (s)		0.0			56.7			36.8			10.4	
Approach LOS		A			E			D			B	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	434	150	187	221	15	186	9	25	0	1	2
Future Volume (vph)	1	434	150	187	221	15	186	9	25	0	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.97			0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97			1.00	
Satd. Flow (prot)	1770	3403		1770	3506		1681	1652			1695	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.83			1.00	
Satd. Flow (perm)	1770	3403		1770	3506		1338	1411			1695	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	1	477	165	205	243	16	204	10	27	0	1	2
RTOR Reduction (vph)	0	39	0	0	6	0	0	11	0	0	1	0
Lane Group Flow (vph)	1	603	0	205	253	0	122	108	0	0	2	0
Turn Type	Prot	NA		Prot	NA		Perm	NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.2	23.3		13.9	32.0		33.4	33.4			33.4	
Effective Green, g (s)	5.2	23.3		13.9	32.0		33.4	33.4			33.4	
Actuated g/C Ratio	0.06	0.28		0.17	0.39		0.40	0.40			0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	111	959		297	1358		541	570			685	
v/s Ratio Prot	0.00	c0.18		c0.12	0.07						0.00	
v/s Ratio Perm							c0.09	0.08				
v/c Ratio	0.01	0.63		0.69	0.19		0.23	0.19			0.00	
Uniform Delay, d1	36.3	25.9		32.3	16.7		16.1	15.9			14.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.3		6.7	0.1		1.0	0.7			0.0	
Delay (s)	36.3	27.2		39.1	16.8		17.1	16.6			14.7	
Level of Service	D	C		D	B		B	B			B	
Approach Delay (s)		27.2			26.6			16.8			14.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	630	23	216	558	227	120	737	246	278	1066	90
Future Volume (vph)	91	630	23	216	558	227	120	737	246	278	1066	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3521		1610	3384	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3521		1610	3384	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	92	636	23	218	564	229	121	744	248	281	1077	91
RTOR Reduction (vph)	0	2	0	0	0	176	0	0	137	0	0	51
Lane Group Flow (vph)	92	657	0	196	586	53	121	744	111	281	1077	40
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	30.0	30.0		30.0	30.0	30.0	11.0	37.0	37.0	17.0	43.0	43.0
Effective Green, g (s)	30.0	30.0		30.0	30.0	30.0	11.0	37.0	37.0	17.0	43.0	43.0
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.23	0.08	0.28	0.28	0.13	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	792	812		371	780	365	149	1007	450	231	1170	523
v/s Ratio Prot	0.03	c0.19		0.12	c0.17		0.07	0.21		c0.16	c0.30	
v/s Ratio Perm						0.03			0.07			0.03
v/c Ratio	0.12	0.81		0.53	0.75	0.14	0.81	0.74	0.25	1.22	0.92	0.08
Uniform Delay, d1	39.5	47.3		43.8	46.5	39.8	58.5	42.1	35.8	56.5	41.9	29.9
Progression Factor	1.00	1.00		0.32	0.32	0.18	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	8.5		4.1	5.2	0.6	36.5	4.9	1.3	130.2	13.1	0.3
Delay (s)	39.8	55.8		18.3	20.1	8.0	95.0	47.0	37.1	186.7	54.9	30.2
Level of Service	D	E		B	C	A	F	D	D	F	D	C
Approach Delay (s)		53.9			17.0			50.0			78.9	
Approach LOS		D			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	995	35	40	691	55	75	116	109	181	176	218
Future Volume (vph)	135	995	35	40	691	55	75	116	109	181	176	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3521		1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.52	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	1770	3521		1770	3539	1583	973	1863	1583	1166	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	139	1026	36	41	712	57	77	120	112	187	181	225
RTOR Reduction (vph)	0	2	0	0	0	32	0	0	82	0	0	138
Lane Group Flow (vph)	139	1060	0	41	712	25	77	120	30	187	181	87
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			2			6	
Permitted Phases						4	2		2	6		6
Actuated Green, G (s)	50.9	50.9		32.0	32.0	32.0	35.1	35.1	35.1	35.1	35.1	35.1
Effective Green, g (s)	50.9	50.9		32.0	32.0	32.0	35.1	35.1	35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.39	0.39		0.25	0.25	0.25	0.27	0.27	0.27	0.27	0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	693	1378		435	871	389	262	503	427	314	503	427
v/s Ratio Prot	0.08	c0.30		0.02	c0.20			0.06			0.10	
v/s Ratio Perm						0.02	0.08		0.02	c0.16		0.05
v/c Ratio	0.20	0.77		0.09	0.82	0.07	0.29	0.24	0.07	0.60	0.36	0.20
Uniform Delay, d1	26.1	34.4		37.8	46.2	37.5	37.6	37.0	35.3	41.3	38.4	36.7
Progression Factor	0.58	0.58		0.84	0.91	1.26	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.4		0.1	5.2	0.1	2.8	1.1	0.3	8.1	2.0	1.1
Delay (s)	15.5	22.5		31.7	47.1	47.2	40.5	38.1	35.6	49.4	40.4	37.7
Level of Service	B	C		C	D	D	D	D	D	D	D	D
Approach Delay (s)		21.7			46.4			37.8			42.2	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1216	17	14	658	0	2	0	93	0	0	0
Future Volume (Veh/h)	0	1216	17	14	658	0	2	0	93	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	1267	18	15	685	0	2	0	97	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)		397			728							
pX, platoon unblocked	0.85			0.74			0.82	0.82	0.74	0.82	0.82	0.85
vC, conflicting volume	685			1285			1648	1991	642	1446	2000	342
vC1, stage 1 conf vol							1276	1276		715	715	
vC2, stage 2 conf vol							372	715		730	1285	
vCu, unblocked vol	269			681			503	923	0	254	934	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			99	100	88	100	100	100
cM capacity (veh/h)	1095			671			299	317	802	538	302	919

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	845	440	15	457	228	99	0
Volume Left	0	0	0	15	0	0	2	0
Volume Right	0	0	18	0	0	0	97	0
cSH	1700	1700	1700	671	1700	1700	776	1700
Volume to Capacity	0.00	0.50	0.26	0.02	0.27	0.13	0.13	0.00
Queue Length 95th (ft)	0	0	0	2	0	0	11	0
Control Delay (s)	0.0	0.0	0.0	10.5	0.0	0.0	10.3	0.0
Lane LOS				B			B	A
Approach Delay (s)	0.0			0.2			10.3	0.0
Approach LOS							B	A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	164	101	155	135	87	389
Future Volume (vph)	164	101	155	135	87	389
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	182	112	172	150	97	432

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	182	112	322	529
Volume Left (vph)	182	0	0	97
Volume Right (vph)	0	112	150	0
Hadj (s)	0.53	-0.67	-0.25	0.07
Departure Headway (s)	7.3	6.0	5.4	5.4
Degree Utilization, x	0.37	0.19	0.48	0.79
Capacity (veh/h)	455	550	629	655
Control Delay (s)	13.2	9.2	13.4	25.9
Approach Delay (s)	11.7		13.4	25.9
Approach LOS	B		B	D

Intersection Summary			
Delay	18.7		
Level of Service	C		
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	7	4	16	16	19	8	68	14	27	51	10
Future Volume (vph)	2	7	4	16	16	19	8	68	14	27	51	10
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
Hourly flow rate (vph)	2	7	4	17	17	20	8	71	15	28	53	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	13	54	94	91
Volume Left (vph)	2	17	8	28
Volume Right (vph)	4	20	15	10
Hadj (s)	-0.12	-0.13	-0.04	0.03
Departure Headway (s)	4.2	4.2	4.1	4.2
Degree Utilization, x	0.02	0.06	0.11	0.11
Capacity (veh/h)	806	820	853	843
Control Delay (s)	7.3	7.5	7.6	7.7
Approach Delay (s)	7.3	7.5	7.6	7.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.6		
Level of Service		A		
Intersection Capacity Utilization		23.2%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	648	248	63	40	32
Future Volume (Veh/h)	38	648	248	63	40	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	39	661	253	64	41	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		434	1270			
pX, platoon unblocked					0.93	
vC, conflicting volume	317				694	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	317				509	158
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				91	96
cM capacity (veh/h)	1240				443	859

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	259	441	169	148	74
Volume Left	39	0	0	0	41
Volume Right	0	0	0	64	33
cSH	1240	1700	1700	1700	565
Volume to Capacity	0.03	0.26	0.10	0.09	0.13
Queue Length 95th (ft)	2	0	0	0	11
Control Delay (s)	1.4	0.0	0.0	0.0	12.3
Lane LOS	A				B
Approach Delay (s)	0.5		0.0		12.3
Approach LOS					B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1253	0	14	837	206	24	22	50	379	8	68
Future Volume (vph)	75	1253	0	14	837	206	24	22	50	379	8	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1816	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.70	1.00		0.69	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1305	1583		1293	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	81	1347	0	15	900	222	26	24	54	408	9	73
RTOR Reduction (vph)	0	0	0	0	0	134	0	0	35	0	0	47
Lane Group Flow (vph)	81	1347	0	15	900	88	0	50	19	0	417	26
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	19.7	69.9		1.2	51.4	51.4		46.9	46.9		46.9	46.9
Effective Green, g (s)	19.7	69.9		1.2	51.4	51.4		46.9	46.9		46.9	46.9
Actuated g/C Ratio	0.15	0.54		0.01	0.40	0.40		0.36	0.36		0.36	0.36
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	268	1902		16	1399	625		470	571		466	571
v/s Ratio Prot	0.05	c0.38		0.01	c0.25							
v/s Ratio Perm						0.06		0.04	0.01		c0.32	0.02
v/c Ratio	0.30	0.71		0.94	0.64	0.14		0.11	0.03		0.89	0.05
Uniform Delay, d1	49.0	22.4		64.4	31.9	25.2		27.6	26.9		39.2	27.0
Progression Factor	1.44	0.62		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	1.8		191.7	2.3	0.5		0.1	0.0		19.3	0.0
Delay (s)	73.0	15.6		256.1	34.2	25.6		27.7	26.9		58.5	27.0
Level of Service	E	B		F	C	C		C	C		E	C
Approach Delay (s)		18.9			35.4			27.3			53.8	
Approach LOS		B			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1097	732	226	1442	243
Future Volume (vph)	0	1097	732	226	1442	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.91	0.95	1.00	0.94	0.86
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		5085	3539	1583	4994	1362
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		5085	3539	1583	4994	1362
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1131	755	233	1487	251
RTOR Reduction (vph)	0	0	0	0	3	33
Lane Group Flow (vph)	0	1131	755	233	1509	193
Turn Type		NA	NA	Free	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)		22.4	22.4	65.0	34.6	34.6
Effective Green, g (s)		22.4	22.4	65.0	34.6	34.6
Actuated g/C Ratio		0.34	0.34	1.00	0.53	0.53
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1752	1219	1583	2658	725
v/s Ratio Prot		c0.22	0.21		c0.30	
v/s Ratio Perm				0.15		0.14
v/c Ratio		0.65	0.62	0.15	0.57	0.27
Uniform Delay, d1		18.0	17.7	0.0	10.2	8.3
Progression Factor		1.00	1.22	1.00	1.00	1.00
Incremental Delay, d2		1.8	0.8	0.2	0.9	0.9
Delay (s)		19.8	22.5	0.2	11.1	9.2
Level of Service		B	C	A	B	A
Approach Delay (s)		19.8	17.2		10.8	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	2018	416	0	499	40	393	74	788	38	20	59
Future Volume (vph)	120	2018	416	0	499	40	393	74	788	38	20	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.95	1.00	0.91	0.81	0.86	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.92	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583		3539	1583	1610	2729	2723	1770	1863	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583		3539	1583	1610	2729	2723	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	125	2102	433	0	520	42	409	77	821	40	21	61
RTOR Reduction (vph)	0	0	139	0	0	30	0	133	229	0	0	58
Lane Group Flow (vph)	125	2102	294	0	520	12	262	362	321	40	21	3
Turn Type	Prot	NA	Perm		NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6			2		8	8		4	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	38.6	78.7	78.7		36.1	36.1	32.0	32.0	32.0	7.3	7.3	7.3
Effective Green, g (s)	38.6	78.7	78.7		36.1	36.1	32.0	32.0	32.0	7.3	7.3	7.3
Actuated g/C Ratio	0.30	0.61	0.61		0.28	0.28	0.25	0.25	0.25	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	525	3078	958		982	439	396	671	670	99	104	88
v/s Ratio Prot	0.07	c0.41			0.15		c0.16	0.13		c0.02	0.01	
v/s Ratio Perm			0.19			0.01			0.12			0.00
v/c Ratio	0.24	0.68	0.31		0.53	0.03	0.66	0.54	0.48	0.40	0.20	0.04
Uniform Delay, d1	34.6	17.3	12.4		39.8	34.2	44.1	42.6	41.9	59.2	58.6	58.0
Progression Factor	0.92	0.86	0.97		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.0	0.7		0.5	0.0	4.1	0.8	0.5	2.7	1.0	0.2
Delay (s)	32.0	15.9	12.7		40.3	34.2	48.2	43.4	42.4	61.9	59.5	58.2
Level of Service	C	B	B		D	C	D	D	D	E	E	E
Approach Delay (s)		16.1			39.8			44.0			59.7	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: Old County Road & O'Neill Avenue

08/02/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	14	0	37	0	508	48	1	212	11
Future Volume (Veh/h)	0	0	0	14	0	37	0	508	48	1	212	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	15	0	39	0	529	50	1	221	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								797			872	
pX, platoon unblocked	0.87	0.87	0.97	0.87	0.87	0.85	0.97			0.85		
vC, conflicting volume	822	808	226	782	788	554	232			579		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	634	618	184	589	595	388	190			417		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	96	100	93	100			100		
cM capacity (veh/h)	316	351	830	364	361	562	1339			971		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	54	579	233
Volume Left	0	15	0	1
Volume Right	0	39	50	11
cSH	1700	488	1339	971
Volume to Capacity	0.00	0.11	0.00	0.00
Queue Length 95th (ft)	0	9	0	0
Control Delay (s)	0.0	13.3	0.0	0.0
Lane LOS	A	B		A
Approach Delay (s)	0.0	13.3	0.0	0.0
Approach LOS	A	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	12	482	6	5	180
Future Volume (Veh/h)	13	12	482	6	5	180
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	14	13	502	6	5	188
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			447			1222
pX, platoon unblocked	0.83	0.83			0.83	
vC, conflicting volume	703	505			508	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	541	303			307	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	98			100	
cM capacity (veh/h)	415	612			1042	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	27	508	193
Volume Left	14	0	5
Volume Right	13	6	0
cSH	491	1700	1042
Volume to Capacity	0.05	0.30	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	12.8	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	12.8	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	232	55	82	539	103	162	346	76	43	110	61
Future Volume (vph)	54	232	55	82	539	103	162	346	76	43	110	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1770	3438		1770	3454		1770	1863	1583		1837	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00	1.00		0.71	1.00
Satd. Flow (perm)	1770	3438		1770	3454		1155	1863	1583		1327	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	60	258	61	91	599	114	180	384	84	48	122	68
RTOR Reduction (vph)	0	29	0	0	22	0	0	0	53	0	0	47
Lane Group Flow (vph)	60	290	0	91	691	0	180	384	31	0	170	21
Turn Type	Split	NA		Split	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			6			2	
Permitted Phases							6		6	2		2
Actuated Green, G (s)	13.0	13.0		23.0	23.0		22.0	22.0	22.0		22.0	22.0
Effective Green, g (s)	13.0	13.0		23.0	23.0		22.0	22.0	22.0		22.0	22.0
Actuated g/C Ratio	0.19	0.19		0.33	0.33		0.31	0.31	0.31		0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	328	638		581	1134		363	585	497		417	497
v/s Ratio Prot	0.03	c0.08		0.05	c0.20			c0.21				
v/s Ratio Perm							0.16		0.02		0.13	0.01
v/c Ratio	0.18	0.45		0.16	0.61		0.50	0.66	0.06		0.41	0.04
Uniform Delay, d1	24.0	25.3		16.6	19.7		19.5	20.7	16.8		18.9	16.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	2.3		0.6	2.4		4.8	5.7	0.2		0.7	0.0
Delay (s)	25.2	27.7		17.2	22.2		24.3	26.4	17.0		19.5	16.7
Level of Service	C	C		B	C		C	C	B		B	B
Approach Delay (s)		27.3			21.6			24.6			18.7	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	366	8	388	4	1271	141	199	1150	0
Future Volume (vph)	0	0	0	366	8	388	4	1271	141	199	1150	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95		0.97	0.95	
Frt				1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)				1681	1689	1583	1770	3486		3433	3539	
Flt Permitted				0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)				1681	1689	1583	1770	3486		3433	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	407	9	431	4	1412	157	221	1278	0
RTOR Reduction (vph)	0	0	0	0	0	267	0	5	0	0	0	0
Lane Group Flow (vph)	0	0	0	208	208	164	4	1564	0	221	1278	0
Turn Type				Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases				8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)				24.4	24.4	24.4	1.3	79.9		13.7	92.3	
Effective Green, g (s)				24.4	24.4	24.4	1.3	79.9		13.7	92.3	
Actuated g/C Ratio				0.19	0.19	0.19	0.01	0.61		0.11	0.71	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)				315	317	297	17	2142		361	2512	
v/s Ratio Prot				c0.12	0.12		0.00	c0.45		c0.06	0.36	
v/s Ratio Perm						0.10						
v/c Ratio				0.66	0.66	0.55	0.24	0.73		0.61	0.51	
Uniform Delay, d1				49.0	48.9	47.8	63.9	17.5		55.6	8.6	
Progression Factor				1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2				5.1	4.8	2.2	7.0	2.2		7.5	0.7	
Delay (s)				54.1	53.7	50.1	70.9	19.8		63.2	9.3	
Level of Service				D	D	D	E	B		E	A	
Approach Delay (s)		0.0			51.9			19.9			17.2	
Approach LOS		A			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	235	105	85	315	4	583	4	83	17	1	7
Future Volume (vph)	5	235	105	85	315	4	583	4	83	17	1	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Frt	1.00	0.95		1.00	1.00		1.00	0.96			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.96			0.97	
Satd. Flow (prot)	1770	3375		1770	3533		1681	1643			1735	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	0.77			0.79	
Satd. Flow (perm)	1770	3375		1770	3533		1310	1304			1425	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	247	111	89	332	4	614	4	87	18	1	7
RTOR Reduction (vph)	0	50	0	0	1	0	0	11	0	0	4	0
Lane Group Flow (vph)	5	308	0	89	335	0	356	338	0	0	22	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.4	26.4		8.0	32.0		37.2	37.2			37.2	
Effective Green, g (s)	2.4	26.4		8.0	32.0		37.2	37.2			37.2	
Actuated g/C Ratio	0.03	0.32		0.10	0.38		0.44	0.44			0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	50	1065		169	1352		582	580			634	
v/s Ratio Prot	0.00	c0.09		c0.05	0.09							
v/s Ratio Perm							c0.27	0.26			0.02	
v/c Ratio	0.10	0.29		0.53	0.25		0.61	0.58			0.03	
Uniform Delay, d1	39.5	21.5		36.0	17.6		17.7	17.4			13.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.9	0.2		2.9	0.1		4.7	4.3			0.1	
Delay (s)	40.4	21.7		38.9	17.7		22.4	21.6			13.2	
Level of Service	D	C		D	B		C	C			B	
Approach Delay (s)		21.9			22.1			22.0			13.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	570	56	249	653	526	104	927	174	260	912	137
Future Volume (vph)	226	570	56	249	653	526	104	927	174	260	912	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3492		1610	3384	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3492		1610	3384	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	231	582	57	254	666	537	106	946	178	265	931	140
RTOR Reduction (vph)	0	6	0	0	0	249	0	0	80	0	0	65
Lane Group Flow (vph)	231	633	0	229	691	288	106	946	98	265	931	75
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	27.5	27.5		30.7	30.7	30.7	12.8	35.0	35.0	20.8	43.0	43.0
Effective Green, g (s)	27.5	27.5		30.7	30.7	30.7	12.8	35.0	35.0	20.8	43.0	43.0
Actuated g/C Ratio	0.21	0.21		0.24	0.24	0.24	0.10	0.27	0.27	0.16	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	726	738		380	799	373	174	952	426	283	1170	523
v/s Ratio Prot	0.07	c0.18		0.14	c0.20		0.06	c0.27		c0.15	c0.26	
v/s Ratio Perm						0.18			0.06			0.05
v/c Ratio	0.32	0.86		0.60	0.86	0.77	0.61	0.99	0.23	0.94	0.80	0.14
Uniform Delay, d1	43.3	49.4		44.2	47.7	46.4	56.2	47.4	37.0	53.9	39.5	30.6
Progression Factor	1.00	1.00		1.38	1.37	2.14	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	12.4		1.9	7.2	7.0	5.9	27.5	0.3	36.5	5.6	0.6
Delay (s)	44.5	61.8		63.1	72.5	106.1	62.1	74.9	37.3	90.5	45.2	31.1
Level of Service	D	E		E	E	F	E	E	D	F	D	C
Approach Delay (s)		57.2			83.4			68.3			52.7	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	66.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	814	28	24	927	64	179	282	92	69	124	322
Future Volume (vph)	166	814	28	24	927	64	179	282	92	69	124	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3522		1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.61	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	1770	3522		1770	3539	1583	1128	1863	1583	606	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	173	848	29	25	966	67	186	294	96	72	129	335
RTOR Reduction (vph)	0	2	0	0	0	27	0	0	44	0	0	248
Lane Group Flow (vph)	173	875	0	25	966	40	186	294	52	72	129	87
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			2			6	
Permitted Phases						4	2		2	6		6
Actuated Green, G (s)	37.3	37.3		47.0	47.0	47.0	33.7	33.7	33.7	33.7	33.7	33.7
Effective Green, g (s)	37.3	37.3		47.0	47.0	47.0	33.7	33.7	33.7	33.7	33.7	33.7
Actuated g/C Ratio	0.29	0.29		0.36	0.36	0.36	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	507	1010		639	1279	572	292	482	410	157	482	410
v/s Ratio Prot	0.10	c0.25		0.01	c0.27			0.16			0.07	
v/s Ratio Perm						0.03	c0.16		0.03	0.12		0.05
v/c Ratio	0.34	0.87		0.04	0.76	0.07	0.64	0.61	0.13	0.46	0.27	0.21
Uniform Delay, d1	36.6	44.0		26.9	36.4	27.2	42.7	42.4	36.9	40.5	38.3	37.7
Progression Factor	0.95	0.94		0.35	0.66	0.50	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	5.1		0.1	3.4	0.2	10.2	5.7	0.6	9.4	1.4	1.2
Delay (s)	34.9	46.4		9.4	27.5	13.7	52.9	48.0	37.5	49.8	39.7	38.9
Level of Service	C	D		A	C	B	D	D	D	D	D	D
Approach Delay (s)		44.5			26.2			47.8			40.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	866	16	44	972	0	7	0	542	0	0	0
Future Volume (Veh/h)	0	866	16	44	972	0	7	0	542	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	902	17	46	1013	0	7	0	565	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)		397			728							
pX, platoon unblocked	0.78			0.77			0.88	0.88	0.77	0.88	0.88	0.78
vC, conflicting volume	1013			919			1509	2016	460	2121	2024	506
vC1, stage 1 conf vol							910	910		1105	1105	
vC2, stage 2 conf vol							598	1105		1016	919	
vCu, unblocked vol	437			306			173	745	0	864	755	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			99	100	33	100	100	100
cM capacity (veh/h)	868			967			674	359	838	95	354	841

