Appendix F

Traffic Impact Analysis Report (TIAR), Austin Tsutsumi & Associates, Inc. (ATA), November 2014

TRAFFIC IMPACT ANALYSIS REPORT
HONOULIULI WASTEWATER TREATMENT PLANT
KAPOLEI, O‘AHU, HAWAI‘I

DRAFT FINAL

November 25, 2014

Prepared for:

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CONTINUING THE ENGINEERING PRACTICE FOUNDED BY H. A. R. AUSTIN IN 1934

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TRAFFIC IMPACT ANALYSIS REPORT
HONOULIULI WASTEWATER TREATMENT PLANT
Kapolei, Oahu, Hawai'i

1. INTRODUCTION

This report documents the findings of a traffic study conducted by Austin, Tsutsumi & Associates, Inc. (ATA) to evaluate the potential traffic impacts resulting from the proposed improvements to the Honouliuli Wastewater Treatment Plant (hereinafter referred to as the "Project").

1.1 Location

The Project is located in Kapolei on the island of Oahu on a parcel of land more specifically identified as TMK: 9-1-069:003 and 9-1-013:007. The Project site is bound to the south by Geiger Road with Roosevelt Ave to the west, Renton Road to the north, and Coral Creek Golf Course to the east. Figure 1 shows the Project location.

1.2 Project Description

The Project proposes to upgrade and expand the facility, which will include the potential relocation of non-process facilities currently located at the Sand Island Wastewater Treatment Plant to the Project site. This TIAR will analyze two benchmark years; Year 2021, which corresponds to the peak year of construction for the Project and Year 2030, which corresponds to the build-out of the Project.

Figure 2 shows the Project site plan.

1.3 Study Methodology

This study will address the following:

1. Existing traffic operations at key locations within the study area.
2. Traffic projections for Base Years 2021 and 2030 without the Project including traffic generated by a defacto growth rate as well as traffic generated by other known developments in the vicinity of the Project.

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3. Trip generation and assignment for the proposed Project.
4. Traffic projections for Years 2021 and 2030 with the Project conditions, which include Base Years 2021 and 2030 traffic volumes in addition to traffic volumes generated by the Project.
5. Recommendations for roadway improvements or other traffic mitigative measures, as appropriate, to reduce or eliminate the adverse impacts resulting from traffic generated by the Project.
6. This TIAR is prepared according to accepted industry practices. Selection and application of analysis methods are appropriate.

1.4 Analysis Methodology

Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. The Highway Capacity Manual – Special Report 209 (HCM), dated 2010, includes methods for calculating volume to capacity ratios, delays, and corresponding Levels of Service that were utilized in this study. LOS definitions for signalized and unsignalized intersections are provided in Appendix B.

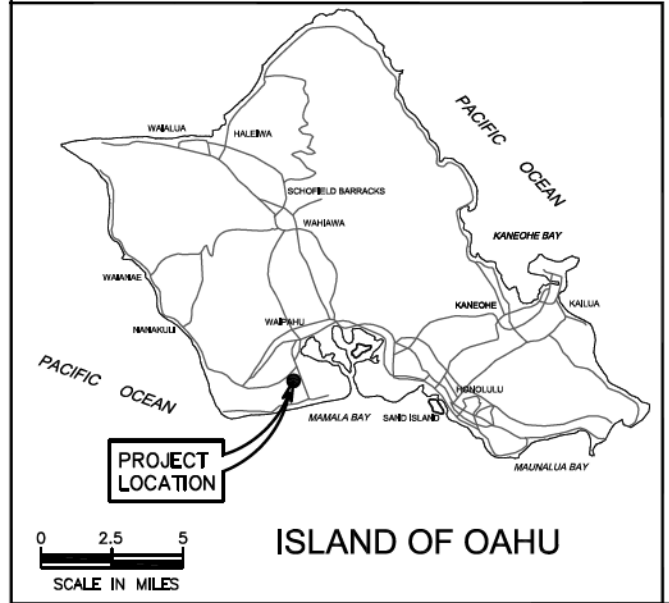
Analyses for the study intersections were performed using the traffic analysis software Synchro, which is able to prepare reports based on the methodologies described in the HCM. These reports contain control delay results as based on intersection lane geometry, signal timing, and hourly traffic volumes. Based on the vehicular delay at each intersection, a LOS is assigned to each approach and intersection movement as a qualitative measure of performance. These results, as confirmed or refined by field observations, constitute the technical analysis that will form the basis of the recommendations outlined in this report.

NORTH

NOT TO SCALE

LIST OF PROJECT INTERSECTIONS:

1. KAPOLEI PARKWAY/KUALAKAI PARKWAY
2. KAPOLEI PARKWAY/RENTON ROAD
3. PHILLIPINE SEA/RENTON ROAD
4. PHILLIPINE SEA/ROOSEVELT AVENUE
5. ESSEX ROAD/ROOSEVELT AVENUE/GEIGER ROAD
6. GEIGER ROAD/EWA REFUSE CONVENIENCE CENTER
7. GEIGER ROAD/HONOULIULI DRIVEWAY 1
8. GEIGER ROAD/HONOULIULI DRIVEWAY 2
9. KAPOLEI PARKWAY/GEIGER ROAD
10. FORT WEAVER ROAD/GEIGER ROAD/IROQUOIS ROAD
11. FORT WEAVER ROAD/RENTON ROAD



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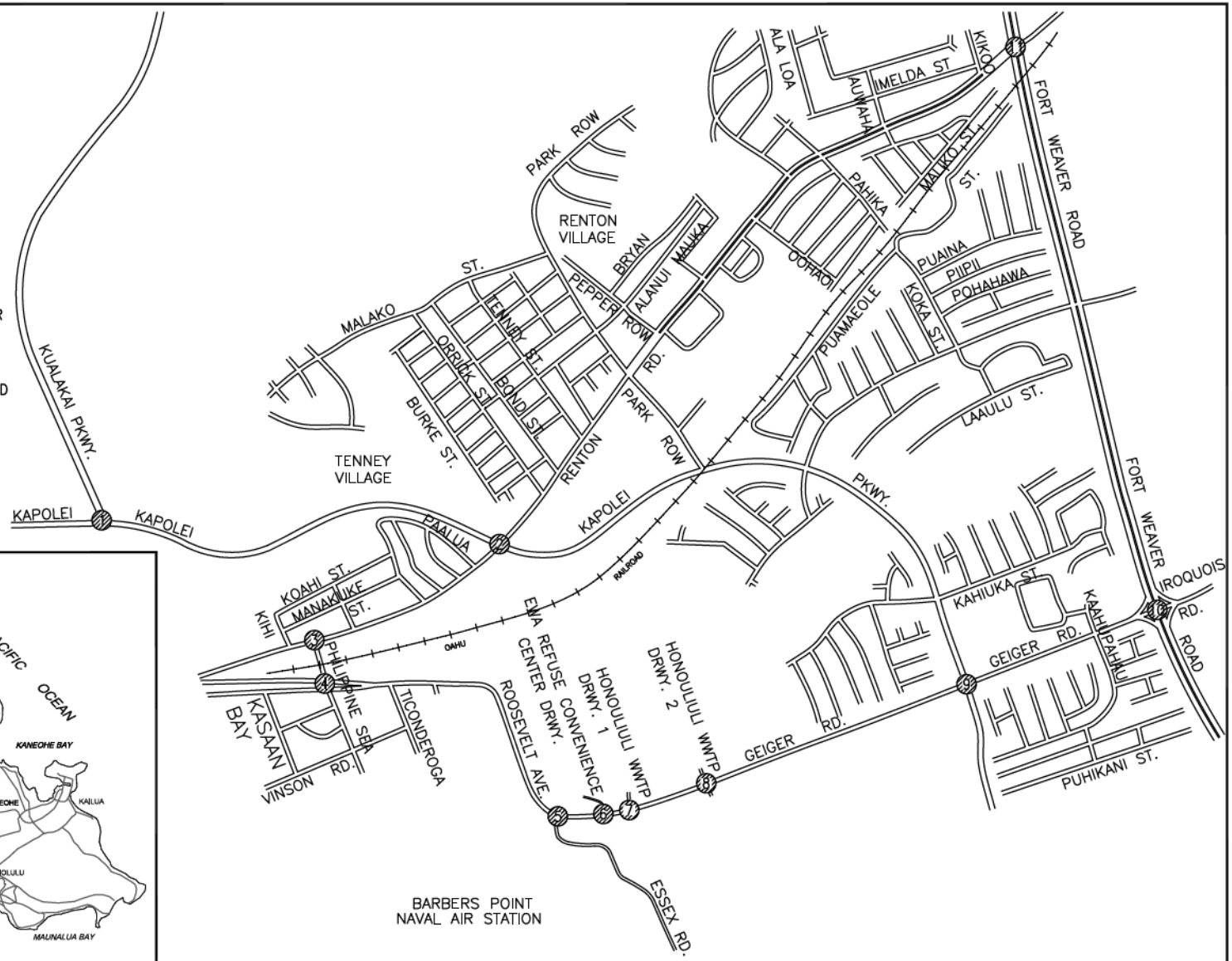

HONOULIULI WASTEWATER TREATMENT PLANT TIAR

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FIGURE 1

PROJECT LOCATION

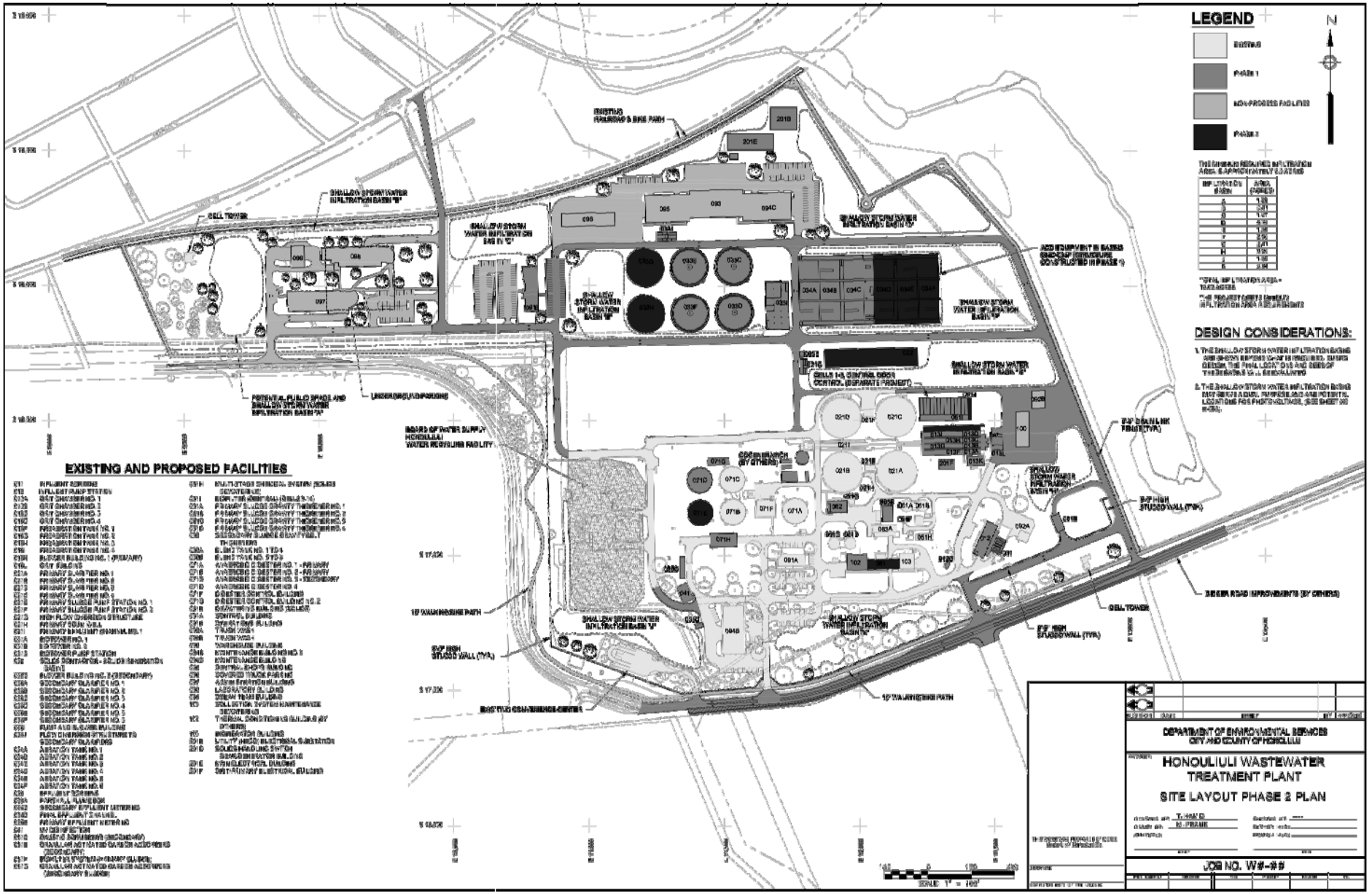

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FIGURE 2

PROJECT SITE PLAN

2. EXISTING CONDITIONS

2.1 Roadway System

The following are brief descriptions of the existing roadways in the vicinity of the Project:

Kualakai Parkway is generally a north-south, two-way, four-lane, divided arterial roadway. This roadway begins to the north as a full diamond interchange with the H-1 Freeway and ends to the south at a T-intersection with Kapolei Parkway. The posted speed limit along Kualakai Parkway is 35 miles per hour (mph).

Renton Road is generally an east-west, two-way, collector roadway that begins at Kihi Street to the west as a two-lane, undivided roadway and extends to the east becoming a four-lane, divided roadway terminating in Asing Park. The posted speed limit along Renton Road is 25 mph.

Kapolei Parkway is generally an east-west, two-way, six-lane, divided arterial roadway in the vicinity of the Project. This roadway begins in the west near the Kapolei Target Store and extends east until it crosses Renton Road and turns to the south. Kapolei Parkway continues past its intersection with Papipi Road as Hailipo Street. The posted speed limit along this roadway in the vicinity of the Project is 30 mph.

Roosevelt Avenue is generally an east-west, two-way, two-lane, undivided collector roadway in the vicinity of the Project. This roadway begins in the west near its intersection with Boxer Road and extends east until it terminates at its intersection with Essex Road and continues as Geiger Road. The posted speed limit along this roadway is 25 mph.

Phillipine Sea is generally a north-south, two-way, two-lane, undivided restricted private local roadway. This roadway begins to the north at a T-intersection with Renton Road and terminates to the south at its intersection with Vinson Road. The posted speed limit is 15 mph.

Geiger Road is generally an east-west, two-lane, undivided two-way collector roadway in the vicinity of the Project. This roadway begins in the west where Roosevelt Ave becomes Geiger Road at the intersection with Essex Road and terminates to the east where Geiger Road becomes Iroquois Road at its intersection with Fort Weaver Road. The posted speed limit in the vicinity of the project is 30 mph.

Fort Weaver Road is generally a north-south, two-way, six-lane, divided arterial roadway in the vicinity of the Project. This roadway begins to the north at the H-1 Freeway interchange, and terminates in the south at its intersection with Popoi Place near Ewa Beach Park. The posted speed limit in the vicinity of the Project is 35 mph.

Essex Road is generally a north-south, two-way, two-lane, undivided private local roadway that primarily serves to provide access to Barbers Point Golf Course. This roadway begins in the north at a T-intersection with Geiger Road, becomes a restricted roadway to the south of Barbers Point Golf Course, and terminates to the south at White Plains Beach Park. The posted speed limit along this roadway is 10 mph.

Ewa Refuse Convenience Center Driveway is approximately 450 feet east of the Geiger Road/Essex Road intersection and provides access to the refuse center.

Honouliuli Driveway 1 is the westernmost Project driveway along Geiger Road and provides direct access to the Honouliuli WWTP.

Honouliuli Driveway 2 is the easternmost Project driveway along Geiger Road and provides direct access to the Honouliuli WWTP.

2.2 Existing Traffic Volumes

Due to their proximity to the Project, the following intersections and Project access driveways were studied:

- Kualakai Parkway/Kapolei Parkway
- Renton Road/Phillipine Sea
- Roosevelt Avenue/Phillipine Sea
- Fort Weaver Road/Geiger Road/Iroquois Road
- Geiger Road/Kapolei Parkway
- Renton Road/Kapolei Parkway
- Renton Road/Fort Weaver Road
- Roosevelt Avenue/Geiger Road/Essex Road
- Geiger Road/Ewa Refuse Convenience Center Driveway
- Geiger Road/Honouliuli Driveway 1
- Geiger Road/Honouliuli Driveway 2

The weekday morning (AM) and afternoon (PM) peak hour turning movement data utilized in this report was collected on Wednesday, September 3, 2014. Based on this traffic count data, the weekday AM peak hour of traffic was determined to be from 7:00 AM to 8:00 AM and the PM peak hour of traffic was determined to be from 4:00 PM to 5:00 PM. The traffic count data is provided in Appendix A.

2.3 Existing Intersection Analysis

At all signalized study intersections, with the exception of Fort Weaver Road intersections, most vehicles typically cleared each intersection within one signal cycle without any heavy queuing or congestion. All study intersections operate at LOS D or better with adequate capacity except for the following intersections:

Kapolei Parkway/Renton Road
All movements of this intersection currently operate at LOS D or better during the AM and PM peak hours of traffic with the exception of the northbound left-turn movement, which operates at LOS E during the AM peak hour of traffic. Although the northbound left-turn movement operates at LOS E during the AM peak hour of traffic, adequate capacity is provided.

Kapolei Parkway/Geiger Road
The eastbound left-turn movement operates at LOS E(E) during the AM(PM) peak hours, but is generally low volume movements of only 8(45) vehicles, respectively. All remaining movements of this intersection operate at LOS D or better during the AM and PM peak hour of traffic.

Fort Weaver Road/Geiger Road/Iroquois Road & Fort Weaver Road/Renton Road
The majority of movements at these intersections currently operate at LOS E/F conditions during the AM and PM peak hours of traffic mainly due to long delays as a result of requisite long cycle lengths (approximately 4 minutes long). These two intersections also provide split-phase signal operation on the side streets and long pedestrian crossing times across Fort Weaver Road, which contribute to the long delays. During the AM peak hour, the northbound traffic is generally heavier, while during the PM peak hour, traffic is heavier in the southbound direction.

Existing traffic volumes, lane configuration and movement LOS are illustrated in Figure 3. Table 1 shows the existing delay, volume to capacity (v/c) ratio, and LOS for the study intersections, with the full LOS summary table provided in Appendix C.

NOT TO SCALE

KUALAKAI PARKWAY

KAPOLEI PARKWAY

RENTON ROAD

FORT WEAVER ROAD

KAPOLEI PARKWAY

PHILLIPINE SEA

ROOSEVELT AVENUE

ESSEX ROAD

ECRC

DW1

DW2

GEIGER ROAD

IROQUOIS ROAD

LEGEND

- (Y) X(X) – SIGNALIZED INTERSECTION Y
- (X) – UNSIGNALIZED INTERSECTION X
- ##(##) – AM(PM) PEAK HOUR OF TRAFFIC VOLUMES
- X(X) – AM(PM) LEVEL OF SERVICE

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EXISTING LANE CONFIGURATION, VOLUME, AND LOS

FIGURE 3

T.1: Existing Intersection Level of Service Summary

Intersection	Existing Conditions					
	AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kapolei Pkwy & Kualakai Pkwy						
EB LT	21.8	0.66	C	21.9	0.64	C
EB TH	3.7	0.12	A	5.8	0.18	A
EB RT	-	-	-	-	-	-
WB LT	-	-	-	-	-	-
WB TH	12.3	0.36	B	12.8	0.26	B
WB RT	7.9	0.28	A	6.3	0.19	A
NB LT	-	-	-	-	-	-
NB TH	-	-	-	-	-	-
NB RT	-	-	-	-	-	-
SB LT	21.3	0.41	C	16.9	0.55	B
SB TH	-	-	-	-	-	-
SB RT	14.4	0.28	B	12.6	0.40	B
Overall	12.5	-	B	12.2	-	B
2: Kapolei Pkwy & Renton Rd						
EB LT	26.5	0.07	C	17.5	0.14	B
EB TH/RT	23.9	0.14	C	17.1	0.31	B
WB LT	36.6	0.73	D	22.1	0.46	C
WB TH	24.4	0.21	C	16.0	0.13	B
WB RT	24.1	0.17	C	15.7	0.08	B
NB LT	62.9	0.77	E	40.7	0.66	D
NB TH	25.3	0.60	C	17.0	0.34	B
NB TH/RT	25.9	0.61	C	17.2	0.35	B
SB LT	45.2	0.85	D	28.5	0.77	C
SB TH	13.9	0.14	B	12.5	0.34	B
SB TH/RT	14.0	0.14	B	12.7	0.34	B
Overall	27.9	-	C	17.5	-	B
3: Phillipine Sea & Renton Rd						
EB TH/RT	-	-	-	-	-	-
WB LT/TH	7.5	0.12	A	7.5	0.09	A
NB LT/RT	8.7	0.08	A	9.3	0.21	A
4: Phillipine Sea & Roosevelt Ave						
EB LT/TH/RT	8.9	0.07	A	8.6	0.16	A
WB LT/TH/RT	0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A
SB LT/TH/RT	18.0	0.41	C	18.0	0.35	C
5: Essex Rd & Roosevelt Ave/Geiger Rd						
EB TH/RT	-	-	-	-	-	-
WB LT	7.9	0.02	A	9.0	0.01	A
WB TH	-	-	-	-	-	-
NB LT/RT	14.4	0.03	B	16.3	0.09	C
6: Geiger Rd & Ewa Refuse Convenience Center						
EB LT/TH/RT	0.0	-	A	8.1	0.00	A
WB LT/TH/RT	7.9	0.01	A	8.9	0.00	A
NB LT/TH/RT	11.8	0.04	B	12.9	0.01	B
SB LT/TH/RT	0.0	-	A	0.0	-	A
7: Geiger Rd & Honouliuli Drwy 1						
EB LT/TH	0.0	-	A	0.0	-	A
WB TH/RT	-	-	-	-	-	-
SB LT/RT	14.6	0.04	B	19.2	0.05	C
8: Geiger Rd & Honouliuli Drwy 2						
EB LT/TH/RT	8.8	0.00	A	8.1	0.01	A
WB LT/TH/RT	0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A
SB LT/TH/RT	15.8	0.04	C	20.4	0.13	C
9: Kapolei Pkwy & Geiger Rd						
EB LT	67.8	0.56	E	56.4	0.78	E
EB TH	35.2	0.35	D	30.5	0.63	C
EB TH/RT	35.2	0.36	D	31.1	0.66	C
EB RT	-	-	-	-	-	-
WB LT	46.9	0.77	D	42.2	0.78	D
WB TH	35.6	0.73	D	23.7	0.32	C
WB RT	29.4	0.15	C	22.4	0.14	C
NB LT	36.3	0.88	D	38.5	0.81	D
NB TH	18.2	0.53	B	23.3	0.41	C
NB RT	14.6	0.10	B	20.7	0.04	C
SB LT	42.2	0.79	D	40.1	0.79	D
SB TH	24.5	0.52	C	26.7	0.60	C
SB RT	20.5	0.01	C	22.1	0.01	C
Overall	27.9	-	C	30.3	-	C

Note:
* = over-capacity, v/c > 1

T.1: Existing Intersection Level of Service Summary (continued)

Intersection	Existing Conditions					
	AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
10: Ft Weaver Rd & Geiger Rd/Iroquois Rd						
EB LT	107.0	0.65	F	106.7	0.65	F
EB LT/TH	101.9	0.63	F	102.5	0.65	F
EB RT	97.2	0.39	F	99.1	0.48	F
WB LT	85.3	0.18	F	90.3	0.05	F
WB TH	105.2	0.75	F	116.8	0.78	F
WB RT	85.2	0.19	F	90.4	0.06	F
NB LT	111.0	0.61	F	111.1	0.59	F
NB TH	35.9	0.53	D	33.2	0.33	C
NB RT	26.0	0.00	C	28.2	0.01	C
SB LT	77.0	0.63	E	119.0	0.80	F
SB TH	50.1	0.34	D	29.3	0.54	C
SB RT	141.5	0.08	F	32.3	0.17	C
Overall	65.2	0.60	E	57.8	0.64	E
11: Ft Weaver Rd & Renton Rd						
EB LT	111.0	0.79	F	112.4	0.79	F
EB LT/TH	109.3	0.77	F	111.6	0.79	F
EB RT	86.5	0.16	F	86.3	0.09	F
WB LT/TH	118.6	0.34	F	121.2	0.63	F
WB RT	111.6	0.01	F	104.5	0.02	F
NB LT	120.7	0.81	F	100.3	0.70	F
NB TH	21.8	0.87	C	28.7	0.48	C
NB RT	14.9	0.01	B	40.0	0.05	D
SB LT	123.1	0.58	F	111.9	0.59	F
SB TH	31.3	0.44	C	54.6	0.95	D
SB RT	45.8	0.17	D	34.6	0.21	C
Overall	39.8	0.84	D	53.9	0.88	D

Note:
* = over-capacity, v/c > 1

3. BASE YEAR WITHOUT PROJECT SCENARIOS

The year 2021 was selected as the base year to reflect the anticipated peak year of construction activity, which was assumed to occur during Phase 1 construction of the Honouliuli WWTP.

3.1 Defacto Growth Rate

The Oahu Regional Transportation Plan 2035 (ORTP) was prepared in 2011, and serves as the basis for future traffic projections of future conditions throughout this TIAR. The ORTP uses existing data from 2007 as its baseline before assigning land uses and socioeconomic data to Traffic Analysis Zones (TAZ's) to generate and assign traffic across the roadway network. Although island wide projects are accounted for in the ORTP, the economic environment and housing demand would be the main driver for the pace of development to occur.

The ORTP Model takes into account island wide projects and generates and distributes the generated trips throughout the roadway network. The growth rates derived from 2007 and 2035 traffic projections were applied linearly to existing 2014 traffic volume to determine year 2021 and 2030 Base Year conditions. In some cases, growth rates were derived from a comparison of the existing collected 2014 traffic counts and 2035 model traffic projections. With the inclusion of other known developments shown below, some growth rates were adjusted to account for the manual inclusion of trips on the roadway network. Calculated defacto growth rates ranging from 0.5-3.5 percent were used to generate Base Year 2021 and 2030 traffic projections.

3.2 Other Known Developments

The surrounding projects traffic studies – University of Hawaii at West Oahu (UHWO), Ka Makana Alii, Ho'opili and East Kapolei developments – were used to determine turning movement volumes at various study intersection and were reconciled with the ORTP, which does not provide individual turning movement volumes. Other projects' trip contributions to the background traffic were assumed to be implicit to the ORTP.

- UHWO – This project is currently located adjacent and to the west of Kualakai Parkway and south of Farrington Highway. The UHWO currently provides an enrollment for approximately 2,400. Future expansion of the UHWO campus anticipates 7,600 enrollment with residential dwelling units and Village Mixed-Use (VMX) space. This project was assumed to be completed by Year 2021.
- Ka Makana Alii – This project is proposed to be located adjacent and to the south of the Kualakai Parkway/Kapolei Parkway intersection. Ka Makana Alii is a planned shopping center, consisting of approximately 1.4 million square feet (SF) of retail commercial space. This project was assumed to be completed by Year 2021.
- Hoopili –This project is located north of the Project, to the east of Kualakai Parkway and west of Fort Weaver Road. Upon full build-out, Hoopili will include 2,300 single family dwelling units, 9,520 multi-family dwelling units, over 3 million SF of commercial/retail space, over 800,000 SF of industrial space, over 70 acres of parks, approximately 200 acres of a commercial farm, three elementary schools, one middle school, and one high school. Only a percentage of traffic was assumed to be completed, for the Base Year 2021 and Base Year 2030 scenarios, since the full build-out is anticipated to occur by Year 2035.

- East Kapolei II – This project is proposed to be located adjacent and to the west of Kualakai Parkway and will consist of approximately 2,100 dwelling units. This project was assumed to be completed by Year 2021.

3.3 Base Year 2021 Analysis

It is anticipated that by year 2021, traffic will have increased significantly over existing conditions due to the continuing development of the Ewa-Kapolei region.

Upon build-out of the Ka Makana Alii Shopping Center, one of the proposed accesses to the shopping center is anticipated to be provided as a new south leg extension from the existing Kapolei Parkway/Kualakai Parkway intersection, ultimately providing a 4-legged intersection. This improvement was triggered by the Ka Makana Alii TIAR, identified on the STIP and assumed to be a joint effort implemented by Ka Makana Alii and HDOT. The following proposed lane configuration is anticipated to be constructed for the Kapolei Parkway/Kualakai Parkway intersection by Base Year 2021:

Kapolei Parkway/Kualakai Parkway

1. Northbound Approach
   a. Provide a new approach that includes one left-turn lane, one through lane and one shared through/right-turn lane.

2. Southbound Approach
   a. Provide two through lanes.

3. Eastbound Approach
   a. Convert three through lanes to two through lanes and one shared through/right-turn lane.

4. Westbound Approach
   a. Provide two new left-turn lanes.

With the improvements at the intersection the low volume northbound left-turn movement is projected to operate at LOS F during the AM peak hour with only 5 vehicles anticipated to make the left-turn onto Kapolei Parkway. During the PM peak hour, all left-turn movements will operate at LOS E conditions. All LOS E/F movements are provided with adequate capacity with a v/c ratio under 1.0.

Kapolei Parkway/Renton Road
This intersection is forecast to operate similar to existing conditions during the AM and PM peak hours of traffic. However, the southbound left-turn movement will worsen to LOS E during the AM peak hour of traffic and the northbound left-turn movement will worsen to LOS E during the PM peak hour of traffic.

Kapolei Parkway/Geiger Road
The intersection is anticipated to operate overall at LOS D during the AM and PM peak hours of traffic. Due to increased traffic, all left-turn movements are anticipated to operate at LOS E during both peak hours, with the low volume eastbound left-turn movement of 10 vehicles,

operating at LOS F. All LOS E/F movements are provided with adequate capacity with a v/c ratio under 1.0.

Fort Weaver Road/Geiger Road/Iroquois Road & Fort Weaver Road/Renton Road
Similar to Existing conditions, the intersections along Fort Weaver Road through the Ewa region will continue to experience LOS F at some movements. However, this is generally ascribed to requisite long traffic signal cycle lengths, split phase operation and generally long crosswalk lengths across Fort Weaver Road. Further widening of Fort Weaver Road is not prescribed by the ORTP 2035, and is generally considered infeasible due to insufficient ROW.

All unsignalized study intersections will continue operating at LOS D or better during the AM and PM peak hours of traffic.

Figure 4 illustrates the forecast traffic volumes, lane configuration and movement LOS for Base Year 2021 conditions. Table 2 shows the Existing and Base Year 2021 LOS at the study intersections, with the full LOS summary table provided in Appendix C.

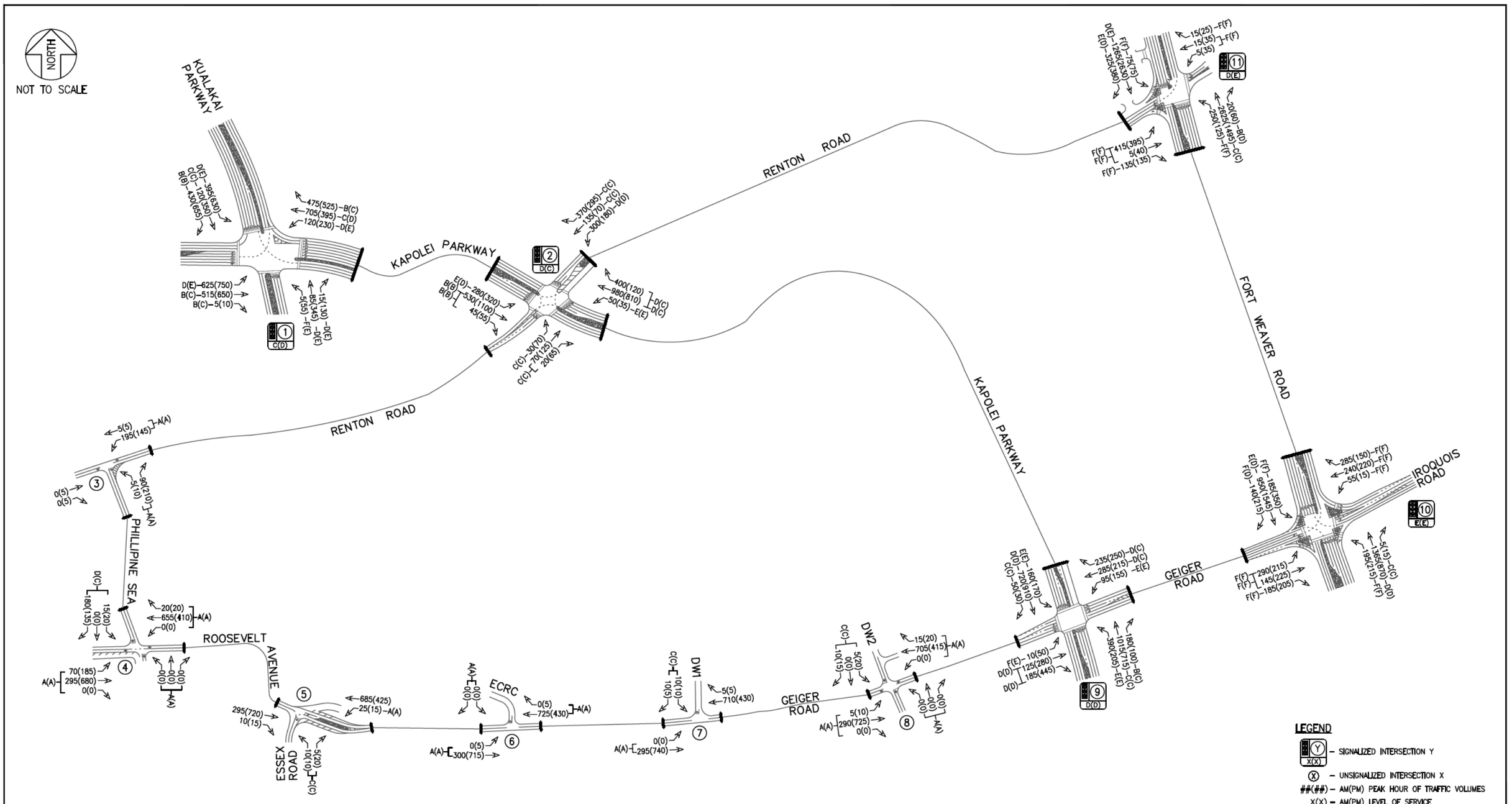

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FIGURE 4

BASE YEAR 2021 LANE CONFIGURATION, VOLUME, AND LOS

Table 2: Existing and Base Year 2021 (no mit) Intersection Level of Service Summary

Intersection	Existing Conditions						BY 2021 (No Mit)					
	AM			PM			AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kapolei Pkwy & Kualakai Pkwy												
EB LT	21.8	0.66	C	21.9	0.64	C	37.0	0.84	D	57.4	0.91	E
EB TH	3.7	0.12	A	5.8	0.18	A	16.7	0.24	B	31.4	0.38	C
EB RT	-	-	-	-	-	-	16.8	0.24	B	31.6	0.38	C
WB LT	-	-	-	-	-	-	46.1	0.61	D	62.6	0.78	E
WB TH	12.3	0.36	B	12.8	0.26	B	30.3	0.56	C	47.2	0.44	D
WB RT	7.9	0.28	A	6.3	0.19	A	19.8	0.44	B	28.3	0.45	C
NB LT	-	-	-	-	-	-	88.5	0.54	F	76.5	0.77	E
NB TH	-	-	-	-	-	-	41.3	0.29	D	56.2	0.71	E
NB TH/RT							41.2	0.29	D	56.2	0.71	E
SB LT	21.3	0.41	C	16.9	0.55	B	42.8	0.82	D	63.2	0.91	E
SB TH	-	-	-	-	-	-	28.7	0.15	C	33.4	0.33	C
SB RT	14.4	0.28	B	12.6	0.40	B	14.7	0.21	B	13.3	0.27	B
Overall	12.5	-	B	12.2	-	B	29.1	-	C	44.4	-	D
2: Kapolei Pkwy & Renton Rd												
EB LT	26.5	0.07	C	17.5	0.14	B	34.8	0.10	C	26.8	0.19	C
EB TH/RT	23.9	0.14	C	17.1	0.31	B	30.1	0.16	C	26.1	0.37	C
WB LT	36.6	0.73	D	22.1	0.46	C	49.2	0.78	D	36.3	0.61	D
WB TH	24.4	0.21	C	16.0	0.13	B	31.2	0.25	C	24.0	0.14	C
WB RT	24.1	0.17	C	15.7	0.08	B	30.5	0.19	C	23.9	0.13	C
NB LT	62.9	0.77	E	40.7	0.66	D	73.2	0.77	E	67.6	0.79	E
NB TH	25.3	0.60	C	17.0	0.34	B	40.2	0.82	D	28.5	0.65	C
NB TH/RT	25.9	0.61	C	17.2	0.35	B	44.6	0.82	D	29.3	0.65	C
SB LT	45.2	0.85	D	28.5	0.77	C	60.7	0.90	E	51.9	0.90	D
SB TH	13.9	0.14	B	12.5	0.34	B	17.1	0.24	B	16.0	0.49	B
SB TH/RT	14.0	0.14	B	12.7	0.34	B	17.2	0.24	B	16.2	0.49	B
Overall	27.9	-	C	17.5	-	B	38.7	-	D	26.8	-	C
3: Phillipine Sea & Renton Rd												
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-
WB LT/TH	7.5	0.12	A	7.5	0.09	A	7.6	0.13	A	7.5	0.09	A
NB LT/RT	8.7	0.08	A	9.3	0.21	A	9.0	0.10	A	9.3	0.21	A
4: Phillipine Sea & Roosevelt Ave												
EB LT/TH/RT	8.9	0.07	A	8.6	0.16	A	9.5	0.09	A	8.6	0.16	A
WB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A
SB LT/TH/RT	18.0	0.41	C	18.0	0.35	C	26.6	0.57	D	18.0	0.35	C
5: Essex Rd & Roosevelt Ave/Geiger Rd												
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-
WB LT	7.9	0.02	A	9.0	0.01	A	8.0	0.02	A	9.0	0.01	A
WB TH	-	-	-	-	-	-	-	-	-	-	-	-
NB LT/RT	14.4	0.03	B	16.3	0.09	C	18.2	0.06	C	16.3	0.09	C
6: Geiger Rd & Ewa Refuse Convenience Center												
EB LT/TH/RT	0.0	-	A	8.1	0.00	A	0.0	-	A	8.1	0.00	A
WB LT/TH/RT	7.9	0.01	A	8.9	0.00	A	0.0	-	A	8.9	0.00	A
NB LT/TH/RT	11.8	0.04	B	12.9	0.01	B	0.0	-	A	12.9	0.01	B
SB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A
7: Geiger Rd & Honouliuli Drwy 1												
EB LT/TH	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A
WB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-
SB LT/RT	14.6	0.04	B	19.2	0.05	C	18.1	0.07	C	19.2	0.05	C
8: Geiger Rd & Honouliuli Drwy 2												
EB LT/TH/RT	8.8	0.00	A	8.1	0.01	A	9.3	0.01	A	8.1	0.01	A
WB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A
SB LT/TH/RT	15.8	0.04	C	20.4	0.13	C	18.1	0.06	C	20.4	0.13	C
9: Kapolei Pkwy & Geiger Rd												
EB LT	67.8	0.56	E	56.4	0.78	E	87.1	0.61	F	73.6	0.77	E
EB TH	35.2	0.35	D	30.5	0.63	C	47.1	0.31	D	46.5	0.75	D
EB TH/RT	35.2	0.36	D	31.1	0.66	C	47.2	0.32	D	47.5	0.77	D
EB RT	-	-	-	-	-	-	-	-	-	-	-	-
WB LT	46.9	0.77	D	42.2	0.78	D	67.9	0.80	E	71.9	0.86	E
WB TH	35.6	0.73	D	23.7	0.32	C	52.3	0.84	D	34.7	0.42	C
WB RT	29.4	0.15	C	22.4	0.14	C	39.5	0.13	D	31.3	0.13	C
NB LT	36.3	0.88	D	38.5	0.81	D	61.5	0.93	E	65.7	0.88	E
NB TH	18.2	0.53	B	23.3	0.41	C	24.5	0.66	C	35.0	0.64	C
NB RT	14.6	0.10	B	20.7	0.04	C	17.7	0.14	B	27.0	0.06	C
SB LT	42.2	0.79	D	40.1	0.79	D	66.6	0.86	E	62.0	0.86	E
SB TH	24.5	0.52	C	26.7	0.60	C	35.1	0.67	D	46.1	0.87	D
SB RT	20.5	0.01	C	22.1	0.01	C	26.8	0.02	C	28.3	0.02	C
Overall	27.9	-	C	30.3	-	C	39.5	-	D	46.3	-	D

Note:
* = over-capacity, v/c > 1

Table 2: Existing and Base Year 2021 (no mit) Intersection Level of Service Summary (continued)

Intersection	Existing Conditions						BY 2021 (No Mit)					
	AM			PM			AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
10: Ft Weaver Rd & Geiger Rd/Iroquois Rd												
EB LT	107.0	0.65	F	106.7	0.65	F	107.2	0.68	F	104.6	0.65	F
EB LT/TH	101.9	0.63	F	102.5	0.65	F	101.8	0.66	F	100.0	0.65	F
EB RT	97.2	0.39	F	99.1	0.48	F	102.9	0.61	F	106.7	0.68	F
WB LT	85.3	0.18	F	90.3	0.05	F	85.0	0.19	F	86.7	0.06	F
WB TH	105.2	0.75	F	116.8	0.78	F	109.3	0.80	F	117.9	0.83	F
WB RT	85.2	0.19	F	90.4	0.06	F	85.4	0.23	F	87.5	0.12	F
NB LT	111.0	0.61	F	111.1	0.59	F	110.9	0.67	F	110.8	0.69	F
NB TH	35.9	0.53	D	33.2	0.33	C	39.0	0.56	D	38.6	0.38	D
NB RT	26.0	0.00	C	28.2	0.01	C	28.0	0.00	C	32.3	0.01	C
SB LT	77.0	0.63	E	119.0	0.80	F	82.7	0.67	F	123.1	0.80	F
SB TH	50.1	0.34	D	29.3	0.54	C	56.6	0.39	E	37.2	0.62	D
SB RT	141.5	0.08	F	32.3	0.17	C	215.0	0.10	F	36.0	0.20	D
Overall	65.2	0.60	E	57.8	0.64	E	72.6	0.63	E	64.4	0.70	E
11: Ft Weaver Rd & Renton Rd												
EB LT	111.0	0.79	F	112.4	0.79	F	113.0	0.81	F	114.2	0.83	F
EB LT/TH	109.3	0.77	F	111.6	0.79	F	110.8	0.80	F	112.8	0.82	F
EB RT	86.5	0.16	F	86.3	0.09	F	87.6	0.27	F	87.2	0.26	F
WB LT/TH	118.6	0.34	F	121.2	0.63	F	118.9	0.39	F	122.3	0.66	F
WB RT	111.6	0.01	F	104.5	0.02	F	111.2	0.01	F	103.4	0.02	F
NB LT	120.7	0.81	F	100.3	0.70	F	124.9	0.85	F	100.3	0.74	F
NB TH	21.8	0.87	C	28.7	0.48	C	22.4	0.87	C	32.0	0.53	C
NB RT	14.9	0.01	B	40.0	0.05	D	15.4	0.02	B	41.3	0.05	D
SB LT	123.1	0.58	F	111.9	0.59	F	126.9	0.66	F	113.6	0.62	F
SB TH	31.3	0.44	C	54.6	0.95	D	37.2	0.51	D	64.5	0.99	E
SB RT	45.8	0.17	D	34.6	0.21	C	56.2	0.23	E	40.3	0.27	D
Overall	39.8	0.84	D	53.9	0.88	D	44.3	0.85	D	60.5	0.90	E

Note:
* = over-capacity, v/c > 1

3.4 Base Year 2030 Analysis

The year 2030 was selected as the base year to reflect the anticipated build-out of the Honouliuli WWTP. By year 2030, traffic will continue to increase due to the continuing development of the Ewa-Kapolei region. Based on a LOS comparison between Base Year 2021 and Base Year 2030, the majority of individual movements that are projected to operate at LOS E/F for Base Year 2021 conditions will continue operating at similar levels of service for Base Year 2030 conditions during the AM and PM peak hours of traffic except for the following:

Kapolei Parkway/Kualakai Parkway

The low volume northbound left-turn movement will operate at LOS F during the PM peak hour. All LOS E/F movements will continue to be provided with adequate capacity with a v/c ratio under 1.0.

Kapolei Parkway/Renton Road
During the AM peak hour, the northbound approach will worsen to LOS E conditions, with the mainline through movement along Kapolei Parkway nearing its capacity. In addition, the westbound and southbound left-turn movements will operate at LOS E during the PM peak hour of traffic. In order to mitigate the deficiencies of the intersection, dual southbound left-turn lanes were recommended to accommodate the relatively high 275(320) southbound left-turn vehicles during the AM(PM) peak hours.

With the dual southbound left-turn lanes, all movements at the intersection are forecast to operate similar to Base Year 2021 conditions.

Phillipine Sea/Roosevelt Avenue
The southbound shared left/through/right-turn lane is anticipated to worsen from LOS D to LOS E. With a low 15(20) vehicles making the southbound left-turn movement, the heavier southbound right-turn movement should not be heavily impacted. Based on existing observations, the southbound queues did extend beyond four vehicles, with the majority of queues typically consisting of only one vehicle.

Kapolei Parkway/Geiger Road
During the AM peak hour, the westbound and southbound left-turn movements will worsen to LOS F. In addition, northbound left-turn movement will worsen to LOS F at overcapacity conditions. During the PM peak hour, the westbound left-turn movement will worsen to LOS F, and the southbound through movement along Kapolei Parkway will operate near capacity. In order to mitigate the deficiencies of the intersection, dual northbound left-turn lanes were recommended to accommodate the high 470(215) northbound left-turn vehicles during the AM(PM) peak hours. Also, the eastbound approach along Geiger Road was restriped from one left-turn, one through and one shared through/right to one left-turn, one through and one right-turn.

With the dual northbound left-turn lanes and eastbound restriping, all movements are forecast to operate similar to Base Year 2021 conditions.

Fort Weaver Road/Geiger Road/Iroquois Road & Fort Weaver Road/Renton Road
The intersections along Fort Weaver Road through the Ewa region will experience LOS F and over-capacity conditions at some movements. However, this is generally ascribed to requisite

long traffic signal cycle lengths, split phase operation and generally long crosswalk lengths across Fort Weaver Road. Further widening of Fort Weaver Road is not prescribed by the ORTP 2035, and is generally considered infeasible due to insufficient ROW.

Figure 5 illustrates the forecast traffic volumes, lane configuration and movement LOS for Base Year 2030 conditions. Table 3 shows the Base Year 2021 and Base Year 2030 LOS at the study intersections, with the full LOS summary table provided in Appendix C.

NORTH

NOT TO SCALE

KUALAKAI PARKWAY

KAPOLEI PARKWAY

RENTON ROAD

FORT WEAVER ROAD

KAPOLEI PARKWAY

RENTON ROAD

PHILLIPINE SEA

ROOSEVELT AVENUE

ESSEX ROAD

ECRC

DW1

DW2

GEIGER ROAD

IROQUOIS ROAD

GEIGER ROAD

① C(D)
② D(C)
③
④ E(E)
⑤
⑥
⑦
⑧
⑨ D(D)
⑩ E(E)
⑪ D(E)

LEGEND

Y – SIGNALIZED INTERSECTION Y, X(X)

X – UNSIGNALIZED INTERSECTION X

##(##) – AM(PM) PEAK HOUR OF TRAFFIC VOLUMES

X(X) – AM(PM) LEVEL OF SERVICE

* – MOVEMENT OPERATING OVERCAPACITY

HONOULIULI WASTEWATER TREATMENT PLAN TIAR

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

FIGURE 5

BASE YEAR 2030 WITH MITIGATION LANE CONFIGURATION, VOLUME, AND LOS

Table 3: Base Year 2021 (no mit), Base Year 2030 (no mit) and Base Year 2030 (with mit) Intersection Level of Service Summary

Intersection	BY 2021 (No Mit)						BY 2030 (No Mit)						BY 2030 WITH MITIGATION					
	AM			PM			AM			PM			AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kapolei Pkwy & Kualakai Pkwy																		
EB LT	37.0	0.84	D	57.4	0.91	E	41.3	0.86	D	59.7	0.92	E						
EB TH	16.7	0.24	B	31.4	0.38	C	18.1	0.32	B	31.5	0.40	C						
EB RT	16.8	0.24	B	31.6	0.38	C	18.2	0.32	B	31.6	0.40	C						
WB LT	46.1	0.61	D	62.6	0.78	E	50.5	0.63	D	70.7	0.80	E						
WB TH	30.3	0.56	C	47.2	0.44	D	34.6	0.67	C	53.4	0.49	D						
WB RT	19.8	0.44	B	28.3	0.45	C	22.0	0.48	C	34.1	0.50	C						
NB LT	88.5	0.54	F	76.5	0.77	E	93.3	0.54	F	84.9	0.77	F						
NB TH	41.3	0.29	D	56.2	0.71	E	44.8	0.33	D	65.3	0.77	E						
NB TH/RT	41.2	0.29	D	56.2	0.71	E	44.7	0.34	D	65.3	0.78	E						
SB LT	42.8	0.82	D	63.2	0.91	E	48.9	0.84	D	76.1	0.93	E						
SB TH	28.7	0.15	C	33.4	0.33	C	30.6	0.17	C	40.6	0.37	D						
SB RT	14.7	0.21	B	13.3	0.27	B	14.8	0.23	B	13.8	0.26	B						
Overall	29.1	-	C	44.4	-	D	31.8	-	C	49.4	-	D						
2: Kapolei Pkwy & Renton Rd																		
EB LT	34.8	0.10	C	26.8	0.19	C	37.1	0.11	D	31.5	0.23	C	31.3	0.10	C	24.4	0.20	C
EB TH/RT	30.1	0.16	C	26.1	0.37	C	30.7	0.17	C	31.0	0.45	C	26.0	0.16	C	24.0	0.40	C
WB LT	49.2	0.78	D	36.3	0.61	D	53.9	0.81	D	56.0	0.77	E	42.8	0.77	D	36.1	0.64	D
WB TH	31.2	0.25	C	24.0	0.14	C	32.5	0.31	C	27.6	0.15	C	27.5	0.30	C	21.4	0.13	C
WB RT	30.5	0.19	C	23.9	0.13	C	33.1	0.35	C	27.7	0.16	C	26.9	0.24	C	21.6	0.16	C
NB LT	73.2	0.77	E	67.6	0.79	E	73.5	0.77	E	73.9	0.78	E	65.3	0.77	E	67.0	0.78	E
NB TH	40.2	0.82	D	28.5	0.65	C	59.5	0.97	E	34.3	0.67	C	36.3	0.86	D	28.6	0.64	C
NB TH/RT	44.6	0.82	D	29.3	0.65	C	71.3	0.97	E	35.7	0.68	C	42.0	0.86	D	29.8	0.65	C
SB LT	60.7	0.90	E	51.9	0.90	D	65.0	0.90	E	66.4	0.92	E	50.8	0.78	D	43.1	0.77	D
SB TH	17.1	0.24	B	16.0	0.49	B	19.2	0.27	B	19.1	0.52	B	18.7	0.28	B	21.4	0.60	C
SB TH/RT	17.2	0.24	B	16.2	0.49	B	19.3	0.27	B	19.3	0.52	B	18.8	0.29	B	21.7	0.60	C
Overall	38.7	-	D	26.8	-	C	50.1	-	D	33.1	-	C	35.1	-	D	27.6	-	C
3: Phillipine Sea & Renton Rd																		
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-						
WB LT/TH	7.6	0.13	A	7.5	0.09	A	7.6	0.15	A	7.5	0.11	A						
NB LT/RT	9.0	0.10	A	9.3	0.21	A	9.0	0.11	A	9.6	0.25	A						
4: Phillipine Sea & Roosevelt Ave																		
EB LT/TH/RT	9.5	0.09	A	8.6	0.16	A	10.2	0.11	B	9.2	0.21	A						
WB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
NB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
SB LT/TH/RT	26.6	0.57	D	18.0	0.35	C	43.8	0.74	E	41.9	0.67	E						
5: Essex Rd & Roosevelt Ave/Geiger Rd																		
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-						
WB LT	8.0	0.02	A	9.0	0.01	A	8.0	0.02	A	9.6	0.02	A						
WB TH	-	-	-	-	-	-	-	-	-	-	-	-						
NB LT/RT	18.2	0.06	C	16.3	0.09	C	21.2	0.07	C	20.1	0.14	C						
6: Geiger Rd & Ewa Refuse Convenience Center																		
EB LT/TH/RT	0.0	-	A	8.1	0.00	A	0.0	-	A	8.4	0.01	A						
WB LT/TH/RT	0.0	-	A	8.9	0.00	A	0.0	-	A	0.0	-	A						
NB LT/TH/RT	0.0	-	A	12.9	0.01	B	0.0	-	A	0.0	-	A						
SB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
7: Geiger Rd & Honouliuli Drwy 1																		
EB LT/TH	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
WB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-						
SB LT/RT	18.1	0.07	C	19.2	0.05	C	21.7	0.09	C	22.4	0.07	C						
8: Geiger Rd & Honouliuli Drwy 2																		
EB LT/TH/RT	9.3	0.01	A	8.1	0.01	A	9.9	0.01	A	8.4	0.01	A						
WB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
NB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
SB LT/TH/RT	18.1	0.06	C	20.4	0.13	C	21.6	0.07	C	27.5	0.19	D						
9: Kapolei Pkwy & Geiger Rd																		
EB LT	87.1	0.61	F	73.6	0.77	E	99.4	0.62	F	77.6	0.77	E	83.7	0.60	F	74.6	0.77	E
EB TH	47.1	0.31	D	46.5	0.75	D	52.5	0.28	D	52.4	0.81	D	44.1	0.46	D	53.2	0.82	D
EB TH/RT	47.2	0.32	D	47.5	0.77	D	52.5	0.29	D	54.2	0.83	D	-	-	-	-	-	-
EB RT	-	-	-	-	-	-	-	-	-	-	-	-	40.5	0.09	D	48.3	0.70	D
WB LT	67.9	0.80	E	71.9	0.86	E	86.9	0.83	F	87.3	0.90	F	67.9	0.81	E	67.9	0.88	E
WB TH	52.3	0.84	D	34.7	0.42	C	68.2	0.89	E	35.4	0.41	D	50.0	0.85	D	34.7	0.42	C
WB RT	39.5	0.13	D	31.3	0.13	C	44.9	0.23	D	32.2	0.15	C	35.2	0.16	D	31.5	0.16	C
NB LT	61.5	0.93	E	65.7	0.88	E	97.9	1.03	F*	73.4	0.89	E	53.2	0.86	D	59.4	0.77	E
NB TH	24.5	0.66	C	35.0	0.64	C	34.4	0.81	C	41.7	0.74	D	39.2	0.91	D	40.0	0.75	D
NB RT	17.7	0.14	B	27.0	0.06	C	21.6	0.23	C	30.2	0.06	C	21.1	0.24	C	28.9	0.05	C
SB LT	66.6	0.86	E	62.0	0.86	E	86.3	0.89	F	70.9	0.88	E	70.5	0.87	E	61.4	0.87	E
SB TH	35.1	0.67	D	46.1	0.87	D	46.2	0.78	D	61.6	0.96	E	30.5	0.66	C	37.9	0.80	D
SB RT	26.8	0.02	C	28.3	0.02	C	32.8	0.03	C	30.9	0.02	C	22.4	0.03	C	24.5	0.02	C
Overall	39.5	-	D	46.3	-	D	53.3	-	D	55.9	-	E	41.9	-	D	45.2	-	D

Note:
* = over-capacity, v/c > 1

Table 3: Base Year 2021 (no mit), Base Year 2030 (no mit) and Base Year 2030 (with mit) Intersection Level of Service Summary (continued)

Intersection	BY 2021 (No Mit)						BY 2030 (No Mit)						BY 2030 WITH MITIGATION					
	AM			PM			AM			PM			AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
10: Ft Weaver Rd & Geiger Rd/Iroquois Rd																		
EB LT	107.2	0.68	F	104.6	0.65	F	108.7	0.73	F	103.8	0.67	F						
EB LT/TH	101.8	0.66	F	100.0	0.65	F	101.9	0.71	F	99.8	0.67	F						
EB RT	102.9	0.61	F	106.7	0.68	F	106.8	0.70	F	107.7	0.72	F						
WB LT	85.0	0.19	F	86.7	0.06	F	84.0	0.20	F	81.4	0.05	F						
WB TH	109.3	0.80	F	117.9	0.83	F	112.4	0.83	F	121.1	0.89	F						
WB RT	85.4	0.23	F	87.5	0.12	F	85.1	0.28	F	83.7	0.19	F						
NB LT	110.9	0.67	F	110.8	0.69	F	110.8	0.68	F	110.4	0.72	F						
NB TH	39.0	0.56	D	38.6	0.38	D	44.8	0.62	D	46.8	0.50	D						
NB RT	28.0	0.00	C	32.3	0.01	C	31.1	0.01	C	36.8	0.01	D						
SB LT	82.7	0.67	F	123.1	0.80	F	97.7	0.73	F	125.8	0.81	F						
SB TH	56.6	0.39	E	37.2	0.62	D	63.7	0.52	E	47.4	0.78	D						
SB RT	215.0	0.10	F	36.0	0.20	D	130.3	0.13	F	38.8	0.22	D						
Overall	72.6	0.63	E	64.4	0.70	E	74.6	0.69	E	69.5	0.80	E						
11: Ft Weaver Rd & Renton Rd																		
EB LT	113.0	0.81	F	114.2	0.83	F	113.1	0.81	F	113.6	0.81	F						
EB LT/TH	110.8	0.80	F	112.8	0.82	F	111.5	0.79	F	113.3	0.81	F						
EB RT	87.6	0.27	F	87.2	0.26	F	87.5	0.22	F	87.2	0.22	F						
WB LT/TH	118.9	0.39	F	122.3	0.66	F	119.6	0.46	F	122.3	0.66	F						
WB RT	111.2	0.01	F	103.4	0.02	F	110.5	0.01	F	103.5	0.02	F						
NB LT	124.9	0.85	F	100.3	0.74	F	126.8	0.90	F	98.8	0.75	F						
NB TH	22.4	0.87	C	32.0	0.53	C	23.0	0.88	C	34.6	0.61	C						
NB RT	15.4	0.02	B	41.3	0.05	D	15.5	0.02	B	40.8	0.06	D						
SB LT	126.9	0.66	F	113.6	0.62	F	127.5	0.68	F	115.2	0.64	F						
SB TH	37.2	0.51	D	64.5	0.99	E	48.5	0.69	D	86.0	1.06	F*						
SB RT	56.2	0.23	E	40.3	0.27	D	63.5	0.29	E	38.6	0.27	D						
Overall	44.3	0.85	D	60.5	0.90	E	49.1	0.87	D	70.4	0.95	E						

Note:
* = over-capacity, v/c > 1

4. FUTURE YEAR WITH PROJECT SCENARIOS

4.1 Future Year 2021 Trip Generation

Future year 2021 trip generation is the anticipated peak year of construction activity, which was assumed to occur during Phase 1 construction of the Honouliuli WWTP. A Technical Memorandum provided by AECOM, dated September 18, 2014, shown in Appendix E, was used to estimate the number of vehicular trips generated by construction activity for the Future Year 2021 scenario. It was estimated that the Project would generate 185 construction workers to/from the site, with the assumption of 1 vehicle trip per construction worker. Therefore, 185 construction workers would arrive to the site during the AM peak hour and 185 construction workers would exit the site during the PM peak hour. This was assumed to be a relatively conservative estimate, since carpooling would likely occur, with some workers traveling outside the studied peak hours of traffic.

