

TRAFFIC IMPACT ANALYSIS

VILLAGES OF KAPOLEI

KAPOLEI, OAHU, HAWAII

October 2004



Over a Century of Engineering Excellence

TRAFFIC IMPACT ANALYSIS

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Kapolei, Oahu, Hawaii

October 2004

Prepared For:

Housing and Community Development Corporation of Hawaii
677 Queen Street, Suite 300
Honolulu, Hawaii 96813

Prepared By:

Parsons Brinckerhoff Quade & Douglas, Inc.
American Savings Bank Tower - Suite 3000
1001 Bishop Street
Honolulu, HI 96813
(808) 531-7094

PBQD Reference Number:
16400A

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I. INTRODUCTION

The Housing and Community Development Corporation of Hawaii (HCDCH) is in the process of completing the Villages of Kapolei development in the Ewa plain of the island of Oahu. This project was one of the pioneer projects that began the implementation of the second city policy for development of the Ewa plain and provided much needed housing for the affordable residential market. Figure 1 illustrates the general location of the site.

Because plans have changed slightly and because there have been community concerns regarding pedestrian safety, bicycle safety, and school-related safety, HCDCH has commissioned this study to find ways to address these concerns in a manner that is compatible with City and County of Honolulu (City) Subdivision Standards. The compatibility with City standards is important in that HCDCH intends to dedicate the streets and pedestrian facilities to the City.

A. Purpose of Study

The study documents existing conditions, including the conditions related to the community concerns and the projects buildout traffic conditions for the Villages of Kapolei. It also summarizes recommended roadway geometry and traffic control improvements and proposes alternatives to mitigate traffic-related issues related to stated community concerns. This study also relates the proposed improvements to City standards so that City agencies can better assess the acceptability of these measures when evaluating future HCDCH requests for dedication of roadways and pedestrian facilities.

B. Background

Figure 2 illustrates the current conceptual master plan for the Villages of Kapolei. Most of the development has been completed with new development programmed primarily for the parcels along Kapolei Parkway. Kapolei Parkway itself is expected to be connected to the regional transportation system in the 5 to 6 year time frame. School crossing issues connected with the Kapolei Middle School and Kapolei High School need to be resolved by then. The Villages of Kapolei community has also expressed concern about pedestrian and bicycle safety internal to the Villages development. The area surrounding Kapolei Elementary is a key area of concern.

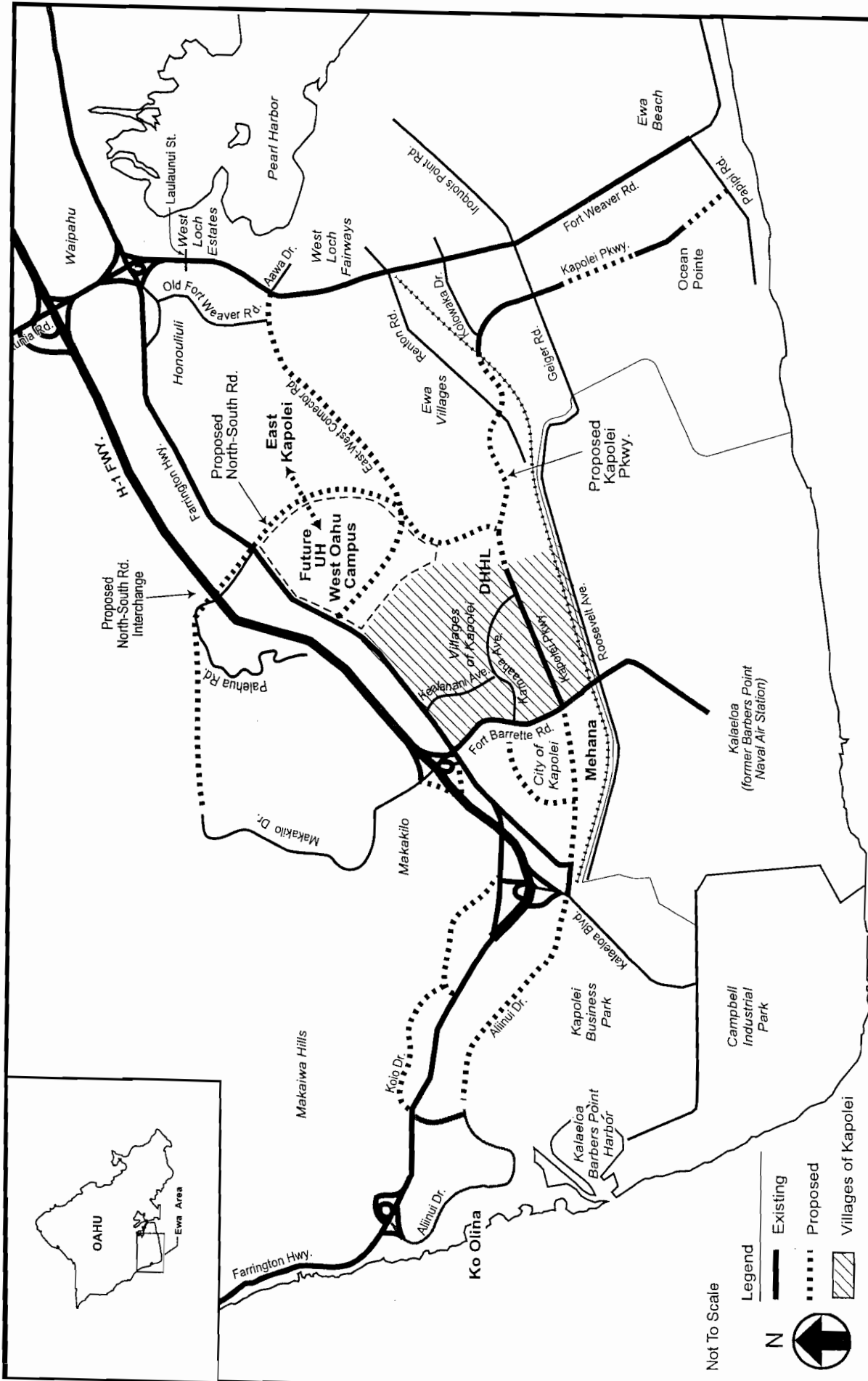


Figure 1

VICINITY MAP





SITE PLAN MAP

Figure
2

II. EXISTING CONDITIONS

A. Existing Roadway System

Interstate H-1, Farrington Highway, and Fort Barrette Road provide regional and sub-regional access to the Villages of Kapolei study area. Within the study area, Kapolei Parkway and Kaiiau Avenue provide the primary east-west circulation, while north south circulation is provided by Kealanani Avenue. Kamaaha Avenue does double duty, providing both north-south and east-west circulation. Figure 3 shows the existing roadways configuration within the study area.

1. Fort Barrette Road

Fort Barrette Road is a major north-south arterial roadway providing access to H-1 Freeway and Farrington Highway. North of Farrington Highway, Fort Barrette Road becomes Makakilo Drive providing access to the Makakilo development. From Farrington Highway, Fort Barrette Road continues south until it merges with Enterprise Avenue just makai of F.D. Roosevelt Avenue. Fort Barrette Road within the study area is a two-lane roadway and the posted speed limit is 40 miles per hour (MPH). Fort Barrette Road intersects Farrington Highway as a four-legged, signalized intersection with median left-turn lanes and right-turn lanes at all approaches. At Kamaaha Avenue and Kapolei Parkway, Fort Barrette Road forms T-intersections with median left-turn lanes provided in the makai-bound and Waianae-bound directions. These intersections are currently unsignalized with STOP-sign control on the Kamaaha and on the Kapolei Parkway approaches.

2. Farrington Highway

Farrington Highway is a major arterial roadway providing east-west mobility within the study area. Farrington Highway is a 4-lane divided roadway from Kamokila Boulevard to the Kapolei Golf Course Entrance with curb, gutter and sidewalks. East of Kapolei Golf Course Entrance, Farrington Highway is a two-lane, undivided arterial roadway until a point west of Fort Weaver Road where it transitions back into a four-lane divided roadway. The posted speed limit is 25 MPH in the study area and 35 MPH east of Kapolei Golf Course Driveway.

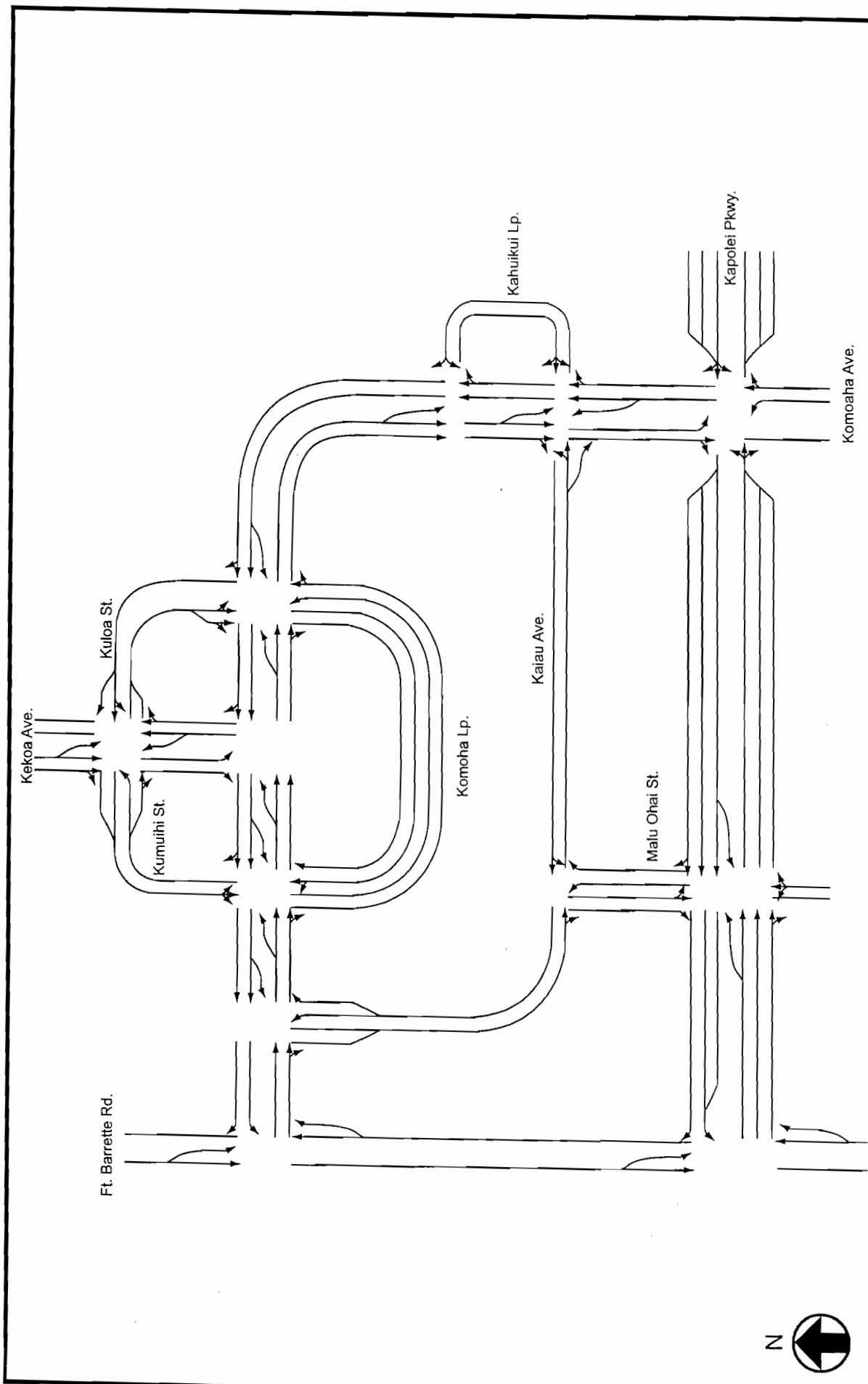


Figure 3

EXISTING ROADWAY CONFIGURATIONS



3. Kapolei Parkway

Kapolei Parkway is a six-lane divided major arterial roadway. Ultimately it will provide east-west mobility between Kapolei and Ewa. Within the Villages of Kapolei, it is currently open to traffic between Fort Barrette Road and a point east of Kapolei Middle School. Within this segment, Kapolei Parkway intersects Fort Barrette Road, Malu Ohai Street, and Kamaaha Avenue at unsignalized intersections. Parking is prohibited along Kapolei Parkway within the study area, and the current posted speed limit is 30 MPH. At Kamaaha Avenue, the middle and curb lanes and the left-turn lanes of Kapolei Parkway are temporarily closed to traffic so that each Kapolei approach has one shared lane serving left-turn, through and right-turn movements. This intersection functions with an all-way STOP control. Malu Ohai Street intersects Kapolei Parkway directly opposite the main driveway for Kapolei High School, forming a four-legged, unsignalized intersection with STOP-sign control on the Malu Ohai and Kapolei High School Driveway approaches. Currently, crossing guards are stationed at Malu Ohai Street and Kamaaha Avenue during the start and end of school during weekdays.

4. Kamaaha Avenue

Kamaaha Avenue is a major collector roadway which provides east-west and north-south circulation within the Villages of Kapolei. Its current termini are Fort Barrette Road to the west and Kapolei Parkway to the east. Ultimately, Kamaaha Avenue is planned to extend west through the City of Kapolei and terminate at Kapolei Parkway east of Kamokila Boulevard. Currently, Kamaaha is a four-lane divided roadway with left turn lanes at intersections and the posted speed limit is 25 MPH. Kaiu Avenue, Kamaaha Loop/Kuloa Avenue, Kealanani Avenue, Kamaaha Loop/Kumuiki Street, Kekuilani Loop, and Kekuilani Loop/Kaiu Avenue are intersections on Kamaaha Avenue. All of these intersections are unsignalized, with STOP-sign control on the non-Kamaaha Avenue approaches.

5. Kealanani Avenue

Kealanani Avenue is a four-lane divided roadway providing mauka-makai circulation within the study area. Kealanani Avenue intersects Kamaaha Avenue and Kuloa Avenue/Kumuiki Street as unsignalized intersections, and it intersects Farrington Highway as a signalized intersection. Left and right-turn lanes are provided at intersection and parking is prohibited

along the entire length of Kealanani Avenue. The posted speed limit on Kealanani Avenue is 25 MPH

6. Kaiau Avenue

Kaiau Avenue is major east-west residential collector within Villages 5 and 6 of The Villages of Kapolei. The western terminus of Kaiau Avenue is Kamaaha Avenue, east of Fort Barrette Road, and the eastern terminus is directly across Kekuilani Loop at Kamaaha Avenue mauka of Kapolei Parkway. Kaiau Avenue is a two-lane roadway with lane channelization at its intersections with Kamaaha Avenue providing left and right-turn lanes. The posted Speed limit is 25 MPH.

C. Existing Traffic Volumes

The evaluation of operations in the Villages of Kapolei Development captured the magnitudes and timings of the AM, mid-day, and PM peaks associated with going to work/school, leaving school, and coming home from work, respectively. Manual traffic volume counts were conducted at the following intersections on Tuesday, October 21, 2003 and Wednesday, October 22, 2003 in order to observe the mid day/PM peaks and AM peak, respectively:

- Fort Barrette Road and Kamaaha Avenue
- Fort Barrette Road and Kapolei Parkway
- Kaiau Avenue and Kamaaha Avenue
- Kumuiki Street/Kamaaha Avenue (West Loop) and Kamaaha Avenue
- Kealanani Avenue and Kamaaha Avenue
- Kuloa Avenue/Kamaaha Avenue (East Loop) and Kamaaha Avenue
- Kekuilani Loop (mauka) and Kamaaha Avenue
- Kekuilani Loop (makai)/Kaiau Avenue and Kamaaha Avenue
- Kapolei Parkway and Kamaaha Avenue

- Kaiua Avenue between Koanimakani Street and Hokeo Street

Additional traffic turning movement counts were conducted at the following intersections on Wednesday, October 22, 2003 and Thursday, October 23, 2003.

- Kealanani Avenue and Farrington Highway
- Kealanani Avenue and Kumuiki Street/Kuloa Avenue
- Kapolei Parkway and Malu Ohai Street

Peak hour volumes at the 13 intersections included in the study can be found in Appendix A. The AM, mid day, and PM peaks were found to occur from 7:00 to 8:00 AM, 1:45 to 2:45 PM, and 4:30 to 5:30 PM, respectively. Figures 4 through 6 show the existing peak hour traffic volumes for the AM, mid-day, and PM peak periods, respectively.

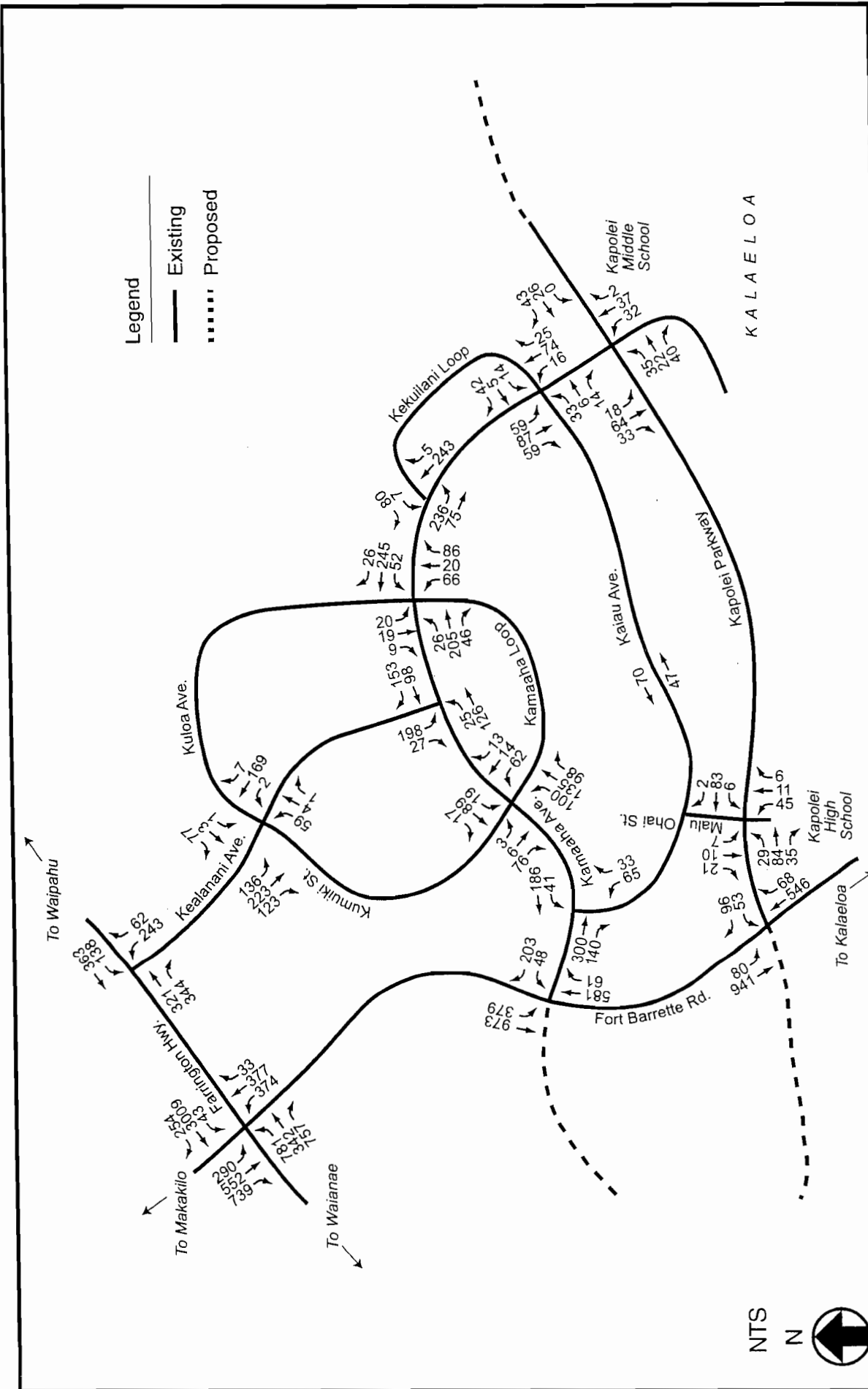


Figure 6

EXISTING PM TRAFFIC VOLUMES



Pedestrian activities at the previously listed intersections were observed at the same time of the traffic counts. The AM and mid-day peaks were the most significant, which was expected due to the amount of school traffic. Pedestrian volumes were the highest near the Kapolei High School and Kapolei Middle School between the hours of 7:00-8:00 AM and 1:45-2:45 PM. AM, mid-day, and PM pedestrian movement summaries can be seen in figures 7 through 9, respectively. Pedestrian volumes are located in Appendix A.

In addition, 24-hour approach volumes were collected between Monday, December 8, 2003 and Thursday, January 26, 2004 at the 13 previously listed intersections for warrant analyses and can be found in Appendix A of this report.

D. Existing Intersection Operations

The aforementioned intersections were analyzed using the methodologies for unsignalized and signalized intersections outlined in the *2000 Highway Capacity manual (HCM)*. An intersection's operating conditions can be broken down by approach and expressed as a qualitative measure known as Level-of-Service (LOS) ranging from A to F. LOS A denotes free-flow operations with low delay; conversely, LOS F conditions would be congested with a comparatively higher delay. An intersection's overall LOS is determined by taking a weighted average of the LOS of individual traffic movement groups. Appendix B has more detailed definitions of intersection LOS. Field observations were performed at selected intersections to verify the results of the intersection analysis.

1. Results of Unsignalized Intersections

Table 1 summarizes the existing conditions Level-of-Service (LOS) for each unsignalized intersection. Most movements operate at an acceptable LOS (LOS D or better). For detailed analysis information, Appendix C includes intersection capacity analysis worksheets.

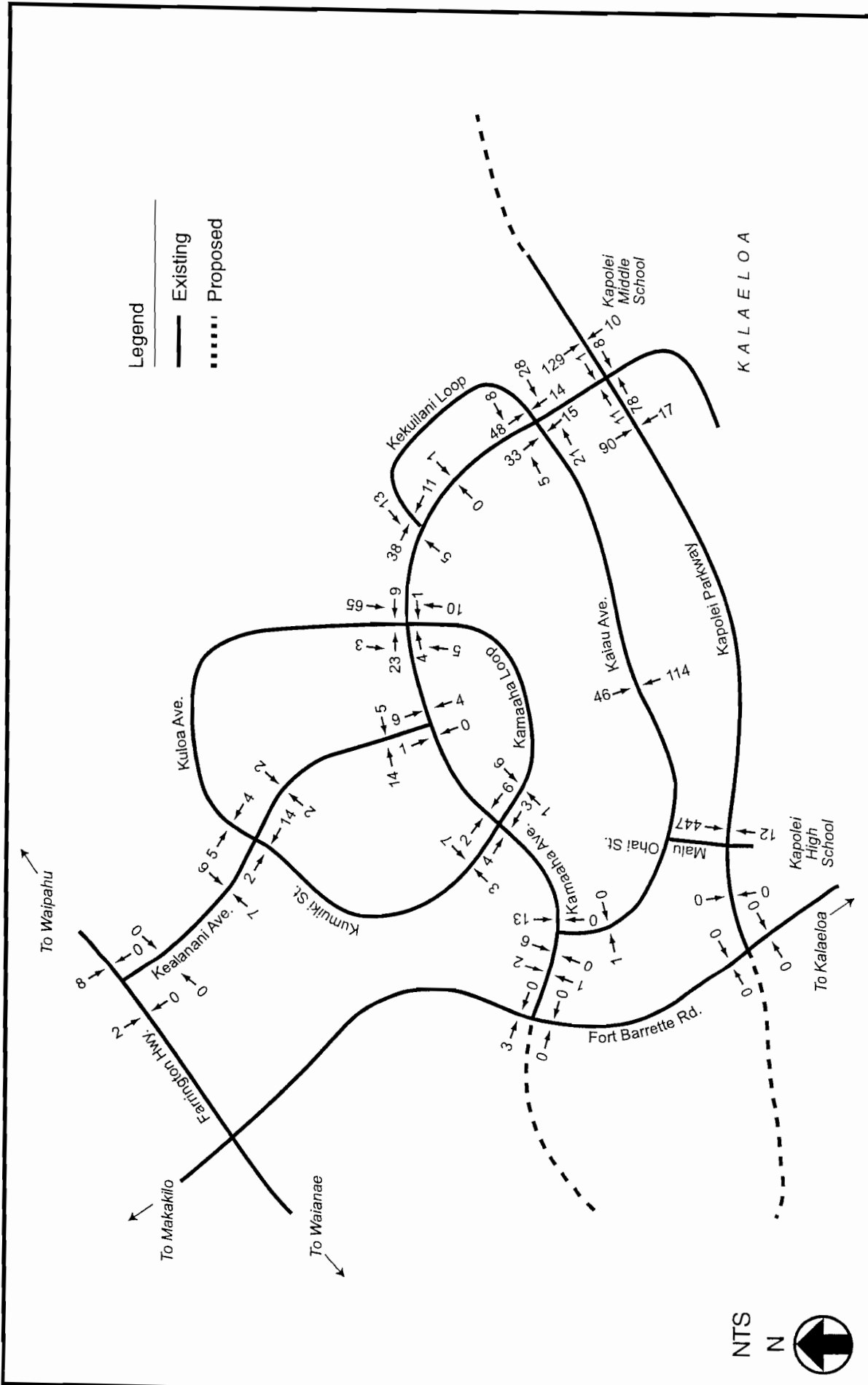


Figure 7

EXISTING AND PROPOSED PEDESTRIAN VOLUMES



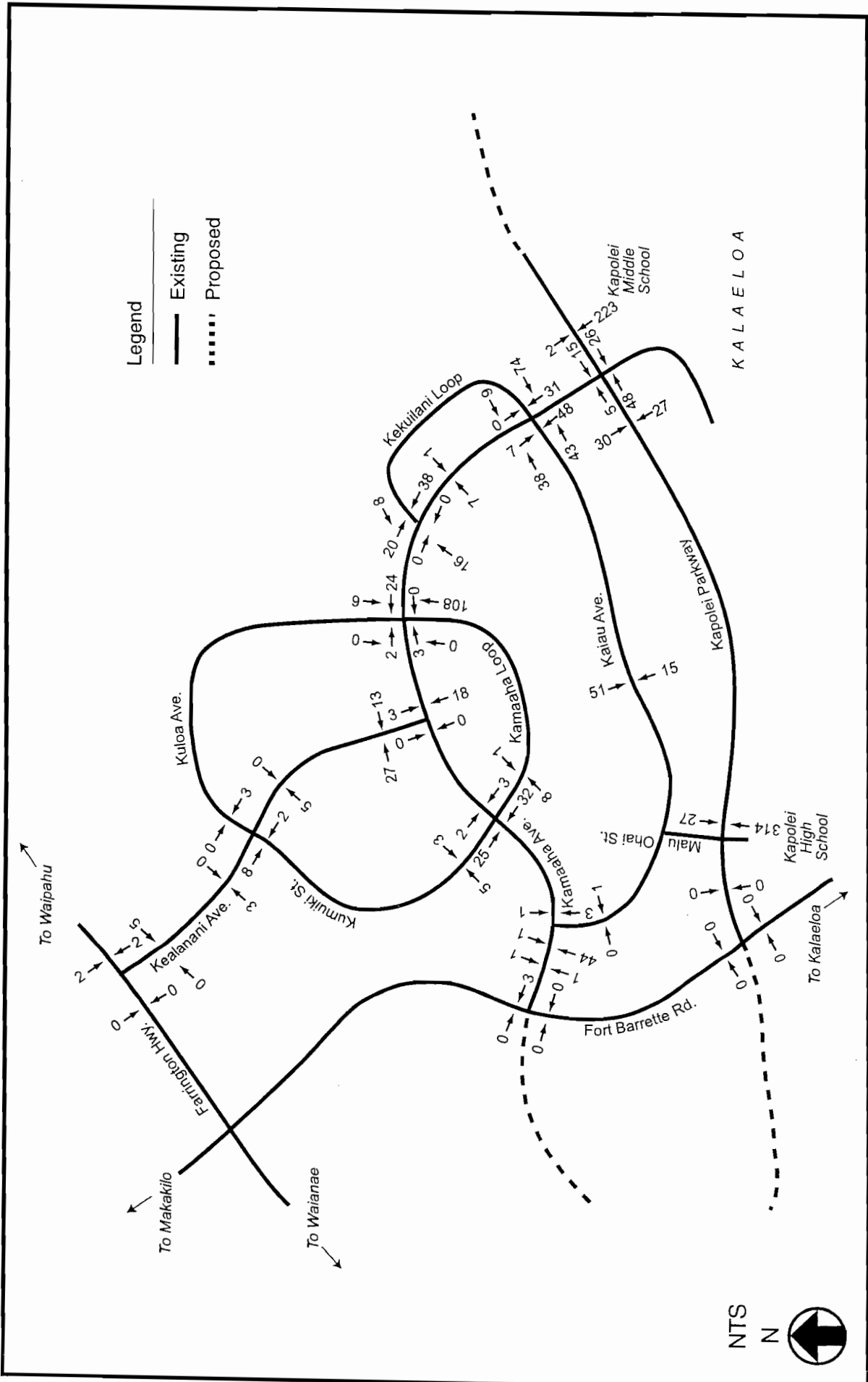


Figure 8

EXISTING MID-DAY PEDESTRIAN VOLUMES



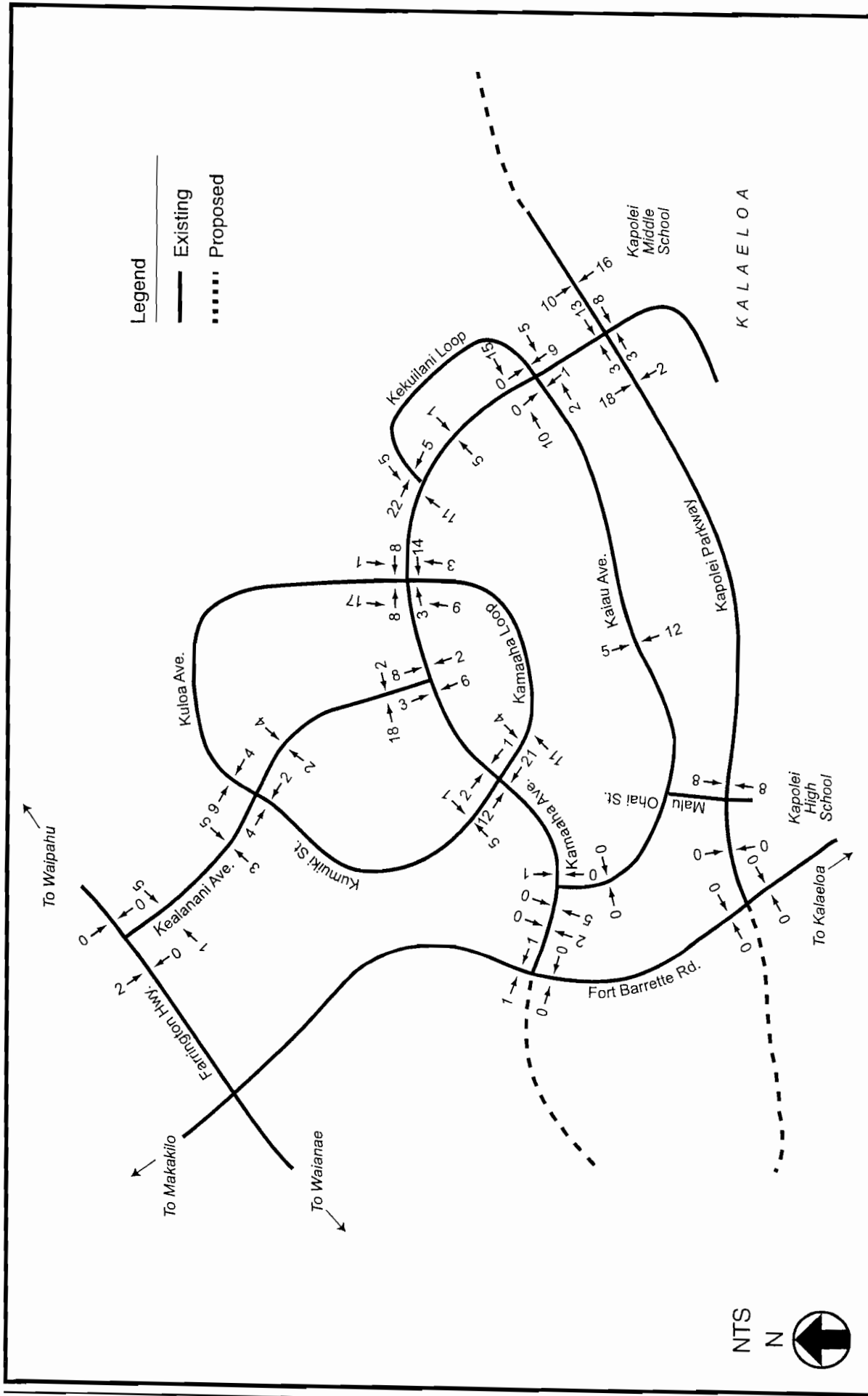


Figure 9

EXISTING PM PEDESTRIAN VOLUMES



Table 1 Existing Unsignalized Intersections LOS

Intersection	AM Peak		Mid Day Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Kealanani Avenue and Kuloa Avenue/Kumuiki Street	Unsignalized					
KKHD Bound Left	C	24.8	C	15.1	C	24.2
KKHD Bound Thru/Right	B	11.2	A	9.1	C	16.9
Waianae Bound Left	C	16.7	B	14.1	C	19.1
Waianae Bound Thru/Right	B	12.0	A	9.3	A	9.4
Mauka Bound Left	A	8.1	A	7.7	A	8.1
Makai Bound Left	A	8.9	A	7.9	A	8.0
Fort Barrette Road and Kapolei Parkway	Unsignalized					
Waianae Bound Left	F	-	F	119.2	F	165.4
Waianae Bound Right	E	43.1	B	14.6	B	14.1
Makai Bound Left	B	14.9	A	9.8	A	9.3
Fort Barrette Road and Kamaaha Avenue	Unsignalized					
Waianae Bound Left	F	-	F	401.0	F	-
Waianae Bound Right	F	493.3	C	21.4	C	19.6
Makai Bound Left	B	13.0	B	11.0	B	12.6
Kamaaha Avenue and Kaiau Avenue	Unsignalized					
Waianae Bound Left	A	8.2	A	8.1	A	8.5
Mauka Bound Left	C	19.7	B	13.0	B	13.3
Mauka Bound Right	A	9.9	A	9.7	A	10.0
Kamaaha Avenue and Kumuiki Street/Kamaaha Loop(West Loop)	Unsignalized					
KKHD Bound Left	A	7.7	A	7.6	A	7.6
Waianae Bound Left	A	8.1	A	7.8	A	7.8
Mauka Bound Left/Thru	C	18.3	C	15.7	C	16.0
Mauka Bound Right	A	9.6	A	9.3	A	9.2
Makai Bound Left/Thru/Right	B	13.1	B	11.7	A	9.9
Kamaaha Avenue and Kealanani Avenue	Unsignalized					
KKHD Bound Left	A	9.5	A	8.3	A	7.9
Makai Bound Left	D	29.1	B	13.5	B	13.4
Makai Bound Right	B	11.5	A	9.9	A	9.5

Table 1 Existing Unsignalized Intersections LOS (Continued)

Intersection	AM Peak		Mid Day Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Kamaaha Avenue and Kuloa Avenue/Kamaaha Loop(East Loop)	Unsignalized					
KKHD Bound Left	A	8.7	A	8.0	A	7.8
Waianae Bound Left	A	8.4	A	7.9	A	8.0
Mauka Bound Left	D	25.9	B	14.3	B	13.1
Mauka Bound Thru/Right	B	13.5	B	12.5	B	11.5
Makai Bound Left/Thru	D	25.8	C	16.6	B	12.9
Makai Bound Thru/Right	C	15.5	B	12.0	B	10.4
Kamaaha Avenue and Kekuilani Loop (Mauka)	Unsignalized					
Waianae Bound Left/Right	B	13.8	B	10.9	B	10.1
Makai Bound Left	A	8.9	A	8.3	A	7.9
Kamaaha Avenue and Kaiua Avenue/Kekuilani Loop (Makai)	Unsignalized					
KKHD Bound Left/Thru	C	20.0	B	14.6	B	12.0
KKHD Bound Right	B	10.8	B	11.1	A	9.0
Waianae Bound Left/Thru/Right	C	17.3	B	12.3	A	9.9
Mauka Bound Left	A	8.3	A	8.0	A	7.6
Makai Bound Left	A	8.4	A	7.9	A	7.6
Kapolei Parkway and Malu Ohai Street	Unsignalized					
KKHD Bound Left	A	7.7	A	7.5	A	7.4
Waianae Bound Left	A	8.7	A	7.7	A	7.5
Mauka Bound Left/Thru/Right	E	46.8	B	11.2	B	10.7
Makai Bound Left/Thru	E	37.2	B	12.1	B	10.7
Makai Bound Right	A	9.2	A	8.7	A	8.6
Kamaaha Avenue and Kapolei Parkway	Unsignalized					
KKHD Bound Left/Thru/Right	B	14.21	B	10.11	A	7.92
Waianae Bound Left/Thru/Right	B	11.43	A	8.91	A	7.52
Mauka Bound Left	B	12.21	A	9.36	A	8.21
Mauka Bound Thru/Right	B	12.96	A	9.65	A	8.02
Makai Bound Left	B	12.20	A	9.22	A	8.04
Makai Bound Thru/Right	B	13.49	A	9.93	A	8.28

Note: - indicates that no data was collected during this period or control delays were considered very high.

a) Fort Barrette Road

Both Kamaaha Avenue and Kapolei Parkway Waianae-bound left-turns onto makai-bound Fort Barrette Road experience delays during the observed peak hours due to high through traffic on Fort Barrette Road. Mitigating this condition somewhat are gaps in the makai-bound flow on Fort Barrette Road created by the adjacent traffic signal at Farrington Highway. Although the left-turn volume from Kamaaha Avenue and Kapolei Parkway experience delays, the current demand at each approach is less than 100 vehicles per hour (VPH) during the peak periods. Also, during the AM peak both Kamaaha Avenue and Kapolei Parkway Waianae-bound right-turns onto mauka-bound Fort Weaver Road experience high delays due to high mauka-bound traffic volume on Fort Barrette Road. This through traffic on Fort Barrette Road is comprised of traffic using Roosevelt Avenue through Kalaeloa (former Barber's Point NAS) to travel between Ewa and the City of Kapolei or H-1 Freeway.

b) Kapolei Parkway

The intersections on Kapolei Parkway at Malu Ohai Street and Kamaaha Avenue were observed to experience a pulse of intense pedestrian and vehicular traffic increase before and after school. Currently, there are crossing guards assigned to both intersections during these time periods.

Conflicts between pedestrian and vehicular activity at the Malu Ohai Street intersection affects traffic movements turning out of Malu Ohai Street and the Kapolei High School Driveway during the AM peak hour. At times, vehicles turning out of these approaches were forced to stop in the middle of the intersection as pedestrians crossed Kapolei Parkway, blocking vehicles traveling on Kapolei Parkway. The Malu Ohai Street intersection operates well during the other observed peak periods.

The Kapolei Parkway/Kamaaha Avenue intersection is configured as an all-way STOP, and Kapolei Parkway has been temporarily narrowed to one lane approaches. The narrowed approaches combined with very concentrated school-related traffic demand creates congestion during a portion of the after-school peak hour. During this time period, it was observed that parents and school buses picking up school children travel KKHD-bound on Kapolei Parkway and make a U-turn at the Kapolei Canal Bridge to travel Waianae-bound.

This is due to the lack of a break in the median of Kapolei Parkway at the main driveway to Kapolei Middle School.

c) Kamaaha Avenue

All intersections along Kamaaha Avenue are unsignalized and stop signed controlled at the minor approaches. With the exception of the intersections with Fort Barrette Road and Kapolei Parkway (previously discussed), all movements operate at an acceptable LOS D or better.

d) Kealanani Avenue

Kealanani Avenue/Kumuiki Street/Kuloa Avenue intersection operates at an acceptable LOS C or better during AM, mid-day and PM Peak periods. The adjacent traffic signal at Farrington Highway provide acceptable gaps for KKHD/Waianae-bound left-turn vehicles to complete their movement and the existing median provides storage for left-turn vehicles to complete their turn in two phases: 1) a vehicle crosses the mauka or makai-bound lane on Kealanani Avenue and then stops in the median area; 2) the vehicle then merges into the makai or mauka-bound traffic flow. These steps reduce the delay because the vehicle does not have to wait for an acceptable gap to occur simultaneously in both mauka and makai-bound traffic on Kealanani Avenue.

2. Results of Signalized Intersections

Two signalized intersections are located within the study area: Farrington Highway/Fort Barrette Road/Makakilo Drive intersection and Farrington Highway/Kealanani Avenue intersection. Data from a previous count at Farrington Highway/Fort Barrette Road/Makakilo Drive intersection were used to supplement data for this effort. Cycle lengths, phasing and timing were observed and recorded at both intersections. Table 2 summarizes the existing signalized intersection LOS.

a) Farrington Highway and Fort Barrette Road/Makakilo Drive

The intersection of Farrington Highway and Fort Barrette Road/Makakilo Drive intersection experiences congestion during both AM and PM peak hours (overall LOS E and D respectively). Long cycle lengths contribute to delays experienced at this intersection. Within the City of Kapolei, Farrington Highway is currently the only east-west roadway

carrying all of the traffic west of Fort Barrette Road. As a result, traffic destined for the Villages of Kapolei, Makakilo and H-1 Freeway Koko Head-bound go through this intersection. A large portion of the green time is allocated to the Koko Head-bound left-

Table 2 Existing Signalized Intersection LOS

Intersection	AM Peak		Mid Day Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Farrington Highway and Fort Barrette Road	E	72.3	-	-	D	50.7
KKHD Bound Left	D	45.5	-	-	D	45.2
KKHD Bound Thru	D	45.5	-	-	C	27.3
KKHD Bound Right	C	27.2	-	-	B	19.5
Waianae Bound Left	E	65.9	-	-	F	80.4
Waianae Bound Thru	F	107.4	-	-	E	71.1
Waianae Bound Right	E	73.8	-	-	D	40.6
Mauka Bound Left	E	74.6	-	-	E	62.0
Mauka Bound Thru	E	62.0	-	-	E	67.7
Mauka Bound Right	C	31.0	-	-	D	47.9
Makai Bound Left	D	53.8	-	-	E	59.5
Makai Bound Thru	F	103.7	-	-	F	95.9
Makai Bound Right	F	82.4	-	-	D	40.9
Farrington Highway and Kealanani Avenue	B	18.6	B	19.9	B	16.6
KKHD Bound Thru/Right	B	15.5	C	30.9	C	21.3
Waianae Bound Left	C	25.1	C	22.5	C	24.2
Waianae Bound Thru	B	10.3	B	10.1	B	10.3
Mauka Bound Left	C	29.1	B	12.6	B	12.3
Mauka Bound Right	A	4.4	A	3.9	A	3.9

turn onto mauka-bound Makakilo Drive. Fort Barrette Road also carries traffic that passes through Kalaeloa (Barber's Point) via F.D. Roosevelt Avenue. A large portion of the green

time is also allocated to the mauka-bound approach to satisfy the mauka-bound through and left-turn demand at this intersection. Field observations at the mauka-bound approach indicate queues in the left-turn lane extend makai blocking traffic headed mauka.

b) Farrington Highway and Kealanani Avenue

The Farrington Highway and Kealanani Avenue intersection operates at an acceptable LOS (LOS C or better) during the AM, mid-day, and PM peak periods. Approximately 50-percent of the existing traffic volume on Farrington Highway turns right from Farrington Highway onto makai-bound Kealanani Avenue making the KKHD-bound curb lane on Farrington Highway a de-facto right-turn lane.

E. Traffic Signal Warrant Analysis

24-hour traffic volumes conducted at the previously discussed intersections were used as input into traffic signal warrant analyses. Supplemental pedestrian data were collected at selected locations where pedestrian activity was observed to be a factor. Table 3 summarizes the results of the warrant analyses at the intersection within the Villages of Kapolei. The traffic signal warrant worksheets are located in Appendix D.

Of the 11 unsignalized intersections included in the study, it was determined that 6 intersections satisfied warrants as defined in the Manual on Uniform Traffic Control Devices, 2003 Edition (MUTCD 2003).

The Fort Barrette Road/Kamaaha Avenue and Fort Barrette Road/Kapolei Parkway intersections satisfied traffic volume warrants for signalization.

In addition, gap studies were conducted at the Kapolei Parkway/Malu Ohai Street and Kapolei Parkway/Kamaaha Avenue intersections to determine if either intersection satisfied the school crossing warrant. These intersections serve as primary accesses to Kapolei High School and Kapolei Middle School, respectively. Data were collected during morning and mid-day peak hours (7:00 AM – 8:00 AM and 1:45 PM – 2:45 PM). It was found that both intersections satisfied the school crossing warrants as specified in the Manual on Uniform Traffic Control Devices, 2003 Edition (MUTCD 2003) during the AM and mid-day peak hours.

Table 3 Traffic Signal Installation Warrants

Location	Peak Hour	4-Hour	8-Hour	School Xing
Farrington Hwy and Kealanani Ave	Signalized	Signalized	Signalized	Signalized
Kealanani Ave and Kumuiki St/Kuloa Ave	No	No	No	-
Ft Barrette Rd and Kamaaha Ave	Yes	Yes	Yes	-
Kamaaha Ave and Kaiau Ave	No	No	No	-
Kamaaha Ave and Kamaaha Loop (West)	No	No	No	Yes*
Kamaaha Ave and Kealanani Ave	No	No	No	-
Kamaaha Ave and Kamaaha Loop (East)	No	No	No	Yes*
Kamaaha Ave and Kekuilani Loop (mauka)	No	No	No	-
Kamaaha Ave and Kekuilani Loop (makai)	No	No	No	-
Kamaaha Ave and Kapolei Pkwy	No	No	No	Yes
Kapolei Pkwy and Malu Ohai St	No	No	No	Yes
Kapolei Pkwy and Ft Barrette Rd	Yes	Yes	Yes	-
Kaiau Ave (Between Malu Ohai and Hokeo)	-	-	-	-



* Taken from 2000 traffic assessment report by Austin, Tsutsumi & Assoc., Inc.

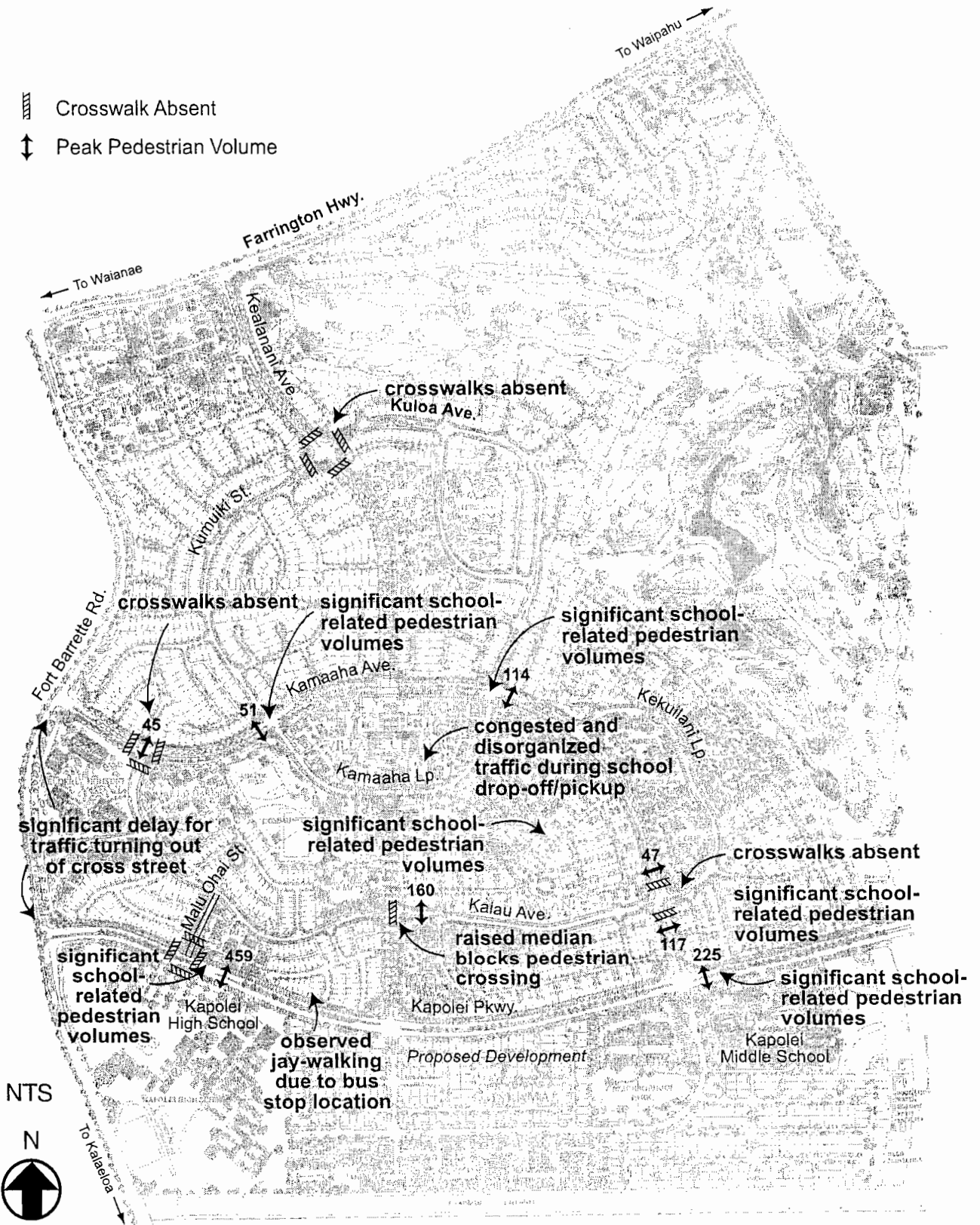
- Not calculated

Additionally, the two Kamaaha Loop/Kamaaha Avenue intersections, which are used by school children on their way to Kapolei Elementary School, also warrant signalization based on the School Crossing Warrant, based on traffic signal warrant analyses contained in the April 2000 Traffic Assessment Report by Austin, Tsutsumi & Associates, Inc.

F. Existing Traffic Issues

A compilation of existing transportation issues and concerns are identified and discussed in this section of the report. Figure 10 illustrates the existing transportation issues within the Village of Kapolei Development.

-  Crosswalk Absent
-  Peak Pedestrian Volume



VILLAGES OF KAPOLEI EXISTING TRANSPORTATION ISSUES

Figure 10

1. Vehicular Traffic Issues

During the off peak hours of the day, traffic volumes are generally very low within the Villages of Kapolei. There are traffic peaks during AM, mid-day, and PM peak hours. Because of the relatively low level of traffic activity, the surge of traffic volumes associated with Kapolei Elementary, Middle and High Schools is a significant part of the peak period activity. Figure 11 shows the existing 24-hour traffic volume on Kapolei Parkway and Kamaaha Avenue at Fort Barrette Road. As shown in Figure 11, the intense spike in traffic volume coincides with the time school begins and ends. In certain locations, the increase in traffic during the mid-day when school is released is higher than the PM commuter peak. Because much of the vehicular issues are related to school activity, the vehicular issues are related to the pedestrian issues and often overlap.

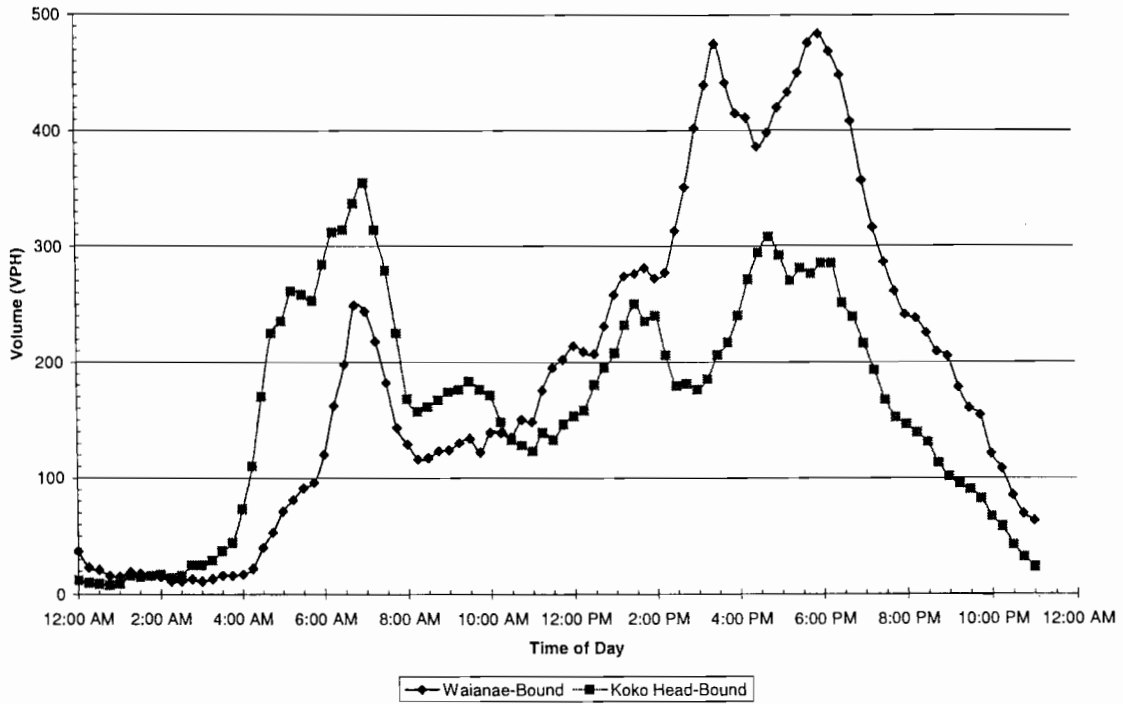
a) Kapolei Parkway and Kamaaha Avenue

During both AM and mid-day peak hours, queuing on the Koko Head and Waianae-bound approaches at the Kapolei Parkway/Kamaaha Avenue intersection has been observed to occur. This queuing is short in duration and appears to consist of parents, school buses, and other school-related vehicles associated with Kapolei Middle School. Figure 12 shows a picture of the Waianae-bound approach on Kapolei Parkway during the mid-day peak. The queue has been observed to reach 16-20 vehicles at times. Similar queuing was observed on the Koko Head-bound approach.

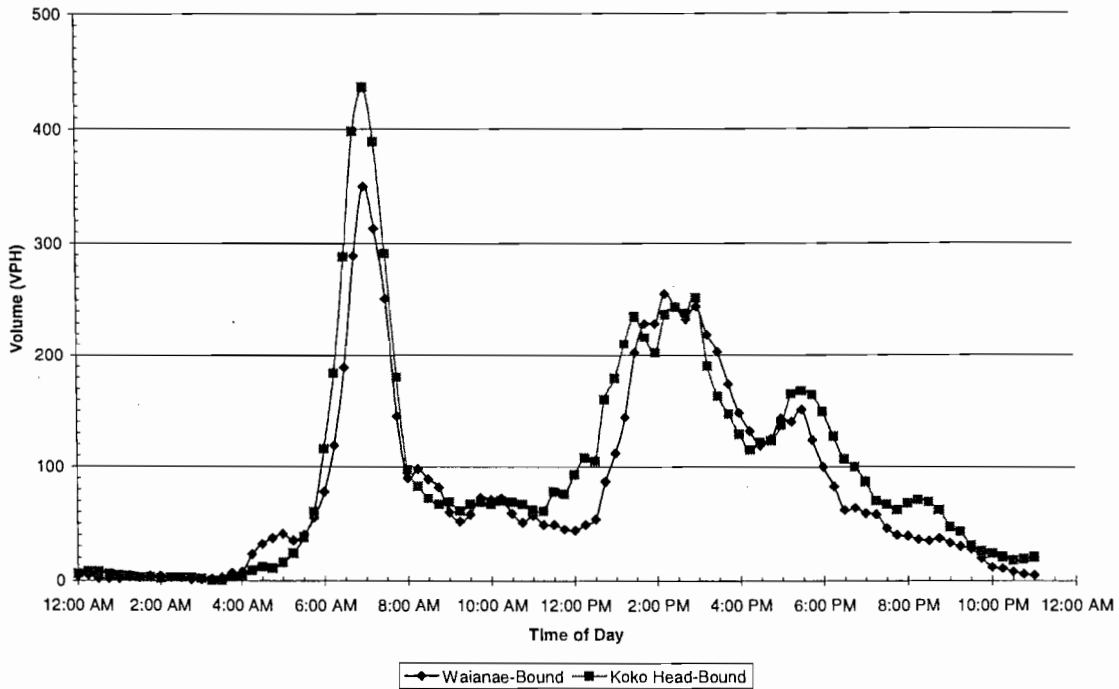
b) Kapolei Parkway and Malu Ohai Street

The Kapolei Parkway/Malu Ohai Street intersection experiences congestion during the AM and mid-day peaks due to Kapolei High School traffic. Traffic patterns during the AM peak show a significant amount of vehicles at this intersection enter Kapolei High School (approximately 45%). More than half of the traffic entering Kapolei High School enters from Koko Head-bound Kapolei Parkway. This increase in traffic volume combined with the increase in pedestrian activity crossing Kapolei Parkway creates delays and queuing for vehicles.