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	601	318	46	675	338	572	0
Volume Left	0	0	0	46	0	0	7	0
Volume Right	0	0	17	0	0	0	565	0
cSH	1700	1700	1700	967	1700	1700	835	1700
Volume to Capacity	0.00	0.35	0.19	0.05	0.40	0.20	0.68	0.00
Queue Length 95th (ft)	0	0	0	4	0	0	139	0
Control Delay (s)	0.0	0.0	0.0	8.9	0.0	0.0	18.1	0.0
Lane LOS				A			C	A
Approach Delay (s)	0.0			0.4			18.1	0.0
Approach LOS							C	A

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	194	209	448	85	63	276
Future Volume (vph)	194	209	448	85	63	276
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	204	220	472	89	66	291

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	204	220	561	357
Volume Left (vph)	204	0	0	66
Volume Right (vph)	0	220	89	0
Hadj (s)	0.53	-0.67	-0.06	0.07
Departure Headway (s)	7.6	6.4	5.8	6.2
Degree Utilization, x	0.43	0.39	0.90	0.62
Capacity (veh/h)	458	544	608	551
Control Delay (s)	15.0	12.2	39.4	18.7
Approach Delay (s)	13.5		39.4	18.7
Approach LOS	B		E	C

Intersection Summary			
Delay	25.7		
Level of Service	D		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	49	1	9	13	16	47	30	477	23	18	54	7
Future Volume (vph)	49	1	9	13	16	47	30	477	23	18	54	7
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
Hourly flow rate (vph)	51	1	9	14	17	49	31	497	24	19	56	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	61	80	552	82
Volume Left (vph)	51	14	31	19
Volume Right (vph)	9	49	24	7
Hadj (s)	0.11	-0.30	0.02	0.03
Departure Headway (s)	5.6	5.2	4.4	4.9
Degree Utilization, x	0.10	0.12	0.68	0.11
Capacity (veh/h)	565	612	792	681
Control Delay (s)	9.2	8.9	16.2	8.6
Approach Delay (s)	9.2	8.9	16.2	8.6
Approach LOS	A	A	C	A

Intersection Summary			
Delay	14.1		
Level of Service	B		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	297	695	356	26	44
Future Volume (Veh/h)	80	297	695	356	26	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	84	313	732	375	27	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		434	1270			
pX, platoon unblocked					0.96	
vC, conflicting volume	1107				1244	554
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1107				1177	554
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	87				82	90
cM capacity (veh/h)	626				153	476

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	188	209	488	619	73
Volume Left	84	0	0	0	27
Volume Right	0	0	0	375	46
cSH	626	1700	1700	1700	268
Volume to Capacity	0.13	0.12	0.29	0.36	0.27
Queue Length 95th (ft)	12	0	0	0	27
Control Delay (s)	6.1	0.0	0.0	0.0	23.4
Lane LOS	A				C
Approach Delay (s)	2.9		0.0		23.4
Approach LOS					C

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1211	0	34	1148	554	26	21	26	290	6	33
Future Volume (vph)	180	1211	0	34	1148	554	26	21	26	290	6	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1812	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.69	1.00		0.70	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1286	1583		1295	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	1236	0	35	1171	565	27	21	27	296	6	34
RTOR Reduction (vph)	0	0	0	0	0	246	0	0	20	0	0	25
Lane Group Flow (vph)	184	1236	0	35	1171	319	0	48	7	0	302	9
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	17.4	57.7		25.5	65.8	65.8		34.8	34.8		34.8	34.8
Effective Green, g (s)	17.4	57.7		25.5	65.8	65.8		34.8	34.8		34.8	34.8
Actuated g/C Ratio	0.13	0.44		0.20	0.51	0.51		0.27	0.27		0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	236	1570		347	1791	801		344	423		346	423
v/s Ratio Prot	0.10	c0.35		0.02	c0.33							
v/s Ratio Perm						0.20		0.04	0.00		c0.23	0.01
v/c Ratio	0.78	0.79		0.10	0.65	0.40		0.14	0.02		0.87	0.02
Uniform Delay, d1	54.4	30.9		42.8	23.7	19.9		36.2	35.0		45.5	35.1
Progression Factor	1.41	0.66		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	13.7	2.4		0.6	1.9	1.5		0.2	0.0		20.8	0.0
Delay (s)	90.4	23.0		43.4	25.6	21.3		36.4	35.0		66.2	35.1
Level of Service	F	C		D	C	C		D	D		E	D
Approach Delay (s)		31.7			24.6			35.9			63.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1152	1261	708	502	487
Future Volume (vph)	0	1152	1261	708	502	487
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.91	0.95	1.00	0.94	0.86
Frt		1.00	1.00	0.85	0.95	0.85
Flt Protected		1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)		5085	3539	1583	4833	1362
Flt Permitted		1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)		5085	3539	1583	4833	1362
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1200	1314	738	523	507
RTOR Reduction (vph)	0	0	0	0	34	34
Lane Group Flow (vph)	0	1200	1314	738	743	219
Turn Type		NA	NA	Free	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)		64.8	64.8	130.0	57.2	57.2
Effective Green, g (s)		64.8	64.8	130.0	57.2	57.2
Actuated g/C Ratio		0.50	0.50	1.00	0.44	0.44
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		2534	1764	1583	2126	599
v/s Ratio Prot		0.24	c0.37		0.15	
v/s Ratio Perm				c0.47		0.16
v/c Ratio		0.47	0.74	0.47	0.35	0.37
Uniform Delay, d1		21.4	26.0	0.0	24.1	24.3
Progression Factor		1.00	0.58	1.00	1.00	1.00
Incremental Delay, d2		0.1	2.1	0.7	0.5	1.7
Delay (s)		21.5	17.2	0.7	24.5	26.0
Level of Service		C	B	A	C	C
Approach Delay (s)		21.5	11.3		24.9	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	901	595	0	1302	55	479	30	50	49	61	178
Future Volume (vph)	155	901	595	0	1302	55	479	30	50	49	61	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.95	1.00	0.91	0.81	0.86	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583		3539	1583	1610	2884	2723	1770	1863	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583		3539	1583	1610	2884	2723	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	161	939	620	0	1356	57	499	31	52	51	64	185
RTOR Reduction (vph)	0	0	234	0	0	28	0	1	37	0	0	146
Lane Group Flow (vph)	161	939	386	0	1356	29	249	285	10	51	64	39
Turn Type	Prot	NA	Perm		NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6			2		8	8		4	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	11.0	80.9	80.9		65.9	65.9	26.6	26.6	26.6	10.5	10.5	10.5
Effective Green, g (s)	11.0	80.9	80.9		65.9	65.9	26.6	26.6	26.6	10.5	10.5	10.5
Actuated g/C Ratio	0.08	0.62	0.62		0.51	0.51	0.20	0.20	0.20	0.08	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	149	3164	985		1794	802	329	590	557	142	150	127
v/s Ratio Prot	c0.09	0.18			c0.38		c0.15	0.10		0.03	c0.03	
v/s Ratio Perm			0.24			0.02			0.00			0.02
v/c Ratio	1.08	0.30	0.39		0.76	0.04	0.76	0.48	0.02	0.36	0.43	0.31
Uniform Delay, d1	59.5	11.4	12.3		25.6	16.1	48.7	45.6	41.3	56.6	56.9	56.3
Progression Factor	0.84	0.79	1.58		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	94.7	0.0	0.2		3.0	0.1	9.6	0.6	0.0	1.6	1.9	1.4
Delay (s)	145.0	9.1	19.6		28.6	16.2	58.2	46.3	41.3	58.1	58.8	57.7
Level of Service	F	A	B		C	B	E	D	D	E	E	E
Approach Delay (s)		25.6			28.1			51.0			58.0	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: Old County Road & O'Neill Avenue

08/02/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	17	0	45	0	241	2	8	216	0
Future Volume (Veh/h)	0	0	0	17	0	45	0	241	2	8	216	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	18	0	47	0	251	2	8	225	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								797			872	
pX, platoon unblocked	0.94	0.94	0.94	0.94	0.94		0.94					
vC, conflicting volume	540	494	225	493	493	252	225			253		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	481	432	147	431	431	252	147			253		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	96	100	94	100			99		
cM capacity (veh/h)	437	483	848	501	484	787	1352			1312		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	65	253	233
Volume Left	0	18	0	8
Volume Right	0	47	2	0
cSH	1700	680	1352	1312
Volume to Capacity	0.00	0.10	0.00	0.01
Queue Length 95th (ft)	0	8	0	0
Control Delay (s)	0.0	10.9	0.0	0.3
Lane LOS	A	B		A
Approach Delay (s)	0.0	10.9	0.0	0.3
Approach LOS	A	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	8	10	188	12	7	175
Future Volume (Veh/h)	8	10	188	12	7	175
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	8	10	196	13	7	182
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			447			1222
pX, platoon unblocked	1.00	1.00			1.00	
vC, conflicting volume	398	202			209	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	397	200			207	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	604	839			1362	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	209	189
Volume Left	8	0	7
Volume Right	10	13	0
cSH	716	1700	1362
Volume to Capacity	0.03	0.12	0.01
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.2	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	440	74	48	247	60	60	117	34	65	129	42
Future Volume (vph)	71	440	74	48	247	60	60	117	34	65	129	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	0.97		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.98	1.00
Satd. Flow (prot)	1770	3467		1770	3435		1770	1863	1583		1832	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.50	1.00	1.00		0.85	1.00
Satd. Flow (perm)	1770	3467		1770	3435		931	1863	1583		1589	1583
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	79	489	77	50	257	62	62	122	35	68	134	44
RTOR Reduction (vph)	0	13	0	0	42	0	0	0	28	0	0	35
Lane Group Flow (vph)	79	553	0	50	278	0	63	122	7	0	202	9
Turn Type	Split	NA		Split	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4		8	8			2			6	
Permitted Phases							2		2	6		6
Actuated Green, G (s)	32.4	32.4		11.1	11.1		14.5	14.5	14.5		14.5	14.5
Effective Green, g (s)	32.4	32.4		11.1	11.1		14.5	14.5	14.5		14.5	14.5
Actuated g/C Ratio	0.46	0.46		0.16	0.16		0.21	0.21	0.21		0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	819	1604		280	544		192	385	327		329	327
v/s Ratio Prot	0.04	c0.16		0.03	c0.08			0.07				
v/s Ratio Perm							0.07		0.00		c0.13	0.01
v/c Ratio	0.10	0.34		0.18	0.51		0.33	0.32	0.02		0.61	0.03
Uniform Delay, d1	10.6	12.0		25.5	27.0		23.6	23.5	22.1		25.2	22.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.6		0.3	0.8		1.0	0.5	0.0		3.4	0.0
Delay (s)	10.8	12.6		25.8	27.8		24.6	24.0	22.1		28.6	22.2
Level of Service	B	B		C	C		C	C	C		C	C
Approach Delay (s)		12.4			27.5			23.9			27.4	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	146	3	202	0	947	149	436	1054	0
Future Volume (vph)	0	0	0	146	3	202	0	947	149	436	1054	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0		4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95	1.00		0.95		0.97	0.95	
Frt				1.00	1.00	0.85		0.98		1.00	1.00	
Flt Protected				0.95	0.95	1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1681	1688	1583		3467		3433	3539	
Flt Permitted				0.95	0.95	1.00		1.00		0.95	1.00	
Satd. Flow (perm)				1681	1688	1583		3467		3433	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	162	3	224	0	1052	166	484	1171	0
RTOR Reduction (vph)	0	0	0	0	0	203	0	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	83	82	21	0	1208	0	484	1171	0
Turn Type				Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases				8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)				12.2	12.2	12.2		55.2		50.6	109.8	
Effective Green, g (s)				12.2	12.2	12.2		55.2		50.6	109.8	
Actuated g/C Ratio				0.09	0.09	0.09		0.42		0.39	0.84	
Clearance Time (s)				4.0	4.0	4.0		4.0		4.0	4.0	
Vehicle Extension (s)				3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				157	158	148		1472		1336	2989	
v/s Ratio Prot				c0.05	0.05			c0.35		0.14	c0.33	
v/s Ratio Perm						0.01						
v/c Ratio				0.53	0.52	0.14		0.82		0.36	0.39	
Uniform Delay, d1				56.2	56.1	54.1		33.0		28.2	2.3	
Progression Factor				1.00	1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2				3.2	2.9	0.4		3.8		0.8	0.4	
Delay (s)				59.4	59.0	54.5		36.8		29.0	2.7	
Level of Service				E	E	D		D		C	A	
Approach Delay (s)		0.0			56.5			36.8			10.4	
Approach LOS		A			E			D			B	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	442	150	187	219	15	186	9	25	0	1	2
Future Volume (vph)	1	442	150	187	219	15	186	9	25	0	1	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.97			0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.97			1.00	
Satd. Flow (prot)	1770	3405		1770	3506		1681	1652			1695	
Flt Permitted	0.95	1.00		0.95	1.00		0.76	0.83			1.00	
Satd. Flow (perm)	1770	3405		1770	3506		1338	1411			1695	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	1	486	165	205	241	16	204	10	27	0	1	2
RTOR Reduction (vph)	0	38	0	0	6	0	0	11	0	0	1	0
Lane Group Flow (vph)	1	613	0	205	251	0	122	108	0	0	2	0
Turn Type	Prot	NA		Prot	NA		Perm	NA			NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.3	23.6		13.9	32.2		33.4	33.4			33.4	
Effective Green, g (s)	5.3	23.6		13.9	32.2		33.4	33.4			33.4	
Actuated g/C Ratio	0.06	0.28		0.17	0.39		0.40	0.40			0.40	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	113	969		296	1361		539	568			682	
v/s Ratio Prot	0.00	c0.18		c0.12	0.07						0.00	
v/s Ratio Perm							c0.09	0.08				
v/c Ratio	0.01	0.63		0.69	0.18		0.23	0.19			0.00	
Uniform Delay, d1	36.3	25.9		32.5	16.7		16.3	16.0			14.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.0	1.4		6.8	0.1		1.0	0.7			0.0	
Delay (s)	36.4	27.2		39.3	16.8		17.2	16.7			14.8	
Level of Service	D	C		D	B		B	B			B	
Approach Delay (s)		27.2			26.8			17.0			14.8	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	82.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	626	22	218	566	233	123	739	245	276	1065	90
Future Volume (vph)	91	626	22	218	566	233	123	739	245	276	1065	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3521		1610	3384	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3521		1610	3384	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	92	632	22	220	572	235	124	746	247	279	1076	91
RTOR Reduction (vph)	0	2	0	0	0	181	0	0	136	0	0	51
Lane Group Flow (vph)	92	652	0	198	594	54	124	746	111	279	1076	40
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	30.0	30.0		30.0	30.0	30.0	11.0	37.0	37.0	17.0	43.0	43.0
Effective Green, g (s)	30.0	30.0		30.0	30.0	30.0	11.0	37.0	37.0	17.0	43.0	43.0
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.23	0.08	0.28	0.28	0.13	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	792	812		371	780	365	149	1007	450	231	1170	523
v/s Ratio Prot	0.03	c0.19		0.12	c0.18		0.07	0.21		c0.16	c0.30	
v/s Ratio Perm						0.03			0.07			0.03
v/c Ratio	0.12	0.80		0.53	0.76	0.15	0.83	0.74	0.25	1.21	0.92	0.08
Uniform Delay, d1	39.5	47.2		43.9	46.7	39.8	58.6	42.2	35.8	56.5	41.8	29.9
Progression Factor	1.00	1.00		0.33	0.33	0.21	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	8.3		4.2	5.4	0.7	39.4	4.9	1.3	126.9	13.0	0.3
Delay (s)	39.8	55.5		18.7	20.8	9.0	98.0	47.1	37.1	183.4	54.8	30.2
Level of Service	D	E		B	C	A	F	D	D	F	D	C
Approach Delay (s)		53.6			17.7			50.5			78.1	
Approach LOS		D			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	52.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	995	28	37	691	55	91	116	113	181	176	218
Future Volume (vph)	135	995	28	37	691	55	91	116	113	181	176	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3525		1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.52	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	1770	3525		1770	3539	1583	973	1863	1583	1166	1863	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	139	1026	29	38	712	57	94	120	116	187	181	225
RTOR Reduction (vph)	0	1	0	0	0	32	0	0	85	0	0	138
Lane Group Flow (vph)	139	1054	0	38	712	25	94	120	31	187	181	87
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			2			6	
Permitted Phases						4	2		2	6		6
Actuated Green, G (s)	50.9	50.9		32.0	32.0	32.0	35.1	35.1	35.1	35.1	35.1	35.1
Effective Green, g (s)	50.9	50.9		32.0	32.0	32.0	35.1	35.1	35.1	35.1	35.1	35.1
Actuated g/C Ratio	0.39	0.39		0.25	0.25	0.25	0.27	0.27	0.27	0.27	0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	693	1380		435	871	389	262	503	427	314	503	427
v/s Ratio Prot	0.08	c0.30		0.02	c0.20			0.06			0.10	
v/s Ratio Perm						0.02	0.10		0.02	c0.16		0.05
v/c Ratio	0.20	0.76		0.09	0.82	0.07	0.36	0.24	0.07	0.60	0.36	0.20
Uniform Delay, d1	26.1	34.3		37.8	46.2	37.5	38.4	37.0	35.3	41.3	38.4	36.7
Progression Factor	0.58	0.58		0.84	0.91	1.26	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	2.4		0.1	5.3	0.1	3.8	1.1	0.3	8.1	2.0	1.1
Delay (s)	15.4	22.3		31.8	47.2	47.4	42.1	38.1	35.7	49.4	40.4	37.7
Level of Service	B	C		C	D	D	D	D	D	D	D	D
Approach Delay (s)		21.5			46.5			38.4			42.2	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1220	17	7	655	0	2	0	108	0	0	0
Future Volume (Veh/h)	0	1220	17	7	655	0	2	0	108	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	1271	18	7	682	0	2	0	113	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)		397			728							
pX, platoon unblocked	0.85			0.74			0.82	0.82	0.74	0.82	0.82	0.85
vC, conflicting volume	682			1289			1635	1976	644	1444	1985	341
vC1, stage 1 conf vol							1280	1280		696	696	
vC2, stage 2 conf vol							355	696		748	1289	
vCu, unblocked vol	272			694			501	919	0	268	930	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	86	100	100	100
cM capacity (veh/h)	1095			666			296	316	804	545	307	921