In addition to the 185 construction workers, 8 total trips (4 entering and 4 exiting) were assumed to be generated by cement trucks during each of the AM and PM peak hours of traffic. This was also a conservative estimate, since it is likely that these trucks would probably avoid peak hours of traffic.

Trips generated for the peak year of construction, 2021 are shown below in Table 4.

Table 4: Future Year 2021 Project Generated Traffic

Independent Variable	AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Construction Worker Trips	185	0	185	0	185	185
Concrete Truck Trips	4	4	8	4	4	8
TOTAL	189	4	193	4	189	193

4.2 Trip Distribution/Assignment

Trip distribution is based on existing traffic flow patterns throughout the study area. Future Year 2021 Project trips were assigned to all existing driveways in addition to three (3) new proposed accesses; one access along Roosevelt Avenue, one access along Geiger Road and one access along Renton Road. The first access is proposed to be located approximately 600 feet east of the existing Geiger Road/Driveway 2 intersection and will hereinafter be referred to as "Honouliuli Driveway 3". The second access is proposed to be located approximately 600 feet east of the existing Roosevelt Avenue/Phillipine Sea intersection and will hereinafter be referred to as "Honouliuli Driveway 4". The third access is proposed to be located along Renton Road adjacent to the Mailo Street intersection. The new access is proposed near Mailo Street. For purposes of this study, this new access along Renton Road will hereinafter be referred to as "Honouliuli Driveway 5".

4.3 Future Year 2021 Analysis

Based on a LOS comparison between Future Year 2021 and Base Year 2021, the majority of individual movements that are projected to operate at LOS E/F for Base Year 2021 conditions will continue operating at similar levels of service for Future Year 2021 conditions during the AM and PM peak hours of traffic except for the following:

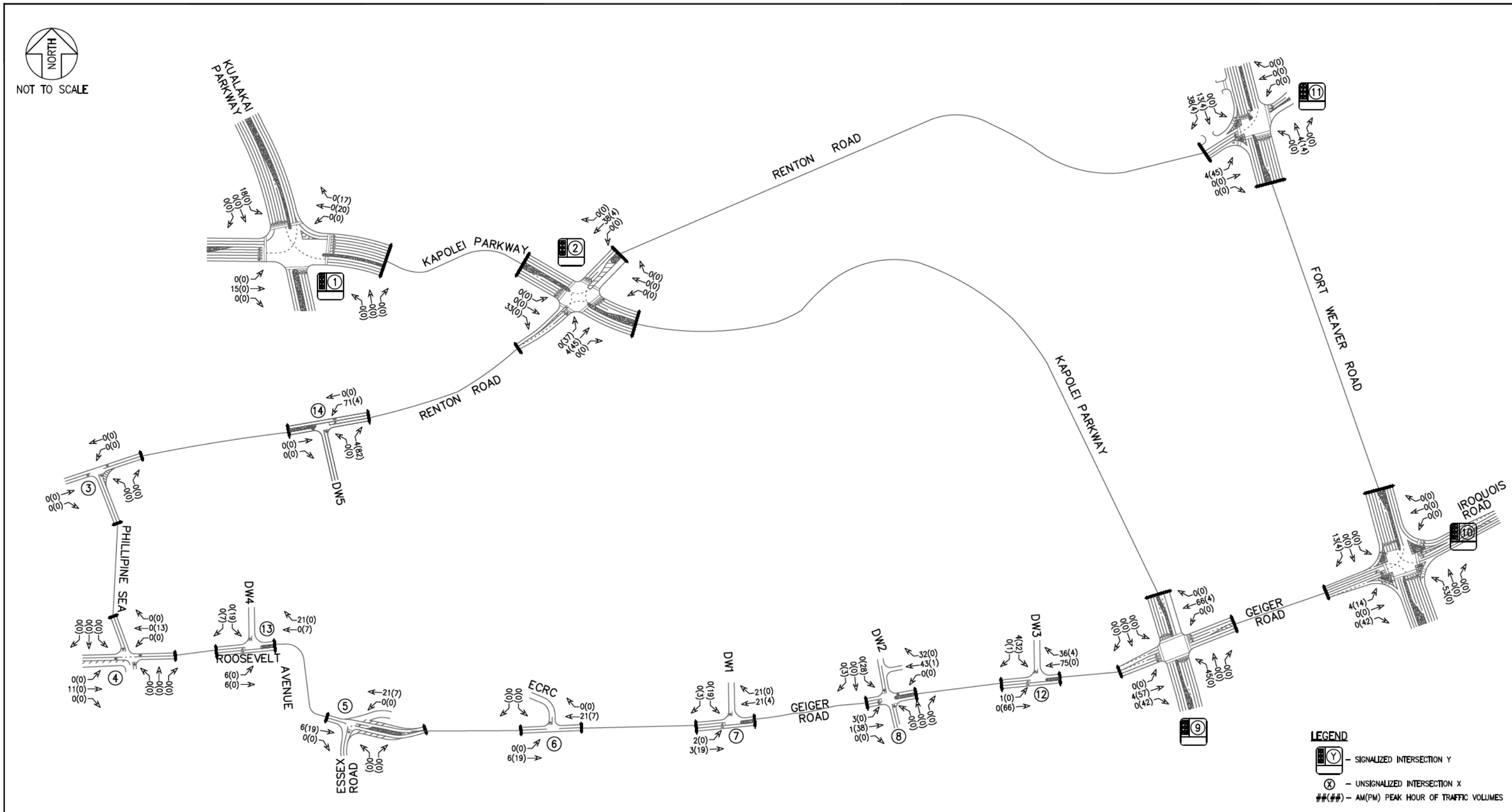
Fort Weaver Road/Geiger Road/Iroquois Road & Fort Weaver Road/Renton Road
The intersections along Fort Weaver Road through the Ewa region will experience LOS F and over-capacity conditions at some movements. However, this is generally ascribed to requisite long traffic signal cycle lengths, split phase operation and generally long crosswalk lengths across Fort Weaver Road. Further widening of Fort Weaver Road is not prescribed by the ORTP 2035, and is generally considered infeasible due to insufficient ROW.

Honouliuli Driveways along Geiger Road, Roosevelt Avenue and Renton Road
At the Geiger Road/Honouliuli Driveway 2, the southbound shared left/through/right-turn lane is anticipated to operate at LOS E during the PM peak hour. The southbound left-turn movement currently operates with 20 vehicles and queues were not observed to extend beyond a couple vehicles long. An additional 30 left-turn vehicles generated by construction worker trips should have minimal impacts to the queues along the southbound approach. All movements at the three new Project driveway intersections will operate adequately at LOS D or better during the AM and PM peak hours of traffic.

Although entering traffic volumes at the Project driveways are anticipated to operate with adequate LOS, A Policy on Geometric Design of Highways and Streets, prepared by American Association of State Highway and Transportation Officials (AASHTO), (hereinafter referred to as the "AASHTO Green Book") provides guidance on implementation of left-turn lanes. In the AASHTO Green Book, page 9-131, it suggests that "left-turning traffic should be removed from the through lanes, whenever practical….Ideally, left-turn lanes should be provided at driveways and street intersections along major arterial and collector roads, wherever left-turns are permitted." Therefore, eastbound left-turn lanes are recommended along Geiger Road and Roosevelt Avenue at its intersection with Honouliuli Driveway 1, 2, 3 and 4 and a westbound left-turn lane is recommended at the Renton Road/Driveway 5 intersection. Based on AASHTO guidance, due to relatively low projected left-turn volume along Geiger Road and Roosevelt Avenue, the left-turn lanes entering the Honouliuli Driveways should provide for a minimum storage of at least 50 feet, while the Renton Road/Driveway 5 intersection should provide a minimum of at least 125 feet of storage.

Figure 6 illustrates the Project Generated Traffic Volumes for Year 2021. Figure 7 illustrates the forecast traffic volumes, lane configuration, and LOS for Future Year 2021 conditions. Table 5 summarizes the delay, V/C, and LOS at the study intersections for Base Year 2021 and Future Year 2021 conditions. The full LOS summary table is provided in Appendix C.

NOT TO SCALE



HONOULIULI WASTEWATER TREATMENT PLAN TIAR

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FIGURE 6

YEAR 2021 PROJECT ONLY VOLUMES

NORTH

NOT TO SCALE

KUALAKAI PARKWAY

KAPOLEI PARKWAY

RENTON ROAD

FORT WEAVER ROAD

PHILLIPINE SEA

ROOSEVELT AVENUE

ESSEX ROAD

ECRC

GEIGER ROAD

IROQUOIS ROAD

DW1

DW2

DW3

DW4

DW5

LEGEND

- (Y) / X(X) – SIGNALIZED INTERSECTION Y
- (X) – UNSIGNALIZED INTERSECTION X
- ##(##) – AM(PM) PEAK HOUR OF TRAFFIC VOLUMES
- X(X) – AM(PM) LEVEL OF SERVICE
- * – MOVEMENT OPERATING OVERCAPACITY

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FIGURE 7

FUTURE YEAR 2021 LANE CONFIGURATION, VOLUME, AND LOS

Table 5: Base Year 2021 (no mit) and Future Year 2021 (no mit) Intersection Level of Service Summary

	BY 2021 (No Mit)						FY 2021 (No Mit)						FY 2021 (With Mit)					
	AM			PM			AM			PM			AM			PM		
Intersection	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kapolei Pkwy & Kualakai Pkwy																		
EB LT	37.0	0.84	D	57.4	0.91	E	37.4	0.84	D	58.1	0.91	E						
EB TH	16.7	0.24	B	31.4	0.38	C	17.1	0.25	B	31.3	0.38	C						
EB RT	16.8	0.24	B	31.6	0.38	C	17.2	0.25	B	31.4	0.38	C						
WB LT	46.1	0.61	D	62.6	0.78	E	46.6	0.61	D	63.1	0.78	E						
WB TH	30.3	0.56	C	47.2	0.44	D	30.8	0.57	C	47.4	0.45	D						
WB RT	19.8	0.44	B	28.3	0.45	C	19.7	0.44	B	28.4	0.46	C						
NB LT	88.5	0.54	F	76.5	0.77	E	89.1	0.54	F	77.0	0.77	E						
NB TH	41.3	0.29	D	56.2	0.71	E	41.7	0.29	D	57.0	0.72	E						
NB TH/RT	41.2	0.29	D	56.2	0.71	E	41.7	0.29	D	57.0	0.72	E						
SB LT	42.8	0.82	D	63.2	0.91	E	43.8	0.82	D	64.0	0.91	E						
SB TH	28.7	0.15	C	33.4	0.33	C	28.5	0.15	C	33.9	0.33	C						
SB RT	14.7	0.21	B	13.3	0.27	B	14.6	0.21	B	13.6	0.27	B						
Overall	29.1	-	C	44.4	-	D	29.5	-	C	44.8	-	D						
2: Kapolei Pkwy & Renton Rd																		
EB LT	34.8	0.10	C	26.8	0.19	C	36.7	0.10	D	27.8	0.26	C						
EB TH/RT	30.1	0.16	C	26.1	0.37	C	30.2	0.16	C	26.9	0.42	C						
WB LT	49.2	0.78	D	36.3	0.61	D	49.2	0.78	D	38.9	0.61	D						
WB TH	31.2	0.25	C	24.0	0.14	C	32.1	0.33	C	23.9	0.14	C						
WB RT	30.5	0.19	C	23.9	0.13	C	30.5	0.19	C	23.9	0.13	C						
NB LT	73.2	0.77	E	67.6	0.79	E	73.4	0.77	E	72.2	0.79	E						
NB TH	40.2	0.82	D	28.5	0.65	C	40.4	0.83	D	34.8	0.70	C						
NB TH/RT	44.6	0.82	D	29.3	0.65	C	44.9	0.83	D	36.9	0.71	C						
SB LT	60.7	0.90	E	51.9	0.90	D	61.0	0.90	E	44.8	0.89	D						
SB TH	17.1	0.24	B	16.0	0.49	B	17.3	0.25	B	18.9	0.51	B						
SB TH/RT	17.2	0.24	B	16.2	0.49	B	17.4	0.25	B	19.2	0.51	B						
Overall	38.7	-	D	26.8	-	C	38.7	-	D	29.5	-	C						
3: Philliipine Sea & Renton Rd																		
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-						
WB LT/TH	7.6	0.13	A	7.5	0.09	A	7.6	0.13	A	7.5	0.10	A						
NB LT/RT	9.0	0.10	A	9.3	0.21	A	9.0	0.10	A	9.5	0.23	A						
4: Philliipine Sea & Roosevelt Ave																		
EB LT/TH/RT	9.5	0.09	A	8.6	0.16	A	9.5	0.09	A	9.1	0.19	A						
WB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
NB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
SB LT/TH/RT	26.6	0.57	D	18.0	0.35	C	26.7	0.57	D	34.4	0.59	D						
5: Essex Rd & Roosevelt Ave/Geiger Rd																		
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-						
WB LT	8.0	0.02	A	9.0	0.01	A	8.0	0.02	A	9.5	0.02	A						
WB TH	-	-	-	-	-	-	-	-	-	-	-	-						
NB LT/RT	18.2	0.06	C	16.3	0.09	C	18.8	0.06	C	20.2	0.12	C						
6: Geiger Rd & Ewa Refuse Convenience Center																		
EB LT/TH/RT	0.0	-	A	8.1	0.00	A	0.0	-	A	8.3	0.01	A						
WB LT/TH/RT	0.0	-	A	8.9	0.00	A	0.0	-	A	0.0	-	A						
NB LT/TH/RT	0.0	-	A	12.9	0.01	B	0.0	-	A	0.0	-	A						
SB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A						
7: Geiger Rd & Honouliuli Drwy 1																		
EB LT	-	-	-	-	-	-	-	-	-	-	-	-	9.5	0.0	A	0.0	-	A
EB LT/TH	0.0	-	A	0.0	-	A	9.5	0.01	A	0.0	-	A	-	-	-	-	-	-
WB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB LT/RT	18.1	0.07	C	19.2	0.05	C	19.1	0.08	C	27.6	0.19	D	19.0	0.1	C	27.6	0.2	D
8: Geiger Rd & Honouliuli Drwy 2																		
EB LT	-	-	-	-	-	-	-	-	-	-	-	-	9.7	0.01	A	8.3	0.01	A
EB LT/TH/RT	9.3	0.01	A	8.1	0.01	A	9.7	0.01	A	8.3	0.01	A	-	-	-	-	-	-
WB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A
SB LT/TH/RT	18.1	0.06	C	20.4	0.13	C	19.8	0.06	C	41.9	0.45	E	19.8	0.06	C	41.6	0.44	E
9: Kapolei Pkwy & Geiger Rd																		
EB LT	87.1	0.61	F	73.6	0.77	E	90.5	0.61	F	76.7	0.77	E						
EB TH	47.1	0.31	D	46.5	0.75	D	44.9	0.25	D	50.2	0.81	D						
EB TH/RT	47.2	0.32	D	47.5	0.77	D	45.0	0.26	D	53.8	0.85	D						
EB RT	-	-	-	-	-	-	-	-	-	-	-	-						
WB LT	67.9	0.80	E	71.9	0.86	E	67.8	0.80	E	77.3	0.86	E						
WB TH	52.3	0.84	D	34.7	0.42	C	54.1	0.86	D	33.9	0.39	C						
WB RT	39.5	0.13	D	31.3	0.13	C	38.5	0.21	D	30.9	0.14	C						
NB LT	61.5	0.93	E	65.7	0.88	E	67.7	0.94	E	70.7	0.89	E						
NB TH	24.5	0.66	C	35.0	0.64	C	29.2	0.70	C	38.5	0.67	D						
NB RT	17.7	0.14	B	27.0	0.06	C	20.7	0.15	C	29.5	0.06	C						
SB LT	66.6	0.86	E	62.0	0.86	E	67.8	0.86	E	66.1	0.86	E						
SB TH	35.1	0.67	D	46.1	0.87	D	45.7	0.80	D	53.2	0.91	D						
SB RT	26.8	0.02	C	28.3	0.02	C	32.8	0.03	C	30.9	0.02	C						
Overall	39.5	-	D	46.3	-	D	45.2	-	D	51.0	-	D						

Note:
* = over-capacity, v/c > 1

Table 5: Base Year 2021 (no mit), Future Year 2021 (no mit), and Future Year 2021 (with mit) Intersection Level of Service Summary (continued)

	BY 2021 (No Mit)						FY 2021 (No Mit)						FY 2021 (With Mit)					
	AM			PM			AM			PM			AM			PM		
Intersection	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
10: Ft Weaver Rd & Geiger Rd/Iroquois Rd																		
EB LT	107.2	0.68	F	104.6	0.65	F	107.4	0.68	F	99.7	0.62	F						
EB LT/TH	101.8	0.66	F	100.0	0.65	F	101.4	0.66	F	96.7	0.62	F						
EB RT	102.9	0.61	F	106.7	0.68	F	102.4	0.60	F	114.6	0.80	F						
WB LT	85.0	0.19	F	86.7	0.06	F	85.3	0.19	F	87.6	0.06	F						
WB TH	109.3	0.80	F	117.9	0.83	F	110.1	0.80	F	122.6	0.85	F						
WB RT	85.4	0.23	F	87.5	0.12	F	85.6	0.23	F	88.5	0.12	F						
NB LT	110.9	0.67	F	110.8	0.69	F	112.9	0.75	F	110.8	0.69	F						
NB TH	39.0	0.56	D	38.6	0.38	D	39.1	0.56	D	39.9	0.39	D						
NB RT	28.0	0.00	C	32.3	0.01	C	28.1	0.0	C	33.3	0.01	C						
SB LT	82.7	0.67	F	123.1	0.80	F	82.7	0.67	F	123.7	0.80	F						
SB TH	56.6	0.39	E	37.2	0.62	D	59.5	0.40	E	39.0	0.63	D						
SB RT	215.0	0.10	F	36.0	0.20	D	236.8	0.10	F	37.9	0.20	D						
Overall	72.6	0.63	E	64.4	0.70	E	75.2	0.65	E	66.3	0.73	E						
11: Ft Weaver Rd & Renton Rd																		
EB LT	113.0	0.81	F	114.2	0.83	F	111.3	0.81	F	112.9	0.84	F						
EB LT/TH	110.8	0.80	F	112.8	0.82	F	109.2	0.79	F	113.6	0.84	F						
EB RT	87.6	0.27	F	87.2	0.26	F	86.9	0.26	F	84.5	0.25	F						
WB LT/TH	118.9	0.39	F	122.3	0.66	F	118.9	0.39	F	122.3	0.66	F						
WB RT	111.2	0.01	F	103.4	0.02	F	111.2	0.01	F	103.4	0.02	F						
NB LT	124.9	0.85	F	100.3	0.74	F	125.7	0.85	F	100.5	0.74	F						
NB TH	22.4	0.87	C	32.0	0.53	C	22.8	0.87	C	33.7	0.54	C						
NB RT	15.4	0.02	B	41.3	0.05	D	15.6	0.02	B	44.2	0.05	D						
SB LT	126.9	0.66	F	113.6	0.62	F	128.3	0.67	F	113.8	0.62	F						
SB TH	37.2	0.51	D	64.5	0.99	E	37.8	0.52	D	73.1	1.01	E*						
SB RT	56.2	0.23	E	40.3	0.27	D	58.3	0.26	E	42.4	0.27	D						
Overall	44.3	0.85	D	60.5	0.90	E	44.8	0.86	D	65.5	0.92	E						
12: Geiger Rd & Honouliuli Drwy 3																		
EB LT							-	-	-	-	-	-	9.8	0.01	A	0.0	-	A
EB LT/TH							9.8	0.01	A	0.0	-	A	-	-	-	-	-	-
WB TH/RT							-	-	-	-	-	-	-	-	-	-	-	-
SB LT/RT							23.8	0.03	C	30.9	0.24	D	23.7	0.03	C	30.9	0.24	D
13: Roosevelt Ave & Honouliuli Drwy 4																		
EB LT							-	-	-	-	-	-	9.3	0.01	A	0.0	-	A
EB LT/TH							9.3	0.01	A	0.0	-	A	-	-	-	-	-	-
WB TH/RT							-	-	-	-	-	-	-	-	-	-	-	-
SB LT/RT							0.0	-	A	21.3	0.13	C	0.0	-	A	21.3	0.13	C
14: Honouliuli Drwy 5 & Renton Rd																		
EB TH/RT							-	-	-	-	-	-	-	-	-	-	-	-
WB LT							7.5	0.06	A	7.7	0.00	A	7.5	0.06	A	7.7	0.00	A
WB TH							-	-	-	-	-	-	-	-	-	-	-	-
NB LT/RT							8.8	0.01	A	10.0	0.11	B	8.8	0.01	A	10.0	0.11	B

Note:
* = over-capacity, v/c > 1

4.4 Future Year 2030 Trip Generation

The trip generation for the Future year 2030 scenario was based on the full build-out of the Project. The Technical Memorandum provided by AECOM, dated September 18, 2014, shown in Appendix E, was used to estimate the number of vehicular trips generated by the build-out of the Project for the Future Year 2030 scenario. The memorandum evaluated the current and future projected staffing level based on full-time equivalent (FTE) positions, which is a calculated unit of measurement that gauges the number of full-time and part-time employees at the Honouliuli WWTP based on collective work hours. It was estimated that the current staffing level at the Honouliuli WWTP is at 39 FTE positions, while the build-out of the Project will increase the staffing to an estimated 320 FTE positions. This results in an eight-fold increase to the number of employees at the Honouliuli WWTP. In order to determine the growth in traffic generated by this increase to 320 FTE, all existing traffic turning movements were increased linearly by a factor of 8. The Future Year 2030 Project Generated Traffic is shown below in Table 6.

Table 6: Future Year 2030 Project Generated Traffic

	FTE Positions	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Estimate Trips Accessing the WWTP in 2014							
Existing 2014 Traffic[1]	39 FTE	20	28	48	33	43	76
New Proposed Trips Accessing the WWTP in 2030 Multiplier: 820 percent							
Future Year 2030 Traffic	320 FTE	164	230	394	271	353	624
Existing 2014 Traffic		(20)	(28)	(48)	(33)	(43)	(76)
TOTAL NEW TRIPS[2]		144	202	346	238	310	548

Notes:

1. Existing 2014 Traffic shows all entering/exiting traffic accessing the existing Honouliuli driveways determined by the traffic counts conducted for this TIAR.
2. Since the eight-fold multiplier includes existing 2014 traffic, the existing traffic was removed to determine the Total New Trips for Future Year 2030 scenario.

4.5 Trip Distribution/Assignment

Trip distribution is based on existing traffic flow patterns throughout the study area. Future Year 2030 Project trips were assigned to all existing driveways in addition to three (3) new accesses described in Section 4.3.

4.6 Future Year 2030 Analysis

Based on a LOS comparison between Future Year 2030 and Base Year 2030/Future Year 2021, the majority of individual movements projected to operate at LOS E/F for Base Year 2030/Future Year 2021 conditions will continue operating at similar levels of service for Future Year 2030 conditions during the AM and PM peak hours of traffic except for the following:

Geiger Road/Honouliuli Driveway 1
This intersection is forecast to operate similar to Base Year 2030 conditions with the exception of the southbound shared left/through/right movement which is projected to operate at LOS E during the PM peak hours of traffic. The southbound left-turn movement currently operates with only 10 vehicles and queues were not observed to extend beyond one vehicle long. An additional 35 left-turn vehicles generated by the Project should have minimal impacts to the queues along the southbound approach.

Geiger Road/Honouliuli Driveway 2
The southbound shared left/through/right movement is projected to operate at LOS E(F) during the AM(PM) peak hours of traffic, respectively. The southbound approach will continue to operate at a low 20 vehicle right-turn movement and 70 vehicle left-turn movement during the more critical PM peak hour. With an average of only 1 southbound left-turn vehicle arriving every minute, the increase in southbound traffic should have minimal impacts on southbound queues.

Geiger Road/Honouliuli Driveway 3
This new proposed access is forecast to operate at LOS D or better during the AM and PM peak hours of traffic with the exception of the southbound shared left/right-turn movement which is projected to operate at LOS F during the PM peak hour of traffic. The southbound left-turn movement will operate at a low 50 vehicles during the PM peak hour. With an average of less than 1 southbound left-turn vehicle arriving every minute, the movement should not experience heavy southbound queues.

Fort Weaver Road/Geiger Road/Iroquois Road & Fort Weaver Road/Renton Road
As discussed in Section 4.3, intersections along Fort Weaver Road through the Ewa region will continue to experience LOS F and over-capacity conditions at some movements. However, this is generally ascribed to requisite long traffic signal cycle lengths, split phase operation and generally long crosswalk lengths across Fort Weaver Road. Further widening of Fort Weaver Road is not prescribed by the ORTP 2035, and is generally considered infeasible due to insufficient ROW.

Figure 8 illustrates the Project Generated Traffic volumes for Year 2030. Figure 9 illustrates the forecast traffic volumes, lane configuration, and LOS for Future Year 2030 conditions. Table 7 summarizes the delay, v/c, and LOS at the study intersections for Base Year 2030 and Future Year 2030 conditions. The full LOS summary table is provided in Appendix C.

NOT TO SCALE

NORTH

KUALAKAI PARKWAY

KAPOLEI PARKWAY

RENTON ROAD

RENTON ROAD

KAPOLEI PARKWAY

FORT WEAVER ROAD

PHILLIPINE SEA

ROOSEVELT AVENUE

ESSEX ROAD

ECRC

GEIGER ROAD

GEIGER ROAD

IROQUOIS ROAD

DW1

DW2

DW3

DW4

DW5

LEGEND

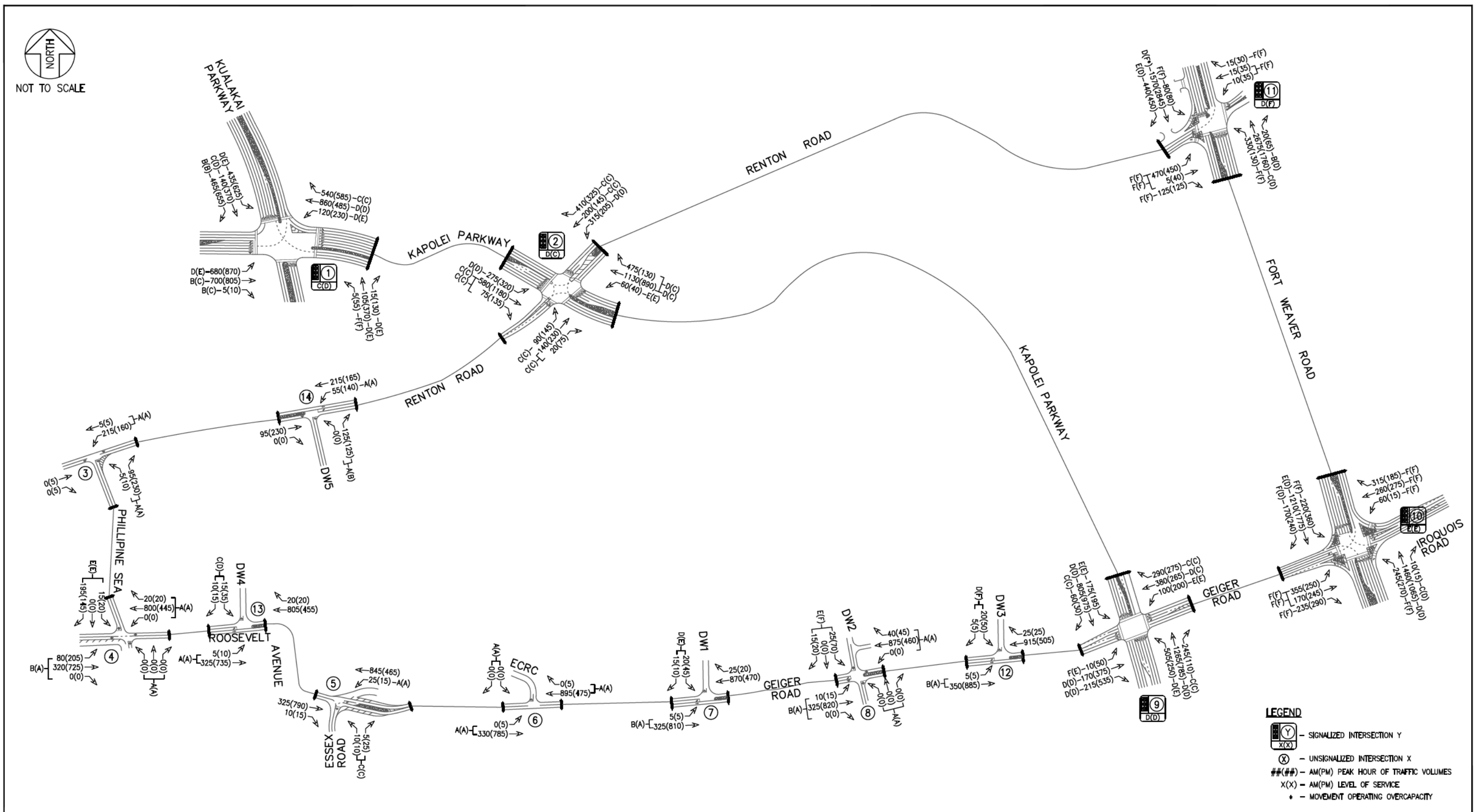
- (Y) – SIGNALIZED INTERSECTION Y
- (X) – UNSIGNALIZED INTERSECTION X
- ##(##) – AM(PM) PEAK HOUR OF TRAFFIC VOLUMES

HONOULIULI WASTEWATER TREATMENT PLAN TIAR

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, HAWAII

FIGURE 8

YEAR 2030 PROJECT ONLY VOLUMES



HONOULIULI WASTEWATER TREATMENT PLAN TIAR

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FIGURE 9

FUTURE YEAR 2030 LANE CONFIGURATION, VOLUME, AND LOS

Table 7: Base Year 2030 (no mit), Base Year 2030 (with mit) and Future Year 2030 (no mit) Intersection Level of Service Summary

Intersection	BY 2030 (No Mit)						BY 2030 WITH MITIGATION						FY 2030 (No Mit)					
	AM			PM			AM			PM			AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kapolei Pkwy & Kualakai Pkwy																		
EB LT	41.3	0.86	D	59.7	0.92	E							42.6	0.86	D	72.6	0.96	E
EB TH	18.1	0.32	B	31.5	0.40	C							18.4	0.32	B	33.5	0.43	C
EB RT	18.2	0.32	B	31.6	0.40	C							18.5	0.32	B	33.7	0.43	C
WB LT	50.5	0.63	D	70.7	0.80	E							51.7	0.63	D	72.7	0.81	E
WB TH	34.6	0.67	C	53.4	0.49	D							35.4	0.69	D	54.6	0.52	D
WB RT	22.0	0.48	C	34.1	0.50	C							22.1	0.49	C	33.7	0.51	C
NB LT	93.3	0.54	F	84.9	0.77	F							94.7	0.55	F	86.7	0.77	F
NB TH	44.8	0.33	D	65.3	0.77	E							45.9	0.34	D	65.7	0.74	E
NB TH/RT	44.7	0.34	D	65.3	0.78	E							45.9	0.34	D	65.5	0.74	E
SB LT	48.9	0.84	D	76.1	0.93	E							50.8	0.85	D	78.0	0.94	E
SB TH	30.6	0.17	C	40.6	0.37	D							31.0	0.17	C	40.1	0.36	D
SB RT	14.8	0.23	B	13.8	0.26	B							15.0	0.23	B	14.1	0.25	B
Overall	31.8	-	C	49.4	-	D							32.6	-	C	52.7	-	D
2: Kapolei Pkwy & Renton Rd																		
EB LT	37.1	0.11	D	31.5	0.23	C	31.3	0.10	C	24.4	0.20	C	34.1	0.28	C	27.9	0.36	C
EB TH/RT	30.7	0.17	C	31.0	0.45	C	26.0	0.16	C	24.0	0.40	C	26.4	0.26	C	24.5	0.46	C
WB LT	53.9	0.81	D	56.0	0.77	E	42.8	0.77	D	36.1	0.64	D	51.5	0.81	D	40.1	0.66	D
WB TH	32.5	0.31	C	27.6	0.15	C	27.5	0.30	C	21.4	0.13	C	27.1	0.32	C	21.7	0.22	C
WB RT	33.1	0.35	C	27.7	0.16	C	26.9	0.24	C	21.6	0.16	C	26.2	0.24	C	21.3	0.17	C
NB LT	73.5	0.77	E	73.9	0.78	E	65.3	0.77	E	67.0	0.78	E	68.9	0.77	E	71.4	0.78	E
NB TH	59.5	0.97	E	34.3	0.67	C	36.3	0.86	D	28.6	0.64	C	44.1	0.90	D	33.9	0.68	C
NB TH/RT	71.3	0.97	E	35.7	0.68	C	42.0	0.86	D	29.8	0.65	C	52.3	0.91	D	35.7	0.69	C
SB LT	65.0	0.90	E	66.4	0.92	E	50.8	0.78	D	43.1	0.77	D	54.4	0.79	D	48.0	0.79	D
SB TH	19.2	0.27	B	19.1	0.52	B	18.7	0.28	B	21.4	0.60	C	21.7	0.31	C	26.5	0.67	C
SB TH/RT	19.3	0.27	B	19.3	0.52	B	18.8	0.29	B	21.7	0.60	C	21.9	0.31	C	27.2	0.67	C
Overall	50.1	-	D	33.1	-	C	35.1	-	D	27.6	-	C	40.3	-	D	31.6	-	C
3: Phillipine Sea & Renton Rd																		
EB TH/RT	-	-	-	-	-	-							-	-	-	-	-	-
WB LT/TH	7.6	0.15	A	7.5	0.11	A							-	-	-	7.5	0.11	A
NB LT/RT	9.0	0.11	A	9.6	0.25	A							-	-	-	9.6	0.25	A
4: Phillipine Sea & Roosevelt Ave																		
EB LT/TH/RT	10.2	0.11	B	9.2	0.21	A							10.3	0.11	B	9.3	0.21	A
WB LT/TH/RT	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
SB LT/TH/RT	43.8	0.74	E	41.9	0.67	E							48.1	0.77	E	49.0	0.72	E
5: Essex Rd & Roosevelt Ave/Geiger Rd																		
EB TH/RT	-	-	-	-	-	-							-	-	-	-	-	-
WB LT	8.0	0.02	A	9.6	0.02	A							8.1	0.02	A	9.8	0.02	A
WB TH	-	-	-	-	-	-							-	-	-	-	-	-
NB LT/RT	21.2	0.07	C	20.1	0.14	C							22.5	0.07	C	21.6	0.15	C
6: Geiger Rd & Ewa Refuse Convenience Center																		
EB LT/TH/RT	0.0	-	A	8.4	0.01	A							0.0	-	A	8.5	0.01	A
WB LT/TH/RT	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
SB LT/TH/RT	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
7: Geiger Rd & Honouliuli Drwy 1																		
EB LT	`												10.1	0.01	B	8.5	0.01	A
EB LT/TH	0.0	-	A	0.0	-	A												
WB TH/RT	-	-	-	-	-	-							-	-	-	-	-	-
SB LT/RT	21.7	0.09	C	22.4	0.07	C							25.7	0.18	D	36.1	0.34	E
8: Geiger Rd & Honouliuli Drwy 2																		
EB LT													10.3	0.02	B	8.6	0.02	A
EB LT/TH/RT	9.9	0.01	A	8.4	0.01	A												
WB LT/TH/RT	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
SB LT/TH/RT	21.6	0.07	C	27.3	0.19	D							35.2	0.27	E	85.8	0.74	F
9: Kapolei Pkwy & Geiger Rd																		
EB LT	99.4	0.62	F	77.6	0.77	E	83.7	0.60	F	74.6	0.77	E	86.5	0.60	F	78.4	0.77	E
EB TH	52.5	0.28	D	52.4	0.81	D	44.1	0.46	D	53.2	0.82	D	44.5	0.53	D	52.3	0.85	D
EB TH/RT	52.5	0.29	D	54.2	0.83	D	-	-	-	-	-	-	-	-	-	-	-	-
EB RT	-	-	-	-	-	-	40.5	0.09	D	48.3	0.70	D	39.9	0.10	D	54.6	0.86	D
WB LT	86.9	0.83	F	87.3	0.90	F	67.9	0.81	E	67.9	0.88	E	72.0	0.81	E	77.9	0.89	E
WB TH	68.2	0.89	E	35.4	0.41	D	50.0	0.85	D	34.7	0.42	C	54.1	0.87	D	32.7	0.43	C
WB RT	44.9	0.23	D	32.2	0.15	C	35.2	0.16	D	31.5	0.16	C	34.9	0.20	C	29.1	0.17	C
NB LT	97.9	1.03	F*	73.4	0.89	E	53.2	0.86	D	59.4	0.77	E	49.7	0.85	D	66.2	0.82	E
NB TH	34.4	0.81	C	41.7	0.74	D	39.2	0.91	D	40.0	0.75	D	46.4	0.95	D	50.7	0.84	D
NB RT	21.6	0.23	C	30.2	0.06	C	21.1	0.24	C	28.9	0.05	C	23.1	0.24	C	34.1	0.05	C
SB LT	86.3	0.89	F	70.9	0.88	E	70.5	0.87	E	61.4	0.87	E	74.8	0.87	E	73.9	0.88	E
SB TH	46.2	0.78	D	61.6	0.96	E	30.5	0.66	C	37.9	0.80	D	35.7	0.72	D	54.4	0.92	D
SB RT	32.8	0.03	C	30.9	0.02	C	22.4	0.03	C	24.5	0.02	C	25.7	0.03	C	30.2	0.02	C
Overall	53.3	-	D	55.9	-	E	41.9	-	D	45.2	-	D	46.1	-	D	54.5	-	D

Note:
* = over-capacity, v/c > 1

Table 7: Base Year 2030 (no mit), Base Year 2030 (with mit) and Future Year 2030 (no mit) Intersection Level of Service Summary (continued)

Intersection	BY 2030 (No Mit)						BY 2030 WITH MITIGATION						FY 2030 (No Mit)					
	AM			PM			AM			PM			AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
10: Ft Weaver Rd & Geiger Rd/Iroquois Rd																		
EB LT	108.7	0.73	F	103.8	0.67	F							110.7	0.76	F	97.0	0.61	F
EB LT/TH	101.9	0.71	F	99.8	0.67	F							101.9	0.72	F	94.3	0.62	F
EB RT	106.8	0.70	F	107.7	0.72	F							112.5	0.77	F	122.9	0.88	F
WB LT	84.0	0.20	F	81.4	0.05	F							84.3	0.20	F	85.3	0.06	F
WB TH	112.4	0.83	F	121.1	0.89	F							113.7	0.84	F	150.4	0.99	F
WB RT	85.1	0.28	F	83.7	0.19	F							85.4	0.28	F	87.7	0.20	F
NB LT	110.8	0.68	F	110.4	0.72	F							112.3	0.74	F	111.2	0.75	F
NB TH	44.8	0.62	D	46.8	0.50	D							45.1	0.63	D	46.8	0.50	D
NB RT	31.1	0.01	C	36.8	0.01	D							31.3	0.01	C	36.8	0.01	D
SB LT	97.7	0.73	F	125.8	0.81	F							98.0	0.73	F	125.1	0.81	F
SB TH	63.7	0.52	E	47.4	0.78	D							65.2	0.53	E	50.0	0.79	D
SB RT	130.3	0.13	F	38.8	0.22	D							133.7	0.14	F	41.2	0.25	D
Overall	74.6	0.69	E	69.5	0.80	E							76.4	0.71	E	73.4	0.85	E
11: Ft Weaver Rd & Renton Rd																		
EB LT	113.1	0.81	F	113.6	0.81	F							107.9	0.81	F	113.6	0.85	F
EB LT/TH	111.5	0.79	F	113.3	0.81	F							110.0	0.82	F	114.3	0.85	F
EB RT	87.5	0.22	F	87.2	0.22	F							82.7	0.20	F	83.2	0.21	F
WB LT/TH	119.6	0.46	F	122.3	0.66	F							119.6	0.46	F	122.3	0.66	F
WB RT	110.5	0.01	F	103.5	0.02	F							110.5	0.01	F	103.5	0.02	F
NB LT	126.8	0.90	F	98.8	0.75	F							139.8	0.95	F	99.4	0.75	F
NB TH	23.0	0.88	C	34.6	0.61	C							27.0	0.91	C	37.7	0.64	D
NB RT	15.5	0.02	B	40.8	0.06	D							17.3	0.02	B	44.1	0.06	D
SB LT	127.5	0.68	F	115.2	0.64	F							131.7	0.71	F	115.1	0.64	F
SB TH	48.5	0.69	D	86.0	1.06	F*							51.1	0.71	D	105.5	1.10	F*
SB RT	63.5	0.29	E	38.6	0.27	D							68.7	0.31	E	44.0	0.32	D
Overall	49.1	0.87	D	70.4	0.95	E							53.3	0.90	D	80.9	0.98	F
12: Geiger Rd & Honouliuli Drwy 3																		
EB LT													10.3	0.01	B	8.6	0.01	A
WB TH/RT													-	-	-	-	-	-
SB LT/RT													30.2	0.16	D	50.8	0.44	F
13: Roosevelt Ave & Honouliuli Drwy 4																		
EB LT													9.8	0.01	A	8.5	0.01	A
WB TH/RT													-	-	-	-	-	-
SB LT/RT													22.7	0.12	C	27.3	0.25	D
14: Honouliuli Drwy 5 & Renton Rd																		
EB LT													-	-	-	-	-	-
WB LT													7.5	0.04	A	8.1	0.12	A
WB TH													-	-	-	-	-	-
NB LT/RT													9.4	0.14	A	10.6	0.19	B

Note:
* = over-capacity, v/c > 1

5. CONCLUSION

The Honouliuli Wastewater Treatment Plant proposes to upgrade and expand the facility, which will include the potential relocation of non-process facilities currently located at the Sand Island Wastewater Treatment Plant to the Project site. This TIAR analyzed two benchmark years; Year 2021, which corresponds to the peak year of construction for the Project and Year 2030, which corresponds to the build-out of the Project.

5.1 Existing Conditions

All study intersections operate at LOS D or better with adequate capacity except along Kapolei Parkway and Fort Weaver Road at its intersections with Renton Road and Geiger Road/Iroquois Road. Although some movements operated at LOS E conditions along Kapolei Parkway, no heavy queues were observed at its intersections with Kualakai Parkway, Renton Road and Geiger Road, with most vehicles typically clearing the intersection within one signal cycle.

Along Fort Weaver Road, the majority of movements at these intersections currently operate at LOS E/F conditions during the AM and PM peak hours of traffic mainly due to long delays as a result of requisite long cycle lengths (approximately 4 minutes long). These two intersections also provide split-phase signal operation on the side streets and long pedestrian crossing times across Fort Weaver Road, which contribute to the long delays. During the AM peak hour, the northbound traffic is generally heavier, while during the PM peak hour, traffic is heavier in the southbound direction. Further widening of Fort Weaver Road is not prescribed by the ORTP 2035, and is generally considered infeasible due to insufficient ROW. Therefore, no mitigation was recommended for any Base Year or Future Year scenarios.

5.2 Base Year WITHOUT Project Scenario

The year 2021 was selected as the base year to reflect the anticipated peak year of construction activity, which was assumed to occur during Phase 1 construction of the Honouliuli WWTP. The year 2030 was selected as the base year to reflect the anticipated build-out of the Honouliuli WWTP.

The Oahu Regional Transportation Plan 2035 (ORTP) model, which was prepared in 2011, serves as the basis for future traffic projections of future conditions throughout this TIAR. Calculated defacto growth rates ranging from 0.5-3.5 percent were used to generate Base Year 2021 and 2030 traffic projections. In addition to the defacto growth, the following developments were supplemented for additional traffic growth along the roadway network: University of Hawaii at West Oahu (UHWO), Ka Makana Alii Shopping Center, Ho'opili and East Kapolei developments. Upon build-out of the Ka Makana Alii Shopping Center, one of the proposed accesses is anticipated to be provided as a new south leg extension from the existing Kapolei Parkway/Kualakai Parkway intersection, ultimately providing a 4-legged intersection, described in further detail in Section 3.3. This improvement was assumed to be completed by Year 2021.

5.2.1 Base Year 2021 Analysis

Based on a LOS comparison between Base Year 2021 and existing conditions, the majority of individual movements that are projected to operate at LOS E/F for existing conditions will continue operating at similar levels of service for Base Year 2021 conditions during the AM and PM peak hours of traffic.

5.2.2 Base Year 2030 Analysis

Due to increased regional growth along the major thoroughfares, the Roosevelt Avenue/Phillipine Sea unsignalized intersection will operate at LOS E conditions along its southbound approach but should not experience heavy queuing due to its low volume.

Based on a LOS comparison between Base Year 2021 and Base Year 2030 conditions, the majority of individual movements that are projected to operate at LOS E/F for Base Year 2021 will continue operating at similar levels of service for Base Year 2030 conditions during the AM and PM peak hours of traffic except at the Kapolei Parkway/Geiger Road intersection and Kapolei Parkway/Renton Road intersection.

The Kapolei Parkway/Geiger Road intersection is anticipated to operate overall at LOS E during the PM peak hour. In addition, all turning movements are forecast to operate at LOS E/F conditions during the AM and PM peak hours of traffic, while the shared eastbound through/right-turn lane is anticipated to operate at LOS D during the PM peak hour due to a relatively high 190(465) vehicle right-turn movement. In order to improve the eastbound approach it is recommended that the shared through/right lane be restriped to an exclusive right-turn lane, while the northbound approach is recommended to be widened to provide two left-turn lanes.

The Kapolei Parkway/Renton Road intersection is forecast to operate with increased delays compared to Base Year 2021 as a result of growth from surrounding development and ambient growth. In order to mitigate the deficiencies of the intersection, dual southbound left-turn lanes were recommended to accommodate the relatively high 275(320) southbound left-turn vehicles during the AM(PM) peak hours. With the dual southbound left-turn lanes, all movements at the intersection are forecast to operate similar to Base Year 2021 conditions.

5.3 Future Year WITH Project Scenario

5.3.1 Future Year Trip Generation and Distribution

A Technical Memorandum provided by AECOM, dated September 18, 2014, shown in Appendix E, was used to estimate the number of vehicular trips generated by construction activity for the Future Year 2021 scenarios. Future year 2021 trip generation is the anticipated peak year of construction activity, and estimated to generate 185 construction workers arriving to the site during the AM peak hour and 185 construction workers exiting the site during the PM peak in addition to 8 total trips (4 entering and 4 exiting) generated by cement trucks during each of the AM and PM peak hours of traffic. The memorandum also estimated the number of vehicular trips generated by the build-out of the Project for the Future Year 2030 scenario and was based on a comparison of existing vs. projected 2030 Full-Time Equivalent (FTE) positions. Based on this comparison, it was estimated that existing traffic accessing the current site will increase eight-fold.

Trip distribution was generally based on existing traffic flow patterns throughout the study area. Future Year Project trips were assigned to all existing driveways in addition to three (3) new accesses described in Section 4.3.

5.3.2 Future Year 2021 Analysis

Based on a LOS comparison between Future Year 2021 and Base Year 2021, the majority of individual movements that are projected to operate at LOS E/F for Base Year 2021 conditions will continue operating at similar levels of service for Future Year 2021 conditions during the AM and PM peak hours of traffic.

Due to increased regional growth along the major thoroughfares and slight increase in exiting Project traffic, the Geiger Road/Honouliuli Driveway 2 intersection will operate at LOS E conditions along its southbound approach but should not experience heavy queuing due to its low volume. Although entering traffic volumes at the Project driveways are anticipated to operate with adequate LOS, based on guidance from the AASHTO Green Book, eastbound left-turn lanes are recommended along Geiger Road and Roosevelt Avenue at its intersection with Honouliuli Driveway 1, 2, 3 and 4 and a westbound left-turn lane is recommended at the Renton Road/Driveway 5 intersection.