Kamaaha Avenue KKHD of Ft Barrette Rd



Kapolei Parkway KKHD of Ft Barrette Rd



24-HOUR TRAFFIC VOLUMES ON
 KAPOLEI PKWY AND KAMAHA AVE
 AT FT BARRETTE RD

Figure
 11

Figure 12 Queuing on WB approach of Kapolei Pkwy-Kamaaha Ave



c) Kapolei Parkway/Fort Barrette Road and Kamaaha Avenue/Fort Barrette Road Intersections

Vehicles wanting to make a left-turn from Kapolei Parkway or Kamaaha Avenue onto makai-bound Fort Barrette Road experience delays during the observed peak periods due to high traffic volume on Fort Barrette Road. Similarly, Traffic turning right from Kapolei Parkway and Kamaaha Avenue onto mauka-bound Fort Barrette Road experience delays during the AM peak. Some gaps in the makai-bound direction are created from the upstream signal at Farrington Highway and Fort Barrette Road/Makakilo Drive intersection. But during the AM Peak, approximately 330 vehicles make a left-turn from makai-bound Fort Weaver Road onto Koko Head-Bound Kapolei Parkway, making it difficult to make a left turn from Kapolei Parkway to makai-bound Fort Barrette Road.

d) Kamaaha Loop

During the mid-day peak, Kamaaha Loop, in front of Kapolei Elementary School, becomes congested with vehicles belonging to people picking up children from the school. Figure 13 shows the effect of school related traffic on Kamaaha Loop during the mid-day peak. Kamaaha Loop essentially becomes a parking lot for approximately 15-20 minutes in the early afternoon period when school lets out. Vehicles have been observed to park along both sides of Kamaaha Loop and in the painted median, creating safety issues as children run to these cars. Additionally, those vehicles that do drive into the drop off area queue out of the Kapolei Elementary School Driveway blocking traffic on Kamaaha Loop.

Figure 13 Parking on Kamaaha Loop During Mid-Day Peak Period



Picture of Parking in median on Kamaaha Loop after school

2. Pedestrian Traffic Issues

Similar to vehicular traffic, pedestrian traffic is generally very low within The Villages of Kapolei except during the peak periods before and after school. Also included in Figure 10 is an illustration of pedestrian traffic issues within The Villages of Kapolei.

a) Areas of Significant Pedestrian Activity

(1) *Kapolei Parkway*

Significant pedestrian traffic was observed within The Villages of Kapolei crossing Kapolei Parkway, Kamaaha Avenue and Kaiiau Avenue. Figure 10 shows the locations of significant pedestrian activity and magnitude of pedestrians crossing at each location.

During the AM peak, Kapolei Parkway experience 459 and 225 pedestrians crossing at Malu Ohai Street and Kamaaha Avenue, respectively. These are mostly associated with Kapolei High School and Kapolei Middle School. The mid-day peak is slightly less intense with 341 and 282 pedestrians crossing Kapolei Parkway at Malu Ohai Street and Kamaaha Avenue, respectively.

Pedestrian crossing Kapolei Parkway in front of Kapolei High School occurs in three main locations: at Kapolei Parkway and Malu Ohai Street Intersection, at the pedestrian access through the fence midway between the two driveways, and at the central mauka-makai Villages of Kapolei pedestrian walkway. While most of the pedestrians cross at Malu Ohai Street, a large portion cross at the access through the fence and near the central mauka-makai pedestrian walkway. The component that crosses at the access through the fence is destined for a City bus stop located on the mauka side of Kapolei Parkway directly opposite the access through the fence.

(2) *Kamaaha Avenue*

Kamaaha Avenue has six internal pedestrian crossings. The Kamaaha Avenue/Kaiiau Avenue/Kekuilani Loop (makai) intersection has the greatest school-related pedestrian activity. Contributing to this crossing volume is the number of students from Kapolei Elementary School that were observed to exit behind the school via a pedestrian path onto Lanakoi Street. These students then walked to the Kekuilani Loop (makai) intersection on Kamaaha Avenue via Maulihiwa Street, Mamaka Street and Kaiiau Avenue. Many then

crossed Kamaaha Avenue. On the Koko Head leg of the Kamaaha Avenue/Kaiiau Avenue/Kekuilani Loop intersection, students buy snacks from a snack van after school. This activity results in children in the roadway on Kekuilani Loop (Makai) near Kamaaha Avenue.

Another major pedestrian crossing location is the Kamaaha Avenue/Kamaaha Loop (KKHD) intersection. A large share of the Kapolei Elementary School-related pedestrians cross Kamaaha Avenue at this location. There is a crossing guard at this intersection before and after school. A significant number of students riding bikes were observed at this intersection.

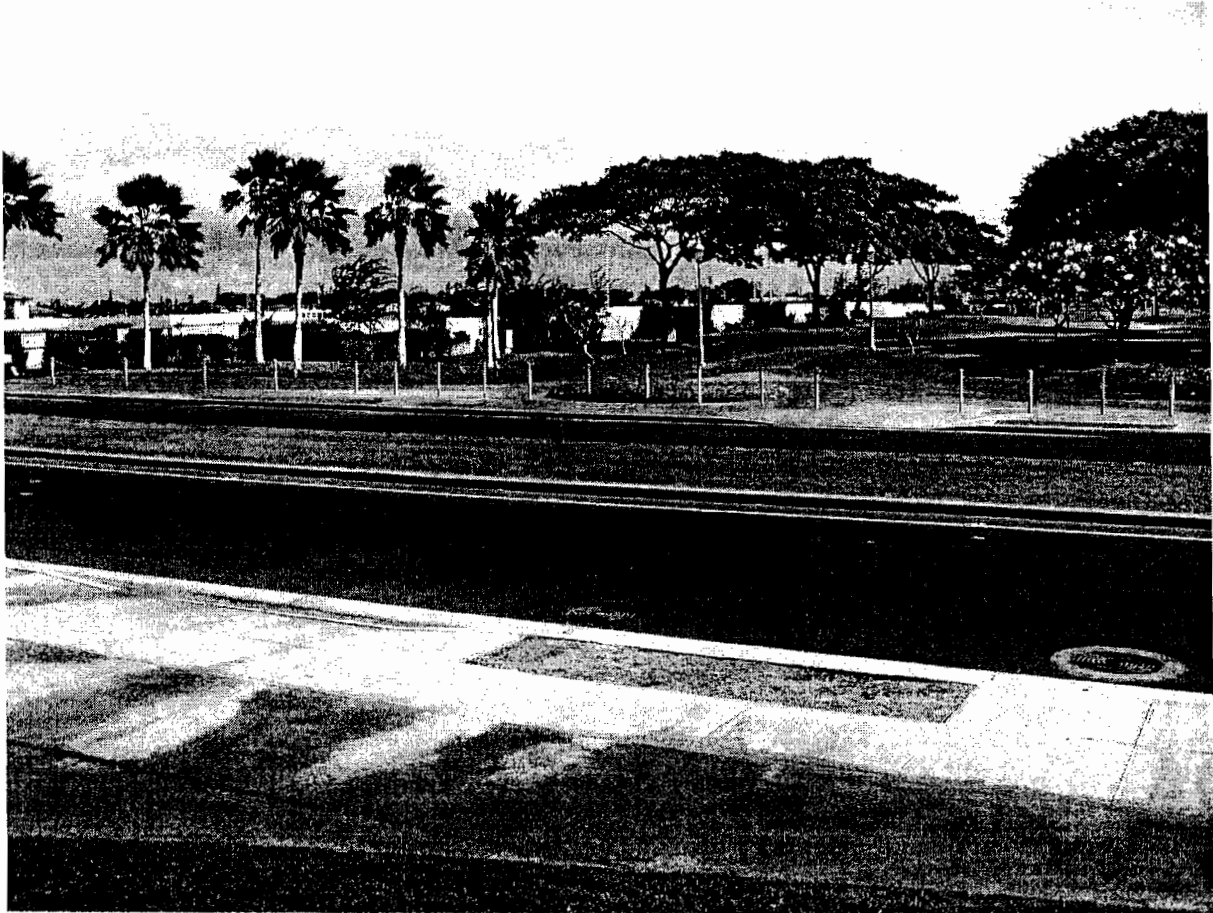
(3) *Kaiiau Avenue*

Kaiiau Avenue intersects the existing pedestrian path between Koanimakani Street and Hokeo Street. Observations and comments from residents indicate that the speed of vehicles on Kaiiau Avenue at this crossing is a concern. Also, although the pedestrian path has handicapped ramps at Kaiiau Avenue, there is no break in the raised median to accommodate the crossing. A photo of this crossing is shown in Figure 14.

b) Potential Crosswalk Locations within the Villages of Kapolei

Figure 10 identifies where potential crosswalks could be located within The Villages of Kapolei. Currently, these locations are unmarked.

Figure 14
Kaiiau Avenue between Koanimakani Street
and Hokeo Street Looking makai



III. PROJECTED BUILDOUT CONDITIONS

A. Projected Future Roadway Network

Future roadway improvements assumed for the Year 2025 time frame were based on the roadway improvements described in the *Oahu Regional Transportation Plan (ORTP)*, approved April 6, 2001 by the Policy Committee of the Oahu Metropolitan Planning Organization (OMPO). The ORTP is the official long-range planning document for Oahu. The *Ewa Transportation Master Plan* and the *North-South Road Corridor Study* were also consulted when greater specificity was required. Figure 15 illustrates the projected roadway network.

1. Major Roadways

Several improvements will be made to Interstate H-1, Farrington Highway, and Fort Barrette Road, and Kapolei Parkway and North-South Road are planned for completion by the Year 2025.

a) H-1 Freeway

The following Interstate H-1 improvement is assumed to occur by the analysis year:

- North-South Road Interchange - New interchange on H-1 Freeway constructed between Makakilo Interchange and Kunia Interchange.
- Kapolei Interchange – Construct new interchange between Makakilo Interchange and Palailai Interchange
- Makakilo Interchange – Construct new westbound onramp and eastbound off ramp
- Palailai Interchange – Improve existing interchange

b) Fort Barrette Road

- Widen Fort Barrette Road from 2 to 4-lanes between Farrington Highway and F.D. Roosevelt Avenue

c) North-South Road

New 6-lane arterial roadway constructed between H1 Freeway and Kapolei Parkway. The new North-South Road will provide alternative access to H1 Freeway for the Ewa plain.

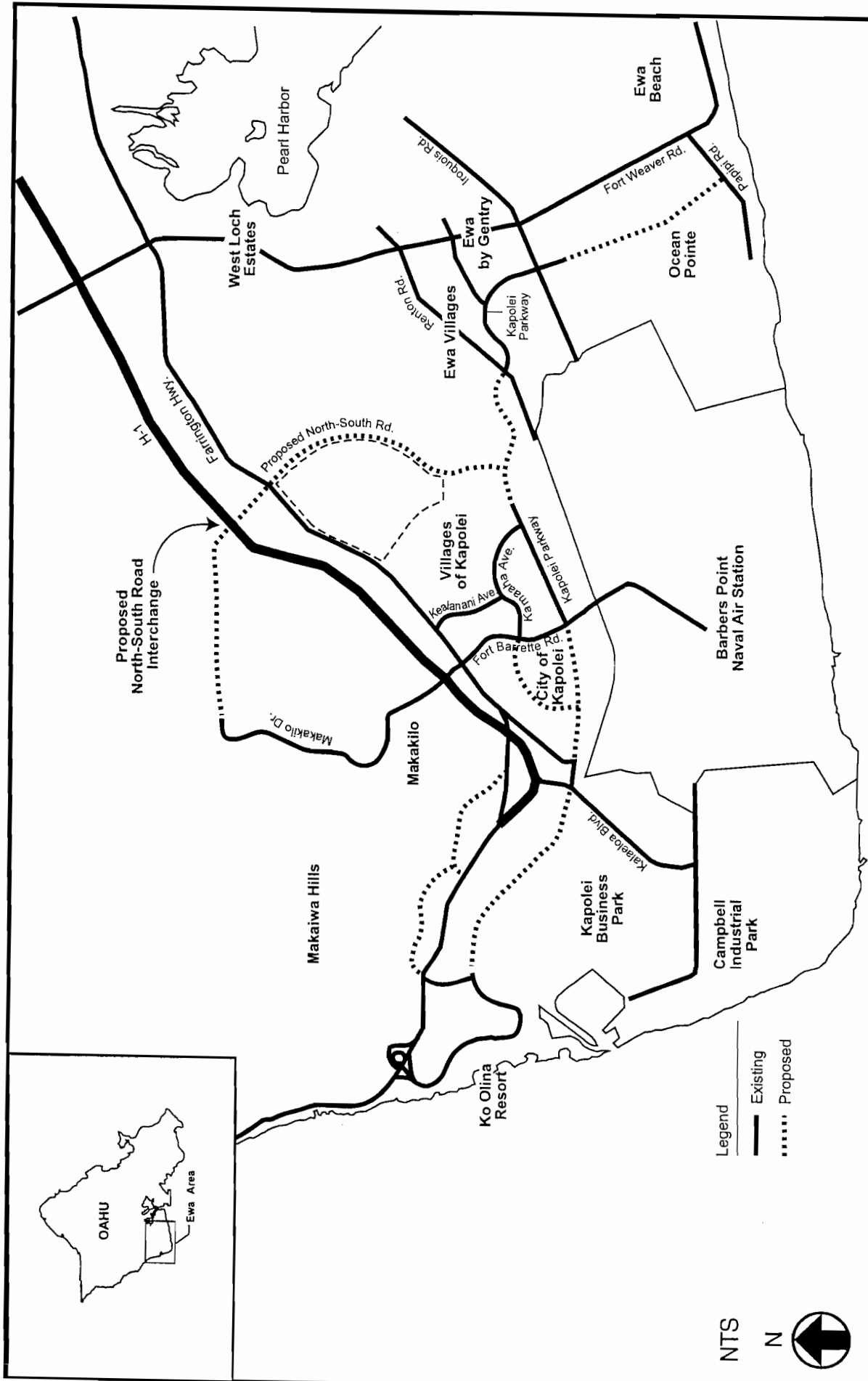
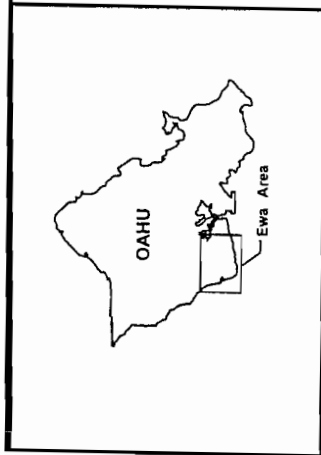


Figure 15

PROJECTED FUTURE ROADWAY NETWORK



NTS

N

Legend

- Existing (solid line)
- Proposed (dotted line)



It is proposed to be implemented in phases starting with an interim 3-lane roadway opening by early 2008 and an expansion to the ultimate 6-lane roadway when warranted by traffic demand.

d) Kapolei Parkway

Kapolei Parkway will ultimately be completed from Papipi Road to Ko Olina Resort. Much of this roadway has already been constructed. Segments of the roadway within Ewa by Gentry, Ocean Pointe, and the Villages of Kapolei are complete. The City and County of Honolulu is currently moving forward on the segment between the OR&L right-of-way and Renton Road. The segment between Renton Road and North-South Road will be constructed within the same time frame as North-South Road. This leaves the segment between North-South Road and the drainage bridge near Kapolei Middle School, the segment between Fort Barrette Road and Kamokila Boulevard, and the segment between Kalaeloa Boulevard and Ko Olina as key links to be finished for Kapolei Parkway to fulfill its regional arterial function within the Ewa plain.

e) Farrington Highway

Farrington Highway will be widened to four lanes from Kapolei Golf Course Access Road to Fort Weaver Road. Farrington Highway is already four lanes from the Kapolei Golf Course Access Road to Kamokila Boulevard.

f) Kamaaha Avenue

Kamaaha Avenue will be extended west into the City of Kapolei terminating at Kapolei Parkway, KKHD of Kamokila Boulevard.

2. Transit Service

The current bus routes reflect a "hub and spoke" system implemented recently. As population grows, the bus fleet is assumed to grow to handle increased transit needs within the Ewa plain. Through the *Primary Corridor Transportation Project*, the City and County of Honolulu is planning improvements that would increase the transit carrying capacity between Kapolei and other major activity areas.

B. Projected Buildout Traffic Volumes

1. Trip Generation

The *Institute of Transportation Engineers (ITE), Trip Generation, 6th edition (1998)* was used to estimate the number of trips generated by the Villages of Kapolei Development based on future development identified in Table 4.

Table 4 Completed and Forecasted Development

Parcel	Total Units	Completed Units	Future Completion			
			Single Family	Multi Family	Elderly Home	Apt
Village 1 - Kumu Iki	519	519				
Village 1 - Northwest Corner (BMX-3)	0	0				
Village 2 - Aeloa	572	432		140		
Village 3 - Malanai	384	384				
Village 4 - Kekuilani	645	609	36			
Village 5 - Iwalani	448	273	31	144		
Village 5 - Kulalani	128	128				
Village 6 - Maluohai	226	181	45			
Village 6 - Pae Ko Gardens	128	128				
Village 7 - Kapolei Kai	204	204				
Village 8 - Future Single Family Residential	446	0	446			
Elderly Mid-Rise Apartments (Multi Family)	500	0			500	
Village Center (Residential) AMX-1	204	0				204
Village Center (Commercial) AMX-1	0	0				

Total	4404	2858	1546			
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Table 4 summarizes the total units expected upon completion of The Villages of Kapolei, the total units currently completed and the expected and type of development in each village expected to be completed in the future. The site generated traffic acknowledges only the expected development summarized in Table 4. Table 5 summarizes the trips generated by the future residential and commercial units planned in The Villages of Kapolei

Development. The village number and name correspond with the development plan shown in Figure 2 of this report and the ITE codes are shown for each parcel.

Table 5
Trip Generation Summary
New Village of Kapolei Development

Parcel	ITE Code	Intensity	AM Peak		PM Peak		Afternoon	
			Enter	Exit	Enter	Exit	Enter	Exit
Village 1 - Northwest Corner (BMX-3)	820	26.6 Acre	101	65	319	346	0	0
Village 2 - Aelo	231	140 Units	23	70	64	49	0	0
Village 4 - Kekuilani	210	36 Units	6	19	21	12	11	9
Village 5 - Iwalani	210	31 Units	6	17	18	10	9	8
Village 5 - Iwalani	231	144 Units	24	72	66	50	0	0
Village 6 - Maluohai	210	45 Units	8	24	26	15	13	11
Village 8 - Future Single Family (Res)	210	446 Units	80	240	259	145	132	113
Elderly Mid-Rise Apartments	253	500 Units	22	13	30	21	0	0
Village Center (Residential)	221	204 Units	20	79	82	42	0	0
Village Center (Commercial)	820	3.4 Acre	13	8	41	44	0	0

2. Trip Distribution and Assignment

The traffic generated by the future Villages of Kapolei development was directionally distributed and assigned to the future roadway network.

A summary of regional travel patterns to and from the Kapolei area was created from the Oahu Metropolitan Planning Organization (OMPO) travel demand model production and attraction trip table. Table 6 summarizes the residential distribution patterns of the generated volumes entering and exiting the Kapolei area. Directions of the generated trips were taken into account by the directional split in the ITE *Trip Generation* 6th edition corresponding with each type of development. Trips associated with the commercial development in The Villages of Kapolei were assumed to service the immediate area and were proportionally distributed to The Villages of Kapolei and Makakilo.

Table 6 Trip Distribution of Villages of Kapolei Residential Trips

Location	Split
Waianae Coast (Campbell Industrial, Ko Olina, etc.)	11%
Makakilo	7%
Kalaeloa (Barbers Point)	3%
The City of Kapolei	1%
The Villages of Kapolei (Internal traffic)	5%
Farrington Highway (UH West Oahu, East Kapolei, etc.)	13%
Kapolei Parkway (Ewa Beach)	21%
H1 Freeway (East Oahu)	39%

Traffic within The Villages of Kapolei was distributed to Villages 1 – 8 by a weighted average of total development. These trips were assigned to the roadway network and are reflected in the projected traffic turning volumes. These trips within The Villages of Kapolei were distributed from Village 1 (BMX-3) commercial development to residential development as summarized in Table 7.

These distributions were applied to the trips generated, and the resulting project-generated trip assignment is shown in Figures 16-17

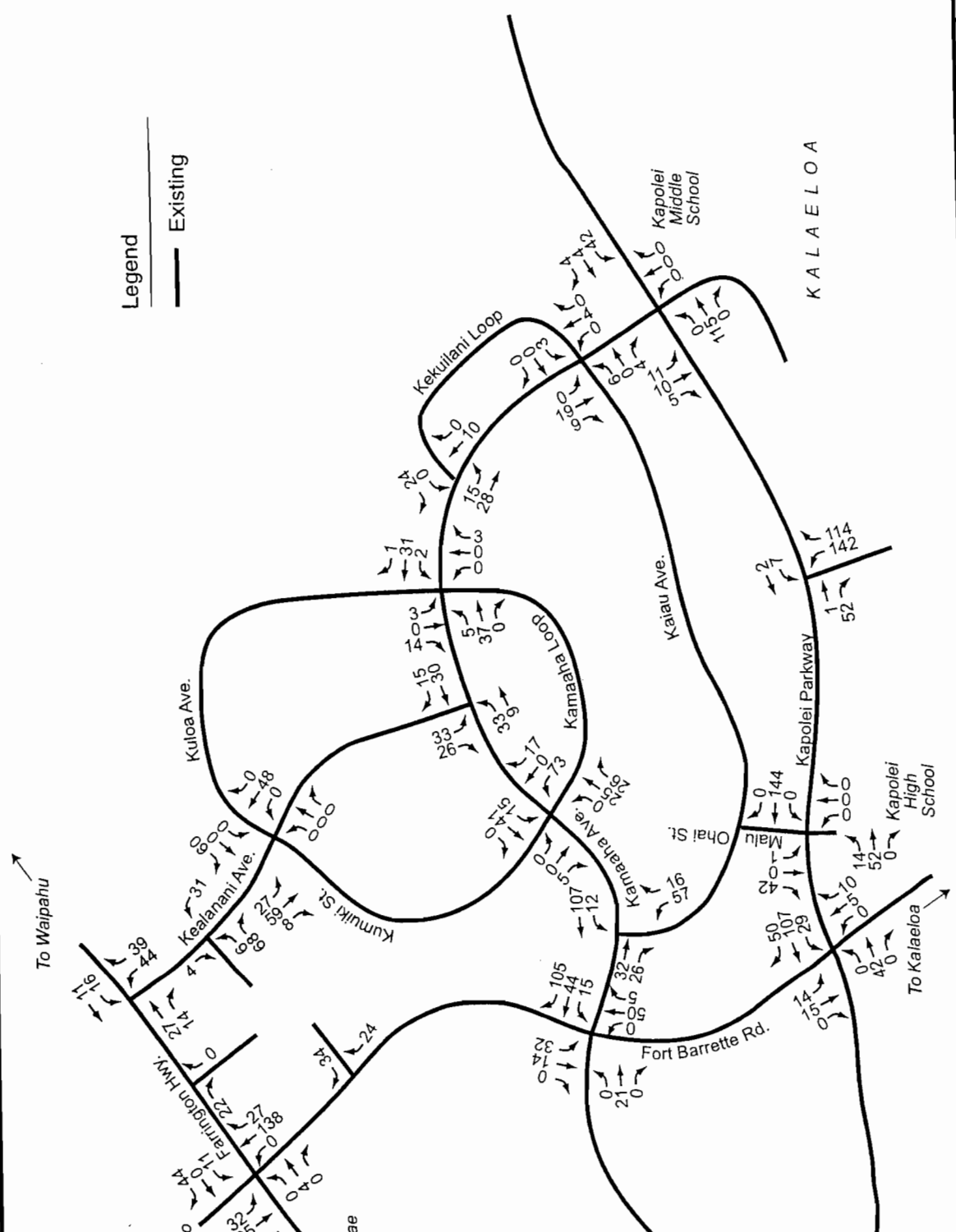


Figure 16

AM PEAK FUTURE DEVELOPMENT GENERATED TRIPS



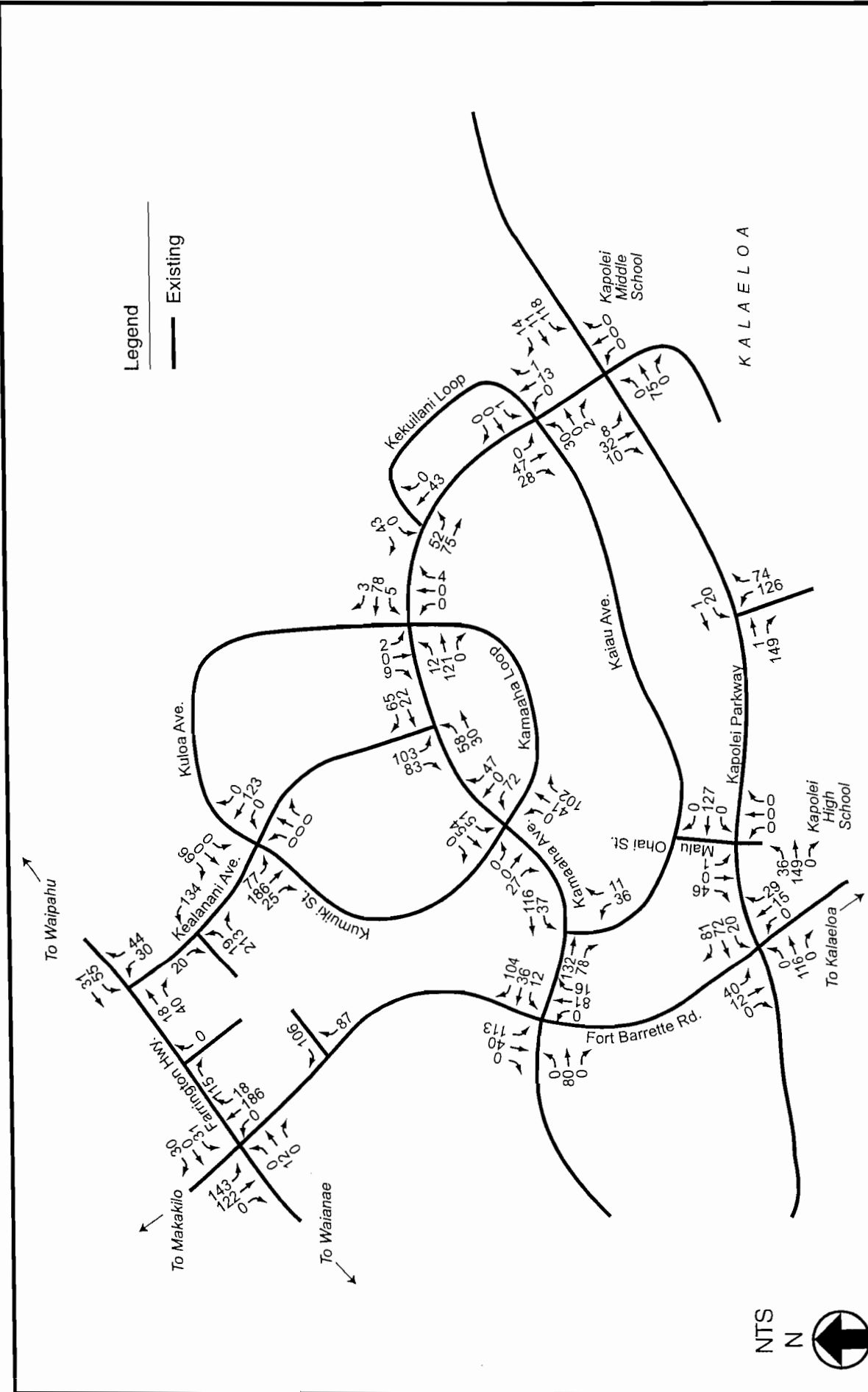


Figure 17

PM PEAK FUTURE DEVELOPMENT GENERATED TRIPS



Table 7 Trip Distribution of Villages of Kapolei Commercial Trips

Location	Traffic Split
Makakilo	33%
Village 1 - Kumu Iki	8%
Village 2 - Aeloa	9%
Village 3 - Malanai	6%
Village 4 - Kekuilani	10%
Village 5 - Iwalani	7%
Village 5 - Kulalani	2%
Village 6 - Maluohai	3%
Village 6 - Pae Ko Gardens	2%
Village 7 - Kapolei Kai	3%
Village 8 - Future Single Family Residential	6%
Elderly Mid-Rise Apartments (Multi Family)	8%
Village Center (Residential) AMX-1	3%

3. Year 2025 Background Traffic

The Year 2025 background traffic were derived from the projected volumes estimated by the Oahu Metropolitan Planning Organization (OMPO) Regional Transportation Plan travel demand model and refined using the travel demand model associated with the Ewa Transportation Master Plan. This background traffic is also consistent with traffic forecasts developed for the *North-South Road and Kapolei Parkway Corridor Study* currently being completed.

The future Year 2025 background traffic assumes appropriate level of buildout for The City of Kapolei, University of Hawaii West Oahu campus, and East Kapolei development parcels. These developments account for the majority of future background traffic generated in the study area. In areas where greater detail was necessary, background traffic was estimated using rates documented in *Trip Generation, 6th Edition*. Traffic

volumes forecasted by the OMPO travel demand model were used as control totals to develop a future Year 2025 peak hour assignment for the study area.

The projected Year 2025 background traffic volumes are shown in Figure 18-19.

4. Total Traffic

The traffic generated by The Villages of Kapolei was added to the projected background traffic to obtain the total peak hour traffic volumes shown in Figures 20-21

C. Projected Intersection Operations

Key intersections were analyzed using the methodologies for unsignalized and signalized intersections outlined in the *2000 Highway Capacity Manual (HCM)*. Operating conditions at an intersection are expressed as qualitative measures known as Level of Service (LOS) ranging from A to F. LOS A represents free-flow operations with low delay, while LOS F represents congested conditions with relatively high delay. The approach LOS is a weighted average of the LOS of individual traffic movement groups. Appendix B has more detailed definitions of intersection LOS. Implicit in these analyses results are specific roadway and intersection configurations, and these are summarized in the following write up and illustrated in Figure 22.

1. Projected Operations at Unsignalized Intersections

Five intersections were analyzed as unsignalized intersection:

- Kealanani Avenue and Entrance B (BMX -3 Parcel KKHD Driveway)
- Kealanani Avenue and Kumuiki Street/Kuloa Avenue
- Kamaaha Avenue and Kaiu Avenue
- Kamaaha Avenue and Kealanani Avenue
- Kamaaha Avenue and Kekuilani Loop (Mauka)

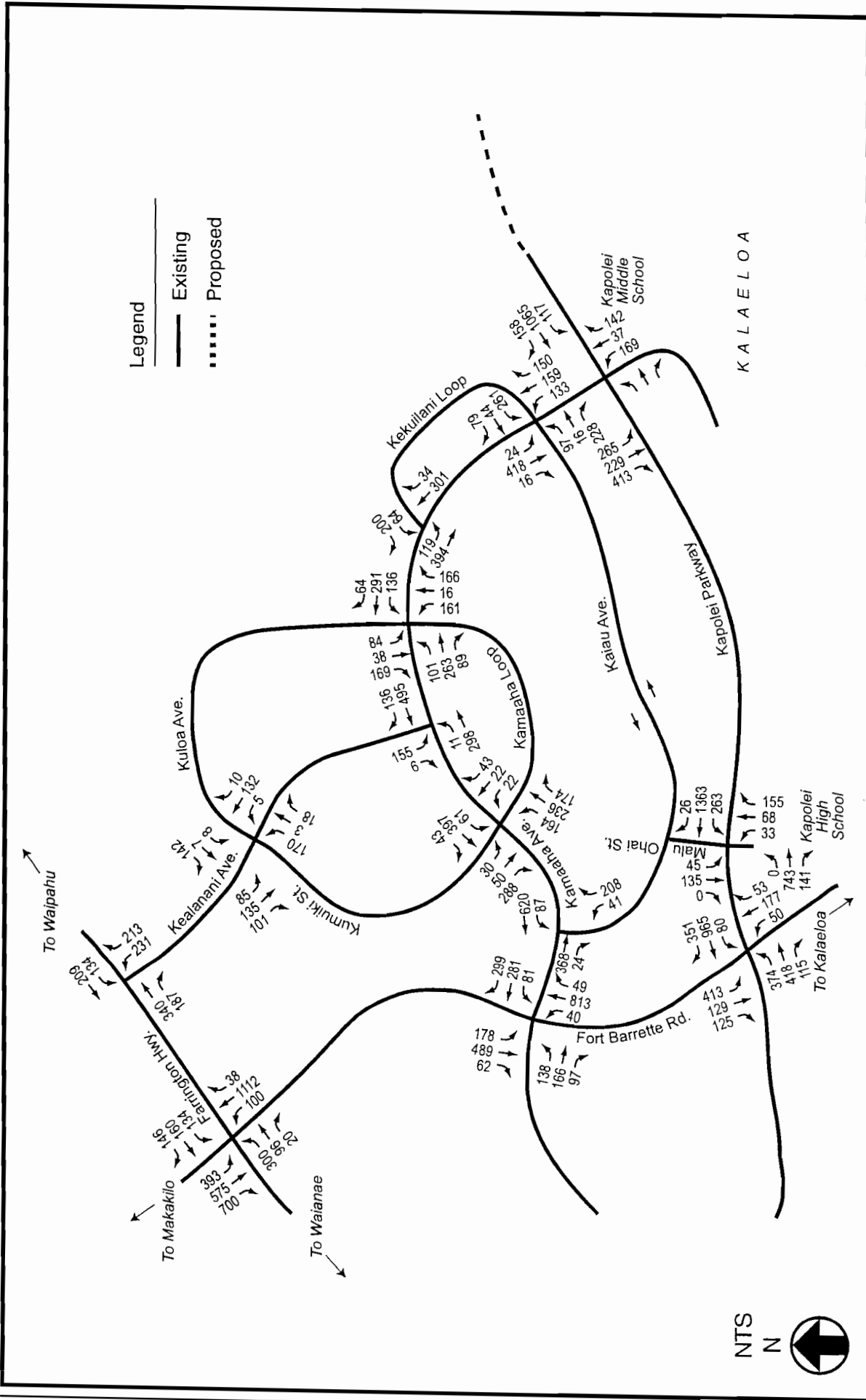


Figure 18

YEAR 2025 AM PEAK FORECASTED BACKGROUND TRAFFIC VOLUMES



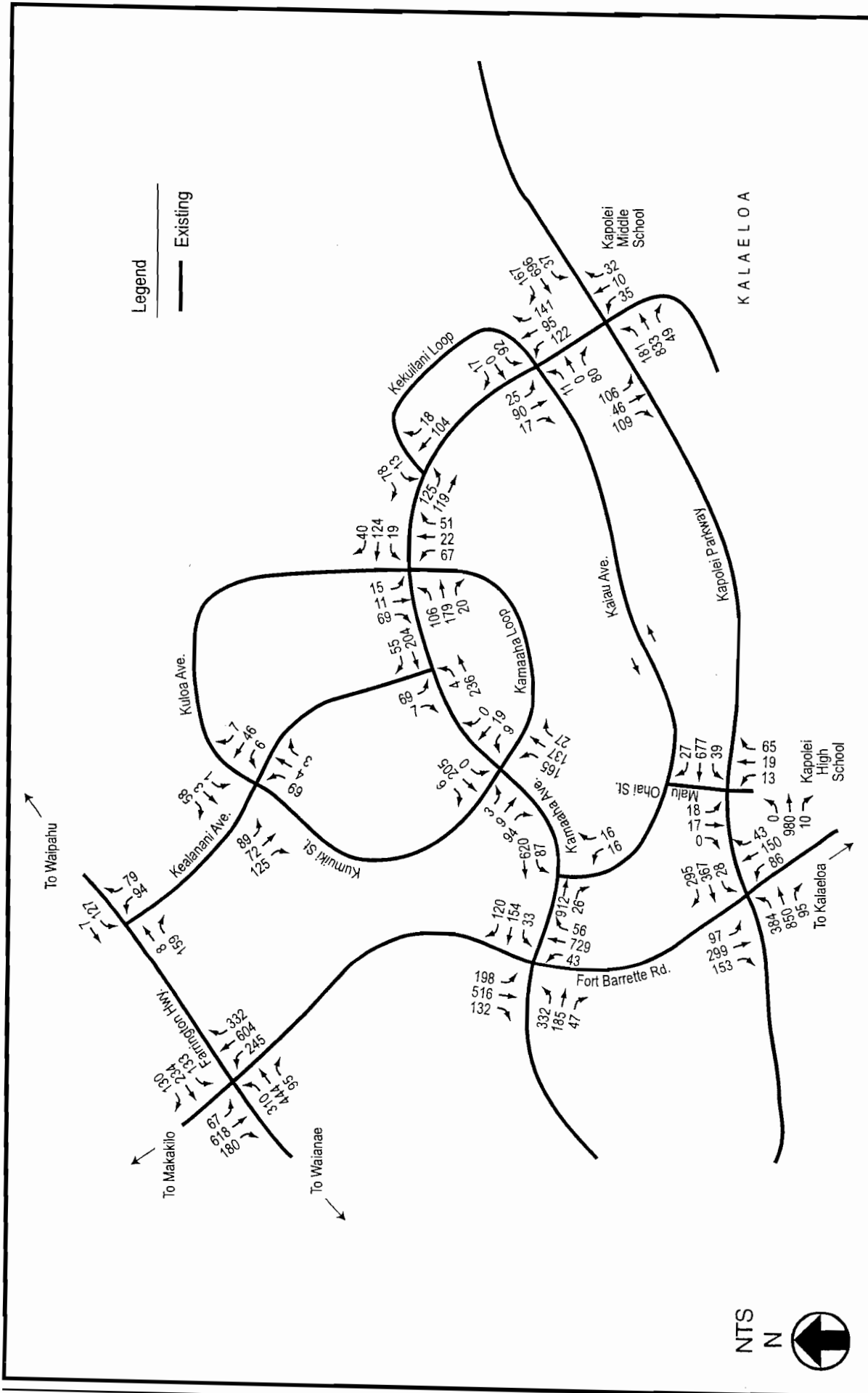
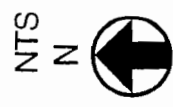


Figure
19

**YEAR 2025 PM PEAK FORECASTED BACKGROUND
 TRAFFIC VOLUMES**



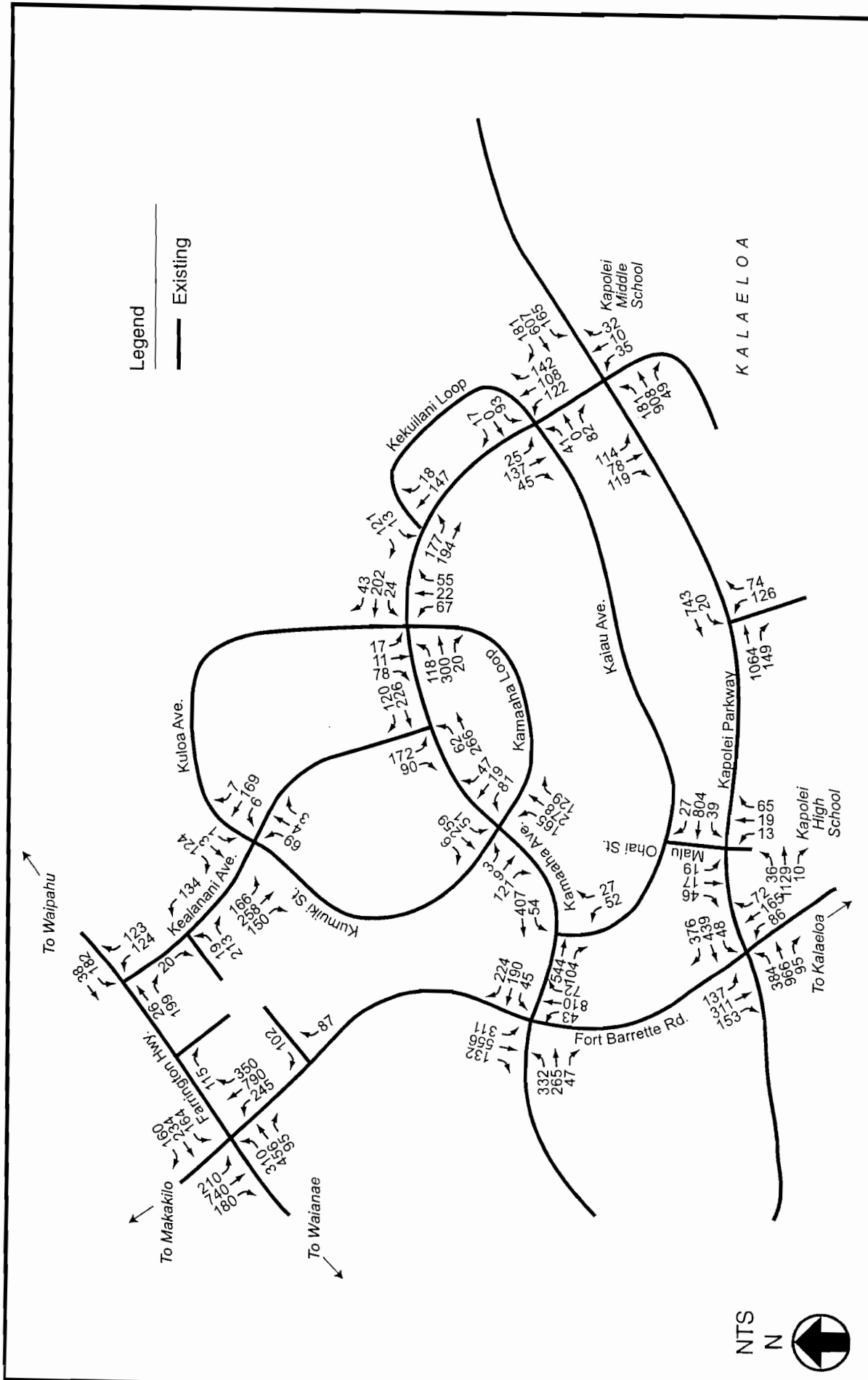


Figure 21

**YEAR 2025 PM PEAK FORECASTED
 TOTAL TRAFFIC VOLUMES**



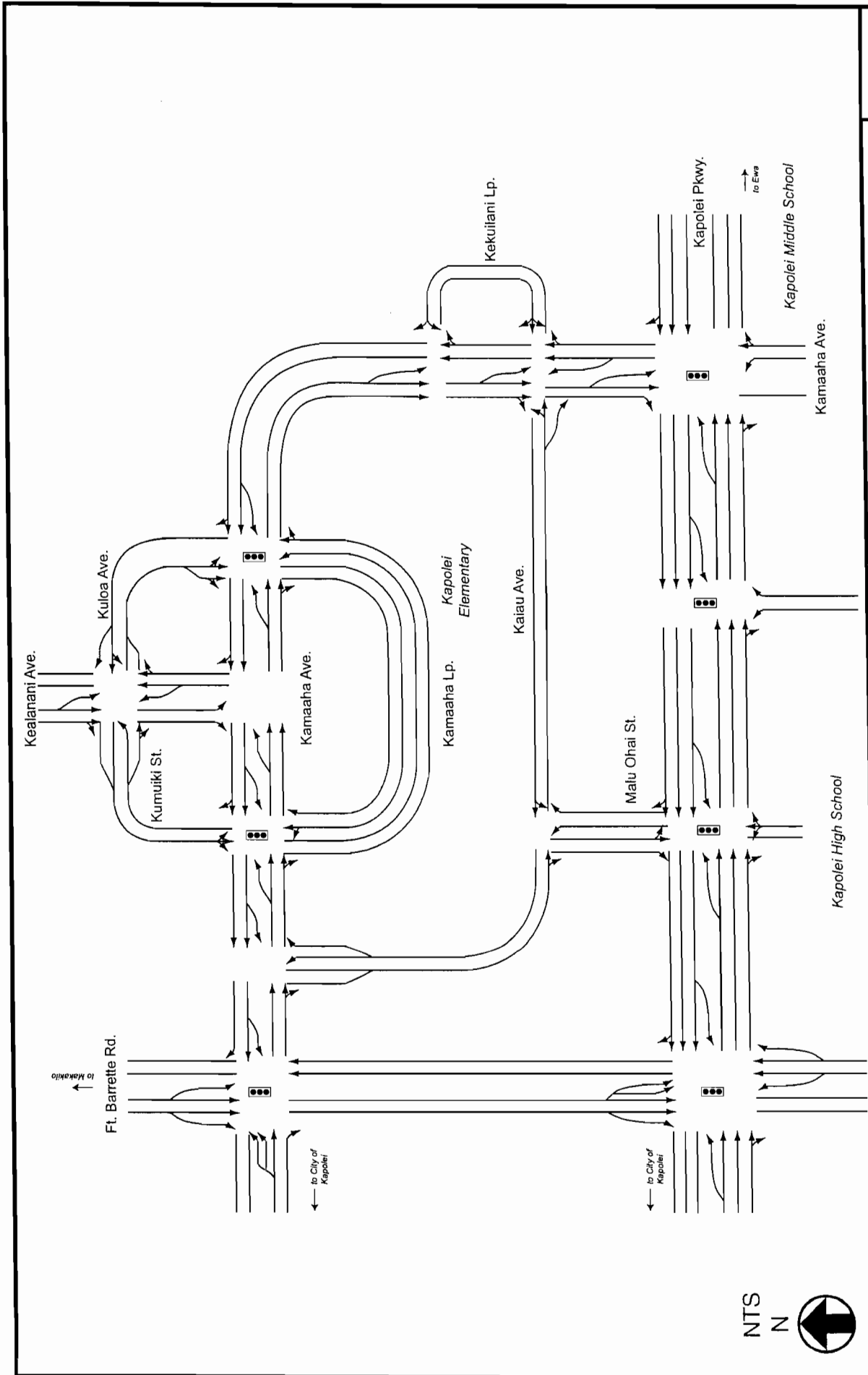


Figure 22

PROJECTED ROADWAY CONFIGURATIONS -
VILLAGES OF KAPOLEI AREA



Table 8 summarizes the projected year 2025 peak hour unsignalized intersection level-of-service within The Villages of Kapolei. As shown in Table 8, the unsignalized intersections analyzed are projected to generally operate well at a level-of-service D or better. Kamaaha Avenue and Kealanani Avenue makai bound left-turn and Kealanani Avenue and Kumuiki Street/Kuloa Avenue Koko Head bound left-turn is projected to operate at a LOS D.

The makai bound left-turn movement at Kealanani Avenue and Kamaaha Avenue are projected to experience some delay during morning peak hour time periods. Future adjacent traffic signals at Kumuiki Street and Kuloa Avenue on Kamaaha Avenue would create gaps in traffic on Kamaaha Avenue, providing time for vehicles turning from makai-bound Kealanani Avenue to Koko Head bound Kamaaha Avenue to complete their desired movements.

Table 8 Future Unsignalized Intersections Level-of-Service

Intersection	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Kamaaha Ave and Kaiau Ave	Unsignalized			
Waianae Bound Left-Turn	A	8.7	A	9.3
Mauka Bound Left-Turn	C	22.3	C	17.4
Mauka Bound Right-Turn	B	12.4	B	10.9
Kamaaha Ave and Kealanani Ave	Unsignalized			
KKHD Bound Left-Turn	A	9.5	A	8.3
Makai Bound Left-Turn	D	29.5	C	17.1
Makai Bound Right-Turn	B	11.4	B	10.4
Kamaaha Ave and Kekuilani Loop (Mauka)	Unsignalized			
Makai Bound Left-Turn	A	8.8	A	8.1
Waianae Bound Left/Right-Turn	C	19.1	B	10.7
Kealanani Ave and Kuloa Ave/Kumuiki St	Unsignalized			
Mauka Bound Left-Turn	A	7.9	A	8.3
Makai Bound Left-Turn	A	7.9	A	8.1
Waianae Bound Left-Turn	B	14.0	C	17.5
Waianae Bound Right-Turn	B	10.4	A	9.7
KKHD Bound Left-Turn	D	28.5	C	24.3
KKHD Bound Right-Turn	B	10.1	B	14.3
Kealanani Ave and Entrance B	Unsignalized			
Mauka Bound Left-Turn	A	8.1	A	8.5
KKHD Bound Left-Turn	B	12.7	B	13.9
KKHD Bound Right-Turn	A	9.8	B	11.3

The Koko Head bound left-turn movement out of Kumuiki Street onto Kealanani Avenue would experience delays due to significant demand in that movement. Kealanani Avenue currently has median storage for left-turn movements out of Kumuiki Street, so that vehicles can accomplish this movement in two steps: 1) Turn out of Kumuiki Street to the median 2) merge from the median with oncoming traffic into mauka bound Kealanani Avenue.

2. Projected Operations at Signalized Intersections

Table 9 summarizes the projected year 2025 peak hour intersection level-of-service for the signalized intersections. As summarized in Table 9, all intersections analyzed are projected to operate at a level-of-service D or better during the peak hours.

Table 9 Future Signalized Intersections Level-of-Service

Intersection	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Farrington Highway and Ft Barrette Rd	C	34.5	C	33.3
KKHD Bound Approach	D	45.9	C	34.9
Waianae Bound Approach	D	39.1	D	45.1
Mauka Bound Approach	D	36.3	C	30.4
Makai Bound Approach	C	28.9	C	29.9
Farrington Highway and Kealanani Ave	C	25.4	C	25.0
KKHD Bound Approach	C	33.1	C	23.6
Waianae Bound Approach	B	17.7	C	28.6
Mauka Bound Approach	C	22.4	C	23.2
Ft Barrette Rd and Kamaaha Ave	D	39.5	D	42.1
KKHD Bound Approach	C	32.6	D	48.3
Waianae Bound Approach	C	30.6	C	29.4
Mauka Bound Approach	D	52.2	D	47.9
Makai Bound Approach	D	37.1	D	38.6
Kamaaha Ave and Kumuiki St (West Loop)	B	19.7	B	15.9
KKHD Bound Approach	B	16.1	B	15.4
Waianae Bound Approach	B	19.5	B	18.2
Mauka Bound Approach	B	16.7	B	13.1
Makai Bound Approach	C	27.6	B	15.7
Kamaaha Ave and Kuloa Ave (East Loop)	B	17.1	B	16.1
KKHD Bound Approach	B	18.4	B	18.1
Waianae Bound Approach	B	18.7	B	16.5
Mauka Bound Approach	B	18.5	B	14.9
Makai Bound Approach	B	10.5	A	8.2

Table 9 Future Signalized Intersections Level-of-Service (Continued)

Intersection	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Kamaaha Ave-Kekuilani Loop (Makai)	C	28.2	C	22.2
KKHD Bound Approach	C	29.0	C	22.6
Waianae Bound Approach	C	28.9	C	20.3
Mauka Bound Approach	C	25.8	C	23.0
Makai Bound Approach	C	29.3	C	21.5
Kamaaha Ave-Kapolei Pkwy	D	43.9	D	37.4
KKHD Bound Approach	D	39.5	D	39.4
Waianae Bound Approach	D	51.4	D	36.9
Mauka Bound Approach	D	51.4	D	37.4
Makai Bound Approach	C	34.8	D	31.6
Ft Barrette Rd-Kapolei Pkwy	D	42.7	C	34.1
KKHD Bound Approach	D	38.8	C	30.8
Waianae Bound Approach	D	46.7	D	38.8
Mauka Bound Approach	D	41.4	D	35.1
Makai Bound Approach	D	40.5	D	35.1
Kapolei Pkwy-Malu Ohai St	C	28.6	C	23.5
KKHD Bound Approach	C	27.0	C	23.8
Waianae Bound Approach	C	26.1	C	22.0
Mauka Bound Approach	D	48.0	C	34.6
Makai Bound Approach	C	33.2	C	22.8
Kapolei Pkwy-Street A	B	16.5	B	17.2
KKHD Bound Approach	C	24.7	C	22.0
Waianae Bound Approach	B	10.4	A	6.3
Mauka Bound Approach	C	24.1	C	29.5

In these analyses, Fort Barrette Road is assumed to be widened to a four-lane roadway with auxiliary lanes at intersections, Kamaaha Avenue has been extended into the City of Kapolei and Kapolei Parkway has fulfilled its role as the major east-west arterial roadway connecting Ewa Beach and Ko Olina Resort.

All intersections along Kapolei Parkway within the Villages of Kapolei are projected to be signalized and projected to operate acceptably during peak hour conditions. Traffic signal warrants at the Kamaaha and Malu Ohai intersections are currently satisfied based on

school crossing warrants. The intersection for the future Village 8, located opposite the existing mauka-makai pedestrian path is expected to warrant signalization in the future.

Kamaaha Avenue at Kumuiki Street and Kuloa Avenue currently satisfy the school crossing warrant for traffic signalization based on analyses conducted by Austin, Tsutsumi & Associates, Inc.

Kamaaha Avenue and Kekuilani Loop (Makai) is projected to warrant signalization by the analysis year and is analyzed in this study as a signalized intersection. Projected peak traffic volumes show a high demand heading toward Kapolei Parkway in the future and existing data show a significant pedestrian movement at this intersection. It is recommended to monitor and signalize this intersection when warranted to protect the pedestrian movement in this area.

D. Recommended Intersection Improvements

The Housing and Community Development Corporation of Hawaii (HCDCH) has already implemented major roadway improvements as part of the Villages of Kapolei development such as widening Farrington Highway from a two to four-lane roadway between the Kapolei Golf Course Entrance Road and Fort Barrette Road/Makakilo Drive, construction of Kapolei Parkway, a six-lane arterial roadway with landscaping and 20-foot raised median between the drainage canal bridge east of Kapolei Intermediate and Fort Barrette Road, construction of Kamaaha Avenue, a four-lane roadway with landscaping and 20' raised median between Kapolei Parkway and Fort Barrette Road, and signalization of Farrington Highway and Kealanani Avenue intersection.

As HCDCH nears the ultimate completion of the Village of Kapolei Development, they will continue internal roadway and intersection improvements. Additionally, implementation of a traffic impact fee ordinance for the Ewa region and recent commitments by the State of Hawaii Department of Transportation (HDOT) and the City & County of Honolulu Department of Transportation Services for major roadway improvements in the Ewa plain are promising steps in addressing the current regional traffic issues. Improvements covered by the impact fee ordinance include widening Fort Barrette Road between Farrington Highway and Kalaeloa (Barbers Point), completion of Kapolei Parkway between

Papipi Road and Ko Olina, the proposed North-South Road and Interchange and Kapolei Interchange.

This section of the report serves to identify roadway improvements and geometric configuration recommendations based on forecasted Year 2025 traffic patterns. Figure 23 summarizes roadway improvements on adjacent and internal roadways

1. Fort Barrette Road




Fort Barrette Road is planned to be widened from a two-lane to a four-lane arterial roadway from Farrington Highway to Kalaeloa (Barbers Point) by the State of Hawaii Department of Transportation (HDOT) in the near future. Environmental clearance and design is scheduled to start this year (2004). It is recommended that the Fort Barrette Road widening project install the appropriate left-turn lanes, and right-turn acceleration and deceleration lanes on Fort Barrette Road.