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	847	442	7	455	227	115	0
Volume Left	0	0	0	7	0	0	2	0
Volume Right	0	0	18	0	0	0	113	0
cSH	1700	1700	1700	666	1700	1700	781	1700
Volume to Capacity	0.00	0.50	0.26	0.01	0.27	0.13	0.15	0.00
Queue Length 95th (ft)	0	0	0	1	0	0	13	0
Control Delay (s)	0.0	0.0	0.0	10.5	0.0	0.0	10.4	0.0
Lane LOS				B			B	A
Approach Delay (s)	0.0			0.1			10.4	0.0
Approach LOS							B	A

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	164	101	155	135	87	389
Future Volume (vph)	164	101	155	135	87	389
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	182	112	172	150	97	432

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	182	112	322	529
Volume Left (vph)	182	0	0	97
Volume Right (vph)	0	112	150	0
Hadj (s)	0.53	-0.67	-0.25	0.07
Departure Headway (s)	7.3	6.0	5.4	5.4
Degree Utilization, x	0.37	0.19	0.48	0.79
Capacity (veh/h)	455	550	629	655
Control Delay (s)	13.2	9.2	13.4	25.9
Approach Delay (s)	11.7		13.4	25.9
Approach LOS	B		B	D

Intersection Summary			
Delay	18.7		
Level of Service	C		
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	17	7	12	16	16	19	6	68	14	27	51	3
Future Volume (vph)	17	7	12	16	16	19	6	68	14	27	51	3
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
Hourly flow rate (vph)	18	7	13	17	17	20	6	71	15	28	53	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	38	54	92	84
Volume Left (vph)	18	17	6	28
Volume Right (vph)	13	20	15	3
Hadj (s)	-0.08	-0.13	-0.05	0.08
Departure Headway (s)	4.3	4.2	4.1	4.3
Degree Utilization, x	0.05	0.06	0.11	0.10
Capacity (veh/h)	803	817	839	818
Control Delay (s)	7.5	7.5	7.6	7.7
Approach Delay (s)	7.5	7.5	7.6	7.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.6		
Level of Service	A		
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	648	248	61	48	32
Future Volume (Veh/h)	38	648	248	61	48	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	39	661	253	62	49	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		434	1270			
pX, platoon unblocked					0.93	
vC, conflicting volume	315				692	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	315				508	158
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				89	96
cM capacity (veh/h)	1242				443	860

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	259	441	169	146	82
Volume Left	39	0	0	0	49
Volume Right	0	0	0	62	33
cSH	1242	1700	1700	1700	551
Volume to Capacity	0.03	0.26	0.10	0.09	0.15
Queue Length 95th (ft)	2	0	0	0	13
Control Delay (s)	1.4	0.0	0.0	0.0	12.7
Lane LOS	A				B
Approach Delay (s)	0.5		0.0		12.7
Approach LOS					B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1272	0	14	827	206	24	22	50	379	8	68
Future Volume (vph)	75	1272	0	14	827	206	24	22	50	379	8	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1816	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.70	1.00		0.69	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1305	1583		1293	1583
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	81	1368	0	15	889	222	26	24	54	408	9	73
RTOR Reduction (vph)	0	0	0	0	0	134	0	0	35	0	0	47
Lane Group Flow (vph)	81	1368	0	15	889	88	0	50	19	0	417	26
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	19.7	69.9		1.2	51.4	51.4		46.9	46.9		46.9	46.9
Effective Green, g (s)	19.7	69.9		1.2	51.4	51.4		46.9	46.9		46.9	46.9
Actuated g/C Ratio	0.15	0.54		0.01	0.40	0.40		0.36	0.36		0.36	0.36
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	268	1902		16	1399	625		470	571		466	571
v/s Ratio Prot	0.05	c0.39		0.01	c0.25							
v/s Ratio Perm						0.06		0.04	0.01		c0.32	0.02
v/c Ratio	0.30	0.72		0.94	0.64	0.14		0.11	0.03		0.89	0.05
Uniform Delay, d1	49.0	22.7		64.4	31.7	25.2		27.6	26.9		39.2	27.0
Progression Factor	1.44	0.61		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	2.3	1.9		191.7	2.2	0.5		0.1	0.0		19.3	0.0
Delay (s)	73.0	15.8		256.1	33.9	25.6		27.7	26.9		58.5	27.0
Level of Service	E	B		F	C	C		C	C		E	C
Approach Delay (s)		19.0			35.3			27.3			53.8	
Approach LOS		B			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1113	725	226	1442	240
Future Volume (vph)	0	1113	725	226	1442	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.91	0.95	1.00	0.94	0.86
Frt		1.00	1.00	0.85	1.00	0.85
Flt Protected		1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)		5085	3539	1583	4994	1362
Flt Permitted		1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)		5085	3539	1583	4994	1362
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1147	747	233	1487	247
RTOR Reduction (vph)	0	0	0	0	3	34
Lane Group Flow (vph)	0	1147	747	233	1509	188
Turn Type		NA	NA	Free	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)		22.4	22.4	65.0	34.6	34.6
Effective Green, g (s)		22.4	22.4	65.0	34.6	34.6
Actuated g/C Ratio		0.34	0.34	1.00	0.53	0.53
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1752	1219	1583	2658	725
v/s Ratio Prot		c0.23	0.21		c0.30	
v/s Ratio Perm				0.15		0.14
v/c Ratio		0.65	0.61	0.15	0.57	0.26
Uniform Delay, d1		18.0	17.7	0.0	10.2	8.2
Progression Factor		1.00	1.21	1.00	1.00	1.00
Incremental Delay, d2		1.9	0.8	0.2	0.9	0.9
Delay (s)		20.0	22.2	0.2	11.1	9.1
Level of Service		B	C	A	B	A
Approach Delay (s)		20.0	17.0		10.8	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	2023	427	0	497	40	388	74	788	38	20	59
Future Volume (vph)	120	2023	427	0	497	40	388	74	788	38	20	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.95	1.00	0.91	0.81	0.86	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.92	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583		3539	1583	1610	2729	2723	1770	1863	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.99	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583		3539	1583	1610	2729	2723	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	125	2107	445	0	518	42	404	77	821	40	21	61
RTOR Reduction (vph)	0	0	141	0	0	30	0	134	230	0	0	58
Lane Group Flow (vph)	125	2107	304	0	518	12	259	359	320	40	21	3
Turn Type	Prot	NA	Perm		NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6			2		8	8		4	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	38.7	79.0	79.0		36.3	36.3	31.7	31.7	31.7	7.3	7.3	7.3
Effective Green, g (s)	38.7	79.0	79.0		36.3	36.3	31.7	31.7	31.7	7.3	7.3	7.3
Actuated g/C Ratio	0.30	0.61	0.61		0.28	0.28	0.24	0.24	0.24	0.06	0.06	0.06
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	526	3090	961		988	442	392	665	663	99	104	88
v/s Ratio Prot	0.07	c0.41			0.15		c0.16	0.13		c0.02	0.01	
v/s Ratio Perm			0.19			0.01			0.12			0.00
v/c Ratio	0.24	0.68	0.32		0.52	0.03	0.66	0.54	0.48	0.40	0.20	0.04
Uniform Delay, d1	34.5	17.1	12.4		39.6	34.0	44.3	42.8	42.1	59.2	58.6	58.0
Progression Factor	0.92	0.86	0.96		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.0	0.7		0.5	0.0	4.1	0.9	0.6	2.7	1.0	0.2
Delay (s)	31.9	15.7	12.6		40.1	34.0	48.4	43.7	42.7	61.9	59.5	58.2
Level of Service	C	B	B		D	C	D	D	D	E	E	E
Approach Delay (s)		16.0			39.6			44.2			59.7	
Approach LOS		B			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: Old County Road & O'Neill Avenue

08/02/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	16	0	40	0	508	59	25	212	11
Future Volume (Veh/h)	0	0	0	16	0	40	0	508	59	25	212	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	0	0	17	0	42	0	529	61	26	221	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								797			872	
pX, platoon unblocked	0.87	0.87	0.97	0.87	0.87	0.85	0.97			0.85		
vC, conflicting volume	880	868	226	838	844	560	232			590		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	700	687	184	651	658	393	189			429		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	95	100	92	100			97		
cM capacity (veh/h)	278	312	831	324	324	557	1340			961		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	59	590	258
Volume Left	0	17	0	26
Volume Right	0	42	61	11
cSH	1700	461	1340	961
Volume to Capacity	0.00	0.13	0.00	0.03
Queue Length 95th (ft)	0	11	0	2
Control Delay (s)	0.0	13.9	0.0	1.1
Lane LOS	A	B		A
Approach Delay (s)	0.0	13.9	0.0	1.1
Approach LOS	A	B		

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	12	493	6	5	182
Future Volume (Veh/h)	13	12	493	6	5	182
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	14	13	514	6	5	190
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			447			1222
pX, platoon unblocked	0.83	0.83			0.83	
vC, conflicting volume	717	517			520	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	558	317			321	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	98			100	
cM capacity (veh/h)	406	601			1030	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	27	520	195
Volume Left	14	0	5
Volume Right	13	6	0
cSH	481	1700	1030
Volume to Capacity	0.06	0.31	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	12.9	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	12.9	0.0	0.3
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	232	55	82	539	103	162	346	76	43	110	63
Future Volume (vph)	65	232	55	82	539	103	162	346	76	43	110	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.97		1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1770	3438		1770	3454		1770	1863	1583		1837	1583
Flt Permitted	0.95	1.00		0.95	1.00		0.62	1.00	1.00		0.71	1.00
Satd. Flow (perm)	1770	3438		1770	3454		1155	1863	1583		1327	1583
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	72	258	61	91	599	114	180	384	84	48	122	70
RTOR Reduction (vph)	0	29	0	0	22	0	0	0	53	0	0	48
Lane Group Flow (vph)	72	290	0	91	691	0	180	384	31	0	170	22
Turn Type	Split	NA		Split	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			6			2	
Permitted Phases							6		6	2		2
Actuated Green, G (s)	13.0	13.0		23.0	23.0		22.0	22.0	22.0		22.0	22.0
Effective Green, g (s)	13.0	13.0		23.0	23.0		22.0	22.0	22.0		22.0	22.0
Actuated g/C Ratio	0.19	0.19		0.33	0.33		0.31	0.31	0.31		0.31	0.31
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	328	638		581	1134		363	585	497		417	497
v/s Ratio Prot	0.04	c0.08		0.05	c0.20			c0.21				
v/s Ratio Perm							0.16		0.02		0.13	0.01
v/c Ratio	0.22	0.45		0.16	0.61		0.50	0.66	0.06		0.41	0.04
Uniform Delay, d1	24.2	25.3		16.6	19.7		19.5	20.7	16.8		18.9	16.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	2.3		0.6	2.4		4.8	5.7	0.2		0.7	0.0
Delay (s)	25.7	27.7		17.2	22.2		24.3	26.4	17.0		19.5	16.7
Level of Service	C	C		B	C		C	C	B		B	B
Approach Delay (s)		27.3			21.6			24.6			18.7	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	367	8	389	4	1273	147	204	1150	0
Future Volume (vph)	0	0	0	367	8	389	4	1273	147	204	1150	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor				0.95	0.95	1.00	1.00	0.95		0.97	0.95	
Frt				1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected				0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)				1681	1689	1583	1770	3484		3433	3539	
Flt Permitted				0.95	0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)				1681	1689	1583	1770	3484		3433	3539	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	408	9	432	4	1414	163	227	1278	0
RTOR Reduction (vph)	0	0	0	0	0	267	0	5	0	0	0	0
Lane Group Flow (vph)	0	0	0	208	209	165	4	1572	0	227	1278	0
Turn Type				Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases				8	8		5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)				24.4	24.4	24.4	1.3	79.7		13.9	92.3	
Effective Green, g (s)				24.4	24.4	24.4	1.3	79.7		13.9	92.3	
Actuated g/C Ratio				0.19	0.19	0.19	0.01	0.61		0.11	0.71	
Clearance Time (s)				4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)				3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)				315	317	297	17	2135		367	2512	
v/s Ratio Prot				0.12	c0.12		0.00	c0.45		c0.07	0.36	
v/s Ratio Perm						0.10						
v/c Ratio				0.66	0.66	0.55	0.24	0.74		0.62	0.51	
Uniform Delay, d1				49.0	48.9	47.9	63.9	17.7		55.5	8.6	
Progression Factor				1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2				5.1	4.9	2.2	7.0	2.3		7.6	0.7	
Delay (s)				54.1	53.8	50.1	70.9	20.1		63.1	9.3	
Level of Service				D	D	D	E	C		E	A	
Approach Delay (s)		0.0			52.0			20.2			17.4	
Approach LOS		A			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	236	105	85	321	4	583	4	83	17	1	7
Future Volume (vph)	5	236	105	85	321	4	583	4	83	17	1	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		0.95	0.95			1.00	
Frt	1.00	0.95		1.00	1.00		1.00	0.96			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.96			0.97	
Satd. Flow (prot)	1770	3375		1770	3533		1681	1643			1735	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	0.77			0.79	
Satd. Flow (perm)	1770	3375		1770	3533		1310	1304			1425	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	248	111	89	338	4	614	4	87	18	1	7
RTOR Reduction (vph)	0	49	0	0	1	0	0	11	0	0	4	0
Lane Group Flow (vph)	5	310	0	89	341	0	356	338	0	0	22	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.4	26.4		8.0	32.0		37.2	37.2			37.2	
Effective Green, g (s)	2.4	26.4		8.0	32.0		37.2	37.2			37.2	
Actuated g/C Ratio	0.03	0.32		0.10	0.38		0.44	0.44			0.44	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	50	1065		169	1352		582	580			634	
v/s Ratio Prot	0.00	c0.09		c0.05	0.10							
v/s Ratio Perm							c0.27	0.26			0.02	
v/c Ratio	0.10	0.29		0.53	0.25		0.61	0.58			0.03	
Uniform Delay, d1	39.5	21.5		36.0	17.6		17.7	17.4			13.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.9	0.2		2.9	0.1		4.7	4.3			0.1	
Delay (s)	40.4	21.7		38.9	17.7		22.4	21.6			13.2	
Level of Service	D	C		D	B		C	C			B	
Approach Delay (s)		22.0			22.1			22.0			13.2	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	579	59	249	654	527	105	927	176	266	914	137
Future Volume (vph)	226	579	59	249	654	527	105	927	176	266	914	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.91	0.91	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3490		1610	3384	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3490		1610	3384	1583	1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	231	591	60	254	667	538	107	946	180	271	933	140
RTOR Reduction (vph)	0	6	0	0	0	249	0	0	80	0	0	65
Lane Group Flow (vph)	231	645	0	229	692	289	107	946	100	271	933	75
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases						4			6			2
Actuated Green, G (s)	27.3	27.3		30.7	30.7	30.7	13.0	35.0	35.0	21.0	43.0	43.0
Effective Green, g (s)	27.3	27.3		30.7	30.7	30.7	13.0	35.0	35.0	21.0	43.0	43.0
Actuated g/C Ratio	0.21	0.21		0.24	0.24	0.24	0.10	0.27	0.27	0.16	0.33	0.33
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	720	732		380	799	373	177	952	426	285	1170	523
v/s Ratio Prot	0.07	c0.18		0.14	c0.20		0.06	c0.27		c0.15	0.26	
v/s Ratio Perm						0.18			0.06			0.05
v/c Ratio	0.32	0.88		0.60	0.87	0.77	0.60	0.99	0.24	0.95	0.80	0.14
Uniform Delay, d1	43.5	49.8		44.2	47.7	46.4	56.0	47.4	37.1	54.0	39.5	30.6
Progression Factor	1.00	1.00		1.38	1.37	2.12	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.2	14.4		1.9	7.2	7.1	5.7	27.5	0.3	40.0	5.7	0.6
Delay (s)	44.7	64.2		63.1	72.6	105.7	61.8	74.9	37.3	94.0	45.2	31.1
Level of Service	D	E		E	E	F	E	E	D	F	D	C
Approach Delay (s)		59.1			83.3			68.2			53.6	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	67.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	814	45	31	927	64	181	282	93	69	124	322
Future Volume (vph)	166	814	45	31	927	64	181	282	93	69	124	322
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3511		1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.60	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	1770	3511		1770	3539	1583	1125	1863	1583	596	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	173	848	47	32	966	67	189	294	97	72	129	335
RTOR Reduction (vph)	0	3	0	0	0	27	0	0	45	0	0	249
Lane Group Flow (vph)	173	892	0	32	966	40	189	294	52	72	129	86
Turn Type	Split	NA		Split	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	8	8		4	4			2			6	
Permitted Phases						4	2		2	6		6
Actuated Green, G (s)	37.8	37.8		47.0	47.0	47.0	33.2	33.2	33.2	33.2	33.2	33.2
Effective Green, g (s)	37.8	37.8		47.0	47.0	47.0	33.2	33.2	33.2	33.2	33.2	33.2
Actuated g/C Ratio	0.29	0.29		0.36	0.36	0.36	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	514	1020		639	1279	572	287	475	404	152	475	404
v/s Ratio Prot	0.10	c0.25		0.02	c0.27			0.16			0.07	
v/s Ratio Perm						0.03	c0.17		0.03	0.12		0.05
v/c Ratio	0.34	0.87		0.05	0.76	0.07	0.66	0.62	0.13	0.47	0.27	0.21
Uniform Delay, d1	36.2	43.8		27.0	36.4	27.2	43.3	42.8	37.3	41.0	38.7	38.1
Progression Factor	0.94	0.93		0.34	0.65	0.48	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	5.2		0.1	3.3	0.2	11.3	5.9	0.7	10.2	1.4	1.2
Delay (s)	34.2	45.9		9.4	27.2	13.4	54.6	48.8	37.9	51.2	40.1	39.3
Level of Service	C	D		A	C	B	D	D	D	D	D	D
Approach Delay (s)		44.0			25.8			48.8			41.1	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	867	16	60	979	0	7	0	544	0	0	0
Future Volume (Veh/h)	0	867	16	60	979	0	7	0	544	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
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
Hourly flow rate (vph)	0	903	17	63	1020	0	7	0	567	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		TWLTL			None							
Median storage veh)		2										
Upstream signal (ft)		397			728							
pX, platoon unblocked	0.77			0.77			0.88	0.88	0.77	0.88	0.88	0.77
vC, conflicting volume	1020			920			1548	2058	460	2164	2066	510
vC1, stage 1 conf vol							912	912		1146	1146	
vC2, stage 2 conf vol							636	1146		1018	920	
vCu, unblocked vol	426			292			181	758	0	879	768	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.5	5.5		6.5	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			94			99	100	32	100	100	100
cM capacity (veh/h)	869			973			634	341	833	78	336	834