5.3.3 Future Year 2030 Analysis

Due to increased regional growth along the major thoroughfares and slight increase in exiting Project traffic, various unsignalized intersection will operate at LOS E/F conditions along its exiting approach but should not experience heavy queuing due to its low volume.

Based on a LOS comparison between Future Year 2030 and Base Year 2030/Future Year 2021, the majority of individual movements projected to operate at LOS E/F for Base Year 2030/Future Year 2021 conditions will continue operating at similar levels of service for Future Year 2030 conditions during the AM and PM peak hours of traffic.

6. RECOMMENDATIONS

The following mitigation at the Kapolei Parkway/Kualakai Parkway intersection was triggered by the Ka Makana Alii Shopping Center and was assumed to be completed by the developer prior to the Base Year 2021 conditions. Ka Makana Alii has already broken ground on the shopping center and portions of the improvement are currently listed on the Statewide Transportation Improvement Program (STIP):

Kapolei Parkway/Kualakai Parkway

1. Northbound Approach
   a. Provide a new approach that includes one left-turn lane, one through lane and one shared through/right-turn lane.

2. Southbound Approach
   a. Provide two through lanes.

3. Eastbound Approach
   a. Convert three through lanes to two through lanes and one shared through/right-turn lane.

4. Westbound Approach
   a. Provide two new left-turn lanes.

The following roadway improvements are recommended for the Base Year 2030 and Future Year 2021 scenarios.

6.1 Base Year 2030 WITHOUT Project

Kapolei Parkway/Geiger Road Intersection

1. Eastbound Approach
   a. Restripe and convert the shared through/right lane to an exclusive right-turn lane.

2. Northbound Approach
   a. Widen to provide two left-turn lanes.

Kapolei Parkway/Renton Road Intersection

1. Southbound Approach
   a. Widen to provide two left-turn lanes.

6.2 Future Year 2021 WITH Project

Geiger Road at its intersection with Honouliuli Driveway 1, 2 and 3

1. Eastbound Approach
   a. Widen to provide a left-turn storage lane.
   b. Provide for a minimum storage of at least 50 feet.

Roosevelt Avenue/Honouliuli Driveway 4 Intersection

1. Eastbound Approach
   a. Widen to provide a left-turn storage lane.
   b. Provide for a minimum storage of at least 50 feet.

Renton Road/Honouliuli Driveway 5 Intersection

1. Westbound Approach
   a. Widen to provide a left-turn storage lane.
   b. Provide for a minimum storage of at least 125 feet.

REFERENCES

1. Institute of Transportation Engineers, Trip Generation, 9th Edition, 2012.
2. Julian Ng, Traffic Impact Analysis Report for East Kapolei II, November 2007.
3. Transportation Research Board, Highway Capacity Manual, 2010.
4. Parsons Brinckerhoff Quade & Douglas Inc., Traffic Study for University of Hawaii – West Oahu, October 2006.
5. PB Americas Inc., Traffic Evaluation for Ka Makana Alii, June 2011.

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APPENDICES

APPENDIX A

Traffic Count Data

Austin Tsutsumi & Associates

501 Sumner Street, Suite 521
Honolulu, HI 96817-5031
Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : AM_Essex Rd - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	From North				GEIGER RD From East				ESSEX RD From South				GEIGER RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
06:00 AM	0	0	0	0	0	67	1	0	0	0	0	0	1	37	0	0	106
06:15 AM	0	0	0	0	0	97	3	0	0	0	0	0	4	48	0	0	152
06:30 AM	0	0	0	0	0	120	5	0	2	0	0	0	6	62	0	0	195
06:45 AM	0	0	0	0	0	112	7	0	3	0	0	0	2	68	0	0	192
Total	0	0	0	0	0	396	16	0	5	0	0	0	13	215	0	0	645
07:00 AM	0	0	0	0	0	112	5	0	0	0	2	0	0	57	0	0	176
07:15 AM	0	0	0	0	0	155	6	0	2	0	1	0	2	74	0	0	240
07:30 AM	0	0	0	0	0	153	5	0	2	0	2	0	1	71	0	0	234
07:45 AM	0	0	0	0	0	136	7	0	0	0	0	0	2	63	0	0	208
Total	0	0	0	0	0	556	23	0	4	0	5	0	5	265	0	0	858
Grand Total	0	0	0	0	0	952	39	0	9	0	5	0	18	480	0	0	1503
Apprch %	0	0	0	0	0	96.1	3.9	0	64.3	0	35.7	0	3.6	96.4	0	0	
Total %	0	0	0	0	0	63.3	2.6	0	0.6	0	0.3	0	1.2	31.9	0	0	

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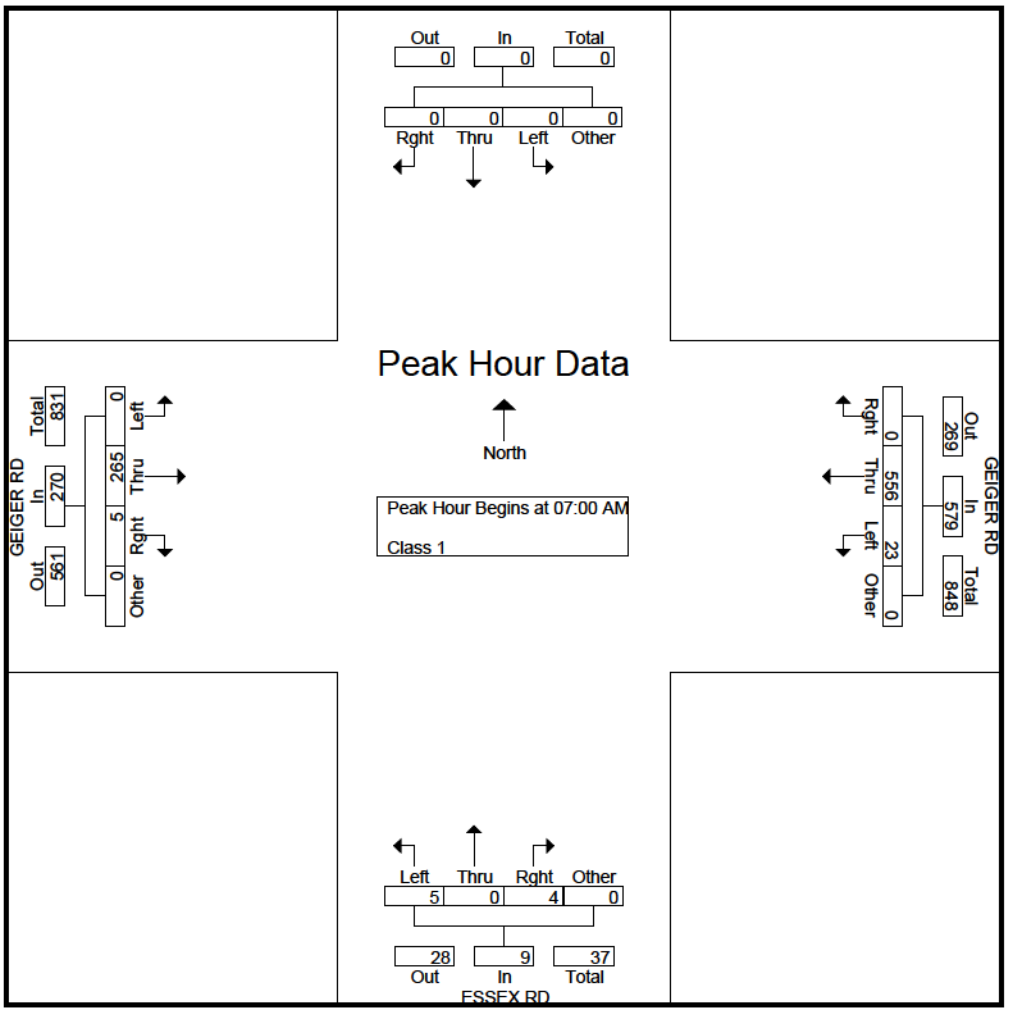
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	From North					GEIGER RD From East					ESSEX RD From South					GEIGER RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	112	5	0	117	0	0	2	0	2	0	57	0	0	57	176
07:15 AM	0	0	0	0	0	0	155	6	0	161	2	0	1	0	3	2	74	0	0	76	240
07:30 AM	0	0	0	0	0	0	153	5	0	158	2	0	2	0	4	1	71	0	0	72	234
07:45 AM	0	0	0	0	0	0	136	7	0	143	0	0	0	0	0	2	63	0	0	65	208
Total Volume	0	0	0	0	0	0	556	23	0	579	4	0	5	0	9	5	265	0	0	270	858
% App. Total	0	0	0	0		0	96	4	0		44.4	0	55.6	0		1.9	98.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.897	.821	.000	.899	.500	.000	.625	.000	.563	.625	.895	.000	.000	.888	.894



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File Name : AM_Ft Weaver Rd - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Unshifted

	FT WEAVER RD From North					GEIGER RD From East				FT WEAVER RD From South					GEIGER RD From West				
Start Time	Right	Thru	Left	U-Turns	Peds	Right	Thru	Left	Peds	Right	Thru	Left	U-Turns	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	28	97	31	0	0	63	43	2	1	1	364	11	2	5	11	12	62	2	735
06:15 AM	28	153	51	0	0	77	31	3	0	3	275	25	2	4	12	16	49	2	731
06:30 AM	38	196	39	0	0	65	36	5	1	0	343	9	0	9	13	29	58	3	844
06:45 AM	29	217	36	0	0	87	37	5	3	1	356	20	0	8	30	17	56	2	904
Total	123	663	157	0	0	292	147	15	5	5	1338	65	4	26	66	74	225	9	3214
07:00 AM	27	223	55	0	0	64	46	13	2	1	336	24	1	8	41	24	69	8	942
07:15 AM	26	219	43	1	0	74	68	22	1	3	276	30	1	18	49	42	59	7	939
07:30 AM	38	250	27	0	0	57	55	10	2	0	348	32	0	9	48	39	76	7	998
07:45 AM	29	183	35	1	0	71	53	5	4	0	388	60	1	6	18	24	55	5	938
Total	120	875	160	2	0	266	222	50	9	4	1348	146	3	41	156	129	259	27	3817
Grand Total	243	1538	317	2	0	558	369	65	14	9	2686	211	7	67	222	203	484	36	7031
Apprch %	11.6	73.2	15.1	0.1	0	55.5	36.7	6.5	1.4	0.3	90.1	7.1	0.2	2.2	23.5	21.5	51.2	3.8	
Total %	3.5	21.9	4.5	0	0	7.9	5.2	0.9	0.2	0.1	38.2	3	0.1	1	3.2	2.9	6.9	0.5	

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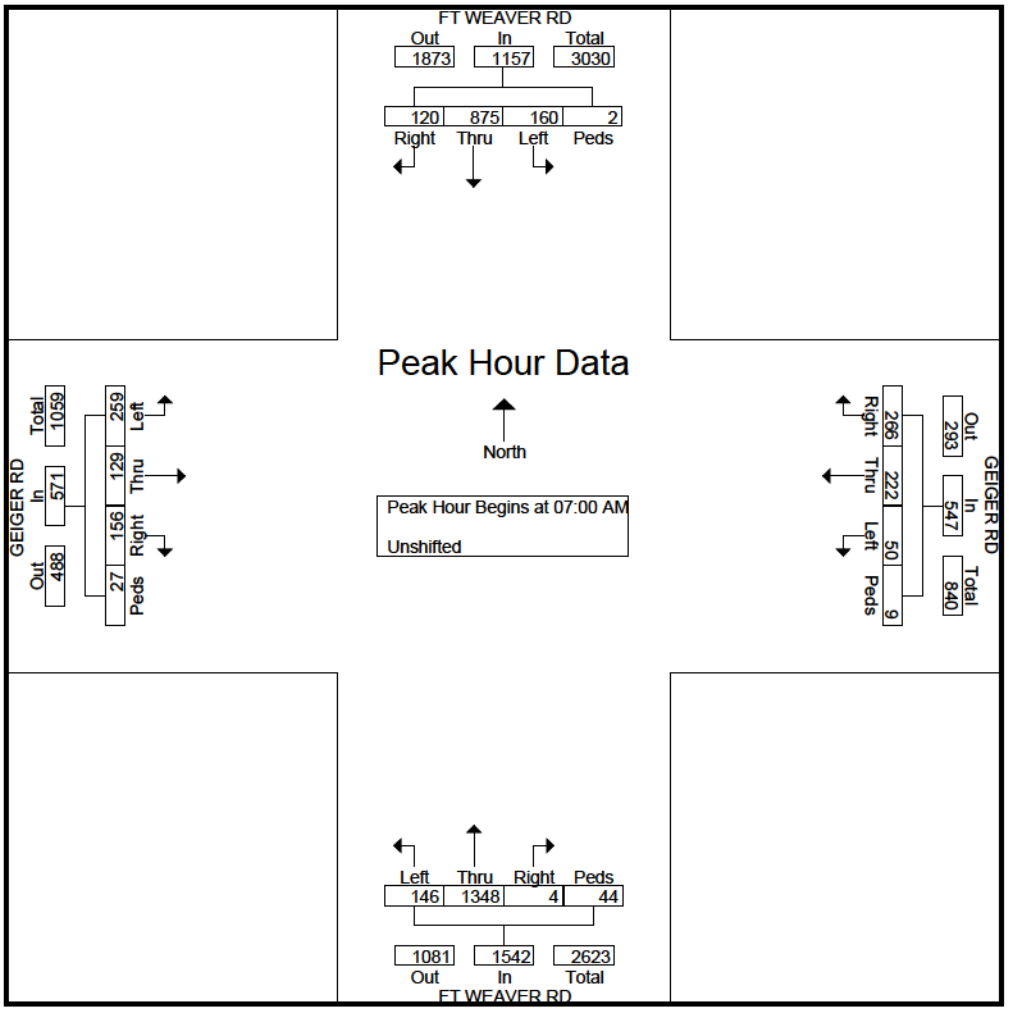
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	FT WEAVER RD From North						GEIGER RD From East					FT WEAVER RD From South						GEIGER RD From West					
Start Time	Right	Thru	Left	U-Turns	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	U-Turns	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																							
Peak Hour for Entire Intersection Begins at 07:00 AM																							
07:00 AM	27	223	55	0	0	305	64	46	13	2	125	1	336	24	1	8	370	41	24	69	8	142	942
07:15 AM	26	219	43	1	0	289	74	68	22	1	165	3	276	30	1	18	328	49	42	59	7	157	939
07:30 AM	38	250	27	0	0	315	57	55	10	2	124	0	348	32	0	9	389	48	39	76	7	170	998
07:45 AM	29	183	35	1	0	248	71	53	5	4	133	0	388	60	1	6	455	18	24	55	5	102	938
Total Volume	120	875	160	2	0	1157	266	222	50	9	547	4	1348	146	3	41	1542	156	129	259	27	571	3817
% App. Total	10.4	75.6	13.8	0.2	0		48.6	40.6	9.1	1.6		0.3	87.4	9.5	0.2	2.7		27.3	22.6	45.4	4.7		
PHF	.789	.875	.727	.500	.000	.918	.899	.816	.568	.563	.829	.333	.869	.608	.750	.569	.847	.796	.768	.852	.844	.840	.956



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Start Date : 9/3/2014
Page No : 1

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	FT WEAVER RD From North					RENTON RD From East				FT WEAVER RD From South					RENTON RD From West				
Start Time	Right	Thru	Left	U-Turns	Peds	Right	Thru	Left	Peds	Right	Thru	Left	U-Turns	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	24	154	1	17	0	3	11	7	4	11	493	8	0	0	11	4	85	0	833
06:15 AM	46	271	0	14	0	4	4	6	19	3	820	12	0	1	7	1	94	0	1302
06:30 AM	53	313	0	18	0	2	1	0	7	4	795	21	0	0	8	4	105	0	1331
06:45 AM	65	293	2	16	0	0	1	4	10	5	758	27	0	0	14	2	107	0	1304
Total	188	1031	3	65	0	9	17	17	40	23	2866	68	0	1	40	11	391	0	4770
07:00 AM	68	280	0	12	0	2	3	2	8	5	713	45	0	0	18	1	106	0	1263
07:15 AM	71	394	0	15	0	1	4	0	12	5	699	40	0	0	18	0	84	0	1343
07:30 AM	49	239	3	16	0	3	3	2	11	3	563	54	0	0	37	3	105	0	1091
07:45 AM	47	263	2	19	0	4	2	0	9	2	675	58	1	0	37	1	96	0	1216
Total	235	1176	5	62	0	10	12	4	40	15	2650	197	1	0	110	5	391	0	4913
Grand Total	423	2207	8	127	0	19	29	21	80	38	5516	265	1	1	150	16	782	0	9683
Apprch %	15.3	79.8	0.3	4.6	0	12.8	19.5	14.1	53.7	0.7	94.8	4.6	0	0	15.8	1.7	82.5	0	
Total %	4.4	22.8	0.1	1.3	0	0.2	0.3	0.2	0.8	0.4	57	2.7	0	0	1.5	0.2	8.1	0	

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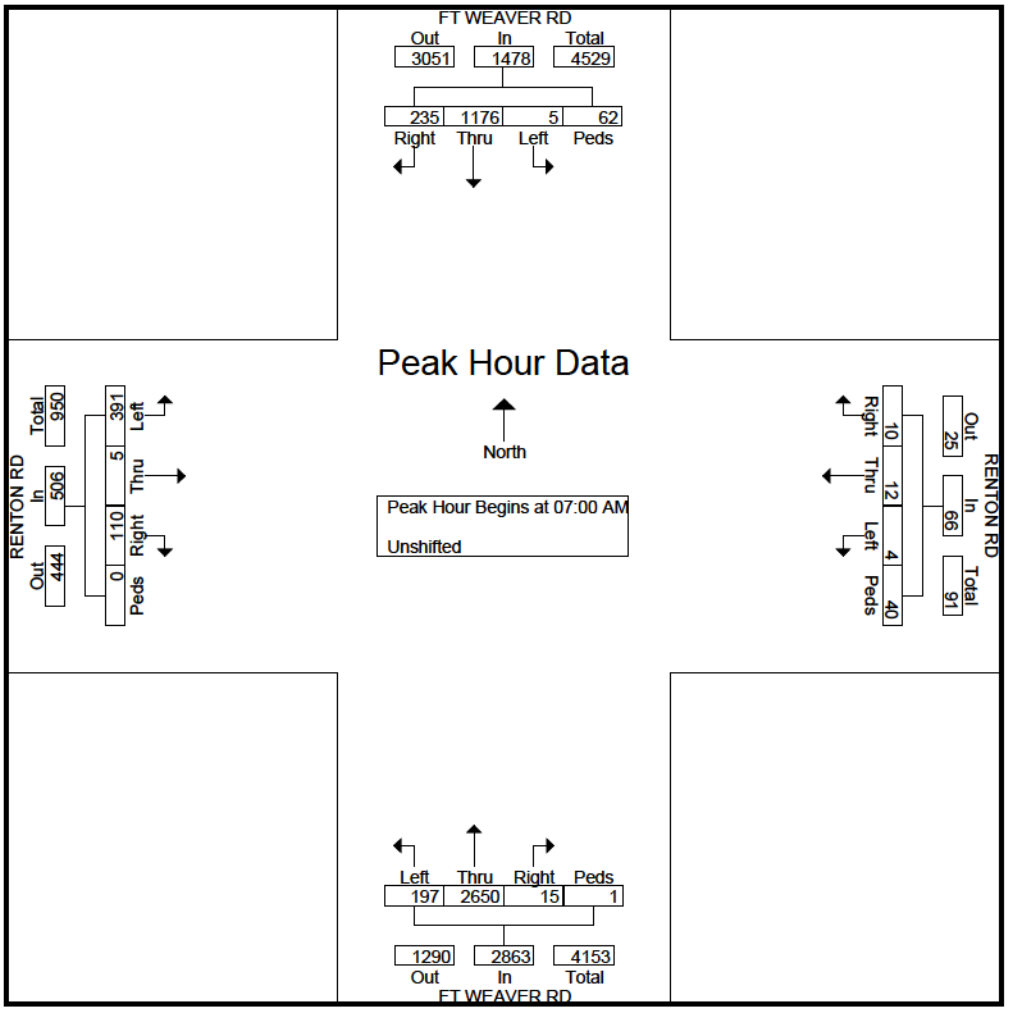
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	FT WEAVER RD From North						RENTON RD From East					FT WEAVER RD From South						RENTON RD From West					
Start Time	Right	Thru	Left	U-Turns	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	U-Turns	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																							
Peak Hour for Entire Intersection Begins at 07:00 AM																							
07:00 AM	68	280	0	12	0	360	2	3	2	8	15	5	713	45	0	0	763	18	1	106	0	125	1263
07:15 AM	71	394	0	15	0	480	1	4	0	12	17	5	699	40	0	0	744	18	0	84	0	102	1343
07:30 AM	49	239	3	16	0	307	3	3	2	11	19	3	563	54	0	0	620	37	3	105	0	145	1091
07:45 AM	47	263	2	19	0	331	4	2	0	9	15	2	675	58	1	0	736	37	1	96	0	134	1216
Total Volume	235	1176	5	62	0	1478	10	12	4	40	66	15	2650	197	1	0	2863	110	5	391	0	506	4913
% App. Total	15.9	79.6	0.3	4.2	0		15.2	18.2	6.1	60.6		0.5	92.6	6.9	0	0		21.7	1	77.3	0		
PHF	.827	.746	.417	.816	.000	.770	.625	.750	.500	.833	.868	.750	.929	.849	.250	.000	.938	.743	.417	.922	.000	.872	.915



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File Name : AM_Kapolei Pkwy - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Unshifted

	KAPOLEI PKWY From North				GEIGER RD From East				KAPOLEI PKWY From South				GEIGER RD From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	5	29	14	0	21	47	9	1	18	101	54	1	17	19	1	0	337
06:15 AM	8	62	17	0	32	41	12	8	14	98	63	0	30	13	4	1	403
06:30 AM	7	58	28	2	27	61	11	3	16	97	78	0	40	19	3	0	450
06:45 AM	9	83	25	6	28	55	9	3	24	126	79	0	55	30	3	2	537
Total	29	232	84	8	108	204	41	15	72	422	274	1	142	81	11	3	1727
07:00 AM	10	119	29	1	38	46	20	13	20	130	70	0	46	22	3	4	571
07:15 AM	10	146	44	3	44	55	23	22	31	184	94	0	44	34	2	9	745
07:30 AM	4	138	36	2	53	61	28	8	47	230	90	0	46	33	3	0	779
07:45 AM	18	98	37	0	60	48	17	5	41	173	82	3	31	21	0	2	636
Total	42	501	146	6	195	210	88	48	139	717	336	3	167	110	8	15	2731
Grand Total	71	733	230	14	303	414	129	63	211	1139	610	4	309	191	19	18	4458
Apprch %	6.8	69.9	21.9	1.3	33.3	45.5	14.2	6.9	10.7	58	31.1	0.2	57.5	35.6	3.5	3.4	
Total %	1.6	16.4	5.2	0.3	6.8	9.3	2.9	1.4	4.7	25.5	13.7	0.1	6.9	4.3	0.4	0.4	

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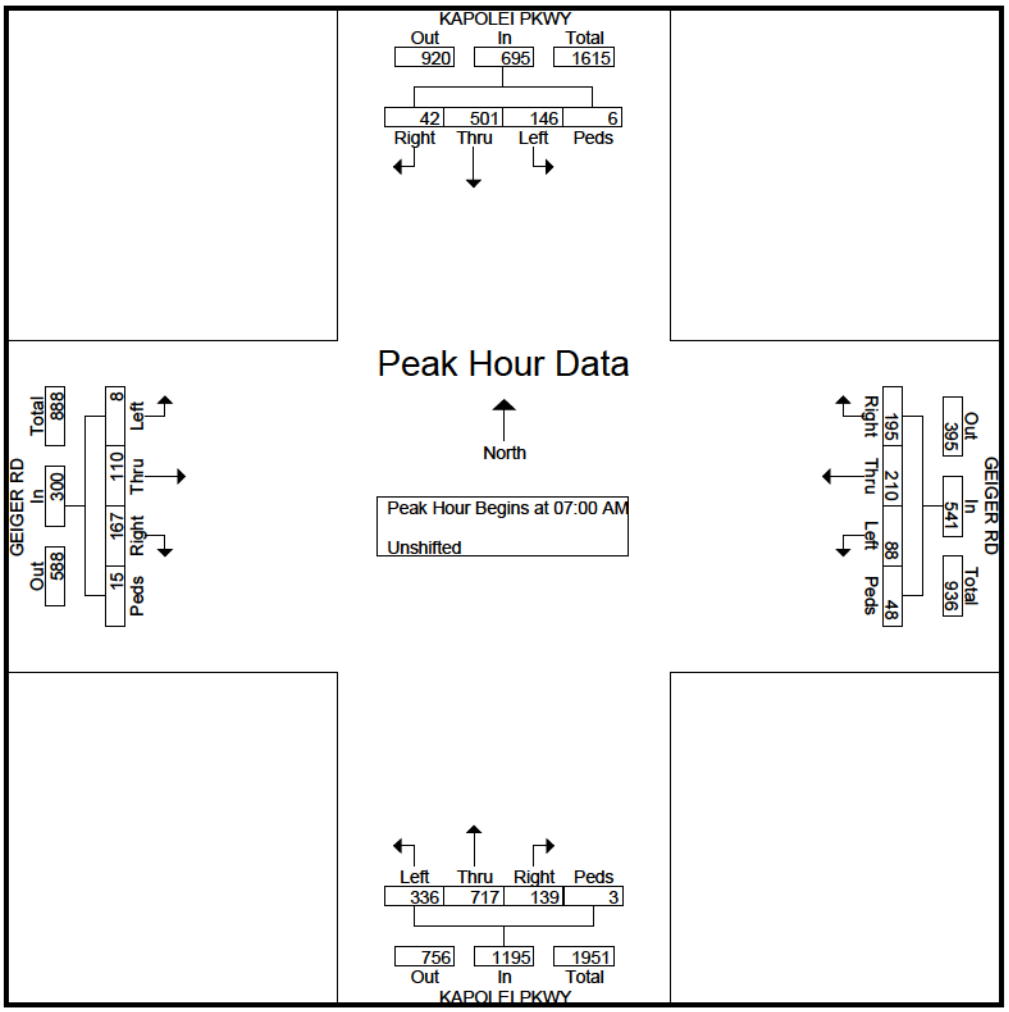
File Name : AM_Kapolei Pkwy - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	KAPOLEI PKWY From North					GEIGER RD From East					KAPOLEI PKWY From South					GEIGER RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	10	119	29	1	159	38	46	20	13	117	20	130	70	0	220	46	22	3	4	75	571
07:15 AM	10	146	44	3	203	44	55	23	22	144	31	184	94	0	309	44	34	2	9	89	745
07:30 AM	4	138	36	2	180	53	61	28	8	150	47	230	90	0	367	46	33	3	0	82	779
07:45 AM	18	98	37	0	153	60	48	17	5	130	41	173	82	3	299	31	21	0	2	54	636
Total Volume	42	501	146	6	695	195	210	88	48	541	139	717	336	3	1195	167	110	8	15	300	2731
% App. Total	6	72.1	21	0.9		36	38.8	16.3	8.9		11.6	60	28.1	0.3		55.7	36.7	2.7	5		
PHF	.583	.858	.830	.500	.856	.813	.861	.786	.545	.902	.739	.779	.894	.250	.814	.908	.809	.667	.417	.843	.876



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File Name : AM_Kualakai Pkwy - Kapolei Pkwy
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Unshifted

	KUALAKAI PKWY From North				KAPOLEI PKWY From East				KUALAKAI PKWY From South				KAPOLEI PKWY From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	16	0	17	0	58	46	0	0	0	0	0	0	0	43	97	0	277
06:15 AM	22	0	27	0	62	59	0	0	0	0	0	0	0	64	79	0	313
06:30 AM	28	0	37	2	72	61	0	0	0	0	0	0	0	69	96	0	365
06:45 AM	37	0	44	0	50	80	0	1	0	0	0	0	0	62	82	0	356
Total	103	0	125	2	242	246	0	1	0	0	0	0	0	238	354	0	1311
07:00 AM	42	0	33	2	58	107	0	0	0	0	0	0	0	76	94	0	412
07:15 AM	53	0	54	1	77	144	0	1	0	0	0	0	0	94	66	0	490
07:30 AM	65	0	46	1	96	195	0	3	0	0	0	0	0	90	83	0	579
07:45 AM	48	0	37	1	129	158	0	0	0	0	0	0	0	104	90	0	567
Total	208	0	170	5	360	604	0	4	0	0	0	0	0	364	333	0	2048
Grand Total	311	0	295	7	602	850	0	5	0	0	0	0	0	602	687	0	3359
Apprch %	50.7	0	48.1	1.1	41.3	58.3	0	0.3	0	0	0	0	0	46.7	53.3	0	
Total %	9.3	0	8.8	0.2	17.9	25.3	0	0.1	0	0	0	0	0	17.9	20.5	0	

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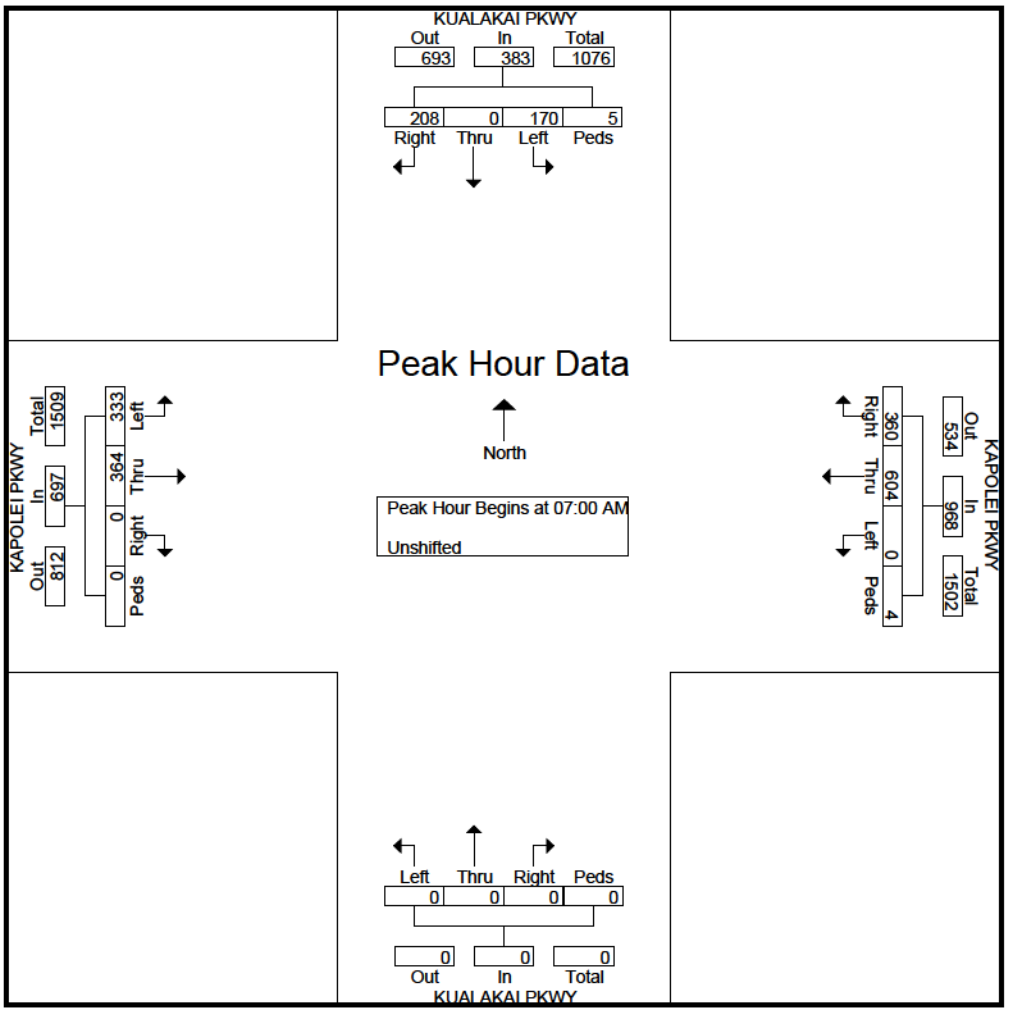
File Name : AM_Kualakai Pkwy - Kapolei Pkwy
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	KUALAKAI PKWY From North					KAPOLEI PKWY From East					KUALAKAI PKWY From South					KAPOLEI PKWY From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	42	0	33	2	77	58	107	0	0	165	0	0	0	0	0	0	76	94	0	170	412
07:15 AM	53	0	54	1	108	77	144	0	1	222	0	0	0	0	0	0	94	66	0	160	490
07:30 AM	65	0	46	1	112	96	195	0	3	294	0	0	0	0	0	0	90	83	0	173	579
07:45 AM	48	0	37	1	86	129	158	0	0	287	0	0	0	0	0	0	104	90	0	194	567
Total Volume	208	0	170	5	383	360	604	0	4	968	0	0	0	0	0	0	364	333	0	697	2048
% App. Total	54.3	0	44.4	1.3		37.2	62.4	0	0.4		0	0	0	0		0	52.2	47.8	0		
PHF	.800	.000	.787	.625	.855	.698	.774	.000	.333	.823	.000	.000	.000	.000	.000	.000	.875	.886	.000	.898	.884



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File Name : AM_Phillipine Sea - Renton Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	PHILLIPINE SEA From North				RENTON RD From East				PHILLIPINE SEA From South				RENTON RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
06:00 AM	0	0	0	0	0	1	44	0	20	0	0	0	0	0	0	0	65
06:15 AM	0	0	0	0	0	0	36	0	20	0	0	0	0	0	0	0	56
06:30 AM	0	0	0	0	0	0	44	0	20	0	0	0	1	0	0	0	65
06:45 AM	0	0	0	0	0	0	61	0	19	0	1	0	0	0	0	0	81
Total	0	0	0	0	0	1	185	0	79	0	1	0	1	0	0	0	267
07:00 AM	0	0	0	0	0	0	51	0	20	0	0	0	0	0	0	0	71
07:15 AM	0	0	0	0	0	0	42	0	21	0	1	0	0	0	0	0	64
07:30 AM	0	0	0	0	0	0	46	0	21	0	0	0	0	0	0	0	67
07:45 AM	0	0	0	0	0	1	42	0	18	0	1	0	0	0	0	0	62
Total	0	0	0	0	0	1	181	0	80	0	2	0	0	0	0	0	264
Grand Total	0	0	0	0	0	2	366	0	159	0	3	0	1	0	0	0	531
Apprch %	0	0	0	0	0	0.5	99.5	0	98.1	0	1.9	0	100	0	0	0	
Total %	0	0	0	0	0	0.4	68.9	0	29.9	0	0.6	0	0.2	0	0	0	

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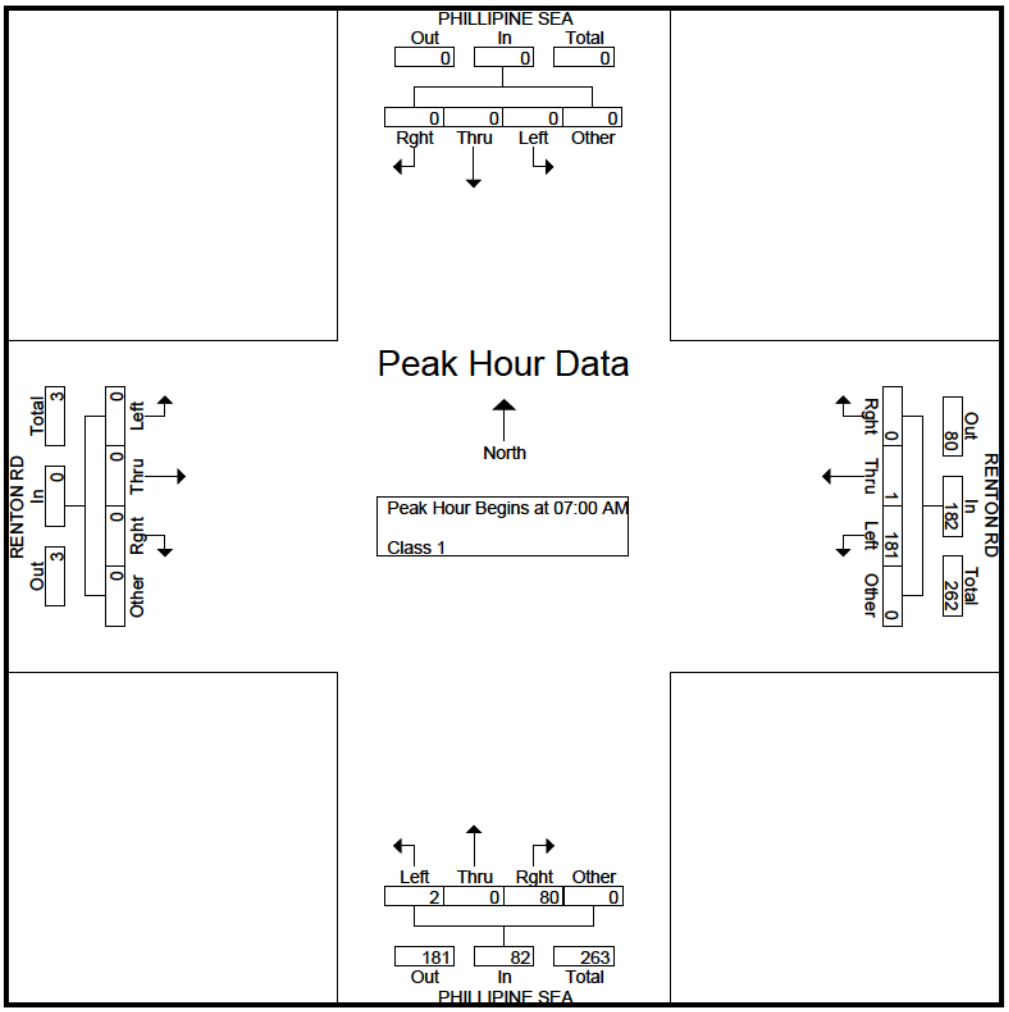
File Name : AM_Phillipine Sea - Renton Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	PHILLIPINE SEA From North					RENTON RD From East					PHILLIPINE SEA From South					RENTON RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	0	51	0	51	20	0	0	0	20	0	0	0	0	0	71
07:15 AM	0	0	0	0	0	0	0	42	0	42	21	0	1	0	22	0	0	0	0	0	64
07:30 AM	0	0	0	0	0	0	0	46	0	46	21	0	0	0	21	0	0	0	0	0	67
07:45 AM	0	0	0	0	0	0	1	42	0	43	18	0	1	0	19	0	0	0	0	0	62
Total Volume	0	0	0	0	0	0	1	181	0	182	80	0	2	0	82	0	0	0	0	0	264
% App. Total	0	0	0	0		0	0.5	99.5	0		97.6	0	2.4	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.887	.000	.892	.952	.000	.500	.000	.932	.000	.000	.000	.000	.000	.930



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File Name : AM_Phillipine Sea - Roosevelt Ave
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	PHILLIPINE SEA From North				ROOSEVELT AVE From East				PHILLIPINE SEA From South				ROOSEVELT AVE From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
06:00 AM	44	0	1	0	0	73	0	0	0	0	0	0	0	37	20	0	175
06:15 AM	30	0	4	0	0	78	0	0	0	0	0	0	0	49	15	0	176
06:30 AM	42	0	7	0	1	123	0	0	0	0	0	0	0	68	17	0	258
06:45 AM	55	0	3	0	2	108	0	0	0	0	0	0	0	67	18	0	253
Total	171	0	15	0	3	382	0	0	0	0	0	0	0	221	70	0	862
07:00 AM	48	0	2	0	2	100	0	0	0	0	0	0	0	55	16	0	223
07:15 AM	39	0	3	0	3	155	0	0	0	0	0	0	0	80	15	0	295
07:30 AM	40	0	4	0	4	141	0	0	0	0	0	0	0	65	17	0	271
07:45 AM	39	0	2	0	5	134	0	0	0	0	0	0	0	67	16	0	263
Total	166	0	11	0	14	530	0	0	0	0	0	0	0	267	64	0	1052
Grand Total	337	0	26	0	17	912	0	0	0	0	0	0	0	488	134	0	1914
Apprch %	92.8	0	7.2	0	1.8	98.2	0	0	0	0	0	0	0	78.5	21.5	0	
Total %	17.6	0	1.4	0	0.9	47.6	0	0	0	0	0	0	0	25.5	7	0	

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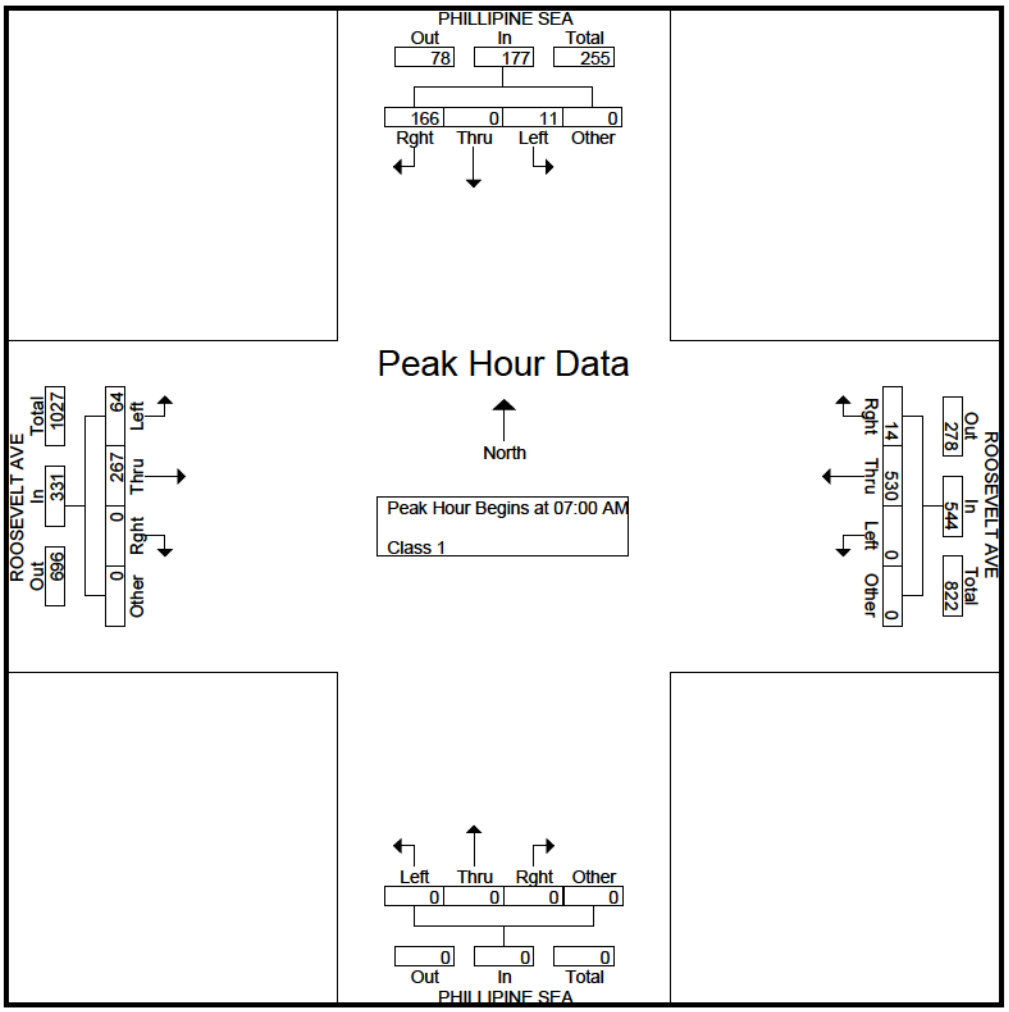
File Name : AM_Phillipine Sea - Roosevelt Ave
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	PHILLIPINE SEA From North					ROOSEVELT AVE From East					PHILLIPINE SEA From South					ROOSEVELT AVE From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	48	0	2	0	50	2	100	0	0	102	0	0	0	0	0	0	55	16	0	71	223
07:15 AM	39	0	3	0	42	3	155	0	0	158	0	0	0	0	0	0	80	15	0	95	295
07:30 AM	40	0	4	0	44	4	141	0	0	145	0	0	0	0	0	0	65	17	0	82	271
07:45 AM	39	0	2	0	41	5	134	0	0	139	0	0	0	0	0	0	67	16	0	83	263
Total Volume	166	0	11	0	177	14	530	0	0	544	0	0	0	0	0	0	267	64	0	331	1052
% App. Total	93.8	0	6.2	0		2.6	97.4	0	0		0	0	0	0		0	80.7	19.3	0		
PHF	.865	.000	.688	.000	.885	.700	.855	.000	.000	.861	.000	.000	.000	.000	.000	.000	.834	.941	.000	.871	.892



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File Name : AM_Renton Rd - Kapolei Pkwy
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Unshifted

	RENTON RD From North				KAPOLEI PKWY From East				RENTON RD From South				KAPOLEI PKWY From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
06:00 AM	26	20	9	1	17	74	9	0	1	14	6	1	7	30	18	0	233
06:15 AM	22	20	19	2	35	103	8	1	5	12	3	0	11	56	29	0	326
06:30 AM	32	22	21	1	29	88	9	0	3	12	8	1	19	50	35	0	330
06:45 AM	33	29	36	4	51	95	7	0	5	18	3	0	22	50	29	0	382
Total	113	91	85	8	132	360	33	1	14	56	20	2	59	186	111	0	1271
07:00 AM	47	24	61	3	57	129	18	2	4	14	5	2	16	55	47	1	485
07:15 AM	57	22	85	1	109	168	9	1	3	17	9	0	10	76	55	1	623
07:30 AM	104	30	83	0	118	240	11	1	4	20	3	1	9	82	62	0	768
07:45 AM	82	32	59	2	66	168	5	0	5	10	7	0	7	76	49	0	568
Total	290	108	288	6	350	705	43	4	16	61	24	3	42	289	213	2	2444
Grand Total	403	199	373	14	482	1065	76	5	30	117	44	5	101	475	324	2	3715
Apprch %	40.7	20.1	37.7	1.4	29.6	65.4	4.7	0.3	15.3	59.7	22.4	2.6	11.2	52.7	35.9	0.2	
Total %	10.8	5.4	10	0.4	13	28.7	2	0.1	0.8	3.1	1.2	0.1	2.7	12.8	8.7	0.1	

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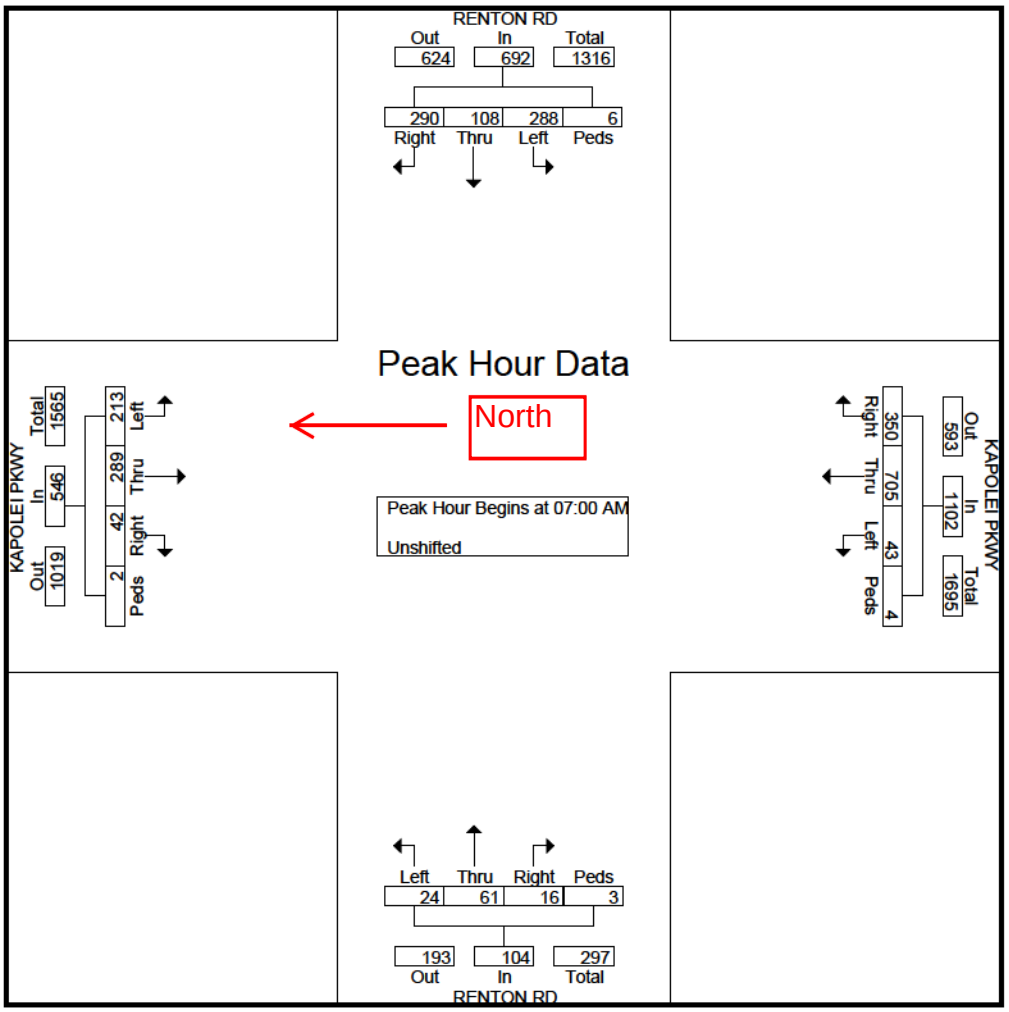
File Name : AM_Renton Rd - Kapolei Pkwy
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	RENTON RD From North					KAPOLEI PKWY From East					RENTON RD From South					KAPOLEI PKWY From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	47	24	61	3	135	57	129	18	2	206	4	14	5	2	25	16	55	47	1	119	485
07:15 AM	57	22	85	1	165	109	168	9	1	287	3	17	9	0	29	10	76	55	1	142	623
07:30 AM	104	30	83	0	217	118	240	11	1	370	4	20	3	1	28	9	82	62	0	153	768
07:45 AM	82	32	59	2	175	66	168	5	0	239	5	10	7	0	22	7	76	49	0	132	568
Total Volume	290	108	288	6	692	350	705	43	4	1102	16	61	24	3	104	42	289	213	2	546	2444
% App. Total	41.9	15.6	41.6	0.9		31.8	64	3.9	0.4		15.4	58.7	23.1	2.9		7.7	52.9	39	0.4		
PHF	.697	.844	.847	.500	.797	.742	.734	.597	.500	.745	.800	.763	.667	.375	.897	.656	.881	.859	.500	.892	.796



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File Name : AM_WWTP Dwy #1 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	WWTP DWY #1 From North				GEIGER RD From East				From South				GEIGER RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
06:00 AM	0	0	0	0	0	79	10	0	0	0	1	0	0	35	0	0	125
06:15 AM	0	0	0	0	0	98	18	0	2	0	0	0	1	48	0	0	167
06:30 AM	0	0	0	0	0	142	5	0	8	0	1	0	3	52	0	0	211
06:45 AM	0	0	0	0	0	141	3	0	19	0	0	0	0	73	0	0	236
Total	0	0	0	0	0	460	36	0	29	0	2	0	4	208	0	0	739
07:00 AM	0	0	0	0	0	120	1	0	6	0	2	0	0	57	0	0	186
07:15 AM	0	0	0	0	0	160	4	0	3	0	1	0	1	77	0	0	246
07:30 AM	0	0	0	0	0	160	2	0	4	0	0	0	0	75	0	0	241
07:45 AM	0	0	0	0	0	152	1	0	2	0	0	0	0	62	0	0	217
Total	0	0	0	0	0	592	8	0	15	0	3	0	1	271	0	0	890
Grand Total	0	0	0	0	0	1052	44	0	44	0	5	0	5	479	0	0	1629
Apprch %	0	0	0	0	0	96	4	0	89.8	0	10.2	0	1	99	0	0	
Total %	0	0	0	0	0	64.6	2.7	0	2.7	0	0.3	0	0.3	29.4	0	0	