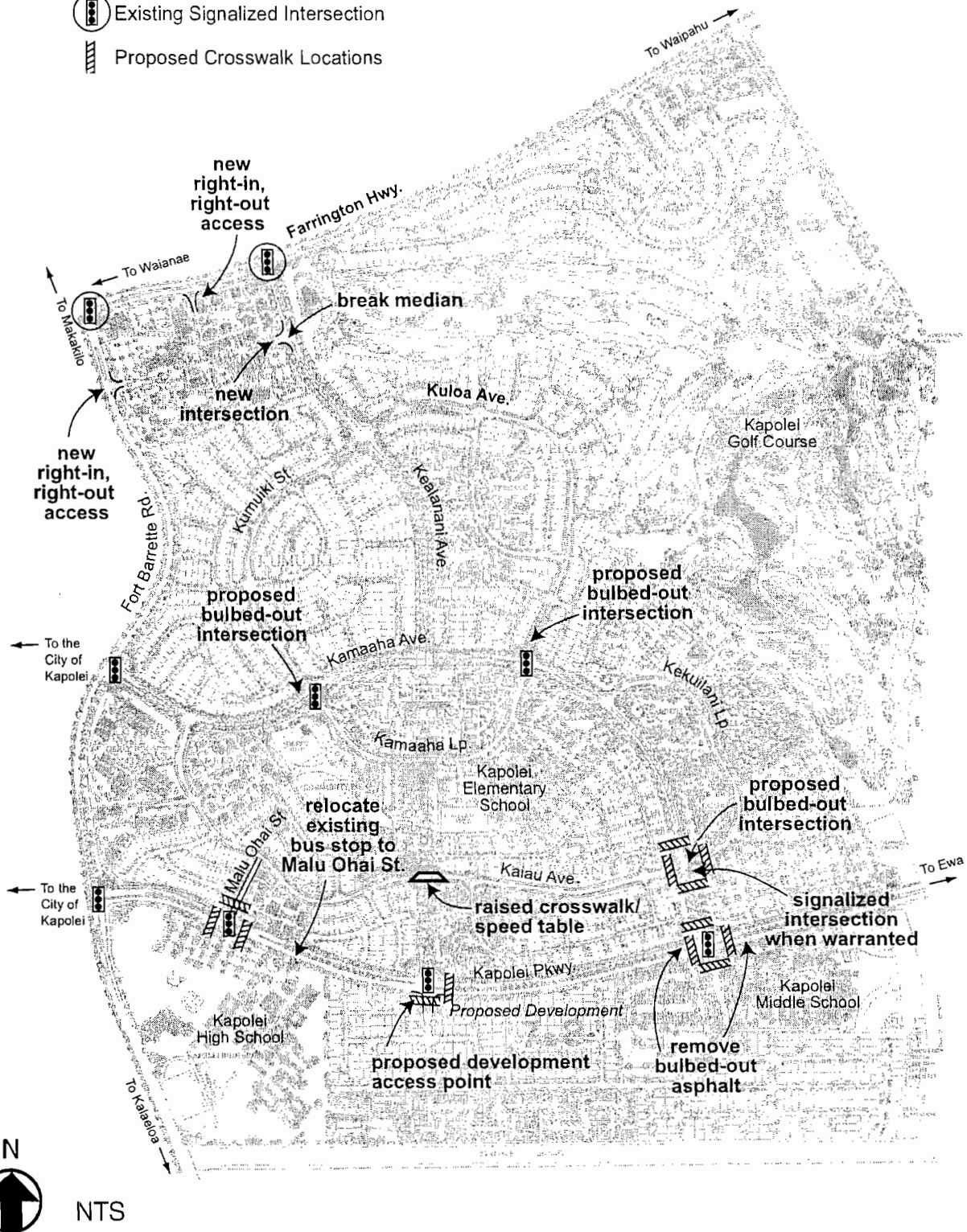
Traffic conditions at the Kamaaha Avenue and at the Kapolei Parkway intersections currently satisfy the Peak Hour Traffic Signal Warrant, as defined in the *Manual on Uniform Traffic Control Devices (2003 Edition)*, due to high mauka-makai through volume on Fort Barrette Road during peak periods. It is, therefore, recommended that these intersections be signalized as part of the Fort Barrette Road widening project.

At Kapolei Parkway, Fort Barrette Road is forecasted to have a high makai-bound to Koko Head-bound left-turn movement. This can be attributed to development along Kapolei Parkway, including Kapolei High School and Kapolei Middle School. Kapolei Parkway will also function as a sub-regional connection between Kapolei and Ewa Beach. Because of this high left-turn demand, it is recommended to provide a double left-turn lane on makai-bound Fort Barrette Road at Kapolei Parkway.

2. Kapolei Parkway

Kapolei Parkway is currently constructed to its ultimate 6-lane cross-section within the Villages of Kapolei between Fort Barrette Road and the Kapolei Drainage Canal Bridge, located east of Kapolei Middle School. Within this segment of roadway, there are currently two existing intersections: Malu Ohai Street and Kamaaha Avenue. The School Crossing

-  Intersections That Warrant Signalization
-  Existing Signalized Intersection
-  Proposed Crosswalk Locations



RECOMMENDED VEHICULAR & PEDESTRIAN ENHANCEMENTS

Figure
23

Warrant as defined in the *Manual on Uniform Traffic Control Devices (2003 Edition)* is currently satisfied for both intersections. Based on the intensity of school-related pedestrians crossing Kapolei Parkway at both intersections, it is recommended to install traffic signals at these intersections. Because there is significant turning movement projected at both intersections, it is recommended to implement the traffic signals with an "all-walk" phase, in which only pedestrians are allowed to move through the intersection. This would reduce vehicle-pedestrian conflicts and provide a safer environment for the students.

The existing Kapolei Parkway is temporarily narrowed to one-lane approaches to the Kamaaha Avenue intersection. As part of the signalization of this intersection, the asphalt curbs used to temporarily narrow Kapolei Parkway are recommended to be removed.

When Village-8 is constructed, it is proposed to provide an access onto Kapolei Parkway via proposed entrance A as shown in figure 22. The proposed access would be located opposite the existing mauka-makai pedestrian path leading to the Kapolei Recreation Center. It is projected that this intersection would be signalized, providing both vehicular access for Village 8 and a protected pedestrian crossing of Kapolei Parkway. It is recommended that an "all-walk" phase be implemented at this location as well, consistent with the phasing schemes recommended for Malu Ohai and Kamaaha intersections.

3. Kamaaha Avenue

At the Fort Barrette Road intersection, it is projected that the Koko Head-bound to mauka-bound left-turn movement will be significant. It is, therefore, recommended that a double left-turn lane for this movement be provided as part of the Fort Barrette Road widening project and the extension of Kamaaha Avenue into the City of Kapolei.

The two intersections of Kamaaha Loop with Kamaaha Avenue satisfy the School Crossing Warrant as defined in the *Manual on Uniform Traffic Control Devices (2003 Edition)*, based on a previous study conducted by Austin, Tsutsumi and Associates, Inc. These intersections are used by students crossing Kamaaha Avenue enroute to Kapolei Elementary School, Kapolei Middle School, and Kapolei High School. It is, therefore, recommended to signalize these intersections. Because of the close proximity to Kapolei

Elementary and the regional park, both intersections of Kamaaha Loop with Kamaaha Avenue are recommended to incorporate an "all walk" phase within the signal phasing.

The Kamaaha Avenue/Kekuilani Loop(Makai)/Kaiiau Avenue intersection currently does not warrant signalization but is projected to warrant signalization when the Villages of Kapolei builds out and Kapolei Parkway is connected to the east, providing access to North-South Road and Ewa. It is recommended to monitor this intersection and to install traffic signals when warrants are satisfied.

The Kamaaha Avenue/Kapolei Parkway intersection is projected to have a significant makai bound left-turn to Koko Head bound movement in the future when Kapolei Parkway is connected to the east. It is recommended to construct an exclusive left-turn lane to accommodate this movement and re-stripe the existing makai-bound lanes to a through lane and an exclusive right-turn lane. There is approximately 500 feet between Kapolei Parkway and Kekuilani Loop (Makai)/Kaiiau Avenue. Queuing analysis based on a Cumulative Poisson Distribution method indicates 325-feet of storage will be required. A left-turn lane of this length can be accommodated within the existing median but will require relocation of three existing trees located within the median.

E. Traffic Calming Measures at Signalized Intersections

The Villages of Kapolei Association has expressed the desire to reduce the width of Kamaaha Avenue at key intersections as a traffic calming action. One method of achieving this reduction in width is to create "bulb outs" at the intersection approaches. Candidate intersections for this type of action were:

- Kamaaha Ave and Kumuiki St (West Loop)
- Kamaaha Ave and Kuloa Ave (East Loop)
- Kamaaha Ave and Kekuilani Loop (Makai)

These "bulb outs" would decrease the Kamaaha approaches by one lane in each direction. The resulting lane configuration would be an exclusive left-turn lane and a shared through/right-turn lane. In this configuration, the curb lanes of Kamaaha Avenue between the intersections could be used for parking, since these lanes would no longer continue through the intersections. Analyses were conducted to determine if future traffic

could be accommodated by the modified intersections, and the results are summarized in Table 10. As shown in Table 10, slightly higher delay is experienced at the modified intersections and timing adjustments are required for optimization. Overall, intersections appear to be capable of operating at an acceptable level-of-service.

**Table 10 Future Signalized Intersections LOS
With "Bulb Out" Treatment**

Intersection	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Kamaaha Ave and Kumuiki St (West Loop)	C	30.0	B	18.5
KKHD Bound Approach	C	21.3	B	19.5
Waianae Bound Approach	D	35.0	C	20.3
Mauka Bound Approach	C	21.1	B	13.1
Makai Bound Approach	D	41.5	B	15.7
Kamaaha Ave and Kuloa Ave (East Loop)	C	24.4	B	17.9
KKHD Bound Approach	C	30.4	C	20.0
Waianae Bound Approach	C	30.5	B	18.1
Mauka Bound Approach	B	18.7	B	14.9
Makai Bound Approach	B	10.6	A	8.2
Kamaaha Ave and Kekuilani Loop (Makai)	D	47.8	D	35.9
KKHD Bound Approach	D	48.5	D	39.5
Waianae Bound Approach	D	53.6	D	39.4
Mauka Bound Approach	D	39.3	D	36.1
Makai Bound Approach	D	50.5	C	31.6

Although the intersections could operate acceptably with the "Bulb Out" configurations, other issues such as roadway drainage and traffic safety are issues that must be resolved before such treatments can be recommended.

F. Pedestrian Crossings

1. Unmarked Pedestrian Crossings

With a few exceptions, most intersections within the Villages of Kapolei do not have marked crosswalks. The Village of Kapolei Association has commented on the lack of crosswalks and requested a review of the situation. Currently, the City and County of Honolulu uses

the *Oahu Pedestrian Safety Study, Phase 1 (1993) (OPSS)*, as a reference in deciding where crosswalks will be installed. This reference was applied to the following unsignalized intersections:

- Kealanani Avenue/Kumuiki Street/Kuloa Avenue
- Kamaaha Avenue/Kaiu Avenue
- Kamaaha Avenue/Kekuilani Loop (Mauka)
- Kamaaha Avenue/Kekuilani Loop (Makai)
- Kaiu Avenue/Mauka-Makai Pedestrian Path
- Kapolei Parkway/Mauka-Makai Pedestrian Path

Based on the criteria contained in the OPSS, only the Kaiu Avenue/Mauka-Makai Pedestrian Path crossing would justify installation of crosswalks.

Installing crosswalks at the other intersections may be possible if the City & County of Honolulu Department of Transportation Services (DTS) is willing to review their current criteria for installation of marked crosswalks. A recent study entitled, [Safety Effects of Marked vs. Unmarked Crosswalks at Uncontrolled Locations \(FHWA-RD-01-075\)](#), February 2002, indicates more flexibility in the designation of marked crosswalks.

2. Kaiu Avenue/Mauka-Makai Pedestrian Path Crossing

The Pedestrian Path already has handicapped ramps at Kaiu Avenue, but there is no opening in the existing raised median to allow a wheelchair to continue across Kaiu Avenue. Rather than create an opening in the median, it was decided to incorporate traffic calming measures into this crossing to address the concerns of the Villages of Kapolei community with regard to vehicle speeding along Kaiu Avenue. To discourage potential speeding and to improve the crossing, a raised speed table is recommended to be constructed on Kaiu Avenue at the pedestrian path. Appropriate signing and striping prior to and at the raised speed table is recommended to be installed at that time.

3. Kapolei Parkway/Maka-Makai Pedestrian Path

The Mauka-Makai Pedestrian Path was observed to have significant student pedestrian activity at Kapolei Parkway during the morning and mid-day periods. Many students were observed to “J-walk” across Kapolei Parkway instead of walking to Malu Ohai where crosswalks and a crossing guard exist. The Pedestrian Path location at Kapolei Parkway did not satisfy the School Crossing Warrant for installation of traffic signals. When Village 8 constructs its future access to Kapolei Parkway, it is expected to warrant signalization, and as previously recommended in this report, an “all walk” phase would be desirable to enhance the safety for the students crossing Kapolei Parkway. During the interim time period prior to the construction of the Village 8 access, appropriate signs should be installed to direct pedestrians to utilize the crosswalks at Malu Ohai Street. The Malu Ohai intersection currently warrants signalization, and after the signals are installed, it would be a safer crossing than “J-walking” across Kapolei Parkway.

4. Kapolei Parkway/Kapolei High School Bus Stop Area

Kapolei High School has two driveway accesses on Kapolei Parkway. The Main Driveway is located opposite Malu Ohai Street, and the Secondary Driveway is located approximately 800-feet Koko Head of the Main Driveway. This Secondary Driveway is restricted to right-out movements only. Between the two driveways, approximately 250-feet east of the Kapolei High School main entrance, there are City Bus Stops on the mauka and makai sides of Kapolei Parkway. There is a pedestrian walkway from Kapolei High School that penetrates the fence and attached to the Kapolei Parkway sidewalk at the City Bus Stop.

“J-walking” in front of Kapolei High School was observed during the morning and mid-day peak. Most of the “J-walking” at this location was associated with students catching the City Bus. To discourage “J-walking” along Kapolei Parkway in front of Kapolei High School, it is recommended to relocate the existing City Bus Stop to the Kapolei Parkway/Malu Ohai Street intersection. This would encourage pedestrians to use the crosswalks at Malu Ohai Street where future signals would provide a more protected crossing.

IV. COMPATIBILITY WITH C&C OF HONOLULU STANDARDS

This section of the report is to make apparent any differences or discrepancies between existing roadway cross-sections and City & County of Honolulu Standards.

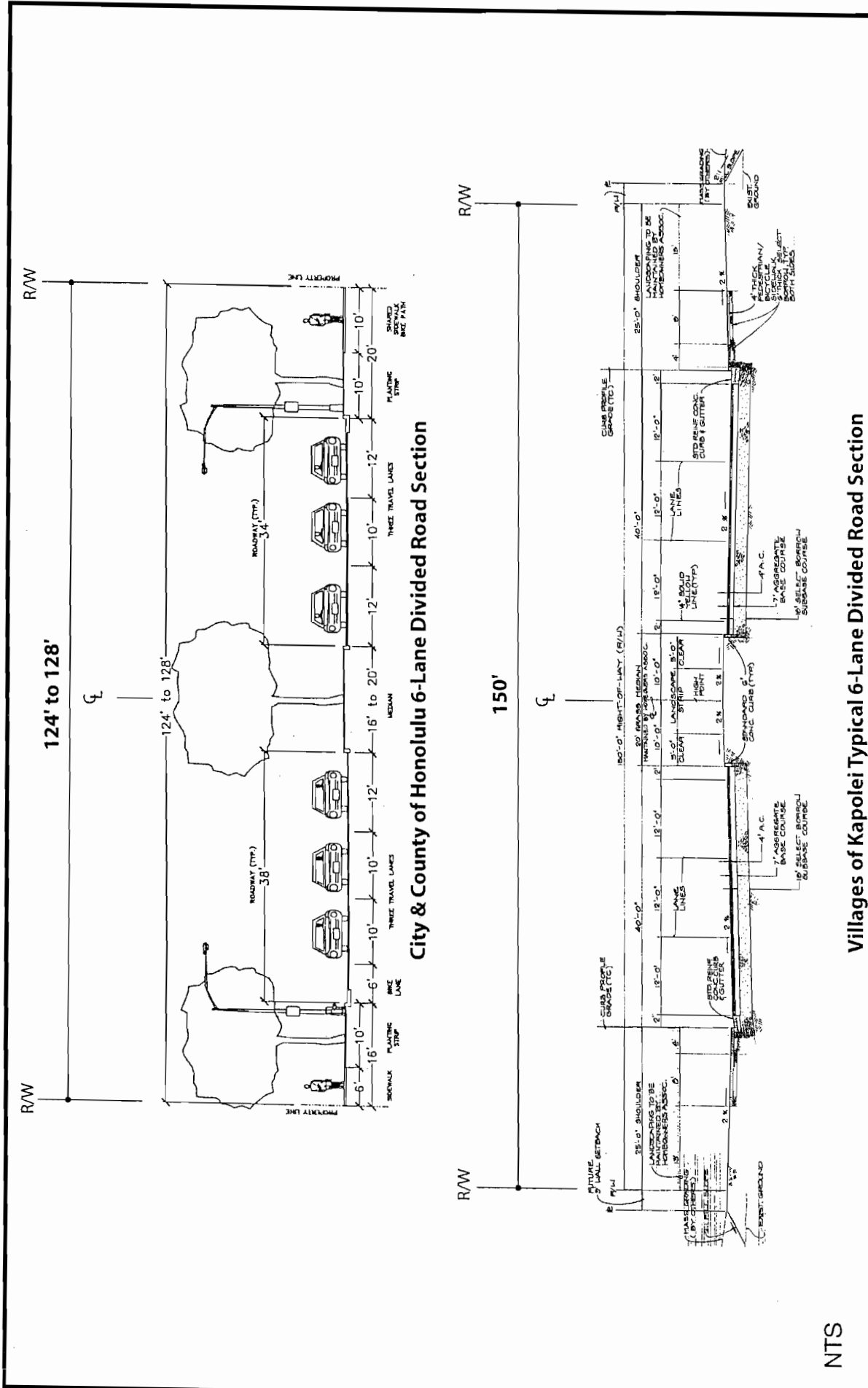
Typical cross-sections for Kapolei Parkway and all other roadways constructed within the Villages of Kapolei were compared with Department of Planning and Permitting *Subdivision Rules and Regulations* adopted June 1, 2001.

A. Roadway Cross-Sections

The Villages of Kapolei began initial construction of Villages 1-3 in the late 1980's. Roadway cross-sections were constructed at that time current City standards. Same Right-of-Way (ROW) was used or more on the more major roadways to allow room for bike lanes and larger landscaping. As of June 1, 2001 the Department of Planning and Permitting (DPP) adopted new revised subdivision street standards for a "Green Honolulu".

1. Six-Lane Divided Roadway Section

Kapolei Parkway is the only six-lane roadway within the Villages of Kapolei development. Figure 24 shows the existing Kapolei Parkway and City standards of 6-lane arterial roadways typical cross-section. As shown in Figure 24, the existing Kapolei Parkway is more generous overall providing 22-feet more ROW than the current City standards. The additional ROW was used to provide wider 12-foot lanes, a large 20-foot median and more landscaping on the outside shoulders of the roadway. The existing sidewalks were constructed larger than the 1984 City standards and was also more generous with landscaping. The State of Hawaii Department of Transportation (HDOT) currently has a bicycle facility master plan to accommodate and promote bicycling within the state of Hawaii. The current *Bike Plan Hawaii*, 2003, proposes to install bicycle lanes in Kapolei Parkway within the Villages of Kapolei. The existing roadway, flow-line to flow-line is wide enough to accommodate future bicycle lanes in the future along this portion of Kapolei Parkway. When the project to implement bicycle lanes along the Kapolei Parkway corridor occurs, it is recommended to re-stripe Kapolei Parkway to accommodate bicycle lanes in each direction.



2. Four-Lane Divided Roadway Section

Kamaaha Avenue and Kealanani Avenue are the 4-lane roadways within the Villages of Kapolei. Figure 25 shows the City standards typical cross-section compared to the existing four-lane roadways typical cross-section within the Villages of Kapolei. As shown in Figure 25 the existing roadways are more generous in ROW allocation and roadway widths providing 10' more ROW and 8' more pavement width. The existing roadways provide 12' lanes with 6' bike lanes, 20' median and 17' outside shoulder. Outside the roadway typical cross-section, the shoulder is allocated as 6' sidewalk, 4' landscaping from edge of roadway to inside edge of sidewalk and 7' landscaping from outside edge of sidewalk to edge of ROW.

3. Two-Lane Roadway Cross-Sections

There are two typical cross-sections for 2-lane roadways within the Villages of Kapolei, a 70-foot and 50-foot ROW. Less ROW is used in the existing typical cross-section than the current City subdivision roadway standards but still provide the same pavement width, curb and gutter. Both typical cross-sections were constructed to, at that time, 1984 City standards. At that time, the standard sidewalk within a subdivision was 4-feet as is constructed. Figures 26 and 27 compare the roadway cross-sections for 2-lane roadways.

4. Cul-de-Sac Cross-Sections

Two different Cul-de-Sac ROW and roadway widths cross-sections were identified in the City standards. Figure 28-29 shows the typical 40' and 26' ROW Cul-de-Sac's and compare them with similar roadway cross-section located within the villages of Kapolei. As highlighted in the previous paragraph, overall ROW width is smaller as a result of the new guidelines published by the City. In both roadways, the roadway bed, flow line to flow line, remains the same providing the same travel way but have smaller planting strips between the roadway and sidewalk. The sidewalk widths comply with previous City standards and would be acceptable for dedication to the city.

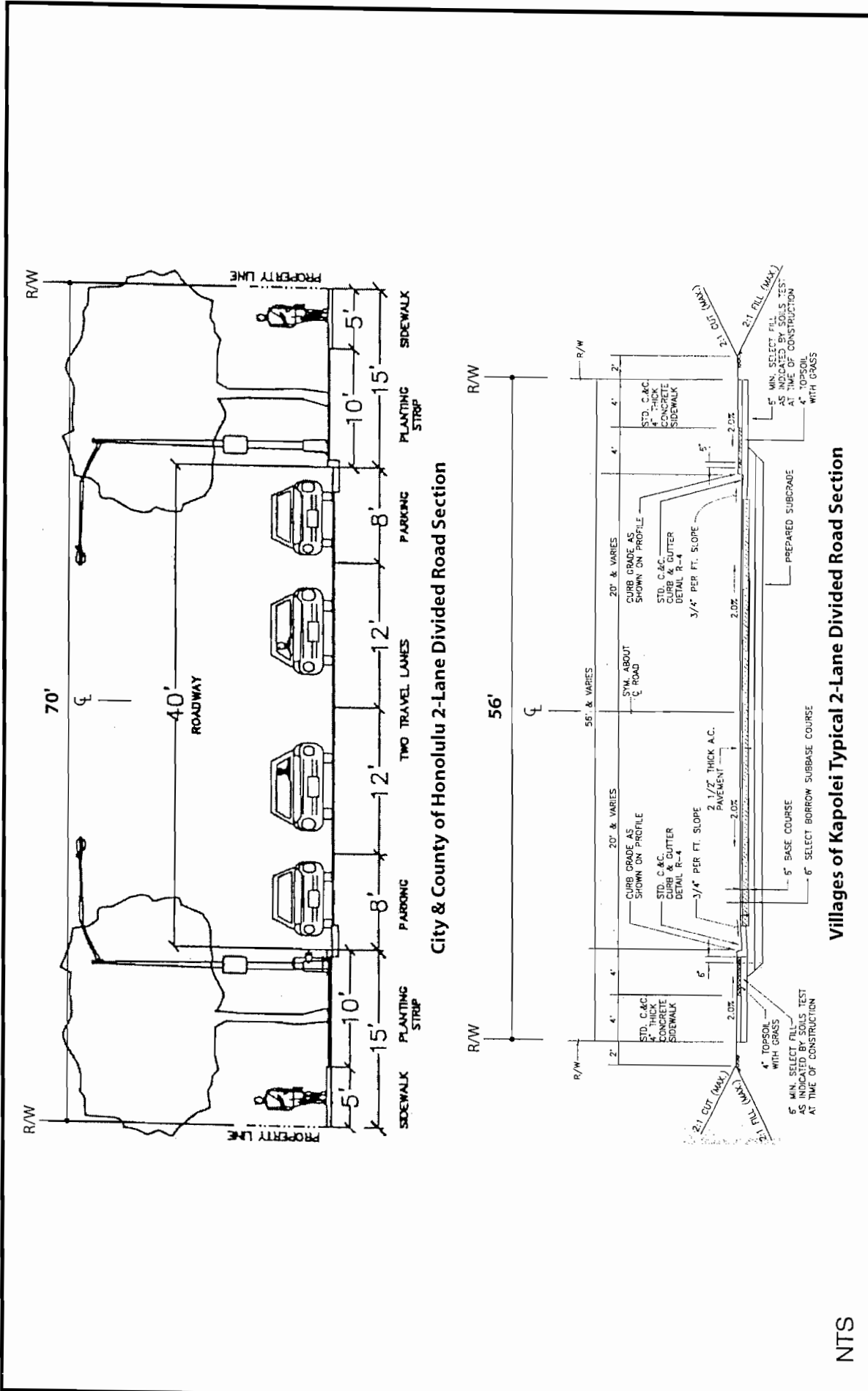
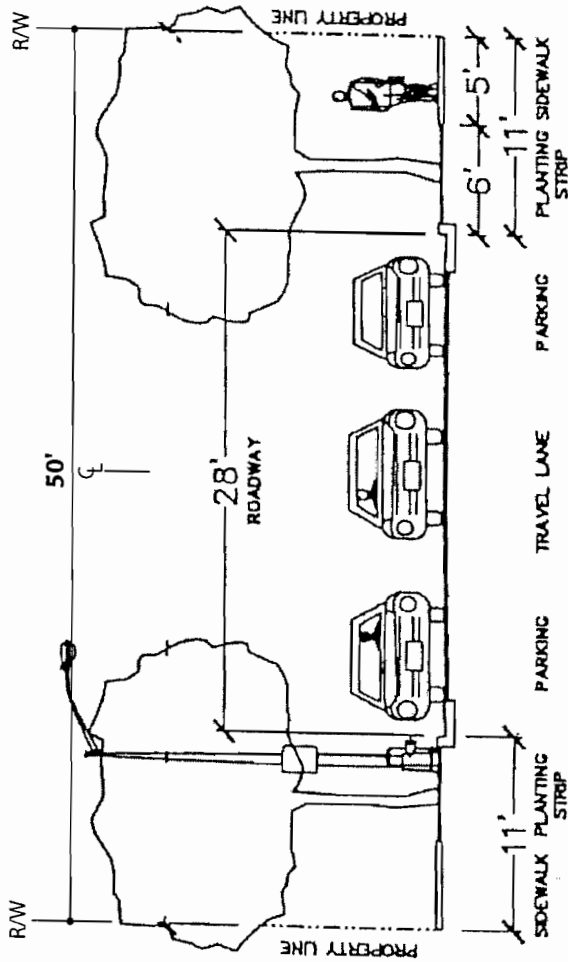


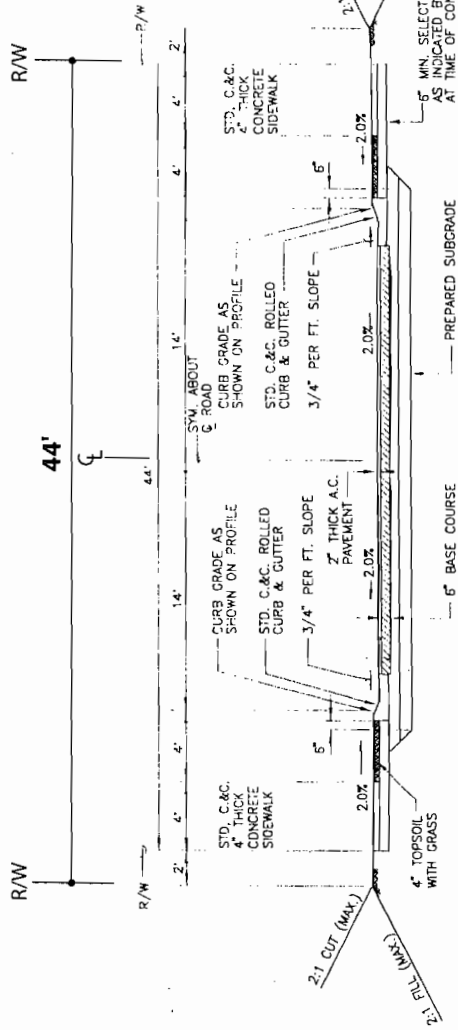
Figure 26

COMPARISON OF TYPICAL TWO-LANE CROSS-SECTION





City & County of Honolulu 2-Lane Divided Road Section

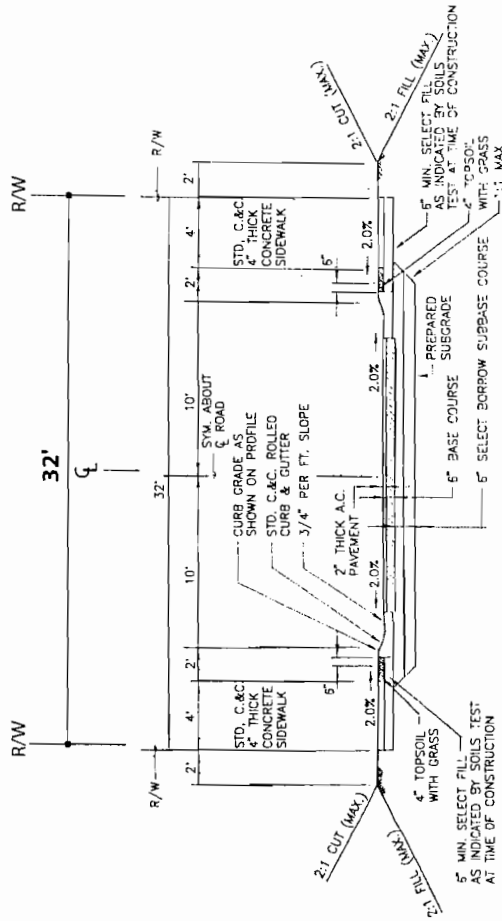
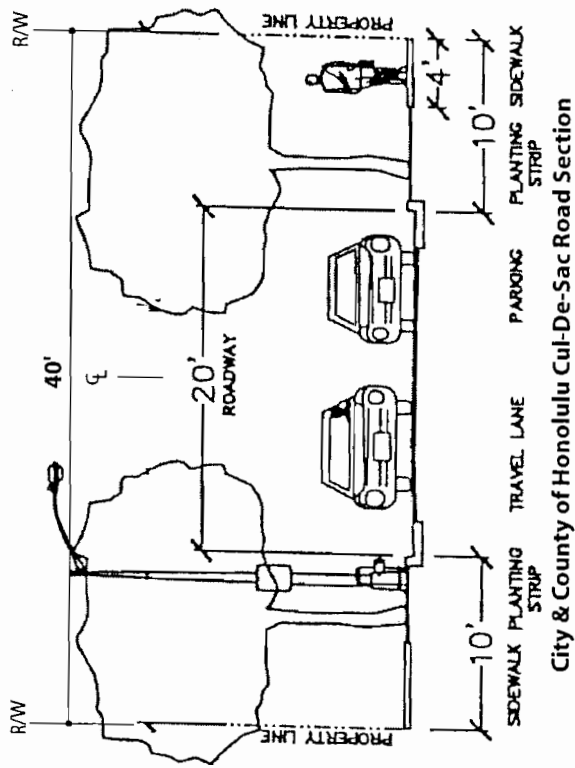


NTS

Villages of Kapolei Typical 2-Lane Divided Road Section

COMPARISON OF TYPICAL TWO-LANE CROSS-SECTION



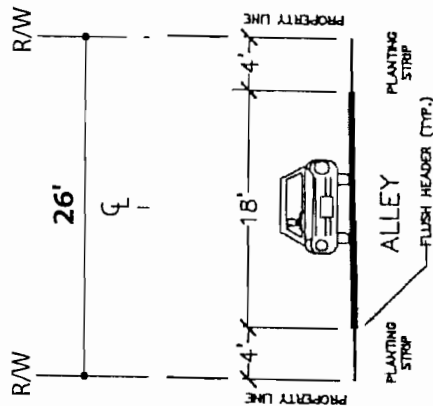


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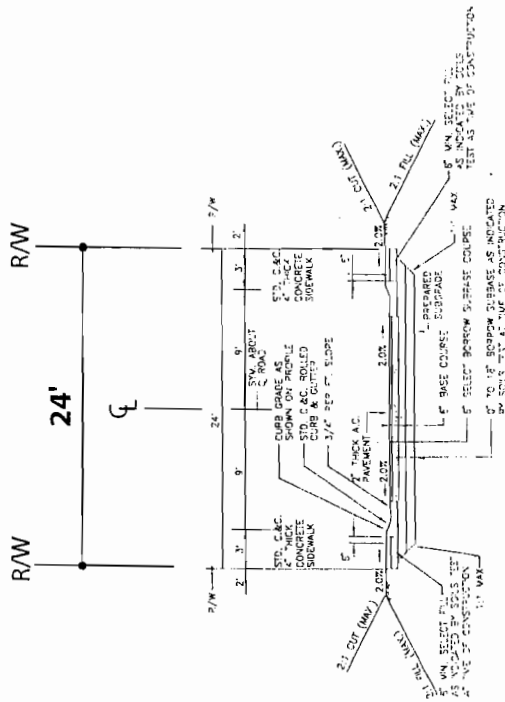
Figure 28

COMPARISON OF TYPICAL CUL-DE-SAC CROSS-SECTION





City & County of Honolulu Cul-De-Sac Road Section



Villages of Kapolei Cul-De-Sac Road Section

NTS

Figure 29

COMPARISON OF TYPICAL CUL-DE-SAC CROSS-SECTION



B. Conclusion

As shown in this chapter, the roadways within the Villages of Kapolei development are more generous in roadway and landscaping width allocation. Future plans along Kapolei Parkway to have bicycle lanes can be accommodated with the existing configuration and require re-striping. More minor roadway within the Villages of Kapolei have less landscaping resulting in less ROW allocation but conform to the City standards during the time of construction of the roadways. Based on the comparison above, it is concluded that the roadways within the Villages of Kapolei adhere to the City standards and are suitable for dedication to the City and County of Honolulu in terms of roadway and pedestrian facilities.

APPENDICES

Appendix A

Traffic Count Data

Vehicle and Pedestrian Peak Hour Summary

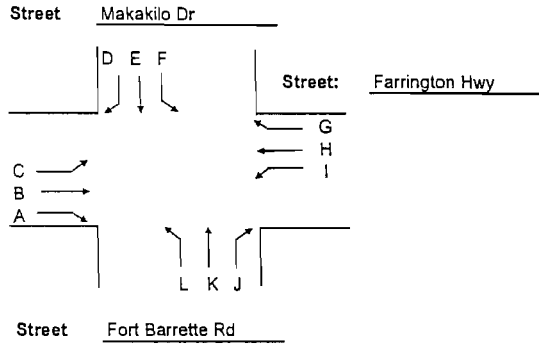
Location	Vehicle		
	AM Peak	Afternoon Peak	PM Peak
Farrington Hwy/Kealanani Ave	7:15 AM - 8:15 AM	2:15 PM - 3:15 PM	4:00 PM - 5:00 PM
Kealanani Ave/Kumuiki S/Kuloa Ave	7:00 AM - 8:00 AM	1:15 PM - 2:15 PM	5:15 PM - 6:15 PM
Ft Barrette Rd/Kamaaha Ave	7:00 AM - 8:00 AM	1:15 PM - 2:15 PM	3:45 PM - 4:45 PM
Kamaaha Ave/Kaiiau Ave	7:00 AM - 8:00 AM	1:45 PM - 2:45 PM	4:00 PM - 5:00 PM
Kamaaha Ave/Kamaaha Lp (West)	7:00 AM - 8:00 AM	1:45 PM - 2:45 PM	4:00 PM - 5:00 PM
Kamaaha Ave/Kealanani Ave	7:00 AM - 8:00 AM	1:45 PM - 2:45 PM	4:30 AM - 5:30 AM
Kamaaha Ave/Kamaaha Lp (East)	7:00 AM - 8:00 AM	1:45 PM - 2:45 PM	4:30 PM - 5:30 PM
Kamaaha Ave/Kekuilani Lp(mauka)	7:00 AM - 8:00 AM	1:45 PM - 2:45 PM	4:30 PM - 5:30 PM
Kamaaha Ave/Kekuilani Lp(makai)	7:00 AM - 8:00 AM	1:30 PM - 2:30 PM	4:45 PM - 5:45 PM
Kamaaha Ave/Kapolei Pkwy	7:00 AM - 8:00 AM	1:45 PM - 2:45 PM	4:15 AM - 5:15 AM
Kapolei Pkwy/Malu Ohai St	7:00 AM - 8:00 AM	2:15 PM - 3:15 PM	3:45 AM - 4:45 AM
Kapolei Pkwy/Ft Barrette Rd	7:00 AM - 8:00 AM	1:45 PM - 2:45 PM	4:30 PM - 5:30 PM
Kaiiau Ave (Between Malu Ohai and Hokeo)	7:00 AM - 8:00 AM	1:45 PM - 2:45 PM	4:30 PM - 5:30 PM

7:00AM - 8:00AM

4:30AM - 5:30AM

AM COUNT SHEET

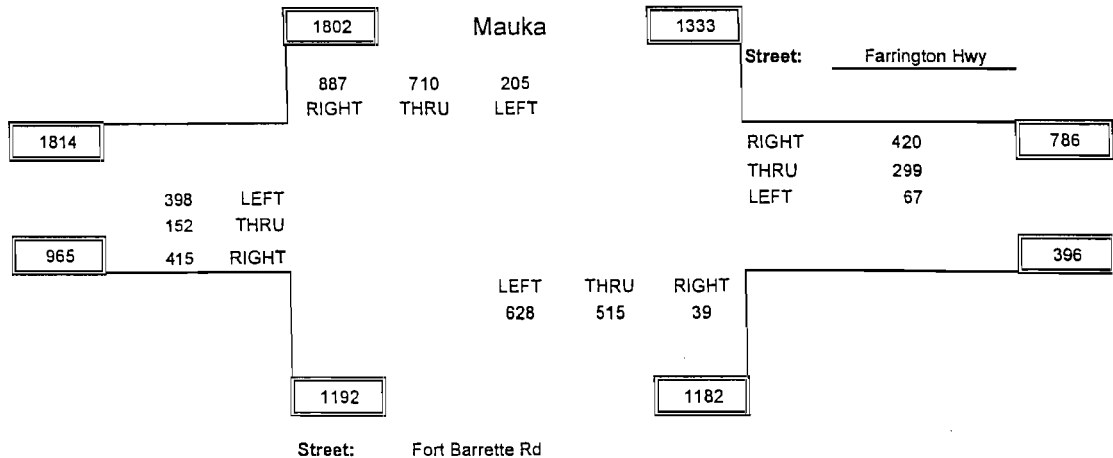
Intersection: Makakilo Dr-Ft Barrette Rd/Farrington Hwy
 Date: 8/2/2002 - 8/5/2002
 By: R. Yoshimura, C. Maruoka
 Weather: Sunny



TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
6:30 - 6:45	96	37	91	199	99	36	120	52	3	11	63	116	923	4147
6:45 - 7:00	76	30	61	200	127	28	120	49	2	11	104	133	941	4476
7:00 - 7:15	110	33	82	195	153	33	119	57	12	11	117	138	1060	4735
7:15 - 7:30	123	34	99	225	179	54	119	68	21	10	129	162	1223	
7:30 - 7:45	101	47	100	217	187	89	96	87	16	13	132	167	1252	
7:45 - 8:00	81	38	117	250	191	29	86	87	18	5	137	161	1200	
Phf	0.843	0.809	0.850	0.887	0.929	0.576	0.882	0.859	0.798	0.750	0.940	0.940	Peak	Phf
7:00 - 8:00	415	152	398	887	710	205	420	299	67	39	515	628	4735	0.945

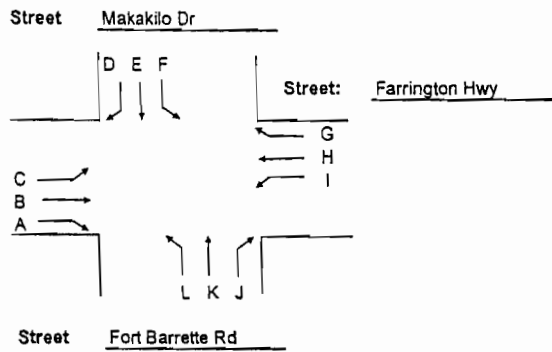
Peak Hour

7:00 - 8:00

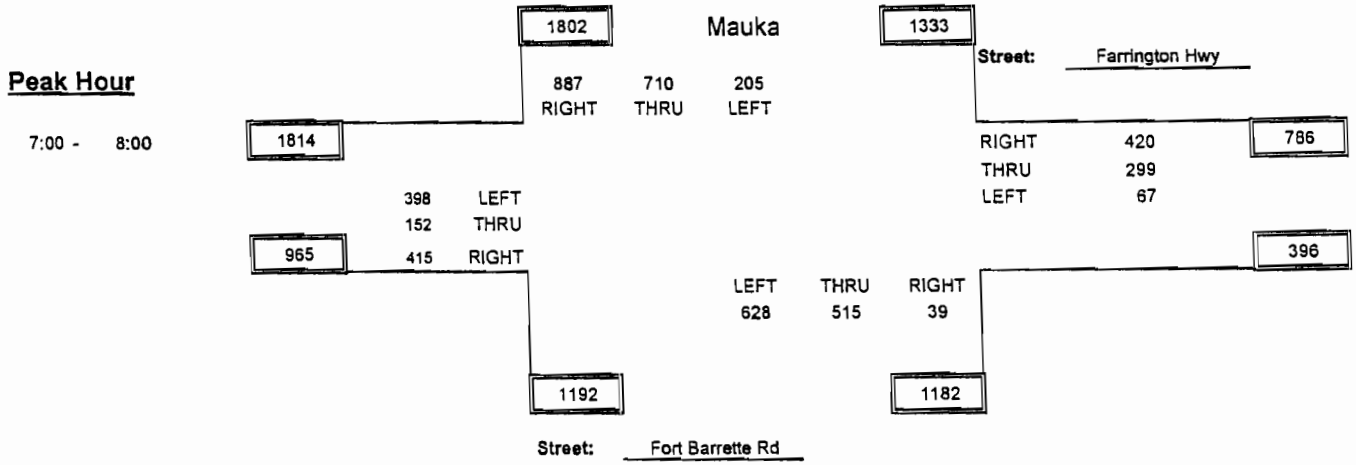


AM COUNT SHEET

Intersection: Makakilo Dr-Ft Barrette Rd/Farrington Hwy
 Date: 8/2/2002 - 8/5/2002
 By: R. Yoshimura, C. Maruoka
 Weather: Sunny



TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
6:30 - 6:45	96	37	91	199	99	36	120	52	3	11	63	116	923	4147
6:45 - 7:00	76	30	61	200	127	28	120	49	2	11	104	133	941	4476
7:00 - 7:15	110	33	82	195	153	33	119	57	12	11	117	138	1060	4735
7:15 - 7:30	123	34	99	225	179	54	119	68	21	10	129	162	1223	
7:30 - 7:45	101	47	100	217	187	89	96	87	16	13	132	167	1252	
7:45 - 8:00	81	38	117	250	191	29	86	87	18	5	137	161	1200	
Phf	0.843	0.809	0.850	0.887	0.929	0.576	0.882	0.859	0.798	0.750	0.940	0.940	Peak	Phf
7:00 - 8:00	415	152	398	887	710	205	420	299	67	39	515	628	4735	0.945



AM COUNT SHEET

Intersection: Farrington Hwy/Kealanani Ave

Date: 10/22/03-10/23/03

By: K. Fujimoto

Weather: Sunny

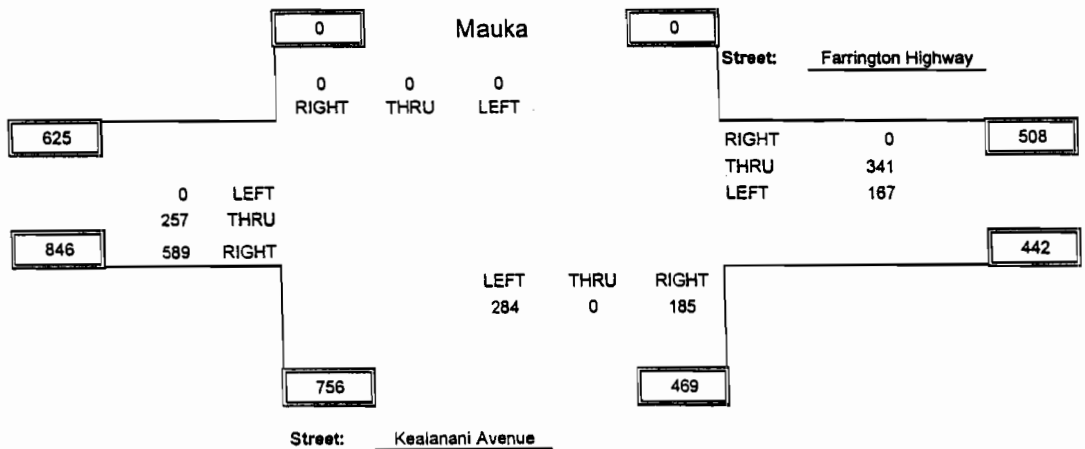
Street: Farrington Highway

Street: Kealanani Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	105	9						58	5	31		44	252	1174
6:00 AM - 6:15 AM	120	21						75	5	36		79	336	1271
6:15 AM - 6:30 AM	93	20						73	11	31		77	305	1282
6:30 AM - 6:45 AM	83	16						66	10	31		75	281	1437
6:45 AM - 7:00 AM	86	29						93	19	29		93	349	1659
7:00 AM - 7:15 AM	120	20						85	31	35		56	347	1817
7:15 AM - 7:30 AM	128	59						100	65	40		68	460	1823
7:30 AM - 7:45 AM	155	97						94	58	46		53	503	
7:45 AM - 8:00 AM	185	68						80	29	76		69	507	
8:00 AM - 8:15 AM	121	33						67	15	23		94	353	
Phf	0.796	0.662	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.853	0.642	0.609	#DIV/0!	0.755	Peak	Phf
7:15 AM - 8:15 AM	589	257	0	0	0	0	0	341	167	185	0	284	1823	0.896

Peak Hour

7:15 AM - 8:15 AM



AM COUNT SHEET

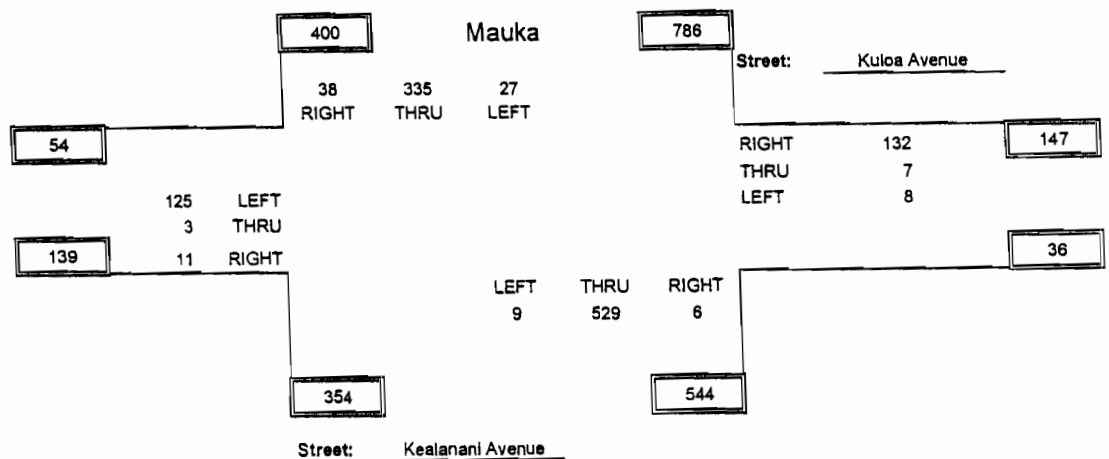
Intersection: Kealanani Ave/KumuikiSt
 Date: 10/22/2003 - 10/23/2003
 By: P. Matsunaga
 Weather: Sunny

Street: Kuloa Avenue
 Street: Kealanani Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	0	26	3	9	4	39	0	0	0	63	0	145	608
6:00 AM - 6:15 AM	1	1	33	3	13	7	35	0	1	0	66	0	160	636
6:15 AM - 6:30 AM	0	0	30	7	14	9	29	0	0	1	63	0	153	700
6:30 AM - 6:45 AM	2	0	32	5	18	5	30	0	0	0	58	0	150	844
6:45 AM - 7:00 AM	0	0	21	9	32	10	28	0	2	0	70	1	173	1077
7:00 AM - 7:15 AM	0	2	27	3	52	7	40	3	2	0	88	0	224	1230
7:15 AM - 7:30 AM	5	0	29	6	99	5	29	2	1	1	118	2	297	1145
7:30 AM - 7:45 AM	5	0	38	16	125	9	32	2	3	2	150	1	383	
7:45 AM - 8:00 AM	1	1	31	13	59	6	31	0	2	3	173	6	326	
8:00 AM - 8:15 AM	3	0	14	9	25	10	21	3	1	0	53	0	139	
Phf	0.550	0.375	0.822	0.594	0.670	0.750	0.825	0.583	0.667	0.500	0.764	0.375	Peak	Phf
7:00 AM - 8:00 AM	11	3	125	38	335	27	132	7	8	6	529	9	1230	0.803

Peak Hour

7:00 AM - 8:00 AM



AM COUNT SHEET

Intersection: Kamaaha Ave/Ft Barrette Rd

Date: 10/21/2003 - 10/22/2003

By: K. Fujimoto

Weather: Sunny

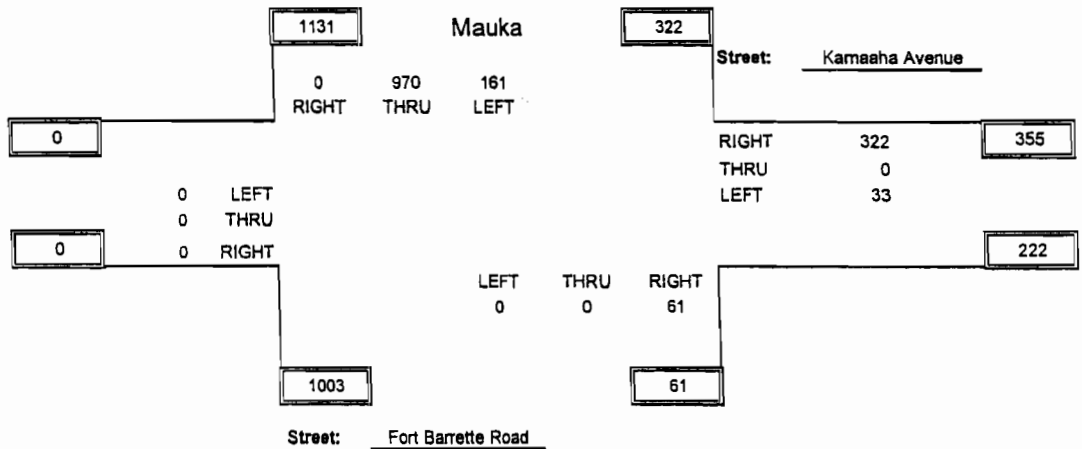
Street: Kamaaha Avenue

Street: Fort Barrette Road

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM					68	19	57		2	1			147	766
6:00 AM - 6:15 AM					83	17	63		5	3			171	940
6:15 AM - 6:30 AM					117	21	66		9	4			217	1156
6:30 AM - 6:45 AM					138	27	52		7	7			231	1406
6:45 AM - 7:00 AM					198	40	74		3	6			321	1652
7:00 AM - 7:15 AM					252	38	76		10	11			387	1729
7:15 AM - 7:30 AM					312	37	92		5	21			467	1547
7:30 AM - 7:45 AM					298	55	90		14	20			477	
7:45 AM - 8:00 AM					249	42	87		8	12			398	
8:00 AM - 8:15 AM					111	27	53		6	8			205	
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.777	0.732	0.875	#DIV/0!	0.589	0.726	#DIV/0!	#DIV/0!	Peak	Phf
7:00 AM - 8:00 AM	0	0	0	0	970	161	322	0	33	61	0	0	1547	0.811

Peak Hour

7:00 AM - 8:00 AM



AM COUNT SHEET

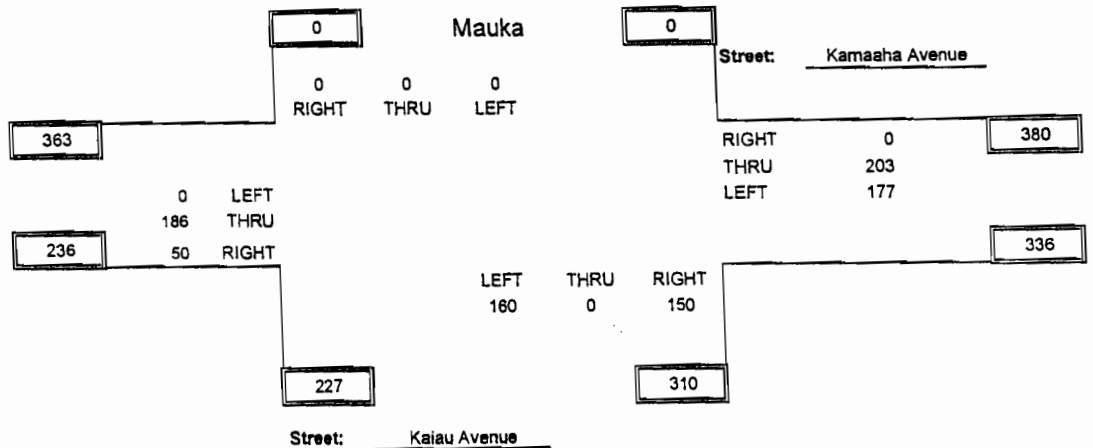
Intersection: Kamaaha Ave/Kaiiau Ave
 Date: 10/21/2003 - 10/22/2003
 By: D. Yukimura
 Weather: Sunny

Street: Kamaaha Avenue
 Street: Kaiiau Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	9	11						25	2	7		16	70	389
6:00 AM - 6:15 AM	12	8						44	1	3		59	127	448
6:15 AM - 6:30 AM	3	22						37	1	1		30	94	500
6:30 AM - 6:45 AM	8	26						31	6	2		25	98	614
6:45 AM - 7:00 AM	13	33						49	5	8		21	129	820
7:00 AM - 7:15 AM	6	43						51	18	13		48	179	926
7:15 AM - 7:30 AM	12	46						58	31	28		33	208	872
7:30 AM - 7:45 AM	14	61						53	85	51		40	304	
7:45 AM - 8:00 AM	18	36						41	43	58		39	235	
8:00 AM - 8:15 AM	11	24						34	10	22		24	125	
Phf	0.694	0.762	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.875	0.521	0.647	#DIV/0!	0.833	Peak	Phf
7:00 AM - 8:00 AM	50	186	0	0	0	0	0	203	177	150	0	160	926	0.762

Peak Hour

7:00 AM - 8:00 AM



AM COUNT SHEET

Intersection: Kamaaha Lp (West)/Kamaaha Ave

Date: 10/21/2003 - 10/22/2003

By: D. Doan

Weather: Sunny

Street: Kumuiki Street

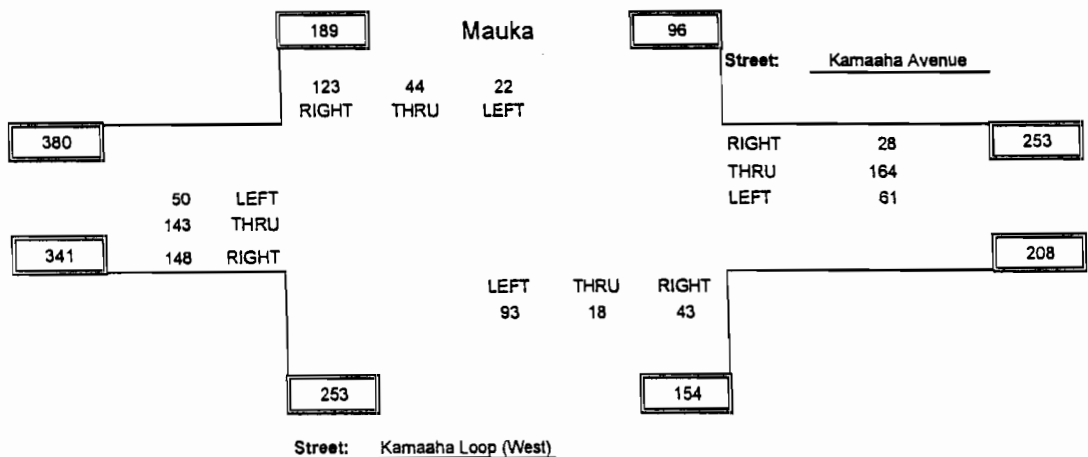
Street: Kamaaha Avenue

Street: Kamaaha Loop (West)