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	602	318	63	680	340	574	0
Volume Left	0	0	0	63	0	0	7	0
Volume Right	0	0	17	0	0	0	567	0
cSH	1700	1700	1700	973	1700	1700	830	1700
Volume to Capacity	0.00	0.35	0.19	0.06	0.40	0.20	0.69	0.00
Queue Length 95th (ft)	0	0	0	5	0	0	143	0
Control Delay (s)	0.0	0.0	0.0	9.0	0.0	0.0	18.5	0.0
Lane LOS				A			C	A
Approach Delay (s)	0.0			0.5			18.5	0.0
Approach LOS							C	A

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	194	209	448	85	63	276
Future Volume (vph)	194	209	448	85	63	276
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	204	220	472	89	66	291

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	204	220	561	357
Volume Left (vph)	204	0	0	66
Volume Right (vph)	0	220	89	0
Hadj (s)	0.53	-0.67	-0.06	0.07
Departure Headway (s)	7.6	6.4	5.8	6.2
Degree Utilization, x	0.43	0.39	0.90	0.62
Capacity (veh/h)	458	544	608	551
Control Delay (s)	15.0	12.2	39.4	18.7
Approach Delay (s)	13.5		39.4	18.7
Approach LOS	B		E	C

Intersection Summary			
Delay	25.7		
Level of Service	D		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	51	1	10	13	16	47	36	477	23	18	54	23
Future Volume (vph)	51	1	10	13	16	47	36	477	23	18	54	23
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
Hourly flow rate (vph)	53	1	10	14	17	49	38	497	24	19	56	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	64	80	559	99
Volume Left (vph)	53	14	38	19
Volume Right (vph)	10	49	24	24
Hadj (s)	0.11	-0.30	0.02	-0.07
Departure Headway (s)	5.7	5.2	4.5	4.9
Degree Utilization, x	0.10	0.12	0.69	0.13
Capacity (veh/h)	558	601	786	691
Control Delay (s)	9.3	8.9	16.8	8.6
Approach Delay (s)	9.3	8.9	16.8	8.6
Approach LOS	A	A	C	A

Intersection Summary			
Delay	14.4		
Level of Service	B		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	297	695	362	27	44
Future Volume (Veh/h)	80	297	695	362	27	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	84	313	732	381	28	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		434	1270			
pX, platoon unblocked					0.96	
vC, conflicting volume	1113				1247	556
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1113				1181	556
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	87				82	90
cM capacity (veh/h)	623				153	474

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	188	209	488	625	74
Volume Left	84	0	0	0	28
Volume Right	0	0	0	381	46
cSH	623	1700	1700	1700	264
Volume to Capacity	0.13	0.12	0.29	0.37	0.28
Queue Length 95th (ft)	12	0	0	0	28
Control Delay (s)	6.1	0.0	0.0	0.0	23.9
Lane LOS	A				C
Approach Delay (s)	2.9		0.0		23.9
Approach LOS					C

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1214	0	34	1171	554	26	21	26	290	6	33
Future Volume (vph)	180	1214	0	34	1171	554	26	21	26	290	6	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539		1770	3539	1583		1812	1583		1776	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.69	1.00		0.70	1.00
Satd. Flow (perm)	1770	3539		1770	3539	1583		1286	1583		1295	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	184	1239	0	35	1195	565	27	21	27	296	6	34
RTOR Reduction (vph)	0	0	0	0	0	241	0	0	20	0	0	25
Lane Group Flow (vph)	184	1239	0	35	1195	324	0	48	7	0	302	9
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2		2	6		6
Actuated Green, G (s)	17.4	57.8		25.4	65.8	65.8		34.8	34.8		34.8	34.8
Effective Green, g (s)	17.4	57.8		25.4	65.8	65.8		34.8	34.8		34.8	34.8
Actuated g/C Ratio	0.13	0.44		0.20	0.51	0.51		0.27	0.27		0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	236	1573		345	1791	801		344	423		346	423
v/s Ratio Prot	0.10	c0.35		0.02	c0.34							
v/s Ratio Perm						0.20		0.04	0.00		c0.23	0.01
v/c Ratio	0.78	0.79		0.10	0.67	0.41		0.14	0.02		0.87	0.02
Uniform Delay, d1	54.4	30.9		42.9	23.9	19.9		36.2	35.0		45.5	35.1
Progression Factor	1.40	0.67		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	13.6	2.4		0.6	2.0	1.5		0.2	0.0		20.8	0.0
Delay (s)	90.0	23.0		43.5	25.9	21.5		36.4	35.0		66.2	35.1
Level of Service	F	C		D	C	C		D	D		E	D
Approach Delay (s)		31.6			24.9			35.9			63.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	1155	1278	708	502	493
Future Volume (vph)	0	1155	1278	708	502	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.91	0.95	1.00	0.94	0.86
Frt		1.00	1.00	0.85	0.95	0.85
Flt Protected		1.00	1.00	1.00	0.97	1.00
Satd. Flow (prot)		5085	3539	1583	4831	1362
Flt Permitted		1.00	1.00	1.00	0.97	1.00
Satd. Flow (perm)		5085	3539	1583	4831	1362
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1203	1331	738	523	514
RTOR Reduction (vph)	0	0	0	0	33	33
Lane Group Flow (vph)	0	1203	1331	738	747	224
Turn Type		NA	NA	Free	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases				Free		6
Actuated Green, G (s)		65.5	65.5	130.0	56.5	56.5
Effective Green, g (s)		65.5	65.5	130.0	56.5	56.5
Actuated g/C Ratio		0.50	0.50	1.00	0.43	0.43
Clearance Time (s)		4.0	4.0		4.0	4.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		2562	1783	1583	2099	591
v/s Ratio Prot		0.24	c0.38		0.15	
v/s Ratio Perm				c0.47		0.16
v/c Ratio		0.47	0.75	0.47	0.36	0.38
Uniform Delay, d1		21.0	25.6	0.0	24.6	24.9
Progression Factor		1.00	0.58	1.00	1.00	1.00
Incremental Delay, d2		0.1	2.1	0.7	0.5	1.8
Delay (s)		21.1	17.0	0.7	25.1	26.7
Level of Service		C	B	A	C	C
Approach Delay (s)		21.1	11.2		25.5	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	902	597	0	1308	55	490	30	50	49	61	178
Future Volume (vph)	155	902	597	0	1308	55	490	30	50	49	61	178
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00		0.95	1.00	0.91	0.81	0.86	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	5085	1583		3539	1583	1610	2884	2723	1770	1863	1583
Flt Permitted	0.95	1.00	1.00		1.00	1.00	0.95	0.96	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	5085	1583		3539	1583	1610	2884	2723	1770	1863	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	161	940	622	0	1362	57	510	31	52	51	64	185
RTOR Reduction (vph)	0	0	237	0	0	28	0	1	37	0	0	145
Lane Group Flow (vph)	161	940	385	0	1363	29	255	290	10	51	64	40
Turn Type	Prot	NA	Perm		NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	1	6			2		8	8		4	4	
Permitted Phases			6			2			8			4
Actuated Green, G (s)	11.0	80.4	80.4		65.4	65.4	27.1	27.1	27.1	10.5	10.5	10.5
Effective Green, g (s)	11.0	80.4	80.4		65.4	65.4	27.1	27.1	27.1	10.5	10.5	10.5
Actuated g/C Ratio	0.08	0.62	0.62		0.50	0.50	0.21	0.21	0.21	0.08	0.08	0.08
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	149	3144	979		1780	796	335	601	567	142	150	127
v/s Ratio Prot	c0.09	0.18			c0.39		c0.16	0.10		0.03	c0.03	
v/s Ratio Perm			0.24			0.02			0.00			0.03
v/c Ratio	1.08	0.30	0.39		0.77	0.04	0.76	0.48	0.02	0.36	0.43	0.31
Uniform Delay, d1	59.5	11.6	12.5		26.1	16.3	48.4	45.3	40.9	56.6	56.9	56.3
Progression Factor	0.85	0.79	1.55		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	94.6	0.1	0.2		3.2	0.1	9.8	0.6	0.0	1.6	1.9	1.4
Delay (s)	145.1	9.2	19.7		29.3	16.4	58.2	45.9	40.9	58.1	58.8	57.8
Level of Service	F	A	B		C	B	E	D	D	E	E	E
Approach Delay (s)		25.7			28.8			50.8			58.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix C

Volume Summary Tables

Intersection Number: 1
Traffix Node Number: 1
Intersection Name: Old County Road and Oneill Avenue
Peak Hour: AM
Count Date: 3/23/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**209**	**9**	**24**	**0**	**5**	**3**	**238**	**0**	**0**	**0**	**0**	**488**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	1	0	0	0	0	0	0	0	0	0	0	1
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	2	0	0	0	0	0	1	0	0	0	0	3
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	1	0	0	0	0	0	1	0	0	0	0	2
777 Induustrial Road	0	3	0	0	0	0	0	1	0	0	0	0	4
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	9	1	0	1	4	0	0	0	0	0	15
Total Approved Trips	0	7	9	1	0	1	4	3	0	0	0	0	25
Background Conditions	**0**	**216**	**18**	**25**	**0**	**6**	**7**	**241**	**0**	**0**	**0**	**0**	**513**
Project Trips	0	0	-10	20	0	11	-5	0	0	0	0	0	16
Existing Plus Project Conditions	**0**	**209**	**-1**	**44**	**0**	**16**	**-2**	**238**	**0**	**0**	**0**	**0**	**504**
							0						
Background Plus Project Conditions	**0**	**216**	**8**	**45**	**0**	**17**	**2**	**241**	**0**	**0**	**0**	**0**	**529**

Intersection Number: 2
Traffix Node Number: 2
Intersection Name: Old County Road and Karen Road
Peak Hour: AM
Count Date: 1/17/2018

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**156**	**7**	**10**	**0**	**8**	**12**	**186**	**0**	**0**	**0**	**0**	**379**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	1	0	0	0	0	0	0	0	0	0	0	1
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	2	0	0	0	0	0	1	0	0	0	0	3
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	1	0	0	0	0	0	1	0	0	0	0	2
777 Induustrial Road	0	3	0	0	0	0	0	1	0	0	0	0	4
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	1	0	0	0	0	0	4	0	0	0	0	5
Total Approved Trips	0	8	0	0	0	0	0	7	0	0	0	0	15
Background Conditions	**0**	**164**	**7**	**10**	**0**	**8**	**12**	**193**	**0**	**0**	**0**	**0**	**394**
Project Trips	0	11	0	0	0	0	0	-5	0	0	0	0	6
Existing Plus Project Conditions	**0**	**167**	**7**	**10**	**0**	**8**	**12**	**181**	**0**	**0**	**0**	**0**	**385**
Background Plus Project Conditions	**0**	**175**	**7**	**10**	**0**	**8**	**12**	**188**	**0**	**0**	**0**	**0**	**400**

Intersection Number: 3
Traffix Node Number: 3
Intersection Name: Old County Road and Harbor Boulevard
Peak Hour: AM
Count Date: 12/9/2014

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**29**	**123**	**65**	**60**	**245**	**48**	**34**	**115**	**60**	**74**	**440**	**71**	**1364**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	1	0	0	0	0	0	0	0	0	0	0	1
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	1	1	0	0	2	0	0	0	0	0	0	1	5
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	1	0	0	0	0	0	1	0	0	0	0	2
777 Induustrial Road	0	3	0	0	0	0	0	1	0	0	0	0	4
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	1	0	0	0	0	0	0	0	0	0	0	4	5
Total Approved Trips	2	6	0	0	2	0	0	2	0	0	0	5	17
Background Conditions	**31**	**129**	**65**	**60**	**247**	**48**	**34**	**117**	**60**	**74**	**440**	**76**	**1381**
Project Trips	11	0	0	0	0	0	0	0	0	0	0	-5	6
Existing Plus Project Conditions	**40**	**123**	**65**	**60**	**245**	**48**	**34**	**115**	**60**	**74**	**440**	**66**	**1370**
Background Plus Project Conditions	**42**	**129**	**65**	**60**	**247**	**48**	**34**	**117**	**60**	**74**	**440**	**71**	**1387**

Intersection Number: 4
Traffix Node Number: 4
Intersection Name: El Camino Real and Harbor Boulevard
Peak Hour: AM
Count Date: 12/9/2014

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**985**	**436**	**197**	**3**	**137**	**149**	**900**	**0**	**0**	**0**	**0**	**2807**
Approved Project Trips													
490 El Camino Real	0	2	0	0	0	0	0	-3	0	0	0	0	-1
576 - 600 El Camino Real	0	4	0	0	0	0	0	3	0	0	0	0	7
Hilton Homewood Suites Hotel	0	1	0	0	0	0	0	2	0	0	0	0	3
Merry Moppet & Belmont Oaks	0	4	0	0	0	0	0	6	0	0	0	0	10
Transit Village	0	2	0	0	0	3	1	15	0	0	0	0	21
Wheeler Plaza	0	3	0	0	0	0	0	5	0	0	0	0	8
Landmark Hotel	0	9	0	0	0	0	0	6	0	0	0	0	15
Meridian 25	0	22	0	0	0	0	0	2	0	0	0	0	24
777 Induustrial Road	0	3	0	0	0	0	0	1	0	0	0	0	4
1091 Industrial Road	0	3	0	0	0	0	0	4	0	0	0	0	7
644-678 Laurel Street	0	1	0	0	0	0	0	1	0	0	0	0	2
520 El Camino Real	0	1	0	0	0	0	0	1	0	0	0	0	2
26 El Camino Real	0	12	0	0	0	0	0	4	0	0	0	0	16
1325 Old County Road - Approved	0	0	2	0	0	0	2	1	0	0	0	0	5
Total Approved Trips	0	67	2	0	0	3	3	48	0	0	0	0	123
Background Conditions	**0**	**1052**	**438**	**197**	**3**	**140**	**152**	**948**	**0**	**0**	**0**	**0**	**2930**
Project Trips	0	2	-2	5	0	6	-3	-1	0	0	0	0	7
Existing Plus Project Conditions	**0**	**987**	**434**	**202**	**3**	**143**	**146**	**899**	**0**	**0**	**0**	**0**	**2814**
Background Plus Project Conditions	**0**	**1054**	**436**	**202**	**3**	**146**	**149**	**947**	**0**	**0**	**0**	**0**	**2937**

Intersection Number: 5
Traffix Node Number: 5
Intersection Name: Industrial Road and Harbor Boulevard
Peak Hour: AM
Count Date: 1/17/2018

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**2**	**1**	**0**	**15**	**217**	**180**	**25**	**9**	**184**	**141**	**434**	**1**	**1209**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	2	0	0	0	0	0	0	0	2
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	1	0	0	0	0	0	0	1
Meridian 25	0	0	0	0	0	5	0	0	1	8	0	0	14
777 Induustrial Road	0	0	0	0	0	1	0	0	1	1	0	0	3
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	2	0	0	0	0	0	0	0	2
Total Approved Trips	0	0	0	0	4	7	0	0	2	9	0	0	22
Background Conditions	**2**	**1**	**0**	**15**	**221**	**187**	**25**	**9**	**186**	**150**	**434**	**1**	**1231**
Project Trips	0	0	0	0	-2	0	0	0	0	0	8	0	6
Existing Plus Project Conditions	**2**	**1**	**0**	**15**	**215**	**180**	**25**	**9**	**184**	**141**	**442**	**1**	**1215**
Background Plus Project Conditions	**2**	**1**	**0**	**15**	**219**	**187**	**25**	**9**	**186**	**150**	**442**	**1**	**1237**

Intersection Number: 6
Traffix Node Number: 6
Intersection Name: El Camino Real and Ralston Avenue
Peak Hour: AM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**79**	**1004**	**265**	**226**	**541**	**215**	**230**	**711**	**114**	**18**	**614**	**83**	**4100**
Approved Project Trips													
490 El Camino Real	0	2	3	-4	0	0	0	-3	0	0	0	0	-2
576 - 600 El Camino Real	2	4	5	3	0	0	0	3	0	0	0	2	19
Hilton Homewood Suites Hotel	0	0	3	2	1	1	2	0	0	0	2	0	11
Merry Moppet & Belmont Oaks	9	0	0	0	16	0	0	0	6	4	11	6	52
Transit Village	0	1	0	0	0	0	13	2	0	0	0	0	16
Wheeler Plaza	0	3	0	0	0	0	0	5	0	0	0	0	8
Landmark Hotel	0	9	0	0	0	0	0	6	0	0	0	0	15
Meridian 25	0	22	0	0	0	0	0	2	0	0	0	0	24
777 Induustrial Road	0	3	0	0	0	0	0	1	0	0	0	0	4
1091 Industrial Road	0	3	0	0	0	0	0	4	0	0	0	0	7
644-678 Laurel Street	0	1	0	0	0	0	0	1	0	0	0	0	2
520 El Camino Real	0	1	0	0	0	0	0	1	0	0	0	0	2
26 El Camino Real	0	12	0	0	0	0	0	4	0	0	0	0	16
1325 Old County Road - Approved	0	1	2	0	0	0	1	0	0	1	3	0	8
Total Approved Trips	11	62	13	1	17	1	16	26	6	5	16	8	182
Background Conditions	**90**	**1066**	**278**	**227**	**558**	**216**	**246**	**737**	**120**	**23**	**630**	**91**	**4282**
Project Trips	0	-1	-2	6	8	2	-1	2	3	-1	-4	0	12
Existing Plus Project Conditions	**79**	**1003**	**263**	**232**	**549**	**217**	**229**	**713**	**117**	**17**	**610**	**83**	**4112**
Background Plus Project Conditions	**90**	**1065**	**276**	**233**	**566**	**218**	**245**	**739**	**123**	**22**	**626**	**91**	**4294**

Intersection Number: 7
Traffix Node Number: 7
Intersection Name: Old County Road and Ralston Avenue
Peak Hour: AM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**218**	**171**	**181**	**55**	**672**	**37**	**109**	**113**	**74**	**28**	**957**	**135**	**2750**
Approved Project Trips													
490 El Camino Real	0	0	0	0	-4	0	0	0	0	0	3	0	-1
576 - 600 El Camino Real	0	0	0	0	3	0	0	0	0	1	4	0	8
Hilton Homewood Suites Hotel	0	0	0	0	4	0	0	0	0	0	7	0	11
Merry Moppet & Belmont Oaks	0	0	0	0	16	0	0	0	0	0	11	0	27
Transit Village	0	1	0	0	0	0	0	1	0	0	13	0	15
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	1	0	0	0	0	0	1	0	0	0	0	2
777 Induustrial Road	0	3	0	0	0	0	0	1	0	0	0	0	4
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	0	3	0	0	1	6	0	0	10
Total Approved Trips	0	5	0	0	19	3	0	3	1	7	38	0	76
Background Conditions	**218**	**176**	**181**	**55**	**691**	**40**	**109**	**116**	**75**	**35**	**995**	**135**	**2826**
Project Trips	0	0	0	0	0	-3	4	0	16	-7	0	0	10
Existing Plus Project Conditions	**218**	**171**	**181**	**55**	**672**	**34**	**113**	**113**	**90**	**21**	**957**	**135**	**2760**
Background Plus Project Conditions	**218**	**176**	**181**	**55**	**691**	**37**	**113**	**116**	**91**	**28**	**995**	**135**	**2836**