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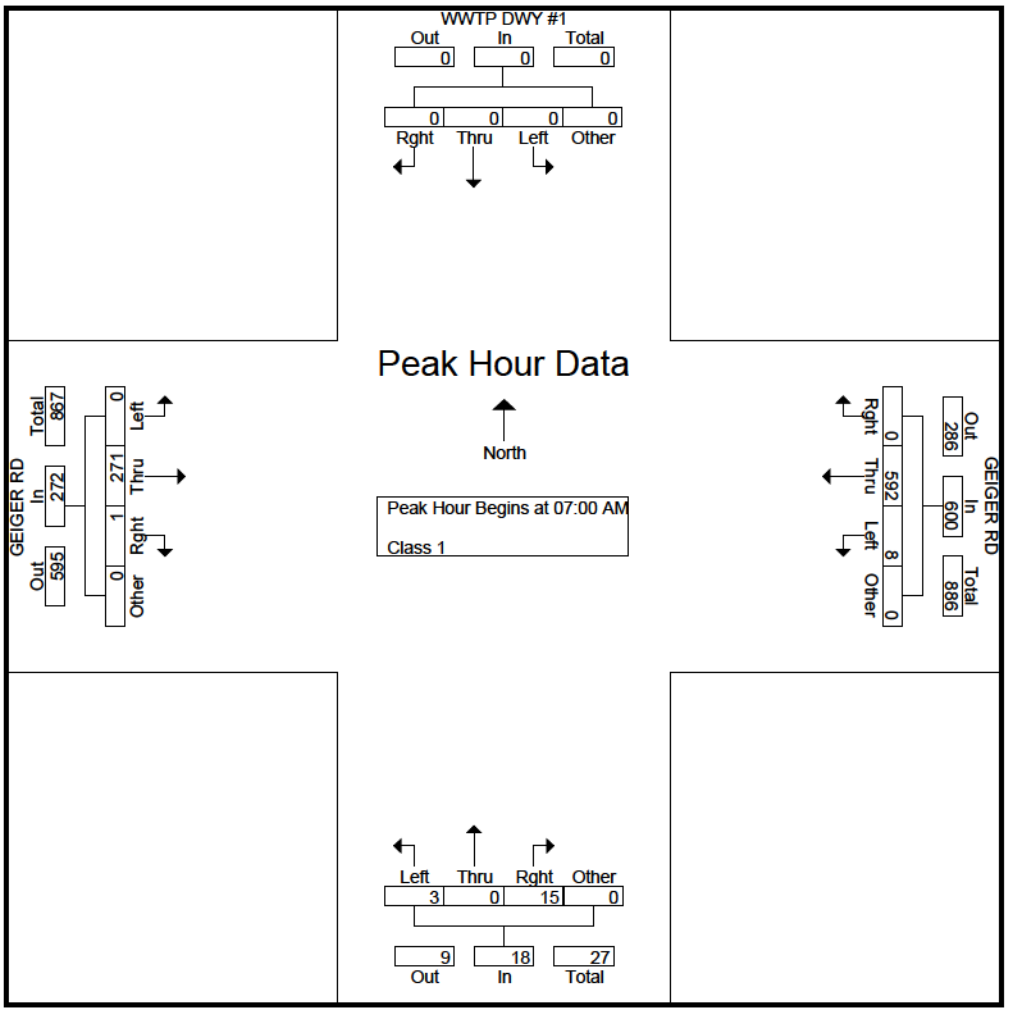
File Name : AM_WWTP Dwy #1 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	WWTP DWY #1 From North					GEIGER RD From East					From South					GEIGER RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	0	120	1	0	121	6	0	2	0	8	0	57	0	0	57	186
07:15 AM	0	0	0	0	0	0	160	4	0	164	3	0	1	0	4	1	77	0	0	78	246
07:30 AM	0	0	0	0	0	0	160	2	0	162	4	0	0	0	4	0	75	0	0	75	241
07:45 AM	0	0	0	0	0	0	152	1	0	153	2	0	0	0	2	0	62	0	0	62	217
Total Volume	0	0	0	0	0	0	592	8	0	600	15	0	3	0	18	1	271	0	0	272	890
% App. Total	0	0	0	0		0	98.7	1.3	0		83.3	0	16.7	0		0.4	99.6	0	0		
PHF	.000	.000	.000	.000	.000	.000	.925	.500	.000	.915	.625	.000	.375	.000	.563	.250	.880	.000	.000	.872	.904



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File Name : AM_WWTP Dwy #2 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	WWTP DWY #2 From North				GEIGER RD From East				From South				GEIGER RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
06:00 AM	0	0	1	0	1	69	0	0	0	0	0	0	0	35	1	0	107
06:15 AM	0	0	1	0	6	99	0	0	0	0	0	0	0	48	2	0	156
06:30 AM	1	0	0	0	15	124	0	0	0	0	0	0	0	53	3	0	196
06:45 AM	0	0	2	0	12	123	0	0	0	0	0	0	0	71	6	0	214
Total	1	0	4	0	34	415	0	0	0	0	0	0	0	207	12	0	673
07:00 AM	2	0	1	0	0	120	0	0	0	0	0	0	0	56	0	0	179
07:15 AM	3	0	2	0	0	155	0	0	0	0	0	0	0	77	0	0	237
07:30 AM	2	0	1	0	1	161	0	0	0	0	0	0	0	75	0	0	240
07:45 AM	3	0	2	0	3	143	0	0	0	0	0	0	0	60	0	0	211
Total	10	0	6	0	4	579	0	0	0	0	0	0	0	268	0	0	867
Grand Total	11	0	10	0	38	994	0	0	0	0	0	0	0	475	12	0	1540
Apprch %	52.4	0	47.6	0	3.7	96.3	0	0	0	0	0	0	0	97.5	2.5	0	
Total %	0.7	0	0.6	0	2.5	64.5	0	0	0	0	0	0	0	30.8	0.8	0	

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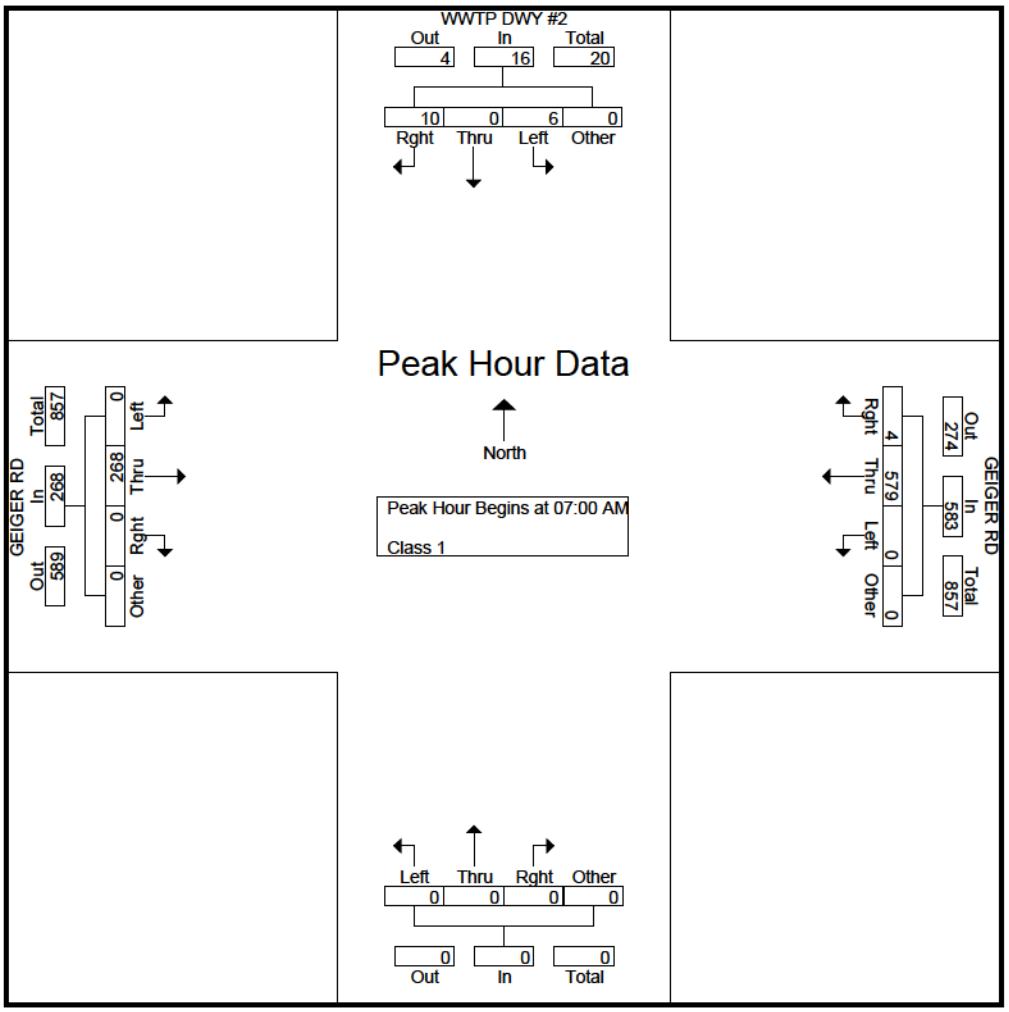
File Name : AM_WWTP Dwy #2 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	WWTP DWY #2 From North					GEIGER RD From East					From South					GEIGER RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	2	0	1	0	3	0	120	0	0	120	0	0	0	0	0	0	56	0	0	56	179
07:15 AM	3	0	2	0	5	0	155	0	0	155	0	0	0	0	0	0	77	0	0	77	237
07:30 AM	2	0	1	0	3	1	161	0	0	162	0	0	0	0	0	0	75	0	0	75	240
07:45 AM	3	0	2	0	5	3	143	0	0	146	0	0	0	0	0	0	60	0	0	60	211
Total Volume	10	0	6	0	16	4	579	0	0	583	0	0	0	0	0	0	268	0	0	268	867
% App. Total	62.5	0	37.5	0		0.7	99.3	0	0		0	0	0	0		0	100	0	0		
PHF	.833	.000	.750	.000	.800	.333	.899	.000	.000	.900	.000	.000	.000	.000	.000	.000	.870	.000	.000	.870	.903



Austin Tsutsumi & Associates

501 Sumner Street, Suite 521
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Phone: (808) 533-3646 Fax: (808) 526-1267

File Name : AM_WWTP Dwy #3 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	WWTP DWY #3 From North				GEIGER RD From East				From South				GEIGER RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
06:00 AM	0	0	0	0	0	70	0	0	0	0	0	0	0	36	0	0	106
06:15 AM	0	0	0	0	0	99	0	0	0	0	0	0	0	50	0	0	149
06:30 AM	0	0	0	0	0	126	0	0	0	0	0	0	0	61	0	0	187
06:45 AM	0	0	0	0	0	120	0	0	0	0	0	0	0	73	1	0	194
Total	0	0	0	0	0	415	0	0	0	0	0	0	0	220	1	0	636
07:00 AM	0	0	0	0	1	118	0	0	0	0	0	0	0	57	0	0	176
07:15 AM	2	0	1	0	2	159	0	0	0	0	0	0	0	75	0	0	239
07:30 AM	1	0	2	0	4	158	0	0	0	0	0	0	0	73	0	0	238
07:45 AM	4	0	2	0	6	140	0	0	0	0	0	0	0	56	3	0	211
Total	7	0	5	0	13	575	0	0	0	0	0	0	0	261	3	0	864
Grand Total	7	0	5	0	13	990	0	0	0	0	0	0	0	481	4	0	1500
Apprch %	58.3	0	41.7	0	1.3	98.7	0	0	0	0	0	0	0	99.2	0.8	0	
Total %	0.5	0	0.3	0	0.9	66	0	0	0	0	0	0	0	32.1	0.3	0	

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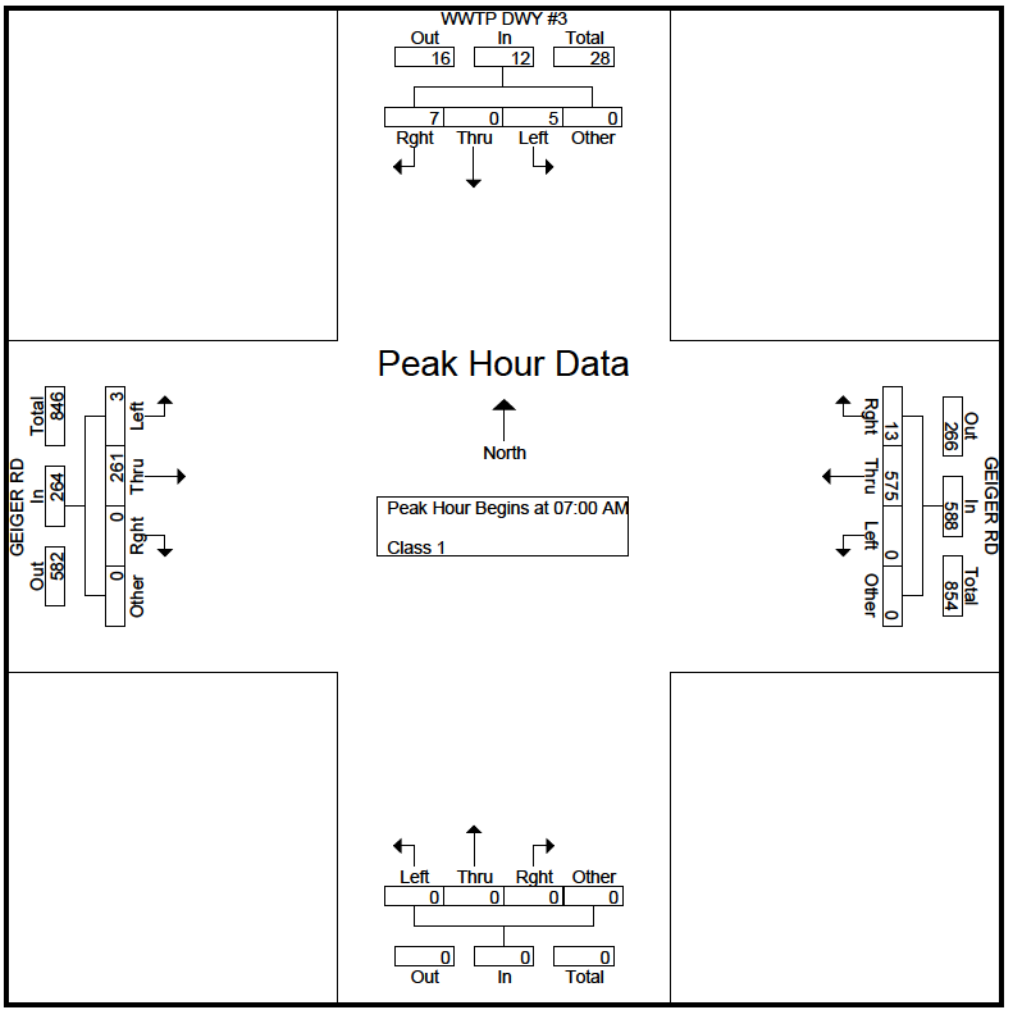
File Name : AM_WWTP Dwy #3 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	WWTP DWY #3 From North					GEIGER RD From East					From South					GEIGER RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 06:45 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	1	118	0	0	119	0	0	0	0	0	0	57	0	0	57	176
07:15 AM	2	0	1	0	3	2	159	0	0	161	0	0	0	0	0	0	75	0	0	75	239
07:30 AM	1	0	2	0	3	4	158	0	0	162	0	0	0	0	0	0	73	0	0	73	238
07:45 AM	4	0	2	0	6	6	140	0	0	146	0	0	0	0	0	0	56	3	0	59	211
Total Volume	7	0	5	0	12	13	575	0	0	588	0	0	0	0	0	0	261	3	0	264	864
% App. Total	58.3	0	41.7	0		2.2	97.8	0	0		0	0	0	0		0	98.9	1.1	0		
PHF	.438	.000	.625	.000	.500	.542	.904	.000	.000	.907	.000	.000	.000	.000	.000	.000	.870	.250	.000	.880	.904



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File Name : PM_Essex Rd - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	From North				GEIGER RD From East				ESSEX RD From South				GEIGER RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
03:30 PM	0	0	0	0	0	98	2	0	0	0	2	0	2	133	0	0	237
03:45 PM	0	0	0	0	0	72	2	0	4	0	1	0	8	140	0	0	227
Total	0	0	0	0	0	170	4	0	4	0	3	0	10	273	0	0	464
04:00 PM	0	0	0	0	0	93	3	0	4	0	2	0	2	158	0	0	262
04:15 PM	0	0	0	0	0	89	3	0	3	0	2	0	4	153	0	0	254
04:30 PM	0	0	0	0	0	93	4	0	9	0	2	0	4	147	0	0	259
04:45 PM	0	0	0	0	0	70	1	0	3	0	3	0	3	166	0	0	246
Total	0	0	0	0	0	345	11	0	19	0	9	0	13	624	0	0	1021
05:00 PM	0	0	0	0	0	71	4	0	5	0	4	0	4	162	0	0	250
05:15 PM	0	0	0	0	0	67	6	0	7	0	3	0	5	136	0	0	224
Grand Total	0	0	0	0	0	653	25	0	35	0	19	0	32	1195	0	0	1959
Apprch %	0	0	0	0	0	96.3	3.7	0	64.8	0	35.2	0	2.6	97.4	0	0	
Total %	0	0	0	0	0	33.3	1.3	0	1.8	0	1	0	1.6	61	0	0	

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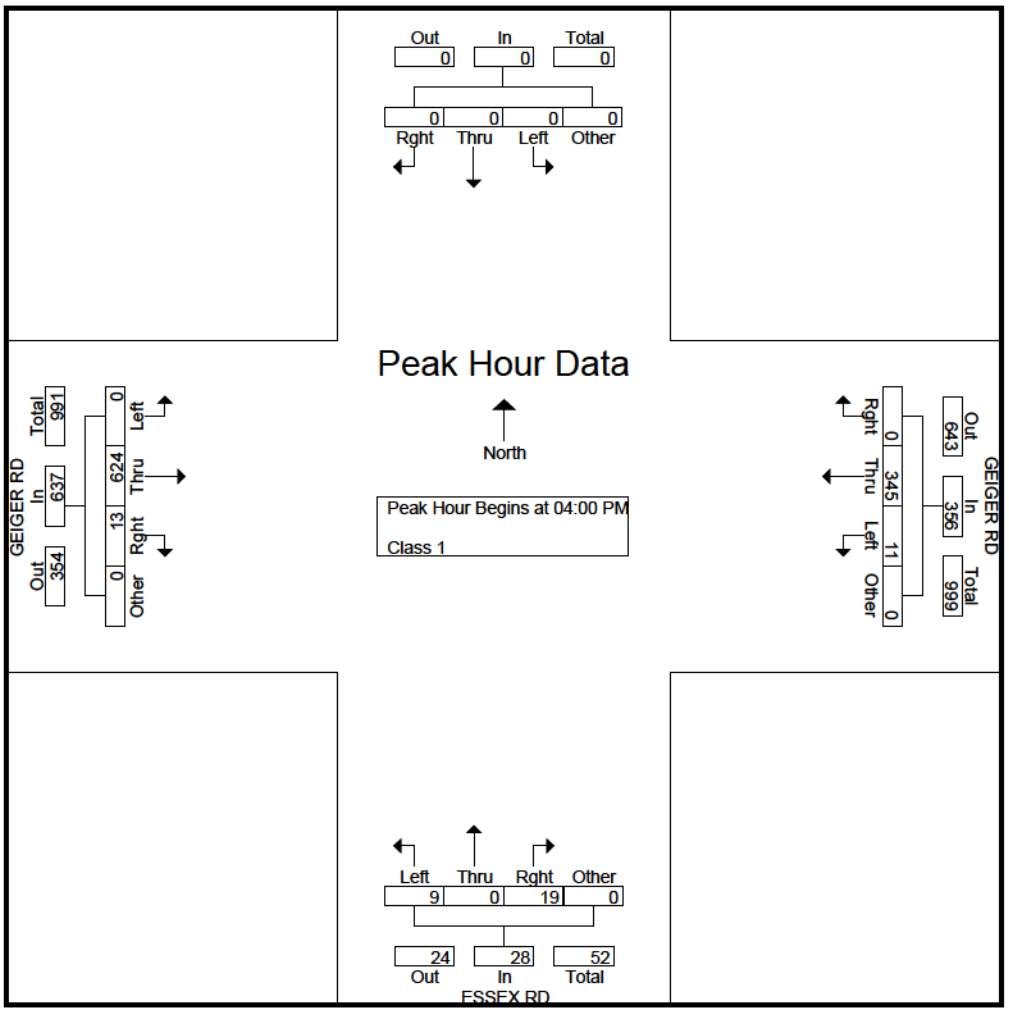
File Name : PM_Essex Rd - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	From North					GEIGER RD From East					ESSEX RD From South					GEIGER RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	93	3	0	96	4	0	2	0	6	2	158	0	0	160	262
04:15 PM	0	0	0	0	0	0	89	3	0	92	3	0	2	0	5	4	153	0	0	157	254
04:30 PM	0	0	0	0	0	0	93	4	0	97	9	0	2	0	11	4	147	0	0	151	259
04:45 PM	0	0	0	0	0	0	70	1	0	71	3	0	3	0	6	3	166	0	0	169	246
Total Volume	0	0	0	0	0	0	345	11	0	356	19	0	9	0	28	13	624	0	0	637	1021
% App. Total	0	0	0	0		0	96.9	3.1	0		67.9	0	32.1	0		2	98	0	0		
PHF	.000	.000	.000	.000	.000	.000	.927	.688	.000	.918	.528	.000	.750	.000	.636	.813	.940	.000	.000	.942	.974



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File Name : PM_Ft Weaver Rd - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Unshifted

	FT WEAVER RD From North					GEIGER RD From East				FT WEAVER RD From South				GEIGER RD From West				
Start Time	Right	Thru	Left	U-Turns	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
03:30 PM	68	399	89	1	0	33	34	2	0	1	266	48	5	34	30	40	7	1057
03:45 PM	53	314	84	0	0	27	33	6	0	3	266	30	20	35	59	52	11	993
Total	121	713	173	1	0	60	67	8	0	4	532	78	25	69	89	92	18	2050
04:00 PM	37	332	77	0	0	37	53	0	0	4	197	30	14	23	54	59	6	923
04:15 PM	43	345	59	0	0	28	38	1	0	1	222	34	15	44	44	50	15	939
04:30 PM	59	399	107	0	0	28	44	5	0	2	200	37	7	47	37	47	4	1023
04:45 PM	68	417	98	0	0	29	47	4	0	3	198	34	11	39	71	42	7	1068
Total	207	1493	341	0	0	122	182	10	0	10	817	135	47	153	206	198	32	3953
05:00 PM	53	356	109	0	0	28	41	6	0	1	181	39	14	48	83	53	2	1014
05:15 PM	79	376	83	0	0	27	31	6	0	2	222	25	12	32	43	46	11	995
Grand Total	460	2938	706	1	0	237	321	30	0	17	1752	277	98	302	421	389	63	8012
Apprch %	11.2	71.6	17.2	0	0	40.3	54.6	5.1	0	0.8	81.7	12.9	4.6	25.7	35.8	33.1	5.4	
Total %	5.7	36.7	8.8	0	0	3	4	0.4	0	0.2	21.9	3.5	1.2	3.8	5.3	4.9	0.8	

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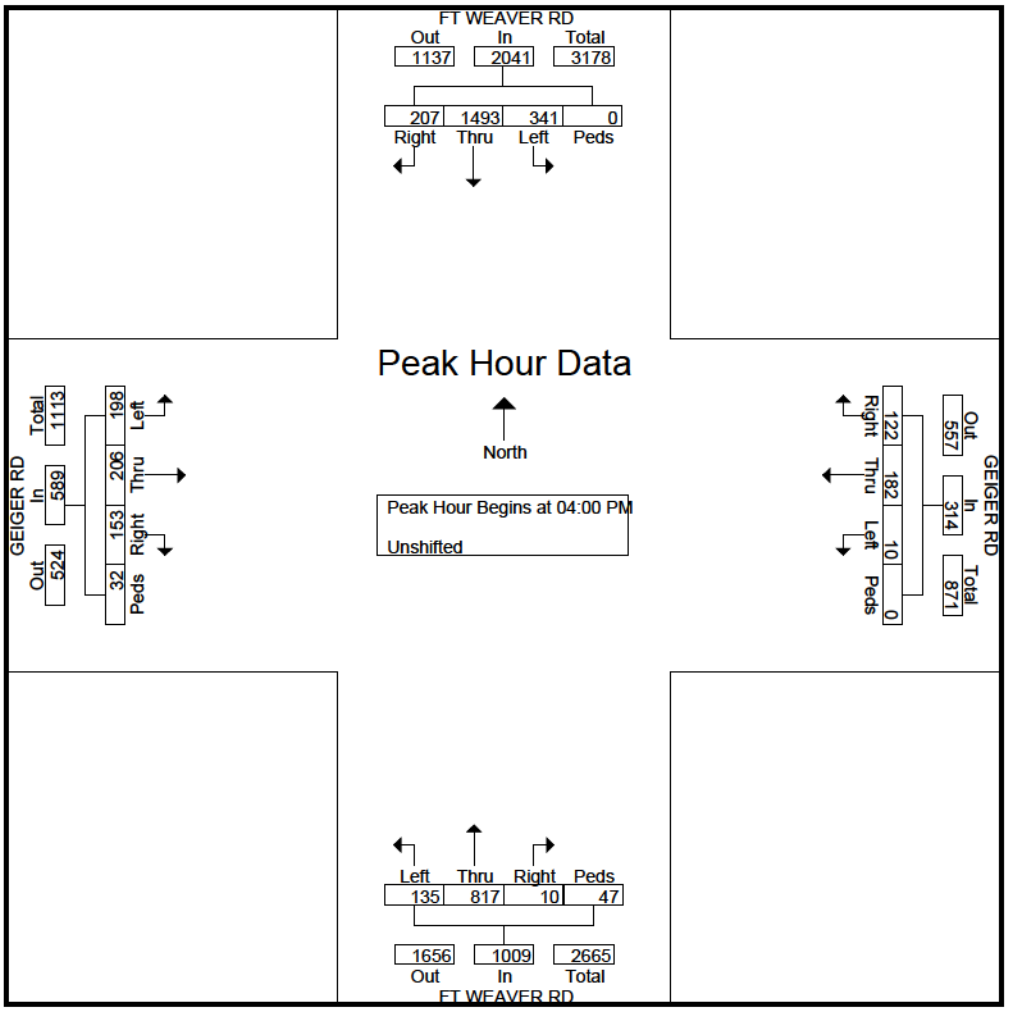
File Name : PM_Ft Weaver Rd - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	FT WEAVER RD From North						GEIGER RD From East					FT WEAVER RD From South					GEIGER RD From West					
Start Time	Right	Thru	Left	U-Turns	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:00 PM																						
04:00 PM	37	332	77	0	0	446	37	53	0	0	90	4	197	30	14	245	23	54	59	6	142	923
04:15 PM	43	345	59	0	0	447	28	38	1	0	67	1	222	34	15	272	44	44	50	15	153	939
04:30 PM	59	399	107	0	0	565	28	44	5	0	77	2	200	37	7	246	47	37	47	4	135	1023
04:45 PM	68	417	98	0	0	583	29	47	4	0	80	3	198	34	11	246	39	71	42	7	159	1068
Total Volume	207	1493	341	0	0	2041	122	182	10	0	314	10	817	135	47	1009	153	206	198	32	589	3953
% App. Total	10.1	73.2	16.7				38.9							13.4					33.6			
PHF	.761	.895	.797	.000	.000	.875	.824	.858	.500	.000	.872	.625	.920	.912	.783	.927	.814	.725	.839	.533	.926	.925



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File Name : PM_Ft Weaver Rd - Renton Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Unshifted

	FT WEAVER RD From North					RENTON RD From East				FT WEAVER RD From South					RENTON RD From West				
Start Time	Right	Thru	Left	U-Turns	Peds	Right	Thru	Left	Peds	Right	Thru	Left	U-Turns	Peds	Right	Thru	Left	Peds	Int. Total
03:30 PM	56	704	0	4	0	3	1	2	5	5	453	23	0	2	27	0	78	2	1365
03:45 PM	88	604	8	7	0	3	1	2	1	13	404	36	1	6	32	4	111	0	1321
Total	144	1308	8	11	0	6	2	4	6	18	857	59	1	8	59	4	189	2	2686
04:00 PM	83	565	11	9	0	4	7	9	19	21	398	33	1	14	23	12	99	1	1309
04:15 PM	71	582	10	4	0	8	10	13	5	18	330	31	1	6	24	11	100	0	1224
04:30 PM	68	733	8	11	0	8	8	8	4	10	380	25	0	7	24	7	75	3	1379
04:45 PM	76	748	8	7	0	2	3	4	3	5	302	24	0	5	26	6	81	1	1301
Total	298	2628	37	31	0	22	28	34	31	54	1410	113	2	32	97	36	355	5	5213
05:00 PM	57	660	4	8	0	8	3	2	13	14	359	32	0	1	27	5	65	0	1258
05:15 PM	70	674	10	6	0	3	3	2	12	9	320	18	2	9	18	5	79	5	1245
Grand Total	569	5270	59	56	0	39	36	42	62	95	2946	222	5	50	201	50	688	12	10402
Apprch %	9.6	88.5	1	0.9	0	21.8	20.1	23.5	34.6	2.9	88.8	6.7	0.2	1.5	21.1	5.3	72.3	1.3	
Total %	5.5	50.7	0.6	0.5	0	0.4	0.3	0.4	0.6	0.9	28.3	2.1	0	0.5	1.9	0.5	6.6	0.1	

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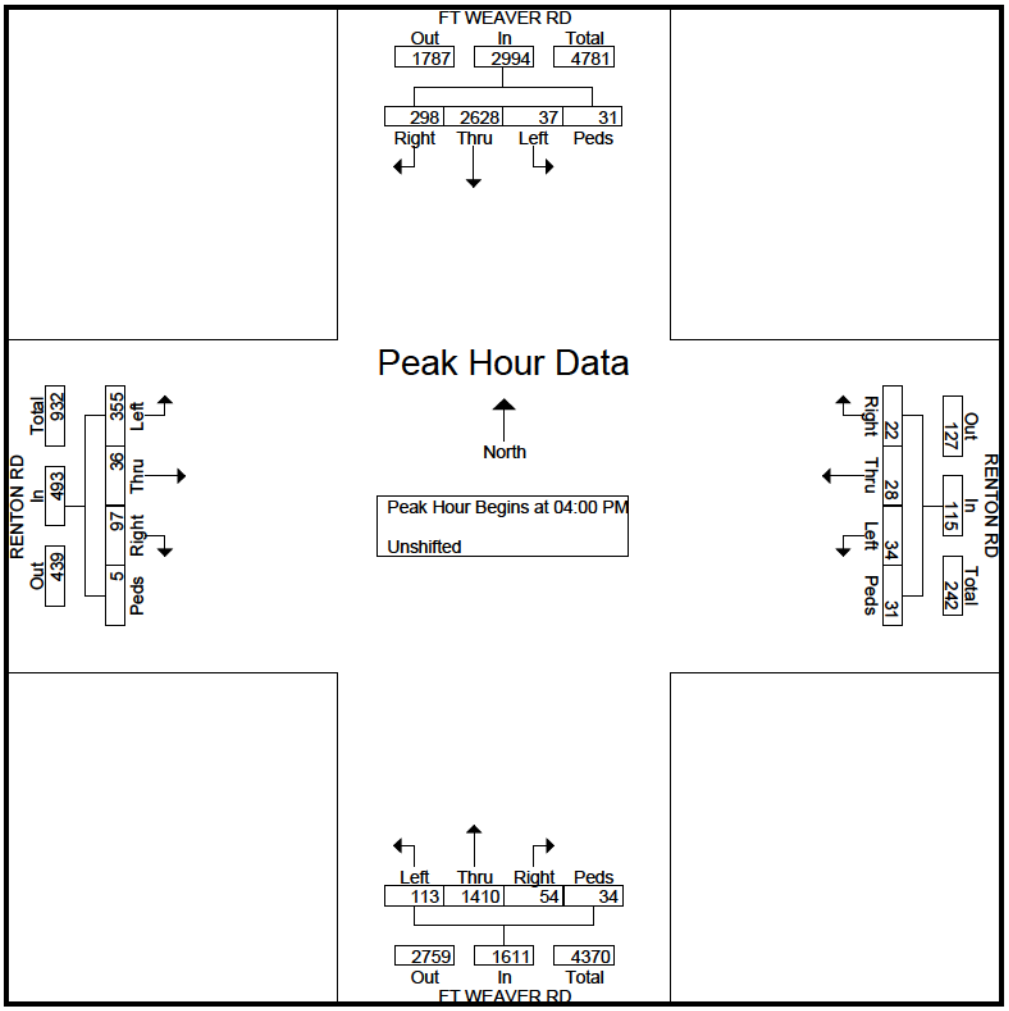
File Name : PM_Ft Weaver Rd - Renton Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	FT WEAVER RD From North						RENTON RD From East					FT WEAVER RD From South						RENTON RD From West					
Start Time	Right	Thru	Left	U-Turns	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	U-Turns	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																							
Peak Hour for Entire Intersection Begins at 04:00 PM																							
04:00 PM	83	565	11	9	0	668	4	7	9	19	39	21	398	33	1	14	467	23	12	99	1	135	1309
04:15 PM	71	582	10	4	0	667	8	10	13	5	36	18	330	31	1	6	386	24	11	100	0	135	1224
04:30 PM	68	733	8	11	0	820	8	8	8	4	28	10	380	25	0	7	422	24	7	75	3	109	1379
04:45 PM	76	748	8	7	0	839	2	3	4	3	12	5	302	24	0	5	336	26	6	81	1	114	1301
Total Volume	298	2628	37	31	0	2994	22	28	34	31	115	54	1410	113	2	32	1611	97	36	355	5	493	5213
% App. Total	10	87.8	1.2	1	0		19.1	24.3	29.6	27		3.4	87.5	7	0.1	2		19.7	7.3	72	1		
PHF	.898	.878	.841	.705	.000	.892	.688	.700	.654	.408	.737	.643	.886	.856	.500	.571	.862	.933	.750	.888	.417	.913	.945



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File Name : PM_Kapolei Pkwy - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Unshifted

	KAPOLEI PKWY From North					GEIGER RD From East				KAPOLEI PKWY From South				GEIGER RD From West				
Start Time	Right	Thru	Left	U-Turns	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
03:30 PM	5	125	29	1	2	67	37	46	3	28	127	56	1	77	52	9	2	667
03:45 PM	8	108	24	0	1	60	24	26	7	13	111	42	0	97	64	10	4	599
Total	13	233	53	1	3	127	61	72	10	41	238	98	1	174	116	19	6	1266
04:00 PM	5	115	36	0	4	57	43	24	5	22	90	51	0	101	55	10	3	621
04:15 PM	9	122	38	0	0	59	26	24	4	26	121	57	1	91	45	11	5	639
04:30 PM	5	133	33	1	0	56	40	29	5	20	82	50	0	101	73	14	1	643
04:45 PM	6	122	45	0	2	60	33	44	4	24	76	38	0	102	55	10	2	623
Total	25	492	152	1	6	232	142	121	18	92	369	196	1	395	228	45	11	2526
05:00 PM	10	137	49	0	1	51	25	47	3	14	83	39	3	111	73	10	0	656
05:15 PM	3	137	35	0	0	57	26	36	5	22	90	45	4	81	50	10	3	604
Grand Total	51	999	289	2	10	467	254	276	36	169	780	378	9	761	467	84	20	5052
Apprch %	3.8	73.9	21.4	0.1	0.7	45.2	24.6	26.7	3.5	12.6	58.4	28.3	0.7	57.1	35.1	6.3	1.5	
Total %	1	19.8	5.7	0	0.2	9.2	5	5.5	0.7	3.3	15.4	7.5	0.2	15.1	9.2	1.7	0.4	

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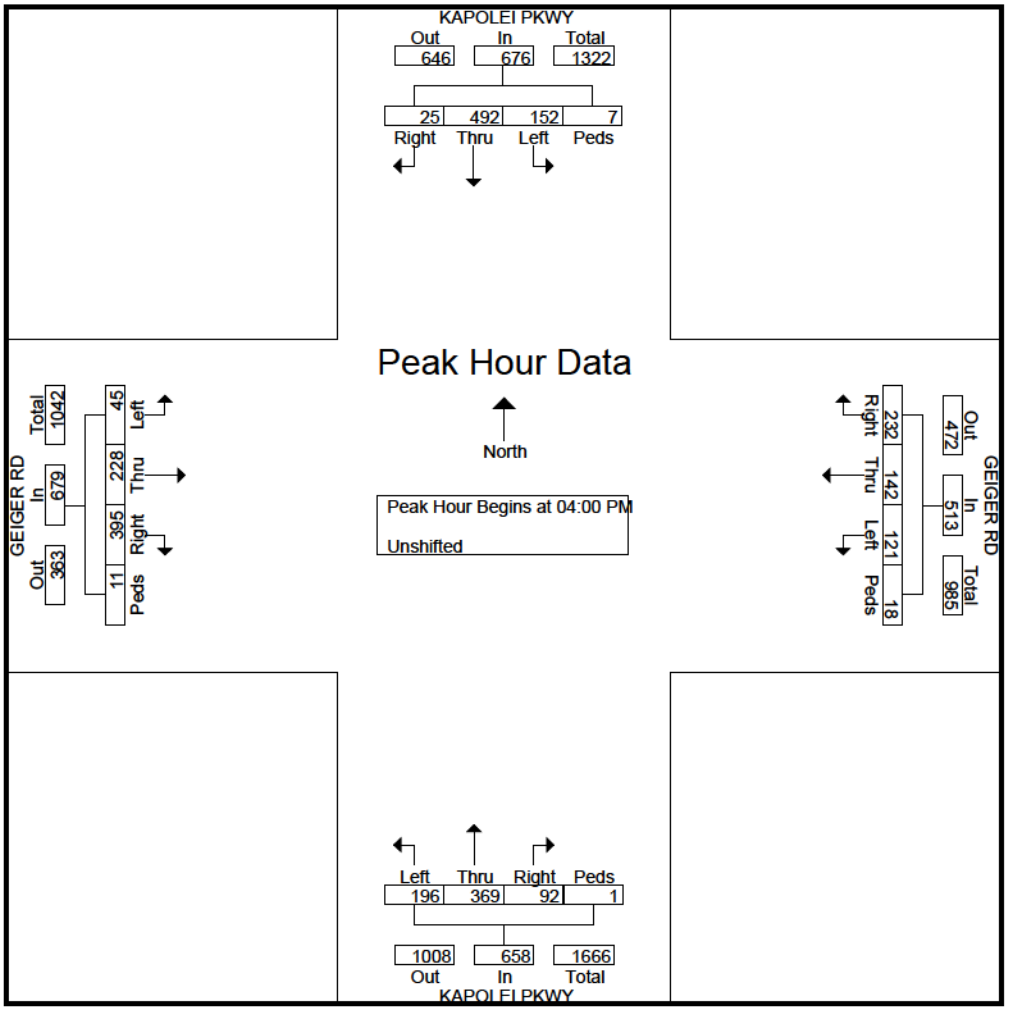
File Name : PM_Kapolei Pkwy - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	KAPOLEI PKWY From North						GEIGER RD From East					KAPOLEI PKWY From South					GEIGER RD From West					
Start Time	Right	Thru	Left	U-Turns	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:00 PM																						
04:00 PM	5	115	36	0	4	160	57	43	24	5	129	22	90	51	0	163	101	55	10	3	169	621
04:15 PM	9	122	38	0	0	169	59	26	24	4	113	26	121	57	1	205	91	45	11	5	152	639
04:30 PM	5	133	33	1	0	172	56	40	29	5	130	20	82	50	0	152	101	73	14	1	189	643
04:45 PM	6	122	45	0	2	175	60	33	44	4	141	24	76	38	0	138	102	55	10	2	169	623
Total Volume	25	492	152	1	6	676	232	142	121	18	513	92	369	196	1	658	395	228	45	11	679	2526
% App. Total	3.7	72.8	22.5	0.1	0.9		45.2	27.7	23.6	3.5		14	56.1	29.8	0.2		58.2	33.6	6.6	1.6		
PHF	.694	.925	.844	.250	.375	.966	.967	.826	.688	.900	.910	.885	.762	.860	.250	.802	.968	.781	.804	.550	.898	.982



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File Name : PM_Kualakai Pkwy - Kapolei Pkwy
Site Code : 00000000
Start Date : 9/3/2014

Groups Printed- Unshifted

	KUALAKAI PKWY From North				KAPOLEI PKWY From East				KUALAKAI PKWY From South				KAPOLEI PKWY From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
03:30 PM	69	0	83	0	51	91	0	0	0	0	0	0	0	114	59	0	467
03:45 PM	91	0	67	0	70	104	0	0	0	0	0	0	0	101	63	0	496
Total	160	0	150	0	121	195	0	0	0	0	0	0	0	215	122	0	963
04:00 PM	92	0	83	0	70	93	0	1	0	0	0	0	0	102	55	4	500
04:15 PM	67	0	108	1	58	84	0	1	0	0	0	0	0	86	38	0	443
04:30 PM	90	0	92	0	64	89	0	0	0	0	0	0	0	114	68	0	517
04:45 PM	85	0	94	0	61	90	0	2	0	0	0	0	0	140	57	0	529
Total	334	0	377	1	253	356	0	4	0	0	0	0	0	442	218	4	1989
05:00 PM	81	0	106	3	49	83	0	2	0	0	0	0	0	128	54	0	506
05:15 PM	83	0	105	1	56	64	0	0	0	0	0	0	0	77	41	0	427
Grand Total	658	0	738	5	479	698	0	6	0	0	0	0	0	862	435	4	3885
Apprch %	47	0	52.7	0.4	40.5	59	0	0.5	0	0	0	0	0	66.3	33.4	0.3	
Total %	16.9	0	19	0.1	12.3	18	0	0.2	0	0	0	0	0	22.2	11.2	0.1	

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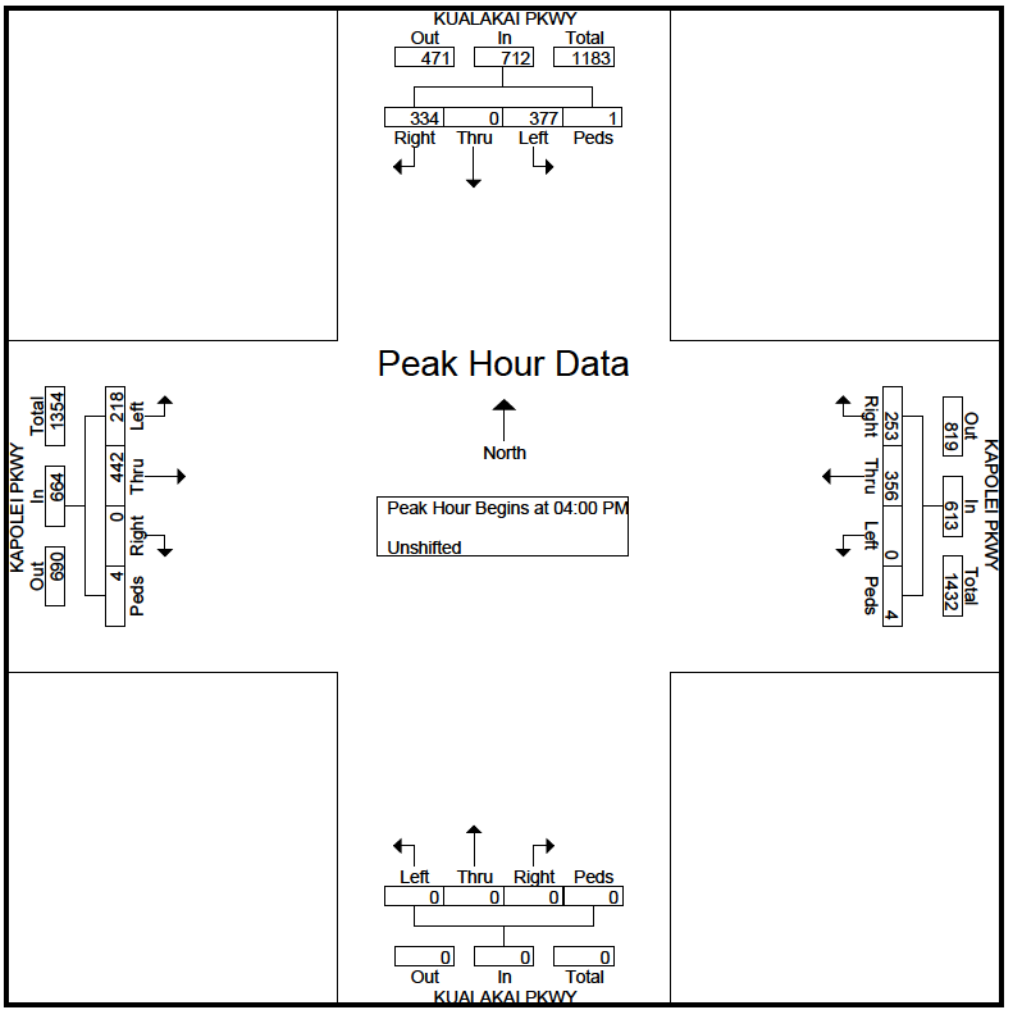
File Name : PM_Kualakai Pkwy - Kapolei Pkwy
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	KUALAKAI PKWY From North					KAPOLEI PKWY From East					KUALAKAI PKWY From South					KAPOLEI PKWY From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	92	0	83	0	175	70	93	0	1	164	0	0	0	0	0	0	102	55	4	161	500
04:15 PM	67	0	108	1	176	58	84	0	1	143	0	0	0	0	0	0	86	38	0	124	443
04:30 PM	90	0	92	0	182	64	89	0	0	153	0	0	0	0	0	0	114	68	0	182	517
04:45 PM	85	0	94	0	179	61	90	0	2	153	0	0	0	0	0	0	140	57	0	197	529
Total Volume	334	0	377	1	712	253	356	0	4	613	0	0	0	0	0	0	442	218	4	664	1989
% App. Total	46.9	0	52.9	0.1		41.3	58.1	0	0.7		0	0	0	0		0	66.6	32.8	0.6		
PHF	.908	.000	.873	.250	.978	.904	.957	.000	.500	.934	.000	.000	.000	.000	.000	.000	.789	.801	.250	.843	.940



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File Name : PM_Phillipine Sea - Renton Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	PHILLIPINE SEA From North				RENTON RD From East				PHILLIPINE SEA From South				RENTON RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
03:30 PM	0	0	0	0	0	2	31	0	35	0	1	0	1	2	0	0	72
03:45 PM	0	0	0	0	0	0	30	0	50	0	1	0	0	1	0	0	82
Total	0	0	0	0	0	2	61	0	85	0	2	0	1	3	0	0	154
04:00 PM	0	0	0	0	0	2	29	0	53	0	1	0	0	1	0	0	86
04:15 PM	0	0	0	0	0	0	40	0	44	0	0	0	0	0	0	0	84
04:30 PM	0	0	0	0	0	0	42	0	47	0	3	0	3	1	0	0	96
04:45 PM	0	0	0	0	0	0	24	0	49	0	2	0	0	0	0	0	75
Total	0	0	0	0	0	2	135	0	193	0	6	0	3	2	0	0	341
05:00 PM	0	0	0	0	0	0	24	0	47	0	0	0	0	2	0	0	73
05:15 PM	0	0	0	0	0	1	34	0	48	0	0	0	2	0	0	0	85
Grand Total	0	0	0	0	0	5	254	0	373	0	8	0	6	7	0	0	653
Apprch %	0	0	0	0	0	1.9	98.1	0	97.9	0	2.1	0	46.2	53.8	0	0	
Total %	0	0	0	0	0	0.8	38.9	0	57.1	0	1.2	0	0.9	1.1	0	0	

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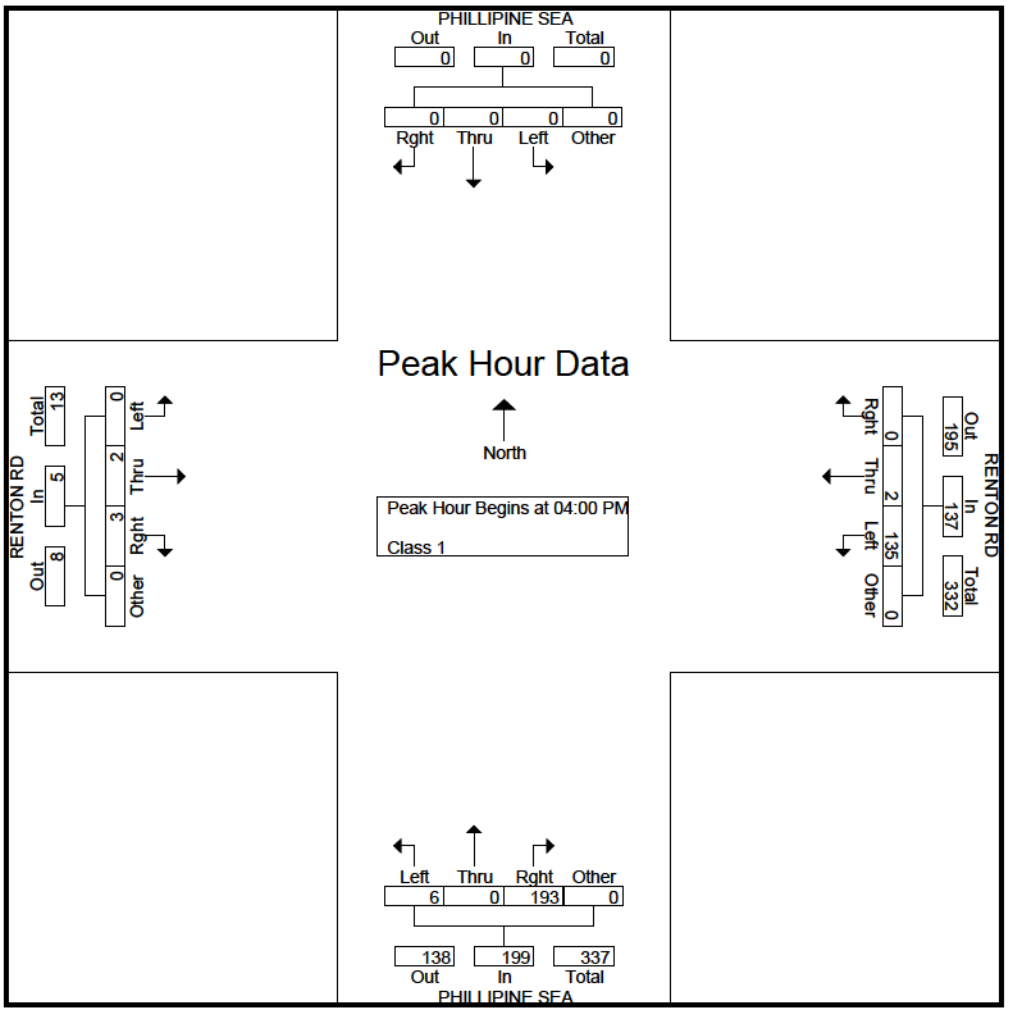
File Name : PM_Phillipine Sea - Renton Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	PHILLIPINE SEA From North					RENTON RD From East					PHILLIPINE SEA From South					RENTON RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	2	29	0	31	53	0	1	0	54	0	1	0	0	1	86
04:15 PM	0	0	0	0	0	0	0	40	0	40	44	0	0	0	44	0	0	0	0	0	84
04:30 PM	0	0	0	0	0	0	0	42	0	42	47	0	3	0	50	3	1	0	0	4	96
04:45 PM	0	0	0	0	0	0	0	24	0	24	49	0	2	0	51	0	0	0	0	0	75
Total Volume	0	0	0	0	0	0	2	135	0	137	193	0	6	0	199	3	2	0	0	5	341
% App. Total	0	0	0	0		0	1.5	98.5	0		97	0	3	0		60	40	0	0		
PHF	.000	.000	.000	.000	.000	.000	.250	.804	.000	.815	.910	.000	.500	.000	.921	.250	.500	.000	.000	.313	.888



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File Name : PM_Phillipine Sea - Roosevelt Ave
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	PHILLIPINE SEA From North				ROOSEVELT AVE From East				PHILLIPINE SEA From South				ROOSEVELT AVE From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
03:30 PM	27	1	8	0	3	91	0	0	0	0	0	0	0	134	36	0	300
03:45 PM	25	0	4	0	3	75	0	0	0	0	0	0	1	143	49	0	300
Total	52	1	12	0	6	166	0	0	0	0	0	0	1	277	85	0	600
04:00 PM	25	0	0	0	3	85	0	0	0	0	0	0	0	137	44	0	294
04:15 PM	37	0	5	0	6	86	0	0	0	0	0	0	0	149	43	0	326
04:30 PM	38	0	5	0	5	91	0	0	0	0	0	0	0	136	41	0	316
04:45 PM	23	0	4	0	3	69	0	0	0	0	0	0	0	161	44	0	304
Total	123	0	14	0	17	331	0	0	0	0	0	0	0	583	172	0	1240
05:00 PM	17	0	4	0	5	69	0	0	0	0	0	0	0	161	44	0	300
05:15 PM	33	0	5	0	2	72	0	0	0	0	0	0	0	132	45	0	289
Grand Total	225	1	35	0	30	638	0	0	0	0	0	0	1	1153	346	0	2429
Apprch %	86.2	0.4	13.4	0	4.5	95.5	0	0	0	0	0	0	0.1	76.9	23.1	0	
Total %	9.3	0	1.4	0	1.2	26.3	0	0	0	0	0	0	0	47.5	14.2	0	

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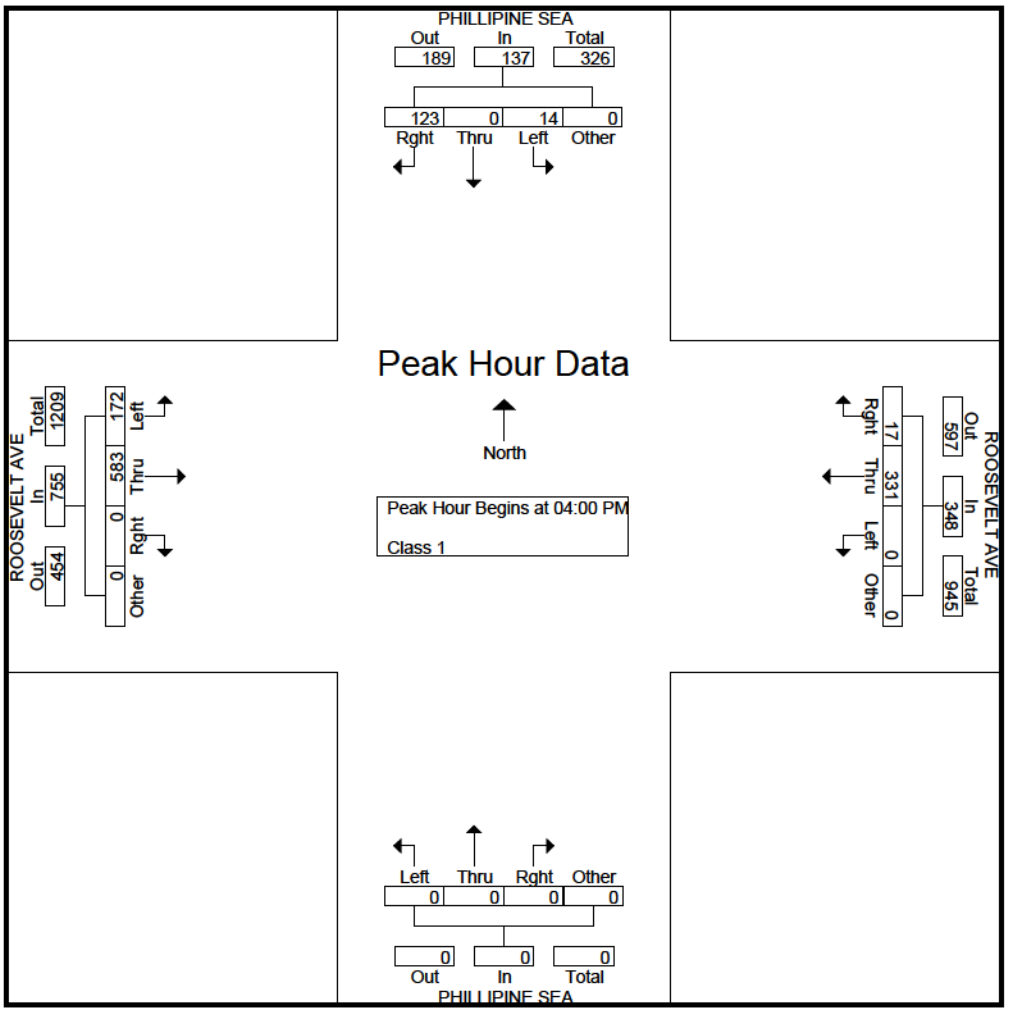
File Name : PM_Phillipine Sea - Roosevelt Ave
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	PHILLIPINE SEA From North					ROOSEVELT AVE From East					PHILLIPINE SEA From South					ROOSEVELT AVE From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	25	0	0	0	25	3	85	0	0	88	0	0	0	0	0	0	137	44	0	181	294
04:15 PM	37	0	5	0	42	6	86	0	0	92	0	0	0	0	0	0	149	43	0	192	326
04:30 PM	38	0	5	0	43	5	91	0	0	96	0	0	0	0	0	0	136	41	0	177	316
04:45 PM	23	0	4	0	27	3	69	0	0	72	0	0	0	0	0	0	161	44	0	205	304
Total Volume	123	0	14	0	137	17	331	0	0	348	0	0	0	0	0	0	583	172	0	755	1240
% App. Total	89.8	0	10.2	0		4.9	95.1	0	0		0	0	0	0		0	77.2	22.8	0		
PHF	.809	.000	.700	.000	.797	.708	.909	.000	.000	.906	.000	.000	.000	.000	.000	.000	.905	.977	.000	.921	.951