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	5	10	5	14	1	0	1	11	0	0	0	2	49	243
6:00 AM - 6:15 AM	4	6	5	31	2	0	0	10	0	1	0	4	63	308
6:15 AM - 6:30 AM	7	6	9	20	1	0	1	14	2	1	0	4	65	392
6:30 AM - 6:45 AM	7	6	7	18	2	2	2	17	2	0	1	2	66	535
6:45 AM - 7:00 AM	24	15	10	18	3	1	1	23	5	1	0	13	114	825
7:00 AM - 7:15 AM	28	14	8	29	10	5	3	25	4	4	2	15	147	937
7:15 AM - 7:30 AM	41	31	6	32	10	6	2	39	15	5	3	18	208	896
7:30 AM - 7:45 AM	57	47	16	43	19	8	12	64	36	17	6	31	356	
7:45 AM - 8:00 AM	22	51	20	19	5	3	11	36	6	17	7	29	226	
8:00 AM - 8:15 AM	5	31	9	13	3	3	3	20	5	2	1	11	106	
Phf	0.649	0.701	0.625	0.715	0.579	0.688	0.583	0.641	0.424	0.632	0.643	0.750	Peak	Phf
7:00 AM - 8:00 AM	148	143	50	123	44	22	28	164	61	43	18	93	937	0.658

Peak Hour

7:00 AM - 8:00 AM



AM COUNT SHEET

Intersection: Kamaaha Ave/Kealanani Ave
 Date: 10/21/2003 - 10/22/2003
 By: M. Cashman
 Weather: Sunny

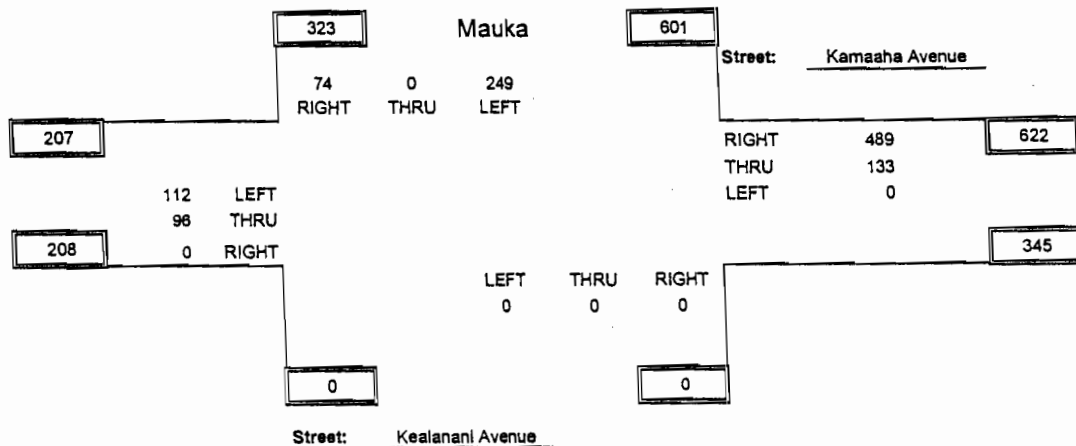
Street: Kamaaha Avenue

Street Kealanani Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM		5	5	0		12	61	13					96	388
6:00 AM - 6:15 AM		3	4	1		8	59	11					86	427
6:15 AM - 6:30 AM		6	1	2		19	69	17					114	512
6:30 AM - 6:45 AM		6	2	1		9	59	15					92	682
6:45 AM - 7:00 AM		14	3	13		19	60	26					135	965
7:00 AM - 7:15 AM		15	8	5		33	89	21					171	1153
7:15 AM - 7:30 AM		22	20	23		75	113	31					284	1132
7:30 AM - 7:45 AM		33	39	34		73	144	52					375	
7:45 AM - 8:00 AM		26	45	12		68	143	29					323	
8:00 AM - 8:15 AM		13	23	8		17	74	15					150	
Phf	#DIV/0!	0.727	0.622	0.544	#DIV/0!	0.830	0.849	0.639	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	Peak	Phf
7:00 AM - 8:00 AM	0	96	112	74	0	249	489	133	0	0	0	0	1153	0.769

Peak Hour

7:00 AM - 8:00 AM



AM COUNT SHEET

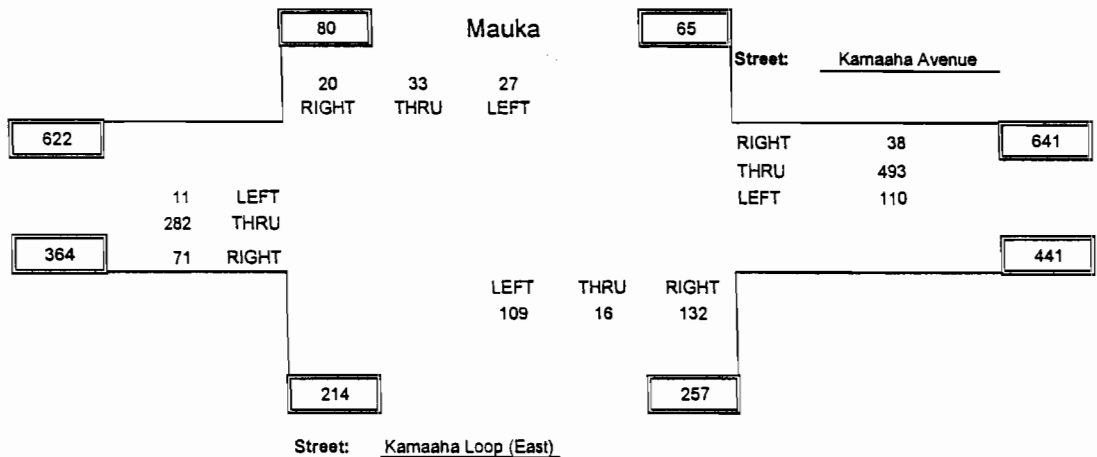
Intersection: Kamaaha Lp (East)/Kamaaha Ave
 Date: 10/21/2003 - 10/22/2003
 By: P. Matsunaga
 Weather: Sunny

Street: Kuloa Avenue
 Street: Kamaaha Avenue
 Street: Kamaaha Loop (East)

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	13	0	1	1	3	1	69	1	3	1	4	98	409
6:00 AM - 6:15 AM	2	10	1	3	0	3	3	61	3	2	0	6	94	450
6:15 AM - 6:30 AM	3	18	2	3	1	0	0	74	2	2	0	9	114	574
6:30 AM - 6:45 AM	3	14	1	4	2	1	1	60	3	3	1	10	103	778
6:45 AM - 7:00 AM	2	22	1	0	6	1	2	74	14	3	2	12	139	1119
7:00 AM - 7:15 AM	17	36	1	2	9	8	3	90	14	19	1	18	218	1342
7:15 AM - 7:30 AM	26	75	1	5	11	6	8	107	26	20	1	32	318	1267
7:30 AM - 7:45 AM	21	79	5	10	12	7	11	148	54	53	6	38	444	
7:45 AM - 8:00 AM	7	92	4	3	1	6	16	148	16	40	8	21	362	
8:00 AM - 8:15 AM	5	26	7	2	1	1	4	72	2	4	4	15	143	
Phf	0.683	0.766	0.550	0.500	0.688	0.844	0.594	0.833	0.509	0.623	0.500	0.717	Peak	Phf
7:00 AM - 8:00 AM	71	282	11	20	33	27	38	493	110	132	16	109	1342	0.756

Peak Hour

7:00 AM - 8:00 AM



AM COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp (mauka)

Date: 10/21/2003 - 10/22/2003

By: C. Kaiuwailani

Weather: Sunny

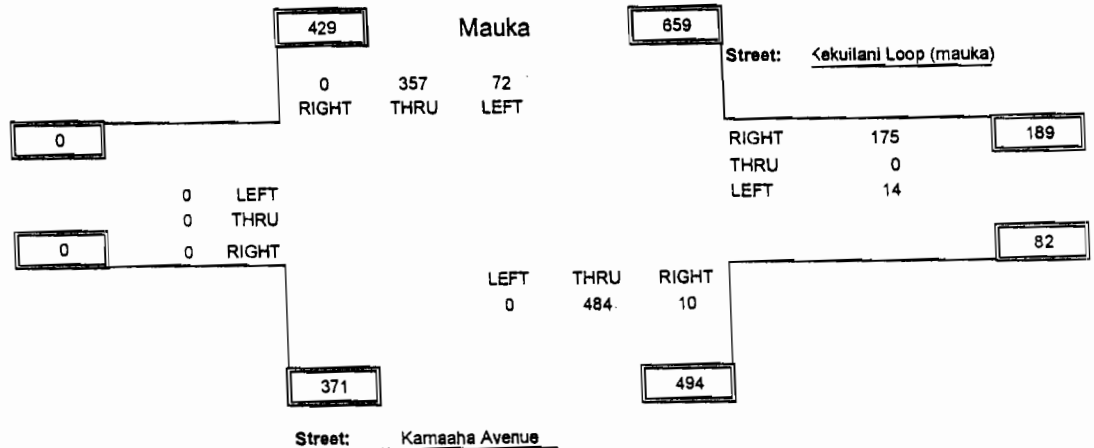
Street: Kekuilani Loop (mauka)

Street: Kamaaha Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM					13	9	32		0	0	38		92	357
6:00 AM - 6:15 AM					11	9	21		0	0	37		78	377
6:15 AM - 6:30 AM					11	8	37		0	1	40		97	496
6:30 AM - 6:45 AM					17	8	27		0	0	38		90	629
6:45 AM - 7:00 AM					23	7	31		0	0	51		112	892
7:00 AM - 7:15 AM					66	13	39		2	2	75		197	1112
7:15 AM - 7:30 AM					64	17	45		5	2	97		230	1064
7:30 AM - 7:45 AM					107	27	58		3	1	157		353	834
7:45 AM - 8:00 AM					120	15	33		4	5	155		332	481
8:00 AM - 8:15 AM					45	8	16		0	1	79		149	
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.744	0.667	0.754	#DIV/0!	0.700	0.500	0.771	#DIV/0!	Peak	Phf
7:00 AM - 8:00 AM	0	0	0	0	357	72	175	0	14	10	484	0	1112	0.788

Peak Hour

7:00 AM - 8:00 AM



AM COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp (Makai)

Date: 10/14/2003 - 10/15/2003

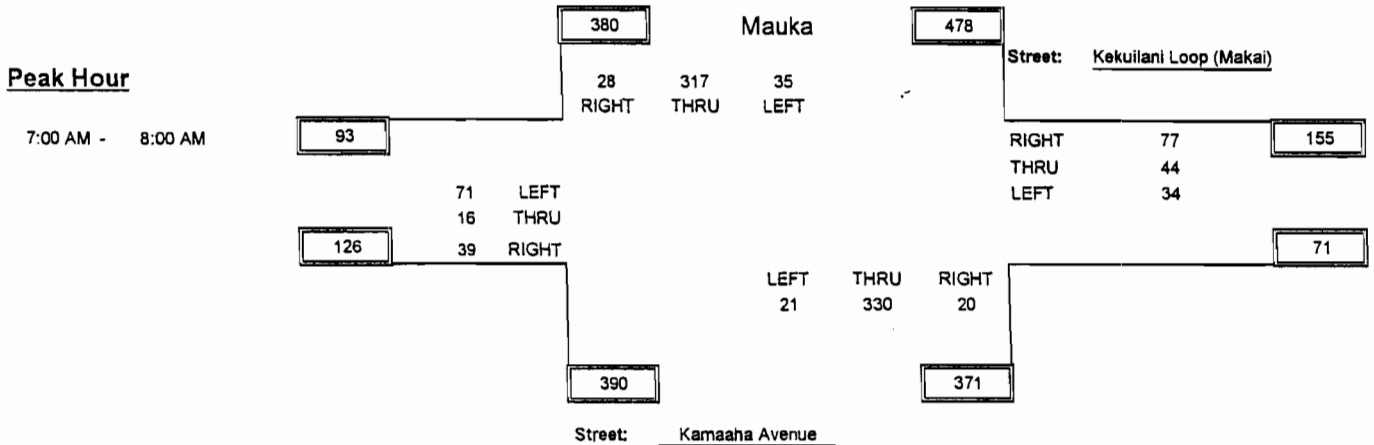
By: J. Javanillo

Weather: Sunny

Street: Kekuilani Loop (Makai)

Street: Kamaaha Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	1	17	4	2	3	14	2	5	1	12	0	62	223
6:00 AM - 6:15 AM	0	3	17	4	1	2	10	2	3	1	10	0	53	249
6:15 AM - 6:30 AM	0	1	13	4	2	5	15	2	2	0	11	0	55	369
6:30 AM - 6:45 AM	0	0	9	4	6	2	12	1	2	2	15	0	53	565
6:45 AM - 7:00 AM	3	0	21	1	18	1	16	2	3	3	20	0	88	831
7:00 AM - 7:15 AM	2	3	17	4	40	2	20	6	11	6	60	2	173	1032
7:15 AM - 7:30 AM	16	2	22	7	87	10	15	13	10	2	59	8	251	954
7:30 AM - 7:45 AM	10	5	21	8	104	11	28	15	7	3	103	4	319	
7:45 AM - 8:00 AM	11	6	11	9	86	12	14	10	6	9	108	7	289	
8:00 AM - 8:15 AM	0	0	10	8	11	6	13	1	1	4	39	2	95	
Phf	0.609	0.667	0.807	0.778	0.762	0.729	0.688	0.733	0.773	0.556	0.764	0.656	Peak	Phf
7:00 AM - 8:00 AM	39	16	71	28	317	35	77	44	34	20	330	21	1032	0.80v



AM COUNT SHEET

Intersection: Kamaaha Ave/Kapolei Pkwy

Date: 10/21/2003 - 10/22/2003

By: K. Nathaniel

Weather: Sunny

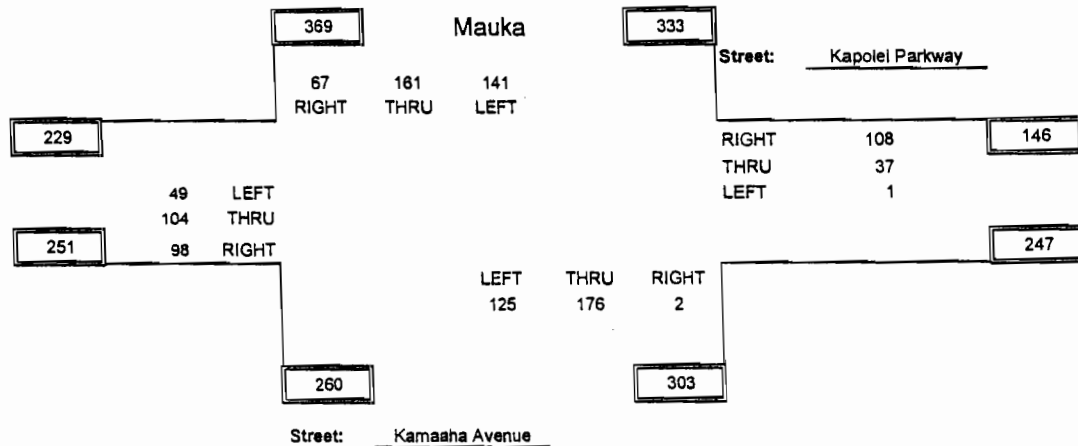
Street: Kapolei Parkway

Street: Kamaaha Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	4	1	5	1	1	0	0	0	0	12	5	30	111
6:00 AM - 6:15 AM	1	1	0	4	0	0	0	1	0	0	8	9	24	181
6:15 AM - 6:30 AM	1	4	2	4	0	0	0	1	0	0	10	5	27	314
6:30 AM - 6:45 AM	3	0	2	5	1	1	0	0	0	0	12	6	30	543
6:45 AM - 7:00 AM	20	7	3	11	8	4	2	1	0	0	21	23	100	834
7:00 AM - 7:15 AM	22	20	5	12	19	15	11	6	0	0	26	21	157	1069
7:15 AM - 7:30 AM	25	22	12	23	47	26	18	11	0	0	34	38	256	1009
7:30 AM - 7:45 AM	25	32	13	18	43	44	39	9	0	0	65	33	321	
7:45 AM - 8:00 AM	26	30	19	14	52	56	40	11	1	2	51	33	335	
8:00 AM - 8:15 AM	9	14	11	2	7	6	17	7	1	0	17	6	97	
Phf	0.942	0.813	0.845	0.728	0.774	0.629	0.675	0.841	0.250	0.250	0.677	0.822	Peak	Phf
7:00 AM - 8:00 AM	98	104	49	67	161	141	108	37	1	2	176	125	1069	0.798

Peak Hour

7:00 AM - 8:00 AM

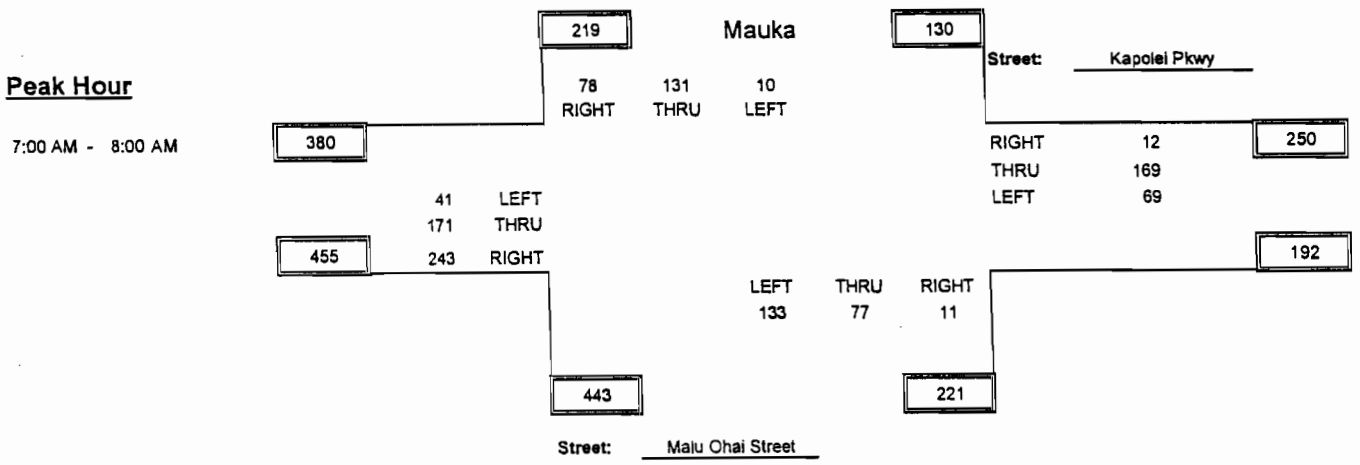


AM COUNT SHEET

Intersection: Kapolei Pkwy/Malu Ohai St
 Date: 10/22/2003 - 10/23/2003
 By: D. Doan/C. Maruoka
 Weather: Sunny

Street: Kapolei Pkwy
 Street: Malu Ohai Street

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	6	0	0	0	0	0	5	0	1	0	2	15	139
6:00 AM - 6:15 AM	2	8	3	2	0	0	0	11	2	0	0	1	29	257
6:15 AM - 6:30 AM	9	9	0	3	1	0	0	10	2	0	0	1	35	462
6:30 AM - 6:45 AM	11	15	3	3	2	0	1	20	1	0	0	4	60	754
6:45 AM - 7:00 AM	39	22	4	10	1	1	2	31	8	1	0	14	133	1046
7:00 AM - 7:15 AM	61	48	4	18	12	1	2	46	7	0	2	33	234	1145
7:15 AM - 7:30 AM	73	47	8	28	35	2	4	51	28	3	17	31	327	991
7:30 AM - 7:45 AM	76	45	10	29	50	6	4	40	30	2	24	36	352	
7:45 AM - 8:00 AM	33	31	19	3	34	1	2	32	4	6	34	33	232	
8:00 AM - 8:15 AM	11	15	4	0	4	0	0	13	4	5	3	21	80	
Phf	0.799	0.891	0.539	0.672	0.655	0.417	0.750	0.828	0.575	0.458	0.566	0.924	Peak	Phf
7:00 AM - 8:00 AM	243	171	41	78	131	10	12	169	69	11	77	133	1145	0.813



AM COUNT SHEET

Intersection: Kapolei Pkwy/Ft Barrette Rd Street: Kapolei Parkway

Date: 10/21/2003 - 10/22/2003

By: M. Smith

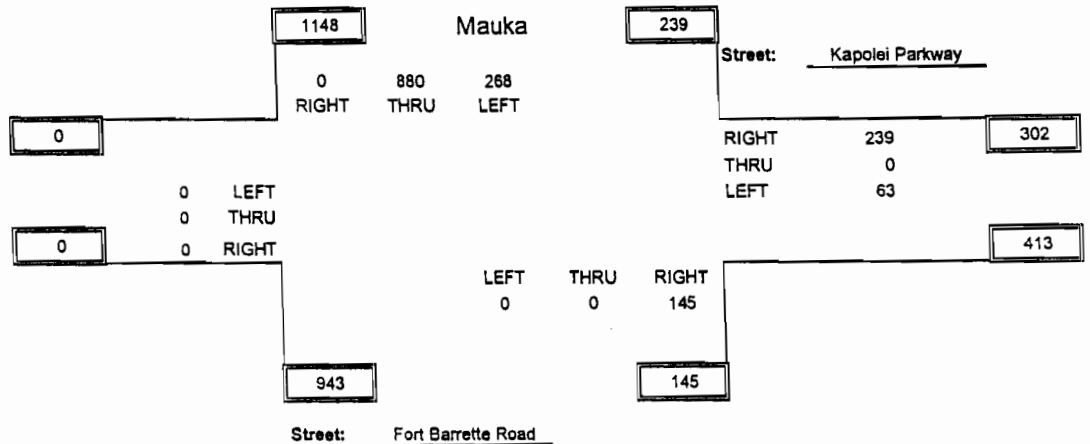
Weather: Sunny

Street Fort Barrette Road

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM					60	10	12		9	2			93	556
6:00 AM - 6:15 AM					75	13	8		9	6			111	737
6:15 AM - 6:30 AM					105	21	14		8	6			154	992
6:30 AM - 6:45 AM					114	31	24		16	13			198	1298
6:45 AM - 7:00 AM					116	85	47		13	13			274	1549
7:00 AM - 7:15 AM					187	75	58		23	23			366	1595
7:15 AM - 7:30 AM					212	105	85		13	45			460	1371
7:30 AM - 7:45 AM					240	72	74		22	41			449	911
7:45 AM - 8:00 AM					241	16	22		5	36			320	462
8:00 AM - 8:15 AM					105	12	16		2	7			142	
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.913	0.638	0.703	#DIV/0!	0.685	0.806	#DIV/0!	#DIV/0!	Peak	Phf
7:00 AM - 8:00 AM	0	0	0	0	880	268	239	0	63	145	0	0	1595	0.867

Peak Hour

7:00 AM - 8:00 AM



AM COUNT SHEET

Intersection: Kaiiau Ave between Koanimakani St and Hokeo St.

Date: 10/21/2003 - 10/22/2003

By: R. Curry/C. Gikanga

Weather: Sunny

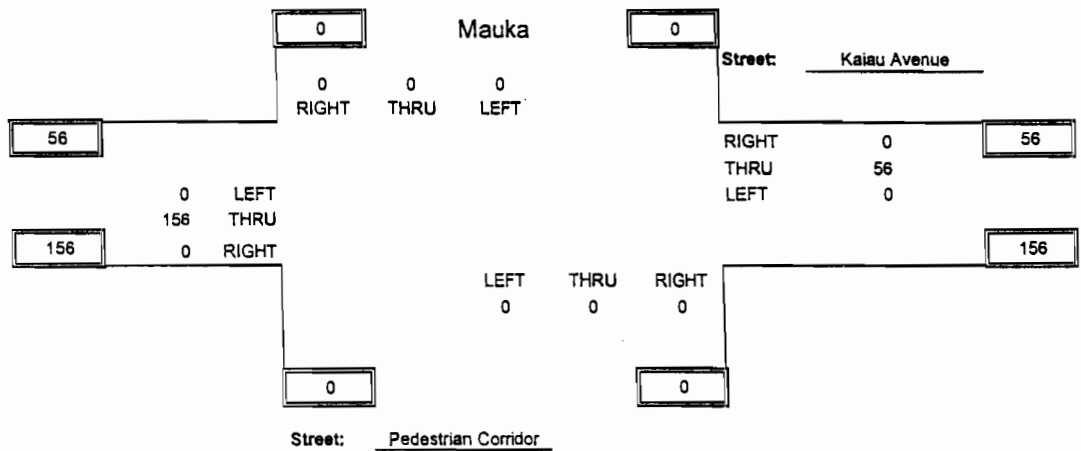
Street: Kaiiau Avenue

Street: Pedestrian Corridor

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
5:45 AM - 6:00 AM		16						2					18	88
6:00 AM - 6:15 AM		17						10					27	92
6:15 AM - 6:30 AM		18						5					23	94
6:30 AM - 6:45 AM		17						3					20	123
6:45 AM - 7:00 AM		12						10					22	162
7:00 AM - 7:15 AM		23						6					29	212
7:15 AM - 7:30 AM		42						10					52	198
7:30 AM - 7:45 AM		38						21					59	
7:45 AM - 8:00 AM		53						19					72	
8:00 AM - 8:15 AM		8						7					15	
Phf	#DIV/0!	0.736	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.667	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	Peak	Phf
7:00 AM - 8:00 AM	0	156	0	0	0	0	0	56	0	0	0	0	212	0.736

Peak Hour

7:00 AM - 8:00 AM



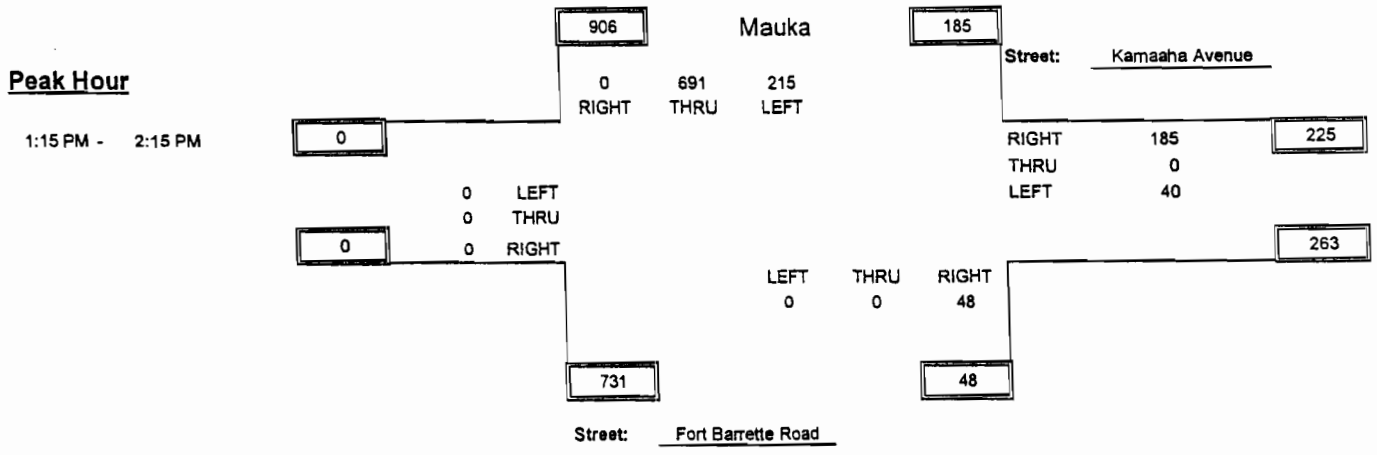
AFTERNOON COUNT SHEET

Intersection: Kamaaha Ave/Ft Barrette Rd
 Date: 10/21/2003 - 10/22/2003
 By: K. Fujimoto
 Weather: Sunny

Street: Kamaaha Avenue

Street: Fort Barrette Road

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM					137	38	27		4	8			214	1179
1:30 PM - 1:45 PM					181	57	36		13	8			295	1306
1:45 PM - 2:00 PM					208	65	49		9	22			353	1330
2:00 PM - 2:15 PM					165	55	73		14	10			317	1299
2:15 PM - 2:30 PM					191	62	59		10	19			341	1267
2:30 PM - 2:45 PM					183	52	60		8	16			319	
2:45 PM - 3:00 PM					190	61	46		12	13			322	
3:00 PM - 3:15 PM					169	62	41		4	9			285	
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.831	0.827	0.634	#DIV/0!	0.714	0.545	#DIV/0!	#DIV/0!	Peak	Phf
1:15 PM - 2:15 PM	0	0	0	0	691	215	185	0	40	48	0	0	1179	0.835



AFTERNOON COUNT SHEET

Intersection: Kamaaha Ave/Kaiu Ave

Date: 10/21/2003 - 10/22/2003

By: D. Yukimura

Weather: Sunny

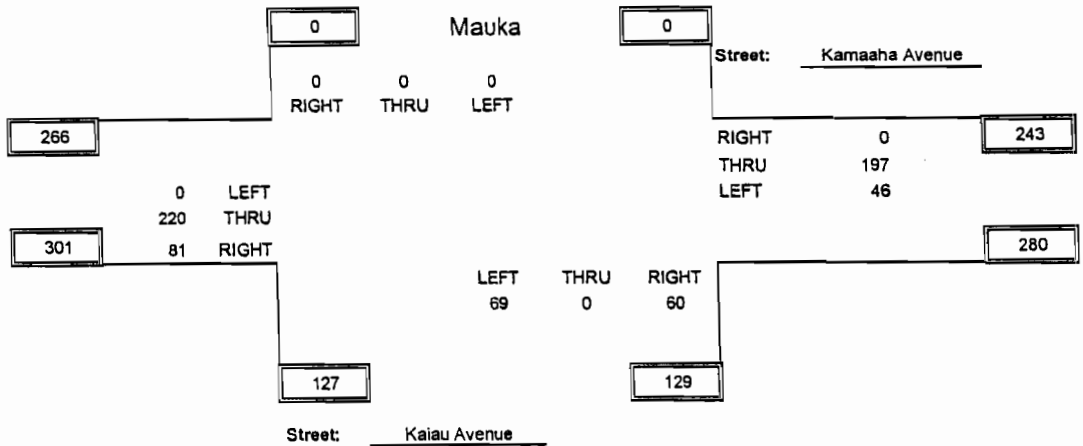
Street: Kamaaha Avenue

Street: Kaiu Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	17	29						18	11	4		17	96	602
1:30 PM - 1:45 PM	22	43						27	12	16		22	142	669
1:45 PM - 2:00 PM	20	67						35	13	29		23	187	673
2:00 PM - 2:15 PM	17	48						61	12	21		18	177	622
2:15 PM - 2:30 PM	21	60						50	10	5		17	163	581
2:30 PM - 2:45 PM	23	45						51	11	5		11	146	
2:45 PM - 3:00 PM	23	51						38	3	4		17	136	
3:00 PM - 3:15 PM	33	38						33	6	5		21	136	
Phf	0.880	0.821	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.807	0.885	0.517	#DIV/0!	0.750	Peak	Phf
1:45 PM - 2:45 PM	81	220	0	0	0	0	0	197	46	60	0	69	673	0.96

Peak Hour

1:45 PM - 2:45 PM



AFTERNOON COUNT SHEET

Intersection: Kamaaha Ave/Kealanani Ave

Date: 10/21/2003 - 10/22/2003

By: M. Cashman

Weather: Sunny

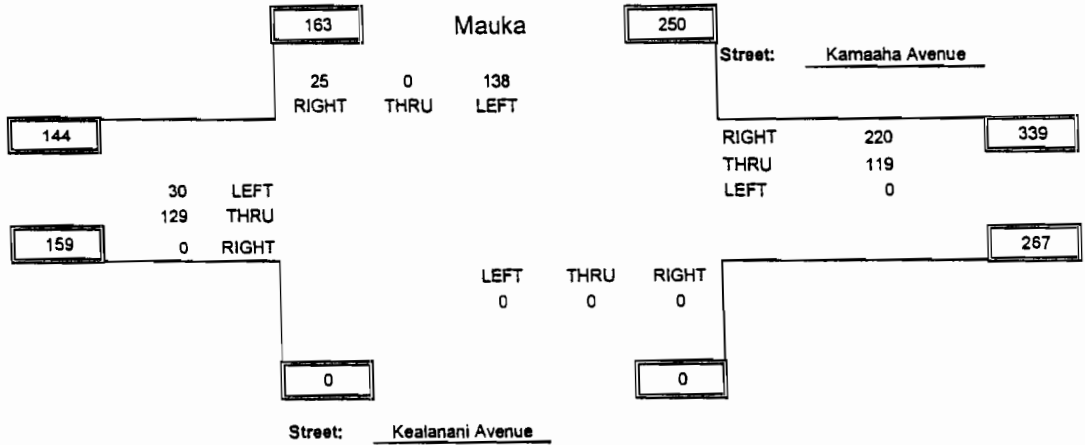
Street: Kamaaha Avenue

Street: Kealanani Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM		14	5	8		16	17	9					69	502
1:30 PM - 1:45 PM		18	4	4		27	33	23					109	605
1:45 PM - 2:00 PM		33	10	8		33	52	13					149	661
2:00 PM - 2:15 PM		35	11	4		43	41	41					175	629
2:15 PM - 2:30 PM		39	5	7		29	56	36					172	582
2:30 PM - 2:45 PM		22	4	6		33	71	29					165	
2:45 PM - 3:00 PM		24	5	4		28	33	23					117	
3:00 PM - 3:15 PM		25	9	7		35	41	11					128	
Phf	#DIV/0!	0.827	0.682	0.781	#DIV/0!	0.802	0.775	0.726	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	Peak	Phf
1:45 PM - 2:45 PM	0	129	30	25	0	138	220	119	0	0	0	0	661	0.944

Peak Hour

1:45 PM - 2:45 PM



AFTERNOON COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp (mauka)

Date: 10/21/2003 - 10/22/2003

By: C. Kaiuwailani

Weather: Sunny

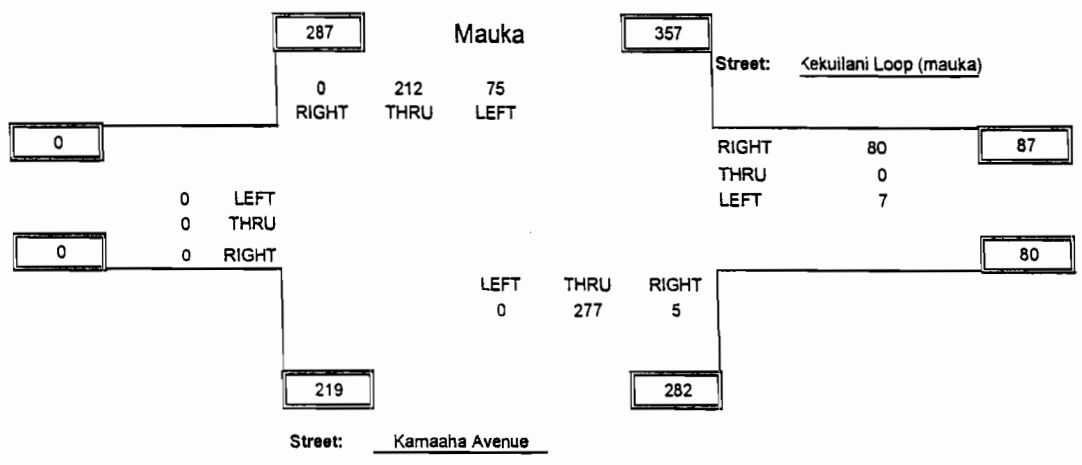
Street: Kekuilani Loop (mauka)

Street: Kamaaha Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM					11	7	7		1	1	10		37	402
1:30 PM - 1:45 PM					52	7	7		1	0	35		102	575
1:45 PM - 2:00 PM					29	17	26		2	1	68		143	656
2:00 PM - 2:15 PM					46	17	14		0	0	43		120	622
2:15 PM - 2:30 PM					101	18	21		1	2	67		210	597
2:30 PM - 2:45 PM					36	23	19		4	2	99		183	387
2:45 PM - 3:00 PM					23	29	19		3	1	34		109	204
3:00 PM - 3:15 PM					21	22	18		1	2	31		95	95
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.525	0.815	0.769	#DIV/0!	0.438	0.625	0.699	#DIV/0!	Peak	Phf
1:45 PM - 2:45 PM	0	0	0	0	212	75	80	0	7	5	277	0	656	0.781

Peak Hour

1:45 PM - 2:45 PM



AFTERNOON COUNT SHEET

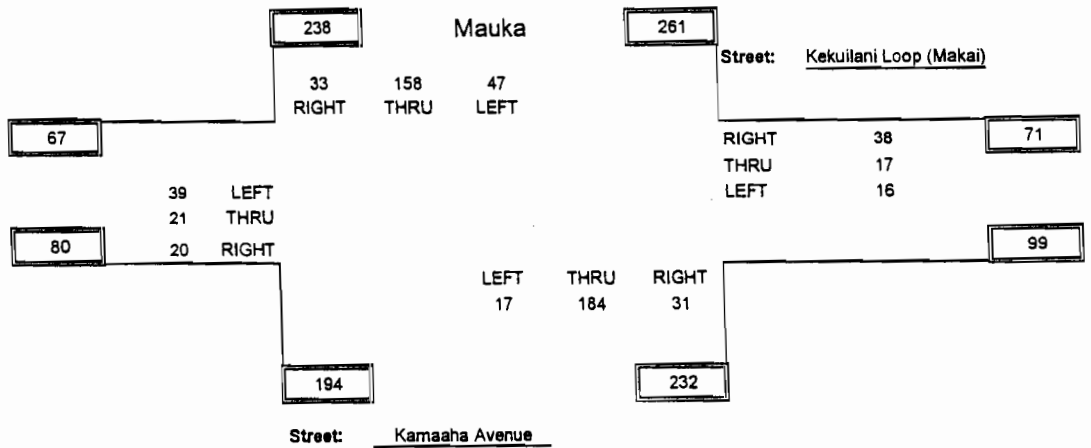
Intersection: Kamaaha Ave/Kekuilani Lp (Makai)
Date: 10/14/2003 - 10/15/2003
By: J. Javanillo
Weather: Sunny

Street: Kekuilani Loop (Makai)
Street: Kamaaha Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	4	2	3	3	6	10	3	3	3	3	5	4	49	443
1:30 PM - 1:45 PM	0	1	12	1	15	10	10	3	2	7	41	5	107	621
1:45 PM - 2:00 PM	4	4	9	11	14	4	10	9	4	10	19	2	100	605
2:00 PM - 2:15 PM	6	10	8	12	63	19	13	3	7	8	36	2	187	581
2:15 PM - 2:30 PM	10	6	10	9	66	14	5	2	3	6	88	8	227	534
2:30 PM - 2:45 PM	1	0	9	4	25	2	8	1	1	5	33	2	91	
2:45 PM - 3:00 PM	1	0	4	6	20	6	8	1	4	6	18	2	76	
3:00 PM - 3:15 PM	1	2	4	5	14	13	14	0	65	6	15	1	140	
Phf	0.500	0.525	0.813	0.688	0.598	0.618	0.731	0.472	0.571	0.775	0.523	0.531	Peak	Phf
1:30 PM - 2:30 PM	20	21	39	33	158	47	38	17	16	31	184	17	621	0.684

Peak Hour

1:30 PM - 2:30 PM



AFTERNOON COUNT SHEET

Intersection: Kamaaha Ave/Kapolei Pkwy

Date: 10/21/2003 - 10/22/2003

By: K. Nathaniel

Weather: Sunny

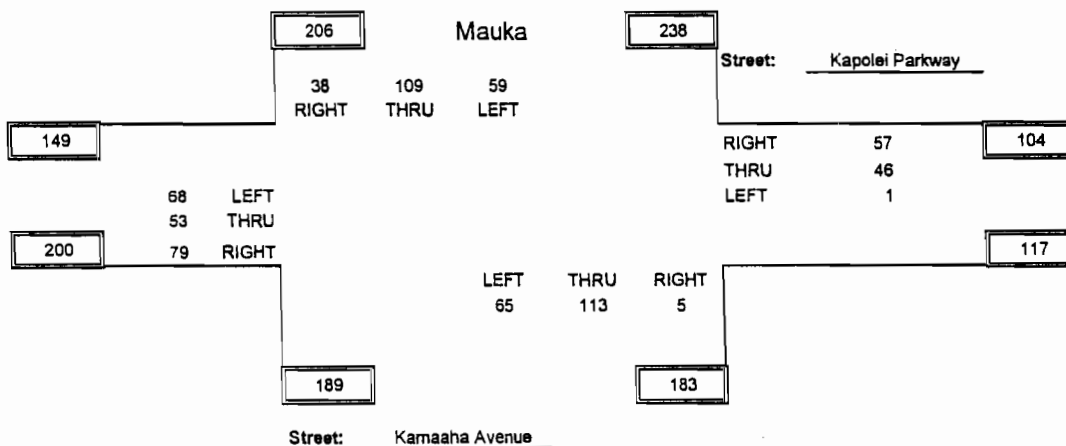
Street: Kapolei Parkway

Street: Kamaaha Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 AM - 1:30 AM	3	1	6	4	5	3	2	2	0	1	6	2	35	330
1:30 AM - 1:45 AM	8	2	22	8	6	4	7	2	0	0	9	3	71	536
1:45 AM - 2:00 AM	12	3	38	8	10	2	1	5	1	0	14	6	100	693
2:00 AM - 2:15 AM	15	14	13	8	28	11	7	2	0	1	21	4	124	681
2:15 AM - 2:30 AM	29	20	10	10	47	34	9	9	0	1	39	33	241	632
2:30 AM - 2:45 AM	23	16	7	12	24	12	40	30	0	3	39	22	228	
2:45 AM - 3:00 AM	13	13	7	7	5	5	9	9	1	1	9	9	88	
3:00 AM - 3:15 AM	12	7	13	5	9	8	8	4	0	0	4	5	75	
Phf	0.681	0.663	0.447	0.792	0.580	0.434	0.356	0.383	0.250	0.417	0.724	0.492	Peak	Phf
1:45 AM - 2:45 AM	79	53	68	38	109	59	57	46	1	5	113	65	693	0.71

Peak Hour

1:45 AM - 2:45 AM



AFTERNOON COUNT SHEET

Intersection: Kapolei Pkwy/Ft Barrette Rd
 Date: 10/21/2003 - 10/22/2003
 By: M. Smith
 Weather: Sunny

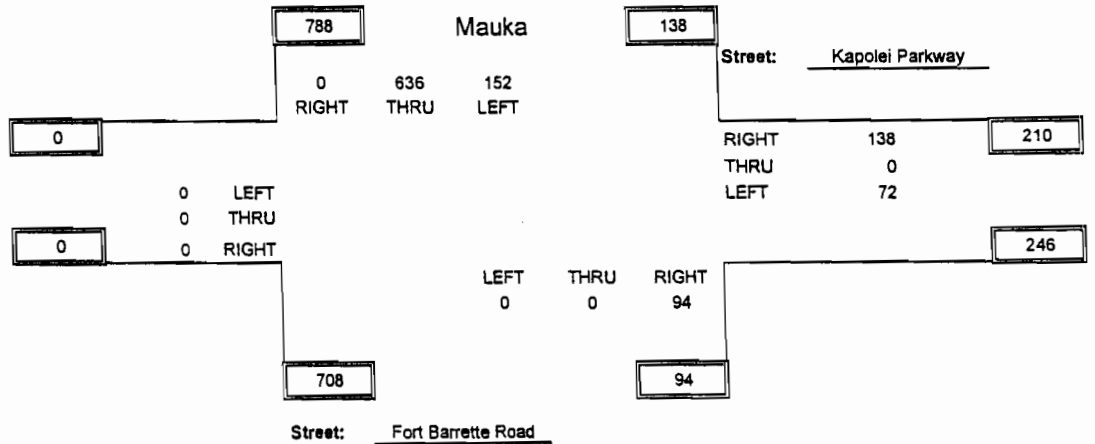
Street: Kapolei Parkway

Street: Fort Barrette Road

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM					117	24	6		6	11			164	961
1:30 PM - 1:45 PM					149	45	31		20	19			264	1088
1:45 PM - 2:00 PM					181	36	32		24	24			297	1092
2:00 PM - 2:15 PM					141	38	20		10	27			236	1047
2:15 PM - 2:30 PM					160	41	42		20	28			291	1048
2:30 PM - 2:45 PM					154	37	44		18	15			268	
2:45 PM - 3:00 PM					180	22	26		11	13			252	
3:00 PM - 3:15 PM					147	26	25		19	20			237	
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.878	0.927	0.784	#DIV/0!	0.750	0.839	#DIV/0!	#DIV/0!	Peak	Phf
1:45 PM - 2:45 PM	0	0	0	0	636	152	138	0	72	94	0	0	1092	0.919

Peak Hour

1:45 PM - 2:45 PM



AFTERNOON COUNT SHEET

Intersection: Kaiiau Ave between Koanimakani St and Hokeo St.

Date: 10/21/2003 - 10/22/2003

By: R. Curry/C. Gikanga

Weather: Sunny

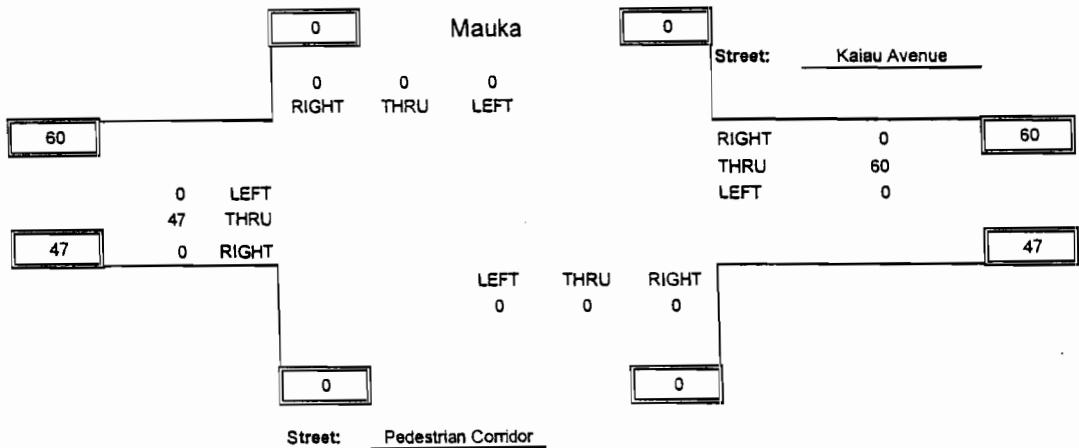
Street: Kaiiau Avenue

Street: Pedestrian Corridor

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM		12						13					25	104
1:30 PM - 1:45 PM		8						13					21	104
1:45 PM - 2:00 PM		10						16					26	107
2:00 PM - 2:15 PM		16						16					32	99
2:15 PM - 2:30 PM		10						15					25	94
2:30 PM - 2:45 PM		11						13					24	69
2:45 PM - 3:00 PM		10						8					18	45
3:00 PM - 3:15 PM		12						15					27	27
Phf	#DIV/0!	0.734	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.938	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	Peak	Phf
1:45 PM - 2:45 PM	0	47	0	0	0	0	0	60	0	0	0	0	107	0.836

Peak Hour

1:45 PM - 2:45 PM

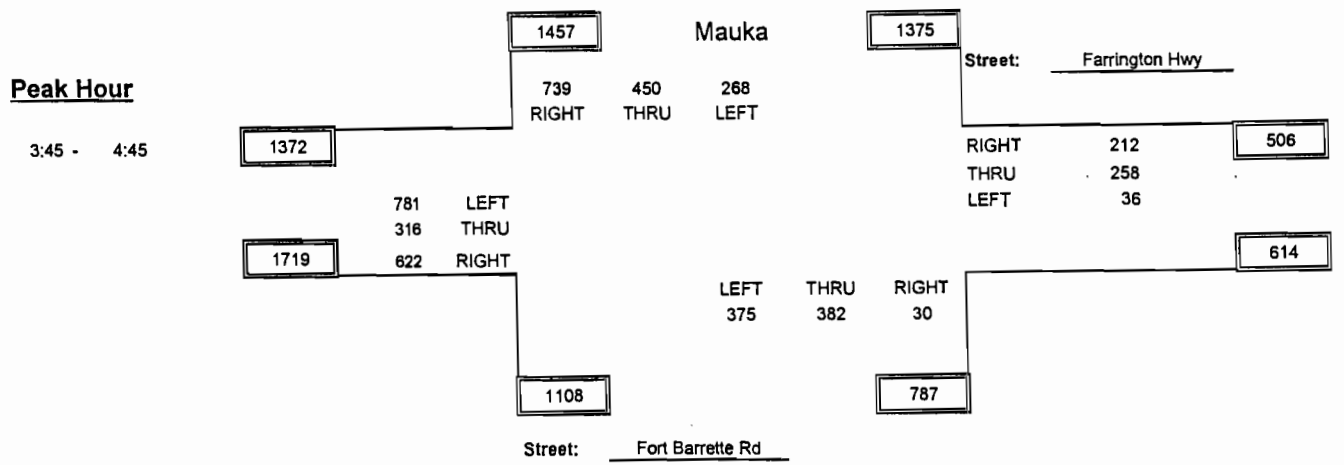


PM COUNT SHEET

Intersection: Makakilo Dr-Ft Barrette Rd/Farrington Hwy
 Date: 8/2/2002 - 8/5/2002
 By: R. Yoshimura, C. Maruoka
 Weather: Sunny

Street: Makakilo Dr
 Street: Farrington Hwy
 Street: Fort Barrette Rd

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:30 - 3:45	125	50	163	184	87	71	64	66	9	12	105	136	1072	4431
3:45 - 4:00	140	74	188	193	111	64	54	69	10	8	83	119	1113	4469
4:00 - 4:15	155	77	192	176	122	68	57	60	5	11	110	85	1118	4461
4:15 - 4:30	157	87	202	170	117	82	46	59	10	4	110	84	1128	
4:30 - 4:45	170	78	199	200	100	54	55	70	11	7	79	87	1110	
4:45 - 5:00	173	49	173	197	108	86	53	66	10	6	82	102	1105	
Phf	0.915	0.908	0.967	0.924	0.922	0.817	0.930	0.921	0.818	0.682	0.866	0.788	Peak	Phf
3:45 - 4:45	622	316	781	739	450	268	212	258	36	30	382	375	4469	0.990

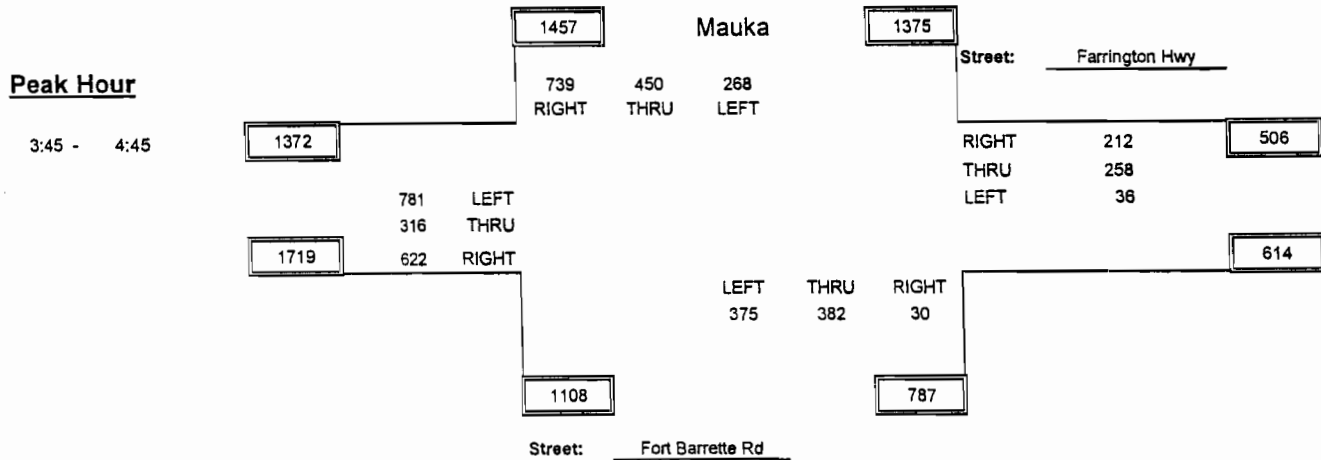


PM COUNT SHEET

Intersection: Makakilo Dr-Ft Barrette Rd/Farrington Hwy
 Date: 8/2/2002 - 8/5/2002
 By: R. Yoshimura, C. Maruoka
 Weather: Sunny

Street: Makakilo Dr
 Street: Farrington Hwy
 Street: Fort Barrette Rd

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:30 - 3:45	125	50	163	184	87	71	64	66	9	12	105	136	1072	4431
3:45 - 4:00	140	74	188	193	111	64	54	69	10	8	83	119	1113	4469
4:00 - 4:15	155	77	192	176	122	68	57	60	5	11	110	85	1118	4461
4:15 - 4:30	157	87	202	170	117	82	46	59	10	4	110	84	1128	
4:30 - 4:45	170	78	199	200	100	54	55	70	11	7	79	87	1110	
4:45 - 5:00	173	49	173	197	108	86	53	66	10	6	82	102	1105	
Phf	0.915	0.908	0.967	0.924	0.922	0.817	0.930	0.921	0.818	0.682	0.868	0.788	Peak	Phf
3:45 - 4:45	622	316	781	739	450	268	212	258	36	30	382	375	4469	0.990



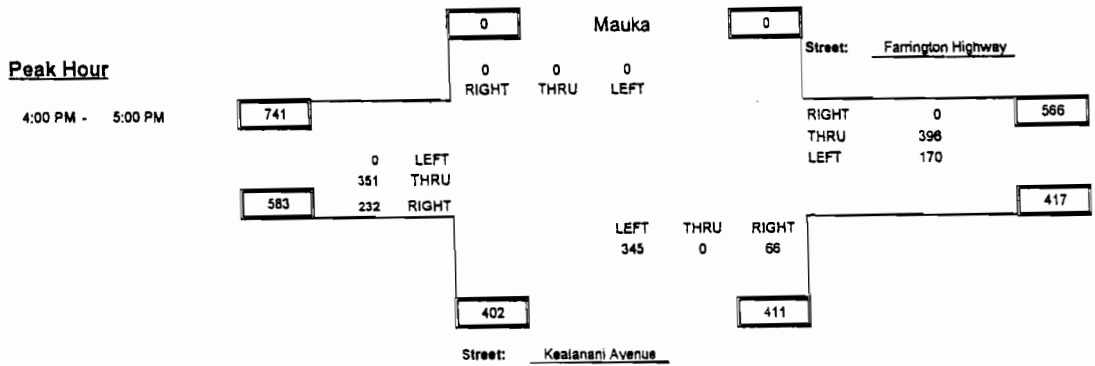
PM COUNT SHEET

Intersection: Farrington Hwy/Kealanani Ave
 Date: 10/22/03-10/23/03
 By: K. Fujimoto
 Weather: Sunny

Street: Farrington Highway

Street: Kealanani Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	43	45						66	35	18		51	258	1191
1:30 PM - 1:45 PM	42	50						77	31	35		85	320	1211
1:45 PM - 2:00 PM	104	24						81	22	19		107	357	1165
2:00 PM - 2:15 PM	60	26						81	13	10		66	256	1126
2:15 PM - 2:30 PM	44	31						90	15	13		85	278	1195
2:30 PM - 2:45 PM	46	61						62	15	12		78	274	1212
2:45 PM - 3:00 PM	49	50						106	17	16		80	318	1299
3:00 PM - 3:15 PM	65	50						85	25	20		80	325	1281
3:15 PM - 3:30 PM	45	59						62	21	19		89	295	1348
3:30 PM - 3:45 PM	59	43						117	31	24		87	361	1486
3:45 PM - 4:00 PM	39	71						72	22	19		77	300	1491
4:00 PM - 4:15 PM	49	82						94	48	17		102	392	1580
4:15 PM - 4:30 PM	65	109						112	37	19		91	433	1552
4:30 PM - 4:45 PM	59	71						94	47	14		81	356	1464
4:45 PM - 5:00 PM	59	89						96	38	16		71	369	1476
5:00 PM - 5:15 PM	46	116						87	29	15		89	384	1424
5:15 PM - 5:30 PM	55	83						86	30	11		60	345	1382
5:30 PM - 5:45 PM	73	75						107	21	18		84	376	
5:45 PM - 8:00 PM	49	91						71	19	27		60	317	
8:00 PM - 8:15 PM	70	67						70	35	19		81	342	
Phf	0.892	0.805	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.684	0.885	0.888	#DIV/0!	0.846	Peak	Phf
4:00 PM - 5:00 PM	232	351	0	0	0	0	0	396	170	86	0	345	1560	0.901