Intersection Number: 8
Traffix Node Number: 8
Intersection Name: Elmer Street and Ralston Avenue
Peak Hour: AM
Count Date: 3/23/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**0**	**0**	**0**	**623**	**0**	**91**	**0**	**2**	**17**	**1191**	**0**	**1924**
Approved Project Trips													
490 El Camino Real	0	0	0	0	-4	0	0	0	0	0	3	0	-1
576 - 600 El Camino Real	0	0	0	0	3	0	0	0	0	0	4	0	7
Hilton Homewood Suites Hotel	0	0	0	0	4	0	0	0	0	0	7	0	11
Merry Moppet & Belmont Oaks	0	0	0	0	16	0	0	0	0	0	11	0	27
Transit Village	0	0	0	0	13	0	0	0	0	0	0	0	13
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	0	0	0	8	1	0	0	0	0	0	9
777 Induustrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	3	6	1	0	0	0	0	0	10
Total Approved Trips	0	0	0	0	35	14	2	0	0	0	25	0	76
Background Conditions	**0**	**0**	**0**	**0**	**658**	**14**	**93**	**0**	**2**	**17**	**1216**	**0**	**2000**
Project Trips	0	0	0	0	-3	-7	15	0	0	0	4	0	9
Existing Plus Project Conditions	**0**	**0**	**0**	**0**	**620**	**-7**	**106**	**0**	**2**	**17**	**1195**	**0**	**1933**
						0							
Background Plus Project Conditions	**0**	**0**	**0**	**0**	**655**	**7**	**108**	**0**	**2**	**17**	**1220**	**0**	**2009**

Intersection Number: 9
Traffix Node Number: 9
Intersection Name: Old County Road and Masonic Way
Peak Hour: AM
Count Date: 3/23/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**385**	**87**	**101**	**0**	**164**	**135**	**153**	**0**	**0**	**0**	**0**	**1025**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	1	0	0	0	0	0	1	0	0	0	0	2
777 Induustrial Road	0	3	0	0	0	0	0	1	0	0	0	0	4
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Trips	0	4	0	0	0	0	0	2	0	0	0	0	6
Background Conditions	**0**	**389**	**87**	**101**	**0**	**164**	**135**	**155**	**0**	**0**	**0**	**0**	**1031**
Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Plus Project Conditions	**0**	**385**	**87**	**101**	**0**	**164**	**135**	**153**	**0**	**0**	**0**	**0**	**1025**
Background Plus Project Conditions	**0**	**389**	**87**	**101**	**0**	**164**	**135**	**155**	**0**	**0**	**0**	**0**	**1031**

Intersection Number: 10
Traffix Node Number: 10
Intersection Name: Elmer Street and Oneill Avenue
Peak Hour: AM
Count Date: 1/23/2018

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**4**	**50**	**19**	**18**	**16**	**16**	**14**	**67**	**6**	**4**	**7**	**1**	**222**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	8	1	0	0	0	0	0	0	0	0	9
777 Induustrial Road	0	1	0	0	0	0	0	1	0	0	0	0	2
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	6	0	0	0	0	0	0	0	2	0	0	1	9
Total Approved Trips	6	1	8	1	0	0	0	1	2	0	0	1	20
Background Conditions	**10**	**51**	**27**	**19**	**16**	**16**	**14**	**68**	**8**	**4**	**7**	**2**	**242**
Project Trips	-7	0	0	0	0	0	0	0	-2	8	0	15	14
Existing Plus Project Conditions	**-3**	**50**	**19**	**18**	**16**	**16**	**14**	**67**	**4**	**12**	**7**	**16**	**236**
	0												
Background Plus Project Conditions	**3**	**51**	**27**	**19**	**16**	**16**	**14**	**68**	**6**	**12**	**7**	**17**	**256**

Intersection Number: 11
Traffix Node Number: 11
Intersection Name: Elmer Street and Harbor Boulevard
Peak Hour: AM
Count Date: 1/17/2018

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**32**	**0**	**31**	**59**	**246**	**0**	**0**	**0**	**0**	**0**	**648**	**38**	**1054**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	2	0	0	0	0	0	0	0	2
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	8	1	0	0	0	0	0	0	0	0	9
777 Induustrial Road	0	0	1	1	0	0	0	0	0	0	0	0	2
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	2	0	0	0	0	0	0	0	0	2
Total Approved Trips	0	0	9	4	2	0	0	0	0	0	0	0	15
Background Conditions	**32**	**0**	**40**	**63**	**248**	**0**	**0**	**0**	**0**	**0**	**648**	**38**	**1069**
Project Trips	0	0	8	-2	0	0	0	0	0	0	0	0	6
Existing Plus Project Conditions	**32**	**0**	**39**	**57**	**246**	**0**	**0**	**0**	**0**	**0**	**648**	**38**	**1060**
Background Plus Project Conditions	**32**	**0**	**48**	**61**	**248**	**0**	**0**	**0**	**0**	**0**	**648**	**38**	**1075**

Intersection Number: 12
Traffix Node Number: 12
Intersection Name: Hiller Street and Ralston Avenue
Peak Hour: AM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**68**	**8**	**379**	**206**	**789**	**14**	**50**	**22**	**24**	**0**	**1226**	**75**	**2861**
Approved Project Trips													
490 El Camino Real	0	0	0	0	-4	0	0	0	0	0	3	0	-1
576 - 600 El Camino Real	0	0	0	0	3	0	0	0	0	0	4	0	7
Hilton Homewood Suites Hotel	0	0	0	0	4	0	0	0	0	0	7	0	11
Merry Moppet & Belmont Oaks	0	0	0	0	16	0	0	0	0	0	11	0	27
Transit Village	0	0	0	0	13	0	0	0	0	0	0	0	13
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	0	0	8	0	0	0	0	0	1	0	9
777 Induustrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	8	0	0	0	0	0	1	0	9
Total Approved Trips	0	0	0	0	48	0	0	0	0	0	27	0	75
Background Conditions	**68**	**8**	**379**	**206**	**837**	**14**	**50**	**22**	**24**	**0**	**1253**	**75**	**2936**
Project Trips	0	0	0	0	-10	0	0	0	0	0	19	0	9
Existing Plus Project Conditions	**68**	**8**	**379**	**206**	**779**	**14**	**50**	**22**	**24**	**0**	**1245**	**75**	**2870**
Background Plus Project Conditions	**68**	**8**	**379**	**206**	**827**	**14**	**50**	**22**	**24**	**0**	**1272**	**75**	**2945**

Intersection Number: 13
Traffix Node Number: 13
Intersection Name: US-101 SB ramps and Ralston Avenue
Peak Hour: AM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**236**	**0**	**1434**	**226**	**691**	**0**	**0**	**0**	**0**	**603**	**1077**	**0**	**4267**
										0			
Approved Project Trips													
490 El Camino Real	-2	0	0	0	-2	0	0	0	0	0	2	0	-2
576 - 600 El Camino Real	1	0	0	0	2	0	0	0	0	0	2	0	5
Hilton Homewood Suites Hotel	0	0	8	0	4	0	0	0	0	0	7	0	19
Merry Moppet & Belmont Oaks	6	0	0	0	10	0	0	0	0	0	7	0	23
Transit Village	0	0	0	0	13	0	0	0	0	0	0	0	13
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	0	0	8	0	0	0	0	0	1	0	9
777 Induustrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	2	0	0	0	6	0	0	0	0	0	1	0	9
Total Approved Trips	7	0	8	0	41	0	0	0	0	0	20	0	76
Background Conditions	**243**	**0**	**1442**	**226**	**732**	**0**	**0**	**0**	**0**	**603**	**1097**	**0**	**4343**
										0			
Project Trips	-3	0	0	0	-7	0	0	0	0	0	16	0	6
Existing Plus Project Conditions	**233**	**0**	**1434**	**226**	**684**	**0**	**0**	**0**	**0**	**603**	**1093**	**0**	**4273**
										0			
Background Plus Project Conditions	**240**	**0**	**1442**	**226**	**725**	**0**	**0**	**0**	**0**	**603**	**1113**	**0**	**4349**
										0			

Intersection Number: 14
Traffix Node Number: 14
Intersection Name: US-101 NB ramps and Island Parkway and Ralston Avenue
Peak Hour: AM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**59**	**20**	**38**	**40**	**477**	**0**	**782**	**74**	**383**	**395**	**1998**	**120**	**4386**
Approved Project Trips													
490 El Camino Real	0	0	0	0	-1	0	0	0	-1	1	1	0	0
576 - 600 El Camino Real	0	0	0	0	1	0	0	0	1	1	1	0	4
Hilton Homewood Suites Hotel	0	0	0	0	8	0	6	0	0	0	15	0	29
Merry Moppet & Belmont Oaks	0	0	0	0	4	0	0	0	6	5	2	0	17
Transit Village	0	0	0	0	0	0	0	0	0	13	0	0	13
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	0	0	8	0	0	0	0	0	1	0	9
777 Induustrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	2	0	0	0	4	1	0	0	7
Total Approved Trips	0	0	0	0	22	0	6	0	10	21	20	0	79
Background Conditions	**59**	**20**	**38**	**40**	**499**	**0**	**788**	**74**	**393**	**416**	**2018**	**120**	**4465**
Project Trips	0	0	0	0	-2	0	0	0	-5	11	5	0	9
Existing Plus Project Conditions	**59**	**20**	**38**	**40**	**475**	**0**	**782**	**74**	**378**	**406**	**2003**	**120**	**4395**
Background Plus Project Conditions	**59**	**20**	**38**	**40**	**497**	**0**	**788**	**74**	**388**	**427**	**2023**	**120**	**4474**

Intersection Number: 1
Traffix Node Number: 1
Intersection Name: Old County Road and Oneill Avenue
Peak Hour: PM
Count Date: 3/23/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**11**	**195**	**0**	**30**	**0**	**10**	**47**	**492**	**0**	**0**	**0**	**0**	**785**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	1	0	0	0	0	0	1	0	0	0	0	2
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	0	0	0	2	0	0	0	0	2
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	-2	0	0	0	0	0	-2	0	0	0	0	-4
Meridian 25	0	16	0	0	0	0	0	12	0	0	0	0	28
777 Induustrial Road	0	2	0	0	0	0	0	3	0	0	0	0	5
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	1	7	0	4	1	0	0	0	0	0	13
Total Approved Trips	0	17	1	7	0	4	1	16	0	0	0	0	46
Background Conditions	**11**	**212**	**1**	**37**	**0**	**14**	**48**	**508**	**0**	**0**	**0**	**0**	**831**
Net Project Trips	0	0	24	3	0	2	11	0	0	0	0	0	40
Existing Plus Project Conditions	**11**	**195**	**24**	**33**	**0**	**12**	**58**	**492**	**0**	**0**	**0**	**0**	**825**
Background Plus Project Conditions	**11**	**212**	**25**	**40**	**0**	**16**	**59**	**508**	**0**	**0**	**0**	**0**	**871**

Intersection Number: 2
Traffix Node Number: 2
Intersection Name: Old County Road and Karen Road
Peak Hour: PM
Count Date: 1/17/2018

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**159**	**5**	**12**	**0**	**13**	**6**	**465**	**1**	**0**	**0**	**0**	**661**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	1	0	0	0	0	0	1	0	0	0	0	2
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	0	0	0	2	0	0	0	0	2
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	-2	0	0	0	0	0	-2	0	0	0	0	-4
Meridian 25	0	16	0	0	0	0	0	12	0	0	0	0	28
777 Induustrial Road	0	2	0	0	0	0	0	3	0	0	0	0	5
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	4	0	0	0	0	0	1	0	0	0	0	5
Total Approved Trips	0	21	0	0	0	0	0	17	0	0	0	0	38
Background Conditions	**0**	**180**	**5**	**12**	**0**	**13**	**6**	**482**	**1**	**0**	**0**	**0**	**699**
Net Project Trips	0	2	0	0	0	0	0	11	0	0	0	0	13
Existing Plus Project Conditions	**0**	**161**	**5**	**12**	**0**	**13**	**6**	**476**	**1**	**0**	**0**	**0**	**674**
Background Plus Project Conditions	**0**	**182**	**5**	**12**	**0**	**13**	**6**	**493**	**1**	**0**	**0**	**0**	**712**

Intersection Number: 3
Traffix Node Number: 3
Intersection Name: Old County Road and Harbor Boulevard
Peak Hour: PM
Count Date: 12/9/2014

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**57**	**93**	**43**	**103**	**529**	**82**	**76**	**331**	**162**	**55**	**232**	**52**	**1815**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	1	0	0	0	0	0	1	0	0	0	0	2
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	10	0	0	1	0	0	0	1	12
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	-2	0	0	0	0	0	-2	0	0	0	0	-4
Meridian 25	0	16	0	0	0	0	0	12	0	0	0	0	28
777 Induustrial Road	0	2	0	0	0	0	0	3	0	0	0	0	5
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	4	0	0	0	0	0	0	0	0	0	0	1	5
Total Approved Trips	4	17	0	0	10	0	0	15	0	0	0	2	48
Background Conditions	**61**	**110**	**43**	**103**	**539**	**82**	**76**	**346**	**162**	**55**	**232**	**54**	**1863**
Net Project Trips	2	0	0	0	0	0	0	0	0	0	0	11	13
Existing Plus Project Conditions	**59**	**93**	**43**	**103**	**529**	**82**	**76**	**331**	**162**	**55**	**232**	**63**	**1828**
Background Plus Project Conditions	**63**	**110**	**43**	**103**	**539**	**82**	**76**	**346**	**162**	**55**	**232**	**65**	**1876**

Intersection Number: 4
Traffix Node Number: 4
Intersection Name: El Camino Real and Harbor Boulevard
Peak Hour: PM
Count Date: 12/9/2014

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**1095**	**199**	**386**	**8**	**354**	**140**	**1200**	**4**	**0**	**0**	**0**	**3386**
Approved Project Trips													
490 El Camino Real	0	3	0	0	0	0	0	8	0	0	0	0	11
576 - 600 El Camino Real	0	5	0	0	0	0	0	5	0	0	0	0	10
Hilton Homewood Suites Hotel	0	1	0	0	0	0	0	2	0	0	0	0	3
Merry Moppet & Belmont Oaks	0	4	0	0	0	0	0	2	0	0	0	0	6
Transit Village	0	3	0	0	0	10	1	9	0	0	0	0	23
Wheeler Plaza	0	5	0	0	0	0	0	7	0	0	0	0	12
Landmark Hotel	0	7	0	0	0	0	0	6	0	0	0	0	13
Meridian 25	0	1	0	0	0	0	0	17	0	0	0	0	18
777 Induustrial Road	0	2	0	0	0	0	0	1	0	0	0	0	3
1091 Industrial Road	0	5	0	0	0	0	0	2	0	0	0	0	7
644-678 Laurel Street	0	4	0	0	0	0	0	4	0	0	0	0	8
520 El Camino Real	0	2	0	0	0	0	0	2	0	0	0	0	4
26 El Camino Real	0	12	0	0	0	0	0	6	0	0	0	0	18
1325 Old County Road - Approved	0	1	0	2	0	2	0	0	0	0	0	0	5
Total Approved Trips	0	55	0	2	0	12	1	71	0	0	0	0	141
Background Conditions	**0**	**1150**	**199**	**388**	**8**	**366**	**141**	**1271**	**4**	**0**	**0**	**0**	**3527**
Net Project Trips	0	0	5	1	0	1	6	2	0	0	0	0	15
Existing Plus Project Conditions	**0**	**1095**	**204**	**387**	**8**	**355**	**146**	**1202**	**4**	**0**	**0**	**0**	**3401**
Background Plus Project Conditions	**0**	**1150**	**204**	**389**	**8**	**367**	**147**	**1273**	**4**	**0**	**0**	**0**	**3542**

Intersection Number: 5
Traffix Node Number: 5
Intersection Name: Industrial Road and Harbor Boulevard
Peak Hour: PM
Count Date: 1/17/2018

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**7**	**1**	**17**	**4**	**305**	**86**	**85**	**4**	**571**	**104**	**232**	**5**	**1421**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	10	0	0	0	0	0	0	0	10
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	-2	-2	0	0	0	0	0	-4
Meridian 25	0	0	0	0	0	0	0	0	10	1	0	0	11
777 Induustrial Road	0	0	0	0	0	1	0	0	2	0	0	0	3
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	0	0	0	0	0	0	3	0	3
Total Approved Trips	0	0	0	0	10	-1	-2	0	12	1	3	0	23
Background Conditions	**7**	**1**	**17**	**4**	**315**	**85**	**83**	**4**	**583**	**105**	**235**	**5**	**1444**
Net Project Trips	0	0	0	0	6	0	0	0	0	0	1	0	7
Existing Plus Project Conditions	**7**	**1**	**17**	**4**	**311**	**86**	**85**	**4**	**571**	**104**	**233**	**5**	**1428**
Background Plus Project Conditions	**7**	**1**	**17**	**4**	**321**	**85**	**83**	**4**	**583**	**105**	**236**	**5**	**1451**

Intersection Number: 6
Traffix Node Number: 6
Intersection Name: El Camino Real and Ralston Avenue
Peak Hour: PM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**130**	**864**	**247**	**499**	**647**	**246**	**165**	**866**	**101**	**52**	**560**	**217**	**4594**
Approved Project Trips													
490 El Camino Real	0	3	4	15	0	0	0	8	0	0	0	0	30
576 - 600 El Camino Real	5	5	5	8	-2	0	0	5	0	0	-1	4	29
Hilton Homewood Suites Hotel	0	0	4	2	1	1	2	0	0	0	2	0	12
Merry Moppet & Belmont Oaks	2	0	0	0	4	0	0	0	2	4	9	5	26
Transit Village	0	2	0	0	0	1	7	2	0	0	0	0	12
Wheeler Plaza	0	5	0	0	0	0	0	7	0	0	0	0	12
Landmark Hotel	0	7	0	0	0	0	0	6	0	0	0	0	13
Meridian 25	0	1	0	0	0	0	0	17	0	0	0	0	18
777 Induustrial Road	0	2	0	0	0	0	0	1	0	0	0	0	3
1091 Industrial Road	0	5	0	0	0	0	0	2	0	0	0	0	7
644-678 Laurel Street	0	4	0	0	0	0	0	4	0	0	0	0	8
520 El Camino Real	0	2	0	0	0	0	0	2	0	0	0	0	4
26 El Camino Real	0	12	0	0	0	0	0	6	0	0	0	0	18
1325 Old County Road - Approved	0	0	0	2	3	1	0	1	1	0	0	0	8
Total Approved Trips	7	48	13	27	6	3	9	61	3	4	10	9	200
Background Conditions	**137**	**912**	**260**	**526**	**653**	**249**	**174**	**927**	**104**	**56**	**570**	**226**	**4794**
Net Project Trips	0	2	6	1	1	0	2	0	1	3	9	0	25
Existing Plus Project Conditions	**130**	**866**	**253**	**500**	**648**	**246**	**167**	**866**	**102**	**55**	**569**	**217**	**4619**
Background Plus Project Conditions	**137**	**914**	**266**	**527**	**654**	**249**	**176**	**927**	**105**	**59**	**579**	**226**	**4819**

Intersection Number: 7
Traffix Node Number: 7
Intersection Name: Old County Road and Ralston Avenue
Peak Hour: PM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**320**	**107**	**69**	**64**	**900**	**24**	**91**	**268**	**172**	**26**	**784**	**165**	**2990**
Approved Project Trips													
490 El Camino Real	0	0	0	0	15	0	0	0	0	0	4	0	19
576 - 600 El Camino Real	1	0	0	0	4	0	0	0	1	1	2	1	10
Hilton Homewood Suites Hotel	0	0	0	0	4	0	0	0	0	0	8	0	12
Merry Moppet & Belmont Oaks	0	0	0	0	4	0	0	0	0	0	9	0	13
Transit Village	1	1	0	0	0	0	0	1	0	0	7	0	10
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	-2	0	0	0	0	0	-2	0	0	0	0	-4
Meridian 25	0	16	0	0	0	0	0	12	0	0	0	0	28
777 Induustrial Road	0	2	0	0	0	0	0	3	0	0	0	0	5
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	0	0	1	0	6	1	0	0	8
Total Approved Trips	2	17	0	0	27	0	1	14	7	2	30	1	101
Background Conditions	**322**	**124**	**69**	**64**	**927**	**24**	**92**	**282**	**179**	**28**	**814**	**166**	**3091**
Net Project Trips	0	0	0	0	0	7	1	0	2	17	0	0	27
Existing Plus Project Conditions	**320**	**107**	**69**	**64**	**900**	**31**	**92**	**268**	**174**	**43**	**784**	**165**	**3017**
Background Plus Project Conditions	**322**	**124**	**69**	**64**	**927**	**31**	**93**	**282**	**181**	**45**	**814**	**166**	**3118**