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File Name : PM_Renton Rd - Kapolei Pkwy
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Unshifted

	RENTON RD From North				KAPOLEI PKWY From East				RENTON RD From South				KAPOLEI PKWY From West					
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	U-Turns	Peds	Int. Total
03:30 PM	35	16	43	1	41	121	4	0	10	19	11	1	12	141	34	0	0	489
03:45 PM	36	15	41	0	44	108	2	0	11	28	12	0	13	126	38	0	0	474
Total	71	31	84	1	85	229	6	0	21	47	23	1	25	267	72	0	0	963
04:00 PM	51	16	45	3	25	101	12	0	12	30	18	0	8	125	47	0	0	493
04:15 PM	36	20	37	2	28	98	9	0	13	22	14	0	13	136	38	0	0	466
04:30 PM	46	16	39	0	22	97	6	0	12	28	9	0	14	153	48	0	0	490
04:45 PM	33	10	37	5	35	86	5	1	19	19	16	4	13	171	51	1	0	506
Total	166	62	158	10	110	382	32	1	56	99	57	4	48	585	184	1	0	1955
05:00 PM	37	15	35	1	22	87	4	1	11	24	11	0	12	187	33	0	0	480
05:15 PM	41	24	36	1	30	91	9	0	10	35	10	0	12	136	29	1	0	465
Grand Total	315	132	313	13	247	789	51	2	98	205	101	5	97	1175	318	2	0	3863
Apprch %	40.8	17.1	40.5	1.7	22.7	72.5	4.7	0.2	24	50.1	24.7	1.2	6.1	73.8	20	0.1	0	
Total %	8.2	3.4	8.1	0.3	6.4	20.4	1.3	0.1	2.5	5.3	2.6	0.1	2.5	30.4	8.2	0.1	0	

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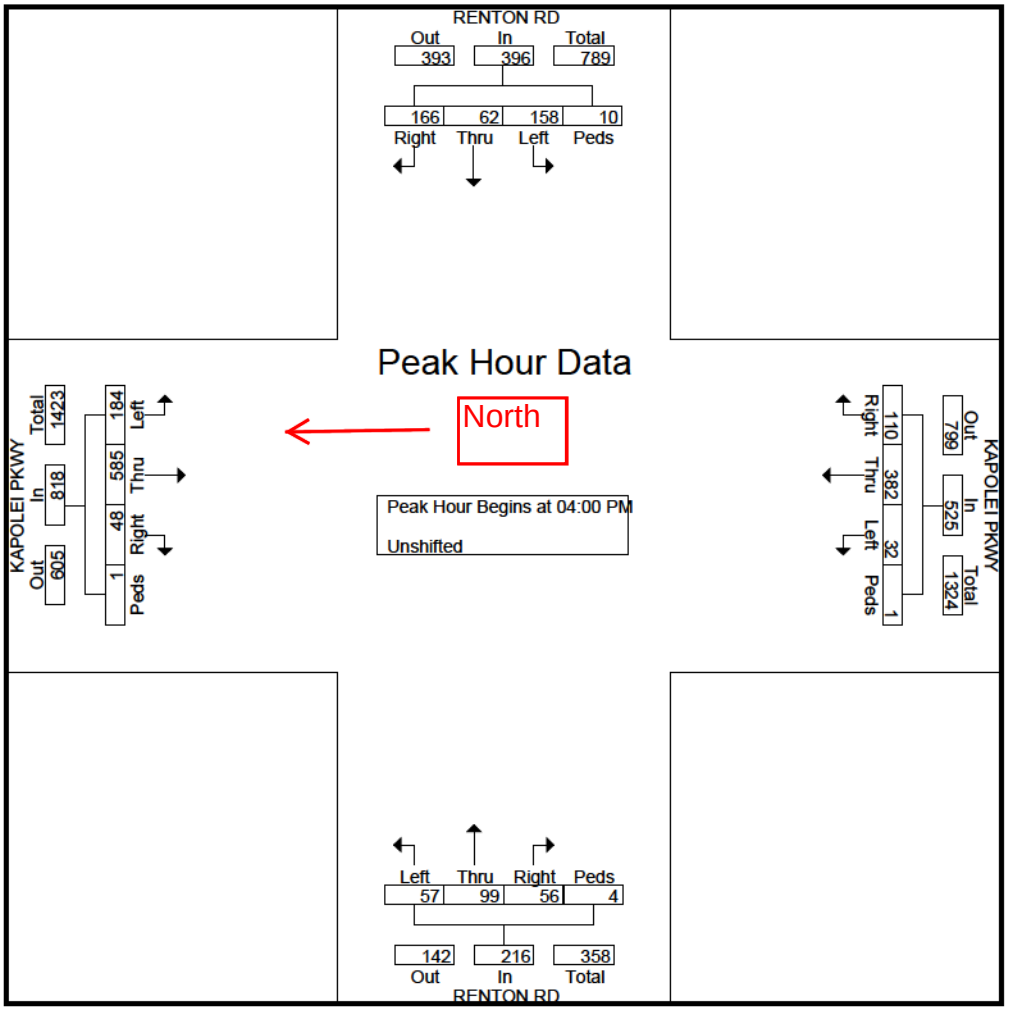
File Name : PM_Renton Rd - Kapolei Pkwy
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	RENTON RD From North					KAPOLEI PKWY From East					RENTON RD From South					KAPOLEI PKWY From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	U-Turns	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:00 PM																						
04:00 PM	51	16	45	3	115	25	101	12	0	138	12	30	18	0	60	8	125	47	0	0	180	493
04:15 PM	36	20	37	2	95	28	98	9	0	135	13	22	14	0	49	13	136	38	0	0	187	466
04:30 PM	46	16	39	0	101	22	97	6	0	125	12	28	9	0	49	14	153	48	0	0	215	490
04:45 PM	33	10	37	5	85	35	86	5	1	127	19	19	16	4	58	13	171	51	1	0	236	506
Total Volume	166	62	158	10	396	110	382	32	1	525	56	99	57	4	216	48	585	184	1	0	818	1955
% App. Total	41.9	15.7	39.9	2.5		21	72.8	6.1	0.2		25.9	45.8	26.4	1.9		5.9	71.5	22.5	0.1	0		
PHF	.814	.775	.878	.500	.861	.786	.946	.667	.250	.951	.737	.825	.792	.250	.900	.857	.855	.902	.250	.000	.867	.966



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File Name : PM_WWTP Dwy #1 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	WWTP DWY #1 From North				GEIGER RD From East				From South				GEIGER RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
03:30 PM	0	0	0	0	0	101	3	0	3	0	1	0	1	129	0	0	238
03:45 PM	1	0	0	0	0	96	5	0	5	0	0	0	0	137	0	0	244
Total	1	0	0	0	0	197	8	0	8	0	1	0	1	266	0	0	482
04:00 PM	0	0	0	0	0	71	1	0	2	0	0	0	0	138	0	0	212
04:15 PM	0	0	0	0	0	95	0	0	0	0	0	0	0	165	0	0	260
04:30 PM	0	0	0	0	0	93	0	0	0	0	0	0	0	156	0	0	249
04:45 PM	0	0	0	0	1	93	0	0	0	0	0	0	0	158	1	0	253
Total	0	0	0	0	1	352	1	0	2	0	0	0	0	617	1	0	974
05:00 PM	2	0	0	0	1	69	0	0	0	0	0	0	0	169	0	0	241
05:15 PM	1	0	0	0	0	75	0	0	1	0	0	0	0	167	0	0	244
Grand Total	4	0	0	0	2	693	9	0	11	0	1	0	1	1219	1	0	1941
Apprch %	100	0	0	0	0.3	98.4	1.3	0	91.7	0	8.3	0	0.1	99.8	0.1	0	
Total %	0.2	0	0	0	0.1	35.7	0.5	0	0.6	0	0.1	0	0.1	62.8	0.1	0	

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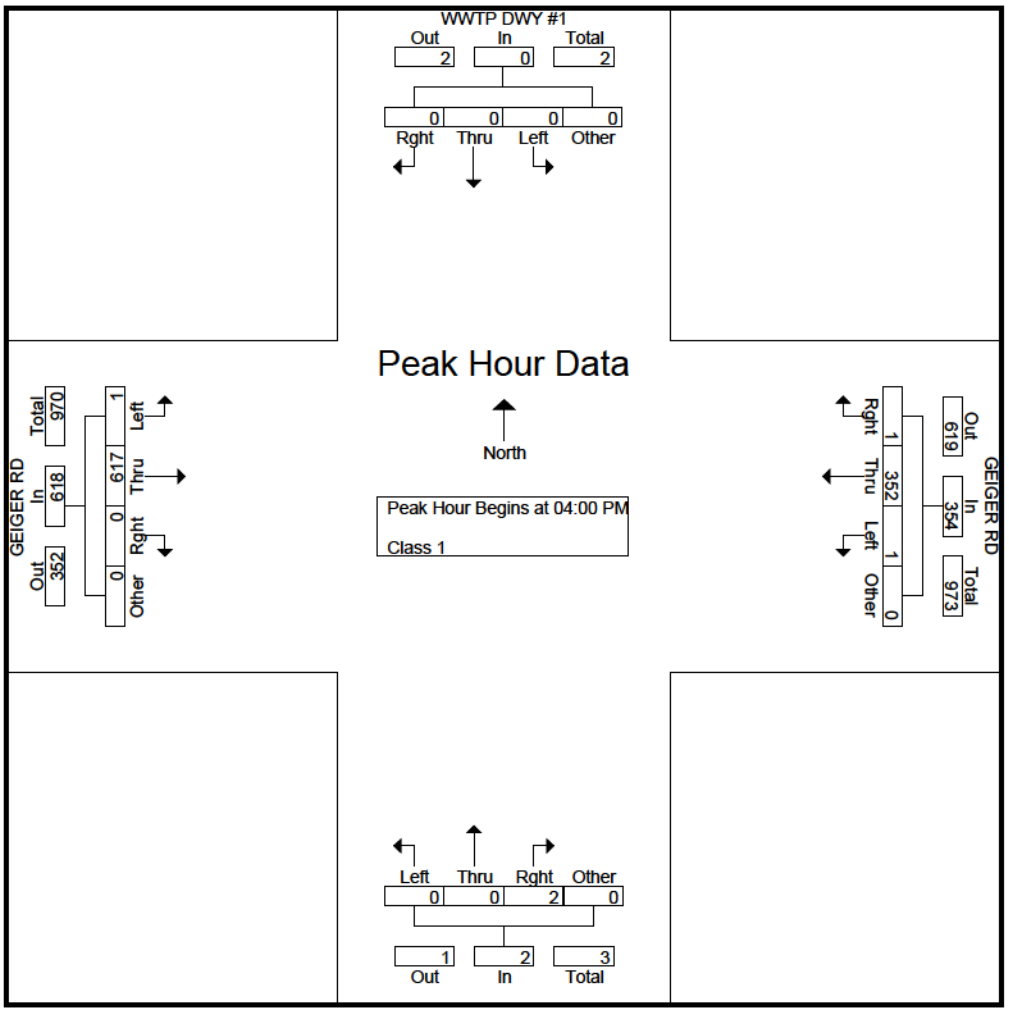
File Name : PM_WWTP Dwy #1 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	WWTP DWY #1 From North					GEIGER RD From East					From South					GEIGER RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	71	1	0	72	2	0	0	0	2	0	138	0	0	138	212
04:15 PM	0	0	0	0	0	0	95	0	0	95	0	0	0	0	0	0	165	0	0	165	260
04:30 PM	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	0	156	0	0	156	249
04:45 PM	0	0	0	0	0	1	93	0	0	94	0	0	0	0	0	0	158	1	0	159	253
Total Volume	0	0	0	0	0	1	352	1	0	354	2	0	0	0	2	0	617	1	0	618	974
% App. Total	0	0	0	0		0.3	99.4	0.3	0		100	0	0	0		0	99.8	0.2	0		
PHF	.000	.000	.000	.000	.000	.250	.926	.250	.000	.932	.250	.000	.000	.000	.250	.000	.935	.250	.000	.936	.937



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File Name : PM_WWTP Dwy #2 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 1

Groups Printed- Class 1

	WWTP DWY #2 From North				GEIGER RD From East				From South				GEIGER RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
03:30 PM	0	0	6	0	0	94	0	0	0	0	0	0	0	132	0	0	232
03:45 PM	1	0	0	0	0	75	0	0	0	0	0	0	0	139	2	0	217
Total	1	0	6	0	0	169	0	0	0	0	0	0	0	271	2	0	449
04:00 PM	0	0	6	0	1	96	0	0	0	0	0	0	0	161	0	0	264
04:15 PM	1	0	2	0	1	94	0	0	0	0	0	0	0	157	0	0	255
04:30 PM	1	0	2	0	0	91	0	0	0	0	0	0	0	158	0	0	252
04:45 PM	0	0	0	0	0	73	0	0	0	0	0	0	0	168	0	0	241
Total	2	0	10	0	2	354	0	0	0	0	0	0	0	644	0	0	1012
05:00 PM	0	0	2	0	0	78	0	0	0	0	0	0	0	170	1	0	251
05:15 PM	2	0	0	0	0	71	0	0	0	0	0	0	0	145	1	0	219
Grand Total	5	0	18	0	2	672	0	0	0	0	0	0	0	1230	4	0	1931
Apprch %	21.7	0	78.3	0	0.3	99.7	0	0	0	0	0	0	0	99.7	0.3	0	
Total %	0.3	0	0.9	0	0.1	34.8	0	0	0	0	0	0	0	63.7	0.2	0	

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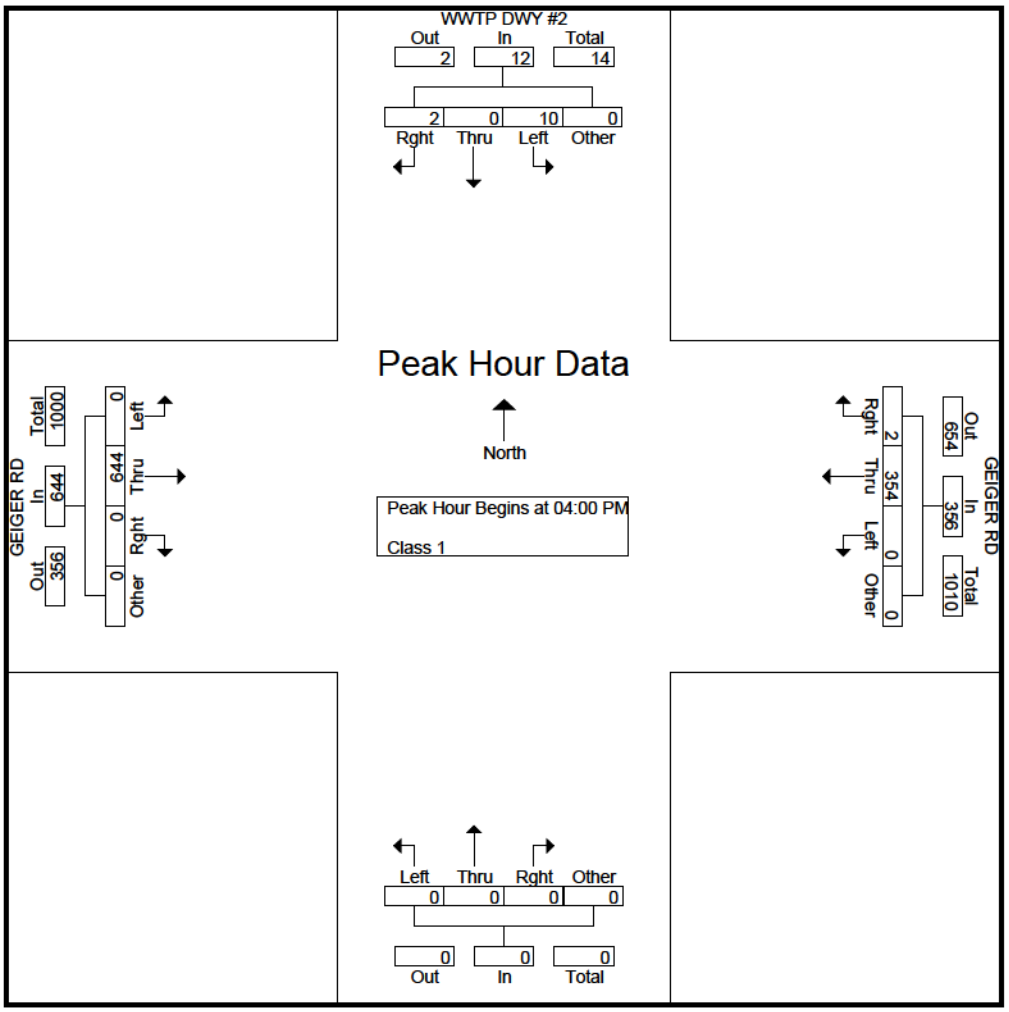
File Name : PM_WWTP Dwy #2 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
Page No : 2

	WWTP DWY #2 From North					GEIGER RD From East					From South					GEIGER RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	6	0	6	1	96	0	0	97	0	0	0	0	0	0	161	0	0	161	264
04:15 PM	1	0	2	0	3	1	94	0	0	95	0	0	0	0	0	0	157	0	0	157	255
04:30 PM	1	0	2	0	3	0	91	0	0	91	0	0	0	0	0	0	158	0	0	158	252
04:45 PM	0	0	0	0	0	0	73	0	0	73	0	0	0	0	0	0	168	0	0	168	241
Total Volume	2	0	10	0	12	2	354	0	0	356	0	0	0	0	0	0	644	0	0	644	1012
% App. Total	16.7	0	83.3	0		0.6	99.4	0	0		0	0	0	0		0	100	0	0		
PHF	.500	.000	.417	.000	.500	.500	.922	.000	.000	.918	.000	.000	.000	.000	.000	.000	.958	.000	.000	.958	.958



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File Name : PM_WWTP Dwy #3 - Geiger Rd
Site Code : 00000000
Start Date : 9/3/2014
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Groups Printed- Class 1

	WWTP DWY #3 From North				GEIGER RD From East				From South				GEIGER RD From West				
Start Time	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Rght	Thru	Left	Other	Int. Total
03:30 PM	7	0	10	0	4	93	0	0	0	0	0	0	0	125	7	0	246
03:45 PM	6	0	1	0	5	70	0	0	0	0	0	0	0	137	3	0	222
Total	13	0	11	0	9	163	0	0	0	0	0	0	0	262	10	0	468
04:00 PM	3	0	3	0	5	91	0	0	0	0	0	0	0	159	1	0	262
04:15 PM	2	0	4	0	4	87	0	0	0	0	0	0	0	151	2	0	250
04:30 PM	5	0	6	0	5	89	0	0	0	0	0	0	0	154	4	0	263
04:45 PM	2	0	6	0	5	69	0	0	0	0	0	0	0	164	3	0	249
Total	12	0	19	0	19	336	0	0	0	0	0	0	0	628	10	0	1024
05:00 PM	4	0	3	0	4	71	0	0	0	0	0	0	0	168	1	0	251
05:15 PM	1	0	3	0	4	71	0	0	0	0	0	0	0	143	3	0	225
Grand Total	30	0	36	0	36	641	0	0	0	0	0	0	0	1201	24	0	1968
Apprch %	45.5	0	54.5	0	5.3	94.7	0	0	0	0	0	0	0	98	2	0	
Total %	1.5	0	1.8	0	1.8	32.6	0	0	0	0	0	0	0	61	1.2	0	

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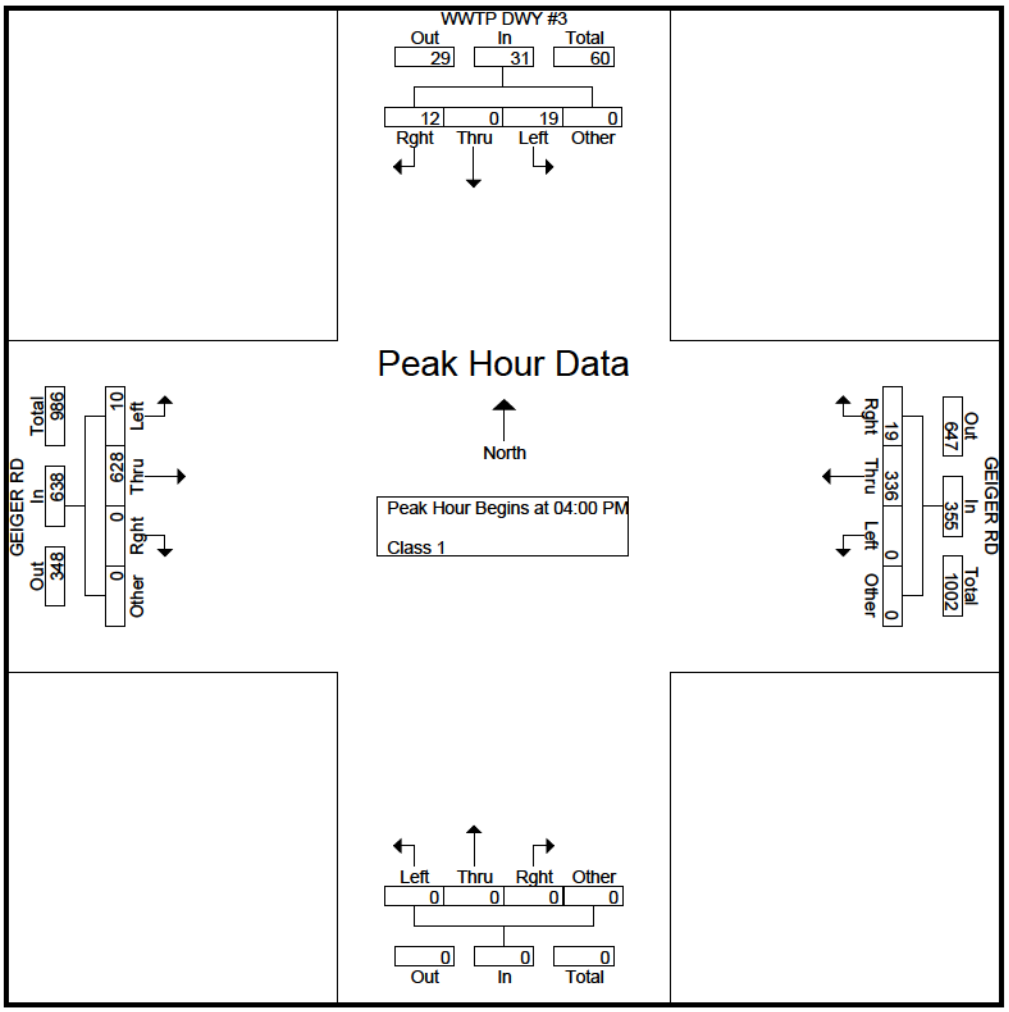
	WWTP DWY #3 From North					GEIGER RD From East					From South					GEIGER RD From West					
Start Time	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Rght	Thru	Left	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	3	0	3	0	6	5	91	0	0	96	0	0	0	0	0	0	159	1	0	160	262
04:15 PM	2	0	4	0	6	4	87	0	0	91	0	0	0	0	0	0	151	2	0	153	250
04:30 PM	5	0	6	0	11	5	89	0	0	94	0	0	0	0	0	0	154	4	0	158	263
04:45 PM	2	0	6	0	8	5	69	0	0	74	0	0	0	0	0	0	164	3	0	167	249
Total Volume	12	0	19	0	31	19	336	0	0	355	0	0	0	0	0	0	628	10	0	638	1024
% App. Total	38.7	0	61.3	0		5.4	94.6	0	0		0	0	0	0		0	98.4	1.6	0		
PHF	.600	.000	.792	.000	.705	.950	.923	.000	.000	.924	.000	.000	.000	.000	.000	.000	.957	.625	.000	.955	.973



APPENDIX B

Level of Service Criteria

APPENDIX B – LEVEL OF SERVICE (LOS) CRITERIA

VEHICULAR LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS (HCM 2010)

Level of service for vehicles at signalized intersections is directly related to delay values and is assigned on that basis. Level of Service is a measure of the acceptability of delay values to motorists at a given intersection. The criteria are given in the table below.

Level-of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec./veh.)
A	< 10.0
B	>10.0 and ≤ 20.0
C	>20.0 and ≤ 35.0
D	>35.0 and ≤ 55.0
E	>55.0 and ≤ 80.0
F	> 80.0

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

VEHICULAR LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM 2010)

The level of service criteria for vehicles at unsignalized intersections is defined as the average control delay, in seconds per vehicle.

LOS delay threshold values are lower for two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections than those of signalized intersections. This is because more vehicles pass through signalized intersections, and therefore, drivers expect and tolerate greater delays. While the criteria for level of service for TWSC and AWSC intersections are the same, procedures to calculate the average total delay may differ.

Level of Service Criteria for Two-Way Stop-Controlled Intersections

Level of Service	Average Control Delay (sec/veh)
A	≤ 10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	> 50

APPENDIX C

Full Level of Service Table

Table C1: Existing, Base Year 2021 (no mit), Future Year 2021 (no mit), Base Year 2030 (no mit), Base Year 2030 (with mit) and Future Year 2030 (no mit) Intersection Level of Service Summary

	Existing Conditions						BY 2021 (No Mit)						FY 2021 (No Mit)						FY 2021 (WITH Mit)						BY 2030 (No Mit)						BY 2030 (WITH Mit)						FY 2030 (No Mit)					
	AM			PM			AM			PM			AM			PM			AM			PM			AM			PM			AM			PM			AM			PM		
Intersection	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kapolei Pkwy & Kualakai Pkwy																																										
EB LT	21.8	0.66	C	21.9	0.64	C	37.0	0.84	D	57.4	0.91	E	37.4	0.84	D	58.1	0.91	E							41.3	0.86	D	59.7	0.92	E							42.6	0.86	D	72.6	0.96	E
EB TH	3.7	0.12	A	5.8	0.18	A	16.7	0.24	B	31.4	0.38	C	17.1	0.25	B	31.3	0.38	C							18.1	0.32	B	31.5	0.40	C							18.4	0.32	B	33.5	0.43	C
EB RT	-	-	-	-	-	-	16.8	0.24	B	31.6	0.38	C	17.2	0.25	B	31.4	0.38	C							18.2	0.32	B	31.6	0.40	C							18.5	0.32	B	33.7	0.43	C
WB LT	-	-	-	-	-	-	46.1	0.61	D	62.6	0.78	E	46.6	0.61	D	63.1	0.78	E							50.5	0.63	D	70.7	0.80	E							51.7	0.63	D	72.7	0.81	E
WB TH	12.3	0.36	B	12.8	0.26	B	30.3	0.56	C	47.2	0.44	D	30.8	0.57	C	47.4	0.45	D							34.6	0.67	C	53.4	0.49	D							35.4	0.69	D	54.6	0.52	D
WB RT	7.9	0.28	A	6.3	0.19	A	19.8	0.44	B	28.3	0.45	C	19.7	0.44	B	28.4	0.46	C							22.0	0.48	C	34.1	0.50	C							22.1	0.49	C	33.7	0.51	C
NB LT	-	-	-	-	-	-	88.5	0.54	F	76.5	0.77	E	89.1	0.54	F	77.0	0.77	E							93.3	0.54	F	84.9	0.77	F							94.7	0.55	F	86.7	0.77	F
NB TH	-	-	-	-	-	-	41.3	0.29	D	56.2	0.71	E	41.7	0.29	D	57.0	0.72	E							44.8	0.33	D	65.3	0.77	E							45.9	0.34	D	65.7	0.74	E
NB TH/RT							41.2	0.29	D	56.2	0.71	E	41.7	0.29	D	57.0	0.72	E							44.7	0.34	D	65.3	0.78	E							45.9	0.34	D	65.5	0.74	E
SB LT	21.3	0.41	C	16.9	0.55	B	42.8	0.82	D	63.2	0.91	E	43.8	0.82	D	64.0	0.91	E							48.9	0.84	D	76.1	0.93	E							50.8	0.85	D	78.0	0.94	E
SB TH	-	-	-	-	-	-	28.7	0.15	C	33.4	0.33	C	28.5	0.15	C	33.9	0.33	C							30.6	0.17	C	40.6	0.37	D							31.0	0.17	C	40.1	0.36	D
SB RT	14.4	0.28	B	12.6	0.40	B	14.7	0.21	B	13.3	0.27	B	14.6	0.21	B	13.6	0.27	B							14.8	0.23	B	13.8	0.26	B							15.0	0.23	B	14.1	0.25	B
Overall	12.5	-	B	12.2	-	B	29.1	-	C	44.4	-	D	29.5	-	C	44.8	-	D							31.8	-	C	49.4	-	D							32.6	-	C	52.7	-	D
2: Kapolei Pkwy & Renton Rd																																										
EB LT	26.5	0.07	C	17.5	0.14	B	34.8	0.10	C	26.8	0.19	C	36.7	0.10	D	27.8	0.26	C							37.1	0.11	D	31.5	0.23	C	31.3	0.10	C	24.4	0.20	C	34.1	0.28	C	27.9	0.36	C
EB TH/RT	23.9	0.14	C	17.1	0.31	B	30.1	0.16	C	26.1	0.37	C	30.2	0.16	C	26.9	0.42	C							30.7	0.17	C	31.0	0.45	C	26.0	0.16	C	24.0	0.40	C	26.4	0.26	C	24.5	0.46	C
WB LT	36.6	0.73	D	22.1	0.46	C	49.2	0.78	D	36.3	0.61	D	49.2	0.78	D	38.9	0.61	D							53.9	0.81	D	56.0	0.77	E	42.8	0.77	D	36.1	0.64	D	51.5	0.81	D	40.1	0.66	D
WB TH	24.4	0.21	C	16.0	0.13	B	31.2	0.25	C	24.0	0.14	C	32.1	0.33	C	23.9	0.14	C							32.5	0.31	C	27.6	0.15	C	27.5	0.30	C	21.4	0.13	C	27.1	0.32	C	21.7	0.22	C
WB RT	24.1	0.17	C	15.7	0.08	B	30.5	0.19	C	23.9	0.13	C	30.5	0.19	C	23.9	0.13	C							33.1	0.35	C	27.7	0.16	C	26.9	0.24	C	21.6	0.16	C	26.2	0.24	C	21.3	0.17	C
NB LT	62.9	0.77	E	40.7	0.66	D	73.2	0.77	E	67.6	0.79	E	73.4	0.77	E	72.2	0.79	E							73.5	0.77	E	73.9	0.78	E	65.3	0.77	E	67.0	0.78	E	68.9	0.77	E	71.4	0.78	E
NB TH	25.3	0.60	C	17.0	0.34	B	40.2	0.82	D	28.5	0.65	C	40.4	0.83	D	34.8	0.70	C							59.5	0.97	E	34.3	0.67	C	36.3	0.86	D	28.6	0.64	C	44.1	0.90	D	33.9	0.68	C
NB TH/RT	25.9	0.61	C	17.2	0.35	B	44.6	0.82	D	29.3	0.65	C	44.9	0.83	D	36.9	0.71	C							71.3	0.97	E	35.7	0.68	C	42.0	0.86	D	29.8	0.65	C	52.3	0.91	D	35.7	0.69	C
SB LT	45.2	0.85	D	28.5	0.77	C	60.7	0.90	E	51.9	0.90	D	61.0	0.90	E	44.8	0.89	D							65.0	0.90	E	66.4	0.92	E	50.8	0.78	D	43.1	0.77	D	54.4	0.79	D	48.0	0.79	D
SB TH	13.9	0.14	B	12.5	0.34	B	17.1	0.24	B	16.0	0.49	B	17.3	0.25	B	18.9	0.51	B							19.2	0.27	B	19.1	0.52	B	18.7	0.28	B	21.4	0.60	C	21.7	0.31	C	26.5	0.67	C
SB TH/RT	14.0	0.14	B	12.7	0.34	B	17.2	0.24	B	16.2	0.49	B	17.4	0.25	B	19.2	0.51	B							19.3	0.27	B	19.3	0.52	B	18.8	0.29	B	21.7	0.60	C	21.9	0.31	C	27.2	0.67	C
Overall	27.9	-	C	17.5	-	B	38.7	-	D	26.8	-	C	38.7	-	D	29.5	-	C							50.1	-	D	33.1	-	C	35.1	-	D	27.6	-	C	40.3	-	D	31.6	-	C
3: Phillipine Sea & Renton Rd																																										
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-	-	-	-							-	-	-	-	-	-
WB LT/TH	7.5	0.12	A	7.5	0.09	A	7.6	0.13	A	7.5	0.09	A	7.6	0.13	A	7.5	0.10	A							7.6	0.15	A	7.5	0.11	A							-	-	-	7.5	0.11	A
NB LT/RT	8.7	0.08	A	9.3	0.21	A	9.0	0.10	A	9.3	0.21	A	9.0	0.10	A	9.5	0.23	A							9.0	0.11	A	9.6	0.25	A							-	-	-	9.6	0.25	A
4: Phillipine Sea & Roosevelt Ave																																										
EB LT/TH/RT	8.9	0.07	A	8.6	0.16	A	9.5	0.09	A	8.6	0.16	A	9.5	0.09	A	9.1	0.19	A							10.2	0.11	B	9.2	0.21	A							10.3	0.11	B	9.3	0.21	A
WB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
SB LT/TH/RT	18.0	0.41	C	18.0	0.35	C	26.6	0.57	D	18.0	0.35	C	26.7	0.57	D	34.4	0.59	D							43.8	0.74	E	41.9	0.67	E							48.1	0.77	E	49.0	0.72	E
5: Essex Rd & Roosevelt Ave/Geiger Rd																																										
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-	-	-	-							-	-	-	-	-	-
WB LT	7.9	0.02	A	9.0	0.01	A	8.0	0.02	A	9.0	0.01	A	8.0	0.02	A	9.5	0.02	A							8.0	0.02	A	9.6	0.02	A							8.1	0.02	A	9.8	0.02	A
WB TH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-	-	-	-							-	-	-	-	-	-
NB LT/RT	14.4	0.03	B	16.3	0.09	C	18.2	0.06	C	16.3	0.09	C	18.8	0.06	C	20.2	0.12	C							21.2	0.07	C	20.1	0.14	C							22.5	0.07	C	21.6	0.15	C
6: Geiger Rd & Ewa Refuse Convenience Center																																										
EB LT/TH/RT	0.0	-	A	8.1	0.00	A	0.0	-	A	8.1	0.00	A	0.0	-	A	8.3	0.01	A							0.0	-	A	8.4	0.01	A							0.0	-	A	8.5	0.01	A
WB LT/TH/RT	7.9	0.01	A	8.9	0.00	A	0.0	-	A	8.9	0.00	A	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
NB LT/TH/RT	11.8	0.04	B	12.9	0.01	B	0.0	-	A	12.9	0.01	B	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
SB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
7: Geiger Rd & Honouliuli Drwy 1																																										
EB LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0	A	0.0	-	A	-	-	-	-	-	-							10.1	0.01	B	8.5	0.01	A
EB LT/TH	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	9.5	0.01	A	0.0	-	A	-	-	-	-	-	-	0.0	-	A	0.0	-	A							-	-	-	-	-	-
WB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-	-	-	-
SB LT/RT	14.6	0.04	B	19.2	0.05	C	18.1	0.07	C	19.2	0.05	C	19.1	0.08	C	27.6	0.19	D	19.0	0.1	C	27.6	0.2	D	21.7	0.09	C	22.4	0.07	C							25.7	0.18	D	36.1	0.34	E
8: Geiger Rd & Honouliuli Drwy 2																																										
EB LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0	A	8	0	A	-	-	-	-	-	-							10.3	0.02	B	8.6	0.02	A
EB LT/TH/RT	8.8	0.00	A	8.1	0.01	A	9.3	0.01	A	8.1	0.01	A	9.7	0.01	A	8.3	0.01	A	-	-	-	-	-	-	9.9	0.01	A	8.4	0.01	A							-	-	-	-	-	-
WB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
NB LT/TH/RT	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A	0.0	-	A							0.0	-	A	0.0	-	A
SB LT/TH/RT	15.8	0.04	C	20.4	0.13	C	18.1	0.06	C	20.4	0.13	C	19.8	0.06	C	41.9	0.45	E	19.8	0.1	C	41.6	0.4	E	21.6	0.07	C	27.3	0.19	D							35.2	0.27	E	85.8	0.74	F
9: Kapolei Pkwy & Geiger Rd																																										
EB LT	67.8	0.56	E	56.4	0.78	E	87.1	0.61	F	73.6	0.77	E	90.5	0.61	F	76.7	0.77	E							99.4	0.62	F	77.6	0.77	E	83.7	0.60	F	74.6	0.77	E	86.5	0.60	F	78.4	0.77	E
EB TH	35.2	0.35	D	30.5	0.63	C	47.1	0.31	D	46.5	0.75	D	44.9	0.25	D	50.2	0.81	D							52.5	0.28	D	52.4	0.81	D	44.1	0.46	D	53.2	0.82	D	44.5	0.53	D	52.3	0.85	D
EB TH/RT	35.2	0.36	D	31.1	0.66	C	47.2	0.32	D	47.5	0.77	D	45.0	0.26	D	53.8	0.85	D							52.5	0.29	D	54.2	0.83	D	-	-	-	-	-	-	-	-	-	-	-	-
EB RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							-	-	-	-	-	-	40.5	0.09	D	48.3	0.70	D	39.9	0.10	D	54.6	0.86	D
WB LT	46.9	0.77	D	42.2	0.78	D	67.9	0.80	E	71.9	0.86	E	67.8	0.80	E	77.3	0.86	E							86.9	0.83	F	87.3	0.90	F	67.9	0.81	E	67.9	0.88	E	72.0	0.81	E	77.9	0.89	E
WB TH	35.6	0.73	D	23.7	0.32	C	52.3	0.84	D	34.7	0.42	C	54.1	0.86	D	33.9	0.39	C							68.2	0.89	E	35.4	0.41	D	50.0	0.85	D	34.7	0.42	C	54.1	0.87	D	32.7	0.43	C
WB RT	29.4	0.15	C	22.4	0.14	C	39.5	0.13	D	31.3	0.13	C	38.5	0.21	D	30.9	0.14	C							44.9	0.23	D	32.2	0.15	C	35.2	0.16	D	31.5	0.16	C	34.9	0.20	C	29.1	0.17	C
NB LT	36.3	0.88	D	38.5	0.81	D	61.5	0.93	E	65.7	0.88	E	67.7	0.94	E	70.7	0.89	E							97.9	1.03	F*	73.4	0.89	E	53.2	0.86	D	59.4	0.77	E	49.7	0.85	D	66.2	0.82	E
NB TH	18.2	0.53	B	23.3	0.41	C	24.5	0.66	C	35.0	0.64	C	29.2	0.70	C	38.5	0.67	D							34.4	0.81	C	41.7	0.74	D	39.2	0.91	D	40.0	0.75	D	46.4	0.95	D	50.7	0.84	D
NB RT	14.6	0.10	B	20.7	0.04	C	17.7	0.14	B	27.0	0.06	C	20.7	0.15	C	29.5	0.06	C							21.6	0.23	C	30.2	0.06	C	21.1	0.24	C	28.9	0.05	C	23.1	0.24	C	34.1	0.05	C
SB LT	42.2	0.79	D	40.1	0.79	D	66.6	0.86	E	62.0	0.86	E	67.8	0.86	E	66.1	0.86	E							86.3	0.89	F	70.9	0.88	E	70.5	0.87	E	61.4	0.87	E	74.8	0.87	E	73.9	0.88	E
SB TH	24.5	0.52	C	26.7	0.60	C	35.1	0.67	D	46.1	0.87	D	45.7	0.80	D	53.2	0.91	D							46.2	0.78	D	61.6	0.96	E	30.5	0.66	C	37.9	0.80	D	35.7	0.72	D	54.4	0.92	D
SB RT	20.5	0.01	C	22.1	0.01	C	26.8	0.02	C	28.3	0.02	C	32.8	0.03	C	30.9	0.02	C							32.8	0.03	C	30.9	0.02	C	22.4	0.03	C	24.5	0.02	C	25.7	0.03	C	30.2	0.02	C
Overall	27.9	-	C	30.3	-	C	39.5	-	D	46.3	-	D	45.2	-	D	51.0	-	D							53.3	-	D	55.9	-	E	41.9	-	D	45.2	-	D	46.1	-	D	54.5	-	D

Note:
* = over-capacity, v/c > 1

Table C1: Existing, Base Year 2021 (no mit), Future Year 2021 (no mit), Base Year 2030 (no mit), Base Year 2030 (with mit) and Future Year 2030 (no mit) Intersection Level of Service Summary (continued)

	Existing Conditions						BY 2021 (No Mit)						FY 2021 (No Mit)						FY 2021 (WITH Mit)						BY 2030 (No Mit)						BY 2030 (WITH Mit)						FY 2030 (No Mit)					
	AM			PM			AM			PM			AM			PM			AM			PM			AM			PM			AM			PM			AM			PM		
Intersection	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
10: Ft Weaver Rd & Geiger Rd/Iroquois Rd																																									
EB LT	107.0	0.65	F	106.7	0.65	F	107.2	0.68	F	104.6	0.65	F	107.4	0.68	F	99.7	0.62	F							108.7	0.73	F	103.8	0.67	F							110.7	0.76	F	97.0	0.61	F
EB LT/TH	101.9	0.63	F	102.5	0.65	F	101.8	0.66	F	100.0	0.65	F	101.4	0.66	F	96.7	0.62	F							101.9	0.71	F	99.8	0.67	F							101.9	0.72	F	94.3	0.62	F
EB RT	97.2	0.39	F	99.1	0.48	F	102.9	0.61	F	106.7	0.68	F	102.4	0.60	F	114.6	0.80	F							106.8	0.70	F	107.7	0.72	F							112.5	0.77	F	122.9	0.88	F
WB LT	85.3	0.18	F	90.3	0.05	F	85.0	0.19	F	86.7	0.06	F	85.3	0.19	F	87.6	0.06	F							84.0	0.20	F	81.4	0.05	F							84.3	0.20	F	85.3	0.06	F
WB TH	105.2	0.75	F	116.8	0.78	F	109.3	0.80	F	117.9	0.83	F	110.1	0.80	F	122.6	0.85	F							112.4	0.83	F	121.1	0.89	F							113.7	0.84	F	150.4	0.99	F
WB RT	85.2	0.19	F	90.4	0.06	F	85.4	0.23	F	87.5	0.12	F	85.6	0.23	F	88.5	0.12	F							85.1	0.28	F	83.7	0.19	F							85.4	0.28	F	87.7	0.20	F
NB LT	111.0	0.61	F	111.1	0.59	F	110.9	0.67	F	110.8	0.69	F	112.9	0.75	F	110.8	0.69	F							110.8	0.68	F	110.4	0.72	F							112.3	0.74	F	111.2	0.75	F
NB TH	35.9	0.53	D	33.2	0.33	C	39.0	0.56	D	38.6	0.38	D	39.1	0.56	D	39.9	0.39	D							44.8	0.62	D	46.8	0.50	D							45.1	0.63	D	46.8	0.50	D
NB RT	26.0	0.00	C	28.2	0.01	C	28.0	0.00	C	32.3	0.01	C	28.1	0.0	C	33.3	0.01	C							31.1	0.01	C	36.8	0.01	D							31.3	0.01	C	36.8	0.01	D
SB LT	77.0	0.63	E	119.0	0.80	F	82.7	0.67	F	123.1	0.80	F	82.7	0.67	F	123.7	0.80	F							97.7	0.73	F	125.8	0.81	F							98.0	0.73	F	125.1	0.81	F
SB TH	50.1	0.34	D	29.3	0.54	C	56.6	0.39	E	37.2	0.62	D	59.5	0.40	E	39.0	0.63	D							63.7	0.52	E	47.4	0.78	D							65.2	0.53	E	50.0	0.79	D
SB RT	141.5	0.08	F	32.3	0.17	C	215.0	0.10	F	36.0	0.20	D	236.8	0.10	F	37.9	0.20	D							130.3	0.13	F	38.8	0.22	D							133.7	0.14	F	41.2	0.25	D
Overall	65.2	0.60	E	57.8	0.64	E	72.6	0.63	E	64.4	0.70	E	75.2	0.65	E	66.3	0.73	E							74.6	0.69	E	69.5	0.80	E							76.4	0.71	E	73.4	0.85	E
11: Ft Weaver Rd & Renton Rd																																										
EB LT	111.0	0.79	F	112.4	0.79	F	113.0	0.81	F	114.2	0.83	F	111.3	0.81	F	112.9	0.84	F							113.1	0.81	F	113.6	0.81	F							107.9	0.81	F	113.6	0.85	F
EB LT/TH	109.3	0.77	F	111.6	0.79	F	110.8	0.80	F	112.8	0.82	F	109.2	0.79	F	113.6	0.84	F							111.5	0.79	F	113.3	0.81	F							110.0	0.82	F	114.3	0.85	F
EB RT	86.5	0.16	F	86.3	0.09	F	87.6	0.27	F	87.2	0.26	F	86.9	0.26	F	84.5	0.25	F							87.5	0.22	F	87.2	0.22	F							82.7	0.20	F	83.2	0.21	F
WB LT/TH	118.6	0.34	F	121.2	0.63	F	118.9	0.39	F	122.3	0.66	F	118.9	0.39	F	122.3	0.66	F							119.6	0.46	F	122.3	0.66	F							119.6	0.46	F	122.3	0.66	F
WB RT	111.6	0.01	F	104.5	0.02	F	111.2	0.01	F	103.4	0.02	F	111.2	0.01	F	103.4	0.02	F							110.5	0.01	F	103.5	0.02	F							110.5	0.01	F	103.5	0.02	F
NB LT	120.7	0.81	F	100.3	0.70	F	124.9	0.85	F	100.3	0.74	F	125.7	0.85	F	100.5	0.74	F							126.8	0.90	F	98.8	0.75	F							139.8	0.95	F	99.4	0.75	F
NB TH	21.8	0.87	C	28.7	0.48	C	22.4	0.87	C	32.0	0.53	C	22.8	0.87	C	33.7	0.54	C							23.0	0.88	C	34.6	0.61	C							27.0	0.91	C	37.7	0.64	D
NB RT	14.9	0.01	B	40.0	0.05	D	15.4	0.02	B	41.3	0.05	D	15.6	0.02	B	44.2	0.05	D							15.5	0.02	B	40.8	0.06	D							17.3	0.02	B	44.1	0.06	D
SB LT	123.1	0.58	F	111.9	0.59	F	126.9	0.66	F	113.6	0.62	F	128.3	0.67	F	113.8	0.62	F							127.5	0.68	F	115.2	0.64	F							131.7	0.71	F	115.1	0.64	F
SB TH	31.3	0.44	C	54.6	0.95	D	37.2	0.51	D	64.5	0.99	E	37.8	0.52	D	73.1	1.01	E*							48.5	0.69	D	86.0	1.06	F*							51.1	0.71	D	105.5	1.10	F*
SB RT	45.8	0.17	D	34.6	0.21	C	56.2	0.23	E	40.3	0.27	D	58.3	0.26	E	42.4	0.27	D							63.5	0.29	E	38.6	0.27	D							68.7	0.31	E	44.0	0.32	D
Overall	39.8	0.84	D	53.9	0.88	D	44.3	0.85	D	60.5	0.90	E	44.8	0.86	D	65.5	0.92	E							49.1	0.87	D	70.4	0.95	E							53.3	0.90	D	80.9	0.98	F
12: Geiger Rd & Honouliuli Drwy 3																																									
EB LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10	0	A	0.0	-	A	-	-	-	-	-	-	-	-	-	-	-	-	10.3	0.0	B	8.6	0.0	A
EB LT/TH	-	-	-	-	-	-	-	-	-	-	-	-	9.8	0.01	A	0.0	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB LT/RT	-	-	-	-	-	-	-	-	-	-	-	-	23.8	0.03	C	30.9	0.24	D	23.7	0.0	C	30.9	0.2	D	-	-	-	-	-	-	-	-	-	-	-	-	30.2	0.16	D	50.8	0.44	F
13: Roosevelt Ave & Honouliuli Drwy 4																																									
EB LT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	0	A	0.0	-	A	-	-	-	-	-	-	-	-	-	-	-	-	9.8	0.01	A	8.5	0.01	A
EB LT/TH	-	-	-	-	-	-	-	-	-	-	-	-	9.3	0.01	A	0.0	-	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB LT/RT	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	A	21.3	0.13	C	0.0	-	A	21.3	0.1	C	-	-	-	-	-	-	-	-	-	-	-	-	22.7	0.12	C	27.3	0.25	D
14: Honouliuli Drwy 5 & Renton Rd																																									
EB TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WB LT	-	-	-	-	-	-	-	-	-	-	-	-	7.5	0.06	A	7.7	0.00	A	7.5	0.1	A	7.7	0.0	A	-	-	-	-	-	-	-	-	-	-	-	-	7.5	0.04	A	8.1	0.12	A
WB TH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NB LT/RT	-	-	-	-	-	-	-	-	-	-	-	-	8.8	0.01	A	10.0	0.11	B	8.8	0.0	A	10.0	0.1	B	-	-	-	-	-	-	-	-	-	-	-	-	9.4	0.14	A	10.6	0.19	B

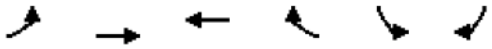
Note:
* = over-capacity, v/c > 1

APPENDIX D

Level of Service Calculations

HCM 2010 Signalized Intersection Summary
1: Kapolei Pkwy & Kualakai Pkwy

10/24/2014



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	333	364	604	360	170	208
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	362	396	657	391	185	226
Adj No. of Lanes	2	3	3	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	550	3242	1842	1376	453	812
Arrive On Green	0.16	0.64	0.36	0.36	0.13	0.13
Sat Flow, veh/h	3442	5253	5253	2787	3442	2787
Grp Volume(v), veh/h	362	396	657	391	185	226
Grp Sat Flow(s),veh/h/ln	1721	1695	1695	1393	1721	1393
Q Serve(g_s), s	5.1	1.6	4.9	4.3	2.6	3.3
Cycle Q Clear(g_c), s	5.1	1.6	4.9	4.3	2.6	3.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	550	3242	1842	1376	453	812
V/C Ratio(X)	0.66	0.12	0.36	0.28	0.41	0.28
Avail Cap(c_a), veh/h	1788	7925	4696	2940	2781	2697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	3.7	12.1	7.7	20.7	14.2
Incr Delay (d2), s/veh	1.3	0.0	0.1	0.1	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.7	2.3	2.1	1.2	2.8
LnGrp Delay(d),s/veh	21.8	3.7	12.3	7.9	21.3	14.4
LnGrp LOS	C	A	B	A	C	B
Approach Vol, veh/h		758	1048		411	
Approach Delay, s/veh		12.4	10.6		17.5	
Approach LOS		B	B		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		39.1		12.8	14.3	24.8		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		81.0		42.0	27.0	48.0		
Max Q Clear Time (g_c+I1), s		3.6		5.3	7.1	6.9		
Green Ext Time (p_c), s		12.8		1.6	1.2	11.9		