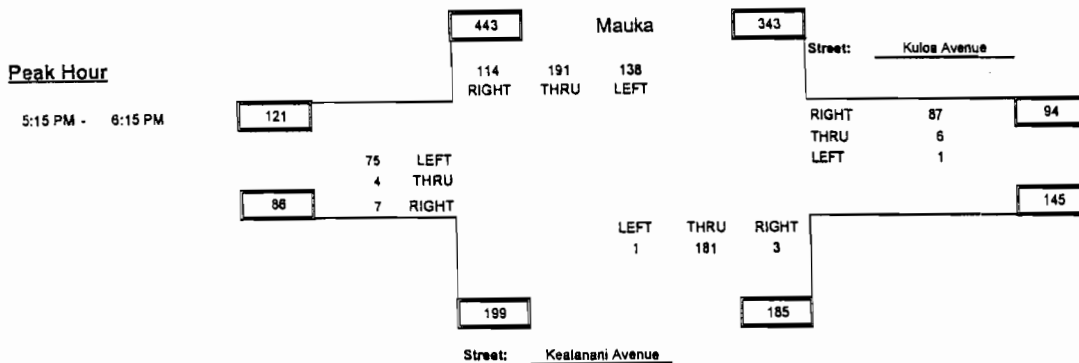
PM COUNT SHEET

Intersection: Kealanani Ave/KumuikiSt
 Date: 10/22/2003 - 10/23/2003
 By: P. Matsunaga
 Weather: Sunny

Street: Kuloa Avenue

Street: Kealanani Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	2	0	12	6	52	18	16	1	0	2	69	4	182	592
1:30 PM - 1:45 PM	2	0	16	12	40	17	12	1	0	1	75	2	178	521
1:45 PM - 2:00 PM	3	0	10	13	25	10	15	1	0	0	31	1	109	466
2:00 PM - 2:15 PM	0	0	18	11	31	9	13	0	1	0	39	1	123	470
2:15 PM - 2:30 PM	2	0	12	10	21	17	13	1	1	1	32	1	111	523
2:30 PM - 2:45 PM	0	0	10	17	28	25	8	1	0	1	35	0	123	581
2:45 PM - 3:00 PM	0	2	11	14	23	22	13	2	0	0	28	0	113	526
3:00 PM - 3:15 PM	1	2	17	19	39	22	14	0	0	1	61	0	176	696
3:15 PM - 3:30 PM	3	3	11	19	40	22	15	2	0	1	51	2	169	696
3:30 PM - 3:45 PM	2	0	21	22	38	23	12	2	1	1	43	3	188	738
3:45 PM - 4:00 PM	1	0	14	27	49	31	21	2	2	1	33	2	183	758
4:00 PM - 4:15 PM	1	1	14	34	51	27	9	1	1	1	35	1	176	796
4:15 PM - 4:30 PM	0	3	18	32	60	39	22	0	1	1	33	0	209	806
4:30 PM - 4:45 PM	0	1	16	26	58	35	15	0	1	2	35	1	190	803
4:45 PM - 5:00 PM	0	0	21	38	61	40	21	0	0	3	37	0	221	807
5:00 PM - 5:15 PM	0	3	10	29	65	21	16	2	0	2	37	1	186	793
5:15 PM - 5:30 PM	1	0	12	30	55	40	25	1	0	0	42	0	206	808
5:30 PM - 5:45 PM	1	3	18	27	47	27	18	3	0	2	48	0	194	
5:45 PM - 6:00 PM	2	0	22	38	48	38	16	1	0	0	43	1	207	
6:00 PM - 6:15 PM	3	1	23	21	41	33	28	1	1	1	48	0	201	
Phf	0.583	0.333	0.815	0.792	0.868	0.883	0.777	0.500	0.250	0.375	0.943	0.250	Peak	Phf
5:15 PM - 6:15 PM	7	4	75	114	191	138	87	8	1	3	181	1	808	0.976



AFTERNOON COUNT SHEET

Intersection: Kamaaha Ave/Ft Barrette Rd

Date: 10/21/2003 - 10/22/2003

By: K. Fujimoto

Weather: Sunny

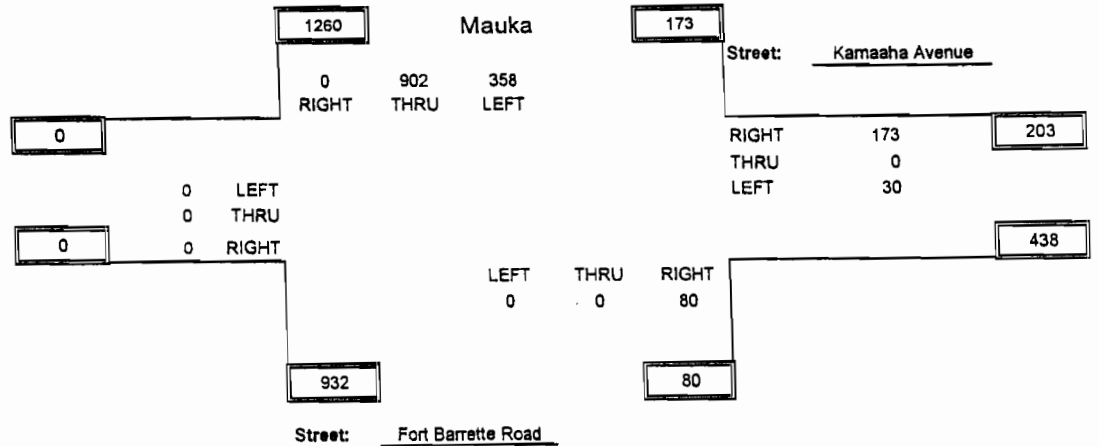
Street: Kamaaha Avenue

Street: Fort Barrette Road

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:45 PM - 4:00 PM					225	87	48		4	25			389	1543
4:00 PM - 4:15 PM					188	69	42		5	20			324	1595
4:15 PM - 4:30 PM					239	97	33		9	19			397	1647
4:30 PM - 4:45 PM					250	105	50		12	16			433	1655
4:45 PM - 5:00 PM					258	96	64		11	12			441	1625
5:00 PM - 5:15 PM					234	70	40		15	17			376	1615
5:15 PM - 5:30 PM					231	105	46		9	14			405	1631
5:30 PM - 5:45 PM					239	94	42		13	15			403	
5:45 PM - 6:00 PM					269	93	46		6	17			431	
6:00 PM - 6:15 PM					208	97	58		11	18			392	
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.902	0.852	0.865	#DIV/0!	0.625	0.800	#DIV/0!	#DIV/0!	Peak	Phf
3:45 PM - 4:45 PM	0	0	0	0	902	358	173	0	30	80	0	0	1543	0.891

Peak Hour

3:45 PM - 4:45 PM



PM COUNT SHEET

Intersection: Kamaaha Ave/Kaiiau Ave

Date: 10/21/2003 - 10/22/2003

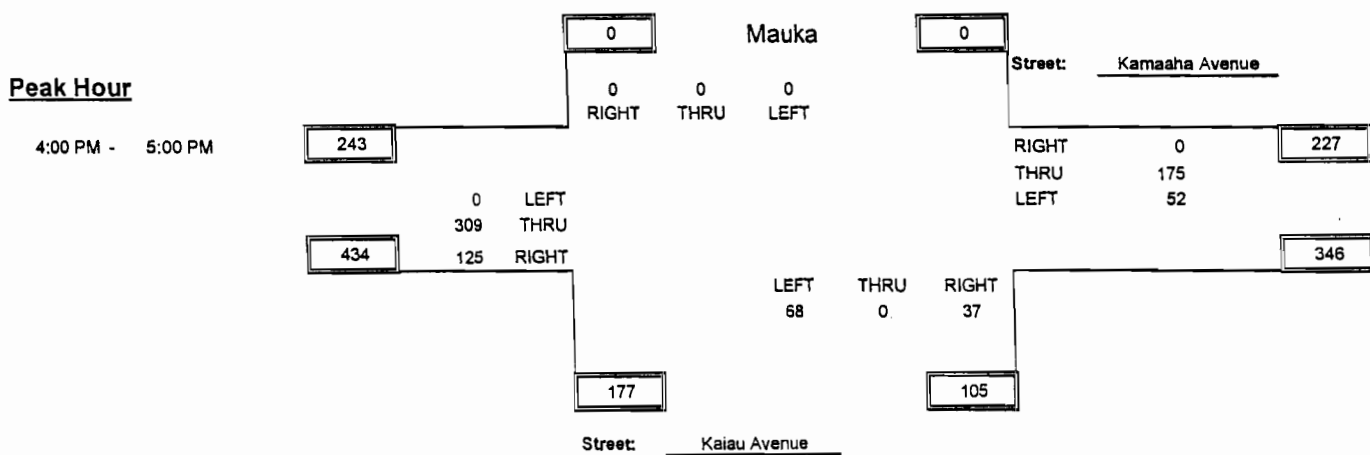
By: D. Yukimura

Weather: Sunny

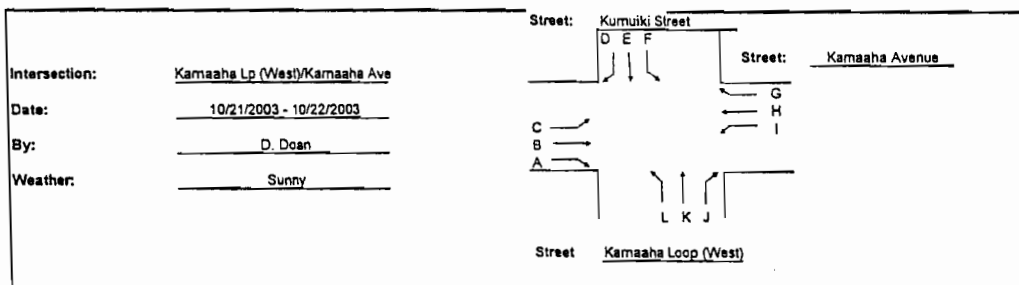
Street: Kamaaha Avenue

Street: Kaiiau Avenue

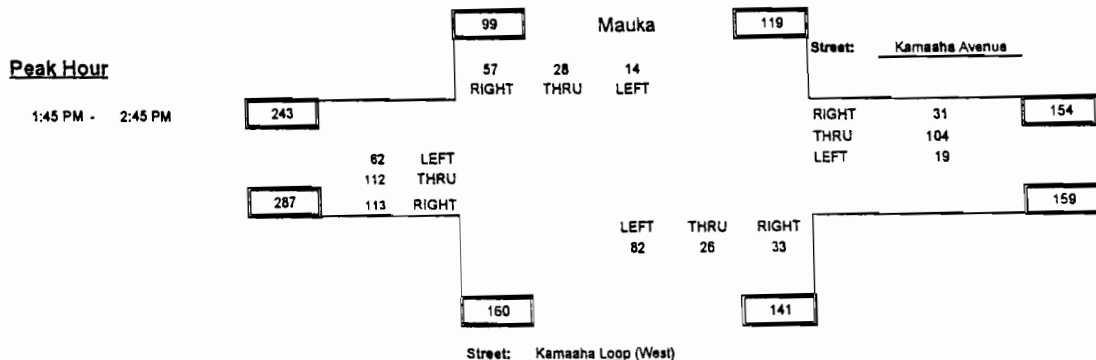
TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	41	71						42	10	8		16	188	752
4:00 PM - 4:15 PM	25	64						33	17	6		20	165	766
4:15 PM - 4:30 PM	33	83						40	12	11		7	186	763
4:30 PM - 4:45 PM	35	86						55	9	10		18	213	762
4:45 PM - 5:00 PM	32	76						47	14	10		23	202	752
5:00 PM - 5:15 PM	26	61						45	10	7		13	162	731
5:15 PM - 5:30 PM	47	72						41	8	6		11	185	775
5:30 PM - 5:45 PM	39	70						51	14	9		20	203	
5:45 PM - 6:00 PM	41	69						37	10	7		17	181	
6:00 PM - 6:15 PM	36	79						44	9	8		30	206	
Phf	0.893	0.898	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.795	0.765	0.841	#DIV/0!	0.739	Peak	Phf
4:00 PM - 5:00 PM	125	309	0	0	0	0	0	175	52	37	0	68	766	0.896



PM COUNT SHEET



TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	13	15	9	9	3	1	1	11	2	3	1	9	77	560
1:30 PM - 1:45 PM	21	19	15	16	1	2	1	16	0	1	1	7	100	655
1:45 PM - 2:00 PM	42	40	22	19	7	3	5	17	7	0	1	12	175	681
2:00 PM - 2:15 PM	36	20	13	11	12	1	8	26	6	25	14	36	208	616
2:15 PM - 2:30 PM	21	31	19	15	6	8	9	24	4	5	9	21	172	509
2:30 PM - 2:45 PM	14	21	8	12	3	2	9	37	2	3	2	13	126	
2:45 PM - 3:00 PM	9	26	20	10	3	1	3	18	3	2	2	13	110	
3:00 PM - 3:15 PM	10	28	15	5	1	1	0	17	2	5	0	17	101	
3:15 PM - 3:30 PM													0	
3:30 PM - 3:45 PM													0	
3:45 PM - 4:00 PM	22	29	28	15	5	4	1	23	7	2	4	14	154	641
4:00 PM - 4:15 PM	24	30	22	20	4	0	4	18	9	1	1	12	145	650
4:15 PM - 4:30 PM	38	33	25	22	3	0	3	12	4	1	3	18	162	644
4:30 PM - 4:45 PM	34	30	31	21	1	1	5	20	7	4	3	23	180	631
4:45 PM - 5:00 PM	24	32	23	25	3	1	7	22	8	3	3	14	163	599
5:00 PM - 5:15 PM	19	27	24	18	1	1	3	27	3	3	3	12	139	568
5:15 PM - 5:30 PM	21	43	22	14	1	0	2	22	3	3	5	13	149	592
5:30 PM - 5:45 PM	8	34	28	17	1	1	3	28	5	1	2	20	148	
5:45 PM - 6:00 PM	20	35	22	13	1	1	3	23	1	1	1	11	132	
6:00 PM - 6:15 PM	18	36	34	20	9	1	3	24	3	1	5	9	163	
PHI	0.673	0.700	0.705	0.750	0.583	0.436	0.861	0.703	0.879	0.330	0.464	0.569	Peak	PHI
1:45 PM - 2:45 PM	113	112	62	57	28	14	31	104	19	33	26	82	681	0.819



PM COUNT SHEET

Intersection: Kamaaha Ave/Kealanani Ave

Date: 10/21/2003 - 10/22/2003

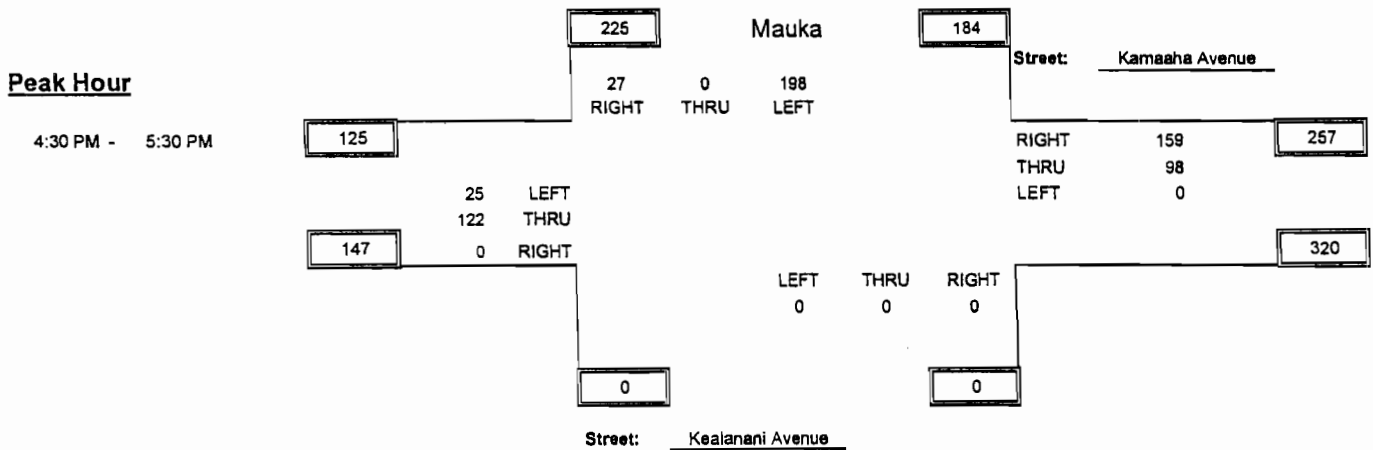
By: M. Cashman

Weather: Sunny

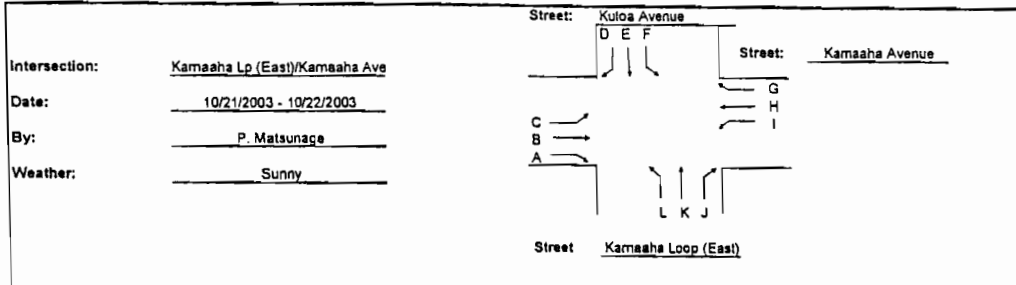
Street: Kamaaha Avenue

Street: Kealanani Avenue

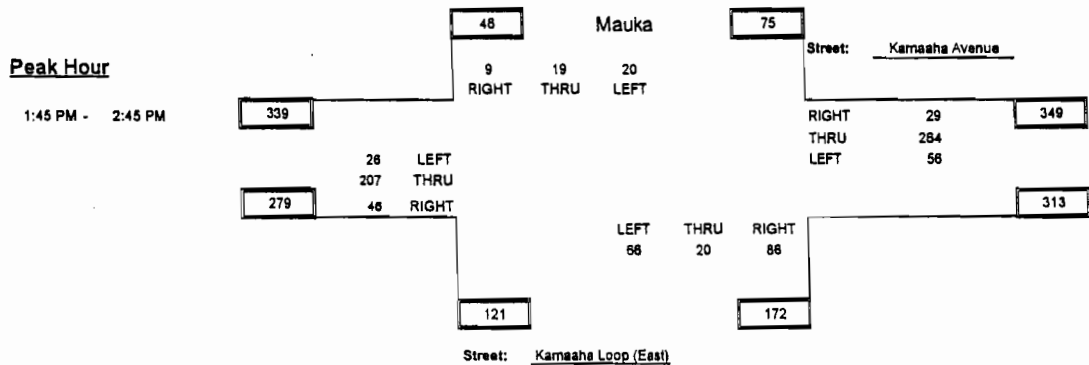
TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:45 PM - 4:00 PM		28	7	8		52	28	22					145	549
4:00 PM - 4:15 PM		27	4	7		42	40	21					141	587
4:15 PM - 4:30 PM		29	5	7		44	30	10					125	594
4:30 PM - 4:45 PM		25	9	7		42	26	29					138	629
4:45 PM - 5:00 PM		31	5	7		68	42	30					183	585
5:00 PM - 5:15 PM		26	5	7		46	38	26					148	601
5:15 PM - 5:30 PM		40	6	6		42	53	13					160	608
5:30 PM - 5:45 PM		28	8	13		-8	32	21					94	
5:45 PM - 6:00 PM		30	7	3		93	35	31					199	
6:00 PM - 6:15 PM		35	3	4		39	45	29					155	
Phf	#DIV/0!	0.763	0.694	0.964	#DIV/0!	0.728	0.750	0.817	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	Peak	Phf
4:30 PM - 5:30 PM	0	122	25	27	0	198	159	98	0	0	0	0	629	0.859



PM COUNT SHEET



TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	7	20	4	0	3	1	0	13	4	4	1	13	70	595
1:30 PM - 1:45 PM	12	31	3	5	3	2	2	44	8	2	0	7	117	776
1:45 PM - 2:00 PM	26	37	7	2	8	2	4	56	18	6	1	7	174	848
2:00 PM - 2:15 PM	7	52	8	3	5	4	1	43	22	44	9	36	234	808
2:15 PM - 2:30 PM	9	71	7	3	5	9	14	74	12	28	6	15	251	892
2:30 PM - 2:45 PM	4	47	4	1	1	5	10	91	4	10	4	8	189	
2:45 PM - 3:00 PM	7	45	3	4	0	2	4	43	3	11	3	9	134	
3:00 PM - 3:15 PM	4	48	3	2	0	2	1	42	3	3	2	8	118	
3:15 PM - 3:30 PM														
3:30 PM - 3:45 PM														
3:45 PM - 4:00 PM	10	59	9	3	0	2	1	38	7	8	2	9	148	606
4:00 PM - 4:15 PM	11	51	10	8	0	3	4	42	4	12	5	11	181	668
4:15 PM - 4:30 PM	12	56	6	2	5	2	3	28	8	12	3	10	145	675
4:30 PM - 4:45 PM	9	60	1	5	3	6	5	37	2	7	4	13	152	707
4:45 PM - 5:00 PM	11	85	4	2	2	5	2	55	8	14	7	15	210	699
5:00 PM - 5:15 PM	14	57	4	5	1	5	2	52	2	13	6	7	188	650
4:45 PM - 5:00 PM	9	73	6	0	3	1	3	54	5	6	5	12	177	657
5:00 PM - 5:15 PM	10	61	1	2	2	1	3	42	2	7	4	9	144	
5:15 PM - 5:30 PM	6	68	4	5	3	1	3	53	5	3	2	8	161	
5:30 PM - 5:45 PM	6	63	9	7	1	6	6	58	5	5	0	9	175	
Phf	0.442	0.729	0.813	0.750	0.594	0.556	0.518	0.725	0.636	0.489	0.556	0.458	Peak	Phf
1:45 PM - 2:45 PM	46	207	26	9	19	20	29	284	56	86	20	66	848	0.645



PM COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp (mauka)

Date: 10/21/2003 - 10/22/2003

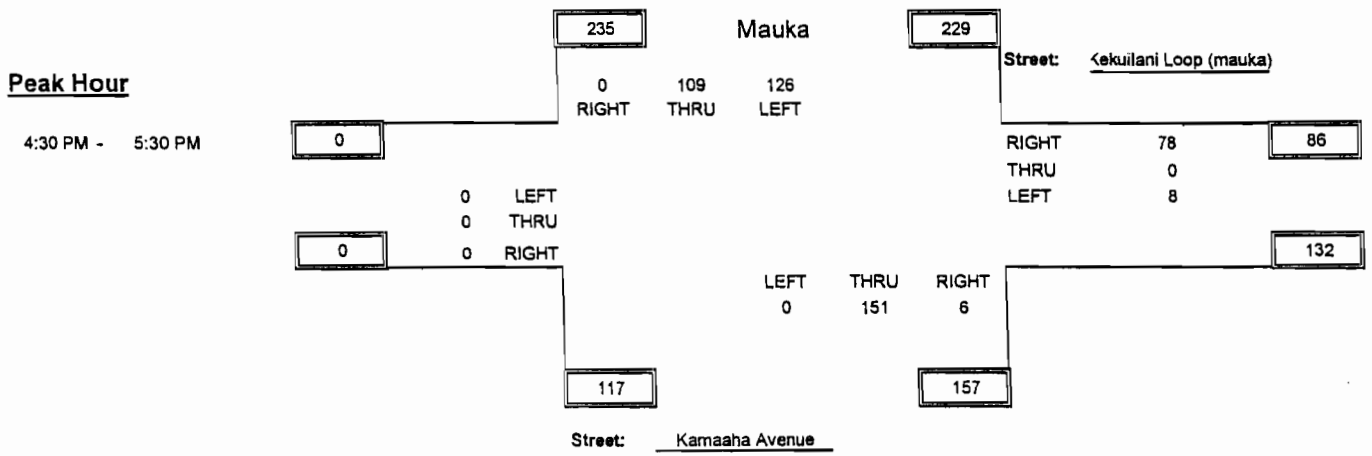
By: C. Kaiuwailani

Weather: Sunny

Street: Kekuilani Loop (mauka)

Street: Kamaaha Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:45 PM - 4:00 PM					26	34	22		1	2	28		113	416
4:00 PM - 4:15 PM					20	26	20		1	1	31		99	454
4:15 PM - 4:30 PM					25	34	10		0	0	27		96	471
4:30 PM - 4:45 PM					12	41	22		4	3	26		108	486
4:45 PM - 5:00 PM					42	45	19		2	1	42		151	478
5:00 PM - 5:15 PM					31	22	16		2	2	43		116	439
5:15 PM - 5:30 PM					19	27	20		3	0	42		111	441
5:30 PM - 5:45 PM					17	32	23		1	3	24		100	
5:45 PM - 6:00 PM					18	30	23		2	0	39		112	
6:00 PM - 6:15 PM					21	32	29		1	0	35		118	
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.649	0.700	0.886	#DIV/0!	0.500	0.500	0.878	#DIV/0!	Peak	Phf
4:30 PM - 5:30 PM	0	0	0	0	109	126	78	0	8	6	151	0	478	0.791



PM COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp (Makai)

Date: 10/14/2003 - 10/15/2003

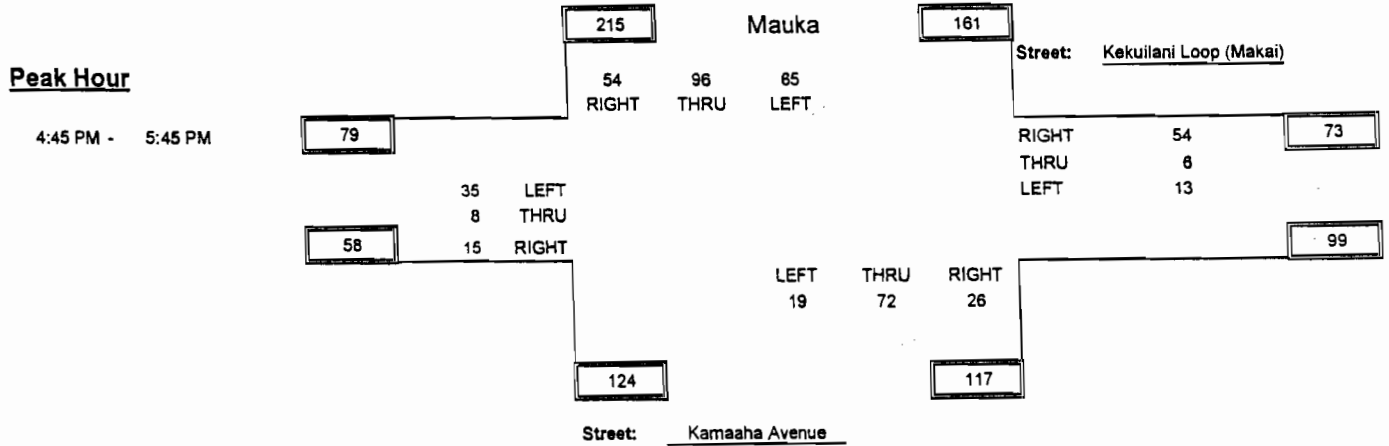
By: J. Javanillo

Weather: Sunny

Street: Kamaaha Avenue

Street: Kekuilani Loop (Makai)

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	2	2	6	8	14	15	11	2	2	7	17	3	89	323
4:00 PM - 4:15 PM	1	2	5	11	13	12	7	1	2	6	14	1	75	364
4:15 PM - 4:30 PM	0	0	3	8	17	12	8	3	4	10	14	1	80	412
4:30 PM - 4:45 PM	3	1	7	16	13	13	3	1	6	2	13	1	79	434
4:45 PM - 5:00 PM	3	2	7	15	21	15	14	1	8	12	24	8	130	463
5:00 PM - 5:15 PM	5	3	5	15	30	17	14	1	0	6	24	3	123	402
5:15 PM - 5:30 PM	3	0	14	13	23	14	11	2	0	5	13	4	102	371
5:30 PM - 5:45 PM	4	3	9	11	22	19	15	2	5	3	11	4	108	
5:45 PM - 6:00 PM	1	4	6	6	8	13	7	0	4	6	11	3	69	
6:00 PM - 6:15 PM	0	4	10	8	13	18	12	1	4	9	11	2	92	
Phf	0.750	0.667	0.625	0.900	0.800	0.855	0.900	0.750	0.406	0.542	0.750	0.594	Peak	Phf
4:45 PM - 5:45 PM	15	8	35	54	96	65	54	6	13	26	72	19	463	0.890



PM COUNT SHEET

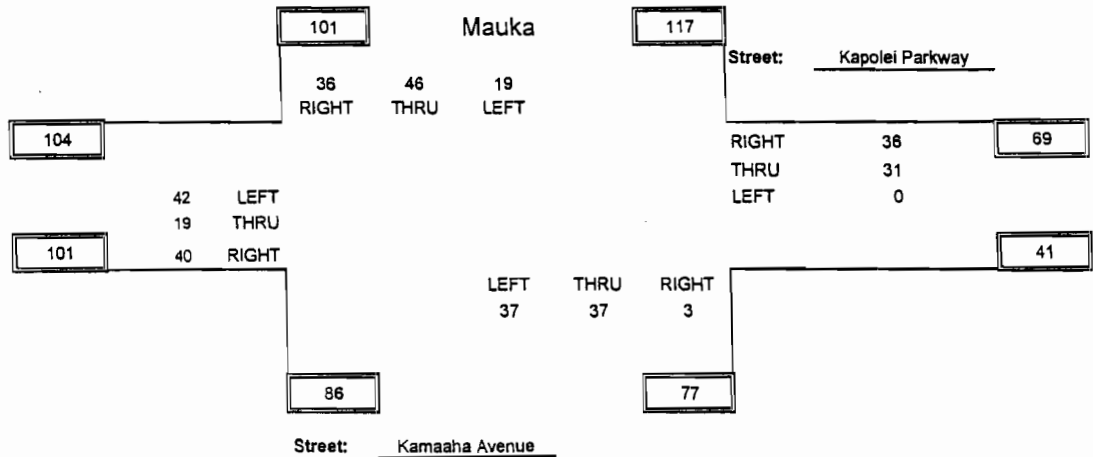
Intersection: Kamaaha Ave/Kapolei Pkwy
 Date: 10/21/2003 - 10/22/2003
 By: K. Nathaniel
 Weather: Sunny

Street: Kapolei Parkway
 Street: Kamaaha Avenue

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:45 - 4:00	11	9	9	8	11	3	8	5	0	0	6	7	77	293
4:00 - 4:15	17	2	10	6	9	2	6	5	1	0	8	9	75	325
4:15 - 4:30	10	1	8	9	9	4	5	10	0	1	8	7	72	348
4:30 - 4:45	13	8	10	8	5	2	4	1	0	0	9	9	69	348
4:45 - 5:00	6	9	10	11	15	5	18	12	0	1	7	15	109	337
5:00 - 5:15	11	1	14	8	17	8	11	8	0	1	13	6	98	304
5:15 - 5:30	10	2	3	6	20	3	13	5	0	0	8	2	72	273
5:30 - 5:45	7	2	10	8	13	3	3	3	0	0	2	7	58	
5:45 - 6:00	20	2	6	7	10	3	5	6	1	1	5	10	76	
6:00 - 6:15	17	4	13	10	3	5	4	0	0	1	7	3	67	
Phf	0.769	0.528	0.750	0.818	0.678	0.594	0.528	0.646	#DIV/0!	0.750	0.712	0.617	Peak	Phf
4:15 - 5:15	40	19	42	36	46	19	38	31	0	3	37	37	348	0.798

Peak Hour

4:15 - 5:15



PM COUNT SHEET

Intersection: Kapolei Pkwy/Malu Ohai St

Date: 10/22/2003 - 10/23/2003

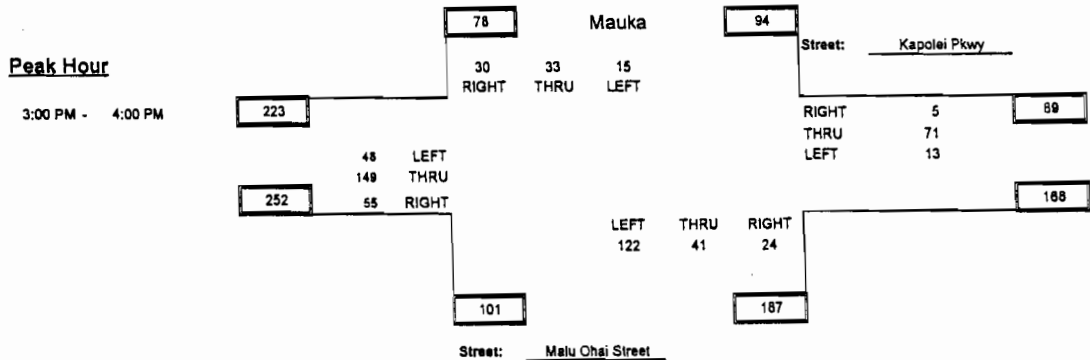
By: D. Dean/C. Maruoka

Weather: Sunny

Street: Kapolei Pkwy

Street: Malu Ohai Street

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	4	46	4	2	3	0	0	39	2	3	1	4	106	359
1:30 PM - 1:45 PM	4	36	2	8	1	0	6	53	2	0	2	6	120	306
1:45 PM - 2:00 PM	7	22	1	1	2	0	0	22	2	3	1	9	70	247
2:00 PM - 2:15 PM	8	17	4	4	0	0	0	20	2	4	0	2	61	264
2:15 PM - 2:30 PM	9	14	3	1	0	1	0	15	1	1	0	10	55	451
2:30 PM - 2:45 PM	11	15	3	2	3	0	0	17	6	1	0	3	61	556
2:45 PM - 3:00 PM	2	44	6	2	1	4	1	13	8	0	1	5	87	600
3:00 PM - 3:15 PM	12	64	25	12	10	11	3	25	7	17	21	41	248	606
3:15 PM - 3:30 PM	20	25	13	7	10	3	0	11	5	3	13	50	160	457
3:30 PM - 3:45 PM	13	27	6	4	4	1	1	25	0	2	4	18	105	377
3:45 PM - 4:00 PM	10	33	4	7	9	0	1	10	1	2	3	13	93	353
4:00 PM - 4:15 PM	11	19	10	7	3	2	0	21	1	2	5	18	99	329
4:15 PM - 4:30 PM	10	14	6	10	2	1	0	15	1	2	1	16	80	300
4:30 PM - 4:45 PM	8	14	7	7	3	0	1	14	3	0	4	20	81	290
4:45 PM - 5:00 PM	12	17	8	8	2	0	0	11	1	1	2	9	69	291
5:00 PM - 5:15 PM	8	25	6	6	4	0	0	13	0	1	1	6	70	334
5:15 PM - 5:30 PM	7	17	8	2	1	2	1	16	2	0	4	10	70	335
5:30 PM - 5:45 PM	11	18	6	1	9	0	2	11	3	0	7	14	82	
5:45 PM - 6:00 PM	18	18	2	9	8	1	0	11	5	8	14	20	112	
6:00 PM - 8:15 PM	6	12	7	4	2	1	1	14	1	1	6	16	71	
Phf	0.688	0.582	0.480	0.825	0.825	0.341	0.417	0.710	0.464	0.353	0.488	0.810	Peak	Phf
3:00 PM - 4:00 PM	55	149	48	30	33	15	5	71	13	24	41	122	606	0.611

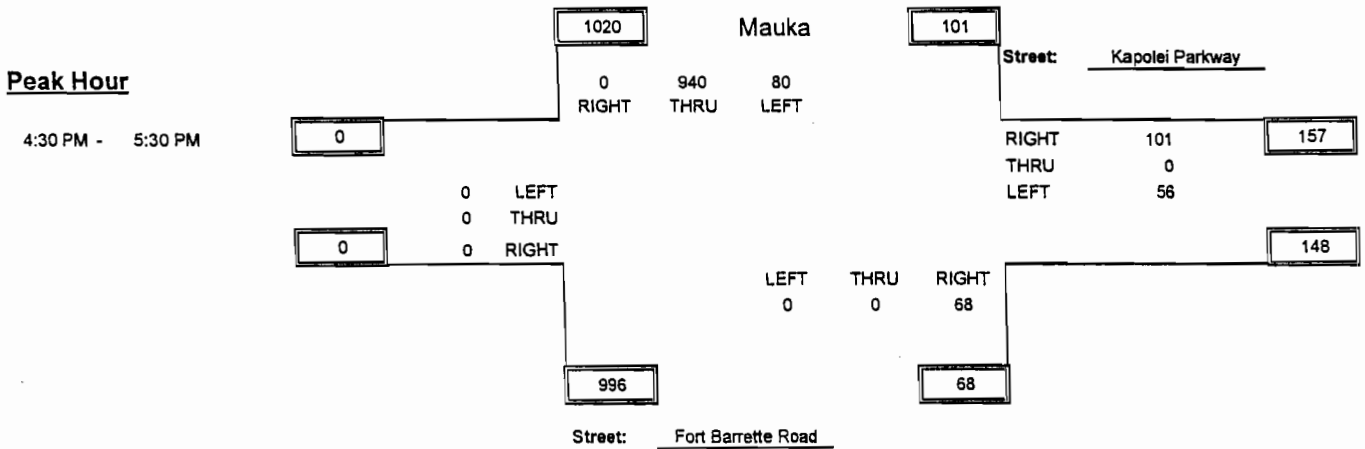


PM COUNT SHEET

Intersection: Kapolei Pkwy/Ft Barrette Rd
 Date: 10/21/2003 - 10/22/2003
 By: M. Smith
 Weather: Sunny

Street: Kapolei Parkway
 Street: Fort Barrette Road

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:45 PM - 4:00 PM					196	33	22		19	17			287	1149
4:00 PM - 4:15 PM					169	24	35		15	13			256	1201
4:15 PM - 4:30 PM					230	18	19		9	14			290	1242
4:30 PM - 4:45 PM					237	25	22		19	13			316	1245
4:45 PM - 5:00 PM					248	21	34		18	18			339	1236
5:00 PM - 5:15 PM					235	14	26		7	15			297	1224
5:15 PM - 5:30 PM					220	20	19		12	22			293	1201
5:30 PM - 5:45 PM					229	23	23		18	14			307	
5:45 PM - 6:00 PM					242	33	18		20	14			327	
6:00 PM - 6:15 PM					189	30	10		20	25			274	
Phf	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.948	0.800	0.743	#DIV/0!	0.737	0.773	#DIV/0!	#DIV/0!	Peak	Phf
4:30 PM - 5:30 PM	0	0	0	0	940	80	101	0	56	68	0	0	1245	0.918



PM COUNT SHEET

Intersection: Kaiiau Ave between Koanimakani St and Hokeo St.

Date: 10/21/2003 - 10/22/2003

By: R. Curry/C. Gikanga

Weather: Sunny

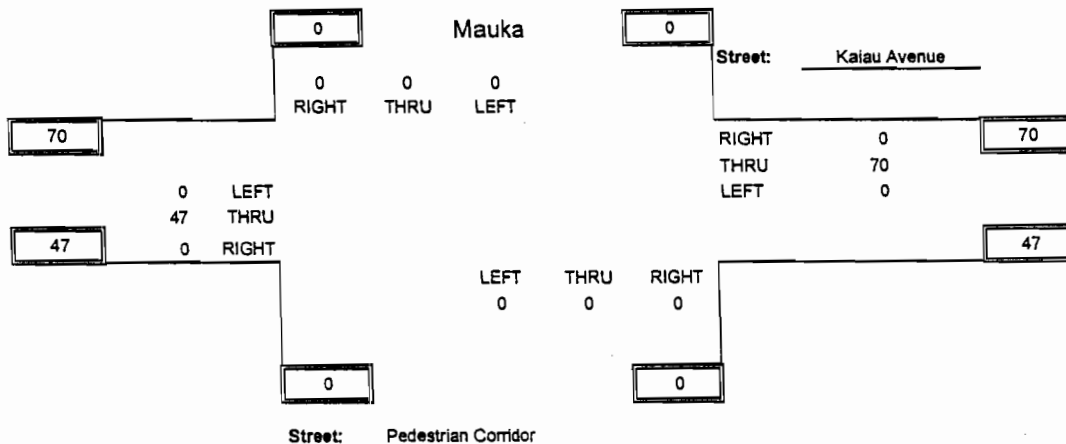
Street: Kaiiau Avenue

Street: Pedestrian Corridor

TIME	A	B	C	D	E	F	G	H	I	J	K	L	Total Mvmt	Total Hour
3:45 PM - 4:00 PM		7						19					26	96
4:00 PM - 4:15 PM		8						12					20	100
4:15 PM - 4:30 PM		2						13					15	103
4:30 PM - 4:45 PM		14						21					35	117
4:45 PM - 5:00 PM		13						17					30	116
5:00 PM - 5:15 PM		7						16					23	115
5:15 PM - 5:30 PM		13						16					29	117
5:30 PM - 5:45 PM		11						23					34	
5:45 PM - 6:00 PM		10						19					29	
6:00 PM - 6:15 PM		11						14					25	
Phf	#DIV/0!	0.839	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.833	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	Peak	Phf
4:30 PM - 5:30 PM	0	47	0	0	0	0	0	70	0	0	0	0	117	0.836

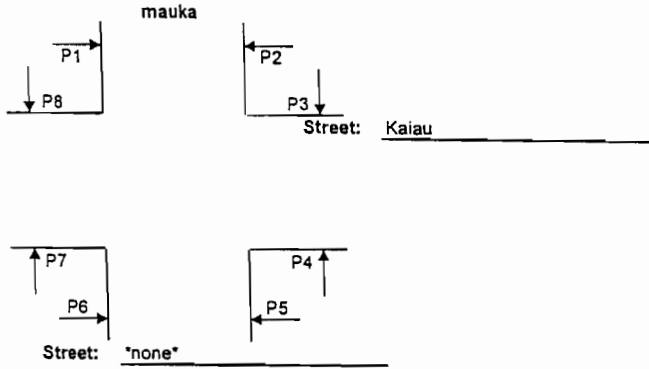
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

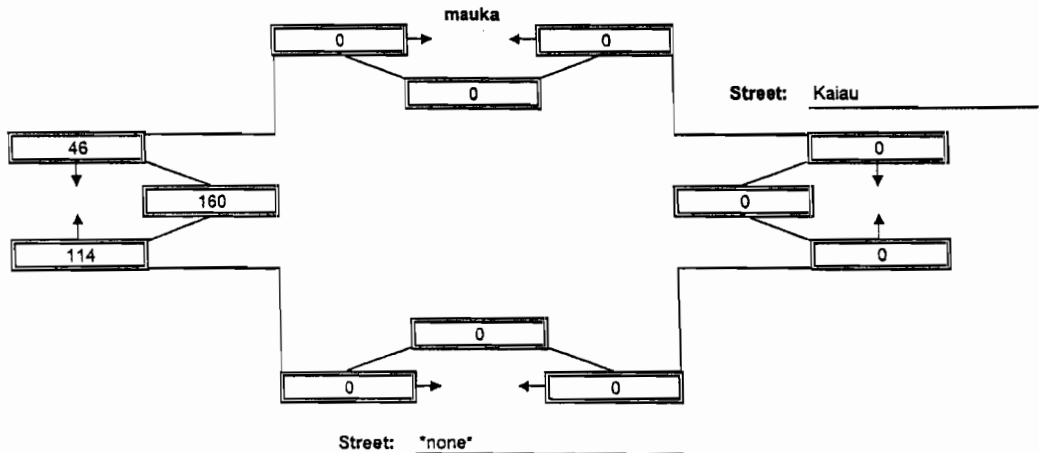
Intersection: Kaiiau
 Date: 10/21/2003 - 10/22/2003
 By: R. Curry
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM							2	2	4	14
6:00 AM - 6:15 AM							2	0	2	30
6:15 AM - 6:30 AM							5	0	5	55
6:30 AM - 6:45 AM							2	1	3	89
6:45 AM - 7:00 AM							13	7	20	145
7:00 AM - 7:15 AM							20	7	27	160
7:15 AM - 7:30 AM							21	18	39	138
7:30 AM - 7:45 AM							49	10	59	
7:45 AM - 8:00 AM							24	11	35	
8:00 AM - 8:15 AM							2	3	5	
7:00 AM - 8:00 AM	0	0	0	0	0	0	114	46		

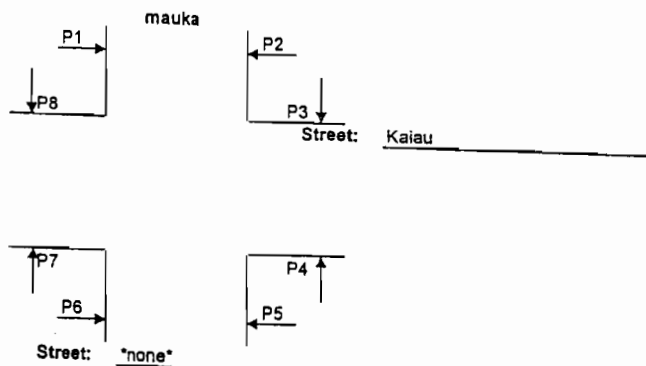
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON COUNT SHEET

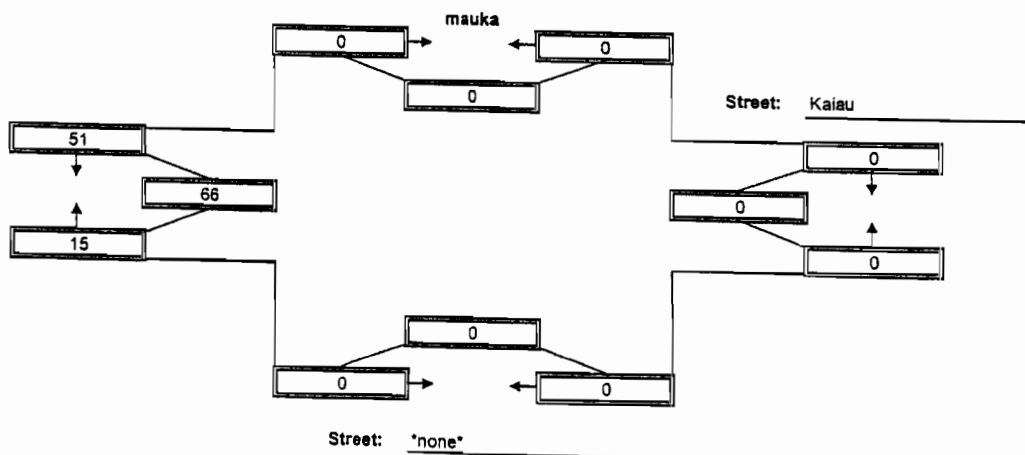
Intersection: Kaiiau
 Date: 10/21/2003 - 10/22/2003
 By: R. Curry
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM							0	0	0	65
1:30 PM - 1:45 PM							0	15	15	72
1:45 PM - 2:00 PM							0	38	38	66
2:00 PM - 2:15 PM							2	10	12	31
2:15 PM - 2:30 PM							4	3	7	20
2:30 PM - 2:45 PM							9	0	9	13
2:45 PM - 3:00 PM							0	3	3	4
3:00 PM - 3:15 PM							0	1	1	1
3:15 PM - 3:30 PM									0	0
3:30 PM - 3:45 PM									0	0
3:45 PM - 4:00 PM									0	0
4:00 PM - 4:15 PM									0	0
1:45 PM - 2:45 PM	0	0	0	0	0	0	15	51		

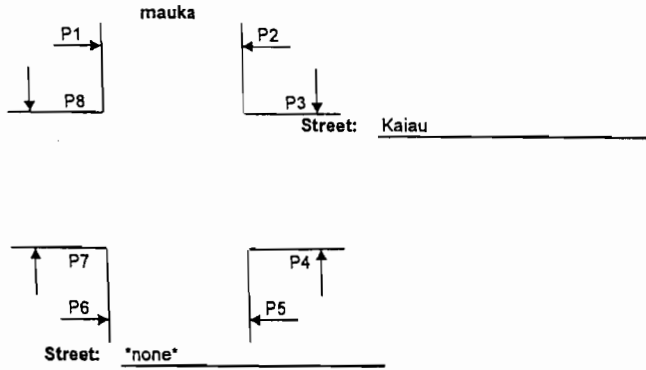
Peak Hour

1:45 PM - 2:45 PM



PM COUNT SHEET

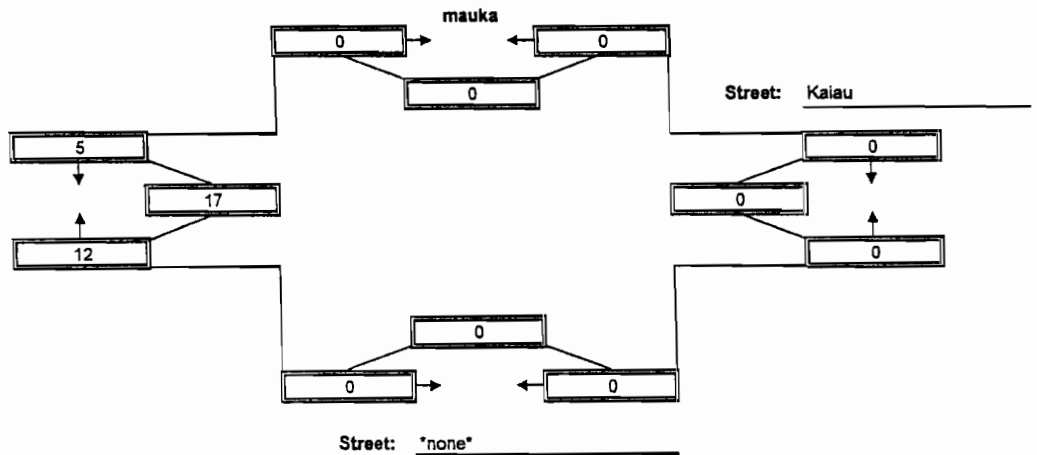
Intersection: Kaiou
 Date: 10/21/2003 - 10/22/2003
 By: R. Curry
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM							0	2	2	13
4:00 PM - 4:15 PM							0	6	6	12
4:15 PM - 4:30 PM							0	0	0	13
4:30 PM - 4:45 PM							3	2	5	17
4:45 PM - 5:00 PM							1	0	1	14
5:00 PM - 5:15 PM							6	1	7	14
5:15 PM - 5:30 PM							2	2	4	7
5:30 PM - 5:45 PM							0	2	2	
5:45 PM - 6:00 PM							0	1	1	
6:00 PM - 6:15 PM							0	0	0	
4:30 PM - 5:30 PM	0	0	0	0	0	0	12	5		

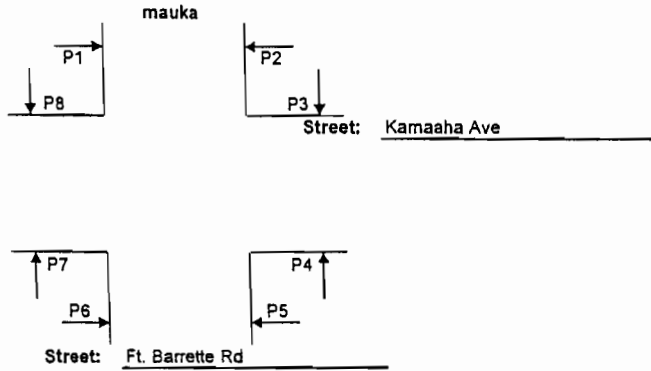
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

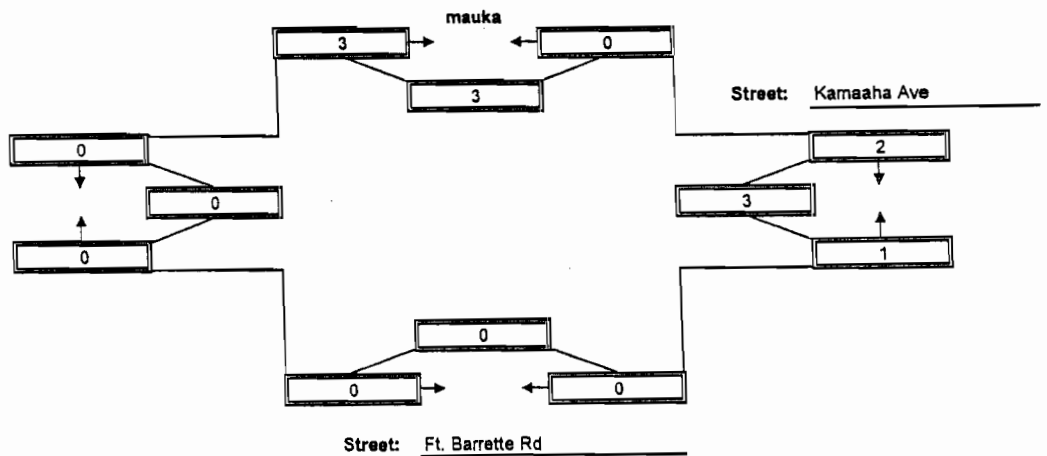
Intersection: Kamaaha Ave/Ft. Barrette Rd
 Date: 10/21/2003 - 10/22/2003
 By: K. Fujimoto
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	0	0	0	0	0	0			0	0
6:00 AM - 6:15 AM	0	0	0	0	0	0			0	0
6:15 AM - 6:30 AM	0	0	0	0	0	0			0	1
6:30 AM - 6:45 AM	0	0	0	0	0	0			0	6
6:45 AM - 7:00 AM	0	0	0	0	0	0			0	6
7:00 AM - 7:15 AM	0	0	0	1	0	0			1	6
7:15 AM - 7:30 AM	3	0	2	0	0	0			5	5
7:30 AM - 7:45 AM	0	0	0	0	0	0			0	
7:45 AM - 8:00 AM	0	0	0	0	0	0			0	
8:00 AM - 8:15 AM	0	0	0	0	0	0			0	
7:00 AM - 8:00 AM	3	0	2	1	0	0	0	0		

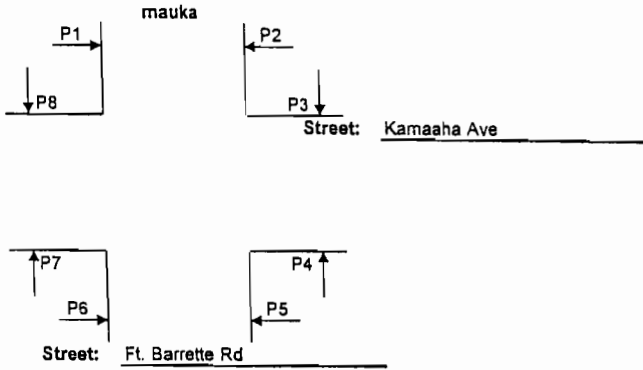
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON COUNT SHEET

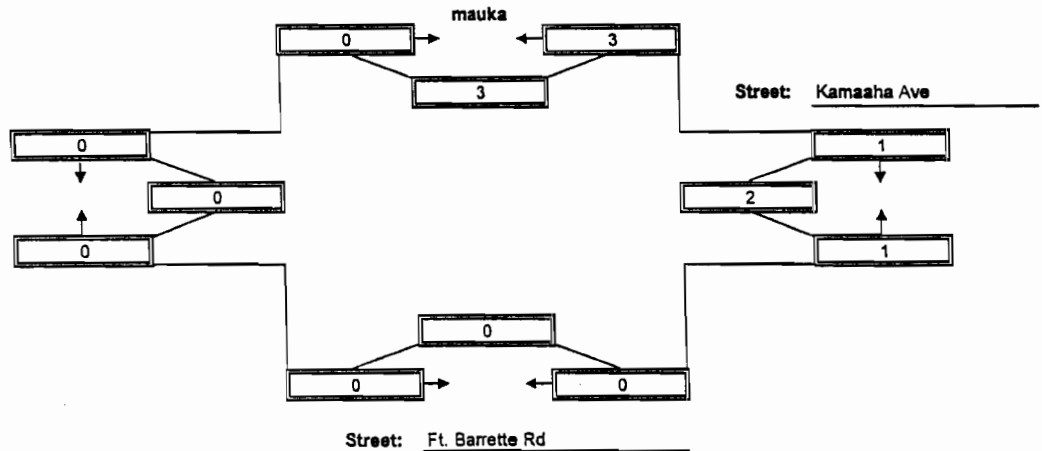
Intersection: Kamaaha Ave/Ft. Barrette Rd
 Date: 10/21/2003 - 10/22/2003
 By: K. Fujimoto
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	0	0	0	0			0	1
1:30 PM - 1:45 PM	0	0	0	0	0	0			0	2
1:45 PM - 2:00 PM	0	0	0	0	0	0			0	5
2:00 PM - 2:15 PM	0	0	0	1	0	0			1	5
2:15 PM - 2:30 PM	0	0	1	0	0	0			1	6
2:30 PM - 2:45 PM	0	3	0	0	0	0			3	
2:45 PM - 3:00 PM	0	0	0	0	0	0			0	
3:00 PM - 3:15 PM	0	0	0	0	2	0			2	
1:45 PM - 2:45 PM	0	3	1	1	0	0	0	0		