Intersection Number: 8
Traffix Node Number: 8
Intersection Name: Elmer Street and Ralston Avenue
Peak Hour: PM
Count Date: 3/23/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**0**	**0**	**0**	**945**	**42**	**526**	**0**	**7**	**16**	**835**	**0**	**2371**
Approved Project Trips													
490 El Camino Real	0	0	0	0	15	0	0	0	0	0	4	0	19
576 - 600 El Camino Real	0	0	0	0	4	0	0	0	0	0	2	0	6
Hilton Homewood Suites Hotel	0	0	0	0	4	0	0	0	0	0	8	0	12
Merry Moppet & Belmont Oaks	0	0	0	0	4	0	0	0	0	0	9	0	13
Transit Village	0	0	0	0	0	0	0	0	0	0	7	0	7
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	0	0	0	1	10	0	0	0	0	0	11
777 Induustrial Road	0	0	0	0	0	0	1	0	0	0	0	0	1
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	0	1	5	0	0	0	1	0	7
Total Approved Trips	0	0	0	0	27	2	16	0	0	0	31	0	76
Background Conditions	**0**	**0**	**0**	**0**	**972**	**44**	**542**	**0**	**7**	**16**	**866**	**0**	**2447**
Net Project Trips	0	0	0	0	7	16	2	0	0	0	1	0	26
Existing Plus Project Conditions	**0**	**0**	**0**	**0**	**952**	**58**	**528**	**0**	**7**	**16**	**836**	**0**	**2397**
Background Plus Project Conditions	**0**	**0**	**0**	**0**	**979**	**60**	**544**	**0**	**7**	**16**	**867**	**0**	**2473**

Intersection Number: 9
Traffix Node Number: 9
Intersection Name: Old County Road and Masonic Way
Peak Hour: PM
Count Date: 3/23/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**0**	**260**	**63**	**209**	**0**	**194**	**85**	**435**	**0**	**0**	**0**	**0**	**1246**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	-2	0	0	0	0	0	-2	0	0	0	0	-4
Meridian 25	0	16	0	0	0	0	0	12	0	0	0	0	28
777 Induustrial Road	0	2	0	0	0	0	0	3	0	0	0	0	5
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Approved Trips	0	16	0	0	0	0	0	13	0	0	0	0	29
Background Conditions	**0**	**276**	**63**	**209**	**0**	**194**	**85**	**448**	**0**	**0**	**0**	**0**	**1275**
Net Project Trips	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Plus Project Conditions	**0**	**260**	**63**	**209**	**0**	**194**	**85**	**435**	**0**	**0**	**0**	**0**	**1246**
Background Plus Project Conditions	**0**	**276**	**63**	**209**	**0**	**194**	**85**	**448**	**0**	**0**	**0**	**0**	**1275**

Intersection Number: 10
Traffix Node Number: 10
Intersection Name: Elmer Street and Oneill Avenue
Peak Hour: PM
Count Date: 1/23/2018

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**6**	**54**	**17**	**37**	**16**	**13**	**23**	**475**	**30**	**6**	**1**	**44**	**722**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	0	0	0	0	0	0	0	0	0
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	1	10	0	0	0	0	0	0	0	0	11
777 Induustrial Road	0	0	0	0	0	0	0	2	0	0	0	0	2
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	1	0	0	0	0	0	0	0	0	3	0	5	9
Total Approved Trips	1	0	1	10	0	0	0	2	0	3	0	5	22
Background Conditions	**7**	**54**	**18**	**47**	**16**	**13**	**23**	**477**	**30**	**9**	**1**	**49**	**744**
Net Project Trips	16	0	0	0	0	0	0	0	6	1	0	2	25
Existing Plus Project Conditions	**22**	**54**	**17**	**37**	**16**	**13**	**23**	**475**	**36**	**7**	**1**	**46**	**747**
Background Plus Project Conditions	**23**	**54**	**18**	**47**	**16**	**13**	**23**	**477**	**36**	**10**	**1**	**51**	**769**

Intersection Number: 11
Traffix Node Number: 11
Intersection Name: Elmer Street and Harbor Boulevard
Peak Hour: PM
Count Date: 1/17/2018

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**44**	**0**	**22**	**344**	**685**	**0**	**0**	**0**	**0**	**0**	**297**	**80**	**1472**
Approved Project Trips													
490 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
576 - 600 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
Hilton Homewood Suites Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	0	0	0	0	0
Transit Village	0	0	0	0	10	0	0	0	0	0	0	0	10
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	1	10	0	0	0	0	0	0	0	0	11
777 Induustrial Road	0	0	0	2	0	0	0	0	0	0	0	0	2
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	3	0	0	0	0	0	0	0	0	0	3
Total Approved Trips	0	0	4	12	10	0	0	0	0	0	0	0	26
Background Conditions	**44**	**0**	**26**	**356**	**695**	**0**	**0**	**0**	**0**	**0**	**297**	**80**	**1498**
Net Project Trips	0	0	1	6	0	0	0	0	0	0	0	0	7
Existing Plus Project Conditions	**44**	**0**	**23**	**350**	**685**	**0**	**0**	**0**	**0**	**0**	**297**	**80**	**1479**
Background Plus Project Conditions	**44**	**0**	**27**	**362**	**695**	**0**	**0**	**0**	**0**	**0**	**297**	**80**	**1505**

Intersection Number: 12
Traffix Node Number: 12
Intersection Name: Hiller Street and Ralston Avenue
Peak Hour: PM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**33**	**6**	**290**	**554**	**1119**	**34**	**26**	**21**	**26**	**0**	**1163**	**180**	**3452**
Approved Project Trips													
490 El Camino Real	0	0	0	0	15	0	0	0	0	0	4	0	19
576 - 600 El Camino Real	0	0	0	0	4	0	0	0	0	0	2	0	6
Hilton Homewood Suites Hotel	0	0	0	0	4	0	0	0	0	0	8	0	12
Merry Moppet & Belmont Oaks	0	0	0	0	4	0	0	0	0	0	9	0	13
Transit Village	0	0	0	0	0	0	0	0	0	0	7	0	7
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	0	0	1	0	0	0	0	0	10	0	11
777 Induustrial Road	0	0	0	0	0	0	0	0	0	0	1	0	1
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	1	0	0	0	0	0	7	0	8
Total Approved Trips	0	0	0	0	29	0	0	0	0	0	48	0	77
Background Conditions	**33**	**6**	**290**	**554**	**1148**	**34**	**26**	**21**	**26**	**0**	**1211**	**180**	**3529**
Net Project Trips	0	0	0	0	23	0	0	0	0	0	3	0	26
Existing Plus Project Conditions	**33**	**6**	**290**	**554**	**1142**	**34**	**26**	**21**	**26**	**0**	**1166**	**180**	**3478**
Background Plus Project Conditions	**33**	**6**	**290**	**554**	**1171**	**34**	**26**	**21**	**26**	**0**	**1214**	**180**	**3555**

Intersection Number: 13
Traffix Node Number: 13
Intersection Name: US-101 SB ramps and Ralston Avenue
Peak Hour: PM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**478**	**0**	**493**	**708**	**1241**	**0**	**0**	**0**	**0**	**376**	**1112**	**0**	**4408**
										0			
Approved Project Trips													
490 El Camino Real	6	0	0	0	9	0	0	0	0	0	2	0	17
576 - 600 El Camino Real	1	0	0	0	3	0	0	0	0	0	1	0	5
Hilton Homewood Suites Hotel	0	0	9	0	4	0	0	0	0	0	8	0	21
Merry Moppet & Belmont Oaks	2	0	0	0	2	0	0	0	0	0	5	0	9
Transit Village	0	0	0	0	0	0	0	0	0	0	7	0	7
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	0	0	1	0	0	0	0	0	10	0	11
777 Induustrial Road	0	0	0	0	0	0	0	0	0	0	1	0	1
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	1	0	0	0	0	0	6	0	7
Total Approved Trips	9	0	9	0	20	0	0	0	0	0	40	0	78
Background Conditions	**487**	**0**	**502**	**708**	**1261**	**0**	**0**	**0**	**0**	**376**	**1152**	**0**	**4486**
										0			
Net Project Trips	6	0	0	0	17	0	0	0	0	0	3	0	26
Existing Plus Project Conditions	**484**	**0**	**493**	**708**	**1258**	**0**	**0**	**0**	**0**	**376**	**1115**	**0**	**4434**
										0			
Background Plus Project Conditions	**493**	**0**	**502**	**708**	**1278**	**0**	**0**	**0**	**0**	**376**	**1155**	**0**	**4512**
										0			

Intersection Number: 14
Traffix Node Number: 14
Intersection Name: US-101 NB ramps and Island Parkway and Ralston Avenue
Peak Hour: PM
Count Date: 10/26/2017

	Movements												
	North Approach			East Approach			South Approach			West Approach			
Scenario:	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
Existing Conditions	**178**	**61**	**49**	**55**	**1289**	**0**	**44**	**30**	**468**	**578**	**869**	**155**	**3776**
Approved Project Trips													
490 El Camino Real	0	0	0	0	3	0	0	0	6	1	1	0	11
576 - 600 El Camino Real	0	0	0	0	1	0	0	0	2	1	0	0	4
Hilton Homewood Suites Hotel	0	0	0	0	8	0	6	0	0	0	17	0	31
Merry Moppet & Belmont Oaks	0	0	0	0	0	0	0	0	2	4	1	0	7
Transit Village	0	0	0	0	0	0	0	0	0	7	0	0	7
Wheeler Plaza	0	0	0	0	0	0	0	0	0	0	0	0	0
Landmark Hotel	0	0	0	0	0	0	0	0	0	0	0	0	0
Meridian 25	0	0	0	0	1	0	0	0	0	0	10	0	11
777 Induustrial Road	0	0	0	0	0	0	0	0	0	0	1	0	1
1091 Industrial Road	0	0	0	0	0	0	0	0	0	0	0	0	0
644-678 Laurel Street	0	0	0	0	0	0	0	0	0	0	0	0	0
520 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
26 El Camino Real	0	0	0	0	0	0	0	0	0	0	0	0	0
1325 Old County Road - Approved	0	0	0	0	0	0	0	0	1	4	2	0	7
Total Approved Trips	0	0	0	0	13	0	6	0	11	17	32	0	79
Background Conditions	**178**	**61**	**49**	**55**	**1302**	**0**	**50**	**30**	**479**	**595**	**901**	**155**	**3855**
Net Project Trips	0	0	0	0	6	0	0	0	11	2	1	0	20
Existing Plus Project Conditions	**178**	**61**	**49**	**55**	**1295**	**0**	**44**	**30**	**479**	**580**	**870**	**155**	**3796**
Background Plus Project Conditions	**178**	**61**	**49**	**55**	**1308**	**0**	**50**	**30**	**490**	**597**	**902**	**155**	**3875**

Appendix D

Signal Warrant Worksheets

Old County Road & Oneill Avenue

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Old County — Critical Approach Speed* (mph) 30

Minor Street: Oneill Avenue — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	10.2	10.4	10.7	10.9				
Corresponding Minor Street Approach Volume (veh/hr)	29	31	60	62				
Minor Street Total Delay (veh-hrs)	0.1	0.1	0.2	0.2				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	NO	NO	NO	NO				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	NO	NO	NO	NO				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	NO	NO	NO	NO				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		459	482	444	467				
Minor Street - Highest Approach	Oneill Avenue	X		29	31	60	62				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

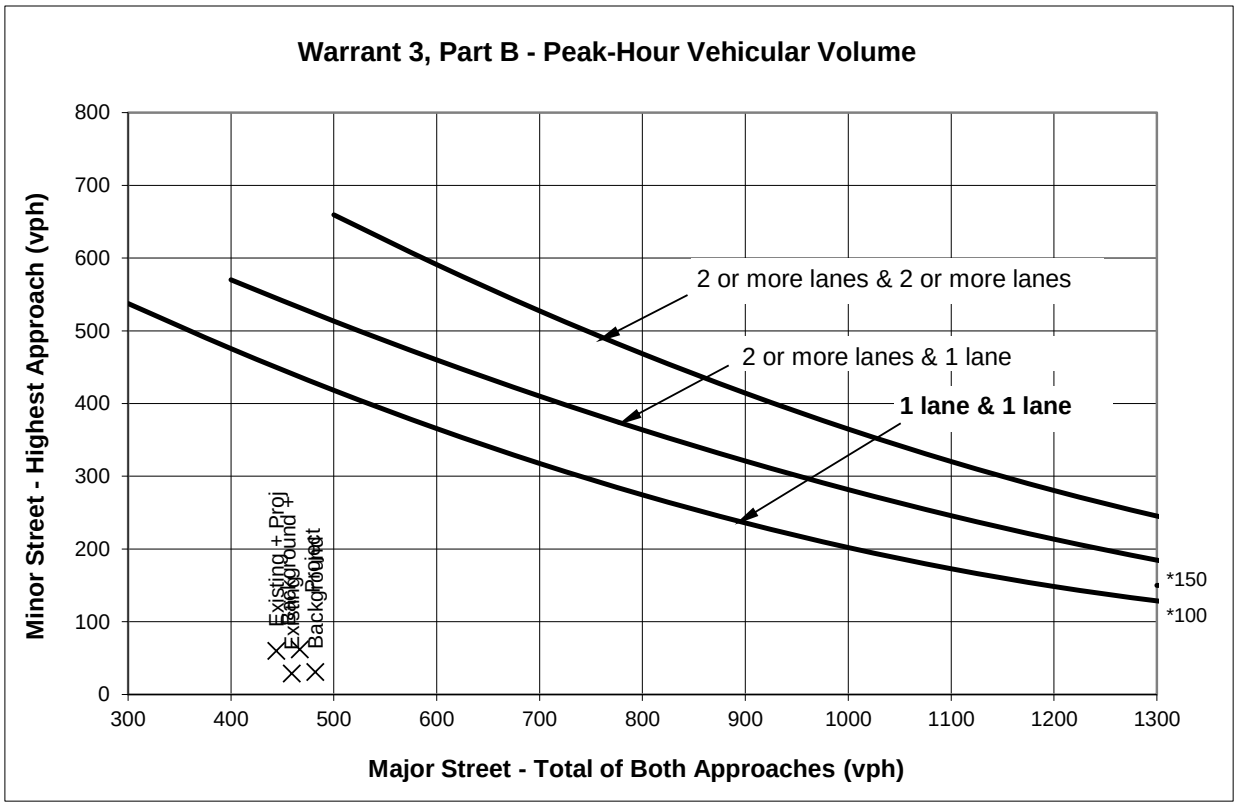
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Old County Road & Oneill Avenue

Old County Road & Oneill Avenue **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		459	482	444	467				
Minor Street - Highest Approach	Oneill Avenue	X		29	31	60	62				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Old County Road & Oneill Avenue

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Old County — Critical Approach Speed* (mph) 30

Minor Street: Oneill Avenue — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

PM PEAK HOUR	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	12.8	13.3	13.5	13.9				
Corresponding Minor Street Approach Volume (veh/hr)	40	51	45	56				
Minor Street Total Delay (veh-hrs)	0.1	0.2	0.2	0.2				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No	No	No	No				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

PM PEAK HOUR		Approach Lanes: One	Approach Lanes: 2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		745	780	780	815				
Minor Street - Highest Approach	Oneill Avenue	X		40	51	45	56				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

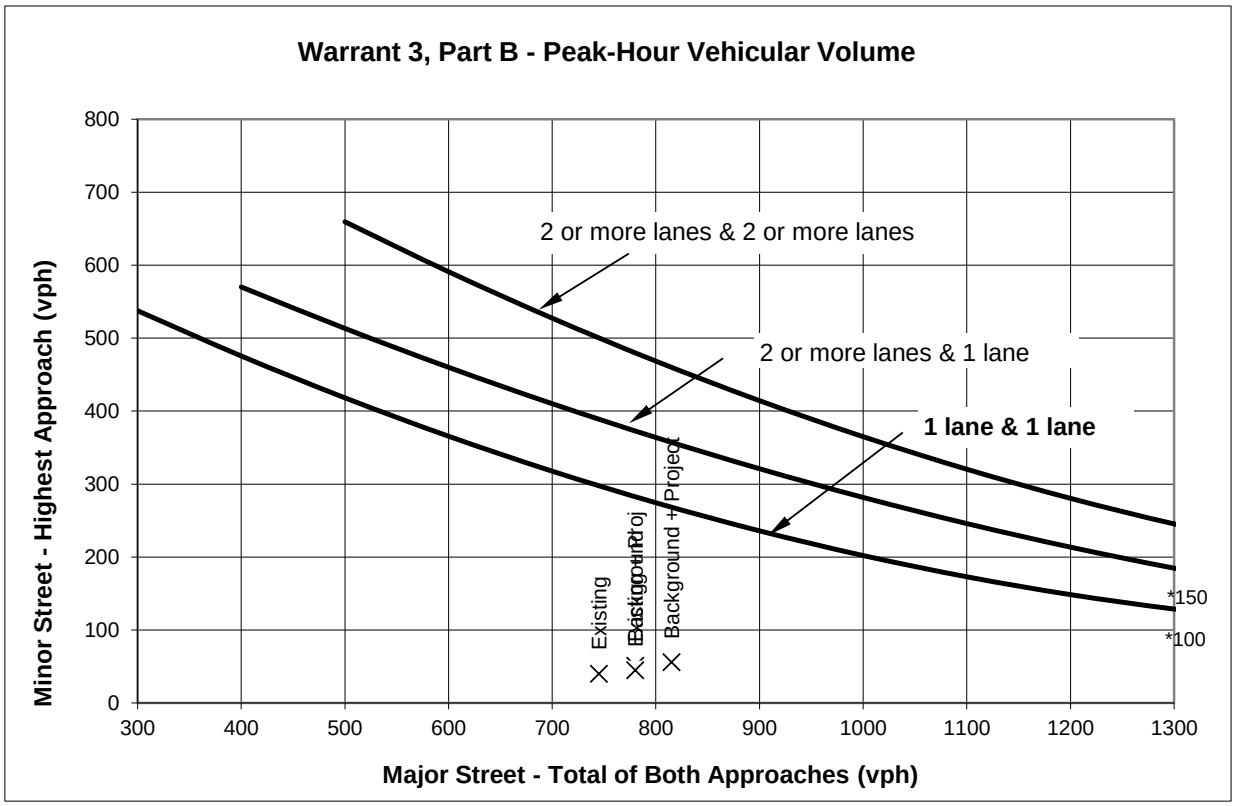
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Old County Road & Oneill Avenue

Old County Road & Oneill Avenue **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		745	780	780	815				
Minor Street - Highest Approach	Oneill Avenue	X		40	51	45	56				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Old County Road & Karen Road

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Old County — Critical Approach Speed* (mph) 30

Minor Street: / Karen Road — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	10.1	10.2	10.1	10.2				
Corresponding Minor Street Approach Volume (veh/hr)	18	18	18	18				
Minor Street Total Delay (veh-hrs)	0.1	0.1	0.1	0.1				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	NO	NO	NO	NO				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	NO	NO	NO	NO				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	NO	NO	NO	NO				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		361	376	367	382				
Minor Street - Highest Approach	/ Karen Road	X		18	18	18	18				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