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	61	16	288	108	290	43	705	350	213	289	42
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	26	66	12	313	117	82	47	766	300	232	314	32
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	460	84	431	559	475	61	1267	492	274	2216	222
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.03	0.35	0.35	0.15	0.47	0.47
Sat Flow, veh/h	1179	1535	279	1316	1863	1583	1774	3606	1400	1774	4700	470
Grp Volume(v), veh/h	26	0	78	313	117	82	47	720	346	232	225	121
Grp Sat Flow(s),veh/h/ln	1179	0	1814	1316	1863	1583	1774	1695	1616	1774	1695	1780
Q Serve(g_s), s	1.6	0.0	2.9	21.2	4.3	3.5	2.4	16.2	16.4	11.8	3.5	3.6
Cycle Q Clear(g_c), s	5.9	0.0	2.9	24.1	4.3	3.5	2.4	16.2	16.4	11.8	3.5	3.6
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.87	1.00		0.26
Lane Grp Cap(c), veh/h	376	0	544	431	559	475	61	1191	568	274	1599	839
V/C Ratio(X)	0.07	0.00	0.14	0.73	0.21	0.17	0.77	0.60	0.61	0.85	0.14	0.14
Avail Cap(c_a), veh/h	455	0	665	519	683	581	555	2889	1377	555	2889	1516
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	23.7	32.5	24.2	24.0	44.4	24.8	24.8	38.1	13.9	13.9
Incr Delay (d2), s/veh	0.1	0.0	0.1	4.1	0.2	0.2	18.5	0.5	1.1	7.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	1.5	8.1	2.3	1.6	1.5	7.7	7.5	6.3	1.6	1.8
LnGrp Delay(d),s/veh	26.5	0.0	23.9	36.6	24.4	24.1	62.9	25.3	25.9	45.2	13.9	14.0
LnGrp LOS	C		C	D	C	C	E	C	C	D	B	B
Approach Vol, veh/h		104			512			1113			578	
Approach Delay, s/veh		24.5			31.8			27.0			26.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.3	38.6		33.8	9.2	49.7		33.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	29.0	79.0		34.0	29.0	79.0		34.0
Max Q Clear Time (g_c+I1), s	13.8	18.4		26.1	4.4	5.6		7.9
Green Ext Time (p_c), s	0.6	14.2		1.7	0.1	14.4		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	7.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1	1	181	1	2	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	197	1	2	87

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2	0	397	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	395	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1620	-	608	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1620	-	534	1082
Mov Cap-2 Maneuver	-	-	-	-	534	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	598	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.5	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1056	-	-	1620	-
HCM Lane V/C Ratio	0.084	-	-	0.121	-
HCM Control Delay (s)	8.7	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.4	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	64	267	0	0	530	14	0	0	0	11	0	166
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	70	290	0	0	576	15	0	0	0	12	0	180

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	591	0	0	290	0	0	1103	1020	290	1013	1013	584
Stage 1	-	-	-	-	-	-	429	429	-	584	584	-
Stage 2	-	-	-	-	-	-	674	591	-	429	429	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	985	-	-	1272	-	-	189	237	749	217	239	512
Stage 1	-	-	-	-	-	-	604	584	-	498	498	-
Stage 2	-	-	-	-	-	-	444	494	-	604	584	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	985	-	-	1272	-	-	114	217	749	203	219	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	114	217	-	203	219	-
Stage 1	-	-	-	-	-	-	553	534	-	456	498	-
Stage 2	-	-	-	-	-	-	288	494	-	553	534	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.7	0	0	18
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	985	-	-	1272	-	-	468
HCM Lane V/C Ratio	-	0.071	-	-	-	-	-	0.411
HCM Control Delay (s)	0	8.9	0	-	0	-	-	18
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.2	-	-	0	-	-	2

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	265	5	23	556	5	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	288	5	25	604	5	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	293	0	945	291
Stage 1	-	-	-	-	291	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1269	-	291	748
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1269	-	285	748
Mov Cap-2 Maneuver	-	-	-	-	285	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	507	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	393	-	-	1269	-
HCM Lane V/C Ratio	0.025	-	-	0.02	-
HCM Control Delay (s)	14.4	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	271	1	8	592	0	3	0	15	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	295	1	9	643	0	3	0	16	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	643	0	0	296	0	0	956	956	295	964	957	643
Stage 1	-	-	-	-	-	-	295	295	-	661	661	-
Stage 2	-	-	-	-	-	-	661	661	-	303	296	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	942	-	-	1265	-	-	238	258	744	235	258	473
Stage 1	-	-	-	-	-	-	713	669	-	452	460	-
Stage 2	-	-	-	-	-	-	452	460	-	706	668	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	942	-	-	1265	-	-	236	255	744	228	255	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	255	-	228	255	-
Stage 1	-	-	-	-	-	-	713	669	-	452	455	-
Stage 2	-	-	-	-	-	-	447	455	-	691	668	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	11.8	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	548	942	-	-	1265	-	-	-
HCM Lane V/C Ratio	0.036	-	-	-	0.007	-	-	-
HCM Control Delay (s)	11.8	0	-	-	7.9	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	268	579	4	6	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	291	629	4	7	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	634	0	-	0	923	632
Stage 1	-	-	-	-	632	-
Stage 2	-	-	-	-	291	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	949	-	-	-	299	480
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	759	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	949	-	-	-	299	480
Mov Cap-2 Maneuver	-	-	-	-	299	-
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	759	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	949	-	-	-	391
HCM Lane V/C Ratio	-	-	-	-	0.044
HCM Control Delay (s)	0	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

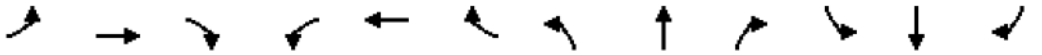
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	261	0	0	575	13	0	0	0	5	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	284	0	0	625	14	0	0	0	5	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	639	0	0	284	0	0	926	929	284	922	922	632
Stage 1	-	-	-	-	-	-	290	290	-	632	632	-
Stage 2	-	-	-	-	-	-	636	639	-	290	290	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	945	-	-	1278	-	-	249	268	755	251	270	480
Stage 1	-	-	-	-	-	-	718	672	-	468	474	-
Stage 2	-	-	-	-	-	-	466	470	-	718	672	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	945	-	-	1278	-	-	244	267	755	250	269	480
Mov Cap-2 Maneuver	-	-	-	-	-	-	244	267	-	250	269	-
Stage 1	-	-	-	-	-	-	715	669	-	466	474	-
Stage 2	-	-	-	-	-	-	459	470	-	715	669	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	15.8
HCM LOS			A	C

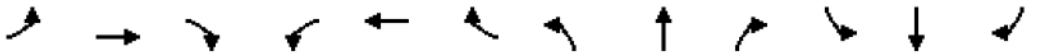
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	945	-	-	1278	-	-	347
HCM Lane V/C Ratio	-	0.003	-	-	-	-	-	0.038
HCM Control Delay (s)	0	8.8	0	-	0	-	-	15.8
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	110	167	88	210	195	336	717	139	146	501	42
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	9	120	14	96	228	39	365	779	64	159	545	7
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	342	39	125	314	267	416	1476	661	202	1048	469
Arrive On Green	0.01	0.11	0.11	0.07	0.17	0.17	0.23	0.42	0.42	0.11	0.30	0.30
Sat Flow, veh/h	1774	3199	368	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	9	66	68	96	228	39	365	779	64	159	545	7
Grp Sat Flow(s),veh/h/ln	1774	1770	1798	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.4	2.8	2.9	4.4	9.5	1.7	16.3	13.5	2.0	7.2	10.5	0.3
Cycle Q Clear(g_c), s	0.4	2.8	2.9	4.4	9.5	1.7	16.3	13.5	2.0	7.2	10.5	0.3
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	16	189	192	125	314	267	416	1476	661	202	1048	469
V/C Ratio(X)	0.56	0.35	0.36	0.77	0.73	0.15	0.88	0.53	0.10	0.79	0.52	0.01
Avail Cap(c_a), veh/h	410	839	853	410	883	751	733	1894	847	733	1894	847
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.6	34.1	34.1	37.6	32.4	29.2	30.3	17.9	14.6	35.5	24.1	20.5
Incr Delay (d2), s/veh	27.3	1.1	1.1	9.4	3.2	0.2	6.0	0.3	0.1	6.7	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.4	1.5	2.5	5.2	0.8	8.7	6.7	0.9	3.9	5.2	0.1
LnGrp Delay(d),s/veh	67.8	35.2	35.2	46.9	35.6	29.4	36.3	18.2	14.6	42.2	24.5	20.5
LnGrp LOS	E	D	D	D	D	C	D	B	B	D	C	C
Approach Vol, veh/h		143			363			1208			711	
Approach Delay, s/veh		37.2			38.0			23.5			28.4	
Approach LOS		D			D			C			C	

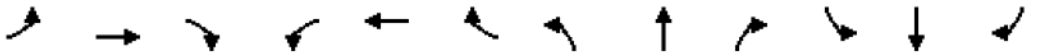
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	40.3	11.8	14.8	25.3	30.3	6.7	19.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	34.0	44.0	19.0	39.0	34.0	44.0	19.0	39.0
Max Q Clear Time (g_c+I1), s	9.2	15.5	6.4	4.9	18.3	12.5	2.4	11.5
Green Ext Time (p_c), s	0.4	11.4	0.2	2.4	1.0	11.8	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	27.9
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	259	129	156	50	222	266	149	1348	4	162	875	120
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3307	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3307	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	282	140	170	54	241	289	162	1465	4	176	951	130
RTOR Reduction (vph)	0	0	86	0	0	199	0	0	2	0	0	58
Lane Group Flow (vph)	141	281	84	54	241	91	162	1465	2	176	951	72
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	30.5	30.5	30.5	39.5	39.5	39.5	16.7	127.4	127.4	17.6	128.3	128.3
Effective Green, g (s)	32.5	32.5	32.5	41.5	41.5	41.5	18.7	130.4	128.4	19.6	131.3	129.3
Actuated g/C Ratio	0.14	0.14	0.14	0.17	0.17	0.17	0.08	0.54	0.54	0.08	0.55	0.54
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	218	447	214	306	322	481	267	2762	846	280	2781	852
v/s Ratio Prot	c0.09	0.08		0.03	c0.13		0.05	c0.29		c0.05	0.19	
v/s Ratio Perm			0.05			0.03			0.00			0.05
v/c Ratio	0.65	0.63	0.39	0.18	0.75	0.19	0.61	0.53	0.00	0.63	0.34	0.08
Uniform Delay, d1	98.3	98.0	94.7	84.7	94.3	84.8	107.1	35.2	26.0	106.7	30.3	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.68	1.65	5.28
Incremental Delay, d2	8.7	3.9	2.5	0.6	10.9	0.4	3.9	0.7	0.0	3.9	0.3	0.2
Delay (s)	107.0	101.9	97.2	85.3	105.2	85.2	111.0	35.9	26.0	77.0	50.1	141.5
Level of Service	F	F	F	F	F	F	F	D	C	E	D	F
Approach Delay (s)		101.8			93.5			43.3			63.3	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	65.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



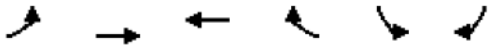
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	391	5	110	4	12	10	198	2650	15	67	1176	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.95	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1434		1841	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.95	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1434		1841	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	425	5	120	4	13	11	215	2880	16	73	1278	255
RTOR Reduction (vph)	0	0	84	0	0	11	0	0	6	0	0	113
Lane Group Flow (vph)	217	213	36	0	17	0	215	2880	10	73	1278	142
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	39.3	39.3	39.3		6.6	6.6	36.2	154.9	154.9	15.2	133.9	133.9
Effective Green, g (s)	39.3	39.3	39.3		6.6	8.6	36.2	156.9	155.9	17.2	135.9	133.9
Actuated g/C Ratio	0.16	0.16	0.16		0.03	0.04	0.15	0.65	0.65	0.07	0.57	0.56
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	275	276	234		50	56	266	3324	851	126	2879	856
v/s Ratio Prot	c0.13	0.13			c0.01		c0.12	c0.57		0.04	0.25	
v/s Ratio Perm			0.03			0.00			0.01			0.09
v/c Ratio	0.79	0.77	0.16		0.34	0.01	0.81	0.87	0.01	0.58	0.44	0.17
Uniform Delay, d1	96.4	96.1	86.1		114.6	111.6	98.5	33.2	14.9	107.9	30.2	25.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.14	0.61	1.00	1.09	1.02	1.76
Incremental Delay, d2	14.7	13.2	0.4		4.0	0.1	8.4	1.4	0.0	6.0	0.5	0.4
Delay (s)	111.0	109.3	86.5		118.6	111.6	120.7	21.8	14.9	123.1	31.3	45.8
Level of Service	F	F	F		F	F	F	C	B	F	C	D
Approach Delay (s)		105.0			115.9			28.6			37.7	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Kapolei Pkwy & Kualakai Pkwy

10/24/2014



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	218	442	356	253	377	334
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	237	480	387	275	410	363
Adj No. of Lanes	2	3	3	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	368	2677	1480	1415	746	902
Arrive On Green	0.11	0.53	0.29	0.29	0.22	0.22
Sat Flow, veh/h	3442	5253	5253	2787	3442	2787
Grp Volume(v), veh/h	237	480	387	275	410	363
Grp Sat Flow(s),veh/h/ln	1721	1695	1695	1393	1721	1393
Q Serve(g_s), s	3.1	2.3	2.7	2.5	4.9	4.7
Cycle Q Clear(g_c), s	3.1	2.3	2.7	2.5	4.9	4.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	368	2677	1480	1415	746	902
V/C Ratio(X)	0.64	0.18	0.26	0.19	0.55	0.40
Avail Cap(c_a), veh/h	516	6639	5224	3467	3094	2803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	5.8	12.7	6.3	16.3	12.3
Incr Delay (d2), s/veh	1.9	0.0	0.1	0.1	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	1.1	1.3	1.4	2.4	3.9
LnGrp Delay(d),s/veh	21.9	5.8	12.8	6.3	16.9	12.6
LnGrp LOS	C	A	B	A	B	B
Approach Vol, veh/h		717	662		773	
Approach Delay, s/veh		11.1	10.1		14.9	
Approach LOS		B	B		B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		30.6		16.1	11.0	19.6		
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		
Max Green Setting (Gmax), s		61.0		42.0	7.0	48.0		
Max Q Clear Time (g_c+I1), s		4.3		6.9	5.1	4.7		
Green Ext Time (p_c), s		9.1		3.2	0.2	8.9		

Intersection Summary	
HCM 2010 Ctrl Delay	12.2
HCM 2010 LOS	B

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	99	56	158	62	166	32	382	110	184	585	48
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	62	108	40	172	67	32	35	415	66	200	636	44
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	348	129	375	500	425	53	1207	188	258	1883	129
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.03	0.27	0.27	0.15	0.39	0.39
Sat Flow, veh/h	1291	1297	481	1235	1863	1583	1774	4441	690	1774	4860	334
Grp Volume(v), veh/h	62	0	148	172	67	32	35	315	166	200	442	238
Grp Sat Flow(s),veh/h/ln	1291	0	1778	1235	1863	1583	1774	1695	1741	1774	1695	1804
Q Serve(g_s), s	2.2	0.0	3.8	7.4	1.6	0.9	1.1	4.3	4.4	6.2	5.3	5.3
Cycle Q Clear(g_c), s	3.8	0.0	3.8	11.2	1.6	0.9	1.1	4.3	4.4	6.2	5.3	5.3
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.40	1.00		0.19
Lane Grp Cap(c), veh/h	437	0	477	375	500	425	53	921	473	258	1314	699
V/C Ratio(X)	0.14	0.00	0.31	0.46	0.13	0.08	0.66	0.34	0.35	0.77	0.34	0.34
Avail Cap(c_a), veh/h	857	0	1055	777	1106	940	743	2308	1185	743	2308	1228
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	16.7	21.2	15.9	15.6	27.5	16.7	16.8	23.6	12.4	12.4
Incr Delay (d2), s/veh	0.1	0.0	0.4	0.9	0.1	0.1	13.2	0.2	0.4	4.9	0.2	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.9	2.6	0.8	0.4	0.7	2.0	2.2	3.4	2.5	2.7
LnGrp Delay(d),s/veh	17.5	0.0	17.1	22.1	16.0	15.7	40.7	17.0	17.2	28.5	12.5	12.7
LnGrp LOS	B		B	C	B	B	D	B	B	C	B	B
Approach Vol, veh/h		210			271			516			880	
Approach Delay, s/veh		17.2			19.8			18.7			16.2	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.3	21.6		21.4	7.7	28.2		21.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	24.0	39.0		34.0	24.0	39.0		34.0
Max Q Clear Time (g_c+I1), s	8.2	6.4		13.2	3.1	7.3		5.8
Green Ext Time (p_c), s	0.5	9.2		2.2	0.1	9.1		2.3

Intersection Summary		
HCM 2010 Ctrl Delay		17.5
HCM 2010 LOS		B

Intersection	
Int Delay, s/veh	8.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	2	3	135	2	6	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	3	147	2	7	210

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	5	0	300	4
Stage 1	-	-	-	-	4	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1616	-	691	1080
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1616	-	628	1080
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1057	-	-	1616	-
HCM Lane V/C Ratio	0.205	-	-	0.091	-
HCM Control Delay (s)	9.3	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.3	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	172	583	0	0	331	17	0	0	0	14	0	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	187	634	0	0	360	18	0	0	0	15	0	134

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	378	0	0	634	0	0	1444	1386	634	1377	1377	369
Stage 1	-	-	-	-	-	-	1008	1008	-	369	369	-
Stage 2	-	-	-	-	-	-	436	378	-	1008	1008	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1180	-	-	949	-	-	110	143	479	122	145	677
Stage 1	-	-	-	-	-	-	290	318	-	651	621	-
Stage 2	-	-	-	-	-	-	599	615	-	290	318	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1180	-	-	949	-	-	72	108	479	99	109	677
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	108	-	99	109	-
Stage 1	-	-	-	-	-	-	219	240	-	492	621	-
Stage 2	-	-	-	-	-	-	481	615	-	219	240	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	0	18
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1180	-	-	949	-	-	424
HCM Lane V/C Ratio	-	0.158	-	-	-	-	-	0.351
HCM Control Delay (s)	0	8.6	0	-	0	-	-	18
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.6	-	-	0	-	-	1.6

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	624	13	11	345	9	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	678	14	12	375	10	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	692	0	1084	685
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	399	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	903	-	240	448
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	678	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	903	-	237	448
Mov Cap-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	348	-	-	903	-
HCM Lane V/C Ratio	0.087	-	-	0.013	-
HCM Control Delay (s)	16.3	-	-	9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	617	0	1	352	1	0	0	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	671	0	1	383	1	0	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	384	0	0	671	0	0	1058	1059	671	1059	1058	383
Stage 1	-	-	-	-	-	-	673	673	-	385	385	-
Stage 2	-	-	-	-	-	-	385	386	-	674	673	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1174	-	-	919	-	-	203	224	456	202	225	664
Stage 1	-	-	-	-	-	-	445	454	-	638	611	-
Stage 2	-	-	-	-	-	-	638	610	-	444	454	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1174	-	-	919	-	-	203	224	456	201	225	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	203	224	-	201	225	-
Stage 1	-	-	-	-	-	-	445	454	-	637	610	-
Stage 2	-	-	-	-	-	-	637	609	-	441	454	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.9	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	456	1174	-	-	919	-	-	-
HCM Lane V/C Ratio	0.005	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	12.9	8.1	0	-	8.9	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	644	354	2	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	700	385	2	11	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	387	0	-	0	1086	386
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	700	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1171	-	-	-	239	662
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	493	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1171	-	-	-	239	662
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	493	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1171	-	-	-	267
HCM Lane V/C Ratio	-	-	-	-	0.049
HCM Control Delay (s)	0	-	-	-	19.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	628	0	0	336	19	0	0	0	19	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	683	0	0	365	21	0	0	0	21	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	386	0	0	683	0	0	1086	1090	683	1080	1080	376
Stage 1	-	-	-	-	-	-	704	704	-	376	376	-
Stage 2	-	-	-	-	-	-	382	386	-	704	704	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1172	-	-	910	-	-	194	215	449	196	218	670
Stage 1	-	-	-	-	-	-	428	440	-	645	616	-
Stage 2	-	-	-	-	-	-	640	610	-	428	440	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1172	-	-	910	-	-	188	212	449	194	215	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	212	-	194	215	-
Stage 1	-	-	-	-	-	-	422	433	-	635	616	-
Stage 2	-	-	-	-	-	-	628	610	-	422	433	-

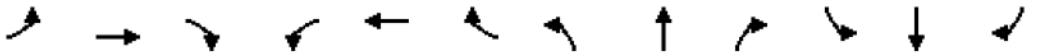
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	20.4
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1172	-	-	910	-	-	268
HCM Lane V/C Ratio	-	0.009	-	-	-	-	-	0.126
HCM Control Delay (s)	0	8.1	0	-	0	-	-	20.4
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	228	395	121	142	232	196	369	92	153	492	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	49	248	191	132	154	59	213	401	18	166	535	4
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	391	290	169	487	414	261	986	441	210	884	396
Arrive On Green	0.04	0.20	0.20	0.10	0.26	0.26	0.15	0.28	0.28	0.12	0.25	0.25
Sat Flow, veh/h	1774	1940	1438	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	49	225	214	132	154	59	213	401	18	166	535	4
Grp Sat Flow(s),veh/h/ln	1774	1770	1609	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	2.1	9.1	9.6	5.7	5.2	2.2	9.1	7.2	0.7	7.1	10.5	0.1
Cycle Q Clear(g_c), s	2.1	9.1	9.6	5.7	5.2	2.2	9.1	7.2	0.7	7.1	10.5	0.1
Prop In Lane	1.00		0.89	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	63	356	324	169	487	414	261	986	441	210	884	396
V/C Ratio(X)	0.78	0.63	0.66	0.78	0.32	0.14	0.81	0.41	0.04	0.79	0.60	0.01
Avail Cap(c_a), veh/h	430	993	902	430	1045	888	656	1760	787	656	1760	787
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.5	28.7	28.8	34.7	23.3	22.2	32.4	23.0	20.6	33.6	26.0	22.1
Incr Delay (d2), s/veh	18.8	1.9	2.3	7.5	0.4	0.2	6.1	0.3	0.0	6.5	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.6	4.5	3.1	2.7	1.0	4.9	3.5	0.3	3.9	5.2	0.1
LnGrp Delay(d),s/veh	56.4	30.5	31.1	42.2	23.7	22.4	38.5	23.3	20.7	40.1	26.7	22.1
LnGrp LOS	E	C	C	D	C	C	D	C	C	D	C	C
Approach Vol, veh/h		488			345			632			705	
Approach Delay, s/veh		33.4			30.5			28.3			29.8	
Approach LOS		C			C			C			C	

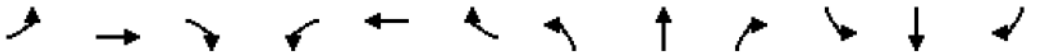
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	27.9	13.5	21.8	17.6	25.6	8.8	26.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	29.0	39.0	19.0	44.0	29.0	39.0	19.0	44.0
Max Q Clear Time (g_c+I1), s	9.1	9.2	7.7	11.6	11.1	12.5	4.1	7.2
Green Ext Time (p_c), s	0.4	7.4	0.2	4.2	0.5	7.1	0.1	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	30.3
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	198	206	153	10	182	122	135	817	10	341	1493	207
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3349	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3349	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	224	166	11	198	133	147	888	11	371	1623	225
RTOR Reduction (vph)	0	0	63	0	0	111	0	0	5	0	0	65
Lane Group Flow (vph)	142	297	103	11	198	22	147	888	6	371	1623	160
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	30.8	30.8	30.8	30.7	30.7	30.7	15.6	122.9	122.9	30.6	137.9	137.9
Effective Green, g (s)	32.8	32.8	32.8	32.7	32.7	32.7	17.6	125.9	123.9	32.6	140.9	138.9
Actuated g/C Ratio	0.14	0.14	0.14	0.14	0.14	0.14	0.07	0.52	0.52	0.14	0.59	0.58
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	220	457	216	241	253	379	251	2667	817	466	2985	916
v/s Ratio Prot	0.09	c0.09		0.01	c0.11		0.04	0.17		c0.11	c0.32	
v/s Ratio Perm			0.07			0.01			0.00			0.10
v/c Ratio	0.65	0.65	0.48	0.05	0.78	0.06	0.59	0.33	0.01	0.80	0.54	0.17
Uniform Delay, d1	98.1	98.2	95.7	90.1	100.2	90.2	107.7	32.9	28.2	100.5	30.1	23.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.10	0.95	1.35
Incremental Delay, d2	8.6	4.3	3.4	0.2	16.6	0.1	3.5	0.3	0.0	9.0	0.7	0.4
Delay (s)	106.7	102.5	99.1	90.3	116.8	90.4	111.1	33.2	28.2	119.0	29.3	32.3
Level of Service	F	F	F	F	F	F	F	C	C	F	C	C
Approach Delay (s)		102.5			105.7			44.1			44.6	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	57.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.0%	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												
Volume (vph)	355	36	97	34	28	22	115	1410	54	68	2628	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.96	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1700	1434		1813	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.96	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1700	1434		1813	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	386	39	105	37	30	24	125	1533	59	74	2857	324
RTOR Reduction (vph)	0	0	84	0	0	22	0	0	22	0	0	136
Lane Group Flow (vph)	212	213	21	0	67	2	125	1533	37	74	2857	188
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	38.3	38.3	38.3		14.2	14.2	24.2	148.4	148.4	15.1	139.3	139.3
Effective Green, g (s)	38.3	38.3	38.3		14.2	16.2	24.2	150.4	149.4	17.1	141.3	139.3
Actuated g/C Ratio	0.16	0.16	0.16		0.06	0.07	0.10	0.63	0.62	0.07	0.59	0.58
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	268	271	228		107	106	178	3186	816	126	2993	891
v/s Ratio Prot	c0.13	0.13			c0.04		c0.07	0.30		0.04	c0.56	
v/s Ratio Perm			0.01			0.00			0.03			0.12
v/c Ratio	0.79	0.79	0.09		0.63	0.02	0.70	0.48	0.05	0.59	0.95	0.21
Uniform Delay, d1	97.0	96.9	86.0		110.3	104.5	104.4	23.9	17.6	108.0	46.3	24.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	0.90	1.19	2.27	0.97	0.99	1.41
Incremental Delay, d2	15.4	14.7	0.2		10.9	0.1	6.0	0.2	0.0	6.8	8.8	0.5
Delay (s)	112.4	111.6	86.3		121.2	104.5	100.3	28.7	40.0	111.9	54.6	34.6
Level of Service	F	F	F		F	F	F	C	D	F	D	C
Approach Delay (s)		106.9			116.8			34.3			53.9	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Kapolei Pkwy & Kualakai Pkwy

11/17/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	625	515	5	120	705	475	5	85	15	395	120	430
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	679	560	5	130	766	516	5	92	3	429	130	278
Adj No. of Lanes	2	3	0	2	3	2	1	2	0	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	809	2293	20	215	1365	1174	9	317	10	526	844	1316
Arrive On Green	0.24	0.44	0.44	0.06	0.27	0.27	0.01	0.09	0.09	0.15	0.24	0.24
Sat Flow, veh/h	3442	5198	46	3442	5085	2787	1774	3499	114	3442	3539	2773
Grp Volume(v), veh/h	679	365	200	130	766	516	5	46	49	429	130	278
Grp Sat Flow(s),veh/h/ln	1721	1695	1855	1721	1695	1393	1774	1770	1843	1721	1770	1386
Q Serve(g_s), s	17.8	6.4	6.4	3.5	12.3	12.5	0.3	2.3	2.3	11.4	2.8	5.6
Cycle Q Clear(g_c), s	17.8	6.4	6.4	3.5	12.3	12.5	0.3	2.3	2.3	11.4	2.8	5.6
Prop In Lane	1.00		0.03	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	809	1495	818	215	1365	1174	9	160	167	526	844	1316
V/C Ratio(X)	0.84	0.24	0.24	0.61	0.56	0.44	0.54	0.29	0.29	0.82	0.15	0.21
Avail Cap(c_a), veh/h	1378	1495	818	1378	2037	1542	224	709	738	798	1791	2058
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	16.6	16.6	43.3	29.9	19.5	47.1	40.3	40.3	38.9	28.6	14.6
Incr Delay (d2), s/veh	2.4	0.1	0.2	2.7	0.4	0.3	41.4	1.0	1.0	4.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	3.0	3.3	1.7	5.8	4.8	0.2	1.2	1.2	5.7	1.4	2.1
LnGrp Delay(d),s/veh	37.0	16.7	16.8	46.1	30.3	19.8	88.5	41.3	41.2	42.8	28.7	14.7
LnGrp LOS	D	B	B	D	C	B	F	D	D	D	C	B
Approach Vol, veh/h		1244			1412			100			837	
Approach Delay, s/veh		27.8			27.9			43.6			31.3	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	14.6	11.9	47.8	6.5	28.6	28.3	31.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	22.0	38.0	38.0	38.0	12.0	48.0	38.0	38.0
Max Q Clear Time (g_c+I1), s	13.4	4.3	5.5	8.4	2.3	7.6	19.8	14.5
Green Ext Time (p_c), s	1.1	2.6	0.4	14.3	0.0	2.7	2.5	11.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	70	20	300	135	370	50	980	400	280	530	45
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	76	13	326	147	93	54	1065	381	304	576	42
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	345	482	82	418	578	492	70	1291	462	338	2421	175
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.35	0.35	0.19	0.50	0.50
Sat Flow, veh/h	1135	1551	265	1303	1863	1583	1774	3697	1323	1774	4841	350
Grp Volume(v), veh/h	33	0	89	326	147	93	54	977	469	304	402	216
Grp Sat Flow(s),veh/h/ln	1135	0	1816	1303	1863	1583	1774	1695	1629	1774	1695	1801
Q Serve(g_s), s	2.7	0.0	4.3	29.1	7.1	5.2	3.6	31.6	31.6	20.1	8.1	8.2
Cycle Q Clear(g_c), s	9.8	0.0	4.3	33.3	7.1	5.2	3.6	31.6	31.6	20.1	8.1	8.2
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.81	1.00		0.19
Lane Grp Cap(c), veh/h	345	0	564	418	578	492	70	1184	569	338	1695	901
V/C Ratio(X)	0.10	0.00	0.16	0.78	0.25	0.19	0.77	0.82	0.82	0.90	0.24	0.24
Avail Cap(c_a), veh/h	399	0	650	480	667	567	251	1242	597	517	1750	930
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	0.0	30.0	42.1	31.0	30.3	57.1	35.7	35.7	47.5	17.0	17.1
Incr Delay (d2), s/veh	0.1	0.0	0.1	7.1	0.2	0.2	16.1	4.5	8.9	13.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	2.2	11.2	3.7	2.3	2.1	15.5	15.6	11.1	3.8	4.1
LnGrp Delay(d),s/veh	34.8	0.0	30.1	49.2	31.2	30.5	73.2	40.2	44.6	60.7	17.1	17.2
LnGrp LOS	C		C	D	C	C	E	D	D	E	B	B
Approach Vol, veh/h		122			566			1500			922	
Approach Delay, s/veh		31.4			41.4			42.8			31.5	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.9	47.9		43.3	10.7	66.1		43.3
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	35.0	44.0		43.0	17.0	62.0		43.0
Max Q Clear Time (g_c+I1), s	22.1	33.6		35.3	5.6	10.2		11.8
Green Ext Time (p_c), s	0.7	8.3		2.0	0.1	25.0		3.2

Intersection Summary		
HCM 2010 Ctrl Delay		38.7
HCM 2010 LOS		D

Intersection	
Int Delay, s/veh	7.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	5	5	195	5	5	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	212	5	5	98

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	437	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1608	-	577	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1608	-	501	1074
Mov Cap-2 Maneuver	-	-	-	-	501	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	570	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.4	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1013	-	-	1608	-
HCM Lane V/C Ratio	0.102	-	-	0.132	-
HCM Control Delay (s)	9	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.5	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	70	295	0	0	655	20	0	0	0	15	0	180
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	321	0	0	712	22	0	0	0	16	0	196

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	734	0	0	321	0	0	1294	1207	321	1196	1196	723
Stage 1	-	-	-	-	-	-	473	473	-	723	723	-
Stage 2	-	-	-	-	-	-	821	734	-	473	473	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	871	-	-	1239	-	-	139	183	720	163	186	426
Stage 1	-	-	-	-	-	-	572	558	-	417	431	-
Stage 2	-	-	-	-	-	-	369	426	-	572	558	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	871	-	-	1239	-	-	69	164	720	150	166	426
Mov Cap-2 Maneuver	-	-	-	-	-	-	69	164	-	150	166	-
Stage 1	-	-	-	-	-	-	511	499	-	373	431	-
Stage 2	-	-	-	-	-	-	200	426	-	511	499	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	0	26.6
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	871	-	-	1239	-	-	373
HCM Lane V/C Ratio	-	0.087	-	-	-	-	-	0.568
HCM Control Delay (s)	0	9.5	0	-	0	-	-	26.6
HCM Lane LOS	A	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	3.4

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	295	10	25	685	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	321	11	27	745	11	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	332	0	1125	326
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	799	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1227	-	227	715
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	443	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1227	-	222	715
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	433	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	18.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	288	-	-	1227	-
HCM Lane V/C Ratio	0.057	-	-	0.022	-
HCM Control Delay (s)	18.2	-	-	8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	300	0	0	725	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	326	0	0	788	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	788	0	0	326	0	0	1114	1114	326	1114	1114	788
Stage 1	-	-	-	-	-	-	326	326	-	788	788	-
Stage 2	-	-	-	-	-	-	788	788	-	326	326	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	831	-	-	1234	-	-	185	208	715	185	208	391
Stage 1	-	-	-	-	-	-	687	648	-	384	402	-
Stage 2	-	-	-	-	-	-	384	402	-	687	648	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	831	-	-	1234	-	-	185	208	715	185	208	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	185	208	-	185	208	-
Stage 1	-	-	-	-	-	-	687	648	-	384	402	-
Stage 2	-	-	-	-	-	-	384	402	-	687	648	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	831	-	-	1234	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	295	710	5	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	321	772	5	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	777	0	-	0	1095	774
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	321	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	839	-	-	-	236	398
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	839	-	-	-	236	398
Mov Cap-2 Maneuver	-	-	-	-	236	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	735	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	839	-	-	-	296
HCM Lane V/C Ratio	-	-	-	-	0.073
HCM Control Delay (s)	0	-	-	-	18.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

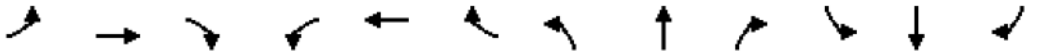
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	290	0	0	705	15	0	0	0	5	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	315	0	0	766	16	0	0	0	5	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	783	0	0	315	0	0	1106	1109	315	1100	1100	774
Stage 1	-	-	-	-	-	-	326	326	-	774	774	-
Stage 2	-	-	-	-	-	-	780	783	-	326	326	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	835	-	-	1245	-	-	188	210	725	190	212	398
Stage 1	-	-	-	-	-	-	687	648	-	391	408	-
Stage 2	-	-	-	-	-	-	388	404	-	687	648	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	835	-	-	1245	-	-	182	209	725	189	211	398
Mov Cap-2 Maneuver	-	-	-	-	-	-	182	209	-	189	211	-
Stage 1	-	-	-	-	-	-	682	643	-	388	408	-
Stage 2	-	-	-	-	-	-	377	404	-	682	643	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	18.1
HCM LOS			A	C

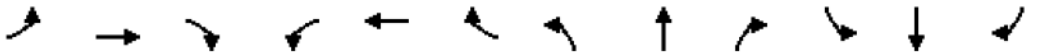
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	835	-	-	1245	-	-	291
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.056
HCM Control Delay (s)	0	9.3	0	-	0	-	-	18.1
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	125	185	95	285	235	390	1015	180	160	720	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	136	17	103	310	42	424	1103	109	174	783	12
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	434	53	128	370	314	458	1682	752	203	1175	525
Arrive On Green	0.01	0.14	0.14	0.07	0.20	0.20	0.26	0.48	0.48	0.11	0.33	0.33
Sat Flow, veh/h	1774	3173	391	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	11	75	78	103	310	42	424	1103	109	174	783	12
Grp Sat Flow(s),veh/h/ln	1774	1770	1794	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.7	4.6	4.7	6.8	19.1	2.6	27.8	28.3	4.6	11.5	22.6	0.6
Cycle Q Clear(g_c), s	0.7	4.6	4.7	6.8	19.1	2.6	27.8	28.3	4.6	11.5	22.6	0.6
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	18	242	245	128	370	314	458	1682	752	203	1175	525
V/C Ratio(X)	0.61	0.31	0.32	0.80	0.84	0.13	0.93	0.66	0.14	0.86	0.67	0.02
Avail Cap(c_a), veh/h	193	549	557	193	578	491	580	1960	877	298	1395	624
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	46.4	46.4	54.5	45.9	39.3	43.1	23.8	17.6	51.8	34.2	26.8
Incr Delay (d2), s/veh	28.3	0.7	0.7	13.4	6.3	0.2	18.4	0.6	0.1	14.8	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.3	2.4	3.8	10.5	1.2	15.9	13.9	2.0	6.4	11.2	0.3
LnGrp Delay(d),s/veh	87.1	47.1	47.2	67.9	52.3	39.5	61.5	24.5	17.7	66.6	35.1	26.8
LnGrp LOS	F	D	D	E	D	D	E	C	B	E	D	C
Approach Vol, veh/h		164			455			1636			969	
Approach Delay, s/veh		49.8			54.6			33.6			40.7	
Approach LOS		D			D			C			D	

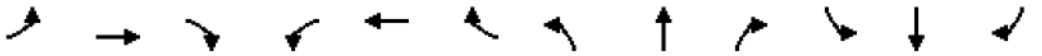
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	62.6	14.6	22.3	36.8	45.6	7.2	29.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	66.0	13.0	37.0	39.0	47.0	13.0	37.0
Max Q Clear Time (g_c+I1), s	13.5	30.3	8.8	6.7	29.8	24.6	2.7	21.1
Green Ext Time (p_c), s	0.2	20.0	0.1	3.1	1.0	14.9	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.5
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	145	185	55	240	285	195	1365	5	185	950	140
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3308	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3308	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	158	201	60	261	310	212	1484	5	201	1033	152
RTOR Reduction (vph)	0	0	62	0	0	199	0	0	2	0	0	74
Lane Group Flow (vph)	157	316	139	60	261	111	212	1484	3	201	1033	78
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	32.6	32.6	32.6	40.2	40.2	40.2	20.1	123.1	123.1	19.1	122.1	122.1
Effective Green, g (s)	34.6	34.6	34.6	42.2	42.2	42.2	22.1	126.1	124.1	21.1	125.1	123.1
Actuated g/C Ratio	0.14	0.14	0.14	0.18	0.18	0.18	0.09	0.53	0.52	0.09	0.52	0.51
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	232	476	228	311	327	490	316	2671	818	301	2650	811
v/s Ratio Prot	c0.10	0.10		0.03	c0.14		c0.06	c0.29		0.06	0.20	
v/s Ratio Perm			0.09			0.04			0.00			0.05
v/c Ratio	0.68	0.66	0.61	0.19	0.80	0.23	0.67	0.56	0.00	0.67	0.39	0.10
Uniform Delay, d1	97.4	97.2	96.3	84.4	94.8	84.9	105.4	38.2	28.0	106.1	34.5	29.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.73	1.63	7.17
Incremental Delay, d2	9.8	4.6	6.6	0.6	14.5	0.5	5.5	0.8	0.0	5.0	0.4	0.2
Delay (s)	107.2	101.8	102.9	85.0	109.3	85.4	110.9	39.0	28.0	82.7	56.6	215.0
Level of Service	F	F	F	F	F	F	F	D	C	F	E	F
Approach Delay (s)		103.4			95.2			47.9			77.7	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	72.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	65.9%	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												
Volume (vph)	415	5	135	5	15	15	250	2625	20	75	1265	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.95	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1434		1841	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.95	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1434		1841	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	451	5	147	5	16	16	272	2853	22	82	1375	353
RTOR Reduction (vph)	0	0	83	0	0	15	0	0	8	0	0	169
Lane Group Flow (vph)	230	226	64	0	21	1	272	2853	14	82	1375	184
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	40.5	40.5	40.5		7.1	7.1	43.3	153.4	153.4	15.0	125.1	125.1
Effective Green, g (s)	40.5	40.5	40.5		7.1	9.1	43.3	155.4	154.4	17.0	127.1	125.1
Actuated g/C Ratio	0.17	0.17	0.17		0.03	0.04	0.18	0.65	0.64	0.07	0.53	0.52
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	283	284	241		54	60	319	3292	843	125	2692	800
v/s Ratio Prot	c0.14	0.13			c0.01		c0.15	c0.56		0.05	0.27	
v/s Ratio Perm			0.04			0.00			0.01			0.12
v/c Ratio	0.81	0.80	0.27		0.39	0.01	0.85	0.87	0.02	0.66	0.51	0.23
Uniform Delay, d1	96.1	95.8	86.8		114.3	111.1	95.3	34.0	15.4	108.7	36.4	31.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.21	0.62	1.00	1.07	1.00	1.78
Incremental Delay, d2	16.9	15.0	0.8		4.6	0.1	9.9	1.4	0.0	11.2	0.7	0.6
Delay (s)	113.0	110.8	87.6		118.9	111.2	124.9	22.4	15.4	126.9	37.2	56.2
Level of Service	F	F	F		F	F	F	C	B	F	D	E
Approach Delay (s)		106.0			115.6			31.2			45.0	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Kapolei Pkwy & Kualakai Pkwy

11/17/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	750	650	10	230	395	525	55	345	130	630	350	655
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	815	707	11	250	429	517	60	375	18	685	380	447
Adj No. of Lanes	2	3	0	2	3	2	1	2	0	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	898	1858	29	319	976	1144	78	528	25	752	1161	1638
Arrive On Green	0.26	0.36	0.36	0.09	0.19	0.19	0.04	0.15	0.15	0.22	0.33	0.33
Sat Flow, veh/h	3442	5159	80	3442	5085	2787	1774	3439	165	3442	3539	2776
Grp Volume(v), veh/h	815	464	254	250	429	517	60	192	201	685	380	447
Grp Sat Flow(s),veh/h/ln	1721	1695	1849	1721	1695	1393	1774	1770	1834	1721	1770	1388
Q Serve(g_s), s	30.1	13.3	13.4	9.3	9.8	17.7	4.4	13.6	13.7	25.5	10.6	10.4
Cycle Q Clear(g_c), s	30.1	13.3	13.4	9.3	9.8	17.7	4.4	13.6	13.7	25.5	10.6	10.4
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	898	1221	666	319	976	1144	78	272	282	752	1161	1638
V/C Ratio(X)	0.91	0.38	0.38	0.78	0.44	0.45	0.77	0.71	0.71	0.91	0.33	0.27
Avail Cap(c_a), veh/h	1047	1221	666	942	1470	1415	513	633	656	838	1161	1638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	31.2	31.2	58.4	46.9	28.0	62.2	52.8	52.9	50.1	33.2	13.2
Incr Delay (d2), s/veh	10.3	0.2	0.4	4.2	0.3	0.3	14.3	3.4	3.3	13.1	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.7	6.3	6.9	4.6	4.6	6.8	2.5	6.9	7.2	13.5	5.2	4.0
LnGrp Delay(d),s/veh	57.4	31.4	31.6	62.6	47.2	28.3	76.5	56.2	56.2	63.2	33.4	13.3
LnGrp LOS	E	C	C	E	D	C	E	E	E	E	C	B
Approach Vol, veh/h		1533			1196			453			1512	
Approach Delay, s/veh		45.2			42.3			58.9			41.0	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.7	26.2	18.2	53.3	10.8	49.1	40.3	31.2
Change Period (Y+Rc), s	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	32.0	47.0	36.0	42.0	38.0	41.0	40.0	38.0
Max Q Clear Time (g_c+I1), s	27.5	15.7	11.3	15.4	6.4	12.6	32.1	19.7
Green Ext Time (p_c), s	1.2	3.5	0.8	11.7	0.1	7.8	2.1	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	44.4
HCM 2010 LOS	D

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	125	65	180	70	295	35	810	120	320	1100	55
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	76	136	53	196	76	58	38	880	110	348	1196	57
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	402	368	143	321	536	456	48	1351	168	387	2417	115
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.03	0.29	0.29	0.22	0.49	0.49
Sat Flow, veh/h	1250	1277	498	1189	1863	1583	1774	4582	570	1774	4974	237
Grp Volume(v), veh/h	76	0	189	196	76	58	38	650	340	348	815	438
Grp Sat Flow(s),veh/h/ln	1250	0	1775	1189	1863	1583	1774	1695	1762	1774	1695	1821
Q Serve(g_s), s	4.3	0.0	7.7	14.2	2.7	2.4	1.9	15.1	15.2	17.2	14.7	14.7
Cycle Q Clear(g_c), s	7.1	0.0	7.7	21.9	2.7	2.4	1.9	15.1	15.2	17.2	14.7	14.7
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.32	1.00		0.13
Lane Grp Cap(c), veh/h	402	0	511	321	536	456	48	1000	520	387	1648	885
V/C Ratio(X)	0.19	0.00	0.37	0.61	0.14	0.13	0.79	0.65	0.65	0.90	0.49	0.49
Avail Cap(c_a), veh/h	512	0	667	426	700	595	471	1462	760	471	1648	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	25.7	34.4	23.9	23.8	43.7	27.8	27.8	34.4	15.7	15.7
Incr Delay (d2), s/veh	0.2	0.0	0.4	1.9	0.1	0.1	23.9	0.7	1.4	17.6	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	3.8	4.8	1.4	1.1	1.3	7.1	7.6	10.3	6.8	7.4
LnGrp Delay(d),s/veh	26.8	0.0	26.1	36.3	24.0	23.9	67.6	28.5	29.3	51.9	16.0	16.2
LnGrp LOS	C		C	D	C	C	E	C	C	D	B	B
Approach Vol, veh/h		265			330			1028			1601	
Approach Delay, s/veh		26.3			31.3			30.2			23.8	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	25.7	32.7		32.0	8.5	49.9		32.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	24.0	39.0		34.0	24.0	39.0		34.0
Max Q Clear Time (g_c+I1), s	19.2	17.2		23.9	3.9	16.7		9.7
Green Ext Time (p_c), s	0.5	9.4		2.1	0.1	16.1		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	8.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	2	3	135	2	6	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	3	147	2	7	210

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	5	0	300	4
Stage 1	-	-	-	-	4	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1616	-	691	1080
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1616	-	628	1080
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1057	-	-	1616	-
HCM Lane V/C Ratio	0.205	-	-	0.091	-
HCM Control Delay (s)	9.3	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.3	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	172	583	0	0	331	17	0	0	0	14	0	123
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	187	634	0	0	360	18	0	0	0	15	0	134

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	378	0	0	634	0	0	1444	1386	634	1377	1377	369
Stage 1	-	-	-	-	-	-	1008	1008	-	369	369	-
Stage 2	-	-	-	-	-	-	436	378	-	1008	1008	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1180	-	-	949	-	-	110	143	479	122	145	677
Stage 1	-	-	-	-	-	-	290	318	-	651	621	-
Stage 2	-	-	-	-	-	-	599	615	-	290	318	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1180	-	-	949	-	-	72	108	479	99	109	677
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	108	-	99	109	-
Stage 1	-	-	-	-	-	-	219	240	-	492	621	-
Stage 2	-	-	-	-	-	-	481	615	-	219	240	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	0	18
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1180	-	-	949	-	-	424
HCM Lane V/C Ratio	-	0.158	-	-	-	-	-	0.351
HCM Control Delay (s)	0	8.6	0	-	0	-	-	18
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0.6	-	-	0	-	-	1.6

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	624	13	11	345	9	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	678	14	12	375	10	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	692	0	1084	685
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	399	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	903	-	240	448
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	678	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	903	-	237	448
Mov Cap-2 Maneuver	-	-	-	-	237	-
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	348	-	-	903	-
HCM Lane V/C Ratio	0.087	-	-	0.013	-
HCM Control Delay (s)	16.3	-	-	9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	617	0	1	352	1	0	0	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	671	0	1	383	1	0	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	384	0	0	671	0	0	1058	1059	671	1059	1058	383
Stage 1	-	-	-	-	-	-	673	673	-	385	385	-
Stage 2	-	-	-	-	-	-	385	386	-	674	673	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1174	-	-	919	-	-	203	224	456	202	225	664
Stage 1	-	-	-	-	-	-	445	454	-	638	611	-
Stage 2	-	-	-	-	-	-	638	610	-	444	454	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1174	-	-	919	-	-	203	224	456	201	225	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	203	224	-	201	225	-
Stage 1	-	-	-	-	-	-	445	454	-	637	610	-
Stage 2	-	-	-	-	-	-	637	609	-	441	454	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.9	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	456	1174	-	-	919	-	-	-
HCM Lane V/C Ratio	0.005	0.001	-	-	0.001	-	-	-
HCM Control Delay (s)	12.9	8.1	0	-	8.9	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	644	354	2	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	700	385	2	11	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	387	0	-	0	1086	386
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	700	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1171	-	-	-	239	662
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	493	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1171	-	-	-	239	662
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	493	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1171	-	-	-	267
HCM Lane V/C Ratio	-	-	-	-	0.049
HCM Control Delay (s)	0	-	-	-	19.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	628	0	0	336	19	0	0	0	19	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	683	0	0	365	21	0	0	0	21	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	386	0	0	683	0	0	1086	1090	683	1080	1080	376
Stage 1	-	-	-	-	-	-	704	704	-	376	376	-
Stage 2	-	-	-	-	-	-	382	386	-	704	704	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1172	-	-	910	-	-	194	215	449	196	218	670
Stage 1	-	-	-	-	-	-	428	440	-	645	616	-
Stage 2	-	-	-	-	-	-	640	610	-	428	440	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1172	-	-	910	-	-	188	212	449	194	215	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	212	-	194	215	-
Stage 1	-	-	-	-	-	-	422	433	-	635	616	-
Stage 2	-	-	-	-	-	-	628	610	-	422	433	-

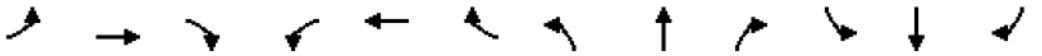
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	20.4
HCM LOS			A	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1172	-	-	910	-	-	268
HCM Lane V/C Ratio	-	0.009	-	-	-	-	-	0.126
HCM Control Delay (s)	0	8.1	0	-	0	-	-	20.4
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	280	445	155	215	250	205	715	100	170	910	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	304	280	168	234	64	223	777	33	185	989	9
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	405	363	196	558	475	254	1210	541	216	1134	508
Arrive On Green	0.04	0.23	0.23	0.11	0.30	0.30	0.14	0.34	0.34	0.12	0.32	0.32
Sat Flow, veh/h	1774	1770	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	54	304	280	168	234	64	223	777	33	185	989	9
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.7	19.5	20.2	11.3	12.3	3.6	15.0	22.5	1.7	12.5	32.1	0.5
Cycle Q Clear(g_c), s	3.7	19.5	20.2	11.3	12.3	3.6	15.0	22.5	1.7	12.5	32.1	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	405	363	196	558	475	254	1210	541	216	1134	508
V/C Ratio(X)	0.77	0.75	0.77	0.86	0.42	0.13	0.88	0.64	0.06	0.86	0.87	0.02
Avail Cap(c_a), veh/h	393	668	598	262	566	481	379	1210	541	379	1191	533
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	43.7	44.0	53.2	34.2	31.1	51.2	33.8	26.9	52.5	39.0	28.3
Incr Delay (d2), s/veh	15.7	2.8	3.5	18.6	0.5	0.1	14.5	1.2	0.0	9.5	7.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	9.9	9.1	6.6	6.4	1.6	8.4	11.2	0.8	6.7	16.8	0.2
LnGrp Delay(d),s/veh	73.6	46.5	47.5	71.9	34.7	31.3	65.7	35.0	27.0	62.0	46.1	28.3
LnGrp LOS	E	D	D	E	C	C	E	C	C	E	D	C
Approach Vol, veh/h		638			466			1033			1183	
Approach Delay, s/veh		49.3			47.6			41.3			48.4	
Approach LOS		D			D			D			D	

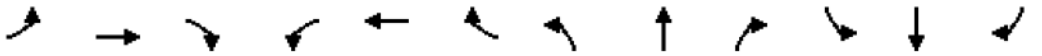
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.8	47.7	19.5	33.9	23.4	45.0	10.8	42.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	41.0	18.0	46.0	26.0	41.0	27.0	37.0
Max Q Clear Time (g_c+I1), s	14.5	24.5	13.3	22.2	17.0	34.1	5.7	14.3
Green Ext Time (p_c), s	0.4	11.1	0.2	5.7	0.4	4.9	0.1	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	46.3
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	215	225	205	15	220	150	215	870	15	350	1545	215
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3350	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3350	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	234	245	223	16	239	163	234	946	16	380	1679	234
RTOR Reduction (vph)	0	0	62	0	0	112	0	0	8	0	0	71
Lane Group Flow (vph)	157	322	161	16	239	51	234	946	8	380	1679	163
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	33.8	33.8	33.8	35.2	35.2	35.2	21.6	114.9	114.9	31.1	124.4	124.4
Effective Green, g (s)	35.8	35.8	35.8	37.2	37.2	37.2	23.6	117.9	115.9	33.1	127.4	125.4
Actuated g/C Ratio	0.15	0.15	0.15	0.16	0.16	0.16	0.10	0.49	0.48	0.14	0.53	0.52
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	240	499	236	274	288	431	337	2498	764	473	2699	827
v/s Ratio Prot	0.10	0.10		0.01	c0.13		0.07	0.19		c0.11	c0.33	
v/s Ratio Perm			c0.10			0.02			0.00			0.10
v/c Ratio	0.65	0.65	0.68	0.06	0.83	0.12	0.69	0.38	0.01	0.80	0.62	0.20
Uniform Delay, d1	96.3	96.1	96.7	86.5	98.3	87.3	104.7	38.2	32.2	100.3	39.4	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.91	1.16
Incremental Delay, d2	8.3	3.9	10.0	0.2	19.5	0.3	6.1	0.4	0.0	9.4	1.1	0.5
Delay (s)	104.6	100.0	106.7	86.7	117.9	87.5	110.8	38.6	32.3	123.1	37.2	36.0
Level of Service	F	F	F	F	F	F	F	D	C	F	D	D
Approach Delay (s)		103.2			104.8			52.6			51.3	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	64.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.2%	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												
Volume (vph)	395	40	135	35	35	25	125	1495	60	75	2630	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1700	1434		1817	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1700	1434		1817	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	429	43	147	38	38	27	136	1625	65	82	2859	413
RTOR Reduction (vph)	0	0	83	0	0	25	0	0	26	0	0	181
Lane Group Flow (vph)	236	236	64	0	76	2	136	1625	39	82	2859	232
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	40.9	40.9	40.9		15.4	15.4	25.1	143.8	143.8	15.9	134.6	134.6
Effective Green, g (s)	40.9	40.9	40.9		15.4	17.4	25.1	145.8	144.8	17.9	136.6	134.6
Actuated g/C Ratio	0.17	0.17	0.17		0.06	0.07	0.10	0.61	0.60	0.07	0.57	0.56
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	286	289	244		116	114	185	3089	790	132	2894	861
v/s Ratio Prot	c0.14	0.14			c0.04		c0.08	0.32		0.05	c0.56	
v/s Ratio Perm			0.04			0.00			0.03			0.15
v/c Ratio	0.83	0.82	0.26		0.66	0.02	0.74	0.53	0.05	0.62	0.99	0.27
Uniform Delay, d1	96.1	95.9	86.5		109.7	103.4	104.2	27.2	19.5	107.8	50.9	27.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	0.89	1.17	2.12	0.97	0.99	1.45
Incremental Delay, d2	18.1	16.9	0.8		12.5	0.1	7.1	0.3	0.0	8.7	14.0	0.8
Delay (s)	114.2	112.8	87.2		122.3	103.4	100.3	32.0	41.3	113.6	64.5	40.3
Level of Service	F	F	F		F	F	F	C	D	F	E	D
Approach Delay (s)		107.3			117.3			37.5			62.7	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	60.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Kapolei Pkwy & Kualakai Pkwy