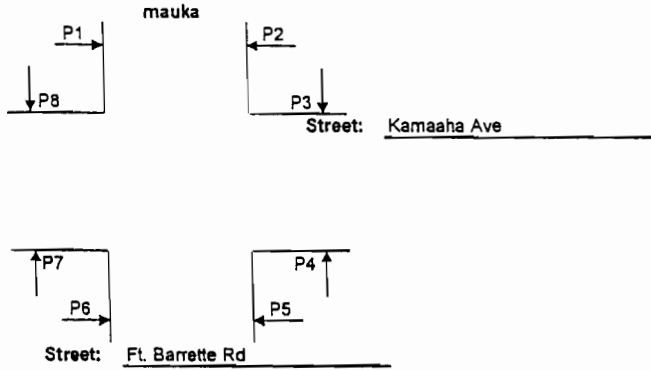
Peak Hour

1:45 PM - 2:45 PM



PM COUNT SHEET

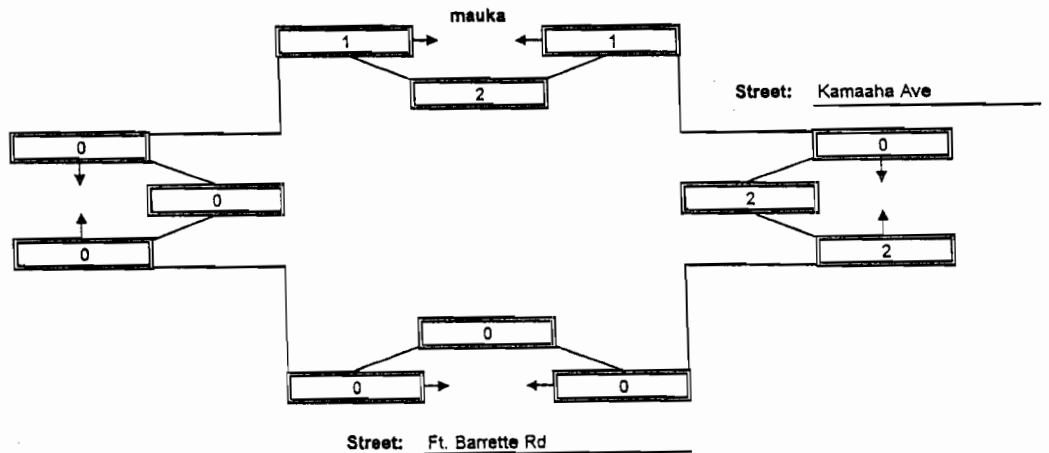
Intersection: Kamaaha Ave/Ft. Barrette Rd
 Date: 10/21/2003 - 10/22/2003
 By: K. Fujimoto
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	0	0	0	0	0	0			0	2
4:00 PM - 4:15 PM	0	0	0	2	0	0			2	2
4:15 PM - 4:30 PM	0	0	0	0	0	0			0	3
4:30 PM - 4:45 PM	0	0	0	0	0	0			0	4
4:45 PM - 5:00 PM	0	0	0	0	0	0			0	4
5:00 PM - 5:15 PM	0	1	0	2	0	0			3	4
5:15 PM - 5:30 PM	1	0	0	0	0	0			1	3
5:30 PM - 5:45 PM	0	0	0	0	0	0			0	
5:45 PM - 6:00 PM	0	0	0	0	0	0			0	
6:00 PM - 6:15 PM	0	0	0	2	0	0			2	
4:30 PM - 5:30 PM	1	1	0	2	0	0	0	0		

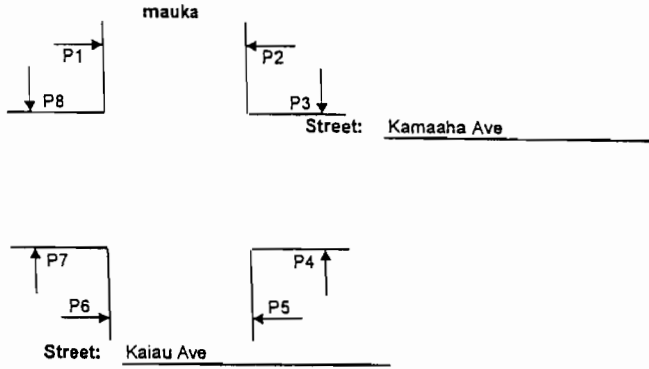
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

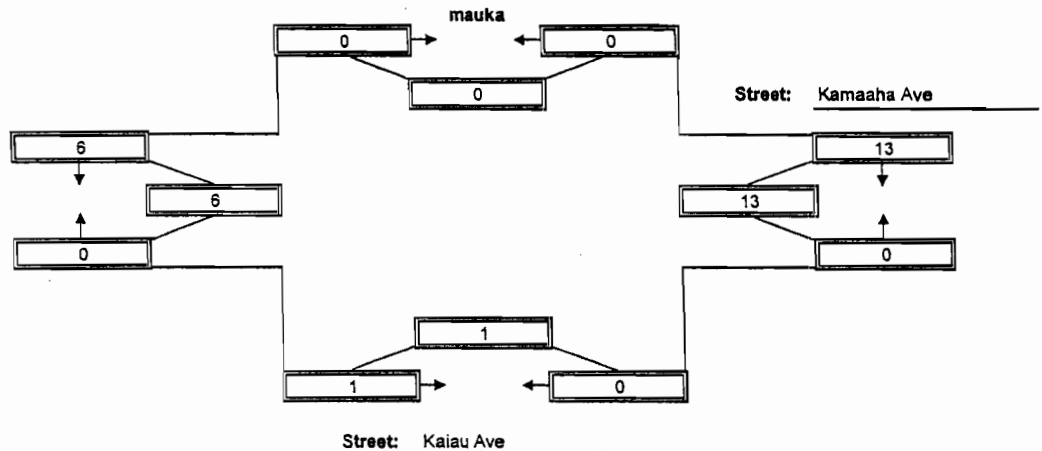
Intersection: Kamaaha/Kaiiau Ave
 Date: 10/21/2003 - 10/22/2003
 By: Devlin
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM			0	0	0	0	0	0	0	3
6:00 AM - 6:15 AM			0	0	0	0	0	0	0	7
6:15 AM - 6:30 AM			0	0	0	0	0	0	0	7
6:30 AM - 6:45 AM			0	0	0	0	0	3	3	14
6:45 AM - 7:00 AM			1	0	1	2	0	0	4	21
7:00 AM - 7:15 AM			0	0	0	0	0	0	0	20
7:15 AM - 7:30 AM			3	0	0	1	0	3	7	20
7:30 AM - 7:45 AM			7	0	0	0	0	3	10	
7:45 AM - 8:00 AM			3	0	0	0	0	0	3	
8:00 AM - 8:15 AM			0	0	0	0	0	0	0	
7:00 AM - 8:00 AM	0	0	13	0	0	1	0	6		

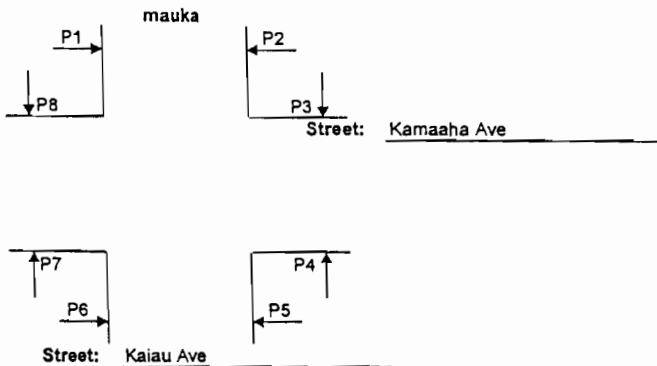
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON COUNT SHEET

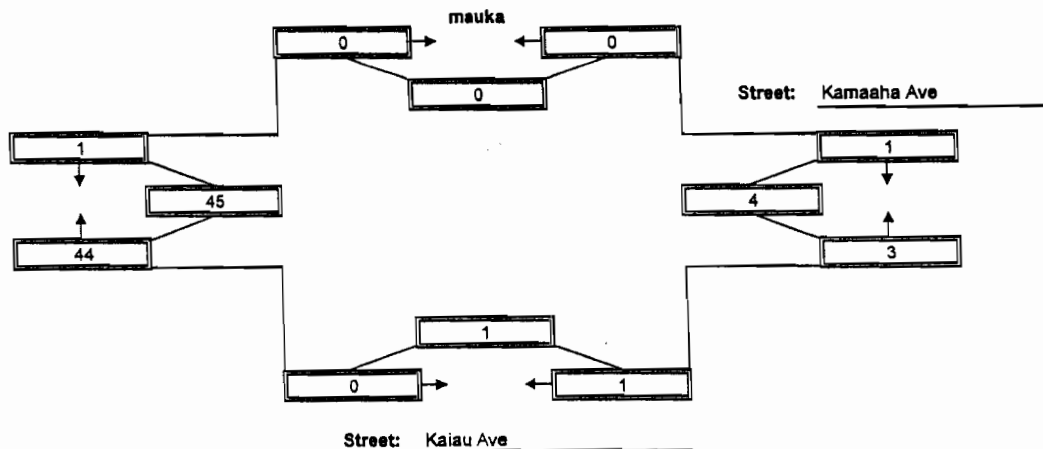
Intersection: Kamaaha/Kaiu Ave
 Date: 10/21/2003 - 10/22/2003
 By: Devin
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM			0	0	0	0	0	1	1	48
1:30 PM - 1:45 PM			0	1	1	0	0	0	2	51
1:45 PM - 2:00 PM			0	3	0	0	37	0	40	50
2:00 PM - 2:15 PM			1	0	0	0	4	0	5	11
2:15 PM - 2:30 PM			0	0	1	0	2	1	4	6
2:30 PM - 2:45 PM			0	0	0	0	1	0	1	
2:45 PM - 3:00 PM			1	0	0	0	0	0	1	
3:00 PM - 3:15 PM			0	0	0	0	0	0	0	
1:45 PM - 2:45 PM	0	0	1	3	1	0	44	1		

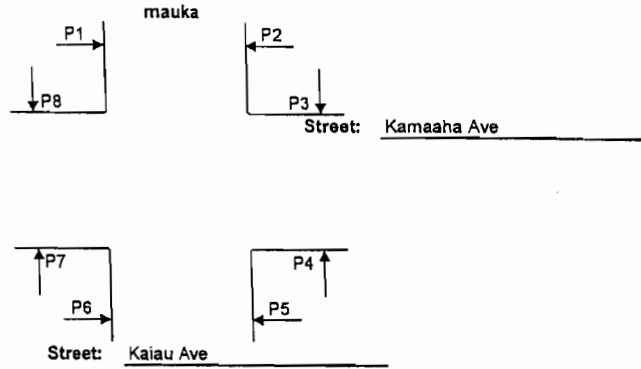
Peak Hour

1:45 PM - 2:45 PM



PM COUNT SHEET

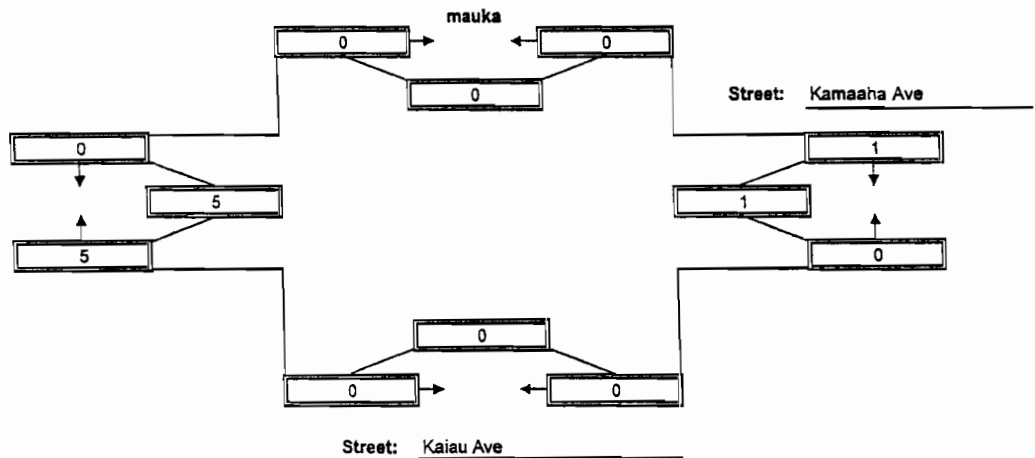
Intersection: Kamaaha/Kaiuu Ave
 Date: 10/21/2003 - 10/22/2003
 By: Devlin
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM			0	0	0	0	1	0	1	39
4:00 PM - 4:15 PM			0	0	0	0	1	0	1	41
4:15 PM - 4:30 PM			0	1	0	0	33	0	34	40
4:30 PM - 4:45 PM			0	0	0	0	3	0	3	6
4:45 PM - 5:00 PM			1	0	0	0	2	0	3	4
5:00 PM - 5:15 PM			0	0	0	0	0	0	0	6
5:15 PM - 5:30 PM			0	0	0	0	0	0	0	15
5:30 PM - 5:45 PM			1	0	0	0	0	0	1	
5:45 PM - 6:00 PM			0	1	1	1	2	0	5	
6:00 PM - 6:15 PM			3	1	3	0	2	0	9	
4:30 PM - 5:30 PM	0	0	1	0	0	0	5	0		

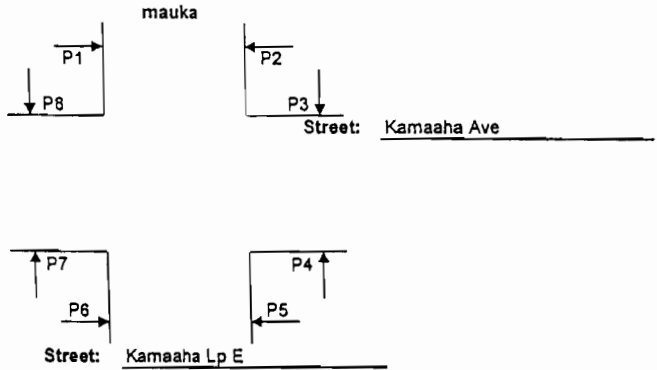
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

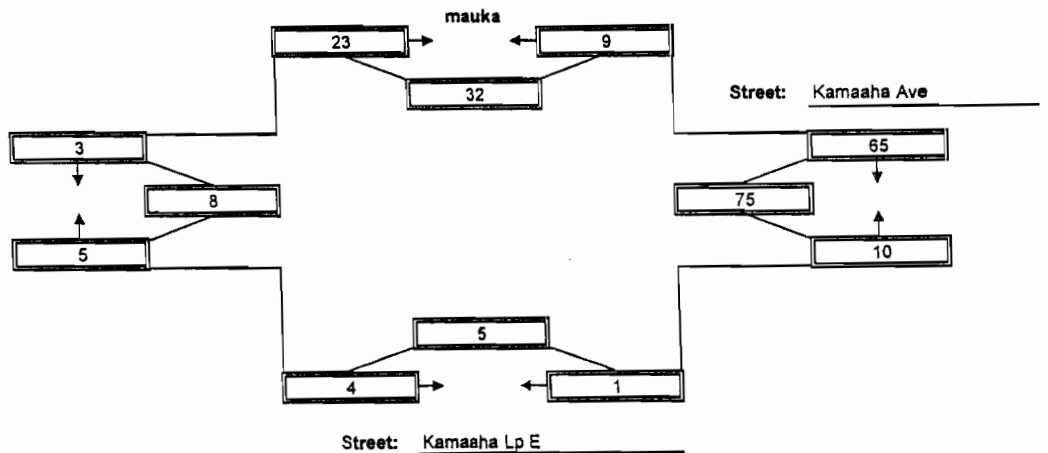
Intersection: Kamaaha Ave/Kamaaha Lp E
 Date: 10/21/2003 - 10/22/2003
 By: P. Matsunaga
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	0	0	4	0	2	1	0	2	9	42
6:00 AM - 6:15 AM	2	0	3	1	1	0	2	1	10	64
6:15 AM - 6:30 AM	1	1	0	2	0	0	4	4	12	76
6:30 AM - 6:45 AM	1	0	4	1	0	4	0	1	11	98
6:45 AM - 7:00 AM	10	1	15	1	0	1	3	0	31	134
7:00 AM - 7:15 AM	3	2	15	1	0	1	0	0	22	120
7:15 AM - 7:30 AM	10	1	21	1	0	1	0	0	34	106
7:30 AM - 7:45 AM	10	3	25	4	1	2	1	1	47	
7:45 AM - 8:00 AM	0	3	4	4	0	0	4	2	17	
8:00 AM - 8:15 AM	0	0	4	0	4	0	0	0	8	
7:00 AM - 8:00 AM	23	9	65	10	1	4	5	3		

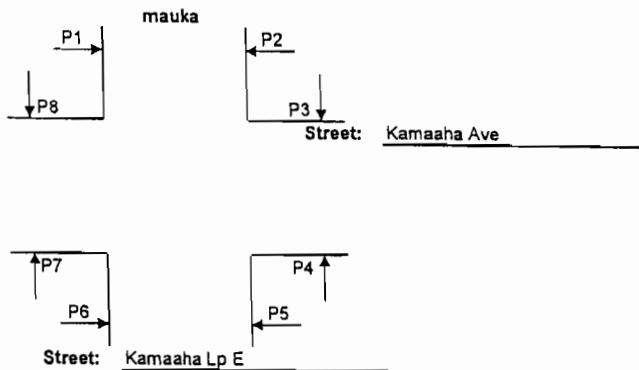
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON COUNT SHEET

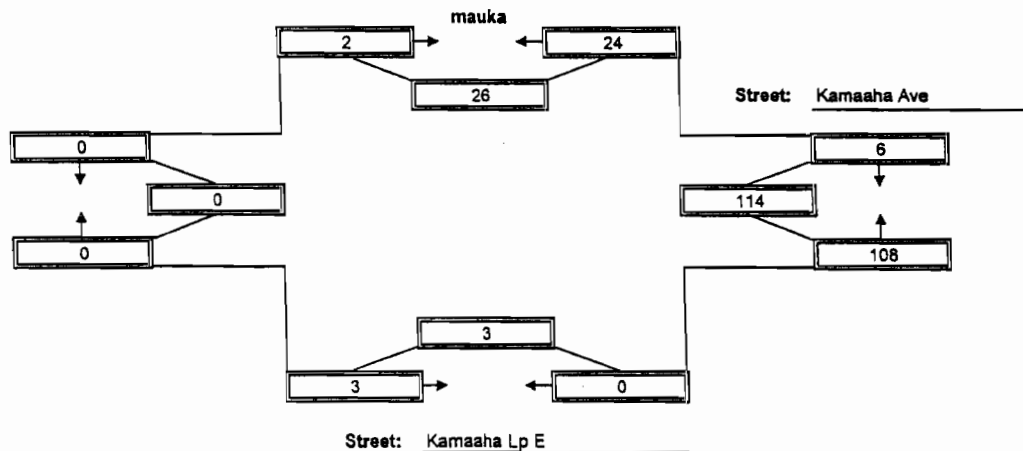
Intersection: Kamaaha Ave/Kamaaha Lp E
 Date: 10/21/2003 - 10/22/2003
 By: P. Matsunaga
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	2	4	0	0	0	0	0	0	6	113
1:30 PM - 1:45 PM	0	0	0	2	0	0	0	0	2	130
1:45 PM - 2:00 PM	2	2	2	6	0	1	0	0	13	143
2:00 PM - 2:15 PM	0	7	1	83	0	1	0	0	92	155
2:15 PM - 2:30 PM	0	9	1	12	0	1	0	0	23	81
2:30 PM - 2:45 PM	0	6	2	7	0	0	0	0	15	
2:45 PM - 3:00 PM	1	7	9	8	0	0	0	0	25	
3:00 PM - 3:15 PM	1	4	1	12	0	0	0	0	18	
1:45 PM - 2:45 PM	2	24	6	108	0	3	0	0		

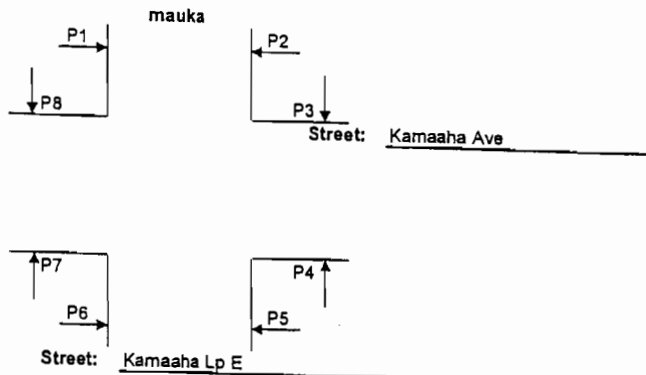
Peak Hour

1:45 PM - 2:45 PM



PM COUNT SHEET

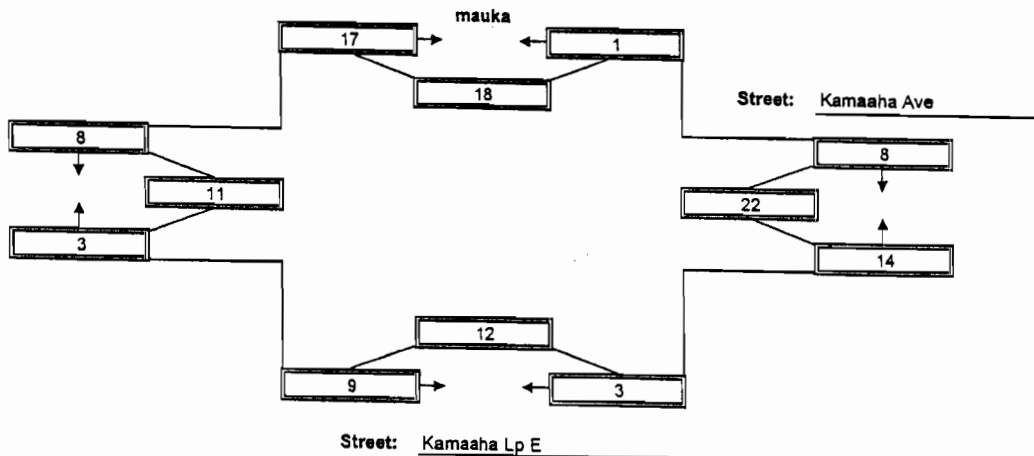
Intersection: Kamaaha Ave/Kamaaha Lp E
 Date: 10/21/2003 - 10/22/2003
 By: P. Matsunaga
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	2	1	1	1	1	0	0	0	6	28
4:00 PM - 4:15 PM	0	2	2	2	0	1	0	1	8	51
4:15 PM - 4:30 PM	0	0	0	4	1	0	0	0	5	62
4:30 PM - 4:45 PM	0	0	3	1	2	3	0	0	9	63
4:45 PM - 5:00 PM	9	0	4	5	0	4	0	7	29	61
5:00 PM - 5:15 PM	7	0	0	6	1	2	3	0	19	60
5:15 PM - 5:30 PM	1	1	1	2	0	0	0	1	6	56
5:30 PM - 5:45 PM	0	1	3	1	1	1	0	0	7	
5:45 PM - 6:00 PM	2	4	2	5	9	2	2	2	28	
6:00 PM - 6:15 PM	1	2	6	0	3	3	0	0	15	
4:30 PM - 5:30 PM	17	1	8	14	3	9	3	8		

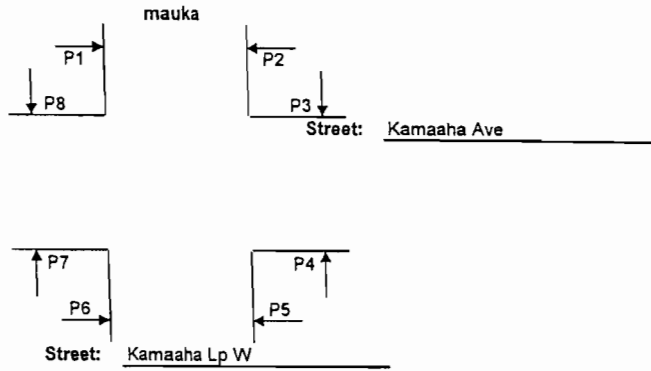
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

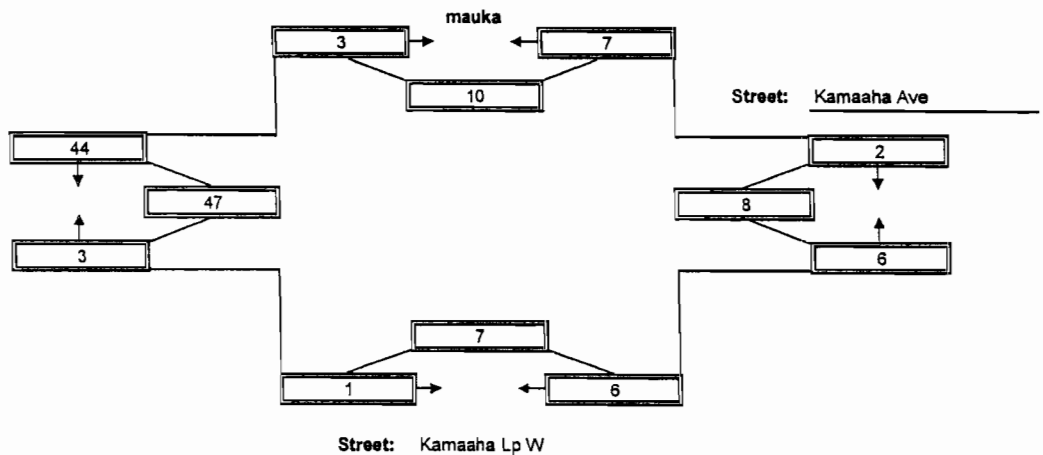
Intersection: Kamaaha Ave/Kamaaha Lp @
 Date: 10/21/2003 - 10/22/2003
 By: D. Doan
 Weather: Clear



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	0	0	0	1	1	2	1	6	24
6:00 AM - 6:15 AM	0	0	0	2	1	1	0	1	5	39
6:15 AM - 6:30 AM	0	0	0	0	0	1	0	1	2	48
6:30 AM - 6:45 AM	0	0	0	3	0	1	2	5	11	76
6:45 AM - 7:00 AM	1	0	4	0	1	1	3	11	21	80
7:00 AM - 7:15 AM	2	1	0	0	0	0	1	10	14	72
7:15 AM - 7:30 AM	1	2	2	1	3	1	0	20	30	61
7:30 AM - 7:45 AM	0	2	0	1	1	0	1	10	15	
7:45 AM - 8:00 AM	0	2	0	4	2	0	1	4	13	
8:00 AM - 8:15 AM	0	0	0	1	0	1	1	0	3	
7:00 AM - 8:00 AM	3	7	2	6	6	1	3	44		

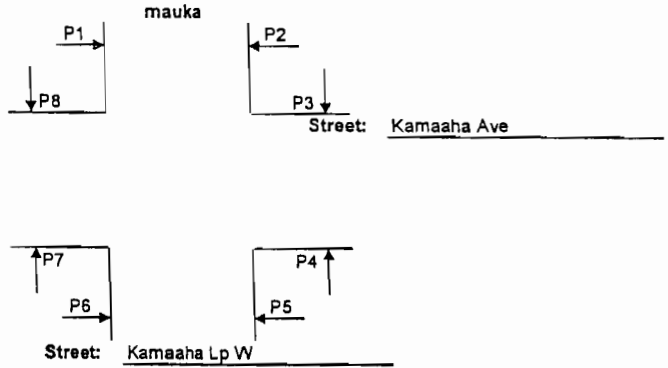
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON COUNT SHEET

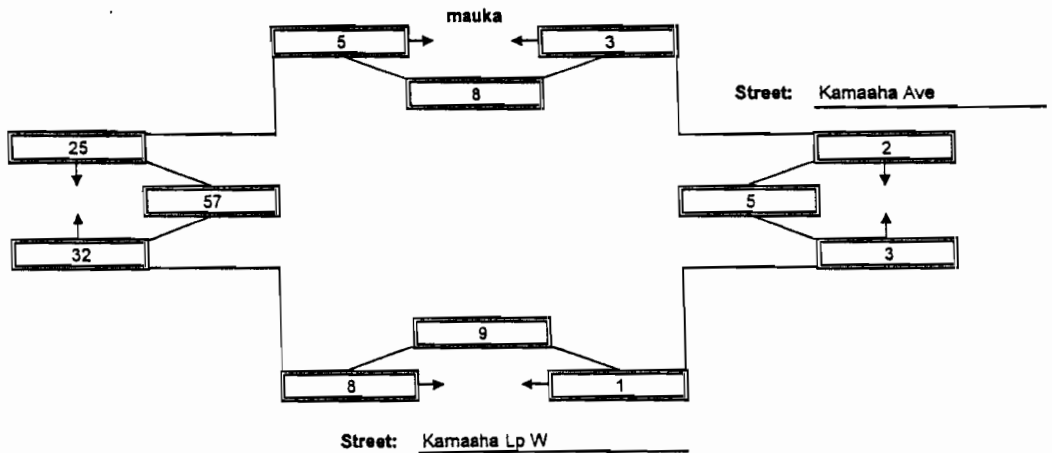
Intersection: Kamaaha Ave/Kamaaha Lp @
 Date: 10/21/2003 - 10/22/2003
 By: D. Doan
 Weather: Clear



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	1	0	0	0	0	0	0	1	19
1:30 PM - 1:45 PM	0	1	0	0	0	1	1	1	4	43
1:45 PM - 2:00 PM	2	1	0	0	1	3	5	2	14	59
2:00 PM - 2:15 PM	2	0	1	0	0	0	2	15	0	56
2:15 PM - 2:30 PM	1	1	0	3	0	2	16	2	25	69
2:30 PM - 2:45 PM	0	1	1	0	0	3	9	6	20	
2:45 PM - 3:00 PM	0	0	0	1	0	0	9	1	11	
3:00 PM - 3:15 PM	2	1	1	0	0	2	6	1	13	
1:45 PM - 2:45 PM	5	3	2	3	1	8	32	25		

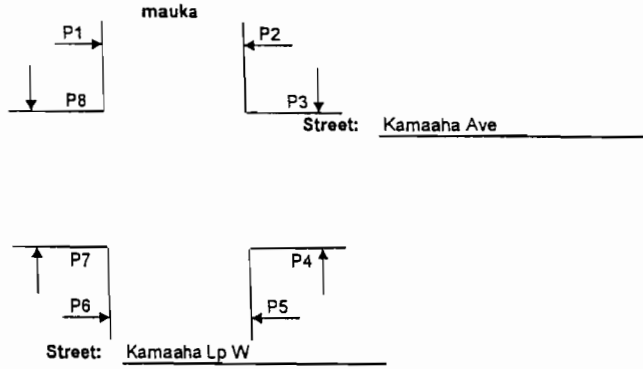
Peak Hour

1:45 PM - 2:45 PM



PM COUNT SHEET

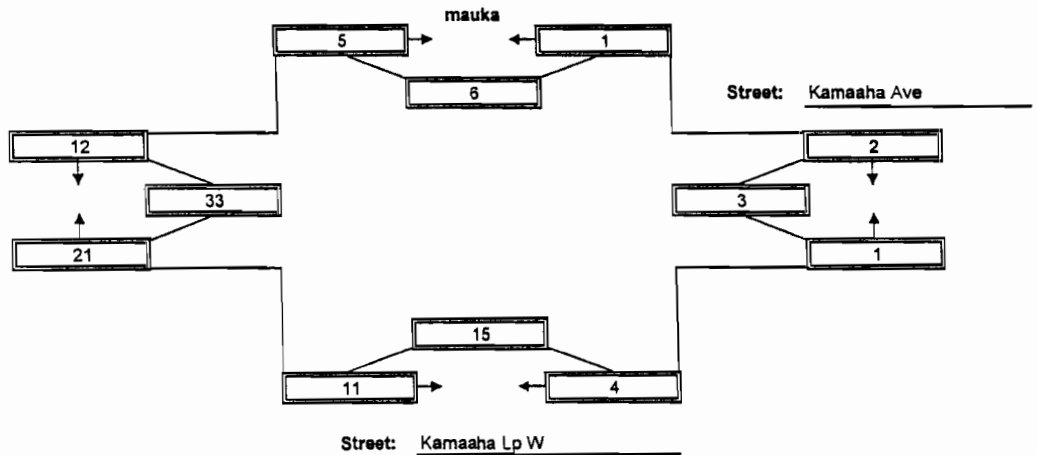
Intersection: Kamaaha Ave/Kamaaha Lp @
 Date: 10/21/2003 - 10/22/2003
 By: D. Doan
 Weather: Clear



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	0	1	0	0	0	0	5	2	8	61
4:00 PM - 4:15 PM	0	2	0	0	0	1	3	0	6	60
4:15 PM - 4:30 PM	20	0	0	0	1	1	5	0	27	70
4:30 PM - 4:45 PM	0	0	0	1	3	5	9	2	20	57
4:45 PM - 5:00 PM	1	0	1	0	0	1	0	4	7	62
5:00 PM - 5:15 PM	3	0	1	0	0	5	6	1	16	83
5:15 PM - 5:30 PM	1	1	0	0	1	0	6	5	14	104
5:30 PM - 5:45 PM	0	1	0	3	3	3	5	10	25	
5:45 PM - 6:00 PM	0	4	0	1	3	4	5	11	28	
6:00 PM - 6:15 PM	0	2	2	0	8	10	11	4	37	
4:30 PM - 5:30 PM	5	1	2	1	4	11	21	12		

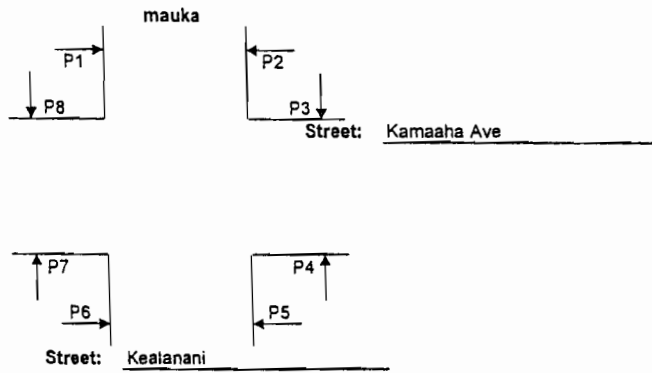
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

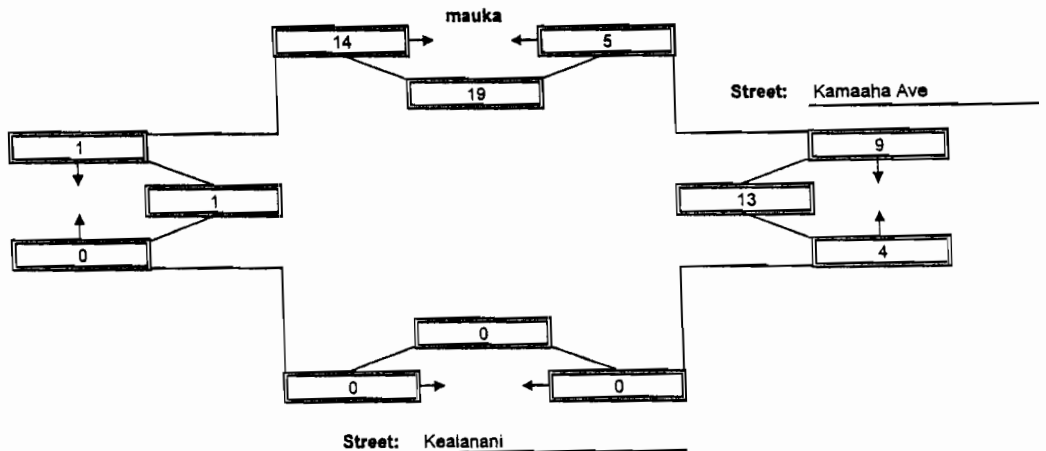
Intersection: Kamaaha Ave/Kealanani
 Date: 10/21/2003 - 10/22/2003
 By: M. Cashman
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	0	0	0			0	0	1	8
6:00 AM - 6:15 AM	0	0	0	0			1	0	1	15
6:15 AM - 6:30 AM	0	1	0	1			0	1	3	21
6:30 AM - 6:45 AM	1	0	2	0			0	0	3	25
6:45 AM - 7:00 AM	6	1	0	0			1	0	8	35
7:00 AM - 7:15 AM	4	1	1	1			0	0	7	33
7:15 AM - 7:30 AM	3	1	2	0			0	1	7	27
7:30 AM - 7:45 AM	7	0	4	2			0	0	13	
7:45 AM - 8:00 AM	0	3	2	1			0	0	6	
8:00 AM - 8:15 AM	0	0	0	1			0	0	1	
7:00 AM - 8:00 AM	14	5	9	4	0	0	0	1		

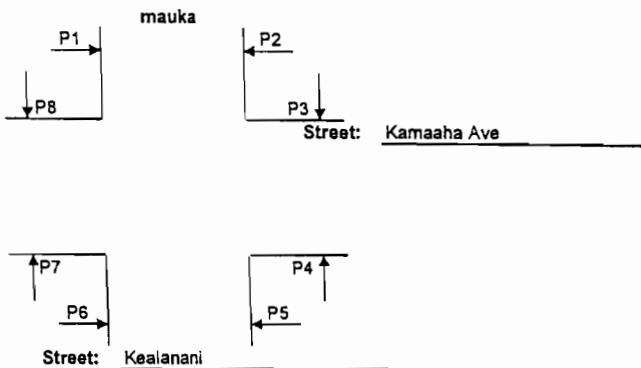
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON COUNT SHEET

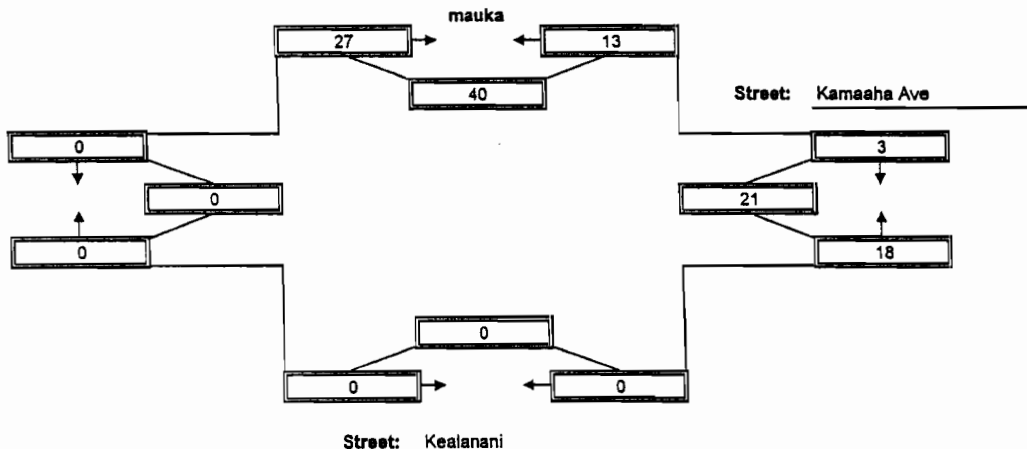
Intersection: Kamaaha Ave/Kealanani
 Date: 10/21/2003 - 10/22/2003
 By: M. Cashman
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	1	0	0	0			0	0	1	47
1:30 PM - 1:45 PM	1	0	0	1			0	0	2	47
1:45 PM - 2:00 PM	1	3	1	3			0	0	8	61
2:00 PM - 2:15 PM	15	10	2	9			0	0	36	59
2:15 PM - 2:30 PM	1	0	0	0			0	0	1	25
2:30 PM - 2:45 PM	10	0	0	6			0	0	16	
2:45 PM - 3:00 PM	4	0	1	1			0	0	6	
3:00 PM - 3:15 PM	0	2	0	0			0	0	2	
1:45 PM - 2:45 PM	27	13	3	18	0	0	0	0		

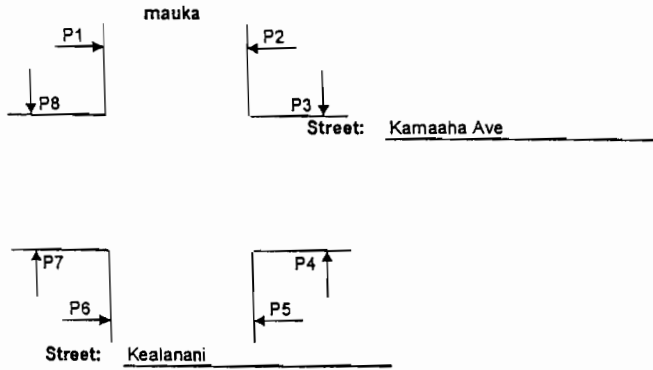
Peak Hour

1:45 PM - 2:45 PM



PM COUNT SHEET

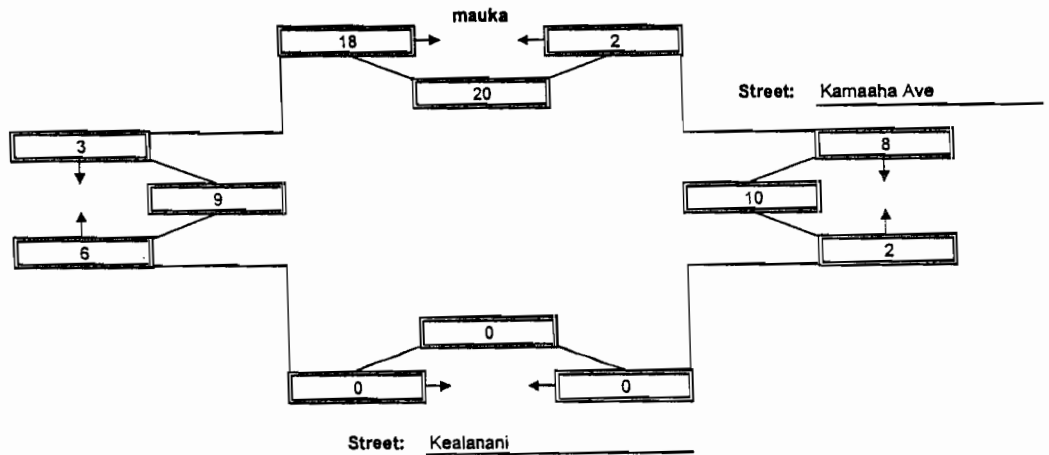
Intersection: Kamaaha Ave/Kealanani
 Date: 10/21/2003 - 10/22/2003
 By: M. Cashman
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	1	2	0	1			0	0	4	30
4:00 PM - 4:15 PM	0	2	1	1			1	0	5	36
4:15 PM - 4:30 PM	7	0	4	2			2	0	15	52
4:30 PM - 4:45 PM	1	0	2	0			2	1	6	39
4:45 PM - 5:00 PM	3	2	4	1			0	0	10	36
5:00 PM - 5:15 PM	14	0	1	0			4	2	21	31
5:15 PM - 5:30 PM	0	0	1	1			0	0	2	23
5:30 PM - 5:45 PM	0	0	0	1			0	2	3	
5:45 PM - 6:00 PM	2	1	0	2			0	0	5	
6:00 PM - 6:15 PM	1	3	0	6			0	3	13	
4:30 PM - 5:30 PM	18	2	8	2	0	0	6	3		

Peak Hour

4:30 PM - 5:30 PM



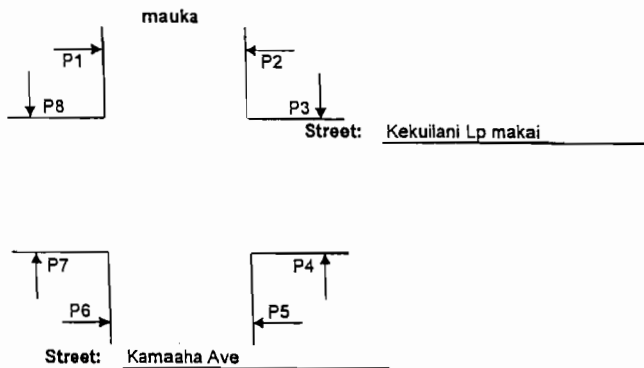
AM COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp makai

Date: 10/21/2003 - 10/22/2003

By: J. Javonillo

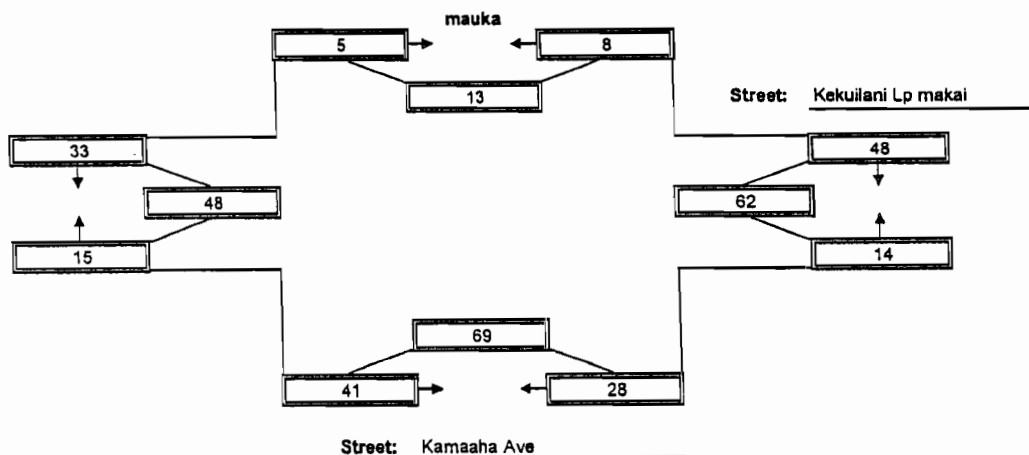
Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	0	0	0	0	0	2	0	0	2	21
6:00 AM - 6:15 AM	0	0	1	0	0	1	0	0	2	41
6:15 AM - 6:30 AM	0	0	1	1	1	0	0	0	3	73
6:30 AM - 6:45 AM	1	2	3	1	0	1	5	1	14	132
6:45 AM - 7:00 AM	1	7	9	0	1	2	1	1	22	214
7:00 AM - 7:15 AM	0	1	11	0	9	9	0	4	34	192
7:15 AM - 7:30 AM	1	0	16	4	10	13	13	5	62	165
7:30 AM - 7:45 AM	4	7	21	10	9	19	2	24	96	
7:45 AM - 8:00 AM	0	0	0	0	0	0	0	0	0	
8:00 AM - 8:15 AM	0	1	1	0	0	1	0	4	7	
7:00 AM - 8:00 AM	5	8	48	14	28	41	15	33		

Peak Hour

7:00 AM - 8:00 AM



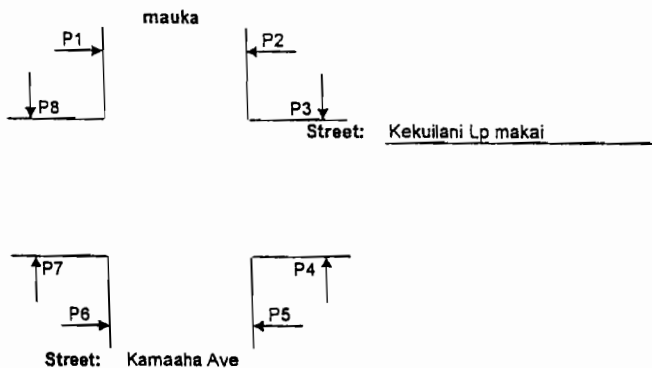
AFTERNOON COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp makai

Date: 10/21/2003 - 10/22/2003

By: J. Javonillo

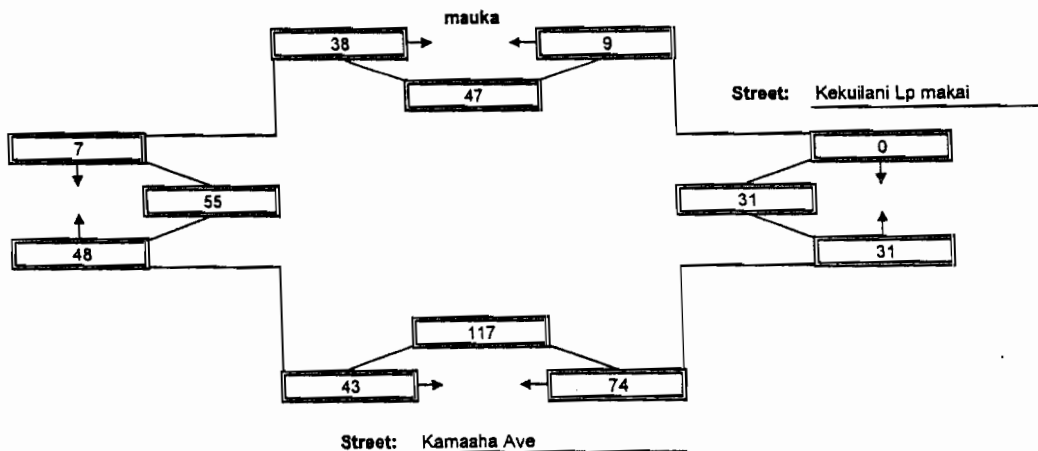
Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	2	2	0	1	1	2	0	8	65
1:30 PM - 1:45 PM	0	0	0	0	0	0	0	0	0	191
1:45 PM - 2:00 PM	1	2	0	0	1	10	1	0	15	250
2:00 PM - 2:15 PM	16	1	0	0	0	20	0	5	42	241
2:15 PM - 2:30 PM	21	3	0	15	53	10	30	2	134	212
2:30 PM - 2:45 PM	0	3	0	16	20	3	17	0	59	
2:45 PM - 3:00 PM	0	0	0	4	1	0	1	0	6	
3:00 PM - 3:15 PM	0	3	3	1	0	5	0	1	13	
1:45 PM - 2:45 PM	38	9	0	31	74	43	48	7		

Peak Hour

1:45 PM - 2:45 PM



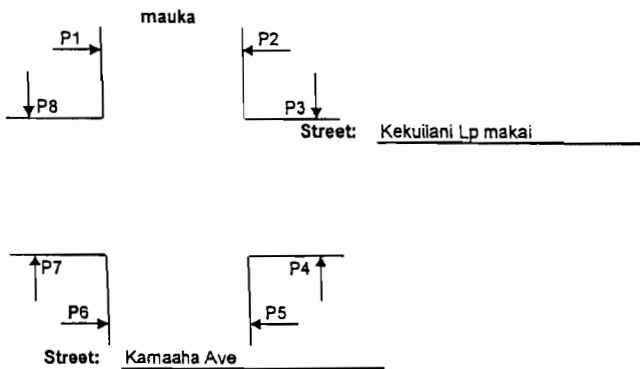
PM COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp makai

Date: 10/21/2003 - 10/22/2003

By: J. Javonillo

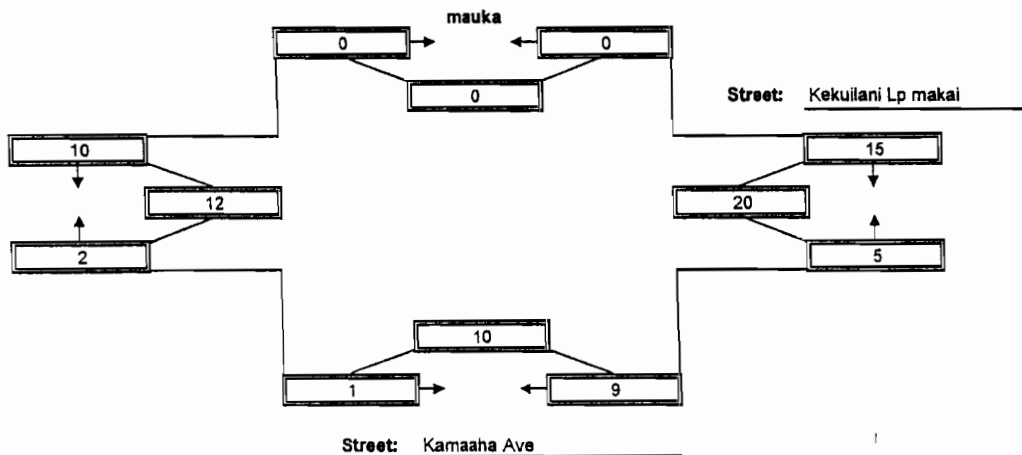
Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	0	0	1	1	2	3	0	0	7	20
4:00 PM - 4:15 PM	1	0	0	3	0	1	0	0	5	30
4:15 PM - 4:30 PM	0	1	0	1	1	0	2	0	5	38
4:30 PM - 4:45 PM	0	0	0	2	0	0	1	0	3	42
4:45 PM - 5:00 PM	0	0	4	3	4	1	0	5	17	67
5:00 PM - 5:15 PM	0	0	11	0	0	0	1	1	13	53
5:15 PM - 5:30 PM	0	0	0	0	5	0	0	4	9	54
5:30 PM - 5:45 PM	3	1	7	6	2	5	4	0	28	
5:45 PM - 6:00 PM	0	0	1	0	1	0	1	0	3	
6:00 PM - 6:15 PM	0	2	0	2	3	5	0	2	14	
4:30 PM - 5:30 PM	0	0	15	5	9	1	2	10		

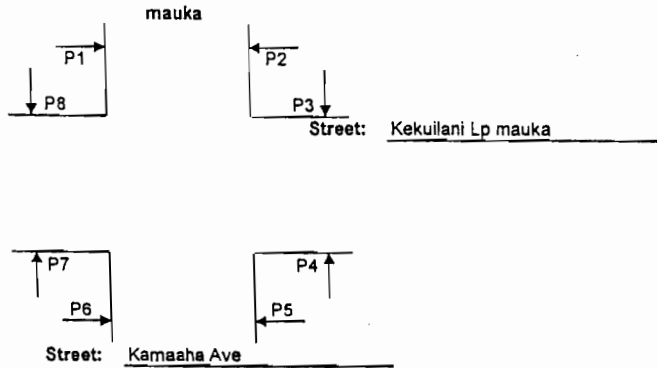
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

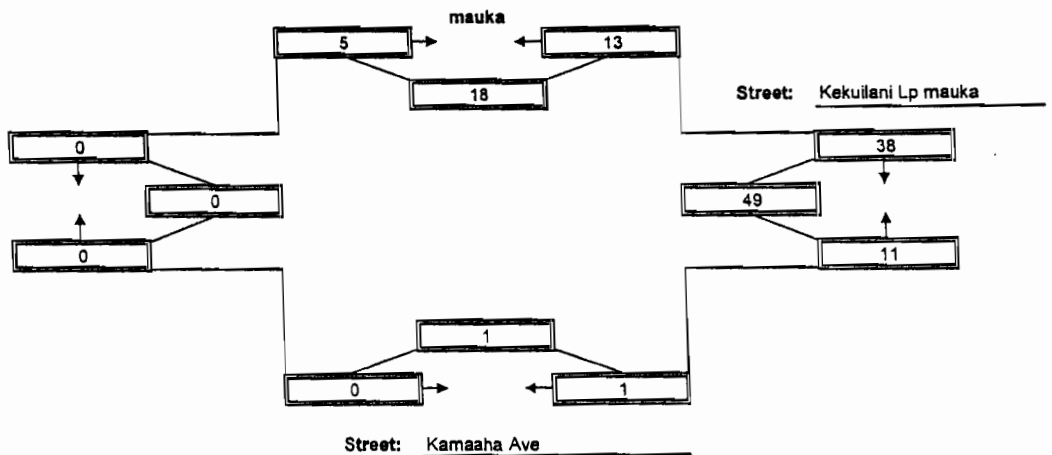
Intersection: Kamaaha Ave/Kekuilani Lp mauka
 Date: 10/21/2003 - 10/22/2003
 By: Chase
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	0	1	0	0	0	0			1	12
6:00 AM - 6:15 AM	0	0	1	0	1	0			2	29
6:15 AM - 6:30 AM	0	0	1	0	0	0			1	43
6:30 AM - 6:45 AM	1	2	4	0	1	0			8	68
6:45 AM - 7:00 AM	2	5	6	5	0	0			18	78
7:00 AM - 7:15 AM	1	4	9	2	0	0			16	68
7:15 AM - 7:30 AM	1	2	17	6	0	0			26	54
7:30 AM - 7:45 AM	0	5	10	3	0	0			18	
7:45 AM - 8:00 AM	3	2	2	0	1	0			8	
8:00 AM - 8:15 AM	1	0	0	1	0	0			2	
7:00 AM - 8:00 AM	5	13	38	11	1	0	0	0		