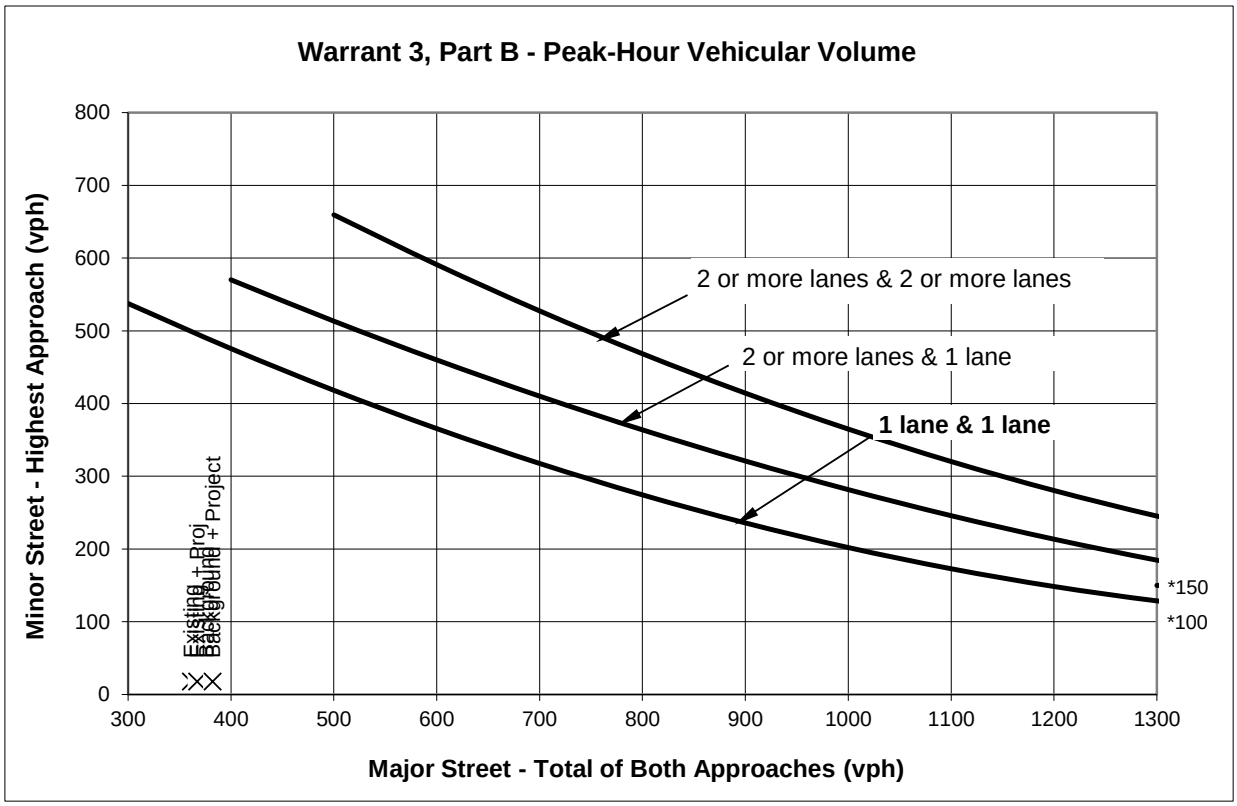
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Old County Road & Karen Road

Old County Road & Karen Road **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		361	376	367	382				
Minor Street - Highest Approach	/ Karen Road	X		18	18	18	18				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Old County Road & Karen Road

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Old County — Critical Approach Speed* (mph) 30

Minor Street: / Karen Road — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	12.4	12.8	12.6	12.9				
Corresponding Minor Street Approach Volume (veh/hr)	25	25	25	25				
Minor Street Total Delay (veh-hrs)	0.1	0.1	0.1	0.1				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	No	No	No	No				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		636	674	649	687				
Minor Street - Highest Approach	/ Karen Road	X		25	25	25	25				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

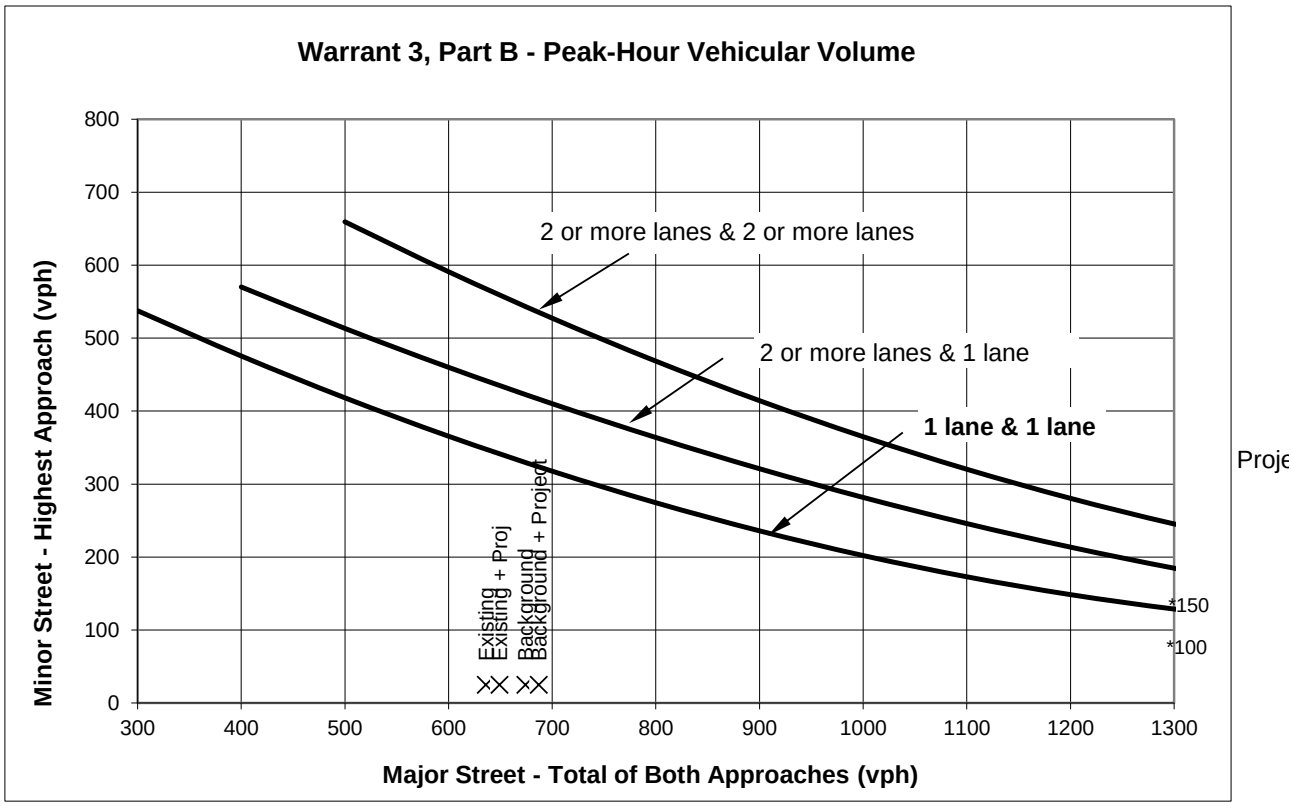
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Old County Road & Karen Road

Old County Road & Karen Road **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		636	674	649	687				
Minor Street - Highest Approach	/ Karen Road	X		25	25	25	25				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Elmer Street & Ralston Avenue

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Ralston Avenue — Critical Approach Speed* (mph) 30

Minor Street: Elmer Street — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	NB	NB	NB	NB				
Highest Minor Street Average Delay (sec/veh)	10.2	10.3	10.3	10.4				
Corresponding Minor Street Approach Volume (veh/hr)	93	95	108	110				
Minor Street Total Delay (veh-hrs)	0.3	0.3	0.3	0.3				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	NO	NO	NO	NO				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	NO	NO	YES	YES				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	YES	YES	YES	YES				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Ralston Avenue		X	1831	1905	1825	1899				
Minor Street - Highest Approach	Elmer Street	X		93	95	108	110				
Signal Warranted based on Part B?				**No**	**No**	**Yes**	**Yes**				

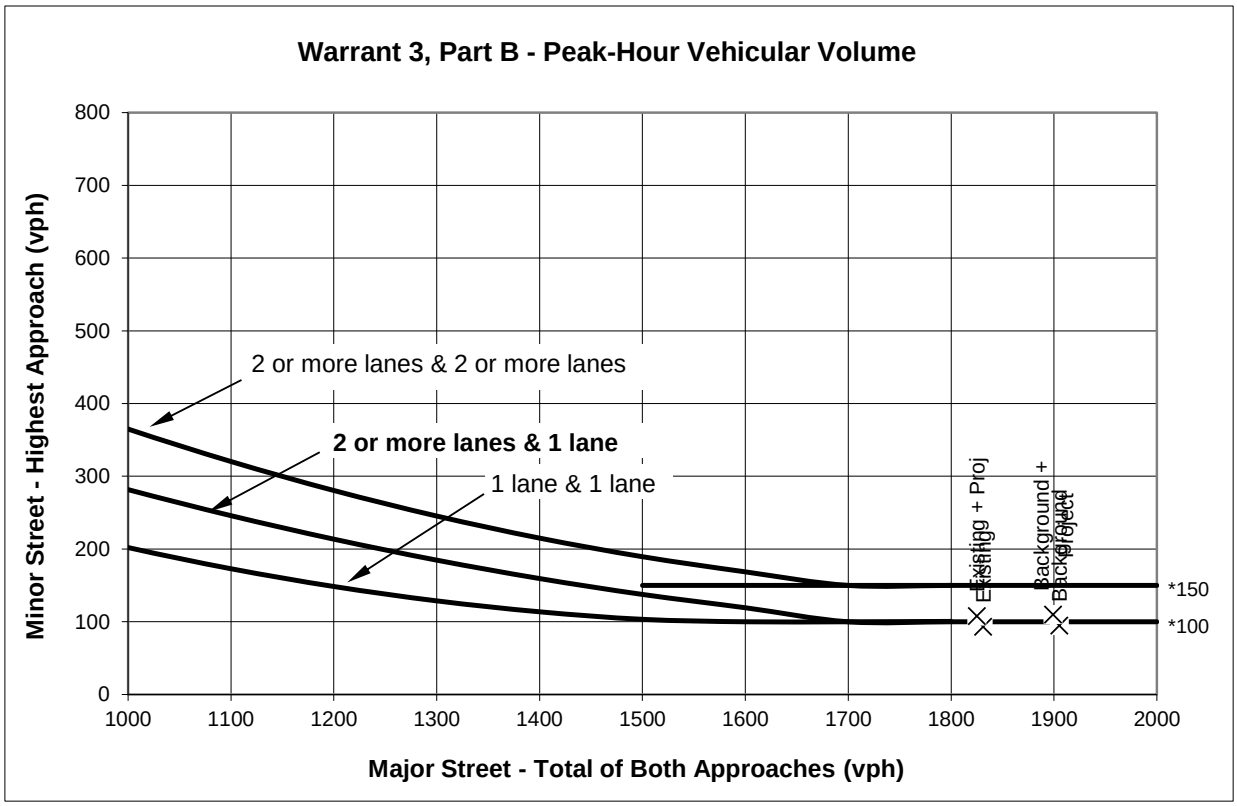
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Elmer Street & Ralston Avenue

Elmer Street & Ralston Avenue **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Ralston Avenue		X	1831	1905	1825	1899				
Minor Street - Highest Approach	Elmer Street	X		93	95	108	110				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Elmer Street & Ralston Avenue

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Ralston Avenue — Critical Approach Speed* (mph) 30

Minor Street: Elmer Street — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	NB	NB	NB	NB				
Highest Minor Street Average Delay (sec/veh)	17.0	18.1	17.3	18.5				
Corresponding Minor Street Approach Volume (veh/hr)	533	549	535	551				
Minor Street Total Delay (veh-hrs)	2.5	2.8	2.6	2.8				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes	Yes	Yes	Yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Ralston Avenue		X	1838	1898	1862	1922				
Minor Street - Highest Approach	Elmer Street	X		533	549	535	551				
Signal Warranted based on Part B?				**Yes**	**Yes**	**Yes**	**Yes**				

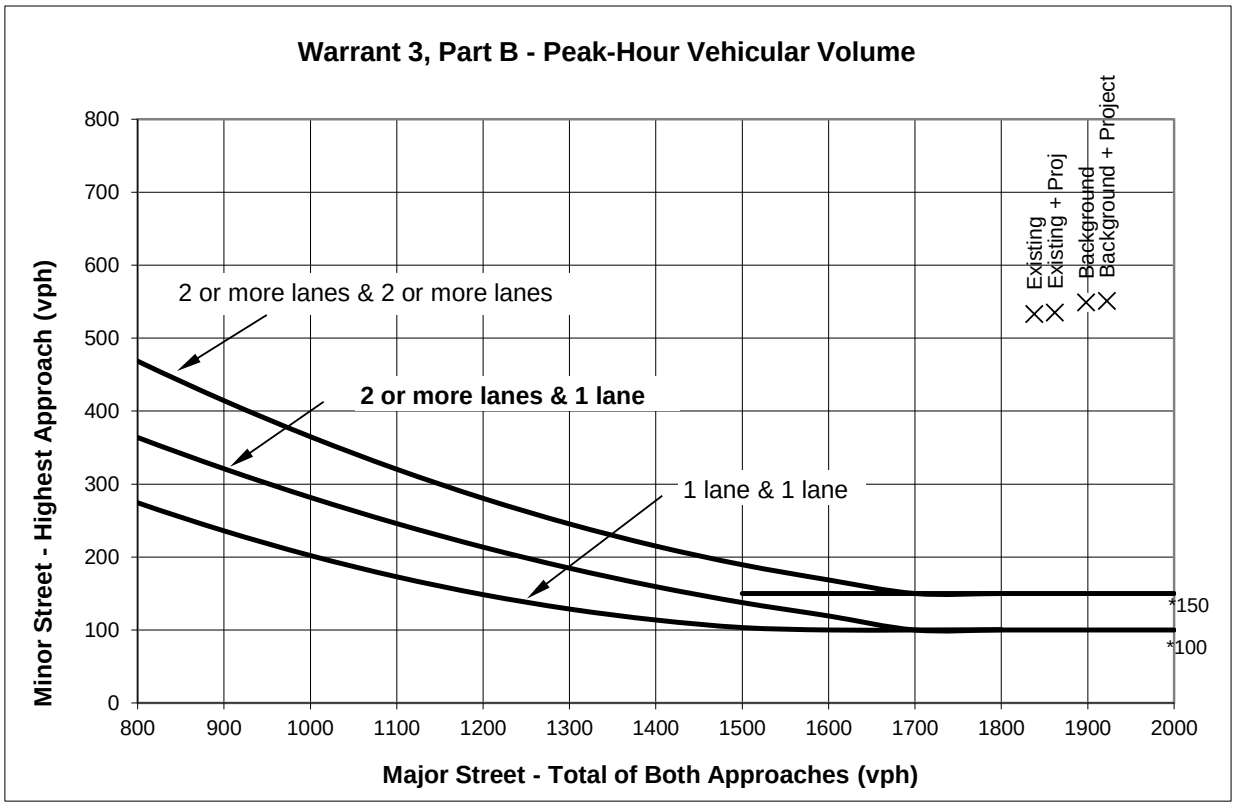
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Elmer Street & Ralston Avenue

Elmer Street & Ralston Avenue **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Ralston Avenue		X	1838	1898	1862	1922				
Minor Street - Highest Approach	Elmer Street	X		533	549	535	551				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Old County Road & Masonic Way

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Old County — Critical Approach Speed* (mph) 30

Minor Street: Masonic Way — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or ☐ **Rural (R)**

In built up area of isolated community of < 10,000 population…… ☐

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	11.6	11.7	11.6	11.7				
Corresponding Minor Street Approach Volume (veh/hr)	265	265	265	265				
Minor Street Total Delay (veh-hrs)	0.85	0.86	0.85	0.86				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	NO	NO	NO	NO				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	YES	YES	YES	YES				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	YES	YES	YES	YES				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		760	766	760	766				
Minor Street - Highest Approach	Masonic Way		X	265	265	265	265				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

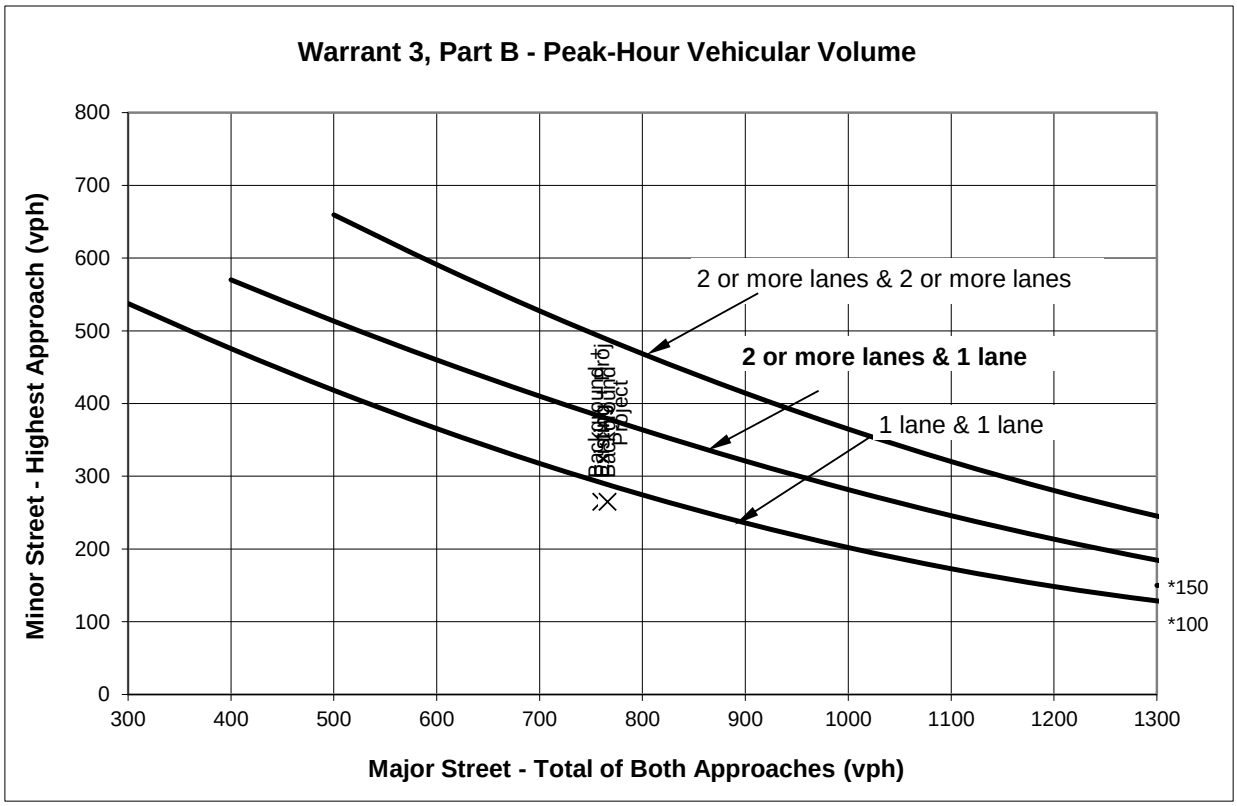
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Old County Road & Masonic Way

Old County Road & Masonic Way **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		760	766	760	766				
Minor Street - Highest Approach	Masonic Way		X	265	265	265	265				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Old County Road & Masonic Way

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Old County — Critical Approach Speed* (mph) 30

Minor Street: Masonic Way — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or
In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	13.3	13.5	13.3	13.5				
Corresponding Minor Street Approach Volume (veh/hr)	403	403	403	403				
Minor Street Total Delay (veh-hrs)	1.49	1.51	1.49	1.51				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	No	No	No	No				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	Yes	Yes	Yes	Yes				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes	Yes	Yes				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		843	872	843	872				
Minor Street - Highest Approach	Masonic Way		X	403	403	403	403				
Signal Warranted based on Part B?				**Yes**	**Yes**	**Yes**	**Yes**				