11/17/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	680	685	5	120	825	520	5	105	15	420	140	465
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	739	745	5	130	897	565	5	114	3	457	152	318
Adj No. of Lanes	2	3	0	2	3	2	1	2	0	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	859	2363	16	208	1343	1176	9	339	9	543	881	1386
Arrive On Green	0.25	0.45	0.45	0.06	0.26	0.26	0.01	0.10	0.10	0.16	0.25	0.25
Sat Flow, veh/h	3442	5212	35	3442	5085	2787	1774	3524	92	3442	3539	2773
Grp Volume(v), veh/h	739	484	266	130	897	565	5	57	60	457	152	318
Grp Sat Flow(s),veh/h/ln	1721	1695	1857	1721	1695	1393	1774	1770	1846	1721	1770	1387
Q Serve(g_s), s	21.2	9.4	9.4	3.8	16.3	15.2	0.3	3.1	3.1	13.3	3.5	6.7
Cycle Q Clear(g_c), s	21.2	9.4	9.4	3.8	16.3	15.2	0.3	3.1	3.1	13.3	3.5	6.7
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	859	1537	842	208	1343	1176	9	170	178	543	881	1386
V/C Ratio(X)	0.86	0.32	0.32	0.63	0.67	0.48	0.54	0.33	0.34	0.84	0.17	0.23
Avail Cap(c_a), veh/h	1265	1537	842	1265	1869	1464	206	651	679	733	1643	1983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	18.0	18.0	47.4	34.0	21.7	51.3	43.6	43.6	42.3	30.5	14.7
Incr Delay (d2), s/veh	4.2	0.1	0.2	3.1	0.6	0.3	42.0	1.1	1.1	6.6	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	4.4	4.8	1.9	7.7	5.8	0.2	1.6	1.7	6.8	1.7	2.6
LnGrp Delay(d),s/veh	41.3	18.1	18.2	50.5	34.6	22.0	93.3	44.8	44.7	48.9	30.6	14.8
LnGrp LOS	D	B	B	D	C	C	F	D	D	D	C	B
Approach Vol, veh/h		1489			1592			122			927	
Approach Delay, s/veh		29.6			31.4			46.7			34.2	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.3	16.0	12.2	52.9	6.5	31.7	31.8	33.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	22.0	38.0	38.0	38.0	12.0	48.0	38.0	38.0
Max Q Clear Time (g_c+I1), s	15.3	5.1	5.8	11.4	2.3	8.7	23.2	18.3
Green Ext Time (p_c), s	1.0	3.1	0.4	16.6	0.0	3.2	2.6	9.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.8
HCM 2010 LOS	C

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	75	20	315	170	410	60	1130	475	275	580	50
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	82	15	342	185	180	65	1228	465	299	630	47
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	308	495	90	425	601	511	84	1267	478	331	2355	175
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.05	0.35	0.35	0.19	0.49	0.49
Sat Flow, veh/h	1013	1533	280	1293	1863	1583	1774	3638	1373	1774	4832	358
Grp Volume(v), veh/h	33	0	97	342	185	180	65	1144	549	299	441	236
Grp Sat Flow(s),veh/h/ln	1013	0	1813	1293	1863	1583	1774	1695	1620	1774	1695	1800
Q Serve(g_s), s	3.2	0.0	4.8	32.5	9.4	11.0	4.6	41.9	42.1	20.8	9.7	9.8
Cycle Q Clear(g_c), s	12.6	0.0	4.8	37.3	9.4	11.0	4.6	41.9	42.1	20.8	9.7	9.8
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.85	1.00		0.20
Lane Grp Cap(c), veh/h	308	0	585	425	601	511	84	1181	565	331	1653	877
V/C Ratio(X)	0.11	0.00	0.17	0.81	0.31	0.35	0.77	0.97	0.97	0.90	0.27	0.27
Avail Cap(c_a), veh/h	326	0	617	448	634	539	239	1181	565	492	1664	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.9	0.0	30.6	44.0	32.2	32.7	59.5	40.5	40.5	50.3	19.1	19.1
Incr Delay (d2), s/veh	0.2	0.0	0.1	9.9	0.3	0.4	14.0	19.1	30.8	14.8	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	2.4	12.8	4.9	4.8	2.6	22.7	23.6	11.6	4.5	4.9
LnGrp Delay(d),s/veh	37.1	0.0	30.7	53.9	32.5	33.1	73.5	59.5	71.3	65.0	19.2	19.3
LnGrp LOS	D		C	D	C	C	E	E	E	E	B	B
Approach Vol, veh/h		130			707			1758			976	
Approach Delay, s/veh		32.3			43.0			63.7			33.2	
Approach LOS		C			D			E			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	29.5	50.0		46.8	12.0	67.6		46.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	35.0	44.0		43.0	17.0	62.0		43.0
Max Q Clear Time (g_c+I1), s	22.8	44.1		39.3	6.6	11.8		14.6
Green Ext Time (p_c), s	0.7	0.0		1.4	0.1	30.4		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.1
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	7.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	5	5	215	5	5	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	234	5	5	103

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	481	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	473	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1608	-	544	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	627	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1608	-	465	1074
Mov Cap-2 Maneuver	-	-	-	-	465	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	535	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.4	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1008	-	-	1608	-
HCM Lane V/C Ratio	0.108	-	-	0.145	-
HCM Control Delay (s)	9	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.5	-

Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	80	310	0	0	780	20	0	0	0	15	0	195
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	337	0	0	848	22	0	0	0	16	0	212

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	870	0	0	337	0	0	1476	1381	337	1370	1370	859
Stage 1	-	-	-	-	-	-	511	511	-	859	859	-
Stage 2	-	-	-	-	-	-	965	870	-	511	511	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	775	-	-	1222	-	-	104	144	705	124	146	356
Stage 1	-	-	-	-	-	-	545	537	-	351	373	-
Stage 2	-	-	-	-	-	-	306	369	-	545	537	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	775	-	-	1222	-	-	38	124	705	111	126	356
Mov Cap-2 Maneuver	-	-	-	-	-	-	38	124	-	111	126	-
Stage 1	-	-	-	-	-	-	470	463	-	303	373	-
Stage 2	-	-	-	-	-	-	124	369	-	470	463	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	0	43.8
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	775	-	-	1222	-	-	308
HCM Lane V/C Ratio	-	0.112	-	-	-	-	-	0.741
HCM Control Delay (s)	0	10.2	0	-	0	-	-	43.8
HCM Lane LOS	A	B	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	5.5

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	305	10	25	815	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	332	11	27	886	11	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	342	0	1277	337
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	940	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1217	-	184	705
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	380	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1217	-	180	705
Mov Cap-2 Maneuver	-	-	-	-	180	-
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	372	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	21.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	239	-	-	1217	-
HCM Lane V/C Ratio	0.068	-	-	0.022	-
HCM Control Delay (s)	21.2	-	-	8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	315	0	0	865	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	342	0	0	940	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	940	0	0	342	0	0	1282	1282	342	1282	1282	940
Stage 1	-	-	-	-	-	-	342	342	-	940	940	-
Stage 2	-	-	-	-	-	-	940	940	-	342	342	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	729	-	-	1217	-	-	142	165	701	142	165	320
Stage 1	-	-	-	-	-	-	673	638	-	316	342	-
Stage 2	-	-	-	-	-	-	316	342	-	673	638	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	729	-	-	1217	-	-	142	165	701	142	165	320
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	165	-	142	165	-
Stage 1	-	-	-	-	-	-	673	638	-	316	342	-
Stage 2	-	-	-	-	-	-	316	342	-	673	638	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	729	-	-	1217	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	310	850	5	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	337	924	5	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	929	0	-	0	1264	927
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	337	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	736	-	-	-	187	325
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	723	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	736	-	-	-	187	325
Mov Cap-2 Maneuver	-	-	-	-	187	-
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	21.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	736	-	-	-	237
HCM Lane V/C Ratio	-	-	-	-	0.092
HCM Control Delay (s)	0	-	-	-	21.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

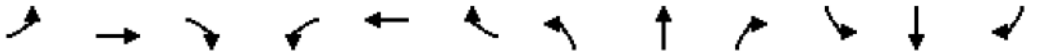
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	300	0	0	840	15	0	0	0	5	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	326	0	0	913	16	0	0	0	5	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	929	0	0	326	0	0	1264	1266	326	1258	1258	921
Stage 1	-	-	-	-	-	-	337	337	-	921	921	-
Stage 2	-	-	-	-	-	-	927	929	-	337	337	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	736	-	-	1234	-	-	146	169	715	148	171	328
Stage 1	-	-	-	-	-	-	677	641	-	324	349	-
Stage 2	-	-	-	-	-	-	322	346	-	677	641	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	736	-	-	1234	-	-	140	168	715	147	170	328
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	168	-	147	170	-
Stage 1	-	-	-	-	-	-	672	636	-	321	349	-
Stage 2	-	-	-	-	-	-	311	346	-	672	636	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	21.6
HCM LOS			A	C

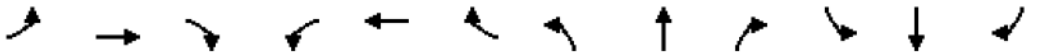
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	736	-	-	1234	-	-	233
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.07
HCM Control Delay (s)	0	9.9	0	-	0	-	-	21.6
HCM Lane LOS	A	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	130	190	100	335	290	470	1265	245	175	805	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	141	18	109	364	80	511	1375	174	190	875	16
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	493	62	132	410	348	497	1687	755	214	1124	503
Arrive On Green	0.01	0.16	0.16	0.07	0.22	0.22	0.28	0.48	0.48	0.12	0.32	0.32
Sat Flow, veh/h	1774	3164	398	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	11	78	81	109	364	80	511	1375	174	190	875	16
Grp Sat Flow(s),veh/h/ln	1774	1770	1793	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.9	5.4	5.6	8.4	26.4	5.8	39.0	46.3	9.0	14.7	31.2	1.0
Cycle Q Clear(g_c), s	0.9	5.4	5.6	8.4	26.4	5.8	39.0	46.3	9.0	14.7	31.2	1.0
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	18	276	279	132	410	348	497	1687	755	214	1124	503
V/C Ratio(X)	0.62	0.28	0.29	0.83	0.89	0.23	1.03	0.81	0.23	0.89	0.78	0.03
Avail Cap(c_a), veh/h	166	470	476	166	495	421	497	1687	755	255	1195	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.7	51.9	52.0	63.6	52.6	44.6	50.1	31.2	21.4	60.3	43.1	32.8
Incr Delay (d2), s/veh	30.8	0.6	0.6	23.4	15.6	0.3	47.8	3.2	0.2	26.0	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.7	2.8	5.0	15.3	2.6	25.6	23.3	3.9	8.7	15.8	0.4
LnGrp Delay(d),s/veh	99.4	52.5	52.5	86.9	68.2	44.9	97.9	34.4	21.6	86.3	46.2	32.8
LnGrp LOS	F	D	D	F	E	D	F	C	C	F	D	C
Approach Vol, veh/h		170			553			2060			1081	
Approach Delay, s/veh		55.5			68.5			49.1			53.1	
Approach LOS		E			E			D			D	

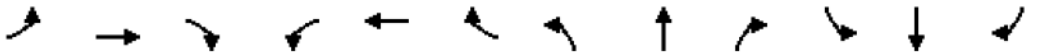
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.8	72.4	16.3	27.7	45.0	50.2	7.4	36.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	66.0	13.0	37.0	39.0	47.0	13.0	37.0
Max Q Clear Time (g_c+I1), s	16.7	48.3	10.4	7.6	41.0	33.2	2.9	28.4
Green Ext Time (p_c), s	0.2	14.5	0.1	3.7	0.0	11.0	0.0	2.3

Intersection Summary	
HCM 2010 Ctrl Delay	53.3
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	335	170	215	60	260	315	205	1460	10	220	1210	160
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3308	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3308	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	185	234	65	283	342	223	1587	11	239	1315	174
RTOR Reduction (vph)	0	0	62	0	0	202	0	0	6	0	0	70
Lane Group Flow (vph)	182	367	172	65	283	140	223	1587	5	239	1315	104
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	35.4	35.4	35.4	41.7	41.7	41.7	20.9	117.0	117.0	20.9	117.0	117.0
Effective Green, g (s)	37.4	37.4	37.4	43.7	43.7	43.7	22.9	120.0	118.0	22.9	120.0	118.0
Actuated g/C Ratio	0.16	0.16	0.16	0.18	0.18	0.18	0.10	0.50	0.49	0.10	0.50	0.49
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	250	515	246	322	339	507	327	2542	778	327	2542	778
v/s Ratio Prot	c0.11	0.11		0.04	c0.15		0.06	c0.31		c0.07	0.26	
v/s Ratio Perm			0.11			0.05			0.00			0.07
v/c Ratio	0.73	0.71	0.70	0.20	0.83	0.28	0.68	0.62	0.01	0.73	0.52	0.13
Uniform Delay, d1	96.5	96.2	96.0	83.3	94.7	84.5	105.0	43.6	31.1	105.6	40.5	33.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.56	3.92
Incremental Delay, d2	12.3	5.7	10.8	0.6	17.7	0.6	5.8	1.2	0.0	7.7	0.7	0.3
Delay (s)	108.7	101.9	106.8	84.0	112.4	85.1	110.8	44.8	31.1	97.7	63.7	130.3
Level of Service	F	F	F	F	F	F	F	D	C	F	E	F
Approach Delay (s)		105.0			96.2			52.8			75.1	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	74.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.1%	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												
Volume (vph)	405	5	125	10	15	15	330	2660	20	80	1565	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.95	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1434		1826	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1434		1826	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	440	5	136	11	16	16	359	2891	22	87	1701	451
RTOR Reduction (vph)	0	0	84	0	0	15	0	0	8	0	0	235
Lane Group Flow (vph)	224	221	53	0	27	1	359	2891	14	87	1701	216
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	39.6	39.6	39.6		7.8	7.8	53.9	153.2	153.2	15.4	114.7	114.7
Effective Green, g (s)	39.6	39.6	39.6		7.8	9.8	53.9	155.2	154.2	17.4	116.7	114.7
Actuated g/C Ratio	0.17	0.17	0.17		0.03	0.04	0.22	0.65	0.64	0.07	0.49	0.48
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	277	278	236		59	64	397	3288	842	128	2472	734
v/s Ratio Prot	c0.13	0.13			c0.01		c0.20	c0.57		0.05	0.33	
v/s Ratio Perm			0.04			0.00			0.01			0.14
v/c Ratio	0.81	0.79	0.22		0.46	0.01	0.90	0.88	0.02	0.68	0.69	0.29
Uniform Delay, d1	96.5	96.3	86.9		114.0	110.4	90.5	34.7	15.5	108.6	47.6	38.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.26	0.62	1.00	1.05	0.99	1.64
Incremental Delay, d2	16.6	15.2	0.7		5.5	0.1	12.4	1.6	0.0	13.1	1.5	1.0
Delay (s)	113.1	111.5	87.5		119.6	110.5	126.8	23.0	15.5	127.5	48.5	63.5
Level of Service	F	F	F		F	F	F	C	B	F	D	E
Approach Delay (s)		106.5			116.2			34.4			54.6	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary
1: Kapolei Pkwy & Kualakai Pkwy

11/17/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	870	770	10	230	450	555	55	370	130	585	370	655
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	946	837	11	250	489	549	60	402	17	636	402	441
Adj No. of Lanes	2	3	0	2	3	2	1	2	0	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1033	2095	28	313	996	1100	78	518	22	685	1080	1683
Arrive On Green	0.30	0.41	0.41	0.09	0.20	0.20	0.04	0.15	0.15	0.20	0.31	0.31
Sat Flow, veh/h	3442	5173	68	3442	5085	2787	1774	3461	146	3442	3539	2776
Grp Volume(v), veh/h	946	548	300	250	489	549	60	205	214	636	402	441
Grp Sat Flow(s),veh/h/ln	1721	1695	1851	1721	1695	1393	1774	1770	1837	1721	1770	1388
Q Serve(g_s), s	39.3	17.0	17.0	10.5	12.7	22.0	5.0	16.5	16.6	26.9	13.2	11.0
Cycle Q Clear(g_c), s	39.3	17.0	17.0	10.5	12.7	22.0	5.0	16.5	16.6	26.9	13.2	11.0
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	1033	1373	750	313	996	1100	78	265	275	685	1080	1683
V/C Ratio(X)	0.92	0.40	0.40	0.80	0.49	0.50	0.77	0.77	0.78	0.93	0.37	0.26
Avail Cap(c_a), veh/h	1232	1373	750	1232	1305	1270	443	538	558	720	1080	1683
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	31.3	31.3	66.0	53.0	33.8	70.1	60.6	60.6	58.3	40.3	13.7
Incr Delay (d2), s/veh	9.7	0.2	0.3	4.7	0.4	0.4	14.8	4.8	4.7	17.8	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.0	8.0	8.8	5.2	6.0	8.5	2.8	8.4	8.8	14.5	6.5	4.2
LnGrp Delay(d),s/veh	59.7	31.5	31.6	70.7	53.4	34.1	84.9	65.3	65.3	76.1	40.6	13.8
LnGrp LOS	E	C	C	E	D	C	F	E	E	E	D	B
Approach Vol, veh/h		1794			1288			479			1479	
Approach Delay, s/veh		46.4			48.5			67.8			47.9	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.5	28.2	19.4	66.0	11.5	51.2	50.4	35.0
Change Period (Y+Rc), s	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	31.0	45.0	53.0	38.0	37.0	39.0	53.0	38.0
Max Q Clear Time (g_c+I1), s	28.9	18.6	12.5	19.0	7.0	15.2	41.3	24.0
Green Ext Time (p_c), s	0.6	2.7	0.9	11.3	0.1	7.7	3.1	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.4
HCM 2010 LOS	D

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	165	75	205	80	325	40	890	130	320	1180	65
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	92	179	67	223	87	79	43	967	123	348	1283	66
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	400	400	150	289	576	490	55	1434	182	378	2457	126
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.03	0.31	0.31	0.21	0.50	0.50
Sat Flow, veh/h	1215	1293	484	1129	1863	1583	1774	4571	580	1774	4953	255
Grp Volume(v), veh/h	92	0	246	223	87	79	43	717	373	348	878	471
Grp Sat Flow(s),veh/h/ln	1215	0	1777	1129	1863	1583	1774	1695	1760	1774	1695	1818
Q Serve(g_s), s	6.5	0.0	12.2	21.7	3.7	4.0	2.6	20.2	20.3	21.1	19.4	19.4
Cycle Q Clear(g_c), s	10.2	0.0	12.2	33.9	3.7	4.0	2.6	20.2	20.3	21.1	19.4	19.4
Prop In Lane	1.00		0.27	1.00		1.00	1.00		0.33	1.00		0.14
Lane Grp Cap(c), veh/h	400	0	550	289	576	490	55	1064	552	378	1681	902
V/C Ratio(X)	0.23	0.00	0.45	0.77	0.15	0.16	0.78	0.67	0.68	0.92	0.52	0.52
Avail Cap(c_a), veh/h	400	0	550	289	576	490	113	1141	593	420	1727	926
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	30.4	44.0	27.5	27.6	52.9	32.8	32.9	42.3	18.8	18.8
Incr Delay (d2), s/veh	0.3	0.0	0.6	12.0	0.1	0.2	21.0	1.4	2.8	24.0	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	6.1	7.7	1.9	1.8	1.6	9.7	10.3	12.9	9.1	9.8
LnGrp Delay(d),s/veh	31.5	0.0	31.0	56.0	27.6	27.7	73.9	34.3	35.7	66.4	19.1	19.3
LnGrp LOS	C		C	E	C	C	E	C	D	E	B	B
Approach Vol, veh/h		338			389			1133			1697	
Approach Delay, s/veh		31.1			43.9			36.2			28.9	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	29.4	40.5		40.0	9.4	60.5		40.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	26.0	37.0		34.0	7.0	56.0		34.0
Max Q Clear Time (g_c+I1), s	23.1	22.3		35.9	4.6	21.4		14.2
Green Ext Time (p_c), s	0.3	12.2		0.0	0.0	23.9		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	33.1
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	8.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	5	5	160	5	10	230
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	174	5	11	250

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	361	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	353	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1608	-	638	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	711	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1608	-	568	1074
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	634	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1036	-	-	1608	-
HCM Lane V/C Ratio	0.252	-	-	0.108	-
HCM Control Delay (s)	9.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	205	705	0	0	425	20	0	0	0	20	0	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	223	766	0	0	462	22	0	0	0	22	0	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	484	0	0	766	0	0	1764	1696	766	1685	1685	473
Stage 1	-	-	-	-	-	-	1212	1212	-	473	473	-
Stage 2	-	-	-	-	-	-	552	484	-	1212	1212	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1079	-	-	847	-	-	66	93	403	75	94	591
Stage 1	-	-	-	-	-	-	222	255	-	572	558	-
Stage 2	-	-	-	-	-	-	518	552	-	222	255	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1079	-	-	847	-	-	35	60	403	54	60	591
Mov Cap-2 Maneuver	-	-	-	-	-	-	35	60	-	54	60	-
Stage 1	-	-	-	-	-	-	142	163	-	366	558	-
Stage 2	-	-	-	-	-	-	380	552	-	142	163	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	0	41.9
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1079	-	-	847	-	-	268
HCM Lane V/C Ratio	-	0.207	-	-	-	-	-	0.669
HCM Control Delay (s)	0	9.2	0	-	0	-	-	41.9
HCM Lane LOS	A	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.8	-	-	0	-	-	4.4

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	750	15	15	440	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	815	16	16	478	11	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	832	0	1334	823
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	511	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	801	-	170	373
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	801	-	167	373
Mov Cap-2 Maneuver	-	-	-	-	167	-
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	590	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	20.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	276	-	-	801	-
HCM Lane V/C Ratio	0.138	-	-	0.02	-
HCM Control Delay (s)	20.1	-	-	9.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	745	0	0	445	5	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	810	0	0	484	5	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	810	0	0	1307	1310	810	1307	1307	486
Stage 1	-	-	-	-	-	-	821	821	-	486	486	-
Stage 2	-	-	-	-	-	-	486	489	-	821	821	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1074	-	-	816	-	-	137	159	380	137	160	581
Stage 1	-	-	-	-	-	-	369	389	-	563	551	-
Stage 2	-	-	-	-	-	-	563	549	-	369	389	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1074	-	-	816	-	-	136	158	380	136	159	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	136	158	-	136	159	-
Stage 1	-	-	-	-	-	-	366	386	-	558	551	-
Stage 2	-	-	-	-	-	-	563	549	-	366	386	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1074	-	-	816	-	-	-
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	-
HCM Control Delay (s)	0	8.4	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	770	450	5	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	837	489	5	11	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	495	0	-	0	1329	492
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	837	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1069	-	-	-	171	577
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	425	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1069	-	-	-	171	577
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	425	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	22.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1069	-	-	-	223
HCM Lane V/C Ratio	-	-	-	-	0.073
HCM Control Delay (s)	0	-	-	-	22.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

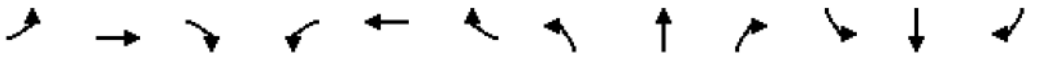
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	755	0	0	430	20	0	0	0	20	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	821	0	0	467	22	0	0	0	22	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	821	0	0	1328	1331	821	1320	1320	478
Stage 1	-	-	-	-	-	-	842	842	-	478	478	-
Stage 2	-	-	-	-	-	-	486	489	-	842	842	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1074	-	-	808	-	-	132	154	374	134	157	587
Stage 1	-	-	-	-	-	-	359	380	-	568	556	-
Stage 2	-	-	-	-	-	-	563	549	-	359	380	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1074	-	-	808	-	-	126	151	374	132	154	587
Mov Cap-2 Maneuver	-	-	-	-	-	-	126	151	-	132	154	-
Stage 1	-	-	-	-	-	-	352	373	-	557	556	-
Stage 2	-	-	-	-	-	-	547	549	-	352	373	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	27.5
HCM LOS			A	D

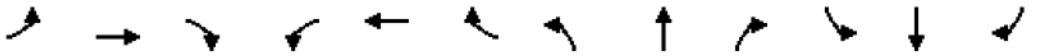
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1074	-	-	808	-	-	198
HCM Lane V/C Ratio	-	0.01	-	-	-	-	-	0.192
HCM Control Delay (s)	0	8.4	0	-	0	-	-	27.5
HCM Lane LOS	A	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	290	465	200	220	275	215	785	110	195	975	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	315	289	217	239	77	234	853	29	212	1060	8
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	388	347	241	587	499	262	1149	514	241	1106	495
Arrive On Green	0.04	0.22	0.22	0.14	0.32	0.32	0.15	0.32	0.32	0.14	0.31	0.31
Sat Flow, veh/h	1774	1770	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	54	315	289	217	239	77	234	853	29	212	1060	8
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.9	22.0	22.7	15.6	13.1	4.5	16.8	27.9	1.6	15.2	38.2	0.5
Cycle Q Clear(g_c), s	3.9	22.0	22.7	15.6	13.1	4.5	16.8	27.9	1.6	15.2	38.2	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	388	347	241	587	499	262	1149	514	241	1106	495
V/C Ratio(X)	0.77	0.81	0.83	0.90	0.41	0.15	0.89	0.74	0.06	0.88	0.96	0.02
Avail Cap(c_a), veh/h	369	627	561	246	587	499	355	1149	514	355	1117	500
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.8	48.2	48.5	55.3	34.9	32.0	54.4	39.0	30.2	55.1	43.8	30.9
Incr Delay (d2), s/veh	15.8	4.2	5.8	32.0	0.5	0.1	19.0	2.6	0.0	15.8	17.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	11.2	10.4	9.8	6.8	2.0	9.6	14.0	0.7	8.5	21.4	0.2
LnGrp Delay(d),s/veh	77.6	52.4	54.2	87.3	35.4	32.2	73.4	41.7	30.2	70.9	61.6	30.9
LnGrp LOS	E	D	D	F	D	C	E	D	C	E	E	C
Approach Vol, veh/h		658			533			1116			1280	
Approach Delay, s/veh		55.3			56.0			48.0			62.9	
Approach LOS		E			E			D			E	

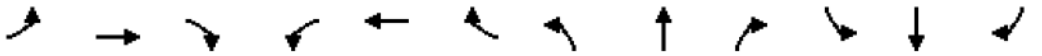
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	48.2	23.7	34.5	25.2	46.6	11.2	47.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	41.0	18.0	46.0	26.0	41.0	27.0	37.0
Max Q Clear Time (g_c+I1), s	17.2	29.9	17.6	24.7	18.8	40.2	5.9	15.1
Green Ext Time (p_c), s	0.4	8.6	0.0	3.8	0.4	0.4	0.1	5.8

Intersection Summary	
HCM 2010 Ctrl Delay	55.9
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	235	245	220	15	275	185	240	1065	15	360	1775	220
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3349	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3349	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	255	266	239	16	299	201	261	1158	16	391	1929	239
RTOR Reduction (vph)	0	0	62	0	0	107	0	0	9	0	0	68
Lane Group Flow (vph)	168	353	177	16	299	94	261	1158	7	391	1929	171
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	35.6	35.6	35.6	41.4	41.4	41.4	23.5	106.4	106.4	31.6	114.5	114.5
Effective Green, g (s)	37.6	37.6	37.6	43.4	43.4	43.4	25.5	109.4	107.4	33.6	117.5	115.5
Actuated g/C Ratio	0.16	0.16	0.16	0.18	0.18	0.18	0.11	0.46	0.45	0.14	0.49	0.48
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	252	524	248	320	336	503	364	2317	708	480	2489	761
v/s Ratio Prot	0.10	0.11		0.01	c0.16		0.08	0.23		c0.11	c0.38	
v/s Ratio Perm			c0.11			0.03			0.00			0.11
v/c Ratio	0.67	0.67	0.72	0.05	0.89	0.19	0.72	0.50	0.01	0.81	0.78	0.22
Uniform Delay, d1	95.3	95.4	96.1	81.3	96.0	83.3	103.8	46.0	36.8	100.2	50.4	36.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.16	0.89	1.05
Incremental Delay, d2	8.5	4.4	11.6	0.1	25.2	0.4	6.6	0.8	0.0	10.1	2.4	0.7
Delay (s)	103.8	99.8	107.7	81.4	121.1	83.7	110.4	46.8	36.8	125.8	47.4	38.8
Level of Service	F	F	F	F	F	F	F	D	D	F	D	D
Approach Delay (s)		103.2			105.3			58.2			58.6	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	69.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.0%	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												
Volume (vph)	380	40	125	35	35	30	130	1740	65	80	2830	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1701	1434		1817	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1701	1434		1817	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	43	136	38	38	33	141	1891	71	87	3076	418
RTOR Reduction (vph)	0	0	83	0	0	31	0	0	27	0	0	183
Lane Group Flow (vph)	227	229	53	0	76	2	141	1891	44	87	3076	235
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	39.9	39.9	39.9		15.4	15.4	25.6	144.3	144.3	16.4	135.1	135.1
Effective Green, g (s)	39.9	39.9	39.9		15.4	17.4	25.6	146.3	145.3	18.4	137.1	135.1
Actuated g/C Ratio	0.17	0.17	0.17		0.06	0.07	0.11	0.61	0.61	0.08	0.57	0.56
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	279	282	238		116	114	188	3099	793	135	2904	864
v/s Ratio Prot	c0.14	0.13			c0.04		c0.08	0.37		0.05	c0.60	
v/s Ratio Perm			0.04			0.00			0.03			0.15
v/c Ratio	0.81	0.81	0.22		0.66	0.02	0.75	0.61	0.06	0.64	1.06	0.27
Uniform Delay, d1	96.5	96.4	86.6		109.7	103.4	104.1	29.1	19.3	107.6	51.5	27.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	0.88	1.18	2.11	0.98	0.99	1.40
Incremental Delay, d2	17.2	16.9	0.6		12.5	0.1	7.6	0.4	0.1	10.0	35.0	0.8
Delay (s)	113.6	113.3	87.2		122.3	103.5	98.8	34.6	40.8	115.2	86.0	38.6
Level of Service	F	F	F		F	F	F	C	D	F	F	D
Approach Delay (s)		107.4			116.6			39.1			81.2	
Approach LOS		F			F			D			F	

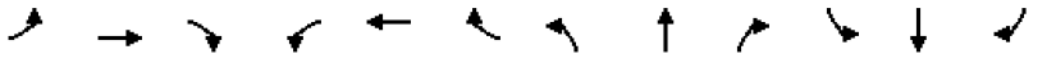
Intersection Summary			
HCM 2000 Control Delay	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	103.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	75	20	315	170	410	60	1130	475	275	580	50
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	82	14	342	185	125	65	1228	464	299	630	46
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	515	88	447	618	525	84	1428	538	386	2211	160
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.05	0.39	0.39	0.11	0.46	0.46
Sat Flow, veh/h	1065	1551	265	1294	1863	1583	1774	3640	1371	3442	4840	351
Grp Volume(v), veh/h	33	0	96	342	185	125	65	1144	548	299	440	236
Grp Sat Flow(s),veh/h/ln	1065	0	1816	1294	1863	1583	1774	1695	1621	1721	1695	1801
Q Serve(g_s), s	2.6	0.0	4.1	27.8	8.1	6.3	4.0	34.0	34.1	9.3	8.9	9.0
Cycle Q Clear(g_c), s	10.7	0.0	4.1	31.9	8.1	6.3	4.0	34.0	34.1	9.3	8.9	9.0
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.85	1.00		0.19
Lane Grp Cap(c), veh/h	340	0	602	447	618	525	84	1330	636	386	1549	823
V/C Ratio(X)	0.10	0.00	0.16	0.77	0.30	0.24	0.77	0.86	0.86	0.78	0.28	0.29
Avail Cap(c_a), veh/h	404	0	711	524	729	620	275	1358	649	1097	1914	1017
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.2	0.0	25.9	37.2	27.2	26.6	51.7	30.6	30.6	47.4	18.6	18.6
Incr Delay (d2), s/veh	0.1	0.0	0.1	5.7	0.3	0.2	13.6	5.7	11.4	3.4	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	2.1	10.6	4.2	2.8	2.3	16.9	17.2	4.6	4.2	4.5
LnGrp Delay(d),s/veh	31.3	0.0	26.0	42.8	27.5	26.9	65.3	36.3	42.0	50.8	18.7	18.8
LnGrp LOS	C		C	D	C	C	E	D	D	D	B	B
Approach Vol, veh/h		129			652			1757			975	
Approach Delay, s/veh		27.4			35.4			39.2			28.6	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.3	49.1		42.4	11.2	56.2		42.4
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	35.0	44.0		43.0	17.0	62.0		43.0
Max Q Clear Time (g_c+I1), s	11.3	36.1		33.9	6.0	11.0		12.7
Green Ext Time (p_c), s	1.0	7.0		2.5	0.1	30.6		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	35.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	130	190	100	335	290	470	1265	245	175	805	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	141	23	109	364	58	511	1375	162	190	875	19
Adj No. of Lanes	1	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	305	259	135	428	363	594	1506	674	219	1332	596
Arrive On Green	0.01	0.16	0.16	0.08	0.23	0.23	0.17	0.43	0.43	0.12	0.38	0.38
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	11	141	23	109	364	58	511	1375	162	190	875	19
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.7	7.8	1.4	6.9	21.3	3.3	16.4	41.5	7.4	12.0	23.3	0.9
Cycle Q Clear(g_c), s	0.7	7.8	1.4	6.9	21.3	3.3	16.4	41.5	7.4	12.0	23.3	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	18	305	259	135	428	363	594	1506	674	219	1332	596
V/C Ratio(X)	0.60	0.46	0.09	0.81	0.85	0.16	0.86	0.91	0.24	0.87	0.66	0.03
Avail Cap(c_a), veh/h	187	606	515	187	606	515	787	1556	696	265	1332	596
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	43.0	40.3	51.7	41.9	35.0	45.7	30.7	20.9	48.9	29.4	22.4
Incr Delay (d2), s/veh	27.7	1.1	0.1	16.2	8.0	0.2	7.5	8.5	0.2	21.6	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.1	0.6	4.0	11.9	1.5	8.4	22.0	3.3	7.2	11.5	0.4
LnGrp Delay(d),s/veh	83.7	44.1	40.5	67.9	50.0	35.2	53.2	39.2	21.1	70.5	30.5	22.4
LnGrp LOS	F	D	D	E	D	D	D	D	C	E	C	C
Approach Vol, veh/h		175			531			2048			1084	
Approach Delay, s/veh		46.1			52.1			41.2			37.4	
Approach LOS		D			D			D			D	

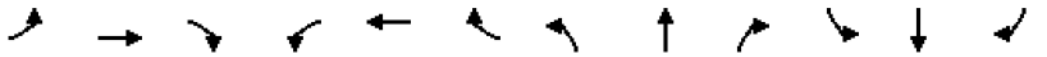
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.1	54.4	14.7	24.6	25.6	48.8	7.2	32.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	50.0	12.0	37.0	26.0	41.0	12.0	37.0
Max Q Clear Time (g_c+I1), s	14.0	43.5	8.9	9.8	18.4	25.3	2.7	23.3
Green Ext Time (p_c), s	0.1	4.9	0.1	3.5	1.2	13.1	0.0	2.8

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	165	75	205	80	325	40	890	130	320	1180	65
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	92	179	69	223	87	88	43	967	129	348	1283	67
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	458	449	173	351	652	555	55	1503	200	453	2136	112
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.03	0.33	0.33	0.13	0.43	0.43
Sat Flow, veh/h	1205	1282	494	1127	1863	1583	1774	4542	604	3442	4949	258
Grp Volume(v), veh/h	92	0	248	223	87	88	43	721	375	348	879	471
Grp Sat Flow(s),veh/h/ln	1205	0	1776	1127	1863	1583	1774	1695	1756	1721	1695	1817
Q Serve(g_s), s	5.4	0.0	10.1	17.9	3.1	3.7	2.3	17.4	17.5	9.4	19.1	19.1
Cycle Q Clear(g_c), s	8.5	0.0	10.1	28.1	3.1	3.7	2.3	17.4	17.5	9.4	19.1	19.1
Prop In Lane	1.00		0.28	1.00		1.00	1.00		0.34	1.00		0.14
Lane Grp Cap(c), veh/h	458	0	622	351	652	555	55	1122	581	453	1463	784
V/C Ratio(X)	0.20	0.00	0.40	0.64	0.13	0.16	0.78	0.64	0.65	0.77	0.60	0.60
Avail Cap(c_a), veh/h	651	0	905	530	949	807	369	1122	581	1575	1869	1002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	0.0	23.6	34.2	21.3	21.5	46.3	27.3	27.4	40.3	21.0	21.0
Incr Delay (d2), s/veh	0.2	0.0	0.4	1.9	0.1	0.1	20.8	1.3	2.5	2.8	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	5.0	5.8	1.6	1.6	1.5	8.3	8.8	4.6	9.0	9.7
LnGrp Delay(d),s/veh	24.4	0.0	24.0	36.1	21.4	21.6	67.0	28.6	29.8	43.1	21.4	21.7
LnGrp LOS	C		C	D	C	C	E	C	C	D	C	C
Approach Vol, veh/h		340			398			1139			1698	
Approach Delay, s/veh		24.1			29.7			30.5			25.9	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.7	37.8		39.7	9.0	47.5		39.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	44.0	29.0		49.0	20.0	53.0		49.0
Max Q Clear Time (g_c+I1), s	11.4	19.5		30.1	4.3	21.1		12.1
Green Ext Time (p_c), s	1.3	8.3		3.6	0.1	20.4		4.1

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	290	465	200	220	275	215	785	110	195	975	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	315	229	217	239	78	234	853	28	212	1060	9
Adj No. of Lanes	1	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	384	326	247	569	484	302	1144	512	244	1319	590
Arrive On Green	0.04	0.21	0.21	0.14	0.31	0.31	0.09	0.32	0.32	0.14	0.37	0.37
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	54	315	229	217	239	78	234	853	28	212	1060	9
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.7	20.0	16.6	14.8	12.6	4.4	8.2	26.6	1.5	14.5	33.2	0.4
Cycle Q Clear(g_c), s	3.7	20.0	16.6	14.8	12.6	4.4	8.2	26.6	1.5	14.5	33.2	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	384	326	247	569	484	302	1144	512	244	1319	590
V/C Ratio(X)	0.77	0.82	0.70	0.88	0.42	0.16	0.77	0.75	0.05	0.87	0.80	0.02
Avail Cap(c_a), veh/h	359	557	474	359	569	484	668	1145	512	488	1431	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.8	46.9	45.5	52.2	34.2	31.4	55.2	37.3	28.8	52.2	34.7	24.5
Incr Delay (d2), s/veh	15.8	6.3	2.7	15.7	0.5	0.2	4.2	2.7	0.0	9.2	3.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	10.9	7.5	8.4	6.6	2.0	4.1	13.3	0.7	7.7	16.8	0.2
LnGrp Delay(d),s/veh	74.6	53.2	48.3	67.9	34.7	31.5	59.4	40.0	28.9	61.4	37.9	24.5
LnGrp LOS	E	D	D	E	C	C	E	D	C	E	D	C
Approach Vol, veh/h		598			534			1115			1281	
Approach Delay, s/veh		53.2			47.7			43.8			41.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	45.9	23.2	31.5	16.9	52.1	10.9	43.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	34.0	40.0	25.0	37.0	24.0	50.0	25.0	37.0
Max Q Clear Time (g_c+I1), s	16.5	28.6	16.8	22.0	10.2	35.2	5.7	14.6
Green Ext Time (p_c), s	0.5	8.8	0.4	3.5	0.6	10.9	0.1	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	45.2
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
1: Kapolei Pkwy & Kualakai Pkwy

11/25/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	625	530	5	120	705	475	5	85	15	415	120	430
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	679	576	5	130	766	516	5	92	3	451	130	278
Adj No. of Lanes	2	3	0	2	3	2	1	2	0	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	808	2280	20	214	1352	1184	9	315	10	547	863	1330
Arrive On Green	0.23	0.44	0.44	0.06	0.27	0.27	0.01	0.09	0.09	0.16	0.24	0.24
Sat Flow, veh/h	3442	5200	45	3442	5085	2787	1774	3499	114	3442	3539	2773
Grp Volume(v), veh/h	679	375	206	130	766	516	5	46	49	451	130	278
Grp Sat Flow(s),veh/h/ln	1721	1695	1855	1721	1695	1393	1774	1770	1843	1721	1770	1386
Q Serve(g_s), s	18.0	6.7	6.7	3.5	12.5	12.5	0.3	2.3	2.4	12.2	2.8	5.6
Cycle Q Clear(g_c), s	18.0	6.7	6.7	3.5	12.5	12.5	0.3	2.3	2.4	12.2	2.8	5.6
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	808	1486	813	214	1352	1184	9	160	166	547	863	1330
V/C Ratio(X)	0.84	0.25	0.25	0.61	0.57	0.44	0.54	0.29	0.29	0.82	0.15	0.21
Avail Cap(c_a), veh/h	1364	1486	813	1364	2016	1548	222	702	730	790	1772	2043
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	17.0	17.0	43.8	30.4	19.5	47.6	40.7	40.8	39.0	28.5	14.5
Incr Delay (d2), s/veh	2.5	0.1	0.2	2.8	0.4	0.3	41.5	1.0	1.0	4.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	3.1	3.5	1.8	5.9	4.9	0.2	1.2	1.2	6.1	1.4	2.1
LnGrp Delay(d),s/veh	37.4	17.1	17.2	46.6	30.8	19.7	89.1	41.7	41.7	43.8	28.5	14.6
LnGrp LOS	D	B	B	D	C	B	F	D	D	D	C	B
Approach Vol, veh/h		1260			1412			100			859	
Approach Delay, s/veh		28.1			28.2			44.1			32.0	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.2	14.6	12.0	48.0	6.5	29.4	28.5	31.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	22.0	38.0	38.0	38.0	12.0	48.0	38.0	38.0
Max Q Clear Time (g_c+I1), s	14.2	4.4	5.5	8.7	2.3	7.6	20.0	14.5
Green Ext Time (p_c), s	1.1	2.6	0.4	14.4	0.0	2.7	2.5	11.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.5
HCM 2010 LOS	C

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	70	20	300	175	370	50	980	400	280	530	80
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	33	76	13	326	190	93	54	1065	381	304	576	73
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	314	483	83	419	580	493	70	1290	462	337	2288	286
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.04	0.35	0.35	0.19	0.50	0.50
Sat Flow, veh/h	1092	1551	265	1303	1863	1583	1774	3697	1323	1774	4579	573
Grp Volume(v), veh/h	33	0	89	326	190	93	54	977	469	304	425	224
Grp Sat Flow(s),veh/h/ln	1092	0	1816	1303	1863	1583	1774	1695	1629	1774	1695	1762
Q Serve(g_s), s	2.9	0.0	4.3	29.1	9.4	5.2	3.6	31.7	31.7	20.2	8.6	8.8
Cycle Q Clear(g_c), s	12.3	0.0	4.3	33.4	9.4	5.2	3.6	31.7	31.7	20.2	8.6	8.8
Prop In Lane	1.00		0.15	1.00		1.00	1.00		0.81	1.00		0.33
Lane Grp Cap(c), veh/h	314	0	565	419	580	493	70	1183	569	337	1694	880
V/C Ratio(X)	0.10	0.00	0.16	0.78	0.33	0.19	0.77	0.83	0.83	0.90	0.25	0.25
Avail Cap(c_a), veh/h	364	0	648	478	665	565	250	1238	595	515	1744	906
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	0.0	30.0	42.1	31.8	30.4	57.3	35.9	35.9	47.7	17.2	17.3
Incr Delay (d2), s/veh	0.1	0.0	0.1	7.0	0.3	0.2	16.1	4.5	9.0	13.3	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	2.2	11.3	4.9	2.3	2.1	15.5	15.6	11.1	4.0	4.3
LnGrp Delay(d),s/veh	36.7	0.0	30.2	49.2	32.1	30.5	73.4	40.4	44.9	61.0	17.3	17.4
LnGrp LOS	D		C	D	C	C	E	D	D	E	B	B
Approach Vol, veh/h		122			609			1500			953	
Approach Delay, s/veh		31.9			41.0			43.0			31.3	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.9	48.1		43.5	10.8	66.2		43.5
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	35.0	44.0		43.0	17.0	62.0		43.0
Max Q Clear Time (g_c+I1), s	22.2	33.7		35.4	5.6	10.8		14.3
Green Ext Time (p_c), s	0.7	8.3		2.1	0.1	25.4		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.7
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	0	0	195	5	5	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	212	5	5	98

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	0	0	429	0
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	-	-	583	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	583	-
Mov Cap-2 Maneuver	-	-	-	-	583	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	657	-

Approach	EB	WB	NB
HCM Control Delay, s	0		
HCM LOS			-

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	-
HCM Lane LOS	-	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	70	305	0	0	655	20	0	0	0	15	0	180
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	76	332	0	0	712	22	0	0	0	16	0	196

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	734	0	0	332	0	0	1305	1218	332	1207	1207	723
Stage 1	-	-	-	-	-	-	484	484	-	723	723	-
Stage 2	-	-	-	-	-	-	821	734	-	484	484	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	871	-	-	1227	-	-	137	181	710	160	183	426
Stage 1	-	-	-	-	-	-	564	552	-	417	431	-
Stage 2	-	-	-	-	-	-	369	426	-	564	552	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	871	-	-	1227	-	-	68	162	710	147	163	426
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	162	-	147	163	-
Stage 1	-	-	-	-	-	-	504	493	-	372	431	-
Stage 2	-	-	-	-	-	-	200	426	-	504	493	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.8	0	0	26.7
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	871	-	-	1227	-	-	372
HCM Lane V/C Ratio	-	0.087	-	-	-	-	-	0.57
HCM Control Delay (s)	0	9.5	0	-	0	-	-	26.7
HCM Lane LOS	A	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.3	-	-	0	-	-	3.4

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	300	10	25	705	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	326	11	27	766	11	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	337	0	1153	332
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	821	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1222	-	218	710
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	432	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1222	-	213	710
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	727	-
Stage 2	-	-	-	-	422	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	18.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	278	-	-	1222	-
HCM Lane V/C Ratio	0.059	-	-	0.022	-
HCM Control Delay (s)	18.8	-	-	8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	305	0	0	745	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	332	0	0	810	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	810	0	0	332	0	0	1142	1142	332	1142	1142	810
Stage 1	-	-	-	-	-	-	332	332	-	810	810	-
Stage 2	-	-	-	-	-	-	810	810	-	332	332	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	816	-	-	1227	-	-	177	200	710	177	200	380
Stage 1	-	-	-	-	-	-	681	644	-	374	393	-
Stage 2	-	-	-	-	-	-	374	393	-	681	644	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	816	-	-	1227	-	-	177	200	710	177	200	380
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	200	-	177	200	-
Stage 1	-	-	-	-	-	-	681	644	-	374	393	-
Stage 2	-	-	-	-	-	-	374	393	-	681	644	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	816	-	-	1227	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	300	730	30	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	326	793	33	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	826	0	-	0	1147	810
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	337	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	805	-	-	-	220	380
Stage 1	-	-	-	-	438	-
Stage 2	-	-	-	-	723	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	805	-	-	-	219	380
Mov Cap-2 Maneuver	-	-	-	-	219	-
Stage 1	-	-	-	-	438	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	805	-	-	-	278
HCM Lane V/C Ratio	0.007	-	-	-	0.078
HCM Control Delay (s)	9.5	-	-	-	19
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

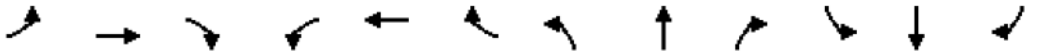
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	290	0	0	750	50	0	0	0	5	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	315	0	0	815	54	0	0	0	5	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	870	0	0	315	0	0	1185	1207	315	1179	1179	842
Stage 1	-	-	-	-	-	-	337	337	-	842	842	-
Stage 2	-	-	-	-	-	-	848	870	-	337	337	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	775	-	-	1245	-	-	166	183	725	167	190	364
Stage 1	-	-	-	-	-	-	677	641	-	359	380	-
Stage 2	-	-	-	-	-	-	356	369	-	677	641	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	775	-	-	1245	-	-	159	180	725	165	187	364
Mov Cap-2 Maneuver	-	-	-	-	-	-	159	180	-	165	187	-
Stage 1	-	-	-	-	-	-	667	632	-	354	380	-
Stage 2	-	-	-	-	-	-	345	369	-	667	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	19.8
HCM LOS			A	C

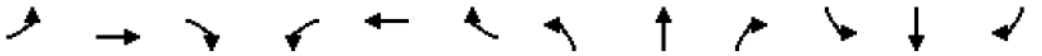
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	775	-	-	1245	-	-	260
HCM Lane V/C Ratio	-	0.014	-	-	-	-	-	0.063
HCM Control Delay (s)	0	9.7	-	-	0	-	-	19.8
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	130	185	95	350	235	435	1015	180	160	720	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	141	19	103	380	77	473	1103	109	174	783	12
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	549	73	129	442	375	501	1580	707	203	984	440
Arrive On Green	0.01	0.17	0.17	0.07	0.24	0.24	0.28	0.45	0.45	0.11	0.28	0.28
Sat Flow, veh/h	1774	3142	417	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	11	78	82	103	380	77	473	1103	109	174	783	12
Grp Sat Flow(s),veh/h/ln	1774	1770	1789	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.8	4.8	4.9	7.1	24.4	4.9	32.6	31.3	5.1	12.0	25.6	0.7
Cycle Q Clear(g_c), s	0.8	4.8	4.9	7.1	24.4	4.9	32.6	31.3	5.1	12.0	25.6	0.7
Prop In Lane	1.00		0.23	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	18	309	313	129	442	375	501	1580	707	203	984	440
V/C Ratio(X)	0.61	0.25	0.26	0.80	0.86	0.21	0.94	0.70	0.15	0.86	0.80	0.03
Avail Cap(c_a), veh/h	242	525	530	313	627	533	554	1580	707	313	1077	482
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.5	44.5	44.5	57.0	45.6	38.2	43.8	27.8	20.6	54.3	41.8	32.8
Incr Delay (d2), s/veh	29.0	0.4	0.4	10.8	8.5	0.3	23.9	1.4	0.1	13.5	3.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.4	2.5	3.9	13.6	2.2	19.2	15.6	2.3	6.7	13.0	0.3
LnGrp Delay(d),s/veh	90.5	44.9	45.0	67.8	54.1	38.5	67.7	29.2	20.7	67.8	45.7	32.8
LnGrp LOS	F	D	D	E	D	D	E	C	C	E	D	C
Approach Vol, veh/h		171			560			1685			969	
Approach Delay, s/veh		47.9			54.5			39.4			49.5	
Approach LOS		D			D			D			D	