Peak Hour

7:00 AM - 8:00 AM



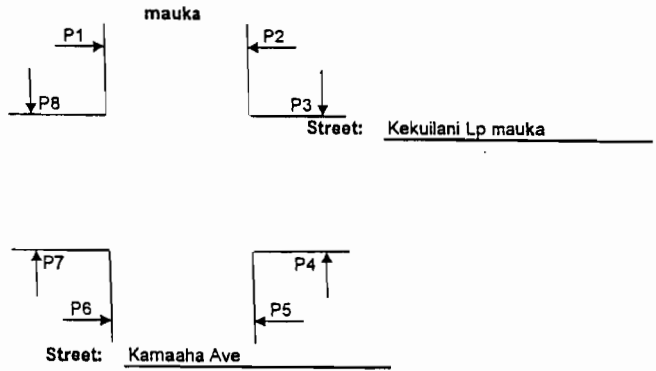
AFTERNOON COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp mauka

Date: 10/21/2003 - 10/22/2003

By: Chase

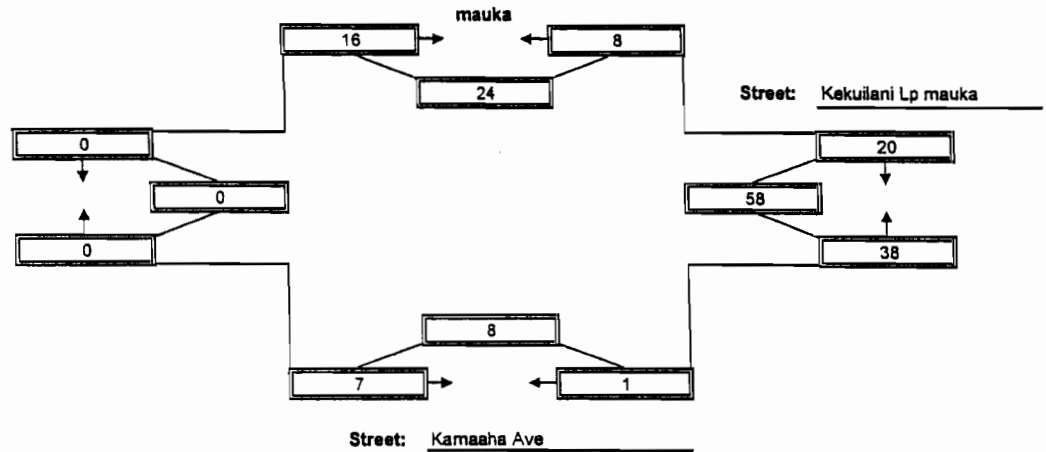
Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	2	0	1	0			3	37
1:30 PM - 1:45 PM	0	0	0	0	0	0			0	62
1:45 PM - 2:00 PM	1	5	0	0	1	0			7	90
2:00 PM - 2:15 PM	9	2	13	0	0	3			27	91
2:15 PM - 2:30 PM	4	0	4	20	0	0			28	69
2:30 PM - 2:45 PM	2	1	3	18	0	4			28	
2:45 PM - 3:00 PM	0	1	1	6	0	0			8	
3:00 PM - 3:15 PM	0	0	1	1	2	1			5	
1:45 PM - 2:45 PM	16	8	20	38	1	7	0	0		

Peak Hour

1:45 PM - 2:45 PM



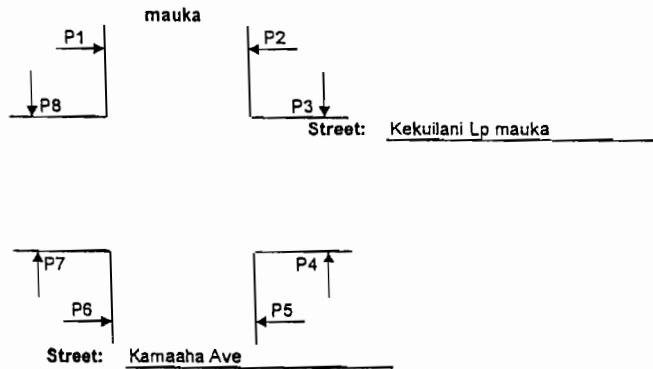
PM COUNT SHEET

Intersection: Kamaaha Ave/Kekuilani Lp mauka

Date: 10/21/2003 - 10/22/2003

By: Chase

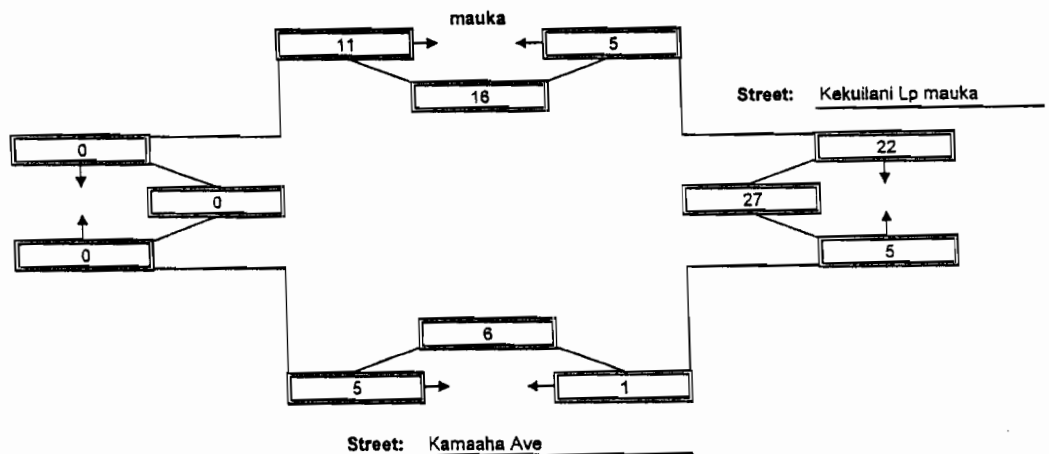
Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	1	3	2	1	0	0			7	23
4:00 PM - 4:15 PM	4	0	0	0	0	2			6	32
4:15 PM - 4:30 PM	2	1	2	1	0	0			6	47
4:30 PM - 4:45 PM	0	0	3	1	0	0			4	49
4:45 PM - 5:00 PM	0	4	7	4	1	0			16	59
5:00 PM - 5:15 PM	8	1	10	0	0	2			21	55
5:15 PM - 5:30 PM	3	0	2	0	0	3			8	42
5:30 PM - 5:45 PM	1	4	2	3	0	4			14	
5:45 PM - 6:00 PM	2	4	1	2	0	3			12	
6:00 PM - 6:15 PM	1	1	0	2	0	4			8	
4:30 PM - 5:30 PM	11	5	22	5	1	5	0	0		

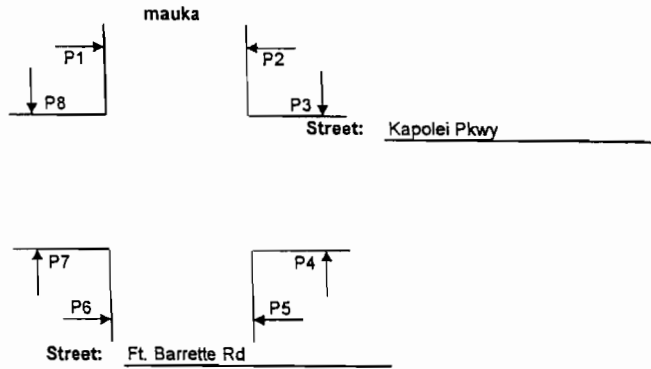
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

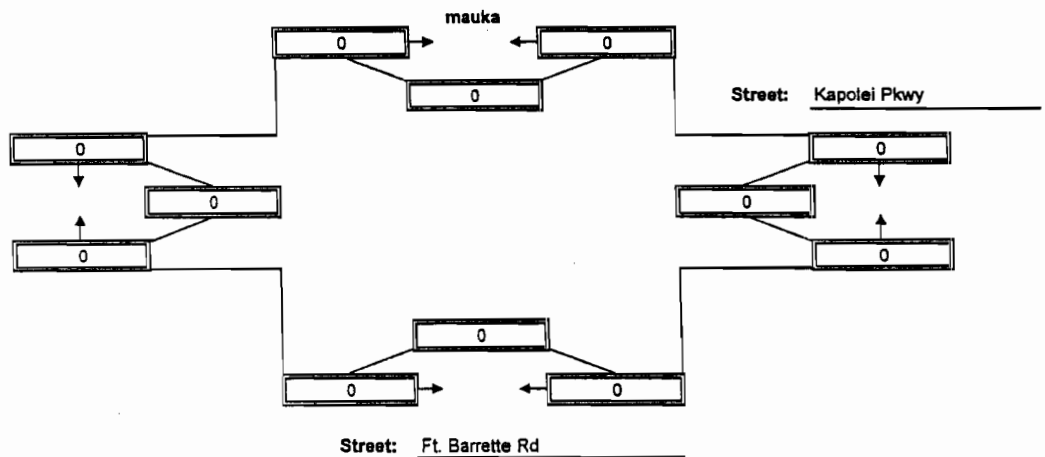
Intersection: Kapolei Pkwy/Ft. Barrette Rd
 Date: 10/21/2003 - 10/22/2003
 By: Monica
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	0	0	0	0	0	0			0	2
6:00 AM - 6:15 AM	0	0	0	0	0	0			0	2
6:15 AM - 6:30 AM	0	0	2	0	0	0			2	2
6:30 AM - 6:45 AM	0	0	0	0	0	0			0	0
6:45 AM - 7:00 AM	0	0	0	0	0	0			0	0
7:00 AM - 7:15 AM	0	0	0	0	0	0			0	0
7:15 AM - 7:30 AM	0	0	0	0	0	0			0	0
7:30 AM - 7:45 AM	0	0	0	0	0	0			0	0
7:45 AM - 8:00 AM	0	0	0	0	0	0			0	0
8:00 AM - 8:15 AM	0	0	0	0	0	0			0	0
7:00 AM - 8:00 AM	0	0	0	0	0	0	0	0		

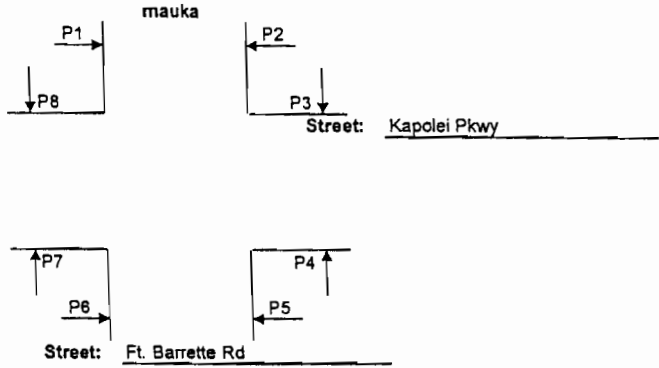
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON COUNT SHEET

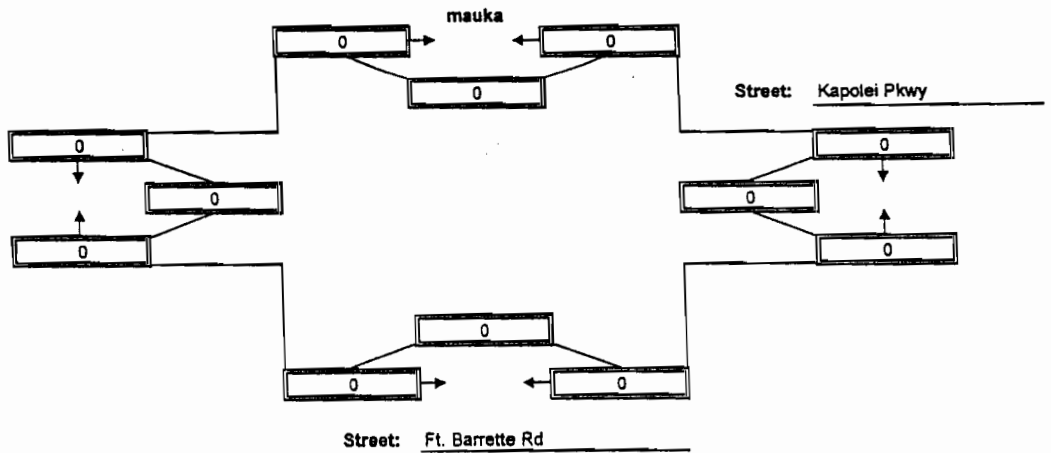
Intersection: Kapolei Pkwy/Ft. Barrette Rd
 Date: 10/21/2003 - 10/22/2003
 By: Monica
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	0	0	0	0			0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0			0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0			0	0
2:00 PM - 2:15 PM	0	0	0	0	0	0			0	0
2:15 PM - 2:30 PM	0	0	0	0	0	0			0	0
2:30 PM - 2:45 PM	0	0	0	0	0	0			0	0
2:45 PM - 3:00 PM	0	0	0	0	0	0			0	0
3:00 PM - 3:15 PM	0	0	0	0	0	0			0	0
1:45 PM - 2:45 PM	0	0	0	0	0	0	0	0	0	0

Peak Hour

1:45 PM - 2:45 PM



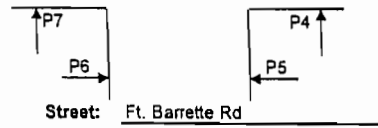
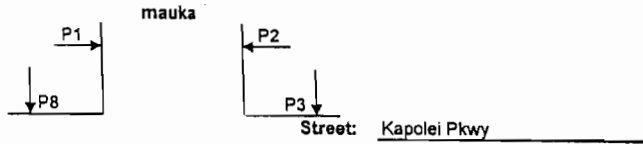
PM COUNT SHEET

Intersection: Kapolei Pkwy/Ft. Barrette Rd

Date: 10/21/2003 - 10/22/2003

By: Monica

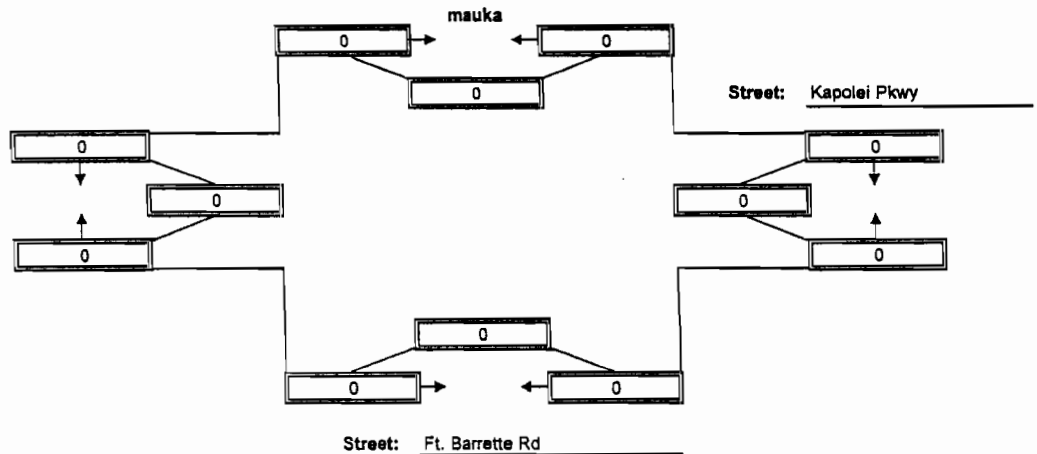
Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	0	0	0	0	0	0			0	0
4:00 PM - 4:15 PM	0	0	0	0	0	0			0	0
4:15 PM - 4:30 PM	0	0	0	0	0	0			0	0
4:30 PM - 4:45 PM	0	0	0	0	0	0			0	0
4:45 PM - 5:00 PM	0	0	0	0	0	0			0	0
5:00 PM - 5:15 PM	0	0	0	0	0	0			0	0
5:15 PM - 5:30 PM	0	0	0	0	0	0			0	0
5:30 PM - 5:45 PM	0	0	0	0	0	0			0	0
5:45 PM - 6:00 PM	0	0	0	0	0	0			0	0
6:00 PM - 6:15 PM	0	0	0	0	0	0			0	0
4:30 PM - 5:30 PM	0	0	0	0	0	0	0	0	0	0

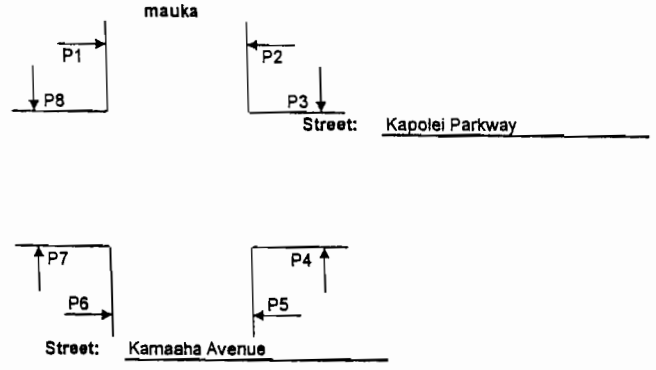
Peak Hour

4:30 PM - 5:30 PM



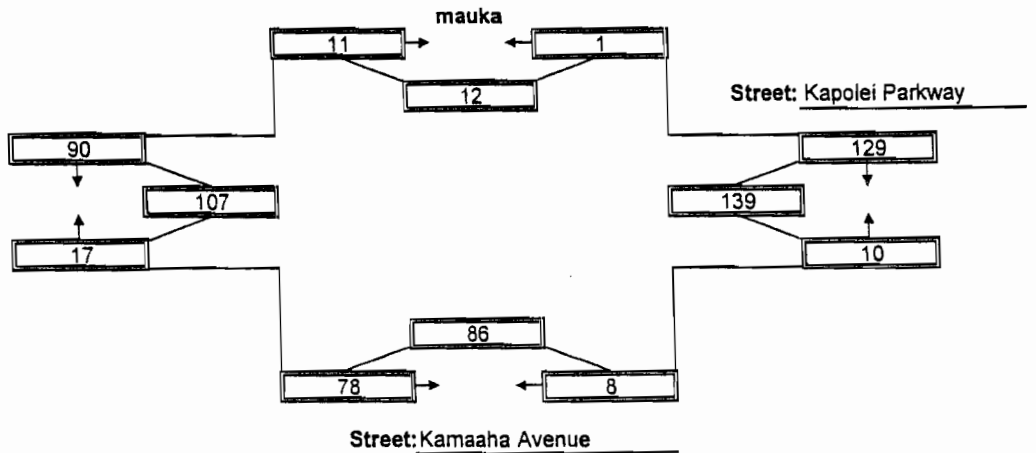
AM COUNT SHEET

Intersection: Kapolei Pkwy/Kamaaha Ave
 Date: 10/21/2003 - 10/22/2003
 By: C. Maruoka
 Weather: Sunny



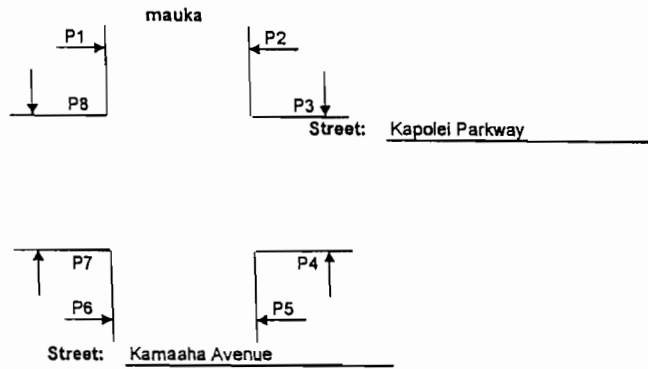
TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	0	0	1	0	0	0	0	2	15
6:00 AM - 6:15 AM	0	0	0	0	0	1	0	1	2	49
6:15 AM - 6:30 AM	1	0	0	1	0	0	0	0	2	103
6:30 AM - 6:45 AM	0	0	1	1	0	1	5	1	9	172
6:45 AM - 7:00 AM	3	0	9	0	0	1	1	22	36	271
7:00 AM - 7:15 AM	1	0	22	1	1	10	6	15	56	344
7:15 AM - 7:30 AM	5	1	28	2	7	13	8	7	71	298
7:30 AM - 7:45 AM	5	0	50	7	0	15	2	29	108	
7:45 AM - 8:00 AM	0	0	29	0	0	40	1	39	109	
8:00 AM - 8:15 AM	0	0	0	0	0	4	0	6	10	
7:00 AM - 8:00 AM	11	1	129	10	8	78	17	90		

Peak Hour
 ##### - #####



AFTERNOON COUNT SHEET

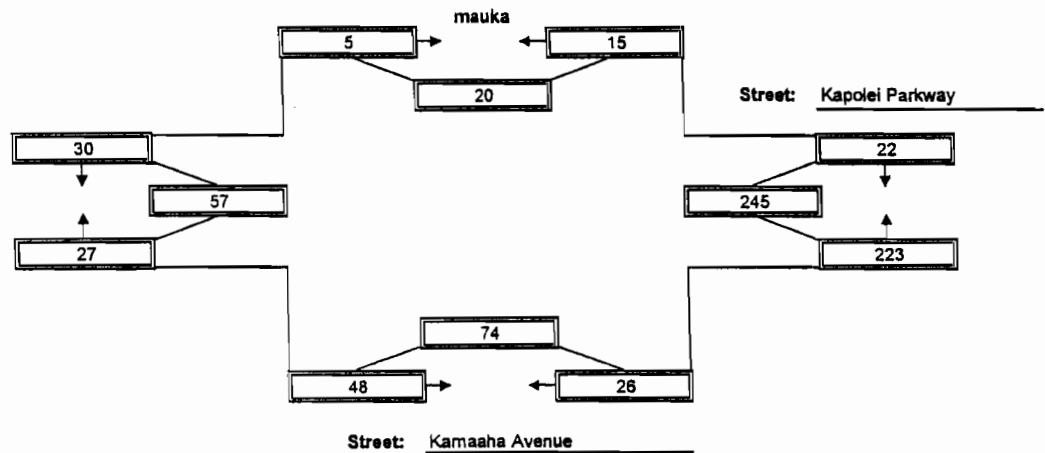
Intersection: Kapolei Pkwy/Kamaaha Ave
 Date: 10/21/2003 - 10/22/2003
 By: C. Maruoka
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	0	2	0	0	0	0	2	45
1:30 PM - 1:45 PM	0	0	0	2	0	2	0	0	4	291
1:45 PM - 2:00 PM	2	0	0	3	0	7	0	0	12	396
2:00 PM - 2:15 PM	0	0	2	0	0	12	7	6	27	407
2:15 PM - 2:30 PM	1	14	10	154	20	23	15	11	248	388
2:30 PM - 2:45 PM	2	1	10	66	6	6	5	13	109	140
2:45 PM - 3:00 PM	6	0	10	6	1	0	0	0	23	
3:00 PM - 3:15 PM	0	0	4	1	1	2	0	0	8	
									0	
1:45 PM - 2:45 PM	5	15	22	223	26	48	27	30		

Peak Hour

1:45 PM - 2:45 PM



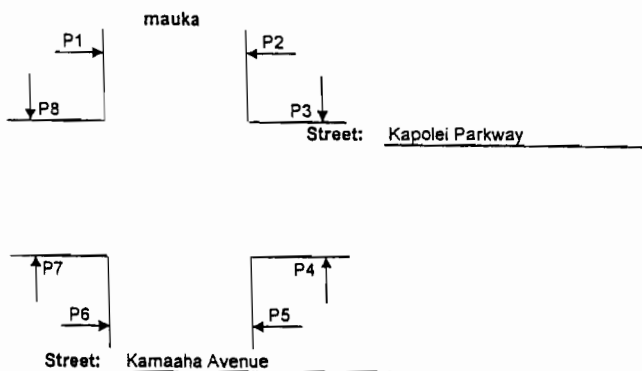
PM COUNT SHEET

Intersection: Kapolei Pkwy/Kamaaha Ave

Date: 10/21/2003 - 10/22/2003

By: C. Maruoka

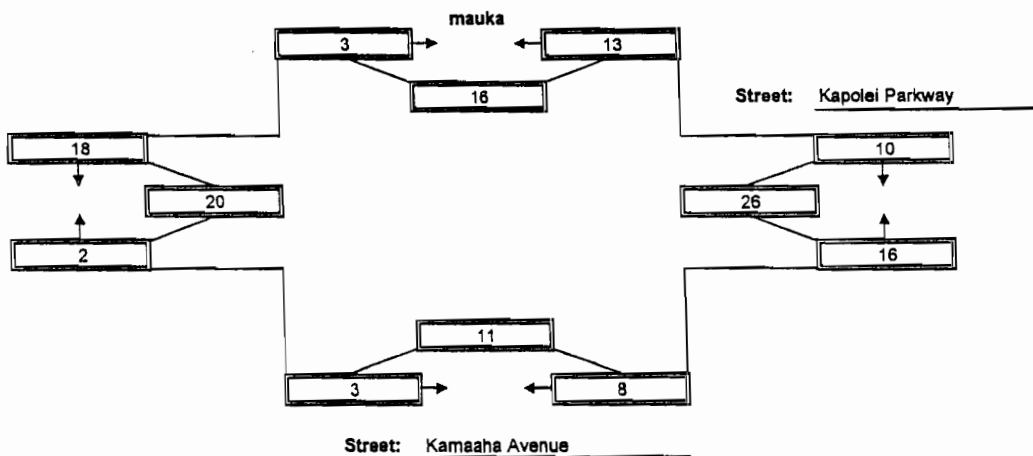
Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
3:45 PM - 4:00 PM	0	0	1	5	3	0	0	0	9	56
4:00 PM - 4:15 PM	0	1	1	4	5	0	5	0	16	82
4:15 PM - 4:30 PM	0	4	0	6	5	3	2	3	23	84
4:30 PM - 4:45 PM	0	0	0	2	3	2	0	1	8	73
4:45 PM - 5:00 PM	3	3	7	11	4	1	1	5	35	72
5:00 PM - 5:15 PM	0	7	2	2	1	0	1	5	18	60
5:15 PM - 5:30 PM	0	3	1	1	0	0	0	7	12	54
5:30 PM - 5:45 PM	2	1	0	1	0	0	2	1	7	
5:45 PM - 6:00 PM	3	7	0	3	0	0	1	9	23	
6:00 PM - 6:15 PM	1	2	1	1	1	2	1	3	12	
4:30 PM - 5:30 PM	3	13	10	16	8	3	2	18		

Peak Hour

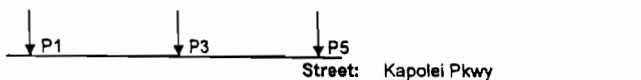
4:30 PM - 5:30 PM



AM COUNT SHEET

mauka

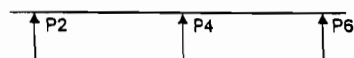
Intersection: Kapolei Pkwy



Date: 10/14/2003 - 10/15/2003

By: Name

Weather: Sunny



Street: *none*

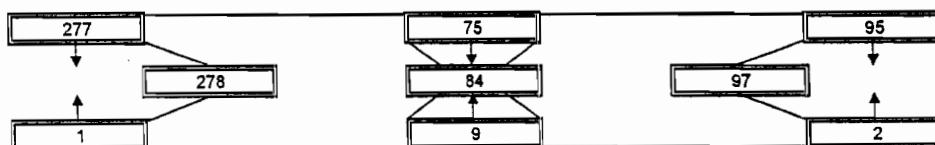
TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	0	0	0	0	0	0			0	14
6:00 AM - 6:15 AM	1	0	0	0	0	0			1	30
6:15 AM - 6:30 AM	1	0	0	0	0	0			1	99
6:30 AM - 6:45 AM	8	0	4	0	0	0			12	182
6:45 AM - 7:00 AM	8	0	2	3	3	0			16	363
7:00 AM - 7:15 AM	25	0	35	1	9	0			70	459
7:15 AM - 7:30 AM	55	0	2	3	23	1			84	396
7:30 AM - 7:45 AM	109	1	38	5	39	1			193	
7:45 AM - 8:00 AM	88	0	0	0	24	0			112	
8:00 AM - 8:15 AM	7	0	0	0	0	0			7	
7:00 AM - 8:00 AM	277	1	75	9	95	2	0	0		

mauka

Peak Hour

7:00 AM - 8:00 AM

Street: Kapolei Pkwy



AFTERNOON PM COUNT SHEET

mauka

Intersection: Kapolei Pkwy ↓ P1 ↓ P3 ↓ P5 Street: Kapolei Pkwy

Date: 10/14/2003 - 10/15/2003

By: Name

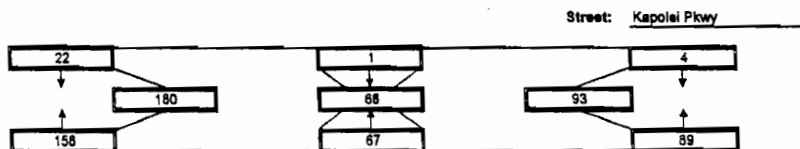
Weather: Sunny ↑ P2 ↑ P4 ↑ P6

Street: "none"

TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	0	0	0	0			0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0			0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0			0	3
2:00 PM - 2:15 PM	0	0	0	0	0	0			0	7
2:15 PM - 2:30 PM	0	0	0	0	0	0			0	247
2:30 PM - 2:45 PM	0	0	3	0	0	0			3	308
2:45 PM - 3:00 PM	4	0	0	0	0	0			4	330
3:00 PM - 3:15 PM	3	123	0	54	1	58			240	341
3:15 PM - 3:30 PM	5	24	0	9	1	22			61	113
3:30 PM - 3:45 PM	6	6	1	4	2	6			25	58
3:45 PM - 4:00 PM	8	5	0	0	0	2			15	37
4:00 PM - 4:15 PM	7	3	0	0	0	2			12	29
4:15 PM - 4:30 PM	3	1	0	2	0	0			6	20
4:30 PM - 4:45 PM	2	0	1	1	0	0			4	16
4:45 PM - 5:00 PM	1	5	1	0	0	0			7	19
5:00 PM - 5:15 PM	2	1	0	0	0	0			3	19
5:15 PM - 5:30 PM	1	1	0	0	0	0			2	20
5:30 PM - 5:45 PM	2	2	0	1	1	1			7	
5:45 PM - 6:00 PM	1	5	0	1	0	0			7	
6:00 PM - 6:15 PM	0	1	1	2	0	0			4	
3:00 PM - 4:00 PM	22	158	1	87	4	89	0	0		

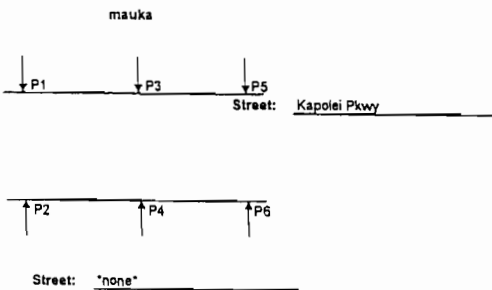
Peak Hour

3:00 PM - 4:00 PM



AFTERNOON PM COUNT SHEET

Intersection: Kapolei Pkwy
 Date: 10/14/2003 - 10/15/2003
 By: Name
 Weather: Sunny

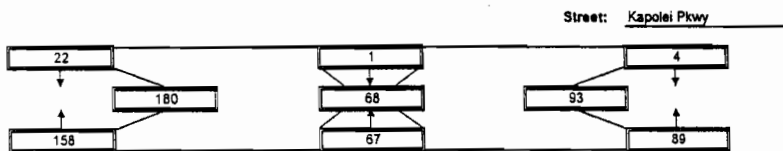


TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	0	0	0	0			0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0			0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0			0	3
2:00 PM - 2:15 PM	0	0	0	0	0	0			0	7
2:15 PM - 2:30 PM	0	0	0	0	0	0			0	247
2:30 PM - 2:45 PM	0	0	3	0	0	0			3	308
2:45 PM - 3:00 PM	4	0	0	0	0	0			4	330
3:00 PM - 3:15 PM	3	123	0	54	1	59			240	341
3:15 PM - 3:30 PM	5	24	0	9	1	22			61	113
3:30 PM - 3:45 PM	6	6	1	4	2	8			25	58
3:45 PM - 4:00 PM	8	5	0	0	0	2			15	37
4:00 PM - 4:15 PM	7	3	0	0	0	2			12	29
4:15 PM - 4:30 PM	3	1	0	2	0	0			6	20
4:30 PM - 4:45 PM	2	0	1	1	0	0			4	16
4:45 PM - 5:00 PM	1	5	1	0	0	0			7	19
5:00 PM - 5:15 PM	2	1	0	0	0	0			3	19
5:15 PM - 5:30 PM	1	1	0	0	0	0			2	20
5:30 PM - 5:45 PM	2	2	0	1	1	1			7	
5:45 PM - 6:00 PM	1	5	0	1	0	0			7	
6:00 PM - 6:15 PM	0	1	1	2	0	0			4	
3:00 PM - 4:00 PM	22	158	1	67	4	89	0	0		

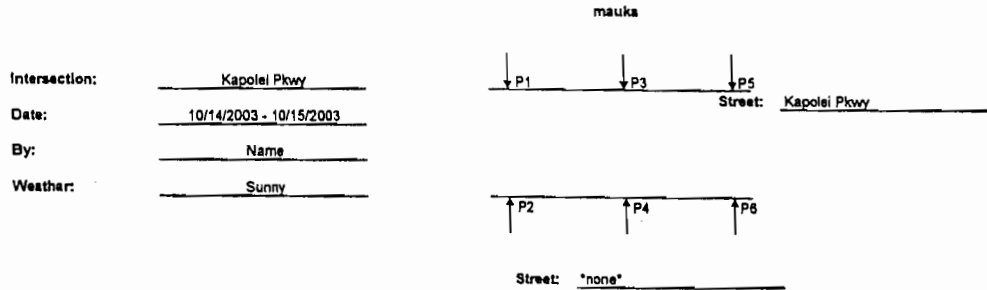
mauka

Peak Hour

3:00 PM - 4:00 PM



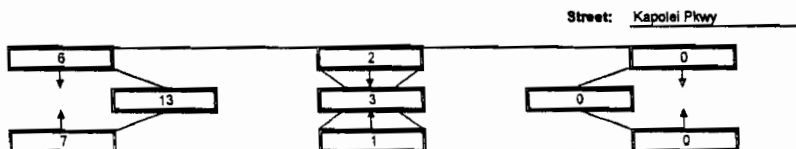
AFTERNOON PM COUNT SHEET



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	0	0	0	0			0	0
1:30 PM - 1:45 PM	0	0	0	0	0	0			0	0
1:45 PM - 2:00 PM	0	0	0	0	0	0			0	3
2:00 PM - 2:15 PM	0	0	0	0	0	0			0	7
2:15 PM - 2:30 PM	0	0	0	0	0	0			0	247
2:30 PM - 2:45 PM	0	0	3	0	0	0			3	308
2:45 PM - 3:00 PM	4	0	0	0	0	0			4	330
3:00 PM - 3:15 PM	3	123	0	54	1	59			240	341
3:15 PM - 3:30 PM	5	24	0	9	1	22			61	113
3:30 PM - 3:45 PM	6	6	1	4	2	6			25	58
3:45 PM - 4:00 PM	8	5	0	0	0	2			15	37
4:00 PM - 4:15 PM	7	3	0	0	0	2			12	29
4:15 PM - 4:30 PM	3	1	0	2	0	0			6	20
4:30 PM - 4:45 PM	2	0	1	1	0	0			4	16
4:45 PM - 5:00 PM	1	5	1	0	0	0			7	19
5:00 PM - 5:15 PM	2	1	0	0	0	0			3	19
5:15 PM - 5:30 PM	1	1	0	0	0	0			2	20
5:30 PM - 5:45 PM	2	2	0	1	1	1			7	
5:45 PM - 6:00 PM	1	5	0	1	0	0			7	
6:00 PM - 6:15 PM	0	1	1	2	0	0			4	
4:30 PM - 5:30 PM	6	7	2	1	0	0	0	0		

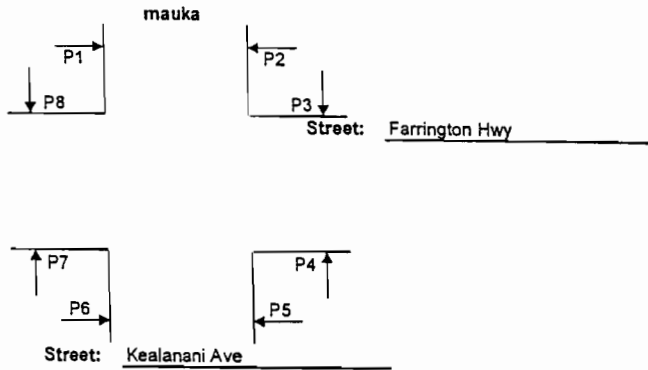
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

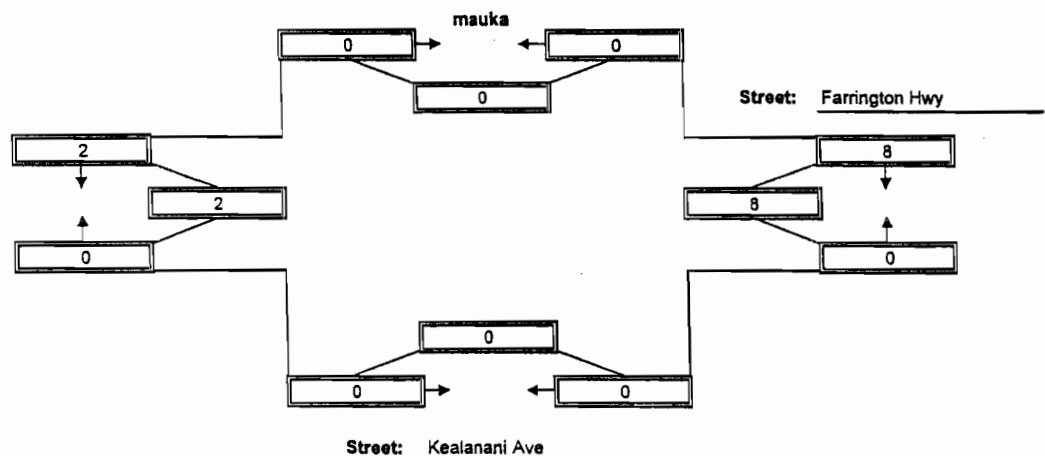
Intersection: Kealanani Ave/Farrington
 Date: 10/22/2003 - 10/23/2003
 By: K. Fujimoto
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM			0	0	0	0	0	0	0	4
6:00 AM - 6:15 AM			0	0	0	0	0	1	1	4
6:15 AM - 6:30 AM			0	0	2	0	0	1	3	4
6:30 AM - 6:45 AM			0	0	0	0	0	0	0	9
6:45 AM - 7:00 AM			0	0	0	0	0	0	0	10
7:00 AM - 7:15 AM			1	0	0	0	0	0	1	10
7:15 AM - 7:30 AM			6	0	0	0	0	2	8	10
7:30 AM - 7:45 AM			1	0	0	0	0	0	1	
7:45 AM - 8:00 AM			0	0	0	0	0	0	0	
8:00 AM - 8:15 AM			0	1	0	0	0	0	1	
7:00 AM - 8:00 AM	0	0	8	0	0	0	0	2		

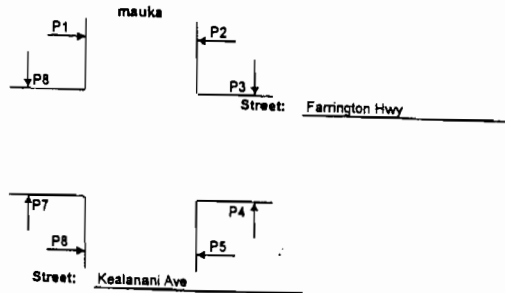
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON PM COUNT SHEET

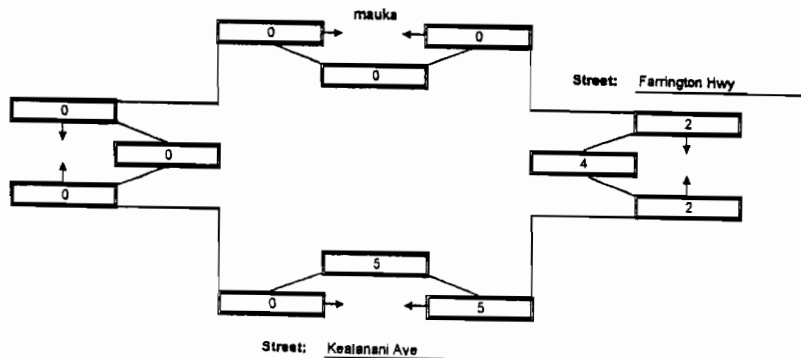
Intersection: Kealanani Ave/Farrington
 Date: 10/22/2003 - 10/23/2003
 By: K. Fujimoto
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM			0	0	1	0	0	1	2	7
1:30 PM - 1:45 PM			0	2	0	0	0	0	2	8
1:45 PM - 2:00 PM			0	0	1	0	0	0	1	9
2:00 PM - 2:15 PM			0	2	0	0	0	0	2	11
2:15 PM - 2:30 PM			2	0	1	0	0	0	3	10
2:30 PM - 2:45 PM			0	0	3	0	0	0	3	8
2:45 PM - 3:00 PM			0	0	0	3	0	0	3	7
3:00 PM - 3:15 PM			0	0	1	0	0	0	1	8
3:15 PM - 3:30 PM			0	0	0	0	1	0	1	7
3:30 PM - 3:45 PM			0	0	1	1	0	0	2	9
3:45 PM - 4:00 PM			2	0	0	2	0	0	4	12
4:00 PM - 4:15 PM			0	0	0	0	0	0	0	8
4:15 PM - 4:30 PM			0	0	0	0	0	3	3	10
4:30 PM - 4:45 PM			0	0	2	1	0	2	5	8
4:45 PM - 5:00 PM			0	0	0	0	0	0	0	3
5:00 PM - 5:15 PM			0	0	2	0	0	0	2	6
5:15 PM - 5:30 PM			0	0	1	0	0	0	1	8
5:30 PM - 5:45 PM			0	0	0	0	0	0	0	
5:45 PM - 8:00 PM			2	0	1	0	0	0	3	
8:00 PM - 8:15 PM			1	1	1	0	0	1	4	
1:45 PM - 2:45 PM	0	0	2	2	5	0	0	0		

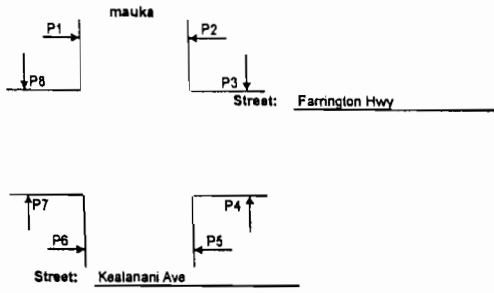
Peak Hour

1:45 PM - 2:45 PM



AFTERNOON PM COUNT SHEET

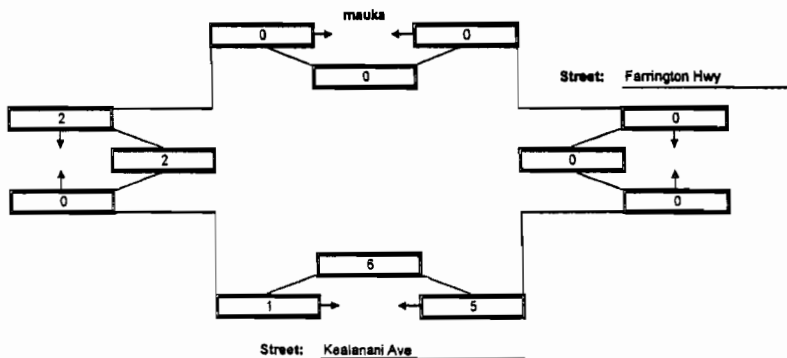
Intersection: Kealanani Ave/Farrington
 Date: 10/22/2003 - 10/23/2003
 By: K. Fujimoto
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM			0	0	1	0	0	1	2	7
1:30 PM - 1:45 PM			0	2	0	0	0	0	2	8
1:45 PM - 2:00 PM			0	0	1	0	0	0	1	9
2:00 PM - 2:15 PM			0	2	0	0	0	0	2	11
2:15 PM - 2:30 PM			2	0	1	0	0	0	3	10
2:30 PM - 2:45 PM			0	0	3	0	0	0	3	8
2:45 PM - 3:00 PM			0	0	0	3	0	0	3	7
3:00 PM - 3:15 PM			0	0	1	0	0	0	1	8
3:15 PM - 3:30 PM			0	0	0	0	1	0	1	7
3:30 PM - 3:45 PM			0	0	1	1	0	0	2	9
3:45 PM - 4:00 PM			2	0	0	2	0	0	4	12
4:00 PM - 4:15 PM			0	0	0	0	0	0	0	8
4:15 PM - 4:30 PM			0	0	0	0	0	3	3	10
4:30 PM - 4:45 PM			0	0	2	1	0	2	5	8
4:45 PM - 5:00 PM			0	0	0	0	0	0	0	3
5:00 PM - 5:15 PM			0	0	2	0	0	0	2	6
5:15 PM - 5:30 PM			0	0	1	0	0	0	1	8
5:30 PM - 5:45 PM			0	0	0	0	0	0	0	
5:45 PM - 6:00 PM			2	0	1	0	0	0	3	
6:00 PM - 8:15 PM			1	1	1	0	0	1	4	
4:30 PM - 5:30 PM	0	0	0	0	5	1	0	2		

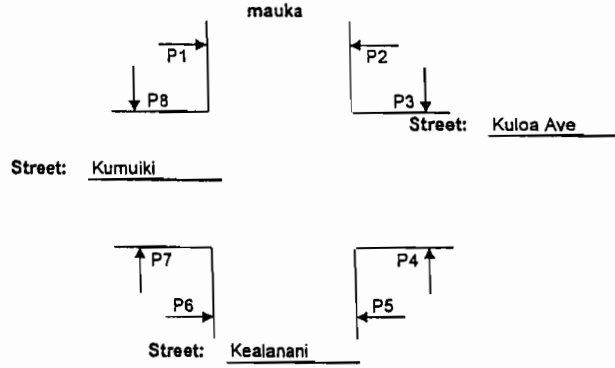
Peak Hour

4:30 PM - 5:30 PM



AM COUNT SHEET

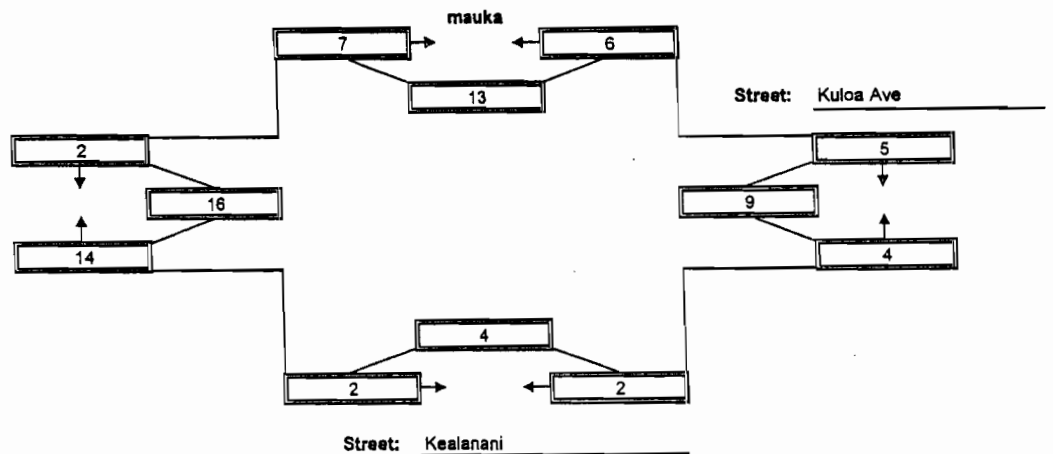
Intersection: Kealanani Ave/Kumuiki
 Date: 10/22/2003 - 10/23/2003
 By: P. Matsunaga
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
5:45 AM - 6:00 AM	1	1	0	0	0	0	0	1	3	16
6:00 AM - 6:15 AM	0	0	0	0	2	0	0	0	2	18
6:15 AM - 6:30 AM	0	0	0	1	0	1	1	0	3	20
6:30 AM - 6:45 AM	1	0	0	2	3	1	1	0	8	37
6:45 AM - 7:00 AM	0	1	0	2	0	0	1	1	5	41
7:00 AM - 7:15 AM	0	0	0	2	0	0	1	1	4	42
7:15 AM - 7:30 AM	4	1	1	2	1	1	9	1	20	44
7:30 AM - 7:45 AM	3	0	3	0	1	1	4	0	12	
7:45 AM - 8:00 AM	0	5	1	0	0	0	0	0	6	
8:00 AM - 8:15 AM	1	0	1	0	1	1	0	2	6	
7:00 AM - 8:00 AM	7	6	5	4	2	2	14	2		

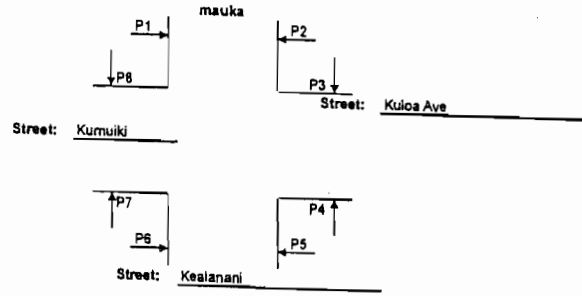
Peak Hour

7:00 AM - 8:00 AM



AFTERNOON PM COUNT SHEET

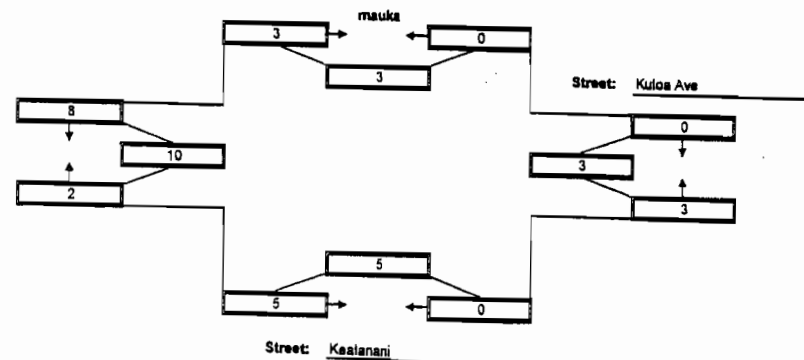
Intersection: Kealanani Ave/Kumuiki
 Date: 10/22/2003 - 10/23/2003
 By: P. Matsunaga
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	1	0	0	0	0	2	3	21
1:30 PM - 1:45 PM	0	0	0	0	0	0	2	7	9	29
1:45 PM - 2:00 PM	3	0	0	0	0	1	0	3	7	21
2:00 PM - 2:15 PM	0	0	0	1	0	0	0	1	2	20
2:15 PM - 2:30 PM	0	0	0	2	0	3	2	4	11	30
2:30 PM - 2:45 PM	0	0	0	0	0	1	0	0	1	21
2:45 PM - 3:00 PM	0	2	0	0	0	0	2	2	6	22
3:00 PM - 3:15 PM	0	1	2	2	1	4	0	2	12	23
3:15 PM - 3:30 PM	0	0	1	0	0	0	0	1	2	20
3:30 PM - 3:45 PM	0	0	0	1	1	0	0	0	2	22
3:45 PM - 4:00 PM	0	0	0	1	4	0	1	1	7	23
4:00 PM - 4:15 PM	7	0	1	1	0	0	0	0	9	18
4:15 PM - 4:30 PM	0	1	0	1	0	2	0	0	4	28
4:30 PM - 4:45 PM	0	1	0	2	0	0	0	0	3	33
4:45 PM - 5:00 PM	0	0	1	0	0	0	0	1	2	38
5:00 PM - 5:15 PM	3	3	5	2	2	2	2	0	19	46
5:15 PM - 5:30 PM	0	1	3	0	2	0	0	3	9	41
5:30 PM - 5:45 PM	0	0	1	3	1	0	2	1	8	
5:45 PM - 6:00 PM	0	1	1	1	1	2	2	2	10	
6:00 PM - 6:15 PM	0	1	4	3	3	0	1	2	14	
1:45 PM - 2:45 PM	3	0	0	3	0	5	2	8		

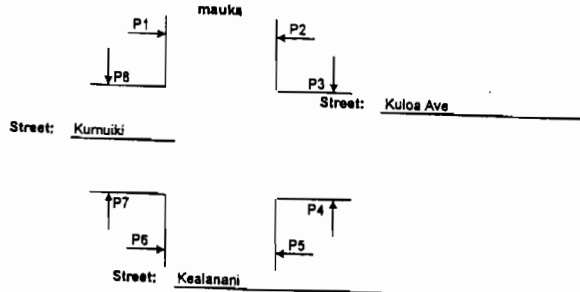
Peak Hour

1:45 PM - 2:45 PM



AFTERNOON PM COUNT SHEET

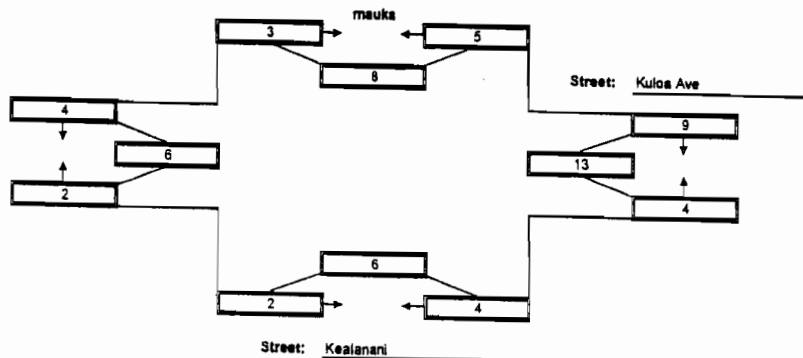
Intersection: Kealanani Ave/Kumuiki
 Date: 10/22/2003 - 10/23/2003
 By: P. Matsunaga
 Weather: Sunny



TIME	P1	P2	P3	P4	P5	P6	P7	P8	Total Mvmt	Total Hour
1:15 PM - 1:30 PM	0	0	1	0	0	0	0	2	3	21
1:30 PM - 1:45 PM	0	0	0	0	0	0	2	7	9	29
1:45 PM - 2:00 PM	3	0	0	0	0	1	0	3	7	21
2:00 PM - 2:15 PM	0	0	0	1	0	0	0	1	2	20
2:15 PM - 2:30 PM	0	0	0	2	0	3	2	4	11	30
2:30 PM - 2:45 PM	0	0	0	0	0	1	0	0	1	21
2:45 PM - 3:00 PM	0	2	0	0	0	0	2	2	6	22
3:00 PM - 3:15 PM	0	1	2	2	1	4	0	2	12	23
3:15 PM - 3:30 PM	0	0	1	0	0	0	0	1	2	20
3:30 PM - 3:45 PM	0	0	0	1	1	0	0	0	2	22
3:45 PM - 4:00 PM	0	0	0	1	4	0	1	1	7	23
4:00 PM - 4:15 PM	7	0	1	1	0	0	0	0	9	18
4:15 PM - 4:30 PM	0	1	0	1	0	2	0	0	4	28
4:30 PM - 4:45 PM	0	1	0	2	0	0	0	0	3	33
4:45 PM - 5:00 PM	0	0	1	0	0	0	0	1	2	38
5:00 PM - 5:15 PM	3	3	5	2	2	2	2	0	19	46
5:15 PM - 5:30 PM	0	1	3	0	2	0	0	3	9	41
5:30 PM - 5:45 PM	0	0	1	3	1	0	2	1	8	
5:45 PM - 6:00 PM	0	1	1	1	1	2	2	2	10	
6:00 PM - 6:15 PM	0	1	4	3	3	0	1	2	14	
4:30 PM - 5:30 PM	3	5	9	4	4	2	2	4		