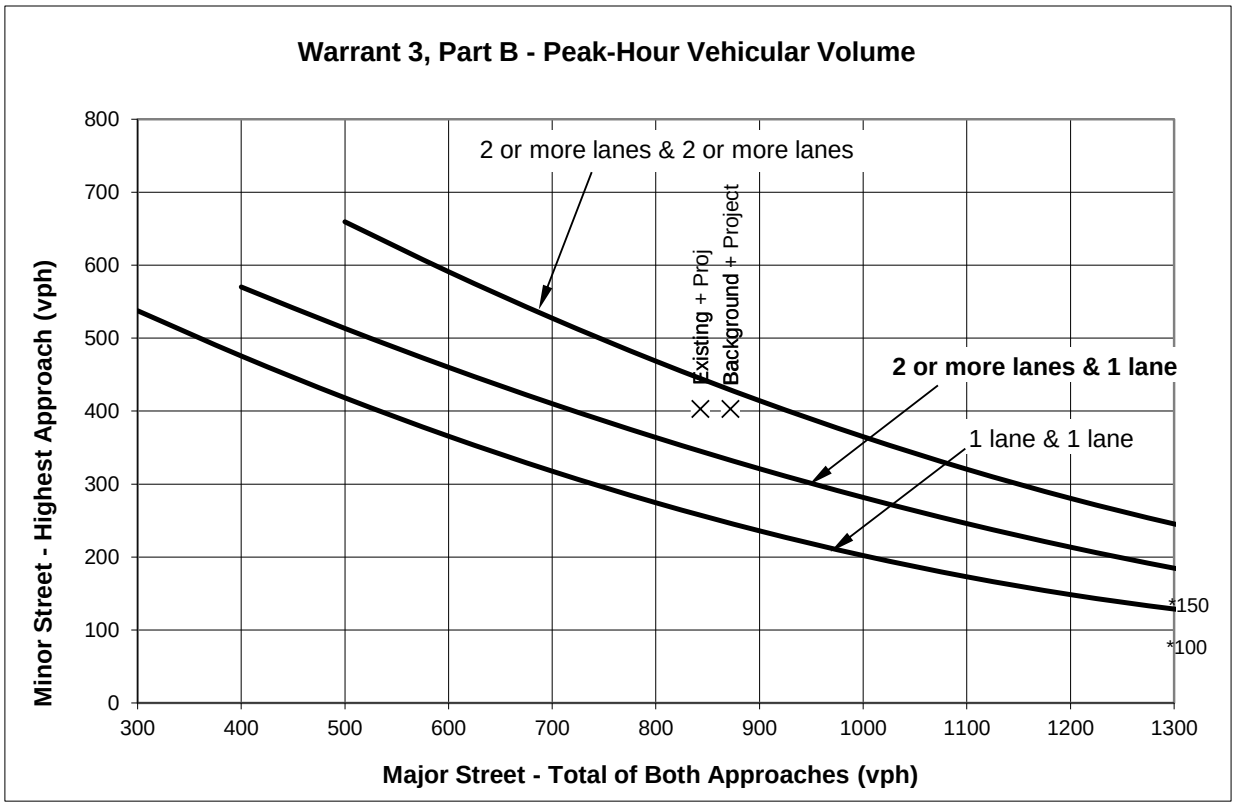
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Old County Road & Masonic Way

Old County Road & Masonic Way **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Old County	X		843	872	843	872				
Minor Street - Highest Approach	Masonic Way		X	403	403	403	403				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**Yes**	**Yes**	**Yes**	**Yes**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Elmer Street & Oneill Avenuen

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Elmer Street — Critical Approach Speed* (mph) 25

Minor Street: Oneill Avenue — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	WB	WB	WB	WB				
Highest Minor Street Average Delay (sec/veh)	7.4	7.5	7.4	7.5				
Corresponding Minor Street Approach Volume (veh/hr)	50	51	50	51				
Minor Street Total Delay (veh-hrs)	0.1	0.1	0.1	0.1				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	NO	NO	NO	NO				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	NO	NO	NO	NO				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	NO	NO	NO	NO				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Elmer Street	X		160	178	151	169				
Minor Street - Highest Approach	Oneill Avenue	X		50	51	50	51				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

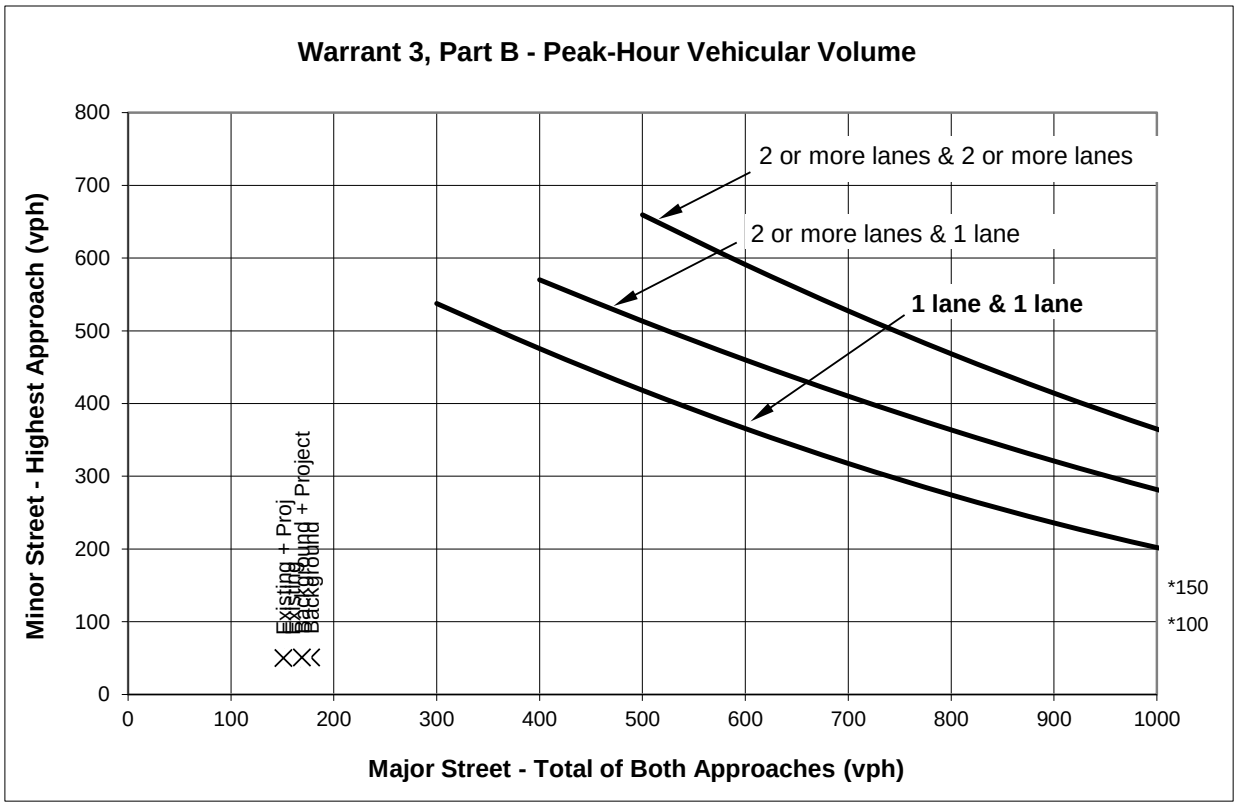
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Elmer Street & Oneill Avenuen

Elmer Street & Oneill Avenue **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Elmer Street	X		160	178	151	169				
Minor Street - Highest Approach	Oneill Avenue	X		50	51	50	51				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Elmer Street & Oneill Avenuen

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Elmer Street — Critical Approach Speed* (mph) 25

Minor Street: Oneill Avenue — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or
In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	EB	EB	EB	EB				
Highest Minor Street Average Delay (sec/veh)	9.1	9.2	9.2	9.3				
Corresponding Minor Street Approach Volume (veh/hr)	51	59	54	62				
Minor Street Total Delay (veh-hrs)	0.1	0.2	0.1	0.2				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	NO	NO	NO	NO				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	NO	NO	NO	NO				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	NO	NO	NO	NO				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Elmer Street	X		605	609	627	631				
Minor Street - Highest Approach	Oneill Avenue	X		66	76	66	76				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

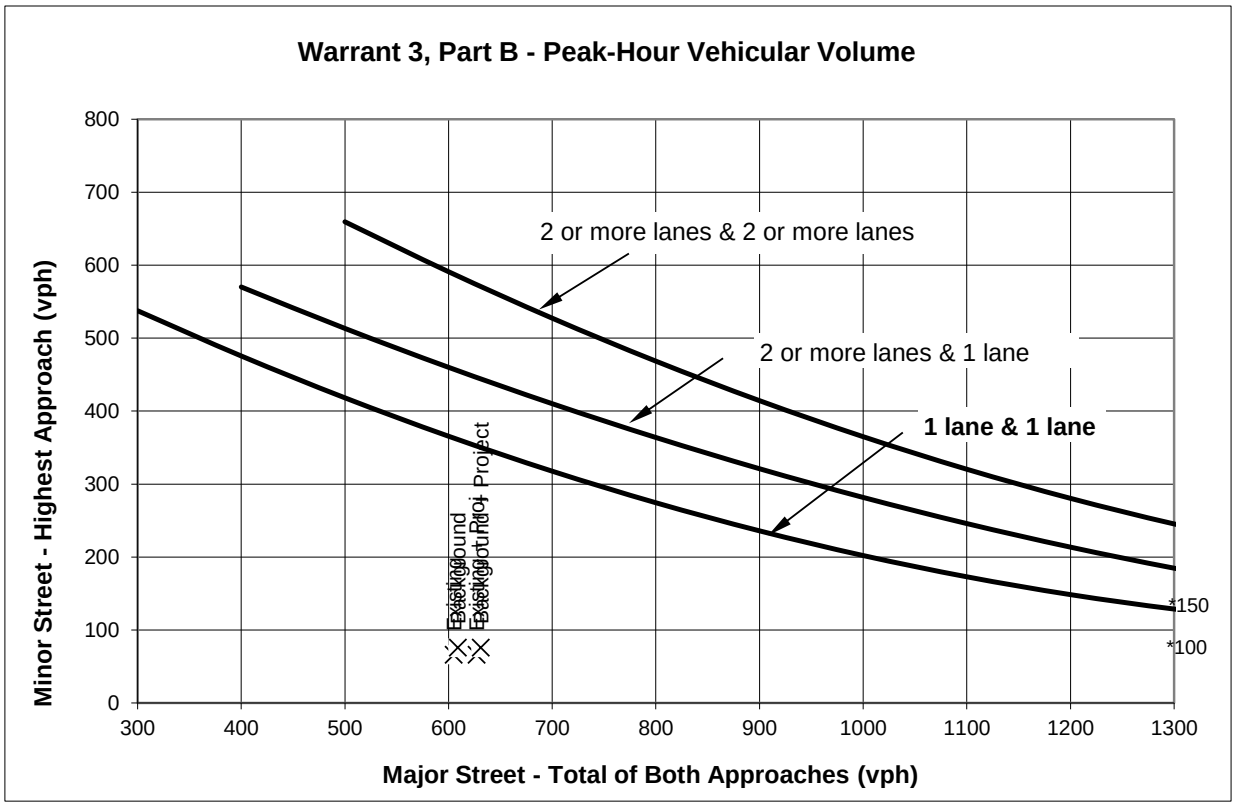
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Elmer Street & Oneill Avenuen

Elmer Street & Oneill Avenue **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Elmer Street	X		605	609	627	631				
Minor Street - Highest Approach	Oneill Avenue	X		66	76	66	76				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Elmer Street & Harbor Boulevard

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Harbor Boulevard — Critical Approach Speed* (mph) 35

Minor Street: Elmer Street — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

AM PEAK PERIOD

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	AM PEAK PERIOD							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	SB	SB	SB	SB				
Highest Minor Street Average Delay (sec/veh)	11.9	12.3	12.2	12.7				
Corresponding Minor Street Approach Volume (veh/hr)	63	72	71	80				
Minor Street Total Delay (veh-hrs)	0.2	0.2	0.2	0.3				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	NO	NO	NO	NO				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	NO	NO	NO	NO				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	YES	YES	YES	YES				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Harbor Boulevard		X	991	997	989	995				
Minor Street - Highest Approach	Elmer Street	X		63	72	71	80				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

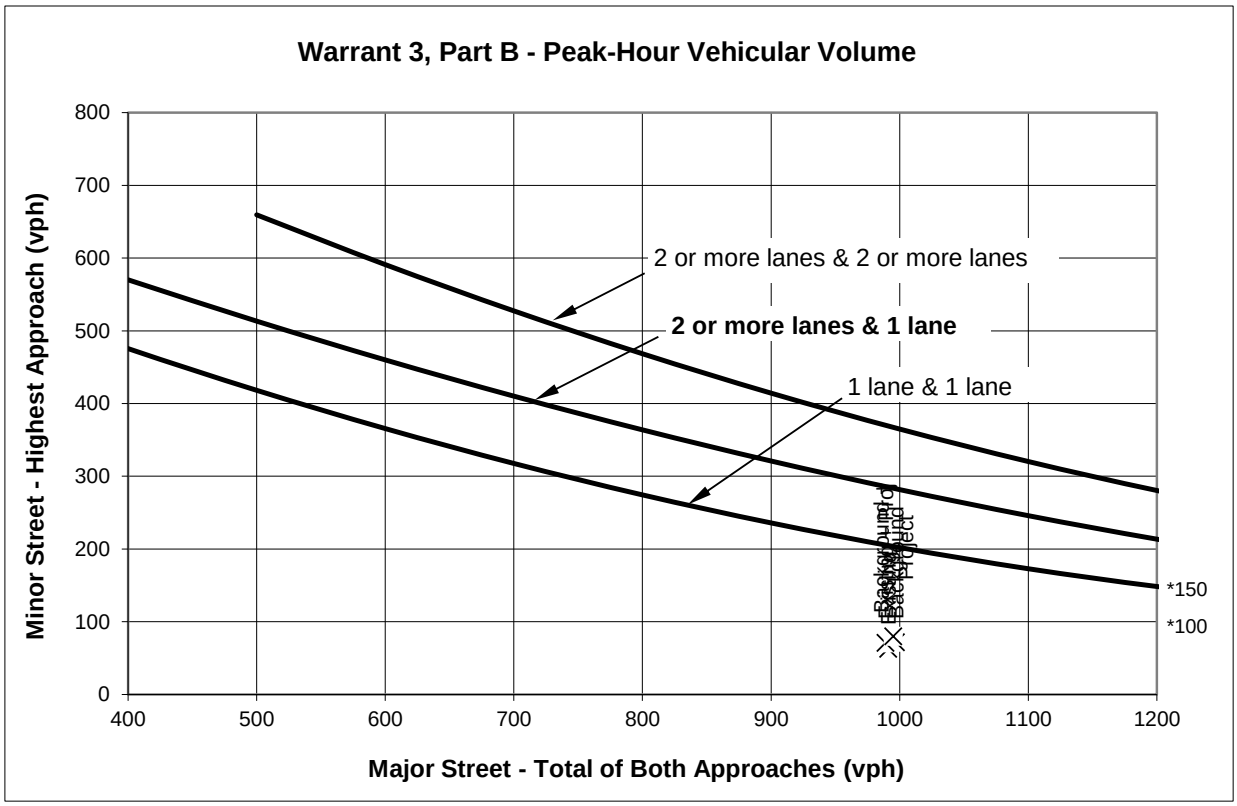
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Elmer Street & Harbor Boulevard

Elmer Street & Harbor Boulevard **AM PEAK PERIOD**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		AM PEAK PERIOD							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Harbor Boulevard		X	991	997	989	995				
Minor Street - Highest Approach	Elmer Street	X		63	72	71	80				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Elmer Street & Harbor Boulevard

TRAFFIC SIGNAL WARRANTS WORKSHEET

Analyst: SS date: 8/1/18

Major Street: Harbor Boulevard — Critical Approach Speed* (mph) 35

Minor Street: Elmer Street — Critical Approach Speed* (mph) 25

**Posted Speed.*

Critical speed of major street traffic > 50 mph (64 km/h)…… ☐ or

In built up area of isolated community of < 10,000 population…… ☐ } **Rural (R)**

☑ **Urban (U)**

PM PEAK HOUR

Warrant 3 - Peak Hour

PART A

(All parts 1, 2, and 3 below must be satisfied)

	PM PEAK HOUR							
	Existing	Background	Existing + Proj	Background + Project				
Minor Street Approach Direction w/ Highest Delay	SB	SB	SB	SB				
Highest Minor Street Average Delay (sec/veh)	21.5	23.4	21.9	23.9				
Corresponding Minor Street Approach Volume (veh/hr)	66	70	67	71				
Minor Street Total Delay (veh-hrs)	0.4	0.5	0.4	0.5				
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; AND	NO	NO	NO	NO				
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; AND	NO	NO	NO	NO				
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	YES	YES	YES	YES				
Signal Warranted based on Part A?	**No**	**No**	**No**	**No**				

PART B

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Harbor Boulevard		X	1406	1428	1412	1434				
Minor Street - Highest Approach	Elmer Street	X		66	70	67	71				
Signal Warranted based on Part B?				**No**	**No**	**No**	**No**				

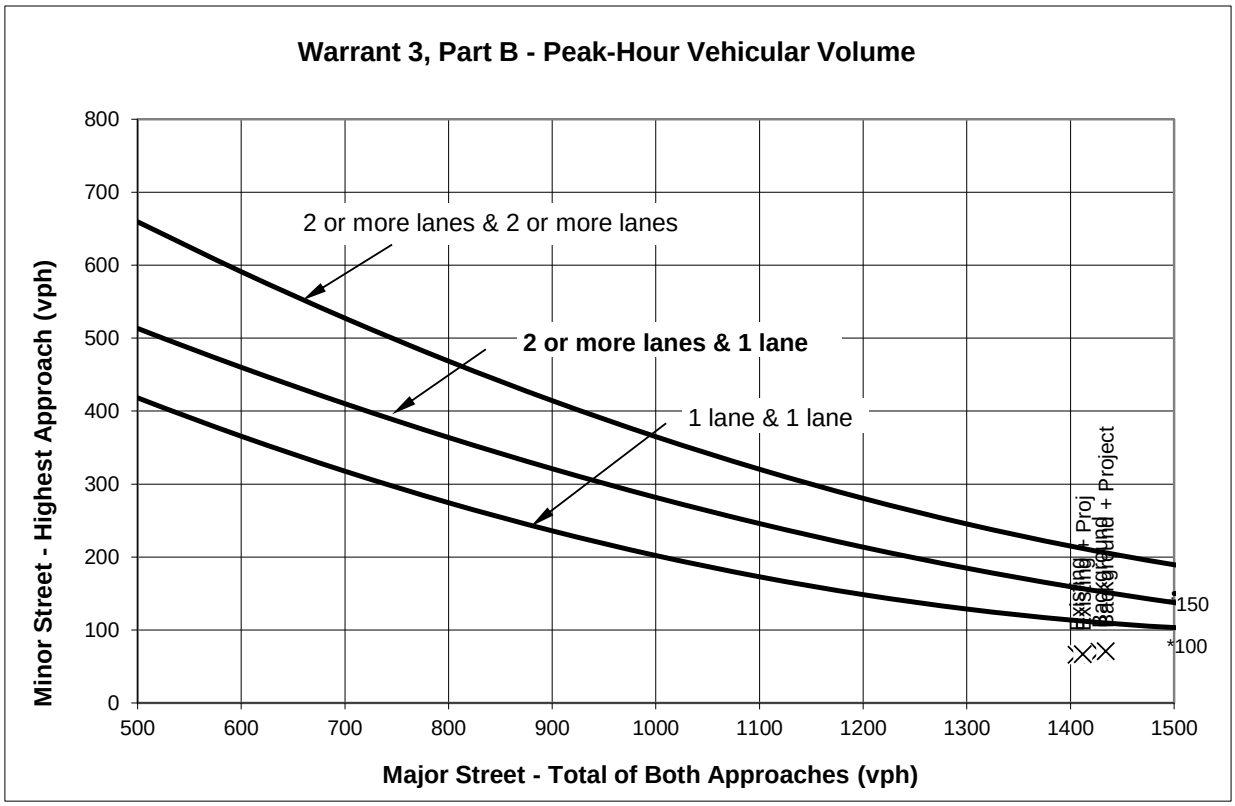
The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California).

Notes:

Elmer Street & Harbor Boulevard

Elmer Street & Harbor Boulevard **PM PEAK HOUR**



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2010 Edition, as amended for use in California)* .

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

		Approach Lanes		PM PEAK HOUR							
		One	2 or More	Existing	Background	Existing + Proj	Background + Project				
Major Street - Both Approaches	Harbor Boulevard		X	1406	1428	1412	1434				
Minor Street - Highest Approach	Elmer Street	X		66	70	67	71				
Signal Warranted Based on Part B - Peak-Hour Volumes?				**No**	**No**	**No**	**No**				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.