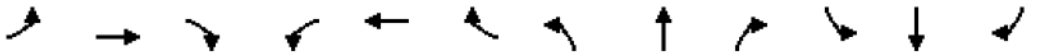
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	61.7	15.1	27.8	41.3	40.7	7.3	35.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	22.0	55.0	22.0	37.0	39.0	38.0	17.0	42.0
Max Q Clear Time (g_c+I1), s	14.0	33.3	9.1	6.9	34.6	27.6	2.8	26.4
Green Ext Time (p_c), s	0.3	14.6	0.2	3.8	0.7	7.1	0.0	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	45.2
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	295	145	185	55	240	285	250	1365	5	185	950	150
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3307	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3307	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	321	158	201	60	261	310	272	1484	5	201	1033	163
RTOR Reduction (vph)	0	0	62	0	0	200	0	0	2	0	0	82
Lane Group Flow (vph)	160	319	139	60	261	110	272	1484	3	201	1033	81
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	33.0	33.0	33.0	39.9	39.9	39.9	23.3	123.0	123.0	19.1	118.8	118.8
Effective Green, g (s)	35.0	35.0	35.0	41.9	41.9	41.9	25.3	126.0	124.0	21.1	121.8	119.8
Actuated g/C Ratio	0.15	0.15	0.15	0.17	0.17	0.17	0.11	0.52	0.52	0.09	0.51	0.50
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	234	482	230	309	325	486	361	2669	817	301	2580	790
v/s Ratio Prot	c0.10	0.10		0.03	c0.14		c0.08	c0.29		0.06	0.20	
v/s Ratio Perm			0.09			0.04			0.00			0.05
v/c Ratio	0.68	0.66	0.60	0.19	0.80	0.23	0.75	0.56	0.00	0.67	0.40	0.10
Uniform Delay, d1	97.2	96.9	96.0	84.6	95.1	85.1	104.3	38.2	28.1	106.1	36.5	31.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.73	1.62	7.45
Incremental Delay, d2	10.2	4.5	6.4	0.6	15.1	0.5	8.6	0.8	0.0	5.0	0.4	0.2
Delay (s)	107.4	101.4	102.4	85.3	110.1	85.6	112.9	39.1	28.1	82.7	59.5	236.8
Level of Service	F	F	F	F	F	F	F	D	C	F	E	F
Approach Delay (s)		103.1			95.7			50.5			83.5	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	75.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	66.5%	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												
Volume (vph)	420	5	135	5	15	15	250	2630	20	75	1275	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.95	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1434		1841	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.95	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1434		1841	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	457	5	147	5	16	16	272	2859	22	82	1386	397
RTOR Reduction (vph)	0	0	83	0	0	15	0	0	8	0	0	191
Lane Group Flow (vph)	233	229	64	0	21	1	272	2859	14	82	1386	206
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	41.3	41.3	41.3		7.1	7.1	43.3	152.9	152.9	14.7	124.3	124.3
Effective Green, g (s)	41.3	41.3	41.3		7.1	9.1	43.3	154.9	153.9	16.7	126.3	124.3
Actuated g/C Ratio	0.17	0.17	0.17		0.03	0.04	0.18	0.65	0.64	0.07	0.53	0.52
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	289	290	246		54	60	319	3281	840	123	2675	795
v/s Ratio Prot	c0.14	0.14			c0.01		c0.15	c0.56		0.05	0.27	
v/s Ratio Perm			0.04			0.00			0.01			0.13
v/c Ratio	0.81	0.79	0.26		0.39	0.01	0.85	0.87	0.02	0.67	0.52	0.26
Uniform Delay, d1	95.5	95.2	86.1		114.3	111.1	95.3	34.5	15.6	108.9	37.0	32.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.22	0.62	1.00	1.06	1.00	1.79
Incremental Delay, d2	15.8	14.0	0.8		4.6	0.1	9.9	1.5	0.0	12.3	0.7	0.8
Delay (s)	111.3	109.2	86.9		118.9	111.2	125.7	22.8	15.6	128.3	37.8	58.3
Level of Service	F	F	F		F	F	F	C	B	F	D	E
Approach Delay (s)		104.6			115.6			31.6			46.1	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	295	795	40	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	321	864	43	5	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	908	0	-	0	1218	886
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	750	-	-	-	199	343
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	727	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	750	-	-	-	198	343
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	23.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	750	-	-	-	198
HCM Lane V/C Ratio	0.007	-	-	-	0.027
HCM Control Delay (s)	9.8	-	-	-	23.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	10	315	670	25	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	342	728	27	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	755	0	-	0	1106	742
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	855	-	-	-	233	416
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	855	-	-	-	230	416
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	694	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	855	-	-	-	-
HCM Lane V/C Ratio	0.013	-	-	-	-
HCM Control Delay (s)	9.3	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	90	0	75	200	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	98	0	82	217	0	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	98	0	478	98
Stage 1	-	-	-	-	98	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1495	-	546	958
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1495	-	516	958
Mov Cap-2 Maneuver	-	-	-	-	516	-
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	653	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	958	-	-	1495	-
HCM Lane V/C Ratio	0.006	-	-	0.055	-
HCM Control Delay (s)	8.8	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	-

HCM 2010 Signalized Intersection Summary
1: Kapolei Pkwy & Kualakai Pkwy

11/25/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	750	650	10	230	415	540	55	345	130	630	350	655
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	815	707	11	250	451	533	60	375	18	685	380	447
Adj No. of Lanes	2	3	0	2	3	2	1	2	0	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	896	1876	29	318	995	1153	78	523	25	751	1154	1631
Arrive On Green	0.26	0.36	0.36	0.09	0.20	0.20	0.04	0.15	0.15	0.22	0.33	0.33
Sat Flow, veh/h	3442	5159	80	3442	5085	2787	1774	3439	165	3442	3539	2776
Grp Volume(v), veh/h	815	464	254	250	451	533	60	192	201	685	380	447
Grp Sat Flow(s),veh/h/ln	1721	1695	1849	1721	1695	1393	1774	1770	1834	1721	1770	1388
Q Serve(g_s), s	30.4	13.4	13.4	9.4	10.4	18.4	4.4	13.7	13.8	25.7	10.7	10.5
Cycle Q Clear(g_c), s	30.4	13.4	13.4	9.4	10.4	18.4	4.4	13.7	13.8	25.7	10.7	10.5
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	896	1233	672	318	995	1153	78	269	279	751	1154	1631
V/C Ratio(X)	0.91	0.38	0.38	0.78	0.45	0.46	0.77	0.72	0.72	0.91	0.33	0.27
Avail Cap(c_a), veh/h	1039	1233	672	935	1458	1407	509	628	650	831	1154	1631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.5	31.1	31.1	58.8	47.0	28.1	62.7	53.4	53.5	50.6	33.7	13.5
Incr Delay (d2), s/veh	10.6	0.2	0.4	4.3	0.3	0.3	14.3	3.5	3.5	13.5	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.8	6.3	6.9	4.7	4.9	7.1	2.5	6.9	7.3	13.7	5.3	4.0
LnGrp Delay(d),s/veh	58.1	31.3	31.4	63.1	47.4	28.4	77.0	57.0	57.0	64.0	33.9	13.6
LnGrp LOS	E	C	C	E	D	C	E	E	E	E	C	B
Approach Vol, veh/h		1533			1234			453			1512	
Approach Delay, s/veh		45.5			42.4			59.6			41.5	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.9	26.2	18.3	54.2	10.8	49.2	40.5	31.9
Change Period (Y+Rc), s	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	32.0	47.0	36.0	42.0	38.0	41.0	40.0	38.0
Max Q Clear Time (g_c+I1), s	27.7	15.8	11.4	15.4	6.4	12.7	32.4	20.4
Green Ext Time (p_c), s	1.2	3.3	0.8	12.0	0.1	7.8	2.1	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	44.8
HCM 2010 LOS	D

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	170	65	180	75	295	35	810	120	320	1100	55
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	114	185	59	196	82	69	38	880	116	348	1196	57
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	434	440	140	319	606	515	48	1249	164	391	2327	111
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.03	0.27	0.27	0.22	0.47	0.47
Sat Flow, veh/h	1231	1355	432	1131	1863	1583	1774	4550	597	1774	4974	237
Grp Volume(v), veh/h	114	0	244	196	82	69	38	655	341	348	815	438
Grp Sat Flow(s),veh/h/ln	1231	0	1787	1131	1863	1583	1774	1695	1757	1774	1695	1821
Q Serve(g_s), s	7.2	0.0	10.7	16.4	3.1	3.1	2.1	17.4	17.5	19.0	16.9	16.9
Cycle Q Clear(g_c), s	10.3	0.0	10.7	27.1	3.1	3.1	2.1	17.4	17.5	19.0	16.9	16.9
Prop In Lane	1.00		0.24	1.00		1.00	1.00		0.34	1.00		0.13
Lane Grp Cap(c), veh/h	434	0	581	319	606	515	48	930	482	391	1586	852
V/C Ratio(X)	0.26	0.00	0.42	0.61	0.14	0.13	0.79	0.70	0.71	0.89	0.51	0.51
Avail Cap(c_a), veh/h	636	0	874	505	912	775	354	982	509	780	1795	964
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	26.4	37.0	23.8	23.8	48.4	32.7	32.7	37.8	18.7	18.7
Incr Delay (d2), s/veh	0.3	0.0	0.5	1.9	0.1	0.1	23.8	2.2	4.2	7.0	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	5.4	5.3	1.6	1.4	1.4	8.4	9.0	10.0	7.9	8.5
LnGrp Delay(d),s/veh	27.8	0.0	26.9	38.9	23.9	23.9	72.2	34.8	36.9	44.8	18.9	19.2
LnGrp LOS	C		C	D	C	C	E	C	D	D	B	B
Approach Vol, veh/h		358			347			1034			1601	
Approach Delay, s/veh		27.2			32.4			36.9			24.6	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.1	33.5		38.6	8.7	52.8		38.6
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	44.0	29.0		49.0	20.0	53.0		49.0
Max Q Clear Time (g_c+I1), s	21.0	19.5		29.1	4.1	18.9		12.7
Green Ext Time (p_c), s	1.0	8.0		3.5	0.0	21.7		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	29.5
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	8.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	5	5	145	5	10	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	158	5	11	228

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	329	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	321	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1608	-	665	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	735	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1608	-	599	1074
Mov Cap-2 Maneuver	-	-	-	-	599	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	662	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.2	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1037	-	-	1608	-
HCM Lane V/C Ratio	0.231	-	-	0.098	-
HCM Control Delay (s)	9.5	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.3	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	185	680	0	0	420	20	0	0	0	20	0	135
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	201	739	0	0	457	22	0	0	0	22	0	147

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	478	0	0	739	0	0	1682	1619	739	1608	1608	467
Stage 1	-	-	-	-	-	-	1141	1141	-	467	467	-
Stage 2	-	-	-	-	-	-	541	478	-	1141	1141	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1084	-	-	867	-	-	75	103	417	84	105	596
Stage 1	-	-	-	-	-	-	244	275	-	576	562	-
Stage 2	-	-	-	-	-	-	525	556	-	244	275	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1084	-	-	867	-	-	43	71	417	63	72	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	71	-	63	72	-
Stage 1	-	-	-	-	-	-	167	188	-	395	562	-
Stage 2	-	-	-	-	-	-	396	556	-	167	188	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	0	34.4
HCM LOS			A	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1084	-	-	867	-	-	285
HCM Lane V/C Ratio	-	0.186	-	-	-	-	-	0.591
HCM Control Delay (s)	0	9.1	0	-	0	-	-	34.4
HCM Lane LOS	A	A	A	-	A	-	-	D
HCM 95th %tile Q(veh)	-	0.7	-	-	0	-	-	3.5

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	740	15	15	430	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	804	16	16	467	11	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	821	0	1313	813
Stage 1	-	-	-	-	813	-
Stage 2	-	-	-	-	500	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	808	-	175	378
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	808	-	172	378
Mov Cap-2 Maneuver	-	-	-	-	172	-
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	597	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	20.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	270	-	-	808	-
HCM Lane V/C Ratio	0.121	-	-	0.02	-
HCM Control Delay (s)	20.2	-	-	9.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	730	0	0	435	5	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	793	0	0	473	5	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	478	0	0	793	0	0	1280	1282	793	1280	1280	476
Stage 1	-	-	-	-	-	-	804	804	-	476	476	-
Stage 2	-	-	-	-	-	-	476	478	-	804	804	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1084	-	-	828	-	-	143	165	389	143	166	589
Stage 1	-	-	-	-	-	-	377	396	-	570	557	-
Stage 2	-	-	-	-	-	-	570	556	-	377	396	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1084	-	-	828	-	-	142	164	389	142	165	589
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	164	-	142	165	-
Stage 1	-	-	-	-	-	-	374	393	-	565	557	-
Stage 2	-	-	-	-	-	-	570	556	-	374	393	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1084	-	-	828	-	-	-
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	-
HCM Control Delay (s)	0	8.3	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	760	435	5	30	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	826	473	5	33	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	478	0	-	0	1302	476
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	826	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1084	-	-	-	177	589
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	430	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1084	-	-	-	177	589
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	430	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	27.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1084	-	-	-	197
HCM Lane V/C Ratio	-	-	-	-	0.193
HCM Control Delay (s)	0	-	-	-	27.6
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.7

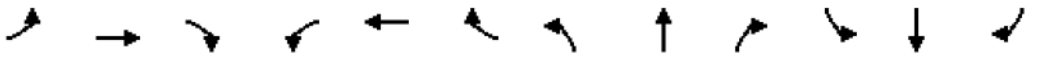
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	765	0	0	415	20	0	0	0	50	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	832	0	0	451	22	0	0	0	54	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	473	0	0	832	0	0	1326	1326	832	1315	1315	462
Stage 1	-	-	-	-	-	-	853	853	-	462	462	-
Stage 2	-	-	-	-	-	-	473	473	-	853	853	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1089	-	-	801	-	-	133	156	369	135	158	600
Stage 1	-	-	-	-	-	-	354	376	-	580	565	-
Stage 2	-	-	-	-	-	-	572	558	-	354	376	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1089	-	-	801	-	-	127	154	369	134	156	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	154	-	134	156	-
Stage 1	-	-	-	-	-	-	350	372	-	574	565	-
Stage 2	-	-	-	-	-	-	551	558	-	350	372	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	41.6
HCM LOS			A	E

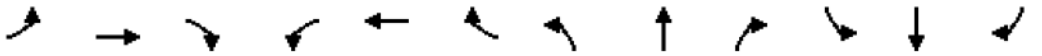
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1089	-	-	801	-	-	172
HCM Lane V/C Ratio	-	0.01	-	-	-	-	-	0.442
HCM Control Delay (s)	0	8.3	-	-	0	-	-	41.6
HCM Lane LOS	A	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	335	485	155	215	250	205	715	100	170	910	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	364	341	168	234	74	223	777	30	185	989	8
Adj No. of Lanes	1	2	0	1	1	1	1	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	70	449	402	195	603	513	252	1163	520	214	1087	486
Arrive On Green	0.04	0.25	0.25	0.11	0.32	0.32	0.14	0.33	0.33	0.12	0.31	0.31
Sat Flow, veh/h	1774	1770	1583	1774	1863	1583	1774	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	54	364	341	168	234	74	223	777	30	185	989	8
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1863	1583	1774	1770	1583	1774	1770	1583
Q Serve(g_s), s	3.9	24.7	26.2	11.9	12.4	4.2	15.8	24.2	1.7	13.1	34.4	0.5
Cycle Q Clear(g_c), s	3.9	24.7	26.2	11.9	12.4	4.2	15.8	24.2	1.7	13.1	34.4	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	70	449	402	195	603	513	252	1163	520	214	1087	486
V/C Ratio(X)	0.77	0.81	0.85	0.86	0.39	0.14	0.89	0.67	0.06	0.86	0.91	0.02
Avail Cap(c_a), veh/h	374	636	569	249	603	513	360	1163	520	360	1133	507
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.9	44.9	45.5	56.1	33.5	30.7	53.9	37.0	29.4	55.3	42.7	30.9
Incr Delay (d2), s/veh	15.8	5.3	8.3	21.2	0.4	0.1	16.8	1.5	0.0	10.8	10.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	12.8	12.4	7.0	6.5	1.9	8.9	12.0	0.7	7.1	18.4	0.2
LnGrp Delay(d),s/veh	76.7	50.2	53.8	77.3	33.9	30.9	70.7	38.5	29.5	66.1	53.2	30.9
LnGrp LOS	E	D	D	E	C	C	E	D	C	E	D	C
Approach Vol, veh/h		759			476			1030			1182	
Approach Delay, s/veh		53.7			48.7			45.2			55.1	
Approach LOS		D			D			D			E	

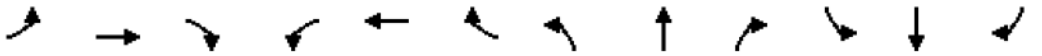
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	48.1	20.0	38.5	24.2	45.3	11.1	47.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	26.0	41.0	18.0	46.0	26.0	41.0	27.0	37.0
Max Q Clear Time (g_c+I1), s	15.1	26.2	13.9	28.2	17.8	36.4	5.9	14.4
Green Ext Time (p_c), s	0.4	10.3	0.2	4.3	0.4	2.9	0.1	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	51.0
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	230	225	250	15	220	150	215	870	15	350	1545	220
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3345	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3345	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	250	245	272	16	239	163	234	946	16	380	1679	239
RTOR Reduction (vph)	0	0	68	0	0	113	0	0	8	0	0	73
Lane Group Flow (vph)	160	335	204	16	239	50	234	946	8	380	1679	166
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	36.9	36.9	36.9	34.1	34.1	34.1	21.6	112.9	112.9	31.1	122.4	122.4
Effective Green, g (s)	38.9	38.9	38.9	36.1	36.1	36.1	23.6	115.9	113.9	33.1	125.4	123.4
Actuated g/C Ratio	0.16	0.16	0.16	0.15	0.15	0.15	0.10	0.48	0.47	0.14	0.52	0.51
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	260	542	256	266	280	419	337	2455	751	473	2656	813
v/s Ratio Prot	0.10	0.10		0.01	c0.13		0.07	0.19		c0.11	c0.33	
v/s Ratio Perm			c0.13			0.02			0.00			0.10
v/c Ratio	0.62	0.62	0.80	0.06	0.85	0.12	0.69	0.39	0.01	0.80	0.63	0.20
Uniform Delay, d1	93.6	93.6	96.8	87.4	99.4	88.2	104.7	39.4	33.3	100.3	40.9	31.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.14	0.93	1.18
Incremental Delay, d2	6.1	3.0	17.8	0.2	23.3	0.3	6.1	0.5	0.0	9.4	1.1	0.6
Delay (s)	99.7	96.7	114.6	87.6	122.6	88.5	110.8	39.9	33.3	123.7	39.0	37.9
Level of Service	F	F	F	F	F	F	F	D	C	F	D	D
Approach Delay (s)		103.6			108.0			53.7			52.9	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	66.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.5%	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												
Volume (vph)	440	40	135	35	35	25	125	1510	60	75	2635	385
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1699	1434		1817	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1699	1434		1817	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	478	43	147	38	38	27	136	1641	65	82	2864	418
RTOR Reduction (vph)	0	0	82	0	0	25	0	0	27	0	0	189
Lane Group Flow (vph)	258	263	65	0	76	2	136	1641	38	82	2864	229
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	44.1	44.1	44.1		15.4	15.4	25.1	140.6	140.6	15.9	131.4	131.4
Effective Green, g (s)	44.1	44.1	44.1		15.4	17.4	25.1	142.6	141.6	17.9	133.4	131.4
Actuated g/C Ratio	0.18	0.18	0.18		0.06	0.07	0.10	0.59	0.59	0.07	0.56	0.55
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	308	312	263		116	114	185	3021	773	132	2826	840
v/s Ratio Prot	0.15	c0.15			c0.04		c0.08	0.32		0.05	c0.56	
v/s Ratio Perm			0.05			0.00			0.03			0.15
v/c Ratio	0.84	0.84	0.25		0.66	0.02	0.74	0.54	0.05	0.62	1.01	0.27
Uniform Delay, d1	94.5	94.6	83.8		109.7	103.4	104.2	29.2	20.8	107.8	53.3	28.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	0.90	1.15	2.12	0.98	0.99	1.44
Incremental Delay, d2	18.4	18.9	0.7		12.5	0.1	7.1	0.3	0.0	8.7	20.3	0.8
Delay (s)	112.9	113.6	84.5		122.3	103.4	100.5	33.7	44.2	113.8	73.1	42.4
Level of Service	F	F	F		F	F	F	C	D	F	E	D
Approach Delay (s)		106.9			117.3			39.0			70.2	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	65.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	810	430	5	35	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	880	467	5	38	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	1350	470
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	880	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	166	594
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	406	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	166	594
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	406	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	30.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	182
HCM Lane V/C Ratio	-	-	-	-	0.239
HCM Control Delay (s)	0	-	-	-	30.9
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.9

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	695	435	0	20	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	755	473	0	22	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	473	0	-	0	1228	473
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	755	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1089	-	-	-	197	591
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	464	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	197	591
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	464	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	21.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	253
HCM Lane V/C Ratio	-	-	-	-	0.129
HCM Control Delay (s)	0	-	-	-	21.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	210	0	5	150	0	85
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	0	5	163	0	92

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	228	0	402	228
Stage 1	-	-	-	-	228	-
Stage 2	-	-	-	-	174	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1340	-	604	811
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	856	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1340	-	602	811
Mov Cap-2 Maneuver	-	-	-	-	602	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	853	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	811	-	-	1340	-
HCM Lane V/C Ratio	0.114	-	-	0.004	-
HCM Control Delay (s)	10	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	870	805	10	230	485	585	55	370	130	625	370	655
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	946	875	11	250	527	582	60	402	5	679	402	423
Adj No. of Lanes	2	3	0	2	3	2	1	2	0	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	986	2054	26	310	1019	1145	78	541	7	724	1125	1681
Arrive On Green	0.29	0.40	0.40	0.09	0.20	0.20	0.04	0.15	0.15	0.21	0.32	0.32
Sat Flow, veh/h	3442	5176	65	3442	5085	2787	1774	3580	44	3442	3539	2776
Grp Volume(v), veh/h	946	573	313	250	527	582	60	199	208	679	402	423
Grp Sat Flow(s),veh/h/ln	1721	1695	1851	1721	1695	1393	1774	1770	1855	1721	1770	1388
Q Serve(g_s), s	41.1	18.6	18.7	10.8	14.0	23.6	5.1	16.3	16.3	29.5	13.3	10.8
Cycle Q Clear(g_c), s	41.1	18.6	18.7	10.8	14.0	23.6	5.1	16.3	16.3	29.5	13.3	10.8
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	986	1345	734	310	1019	1145	78	268	280	724	1125	1681
V/C Ratio(X)	0.96	0.43	0.43	0.81	0.52	0.51	0.77	0.74	0.74	0.94	0.36	0.25
Avail Cap(c_a), veh/h	997	1345	734	997	1272	1284	456	606	635	748	1125	1681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	33.3	33.3	67.8	54.2	33.3	71.9	61.6	61.6	59.0	39.9	14.0
Incr Delay (d2), s/veh	19.3	0.2	0.4	4.9	0.4	0.4	14.9	4.0	3.9	19.0	0.2	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.2	8.8	9.6	5.4	6.6	9.1	2.8	8.3	8.7	16.0	6.5	4.1
LnGrp Delay(d),s/veh	72.6	33.5	33.7	72.7	54.6	33.7	86.7	65.7	65.5	78.0	40.1	14.1
LnGrp LOS	E	C	C	E	D	C	F	E	E	E	D	B
Approach Vol, veh/h		1832			1359			467			1504	
Approach Delay, s/veh		53.7			48.9			68.3			49.9	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.0	29.0	19.7	66.2	11.6	54.3	49.5	36.4
Change Period (Y+Rc), s	5.0	6.0	6.0	6.0	5.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	33.0	52.0	44.0	38.0	39.0	46.0	44.0	38.0
Max Q Clear Time (g_c+I1), s	31.5	18.3	12.8	20.7	7.1	15.3	43.1	25.6
Green Ext Time (p_c), s	0.5	3.7	0.9	11.2	0.1	8.1	0.4	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	52.7
HCM 2010 LOS	D

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	145	230	75	205	145	325	40	890	130	320	1180	135
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	158	250	73	223	158	106	43	967	129	348	1283	137
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	440	542	158	338	729	619	55	1412	188	443	1906	203
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.03	0.31	0.31	0.13	0.41	0.41
Sat Flow, veh/h	1111	1386	405	1052	1863	1583	1774	4542	604	3442	4667	498
Grp Volume(v), veh/h	158	0	323	223	158	106	43	721	375	348	932	488
Grp Sat Flow(s),veh/h/ln	1111	0	1791	1052	1863	1583	1774	1695	1756	1721	1695	1775
Q Serve(g_s), s	11.7	0.0	14.2	21.2	6.0	4.6	2.6	19.8	19.9	10.4	23.9	23.9
Cycle Q Clear(g_c), s	17.7	0.0	14.2	35.5	6.0	4.6	2.6	19.8	19.9	10.4	23.9	23.9
Prop In Lane	1.00		0.23	1.00		1.00	1.00		0.34	1.00		0.28
Lane Grp Cap(c), veh/h	440	0	701	338	729	619	55	1054	546	443	1384	725
V/C Ratio(X)	0.36	0.00	0.46	0.66	0.22	0.17	0.78	0.68	0.69	0.79	0.67	0.67
Avail Cap(c_a), veh/h	517	0	825	412	858	730	334	1054	546	1424	1690	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.4	0.0	24.0	37.2	21.5	21.1	51.1	32.1	32.1	44.9	25.7	25.7
Incr Delay (d2), s/veh	0.5	0.0	0.5	2.8	0.1	0.1	20.3	1.8	3.6	3.1	0.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	7.1	6.4	3.1	2.0	1.6	9.5	10.1	5.2	11.3	12.0
LnGrp Delay(d),s/veh	27.9	0.0	24.5	40.1	21.7	21.3	71.4	33.9	35.7	48.0	26.5	27.2
LnGrp LOS	C		C	D	C	C	E	C	D	D	C	C
Approach Vol, veh/h		481			487			1139			1768	
Approach Delay, s/veh		25.6			30.0			35.9			30.9	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.7	39.1		47.6	9.3	49.4		47.6
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	44.0	29.0		49.0	20.0	53.0		49.0
Max Q Clear Time (g_c+I1), s	12.4	21.9		37.5	4.6	25.9		19.7
Green Ext Time (p_c), s	1.3	6.4		4.1	0.1	17.6		5.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	0	0	215	5	5	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	234	5	5	103

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	0	0	473	0
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	473	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	627	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	550	-
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	627	-

Approach	EB	WB	NB
HCM Control Delay, s	0		
HCM LOS			-

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	-	-	-	-	-
HCM Lane LOS	-	-	-	-	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	80	320	0	0	800	20	0	0	0	15	0	195
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	87	348	0	0	870	22	0	0	0	16	0	212

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	891	0	0	348	0	0	1508	1413	348	1402	1402	880
Stage 1	-	-	-	-	-	-	522	522	-	880	880	-
Stage 2	-	-	-	-	-	-	986	891	-	522	522	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	761	-	-	1211	-	-	99	138	695	117	140	346
Stage 1	-	-	-	-	-	-	538	531	-	342	365	-
Stage 2	-	-	-	-	-	-	298	361	-	538	531	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	761	-	-	1211	-	-	34	118	695	104	120	346
Mov Cap-2 Maneuver	-	-	-	-	-	-	34	118	-	104	120	-
Stage 1	-	-	-	-	-	-	462	456	-	293	365	-
Stage 2	-	-	-	-	-	-	115	361	-	462	456	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	0	48.1
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	761	-	-	1211	-	-	297
HCM Lane V/C Ratio	-	0.114	-	-	-	-	-	0.769
HCM Control Delay (s)	0	10.3	0	-	0	-	-	48.1
HCM Lane LOS	A	B	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.4	-	-	0	-	-	5.9

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	325	10	25	845	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	353	11	27	918	11	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	364	0	1332	359
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	973	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1195	-	170	685
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	366	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1195	-	166	685
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	358	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	22.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	222	-	-	1195	-
HCM Lane V/C Ratio	0.073	-	-	0.023	-
HCM Control Delay (s)	22.5	-	-	8.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	330	0	0	895	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	359	0	0	973	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	973	0	0	359	0	0	1332	1332	359	1332	1332	973
Stage 1	-	-	-	-	-	-	359	359	-	973	973	-
Stage 2	-	-	-	-	-	-	973	973	-	359	359	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	709	-	-	1200	-	-	131	154	685	131	154	306
Stage 1	-	-	-	-	-	-	659	627	-	303	330	-
Stage 2	-	-	-	-	-	-	303	330	-	659	627	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	709	-	-	1200	-	-	131	154	685	131	154	306
Mov Cap-2 Maneuver	-	-	-	-	-	-	131	154	-	131	154	-
Stage 1	-	-	-	-	-	-	659	627	-	303	330	-
Stage 2	-	-	-	-	-	-	303	330	-	659	627	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	709	-	-	1200	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	325	870	25	20	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	353	946	27	22	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	973	0	-	0	1323	959
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	709	-	-	-	172	312
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	709	-	-	-	171	312
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	372	-
Stage 2	-	-	-	-	698	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	25.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	709	-	-	-	212
HCM Lane V/C Ratio	0.008	-	-	-	0.179
HCM Control Delay (s)	10.1	-	-	-	25.7
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.6

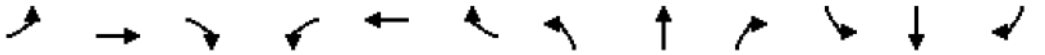
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	325	0	0	875	40	0	0	0	25	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	353	0	0	951	43	0	0	0	27	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	995	0	0	353	0	0	1356	1370	353	1348	1348	973
Stage 1	-	-	-	-	-	-	375	375	-	973	973	-
Stage 2	-	-	-	-	-	-	981	995	-	375	375	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	695	-	-	1206	-	-	126	146	691	128	151	306
Stage 1	-	-	-	-	-	-	646	617	-	303	330	-
Stage 2	-	-	-	-	-	-	300	323	-	646	617	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	695	-	-	1206	-	-	118	144	691	126	149	306
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	144	-	126	149	-
Stage 1	-	-	-	-	-	-	636	607	-	298	330	-
Stage 2	-	-	-	-	-	-	284	323	-	636	607	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	0	35.2
HCM LOS			A	E

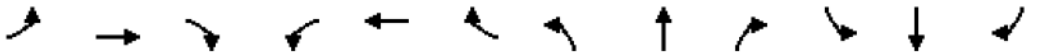
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	695	-	-	1206	-	-	162
HCM Lane V/C Ratio	-	0.016	-	-	-	-	-	0.268
HCM Control Delay (s)	0	10.3	-	-	0	-	-	35.2
HCM Lane LOS	A	B	-	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	375	535	200	265	275	250	785	110	195	975	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	408	353	217	288	94	272	853	24	212	1060	8
Adj No. of Lanes	1	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	483	410	244	665	565	331	1013	453	240	1151	515
Arrive On Green	0.04	0.26	0.26	0.14	0.36	0.36	0.10	0.29	0.29	0.14	0.33	0.33
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	54	408	353	217	288	94	272	853	24	212	1060	8
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	4.0	27.4	28.0	15.8	15.5	5.4	10.2	29.9	1.4	15.5	38.0	0.5
Cycle Q Clear(g_c), s	4.0	27.4	28.0	15.8	15.5	5.4	10.2	29.9	1.4	15.5	38.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	71	483	410	244	665	565	331	1013	453	240	1151	515
V/C Ratio(X)	0.77	0.85	0.86	0.89	0.43	0.17	0.82	0.84	0.05	0.88	0.92	0.02
Avail Cap(c_a), veh/h	431	721	613	310	665	565	470	1013	453	336	1181	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	46.3	46.6	55.9	32.3	29.0	58.5	44.2	34.1	56.0	42.8	30.2
Incr Delay (d2), s/veh	15.7	6.0	8.0	22.0	0.4	0.1	7.7	6.5	0.0	17.9	11.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	14.9	13.1	9.3	8.1	2.4	5.2	15.5	0.6	8.8	20.4	0.2
LnGrp Delay(d),s/veh	78.4	52.3	54.6	77.9	32.7	29.1	66.2	50.7	34.1	73.9	54.4	30.2
LnGrp LOS	E	D	D	E	C	C	E	D	C	E	D	C
Approach Vol, veh/h		815			599			1149			1280	
Approach Delay, s/veh		55.0			48.5			54.1			57.5	
Approach LOS		E			D			D			E	

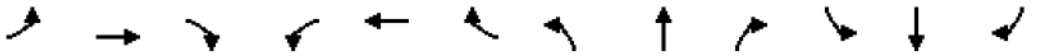
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.8	43.7	24.1	40.2	18.7	48.9	11.2	53.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	25.0	37.0	23.0	51.0	18.0	44.0	32.0	42.0
Max Q Clear Time (g_c+I1), s	17.5	31.9	17.8	30.0	12.2	40.0	6.0	17.5
Green Ext Time (p_c), s	0.3	4.3	0.3	4.1	0.5	2.8	0.1	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	245	290	15	275	185	270	1065	15	360	1775	240
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3345	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3345	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	266	315	16	299	201	293	1158	16	391	1929	261
RTOR Reduction (vph)	0	0	72	0	0	110	0	0	9	0	0	75
Lane Group Flow (vph)	174	364	243	16	299	91	293	1158	7	391	1929	186
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	40.2	40.2	40.2	36.8	36.8	36.8	25.2	106.4	106.4	31.6	112.8	112.8
Effective Green, g (s)	42.2	42.2	42.2	38.8	38.8	38.8	27.2	109.4	107.4	33.6	115.8	113.8
Actuated g/C Ratio	0.18	0.18	0.18	0.16	0.16	0.16	0.11	0.46	0.45	0.14	0.48	0.47
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	283	588	278	286	301	450	389	2317	708	480	2453	750
v/s Ratio Prot	0.11	0.11		0.01	c0.16		0.09	0.23		c0.11	c0.38	
v/s Ratio Perm			c0.15			0.03			0.00			0.12
v/c Ratio	0.61	0.62	0.88	0.06	0.99	0.20	0.75	0.50	0.01	0.81	0.79	0.25
Uniform Delay, d1	91.4	91.5	96.3	85.1	100.5	87.2	103.1	46.0	36.8	100.2	51.8	37.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.15	0.92	1.07
Incremental Delay, d2	5.6	2.8	26.6	0.2	50.0	0.5	8.0	0.8	0.0	10.1	2.6	0.8
Delay (s)	97.0	94.3	122.9	85.3	150.4	87.7	111.2	46.8	36.8	125.1	50.0	41.2
Level of Service	F	F	F	F	F	F	F	D	D	F	D	D
Approach Delay (s)		105.4			124.0			59.5			60.5	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	73.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.2%	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												
Volume (vph)	450	40	125	35	35	30	130	1760	65	80	2845	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1698	1434		1817	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.96	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1698	1434		1817	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	489	43	136	38	38	33	141	1913	71	87	3092	489
RTOR Reduction (vph)	0	0	81	0	0	31	0	0	28	0	0	223
Lane Group Flow (vph)	264	268	55	0	76	2	141	1913	43	87	3092	266
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	44.6	44.6	44.6		15.4	15.4	25.6	139.6	139.6	16.4	130.4	130.4
Effective Green, g (s)	44.6	44.6	44.6		15.4	17.4	25.6	141.6	140.6	18.4	132.4	130.4
Actuated g/C Ratio	0.19	0.19	0.19		0.06	0.07	0.11	0.59	0.59	0.08	0.55	0.54
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	312	315	266		116	114	188	3000	768	135	2805	834
v/s Ratio Prot	0.16	c0.16			c0.04		c0.08	c0.38		0.05	c0.61	
v/s Ratio Perm			0.04			0.00			0.03			0.17
v/c Ratio	0.85	0.85	0.21		0.66	0.02	0.75	0.64	0.06	0.64	1.10	0.32
Uniform Delay, d1	94.4	94.5	82.7		109.7	103.4	104.1	32.3	21.3	107.6	53.8	30.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	0.88	1.15	2.07	0.98	0.99	1.42
Incremental Delay, d2	19.3	19.9	0.5		12.5	0.1	7.6	0.4	0.1	10.0	52.1	1.0
Delay (s)	113.6	114.3	83.2		122.3	103.5	99.4	37.7	44.1	115.1	105.5	44.0
Level of Service	F	F	F		F	F	F	D	D	F	F	D
Approach Delay (s)		107.7			116.6			42.0			97.5	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	80.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	350	915	25	20	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	380	995	27	22	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1022	0	-	0	1399	1008
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	679	-	-	-	155	292
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	679	-	-	-	154	292
Mov Cap-2 Maneuver	-	-	-	-	154	-
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	678	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	30.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	679	-	-	-	170
HCM Lane V/C Ratio	0.008	-	-	-	0.16
HCM Control Delay (s)	10.3	-	-	-	30.2
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	325	805	20	15	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	353	875	22	16	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	897	0	-	0	1250	886
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	364	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	757	-	-	-	191	343
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	757	-	-	-	190	343
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	698	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	22.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	757	-	-	-	231
HCM Lane V/C Ratio	0.007	-	-	-	0.118
HCM Control Delay (s)	9.8	-	-	-	22.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	95	0	55	215	0	125
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	103	0	60	234	0	136

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	103	0	456	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	353	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1489	-	562	952
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	711	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1489	-	539	952
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	682	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	952	-	-	1489	-
HCM Lane V/C Ratio	0.143	-	-	0.04	-
HCM Control Delay (s)	9.4	-	-	7.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	680	700	5	120	860	540	5	105	15	435	140	465
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	739	761	5	130	935	587	5	114	3	473	152	318
Adj No. of Lanes	2	3	0	2	3	2	1	2	0	2	2	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	855	2379	16	206	1362	1196	9	335	9	556	890	1390
Arrive On Green	0.25	0.46	0.46	0.06	0.27	0.27	0.01	0.10	0.10	0.16	0.25	0.25
Sat Flow, veh/h	3442	5213	34	3442	5085	2787	1774	3524	92	3442	3539	2773
Grp Volume(v), veh/h	739	495	271	130	935	587	5	57	60	473	152	318
Grp Sat Flow(s),veh/h/ln	1721	1695	1857	1721	1695	1393	1774	1770	1846	1721	1770	1387
Q Serve(g_s), s	21.7	9.8	9.8	3.9	17.4	16.1	0.3	3.2	3.2	14.1	3.6	6.8
Cycle Q Clear(g_c), s	21.7	9.8	9.8	3.9	17.4	16.1	0.3	3.2	3.2	14.1	3.6	6.8
Prop In Lane	1.00		0.02	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	855	1548	848	206	1362	1196	9	168	176	556	890	1390
V/C Ratio(X)	0.86	0.32	0.32	0.63	0.69	0.49	0.55	0.34	0.34	0.85	0.17	0.23
Avail Cap(c_a), veh/h	1237	1548	848	1237	1828	1452	201	636	664	716	1607	1952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	18.3	18.3	48.6	34.7	21.8	52.5	44.7	44.7	43.1	30.9	14.9
Incr Delay (d2), s/veh	4.6	0.1	0.2	3.2	0.7	0.3	42.2	1.2	1.1	7.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	4.6	5.1	2.0	8.2	6.2	0.3	1.6	1.7	7.3	1.7	2.6
LnGrp Delay(d),s/veh	42.6	18.4	18.5	51.7	35.4	22.1	94.7	45.9	45.9	50.8	31.0	15.0
LnGrp LOS	D	B	B	D	D	C	F	D	D	D	C	B
Approach Vol, veh/h		1505			1652			122			943	
Approach Delay, s/veh		30.3			32.0			47.9			35.6	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	16.1	12.3	54.3	6.5	32.6	32.3	34.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	22.0	38.0	38.0	38.0	12.0	48.0	38.0	38.0
Max Q Clear Time (g_c+I1), s	16.1	5.2	5.9	11.8	2.3	8.8	23.7	19.4
Green Ext Time (p_c), s	0.9	3.1	0.4	17.1	0.0	3.2	2.5	8.9

Intersection Summary	
HCM 2010 Ctrl Delay	32.6
HCM 2010 LOS	C

Notes

User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	140	20	315	200	410	60	1130	475	275	580	75
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	98	152	19	342	217	139	65	1228	462	299	630	69
Adj No. of Lanes	1	1	0	1	1	1	1	3	0	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	347	590	74	422	677	576	84	1357	509	380	2028	220
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.05	0.37	0.37	0.11	0.44	0.44
Sat Flow, veh/h	1021	1624	203	1209	1863	1583	1774	3645	1367	3442	4658	505
Grp Volume(v), veh/h	98	0	171	342	217	139	65	1142	548	299	457	242
Grp Sat Flow(s),veh/h/ln	1021	0	1827	1209	1863	1583	1774	1695	1621	1721	1695	1774
Q Serve(g_s), s	9.0	0.0	7.7	32.4	9.8	7.2	4.2	37.4	37.5	9.9	10.3	10.5
Cycle Q Clear(g_c), s	18.8	0.0	7.7	40.1	9.8	7.2	4.2	37.4	37.5	9.9	10.3	10.5
Prop In Lane	1.00		0.11	1.00		1.00	1.00		0.84	1.00		0.28
Lane Grp Cap(c), veh/h	347	0	664	422	677	576	84	1262	604	380	1476	772
V/C Ratio(X)	0.28	0.00	0.26	0.81	0.32	0.24	0.77	0.90	0.91	0.79	0.31	0.31
Avail Cap(c_a), veh/h	351	0	670	426	684	581	257	1273	609	1028	1794	938
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.6	0.0	26.2	40.3	26.9	26.0	55.2	34.8	34.9	50.8	21.6	21.6
Incr Delay (d2), s/veh	0.4	0.0	0.2	11.2	0.3	0.2	13.8	9.3	17.4	3.6	0.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	3.9	12.1	5.1	3.2	2.4	19.1	19.7	4.9	4.8	5.2
LnGrp Delay(d),s/veh	34.1	0.0	26.4	51.5	27.1	26.2	68.9	44.1	52.3	54.4	21.7	21.9
LnGrp LOS	C		C	D	C	C	E	D	D	D	C	C
Approach Vol, veh/h		269			698			1755			998	
Approach Delay, s/veh		29.2			38.9			47.6			31.5	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.9	49.6		48.6	11.6	57.0		48.6
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	35.0	44.0		43.0	17.0	62.0		43.0
Max Q Clear Time (g_c+I1), s	11.9	39.5		42.1	6.2	12.5		20.8
Green Ext Time (p_c), s	1.0	4.1		0.5	0.1	30.4		4.9

Intersection Summary	
HCM 2010 Ctrl Delay	40.3
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	8.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	5	5	160	5	10	230
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	174	5	11	250

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	11	0	361	8
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	353	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1608	-	638	1074
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	711	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1608	-	568	1074
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	634	-

Approach	EB	WB	NB
HCM Control Delay, s	0	7.3	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1036	-	-	1608	-
HCM Lane V/C Ratio	0.252	-	-	0.108	-
HCM Control Delay (s)	9.6	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	1	-	-	0.4	-

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	205	725	0	0	445	20	0	0	0	20	0	145
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	223	788	0	0	484	22	0	0	0	22	0	158

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	505	0	0	788	0	0	1807	1739	788	1729	1729	495
Stage 1	-	-	-	-	-	-	1234	1234	-	495	495	-
Stage 2	-	-	-	-	-	-	573	505	-	1234	1234	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1060	-	-	831	-	-	61	87	391	69	88	575
Stage 1	-	-	-	-	-	-	216	249	-	556	546	-
Stage 2	-	-	-	-	-	-	505	540	-	216	249	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1060	-	-	831	-	-	31	54	391	49	55	575
Mov Cap-2 Maneuver	-	-	-	-	-	-	31	54	-	49	55	-
Stage 1	-	-	-	-	-	-	135	156	-	348	546	-
Stage 2	-	-	-	-	-	-	367	540	-	135	156	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2	0	0	49
HCM LOS			A	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1060	-	-	831	-	-	250
HCM Lane V/C Ratio	-	0.21	-	-	-	-	-	0.717
HCM Control Delay (s)	0	9.3	0	-	0	-	-	49
HCM Lane LOS	A	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	-	0.8	-	-	0	-	-	4.9

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	790	15	15	465	10	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	859	16	16	505	11	27

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	875	0	1405	867
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	538	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	771	-	154	352
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	585	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	771	-	151	352
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	411	-
Stage 2	-	-	-	-	573	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	21.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	255	-	-	771	-
HCM Lane V/C Ratio	0.149	-	-	0.021	-
HCM Control Delay (s)	21.6	-	-	9.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	785	0	0	475	5	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	853	0	0	516	5	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	522	0	0	853	0	0	1383	1386	853	1383	1383	519
Stage 1	-	-	-	-	-	-	864	864	-	519	519	-
Stage 2	-	-	-	-	-	-	519	522	-	864	864	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1044	-	-	786	-	-	121	143	359	121	144	557
Stage 1	-	-	-	-	-	-	349	371	-	540	533	-
Stage 2	-	-	-	-	-	-	540	531	-	349	371	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1044	-	-	786	-	-	120	142	359	120	143	557
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	142	-	120	143	-
Stage 1	-	-	-	-	-	-	346	368	-	535	533	-
Stage 2	-	-	-	-	-	-	540	531	-	346	368	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1044	-	-	786	-	-	-
HCM Lane V/C Ratio	-	0.005	-	-	-	-	-	-
HCM Control Delay (s)	0	8.5	0	-	0	-	-	0
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	810	470	20	45	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	880	511	22	49	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	533	0	-	0	1413	522
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	891	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1035	-	-	-	152	555
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	401	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1035	-	-	-	151	555
Mov Cap-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	399	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	36.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1035	-	-	-	174
HCM Lane V/C Ratio	0.005	-	-	-	0.344
HCM Control Delay (s)	8.5	-	-	-	36.1
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	1.4

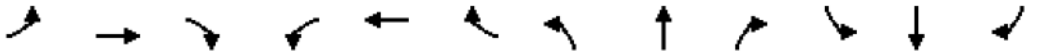
Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	820	0	0	460	45	0	0	0	70	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	891	0	0	500	49	0	0	0	76	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	549	0	0	891	0	0	1459	1473	891	1448	1448	524
Stage 1	-	-	-	-	-	-	924	924	-	524	524	-
Stage 2	-	-	-	-	-	-	535	549	-	924	924	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1021	-	-	761	-	-	107	127	341	109	131	553
Stage 1	-	-	-	-	-	-	323	348	-	537	530	-
Stage 2	-	-	-	-	-	-	529	516	-	323	348	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1021	-	-	761	-	-	102	125	341	108	129	553
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	125	-	108	129	-
Stage 1	-	-	-	-	-	-	318	343	-	529	530	-
Stage 2	-	-	-	-	-	-	508	516	-	318	343	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	0	85.8
HCM LOS			A	F

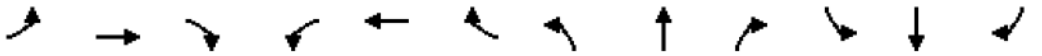
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1021	-	-	761	-	-	132
HCM Lane V/C Ratio	-	0.016	-	-	-	-	-	0.741
HCM Control Delay (s)	0	8.6	-	-	0	-	-	85.8
HCM Lane LOS	A	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	4.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	170	215	100	380	290	505	1265	245	175	805	60
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	11	185	30	109	413	80	549	1375	159	190	875	17
Adj No. of Lanes	1	1	1	1	1	1	2	2	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	18	351	298	134	473	402	646	1451	649	218	1222	547
Arrive On Green	0.01	0.19	0.19	0.08	0.25	0.25	0.19	0.41	0.41	0.12	0.35	0.35
Sat Flow, veh/h	1774	1863	1583	1774	1863	1583	3442	3539	1583	1774	3539	1583
Grp Volume(v), veh/h	11	185	30	109	413	80	549	1375	159	190	875	17
Grp Sat Flow(s),veh/h/ln	1774	1863	1583	1774	1863	1583	1721	1770	1583	1774	1770	1583
Q Serve(g_s), s	0.7	10.6	1.9	7.2	25.1	4.7	18.2	44.4	7.8	12.4	25.4	0.8
Cycle Q Clear(g_c), s	0.7	10.6	1.9	7.2	25.1	4.7	18.2	44.4	7.8	12.4	25.4	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	18	351	298	134	473	402	646	1451	649	218	1222	547
V/C Ratio(X)	0.60	0.53	0.10	0.81	0.87	0.20	0.85	0.95	0.24	0.87	0.72	0.03
Avail Cap(c_a), veh/h	180	582	495	180	582	495	1163	1495	669	255	1222	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.3	43.3	39.7	53.9	42.3	34.7	46.4	33.7	22.9	51.0	33.7	25.6
Incr Delay (d2), s/veh	28.2	1.2	0.1	18.1	11.8	0.2	3.2	12.7	0.2	23.8	2.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	5.6	0.8	4.2	14.5	2.1	9.0	24.1	3.4	7.6	12.7	0.4
LnGrp Delay(d),s/veh	86.5	44.5	39.9	72.0	54.1	34.9	49.7	46.4	23.1	74.8	35.7	25.7
LnGrp LOS	F	D	D	E	D	C	D	D	C	E	D	C
Approach Vol, veh/h		226			602			2083			1082	
Approach Delay, s/veh		45.9			54.8			45.5			42.4	
Approach LOS		D			D			D			D	

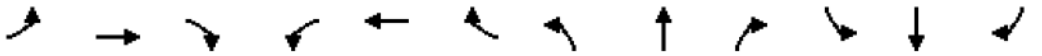
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.5	54.5	15.0	28.3	28.2	46.9	7.2	36.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	50.0	12.0	37.0	40.0	27.0	12.0	37.0
Max Q Clear Time (g_c+I1), s	14.4	46.4	9.2	12.6	20.2	27.4	2.7	27.1
Green Ext Time (p_c), s	0.1	2.2	0.1	4.2	2.0	0.0	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	355	170	235	60	260	315	245	1460	10	220	1210	170
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	6.0	4.0	4.0	6.0
Lane Util. Factor	0.91	0.91	1.00	1.00	1.00	0.88	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1610	3306	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1610	3306	1583	1770	1863	2787	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	386	185	255	65	283	342	266	1587	11	239	1315	185
RTOR Reduction (vph)	0	0	61	0	0	202	0	0	6	0	0	75
Lane Group Flow (vph)	193	378	194	65	283	140	266	1587	5	239	1315	110
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	3		4	4		5	2		1	6	
Permitted Phases			3			4			2			6
Actuated Green, G (s)	36.1	36.1	36.1	41.4	41.4	41.4	23.1	116.6	116.6	20.9	114.4	114.4
Effective Green, g (s)	38.1	38.1	38.1	43.4	43.4	43.4	25.1	119.6	117.6	22.9	117.4	115.4
Actuated g/C Ratio	0.16	0.16	0.16	0.18	0.18	0.18	0.10	0.50	0.49	0.10	0.49	0.48
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	3.0	5.0	5.0
Lane Grp Cap (vph)	255	524	251	320	336	503	359	2534	775	327	2487	761
v/s Ratio Prot	0.12	0.11		0.04	c0.15		c0.08	c0.31		0.07	0.26	
v/s Ratio Perm			c0.12			0.05			0.00			0.07
v/c Ratio	0.76	0.72	0.77	0.20	0.84	0.28	0.74	0.63	0.01	0.73	0.53	0.14
Uniform Delay, d1	96.5	95.9	96.8	83.6	95.0	84.8	104.3	43.9	31.3	105.6	42.2	34.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85	1.53	3.84
Incremental Delay, d2	14.2	5.9	15.7	0.7	18.7	0.6	8.0	1.2	0.0	7.7	0.8	0.4
Delay (s)	110.7	101.9	112.5	84.3	113.7	85.4	112.3	45.1	31.3	98.0	65.2	133.7
Level of Service	F	F	F	F	F	F	F	D	C	F	E	F
Approach Delay (s)		107.2			96.9			54.6			77.0	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	76.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.5%	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												
Volume (vph)	470	5	125	10	15	15	330	2675	20	80	1570	440
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		6.0	4.0	6.0	5.0	6.0	4.0	5.0	7.0
Lane Util. Factor	0.95	0.95	1.00		1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.91		1.00	1.00	1.00	1.00	0.83	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	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	0.95	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1687	1434		1826	1583	1770	5085	1311	1770	5085	1536
Flt Permitted	0.95	0.95	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1687	1434		1826	1583	1770	5085	1311	1770	5085	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	511	5	136	11	16	16	359	2908	22	87	1707	478
RTOR Reduction (vph)	0	0	81	0	0	15	0	0	8	0	0	256
Lane Group Flow (vph)	255	261	55	0	27	1	359	2908	14	87	1707	222
Confl. Peds. (#/hr)			43						31			2
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases			4			3			2			6
Actuated Green, G (s)	45.2	45.2	45.2		7.8	7.8	51.4	148.3	148.3	14.7	111.6	111.6
Effective Green, g (s)	45.2	45.2	45.2		7.8	9.8	51.4	150.3	149.3	16.7	113.6	111.6
Actuated g/C Ratio	0.19	0.19	0.19		0.03	0.04	0.21	0.63	0.62	0.07	0.47	0.46
Clearance Time (s)	5.0	5.0	5.0		6.0	6.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	4.0	4.0	4.0		3.0	3.0	5.0	6.0	6.0	3.0	6.0	6.0
Lane Grp Cap (vph)	316	317	270		59	64	379	3184	815	123	2406	714
v/s Ratio Prot	0.15	c0.15			c0.01		c0.20	c0.57		0.05	0.34	
v/s Ratio Perm			0.04			0.00			0.01			0.14
v/c Ratio	0.81	0.82	0.20		0.46	0.01	0.95	0.91	0.02	0.71	0.71	0.31
Uniform Delay, d1	93.2	93.6	82.2		114.0	110.4	93.0	39.2	17.3	109.3	50.1	40.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.30	0.63	1.00	1.05	0.98	1.68
Incremental Delay, d2	14.7	16.4	0.5		5.5	0.1	18.6	2.3	0.0	16.5	1.8	1.1
Delay (s)	107.9	110.0	82.7		119.6	110.5	139.8	27.0	17.3	131.7	51.1	68.7
Level of Service	F	F	F		F	F	F	C	B	F	D	E
Approach Delay (s)		103.5			116.2			39.3			57.9	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	240.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	885	505	25	50	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	962	549	27	54	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	576	0	-	0	1536	563
Stage 1	-	-	-	-	563	-
Stage 2	-	-	-	-	973	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	997	-	-	-	128	526
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	366	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	997	-	-	-	127	526
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	364	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	50.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	997	-	-	-	136
HCM Lane V/C Ratio	0.005	-	-	-	0.44
HCM Control Delay (s)	8.6	-	-	-	50.8
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	2

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	10	735	455	20	35	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	799	495	22	38	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	516	0	-	0	1326	505
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	821	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1050	-	-	-	172	567
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	432	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1050	-	-	-	170	567
Mov Cap-2 Maneuver	-	-	-	-	170	-
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	427	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	27.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1050	-	-	-	215
HCM Lane V/C Ratio	0.01	-	-	-	0.253
HCM Control Delay (s)	8.5	-	-	-	27.3
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	1

Intersection	
Int Delay, s/veh	3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	230	0	140	165	0	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	250	0	152	179	0	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	250	0	734	250
Stage 1	-	-	-	-	250	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1316	-	387	789
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1316	-	342	789
Mov Cap-2 Maneuver	-	-	-	-	342	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	548	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	789	-	-	1316	-
HCM Lane V/C Ratio	0.186	-	-	0.116	-
HCM Control Delay (s)	10.6	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.4	-