Peak Hour

4:30 PM - 5:30 PM



Kealanani Ave and Kuloa Ave/Kumuiki St 24-Hour Approach Volumes

1/15/2004

Time	15-Min Interval							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
0:00 - 0:15	6	6	16		0		0	5
0:15 - 0:30	14	2	18		0		1	2
0:30 - 0:45	6	3	12		1		1	1
0:45 - 1:00	1	0	3		0		1	2
1:00 - 1:15	6	2	10		0		0	3
1:15 - 1:30	3	3	8		0		2	5
1:30 - 1:45	5	1	6		1		1	3
1:45 - 2:00	1	3	5		0		0	0
2:00 - 2:15	1	1	5		0		0	1
2:15 - 2:30	5	2	8		0		1	3
2:30 - 2:45	3	3	6		0		3	3
2:45 - 3:00	0	0	6		0		1	5
3:00 - 3:15	3	6	5		0		1	2
3:15 - 3:30	0	2	3		0		2	0
3:30 - 3:45	2	7	4		1		4	2
3:45 - 4:00	4	6	5		1		2	2
4:00 - 4:15	1	10	2		0		2	0
4:15 - 4:30	4	8	6		1		3	1
4:30 - 4:45	4	22	6		1		13	2
4:45 - 5:00	2	26	3		1		21	1
5:00 - 5:15	4	44	5		1		21	0
5:15 - 5:30	3	56	10		3		41	6
5:30 - 5:45	10	63	20		3		56	6
5:45 - 6:00	14	83	22		0		43	6
6:00 - 6:15	18	80	19		2		32	6
6:15 - 6:30	10	83	20		0		32	8
6:30 - 6:45	15	84	26		0		27	5
6:45 - 7:00	26	60	32		1		25	4
7:00 - 7:15	51	101	69		1		44	3
7:15 - 7:30	122	108	143		4		48	11
7:30 - 7:45	159	155	176		5		31	15
7:45 - 8:00	66	156	74		1		17	5
8:00 - 8:15	25	53	43		0		22	7
8:15 - 8:30	13	53	29		1		25	12
8:30 - 8:45	13	32	20		0		25	6
8:45 - 9:00	11	21	25		1		17	3
9:00 - 9:15	11	33	33		1		20	13
9:15 - 9:30	14	36	35		0		20	17
9:30 - 9:45	14	29	28		0		13	8
9:45 - 10:00	18	29	33		1		11	5
10:00 - 10:15	17	29	37		3		15	12
10:15 - 10:30	7	32	22		3		16	6
10:30 - 10:45	15	24	24		7		9	4
10:45 - 11:00	7	22	19		7		18	9
11:00 - 11:15	19	24	42		11		13	9
11:15 - 11:30	18	26	31		16		10	7
11:30 - 11:45	16	19	39		13		12	20
11:45 - 12:00	16	13	41		13		8	22

Kealanani Ave and Kuloa Ave/Kumuiki St 24-Hour Approach Volumes

1/15/2004

15-Min Interval								
Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 - 12:15	21	25	41		9		7	15
12:15 - 12:30	18	17	36		9		13	14
12:30 - 12:45	19	20	43		13		19	14
12:45 - 13:00	28	20	46		5		14	13
13:00 - 13:15	18	15	42		12		17	12
13:15 - 13:30	19	22	41		10		9	16
13:30 - 13:45	42	44	64		3		17	9
13:45 - 14:00	43	51	70		20		26	19
14:00 - 14:15	49	52	64		19		21	16
14:15 - 14:30	62	72	94		20		25	24
14:30 - 14:45	44	63	77		9		15	27
14:45 - 15:00	43	43	68		13		16	17
15:00 - 15:15	41	42	91		10		25	30
15:15 - 15:30	42	43	90		15		17	22
15:30 - 15:45	54	45	111		15		24	34
15:45 - 16:00	63	52	93		16		20	26
16:00 - 16:15	64	41	114		18		16	26
16:15 - 16:30	71	33	118		12		27	28
16:30 - 16:45	68	49	124		21		17	36
16:45 - 17:00	64	41	120		22		23	33
17:00 - 17:15	93	47	153		12		20	34
17:15 - 17:30	66	50	147		15		13	33
17:30 - 17:45	67	47	126		14		22	49
17:45 - 18:00	54	35	108		14		22	30
18:00 - 18:15	47	45	101		19		16	28
18:15 - 18:30	65	26	142		7		23	46
18:30 - 18:45	55	34	117		13		32	50
18:45 - 19:00	43	47	92		13		17	37
19:00 - 19:15	36	31	87		4		27	33
19:15 - 19:30	47	22	84		6		15	23
19:30 - 19:45	30	23	74		4		18	25
19:45 - 20:00	25	24	74		3		13	31
20:00 - 20:15	28	19	68		1		6	26
20:15 - 20:30	31	21	63		2		11	19
20:30 - 20:45	33	15	74		1		12	22
20:45 - 21:00	25	15	66		2		8	25
21:00 - 21:15	27	21	59		0		9	16
21:15 - 21:30	21	26	47		1		5	20
21:30 - 21:45	35	13	62		2		6	17
21:45 - 22:00	16	18	44		0		6	14
22:00 - 22:15	32	16	54		1		10	18
22:15 - 22:30	14	8	30		0		12	6
22:30 - 22:45	13	7	28		0		6	10
22:45 - 23:00	10	8	28		0		8	18
23:00 - 23:15	18	6	39		0		3	10
23:15 - 23:30	6	2	27		0		4	12
23:30 - 23:45	10	2	16		1		3	4
23:45 - 0:00	8	0	13		0		2	2

2631	3079	4824	0	511	0	1447	1367
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Kuloa Ave/Kumuiki St 24-Hour Approach Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 1:00 AM	27	11	49	0	1	0	3	10
12:15 AM - 1:15 AM	27	7	43	0	1	0	3	8
12:30 AM - 1:30 AM	16	8	33	0	1	0	4	11
12:45 AM - 1:45 AM	15	6	27	0	1	0	4	13
1:00 AM - 2:00 AM	15	9	29	0	1	0	3	11
1:15 AM - 2:15 AM	10	8	24	0	1	0	3	9
1:30 AM - 2:30 AM	12	7	24	0	1	0	2	7
1:45 AM - 2:45 AM	10	9	24	0	0	0	4	7
2:00 AM - 3:00 AM	9	6	25	0	0	0	5	12
2:15 AM - 3:15 AM	11	11	25	0	0	0	6	13
2:30 AM - 3:30 AM	6	11	20	0	0	0	7	10
2:45 AM - 3:45 AM	5	15	18	0	1	0	8	9
3:00 AM - 4:00 AM	9	21	17	0	2	0	9	6
3:15 AM - 4:15 AM	7	25	14	0	2	0	10	4
3:30 AM - 4:30 AM	11	31	17	0	3	0	11	5
3:45 AM - 4:45 AM	13	46	19	0	3	0	20	5
4:00 AM - 5:00 AM	11	66	17	0	3	0	39	4
4:15 AM - 5:15 AM	14	100	20	0	4	0	58	4
4:30 AM - 5:30 AM	13	148	24	0	6	0	96	9
4:45 AM - 5:45 AM	19	189	38	0	8	0	139	13
5:00 AM - 6:00 AM	31	246	57	0	7	0	161	18
5:15 AM - 6:15 AM	45	282	71	0	8	0	172	24
5:30 AM - 6:30 AM	52	309	81	0	5	0	163	26
5:45 AM - 6:45 AM	57	330	87	0	2	0	134	25
6:00 AM - 7:00 AM	69	307	97	0	3	0	116	23
6:15 AM - 7:15 AM	102	328	147	0	2	0	128	20
6:30 AM - 7:30 AM	214	353	270	0	6	0	144	23
6:45 AM - 7:45 AM	358	424	420	0	11	0	148	33
7:00 AM - 8:00 AM	398	520	462	0	11	0	140	34
7:15 AM - 8:15 AM	372	472	436	0	10	0	118	38
7:30 AM - 8:30 AM	263	417	322	0	7	0	95	39
7:45 AM - 8:45 AM	117	294	166	0	2	0	89	30
8:00 AM - 9:00 AM	62	159	117	0	2	0	89	28
8:15 AM - 9:15 AM	48	139	107	0	3	0	87	34
8:30 AM - 9:30 AM	49	122	113	0	2	0	82	39
8:45 AM - 9:45 AM	50	119	121	0	2	0	70	41
9:00 AM - 10:00 AM	57	127	129	0	2	0	64	43
9:15 AM - 10:15 AM	63	123	133	0	4	0	59	42
9:30 AM - 10:30 AM	56	119	120	0	7	0	55	31
9:45 AM - 10:45 AM	57	114	116	0	14	0	51	27
10:00 AM - 11:00 AM	46	107	102	0	20	0	58	31
10:15 AM - 11:15 AM	43	102	107	0	28	0	56	28
10:30 AM - 11:30 AM	59	96	116	0	41	0	50	29
10:45 AM - 11:45 AM	60	91	131	0	47	0	53	45
11:00 AM - 12:00 PM	69	82	153	0	53	0	43	58
11:15 AM - 12:15 PM	71	83	152	0	51	0	37	64
11:30 AM - 12:30 PM	71	74	157	0	44	0	40	71
11:45 AM - 12:45 PM	74	75	161	0	44	0	47	65

Kuloa Ave/Kumuiki St 24-Hour Approach Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 PM - 1:00 PM	86	82	166	0	36	0	53	56
12:15 PM - 1:15 PM	83	72	167	0	39	0	63	53
12:30 PM - 1:30 PM	84	77	172	0	40	0	59	55
12:45 PM - 1:45 PM	107	101	193	0	30	0	57	50
1:00 PM - 2:00 PM	122	132	217	0	45	0	69	56
1:15 PM - 2:15 PM	153	169	239	0	52	0	73	60
1:30 PM - 2:30 PM	196	219	292	0	62	0	89	68
1:45 PM - 2:45 PM	198	238	305	0	68	0	87	86
2:00 PM - 3:00 PM	198	230	303	0	61	0	77	84
2:15 PM - 3:15 PM	190	220	330	0	52	0	81	98
2:30 PM - 3:30 PM	170	191	326	0	47	0	73	96
2:45 PM - 3:45 PM	180	173	360	0	53	0	82	103
3:00 PM - 4:00 PM	200	182	385	0	56	0	86	112
3:15 PM - 4:15 PM	223	181	408	0	64	0	77	108
3:30 PM - 4:30 PM	252	171	436	0	61	0	87	114
3:45 PM - 4:45 PM	266	175	449	0	67	0	80	116
4:00 PM - 5:00 PM	267	164	476	0	73	0	83	123
4:15 PM - 5:15 PM	296	170	515	0	67	0	87	131
4:30 PM - 5:30 PM	291	187	544	0	70	0	73	136
4:45 PM - 5:45 PM	290	185	546	0	63	0	78	149
5:00 PM - 6:00 PM	280	179	534	0	55	0	77	146
5:15 PM - 6:15 PM	234	177	482	0	62	0	73	140
5:30 PM - 6:30 PM	223	153	477	0	54	0	83	153
5:45 PM - 6:45 PM	221	140	468	0	53	0	93	154
6:00 PM - 7:00 PM	210	152	452	0	52	0	88	161
6:15 PM - 7:15 PM	199	138	438	0	37	0	99	166
6:30 PM - 7:30 PM	181	134	380	0	36	0	91	143
6:45 PM - 7:45 PM	156	123	337	0	27	0	77	118
7:00 PM - 8:00 PM	138	100	319	0	17	0	73	112
7:15 PM - 8:15 PM	130	88	300	0	14	0	52	105
7:30 PM - 8:30 PM	114	87	279	0	10	0	48	101
7:45 PM - 8:45 PM	117	79	279	0	7	0	42	98
8:00 PM - 9:00 PM	117	70	271	0	6	0	37	92
8:15 PM - 9:15 PM	116	72	262	0	5	0	40	82
8:30 PM - 9:30 PM	106	77	246	0	4	0	34	83
8:45 PM - 9:45 PM	103	75	234	0	5	0	28	78
9:00 PM - 10:00 PM	99	78	212	0	3	0	26	67
9:15 PM - 10:15 PM	104	73	207	0	4	0	27	69
9:30 PM - 10:30 PM	97	55	190	0	3	0	34	55
9:45 PM - 10:45 PM	75	49	156	0	1	0	34	48
10:00 PM - 11:00 PM	69	39	140	0	1	0	36	52
10:15 PM - 11:15 PM	55	29	125	0	0	0	29	44
10:30 PM - 11:30 PM	47	23	122	0	0	0	21	50
10:45 PM - 11:45 PM	44	18	110	0	1	0	18	44
11:00 PM - 12:00 AM	42	10	95	0	1	0	12	28

10422	12285	19102	0	2041	0	5769	5422
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Ft. Barrette Rd and Kamaaha Ave 24-Hour Traffic Volumes

1-hour interval								
Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 1:00 AM	44	60	88	40	0	0	37	12
12:15 AM - 1:15 AM	48	51	70	41	0	0	23	10
12:30 AM - 1:30 AM	41	40	63	44	0	0	21	9
12:45 AM - 1:45 AM	37	34	55	46	0	0	16	8
1:00 AM - 2:00 AM	32	30	48	34	0	0	15	9
1:15 AM - 2:15 AM	25	27	49	37	0	0	19	16
1:30 AM - 2:30 AM	23	29	41	30	0	0	18	15
1:45 AM - 2:45 AM	22	31	39	27	0	0	16	16
2:00 AM - 3:00 AM	23	26	36	35	0	0	15	17
2:15 AM - 3:15 AM	23	25	30	31	0	0	11	14
2:30 AM - 3:30 AM	32	22	31	39	0	0	11	16
2:45 AM - 3:45 AM	37	23	30	57	0	0	13	25
3:00 AM - 4:00 AM	37	28	34	64	0	0	11	25
3:15 AM - 4:15 AM	45	39	39	72	0	0	13	29
3:30 AM - 4:30 AM	44	40	49	74	0	0	16	37
3:45 AM - 4:45 AM	59	58	71	87	0	0	16	44
4:00 AM - 5:00 AM	82	64	79	136	0	0	17	73
4:15 AM - 5:15 AM	136	77	98	220	0	0	22	110
4:30 AM - 5:30 AM	242	102	127	368	0	0	40	170
4:45 AM - 5:45 AM	349	116	157	542	0	0	53	225
5:00 AM - 6:00 AM	481	176	224	684	0	0	71	235
5:15 AM - 6:15 AM	607	236	291	810	0	0	81	261
5:30 AM - 6:30 AM	664	332	403	871	0	0	91	258
5:45 AM - 6:45 AM	739	459	500	927	0	0	96	253
6:00 AM - 7:00 AM	793	591	622	1003	0	0	120	284
6:15 AM - 7:15 AM	835	759	811	1120	0	0	162	312
6:30 AM - 7:30 AM	944	913	959	1274	0	0	198	314
6:45 AM - 7:45 AM	964	1095	1112	1353	0	0	249	337
7:00 AM - 8:00 AM	997	1117	1152	1411	0	0	244	355
7:15 AM - 8:15 AM	954	976	1000	1345	0	0	218	314
7:30 AM - 8:30 AM	792	813	831	1130	0	0	182	279
7:45 AM - 8:45 AM	686	592	662	897	0	0	143	225
8:00 AM - 9:00 AM	571	467	567	699	0	0	129	168
8:15 AM - 9:15 AM	485	479	540	578	0	0	116	157
8:30 AM - 9:30 AM	463	457	541	552	0	0	117	161
8:45 AM - 9:45 AM	446	466	541	601	0	0	123	167
9:00 AM - 10:00 AM	408	489	494	587	0	0	124	174
9:15 AM - 10:15 AM	419	461	498	590	0	0	130	176
9:30 AM - 10:30 AM	425	474	497	601	0	0	134	183
9:45 AM - 10:45 AM	438	455	487	591	0	0	122	176
10:00 AM - 11:00 AM	451	460	540	580	0	0	139	171
10:15 AM - 11:15 AM	443	488	578	563	0	0	139	148
10:30 AM - 11:30 AM	460	490	591	571	0	0	135	133
10:45 AM - 11:45 AM	475	496	632	555	0	0	150	128
11:00 AM - 12:00 PM	514	480	634	579	0	0	148	123
11:15 AM - 12:15 PM	517	495	631	591	0	0	175	139
11:30 AM - 12:30 PM	521	537	630	580	0	0	195	133
11:45 AM - 12:45 PM	506	565	657	588	0	0	202	146

Ft. Barrette Rd and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 PM - 1:00 PM	485	643	749	575	0	0	214	153
12:15 PM - 1:15 PM	537	627	753	630	0	0	209	158
12:30 PM - 1:30 PM	548	663	768	666	0	0	207	180
12:45 PM - 1:45 PM	610	701	829	698	0	0	231	195
1:00 PM - 2:00 PM	606	676	776	834	0	0	258	208
1:15 PM - 2:15 PM	570	722	836	812	0	0	274	232
1:30 PM - 2:30 PM	558	750	889	845	0	0	276	250
1:45 PM - 2:45 PM	515	758	833	901	0	0	281	235
2:00 PM - 3:00 PM	542	742	847	854	0	0	272	240
2:15 PM - 3:15 PM	659	769	832	872	0	0	277	206
2:30 PM - 3:30 PM	728	755	884	867	0	0	313	179
2:45 PM - 3:45 PM	773	759	971	860	0	0	351	181
3:00 PM - 4:00 PM	841	841	977	827	0	0	402	176
3:15 PM - 4:15 PM	792	848	1102	872	0	0	439	185
3:30 PM - 4:30 PM	773	881	1187	895	0	0	475	206
3:45 PM - 4:45 PM	783	921	1173	898	0	0	441	217
4:00 PM - 5:00 PM	712	899	1247	921	0	0	415	240
4:15 PM - 5:15 PM	674	887	1250	911	0	0	411	271
4:30 PM - 5:30 PM	639	881	1205	907	0	0	386	294
4:45 PM - 5:45 PM	598	859	1261	847	0	0	398	308
5:00 PM - 6:00 PM	605	838	1284	863	0	0	420	292
5:15 PM - 6:15 PM	603	827	1255	820	0	0	433	270
5:30 PM - 6:30 PM	616	791	1219	838	0	0	450	281
5:45 PM - 6:45 PM	580	740	1165	896	0	0	476	276
6:00 PM - 7:00 PM	528	669	1066	867	0	0	484	285
6:15 PM - 7:15 PM	455	596	1003	825	0	0	469	285
6:30 PM - 7:30 PM	377	500	923	692	0	0	448	251
6:45 PM - 7:45 PM	350	410	806	595	0	0	408	239
7:00 PM - 8:00 PM	310	365	736	496	0	0	357	216
7:15 PM - 8:15 PM	304	324	619	427	0	0	316	193
7:30 PM - 8:30 PM	293	298	549	387	0	0	286	167
7:45 PM - 8:45 PM	274	285	496	358	0	0	261	152
8:00 PM - 9:00 PM	276	270	454	370	0	0	241	146
8:15 PM - 9:15 PM	252	268	488	373	0	0	238	139
8:30 PM - 9:30 PM	258	273	473	371	0	0	225	131
8:45 PM - 9:45 PM	264	261	466	346	0	0	209	113
9:00 PM - 10:00 PM	249	244	449	303	0	0	205	101
9:15 PM - 10:15 PM	228	219	381	279	0	0	178	95
9:30 PM - 10:30 PM	195	173	355	256	0	0	160	90
9:45 PM - 10:45 PM	150	170	313	235	0	0	154	82
10:00 PM - 11:00 PM	116	161	274	209	0	0	121	67
10:15 PM - 11:15 PM	106	147	236	168	0	0	108	58
10:30 PM - 11:30 PM	78	142	198	135	0	0	85	42
10:45 PM - 11:45 PM	70	121	171	103	0	0	69	32
11:00 PM - 12:00 AM	66	97	157	79	0	0	63	23

38925	41511	53764	52038	0	0	17930	15130
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Ft Barrette Rd and Kamaaha Ave 24-Hour Approach Volumes

Time	15 min interval							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
0:00 - 0:15	9	18	32	10			17	2
0:15 - 0:30	12	19	22	10			6	4
0:30 - 0:45	11	10	17	7			8	3
0:45 - 1:00	12	13	17	13			6	3
1:00 - 1:15	13	9	14	11			3	0
1:15 - 1:30	5	8	15	13			4	3
1:30 - 1:45	7	4	9	9			3	2
1:45 - 2:00	7	9	10	1			5	4
2:00 - 2:15	6	6	15	14			7	7
2:15 - 2:30	3	10	7	6			3	2
2:30 - 2:45	6	6	7	6			1	3
2:45 - 3:00	8	4	7	9			4	5
3:00 - 3:15	6	5	9	10			3	4
3:15 - 3:30	12	7	8	14			3	4
3:30 - 3:45	11	7	6	24			3	12
3:45 - 4:00	8	9	11	16			2	5
4:00 - 4:15	14	16	14	18			5	8
4:15 - 4:30	11	8	18	16			6	12
4:30 - 4:45	26	25	28	37			3	19
4:45 - 5:00	31	15	19	65			3	34
5:00 - 5:15	68	29	33	102			10	45
5:15 - 5:30	117	33	47	164			24	72
5:30 - 5:45	133	39	58	211			16	74
5:45 - 6:00	163	75	86	207			21	44
6:00 - 6:15	194	89	100	228			20	71
6:15 - 6:30	174	129	159	225			34	69
6:30 - 6:45	208	166	155	267			21	69
6:45 - 7:00	217	207	208	283			45	75
7:00 - 7:15	236	257	289	345			62	99
7:15 - 7:30	283	283	307	379			70	71
7:30 - 7:45	228	348	308	346			72	92
7:45 - 8:00	250	229	248	341			40	93
8:00 - 8:15	193	116	137	279			36	58
8:15 - 8:30	121	120	138	164			34	36
8:30 - 8:45	122	127	139	113			33	38
8:45 - 9:00	135	104	153	143			26	36
9:00 - 9:15	107	128	110	158			23	47
9:15 - 9:30	99	98	139	138			35	40
9:30 - 9:45	105	136	139	162			39	44
9:45 - 10:00	97	127	106	129			27	43
10:00 - 10:15	118	100	114	161			29	49
10:15 - 10:30	105	111	138	149			39	47
10:30 - 10:45	118	117	129	152			27	37
10:45 - 11:00	110	132	159	118			44	38
11:00 - 11:15	110	128	152	144			29	26
11:15 - 11:30	122	113	151	157			35	32
11:30 - 11:45	133	123	170	136			42	32
11:45 - 12:00	149	116	161	142			42	33

Ft Barrette Rd and Kamaaha Ave 24-Hour Approach Volumes

15 min interval								
Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 - 12:15	113	143	149	156			56	42
12:15 - 12:30	126	155	150	146			55	26
12:30 - 12:45	118	151	197	144			49	45
12:45 - 13:00	128	194	253	129			54	40
13:00 - 13:15	165	127	153	211			51	47
13:15 - 13:30	137	191	165	182			53	48
13:30 - 13:45	180	189	258	176			73	60
13:45 - 14:00	124	169	200	265			81	53
14:00 - 14:15	129	173	213	189			67	71
14:15 - 14:30	125	219	218	215			55	66
14:30 - 14:45	137	197	202	232			78	45
14:45 - 15:00	151	153	214	218			72	58
15:00 - 15:15	246	200	198	207			72	37
15:15 - 15:30	194	205	270	210			91	39
15:30 - 15:45	182	201	289	225			116	47
15:45 - 16:00	219	235	220	185			123	53
16:00 - 16:15	197	207	323	252			109	46
16:15 - 16:30	175	238	355	233			127	60
16:30 - 16:45	192	241	275	228			82	58
16:45 - 17:00	148	213	294	208			97	76
17:00 - 17:15	159	195	326	242			105	77
17:15 - 17:30	140	232	310	229			102	83
17:30 - 17:45	151	219	331	168			94	72
17:45 - 18:00	155	192	317	224			119	60
18:00 - 18:15	157	184	297	199			118	55
18:15 - 18:30	153	196	274	247			119	94
18:30 - 18:45	115	168	277	226			120	67
18:45 - 19:00	103	121	218	195			127	69
19:00 - 19:15	84	111	234	157			103	55
19:15 - 19:30	75	100	194	114			98	60
19:30 - 19:45	88	78	160	129			80	55
19:45 - 20:00	63	76	148	96			76	46
20:00 - 20:15	78	70	117	88			62	32
20:15 - 20:30	64	74	124	74			68	34
20:30 - 20:45	69	65	107	100			55	40
20:45 - 21:00	65	61	106	108			56	40
21:00 - 21:15	54	68	151	91			59	25
21:15 - 21:30	70	79	109	72			55	26
21:30 - 21:45	75	53	100	75			39	22
21:45 - 22:00	50	44	89	65			52	28
22:00 - 22:15	33	43	83	67			32	19
22:15 - 22:30	37	33	83	49			37	21
22:30 - 22:45	30	50	58	54			33	14
22:45 - 23:00	16	35	50	39			19	13
23:00 - 23:15	23	29	45	26			19	10
23:15 - 23:30	9	28	45	16			14	5
23:30 - 23:45	22	29	31	22			17	4
23:45 - 0:00	12	11	36	15			13	4

9769	10433	13534	13050	0	0	4522	3793
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Kaiu Ave and Kamaaha Ave 24-hour Approach Volumes

Time	Movement					
	Makai Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
0:00 - 0:15	10	6	23	11	6	14
0:15 - 0:30	9	1	17	7	9	12
0:30 - 0:45	2	3	7	7	6	7
0:45 - 1:00	2	2	11	4	2	9
1:00 - 1:15	2	1	7	2	1	5
1:15 - 1:30	2	3	6	5	2	4
1:30 - 1:45	1	3	5	5	2	4
1:45 - 2:00	4	4	6	6	3	2
2:00 - 2:15	3	1	6	2	1	3
2:15 - 2:30	3	2	8	4	2	4
2:30 - 2:45	3	6	6	8	2	4
2:45 - 3:00	0	3	3	4	1	2
3:00 - 3:15	3	6	7	9	4	5
3:15 - 3:30	2	6	4	9	4	3
3:30 - 3:45	0	2	6	7	5	6
3:45 - 4:00	2	4	8	4	2	7
4:00 - 4:15	4	5	8	9	4	4
4:15 - 4:30	3	9	5	16	6	2
4:30 - 4:45	3	9	6	17	8	4
4:45 - 5:00	3	15	8	26	12	5
5:00 - 5:15	11	18	12	40	24	5
5:15 - 5:30	10	36	16	64	30	10
5:30 - 5:45	3	34	11	58	25	11
5:45 - 6:00	11	40	23	56	21	16
6:00 - 6:15	17	34	22	55	31	15
6:15 - 6:30	15	28	23	65	41	14
6:30 - 6:45	11	37	28	64	31	21
6:45 - 7:00	16	27	26	63	42	20
7:00 - 7:15	23	39	60	69	46	52
7:15 - 7:30	55	51	61	79	76	65
7:30 - 7:45	109	80	73	78	119	101
7:45 - 8:00	81	81	53	102	116	79
8:00 - 8:15	37	38	45	60	53	48
8:15 - 8:30	17	34	38	54	33	39
8:30 - 8:45	17	25	40	47	31	30
8:45 - 9:00	9	21	43	51	33	40
9:00 - 9:15	17	25	30	44	29	22
9:15 - 9:30	22	22	35	59	45	27
9:30 - 9:45	14	26	24	47	28	22
9:45 - 10:00	15	20	34	32	20	26
10:00 - 10:15	23	18	53	44	35	36
10:15 - 10:30	17	14	33	32	30	26
10:30 - 10:45	17	27	51	60	42	35
10:45 - 11:00	17	29	74	44	31	76
11:00 - 11:15	26	29	70	68	54	73
11:15 - 11:30	23	27	66	90	78	60
11:30 - 11:45	24	31	55	63	47	41
11:45 - 12:00	26	18	48	60	51	32

Kaiu Ave and Kamaaha Ave 24-hour Approach Volumes

Movement						
Time	Makai Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 - 12:15	34	38	72	68	48	54
12:15 - 12:30	41	49	72	47	42	76
12:30 - 12:45	29	24	51	55	45	37
12:45 - 13:00	38	33	52	52	43	39
13:00 - 13:15	31	27	73	54	35	57
13:15 - 13:30	19	22	40	47	36	34
13:30 - 13:45	28	18	72	37	28	48
13:45 - 14:00	19	21	55	41	28	47
14:00 - 14:15	35	16	75	37	29	44
14:15 - 14:30	28	24	55	47	39	46
14:30 - 14:45	28	24	59	50	35	41
14:45 - 15:00	28	24	76	47	30	49
15:00 - 15:15	38	22	76	62	42	57
15:15 - 15:30	37	29	94	57	45	48
15:30 - 15:45	37	24	86	46	42	45
15:45 - 16:00	46	31	76	55	52	50
16:00 - 16:15	40	24	81	47	43	57
16:15 - 16:30	44	36	104	54	33	77
16:30 - 16:45	28	31	72	59	40	52
16:45 - 17:00	45	25	90	59	48	65
17:00 - 17:15	34	23	88	45	35	59
17:15 - 17:30	41	29	88	55	29	49
17:30 - 17:45	37	22	109	44	35	85
17:45 - 18:00	42	25	82	68	54	56
18:00 - 18:15	36	27	93	62	49	71
18:15 - 18:30	44	24	100	58	49	64
18:30 - 18:45	38	26	97	49	30	68
18:45 - 19:00	41	33	113	60	40	84
19:00 - 19:15	44	20	99	52	41	61
19:15 - 19:30	27	31	82	60	32	57
19:30 - 19:45	33	29	89	57	36	66
19:45 - 20:00	37	25	88	56	31	43
20:00 - 20:15	30	11	78	43	36	59
20:15 - 20:30	31	19	64	48	34	40
20:30 - 20:45	25	12	76	38	28	54
20:45 - 21:00	30	11	72	32	24	44
21:00 - 21:15	20	17	53	36	25	37
21:15 - 21:30	31	16	67	32	22	43
21:30 - 21:45	23	10	59	22	17	38
21:45 - 22:00	27	13	62	25	14	34
22:00 - 22:15	26	15	70	37	25	50
22:15 - 22:30	27	10	65	21	18	42
22:30 - 22:45	22	17	51	26	15	37
22:45 - 23:00	18	8	31	17	11	16
23:00 - 23:15	7	12	31	15	5	23
23:15 - 23:30	14	3	36	11	9	22
23:30 - 23:45	11	4	25	8	5	15
23:45 - 0:00	2	3	19	9	8	16

2215	2037	4722	3917	2864	3504
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Kaiau Ave and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 AM - 1:00 AM	23	12	58	29	23	42
12:15 AM - 1:15 AM	15	7	42	20	18	33
12:30 AM - 1:30 AM	8	9	31	18	11	25
12:45 AM - 1:45 AM	7	9	29	16	7	22
1:00 AM - 2:00 AM	9	11	24	18	8	15
1:15 AM - 2:15 AM	10	11	23	18	8	13
1:30 AM - 2:30 AM	11	10	25	17	8	13
1:45 AM - 2:45 AM	13	13	26	20	8	13
2:00 AM - 3:00 AM	9	12	23	18	6	13
2:15 AM - 3:15 AM	9	17	24	25	9	15
2:30 AM - 3:30 AM	8	21	20	30	11	14
2:45 AM - 3:45 AM	5	17	20	29	14	16
3:00 AM - 4:00 AM	7	18	25	29	15	21
3:15 AM - 4:15 AM	8	17	26	29	15	20
3:30 AM - 4:30 AM	9	20	27	36	17	19
3:45 AM - 4:45 AM	12	27	27	46	20	17
4:00 AM - 5:00 AM	13	38	27	68	30	15
4:15 AM - 5:15 AM	20	51	31	99	50	16
4:30 AM - 5:30 AM	27	78	42	147	74	24
4:45 AM - 5:45 AM	27	103	47	188	91	31
5:00 AM - 6:00 AM	35	128	62	218	100	42
5:15 AM - 6:15 AM	41	144	72	233	107	52
5:30 AM - 6:30 AM	46	136	79	234	118	56
5:45 AM - 6:45 AM	54	139	96	240	124	66
6:00 AM - 7:00 AM	59	126	99	247	145	70
6:15 AM - 7:15 AM	65	131	137	261	160	107
6:30 AM - 7:30 AM	105	154	175	275	195	158
6:45 AM - 7:45 AM	203	197	220	289	283	238
7:00 AM - 8:00 AM	268	251	247	328	357	297
7:15 AM - 8:15 AM	282	250	232	319	364	293
7:30 AM - 8:30 AM	244	233	209	294	321	267
7:45 AM - 8:45 AM	152	178	176	263	233	196
8:00 AM - 9:00 AM	80	118	166	212	150	157
8:15 AM - 9:15 AM	60	105	151	196	126	131
8:30 AM - 9:30 AM	65	93	148	201	138	119
8:45 AM - 9:45 AM	62	94	132	201	135	111
9:00 AM - 10:00 AM	68	93	123	182	122	97
9:15 AM - 10:15 AM	74	86	146	182	128	111
9:30 AM - 10:30 AM	69	78	144	155	113	110
9:45 AM - 10:45 AM	72	79	171	168	127	123
10:00 AM - 11:00 AM	74	88	211	180	138	173
10:15 AM - 11:15 AM	77	99	228	204	157	210
10:30 AM - 11:30 AM	83	112	261	262	205	244
10:45 AM - 11:45 AM	90	116	265	265	210	250
11:00 AM - 12:00 PM	99	105	239	281	230	206
11:15 AM - 12:15 PM	107	114	241	281	224	187
11:30 AM - 12:30 PM	125	136	247	238	188	203
11:45 AM - 12:45 PM	130	129	243	230	186	199

Kaiu Ave and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 PM - 1:00 PM	142	144	247	222	178	206
12:15 PM - 1:15 PM	139	133	248	208	165	209
12:30 PM - 1:30 PM	117	106	216	208	159	167
12:45 PM - 1:45 PM	116	100	237	190	142	178
1:00 PM - 2:00 PM	97	88	240	179	127	186
1:15 PM - 2:15 PM	101	77	242	162	121	173
1:30 PM - 2:30 PM	110	79	257	162	124	185
1:45 PM - 2:45 PM	110	85	244	175	131	178
2:00 PM - 3:00 PM	119	88	265	181	133	180
2:15 PM - 3:15 PM	122	94	266	206	146	193
2:30 PM - 3:30 PM	131	99	305	216	152	195
2:45 PM - 3:45 PM	140	99	332	212	159	199
3:00 PM - 4:00 PM	158	106	332	220	181	200
3:15 PM - 4:15 PM	160	108	337	205	182	200
3:30 PM - 4:30 PM	167	115	347	202	170	229
3:45 PM - 4:45 PM	158	122	333	215	168	236
4:00 PM - 5:00 PM	157	116	347	219	164	251
4:15 PM - 5:15 PM	151	115	354	217	156	253
4:30 PM - 5:30 PM	148	108	338	218	152	225
4:45 PM - 5:45 PM	157	99	375	203	147	258
5:00 PM - 6:00 PM	154	99	367	212	153	249
5:15 PM - 6:15 PM	156	103	372	229	167	261
5:30 PM - 6:30 PM	159	98	384	232	187	276
5:45 PM - 6:45 PM	160	102	372	237	182	259
6:00 PM - 7:00 PM	159	110	403	229	168	287
6:15 PM - 7:15 PM	167	103	409	219	160	277
6:30 PM - 7:30 PM	150	110	391	221	143	270
6:45 PM - 7:45 PM	145	113	383	229	149	268
7:00 PM - 8:00 PM	141	105	358	225	140	227
7:15 PM - 8:15 PM	127	96	337	216	135	225
7:30 PM - 8:30 PM	131	84	319	204	137	208
7:45 PM - 8:45 PM	123	67	306	185	129	196
8:00 PM - 9:00 PM	116	53	290	161	122	197
8:15 PM - 9:15 PM	106	59	265	154	111	175
8:30 PM - 9:30 PM	106	56	268	138	99	178
8:45 PM - 9:45 PM	104	54	251	122	88	162
9:00 PM - 10:00 PM	101	56	241	115	78	152
9:15 PM - 10:15 PM	107	54	258	116	78	165
9:30 PM - 10:30 PM	103	48	256	105	74	164
9:45 PM - 10:45 PM	102	55	248	109	72	163
10:00 PM - 11:00 PM	93	50	217	101	69	145
10:15 PM - 11:15 PM	74	47	178	79	49	118
10:30 PM - 11:30 PM	61	40	149	69	40	98
10:45 PM - 11:45 PM	50	27	123	51	30	76
11:00 PM - 12:00 AM	34	22	111	43	27	76

8768	8105	18635	15560	11371	13843
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Note: KKHD departure is calculated from all vehicles entering and exiting the ir

24-Hour Approach Volumes

Time	Movement							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
0:00 - 0:15	0	0	2			3	1	4
0:15 - 0:30	1	0	2			6	3	8
0:30 - 0:45	0	1	2			4	4	5
0:45 - 1:00	0	0	1			3	4	4
1:00 - 1:15	0	0	1			4	3	5
1:15 - 1:30	0	0	0			0	0	0
1:30 - 1:45	0	0	0			1	1	4
1:45 - 2:00	0	1	0			1	1	2
2:00 - 2:15	0	0	1			1	0	3
2:15 - 2:30	0	0	0			1	0	2
2:30 - 2:45	0	0	0			1	2	2
2:45 - 3:00	0	0	0			1	1	1
3:00 - 3:15	0	0	0			1	1	1
3:15 - 3:30	1	0	1			2	0	6
3:30 - 3:45	0	1	4			4	1	0
3:45 - 4:00	0	0	4			6	1	4
4:00 - 4:15	0	0	4			7	4	1
4:15 - 4:30	0	0	7			10	5	4
4:30 - 4:45	0	0	5			7	1	0
4:45 - 5:00	0	0	5			7	3	1
5:00 - 5:15	0	1	19			26	9	5
5:15 - 5:30	3	2	15			24	13	10
5:30 - 5:45	2	7	18			30	17	6
5:45 - 6:00	0	10	19			20	8	8
6:00 - 6:15	6	3	28			37	13	9
6:15 - 6:30	9	10	27			47	21	3
6:30 - 6:45	4	11	15			25	15	12
6:45 - 7:00	6	19	26			35	21	13
7:00 - 7:15	15	35	39			52	32	22
7:15 - 7:30	31	55	46			71	47	25
7:30 - 7:45	50	105	75			124	104	62
7:45 - 8:00	64	62	40			112	92	59
8:00 - 8:15	20	19	20			39	19	26
8:15 - 8:30	9	16	12			26	15	13
8:30 - 8:45	9	10	16			24	11	12
8:45 - 9:00	6	5	15			27	8	19
9:00 - 9:15	4	5	14			30	20	15
9:15 - 9:30	3	4	16			27	12	9
9:30 - 9:45	8	5	16			28	10	21
9:45 - 10:00	3	3	15			25	17	23
10:00 - 10:15	5	9	11			24	17	13
10:15 - 10:30	5	5	7			16	9	12
10:30 - 10:45	6	13	12			32	20	18
10:45 - 11:00	8	10	12			30	20	13
11:00 - 11:15	6	3	7			24	14	18
11:15 - 11:30	2	14	9			18	13	11
11:30 - 11:45	3	13	16			24	14	12
11:45 - 12:00	9	10	7			23	17	30

24-Hour Approach Volumes

Movement								
Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 - 12:15	12	10	10			26	13	22
12:15 - 12:30	7	9	11			24	9	12
12:30 - 12:45	6	11	13			24	11	21
12:45 - 13:00	5	12	9			25	15	17
13:00 - 13:15	6	43	22			26	20	35
13:15 - 13:30	63	54	24			60	37	47
13:30 - 13:45	41	30	21			59	43	35
13:45 - 14:00	21	13	15			36	15	23
14:00 - 14:15	12	8	11			34	17	28
14:15 - 14:30	12	5	7			26	13	30
14:30 - 14:45	8	6	5			32	19	22
14:45 - 15:00	16	13	14			33	13	18
15:00 - 15:15	15	10	24			61	40	49
15:15 - 15:30	10	17	26			52	37	46
15:30 - 15:45	19	11	22			44	23	41
15:45 - 16:00	10	15	17			51	29	31
16:00 - 16:15	15	19	22			34	14	38
16:15 - 16:30	10	13	19			33	22	28
16:30 - 16:45	6	16	21			41	22	36
16:45 - 17:00	26	22	14			37	16	37
17:00 - 17:15	23	22	24			44	21	33
17:15 - 17:30	16	16	16			48	32	31
17:30 - 17:45	14	15	23			45	29	33
17:45 - 18:00	11	21	12			39	31	40
18:00 - 18:15	13	12	23			40	21	38
18:15 - 18:30	11	15	23			40	27	49
18:30 - 18:45	12	11	19			50	30	40
18:45 - 19:00	3	11	23			37	18	33
19:00 - 19:15	8	8	15			39	26	44
19:15 - 19:30	3	8	12			32	22	40
19:30 - 19:45	5	3	11			28	21	56
19:45 - 20:00	2	1	11			27	19	30
20:00 - 20:15	6	2	8			26	15	28
20:15 - 20:30	11	3	13			34	15	35
20:30 - 20:45	3	0	8			27	18	38
20:45 - 21:00	1	3	10			18	12	25
21:00 - 21:15	1	6	11			26	26	24
21:15 - 21:30	1	4	18			20	11	23
21:30 - 21:45	1	1	8			21	13	18
21:45 - 22:00	0	0	14			24	15	23
22:00 - 22:15	0	0	7			17	15	28
22:15 - 22:30	3	4	6			14	11	20
22:30 - 22:45	3	2	7			18	11	15
22:45 - 23:00	2	1	3			10	8	13
23:00 - 23:15	1	3	4			5	4	10
23:15 - 23:30	1	4	4			3	3	8
23:30 - 23:45	2	1	2			13	12	6
23:45 - 0:00	0	1	1			2	2	5

775	982	1274	0	0	2595	1580	1958
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24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 AM - 1:00 AM	1	1	7	0	0	16	12	21
12:15 AM - 1:15 AM	1	1	6	0	0	17	14	22
12:30 AM - 1:30 AM	0	1	4	0	0	11	11	14
12:45 AM - 1:45 AM	0	0	2	0	0	8	8	13
1:00 AM - 2:00 AM	0	1	1	0	0	6	5	11
1:15 AM - 2:15 AM	0	1	1	0	0	3	2	9
1:30 AM - 2:30 AM	0	1	1	0	0	4	2	11
1:45 AM - 2:45 AM	0	1	1	0	0	4	3	9
2:00 AM - 3:00 AM	0	0	1	0	0	4	3	8
2:15 AM - 3:15 AM	0	0	0	0	0	4	4	6
2:30 AM - 3:30 AM	1	0	1	0	0	5	4	10
2:45 AM - 3:45 AM	1	1	5	0	0	8	3	8
3:00 AM - 4:00 AM	1	1	9	0	0	13	3	11
3:15 AM - 4:15 AM	1	1	13	0	0	19	6	11
3:30 AM - 4:30 AM	0	1	19	0	0	27	11	9
3:45 AM - 4:45 AM	0	0	20	0	0	30	11	9
4:00 AM - 5:00 AM	0	0	21	0	0	31	13	6
4:15 AM - 5:15 AM	0	1	36	0	0	50	18	10
4:30 AM - 5:30 AM	3	3	44	0	0	64	26	16
4:45 AM - 5:45 AM	5	10	57	0	0	87	42	22
5:00 AM - 6:00 AM	5	20	71	0	0	100	47	29
5:15 AM - 6:15 AM	11	22	80	0	0	111	51	33
5:30 AM - 6:30 AM	17	30	92	0	0	134	59	26
5:45 AM - 6:45 AM	19	34	89	0	0	129	57	32
6:00 AM - 7:00 AM	25	43	96	0	0	144	70	37
6:15 AM - 7:15 AM	34	75	107	0	0	159	89	50
6:30 AM - 7:30 AM	56	120	126	0	0	183	115	72
6:45 AM - 7:45 AM	102	214	186	0	0	282	204	122
7:00 AM - 8:00 AM	160	257	200	0	0	359	275	168
7:15 AM - 8:15 AM	165	241	181	0	0	346	262	172
7:30 AM - 8:30 AM	143	202	147	0	0	301	230	160
7:45 AM - 8:45 AM	102	107	88	0	0	201	137	110
8:00 AM - 9:00 AM	44	50	63	0	0	116	53	70
8:15 AM - 9:15 AM	28	36	57	0	0	107	54	59
8:30 AM - 9:30 AM	22	24	61	0	0	108	51	55
8:45 AM - 9:45 AM	21	19	61	0	0	112	50	64
9:00 AM - 10:00 AM	18	17	61	0	0	110	59	68
9:15 AM - 10:15 AM	19	21	58	0	0	104	56	66
9:30 AM - 10:30 AM	21	22	49	0	0	93	53	69
9:45 AM - 10:45 AM	19	30	45	0	0	97	63	66
10:00 AM - 11:00 AM	24	37	42	0	0	102	66	56
10:15 AM - 11:15 AM	25	31	38	0	0	102	63	61
10:30 AM - 11:30 AM	22	40	40	0	0	104	67	60
10:45 AM - 11:45 AM	19	40	44	0	0	96	61	54
11:00 AM - 12:00 PM	20	40	39	0	0	89	58	71
11:15 AM - 12:15 PM	26	47	42	0	0	91	57	75
11:30 AM - 12:30 PM	31	42	44	0	0	97	53	76
11:45 AM - 12:45 PM	34	40	41	0	0	97	50	85

Kamaaha Lp/Kumuiki St and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 PM - 1:00 PM	30	42	43	0	0	99	48	72
12:15 PM - 1:15 PM	24	75	55	0	0	99	55	85
12:30 PM - 1:30 PM	80	120	68	0	0	135	83	120
12:45 PM - 1:45 PM	115	139	76	0	0	170	115	134
1:00 PM - 2:00 PM	131	140	82	0	0	181	115	140
1:15 PM - 2:15 PM	137	105	71	0	0	189	112	133
1:30 PM - 2:30 PM	86	56	54	0	0	155	88	116
1:45 PM - 2:45 PM	53	32	38	0	0	128	64	103
2:00 PM - 3:00 PM	48	32	37	0	0	125	62	98
2:15 PM - 3:15 PM	51	34	50	0	0	152	85	119
2:30 PM - 3:30 PM	49	46	69	0	0	178	109	135
2:45 PM - 3:45 PM	60	51	86	0	0	190	113	154
3:00 PM - 4:00 PM	54	53	89	0	0	208	129	167
3:15 PM - 4:15 PM	54	62	87	0	0	181	103	156
3:30 PM - 4:30 PM	54	58	80	0	0	162	88	138
3:45 PM - 4:45 PM	41	63	79	0	0	159	87	133
4:00 PM - 5:00 PM	57	70	76	0	0	145	74	139
4:15 PM - 5:15 PM	65	73	78	0	0	155	81	134
4:30 PM - 5:30 PM	71	76	75	0	0	170	91	137
4:45 PM - 5:45 PM	79	75	77	0	0	174	98	134
5:00 PM - 6:00 PM	64	74	75	0	0	176	113	137
5:15 PM - 6:15 PM	54	64	74	0	0	172	113	142
5:30 PM - 6:30 PM	49	63	81	0	0	164	108	160
5:45 PM - 6:45 PM	47	59	77	0	0	169	109	167
6:00 PM - 7:00 PM	39	49	88	0	0	167	96	160
6:15 PM - 7:15 PM	34	45	80	0	0	166	101	166
6:30 PM - 7:30 PM	26	38	69	0	0	158	96	157
6:45 PM - 7:45 PM	19	30	61	0	0	136	87	173
7:00 PM - 8:00 PM	18	20	49	0	0	126	88	170
7:15 PM - 8:15 PM	16	14	42	0	0	113	77	154
7:30 PM - 8:30 PM	24	9	43	0	0	115	70	149
7:45 PM - 8:45 PM	22	6	40	0	0	114	67	131
8:00 PM - 9:00 PM	21	8	39	0	0	105	60	126
8:15 PM - 9:15 PM	16	12	42	0	0	105	71	122
8:30 PM - 9:30 PM	6	13	47	0	0	91	67	110
8:45 PM - 9:45 PM	4	14	47	0	0	85	62	90
9:00 PM - 10:00 PM	3	11	51	0	0	91	65	88
9:15 PM - 10:15 PM	2	5	47	0	0	82	54	92
9:30 PM - 10:30 PM	4	5	35	0	0	76	54	89
9:45 PM - 10:45 PM	6	6	34	0	0	73	52	86
10:00 PM - 11:00 PM	8	7	23	0	0	59	45	76
10:15 PM - 11:15 PM	9	10	20	0	0	47	34	58
10:30 PM - 11:30 PM	7	10	18	0	0	36	26	46
10:45 PM - 11:45 PM	6	9	13	0	0	31	27	37
11:00 PM - 12:00 AM	4	9	11	0	0	23	21	29

3093	3918	5073	0	0	10320	6274	7764
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Note: KKHD departure is calculated from all vehicles entering and exiting the intersection

Kealanani Ave and Kamaaha Ave 24-Hour Approach Volumes

15-Min Intervals						
Time	Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 12:15 AM	11	1	14	6	7	23
12:15 AM - 12:30 AM	6	4	2	2	4	7
12:30 AM - 12:45 AM	7	5	3	1	5	9
12:45 AM - 1:00 AM	5	0	1	3	1	5
1:00 AM - 1:15 AM	2	3	2	1	4	4
1:15 AM - 1:30 AM	4	1	5	1	2	8
1:30 AM - 1:45 AM	2	0	4	1	0	5
1:45 AM - 2:00 AM	4	1	0	0	1	4
2:00 AM - 2:15 AM	3	0	3	1	1	6
2:15 AM - 2:30 AM	4	3	2	2	4	5
2:30 AM - 2:45 AM	3	4	2	1	5	5
2:45 AM - 3:00 AM	0	1	3	1	2	3
3:00 AM - 3:15 AM	1	0	2	0	0	3
3:15 AM - 3:30 AM	1	5	2	2	7	3
3:30 AM - 3:45 AM	4	5	6	3	9	9
3:45 AM - 4:00 AM	4	10	5	4	13	9
4:00 AM - 4:15 AM	6	8	1	4	10	5
4:15 AM - 4:30 AM	1	19	3	1	19	3
4:30 AM - 4:45 AM	1	14	1	5	19	1
4:45 AM - 5:00 AM	3	22	2	5	26	4
5:00 AM - 5:15 AM	4	39	4	4	43	6
5:15 AM - 5:30 AM	1	58	11	6	58	7
5:30 AM - 5:45 AM	10	74	9	20	91	12
5:45 AM - 6:00 AM	9	68	13	12	73	16
6:00 AM - 6:15 AM	14	61	7	18	79	17
6:15 AM - 6:30 AM	10	61	5	12	67	12
6:30 AM - 6:45 AM	16	61	2	15	75	15
6:45 AM - 7:00 AM	23	66	12	24	82	28
7:00 AM - 7:15 AM	41	101	16	22	117	42
7:15 AM - 7:30 AM	85	101	36	61	125	79
7:30 AM - 7:45 AM	155	142	56	99	151	113
7:45 AM - 8:00 AM	127	173	91	91	168	140
8:00 AM - 8:15 AM	20	100	33	30	100	28
8:15 AM - 8:30 AM	11	34	11	16	45	18
8:30 AM - 8:45 AM	19	42	18	13	44	28
8:45 AM - 9:00 AM	8	38	12	18	52	17
9:00 AM - 9:15 AM	18	36	8	18	52	17
9:15 AM - 9:30 AM	11	45	10	11	46	15
9:30 AM - 9:45 AM	14	27	10	11	33	18
9:45 AM - 10:00 AM	16	29	14	13	41	25
10:00 AM - 10:15 AM	16	23	13	11	30	26
10:15 AM - 10:30 AM	18	34	17	21	46	27
10:30 AM - 10:45 AM	19	25	28	18	34	37
10:45 AM - 11:00 AM	15	22	9	9	30	20
11:00 AM - 11:15 AM	22	23	20	18	36	31
11:15 AM - 11:30 AM	11	24	16	13	29	20
11:30 AM - 11:45 AM	18	34	14	12	40	24
11:45 AM - 12:00 PM	12	23	19	14	31	28

Kealanani Ave and Kamaaha Ave 24-Hour Approach Volumes

15-Min Intervals						
Time	Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 PM - 12:15 PM	11	13	27	13	25	32
12:15 PM - 12:30 PM	13	22	17	12	29	25
12:30 PM - 12:45 PM	14	17	21	16	27	24
12:45 PM - 1:00 PM	23	25	23	21	37	30
1:00 PM - 1:15 PM	17	27	16	22	39	23
1:15 PM - 1:30 PM	21	17	14	14	28	29
1:30 PM - 1:45 PM	34	30	33	38	52	46
1:45 PM - 2:00 PM	44	45	42	26	52	63
2:00 PM - 2:15 PM	56	55	42	38	74	64
2:15 PM - 2:30 PM	47	67	55	37	82	85
2:30 PM - 2:45 PM	45	75	40	36	92	71
2:45 PM - 3:00 PM	36	34	35	27	52	52
3:00 PM - 3:15 PM	37	38	27	23	44	48
3:15 PM - 3:30 PM	49	34	30	27	52	64
3:30 PM - 3:45 PM	40	46	37	27	55	56
3:45 PM - 4:00 PM	44	42	36	31	53	62
4:00 PM - 4:15 PM	61	60	48	33	71	77
4:15 PM - 4:30 PM	57	40	36	16	42	81
4:30 PM - 4:45 PM	73	32	34	27	48	87
4:45 PM - 5:00 PM	59	45	40	19	50	82
5:00 PM - 5:15 PM	59	43	42	23	53	86
5:15 PM - 5:30 PM	43	31	43	23	40	73
5:30 PM - 5:45 PM	51	46	40	25	63	75
5:45 PM - 6:00 PM	47	42	48	35	64	80
6:00 PM - 6:15 PM	49	44	50	28	61	81
6:15 PM - 6:30 PM	48	31	38	36	56	68
6:30 PM - 6:45 PM	25	28	38	19	47	56
6:45 PM - 7:00 PM	54	41	30	24	58	76
7:00 PM - 7:15 PM	42	28	44	24	36	74
7:15 PM - 7:30 PM	46	28	55	15	36	82
7:30 PM - 7:45 PM	45	23	35	13	33	68
7:45 PM - 8:00 PM	32	22	29	18	38	54
8:00 PM - 8:15 PM	32	23	41	13	29	65
8:15 PM - 8:30 PM	31	16	31	15	28	53
8:30 PM - 8:45 PM	29	13	22	12	23	46
8:45 PM - 9:00 PM	33	12	26	23	26	53
9:00 PM - 9:15 PM	25	25	31	16	36	47
9:15 PM - 9:30 PM	38	14	34	18	29	60
9:30 PM - 9:45 PM	22	17	12	8	20	30
9:45 PM - 10:00 PM	23	14	18	11	18	34
10:00 PM - 10:15 PM	18	11	14	5	17	31
10:15 PM - 10:30 PM	25	9	14	20	21	34
10:30 PM - 10:45 PM	16	10	8	11	20	22
10:45 PM - 11:00 PM	12	8	11	6	16	22
11:00 PM - 11:15 PM	10	12	10	8	19	19
11:15 PM - 11:30 PM	14	5	14	9	10	25
11:30 PM - 11:45 PM	13	4	7	9	12	19
11:45 PM - 12:00 AM	8	2	6	2	4	13

2486	3036	2021	1646	3874	3534
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Kealanani Ave and Kamaaha Ave 24-Hour Traffic Volumes

Time	1-Hour Intervals					
	Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 AM - 1:00 AM	29	10	20	12	17	44
12:15 AM - 1:15 AM	20	12	8	7	14	25
12:30 AM - 1:30 AM	18	9	11	6	12	26
12:45 AM - 1:45 AM	13	4	12	6	7	22
1:00 AM - 2:00 AM	12	5	11	3	7	21
1:15 AM - 2:15 AM	13	2	12	3	4	23
1:30 AM - 2:30 AM	13	4	9	4	6	20
1:45 AM - 2:45 AM	14	8	7	4	11	20
2:00 AM - 3:00 AM	10	8	10	5	12	19
2:15 AM - 3:15 AM	8	8	9	4	11	16
2:30 AM - 3:30 AM	5	10	9	4	14	14
2:45 AM - 3:45 AM	6	11	13	6	18	18
3:00 AM - 4:00 AM	10	20	15	9	29	24
3:15 AM - 4:15 AM	15	28	14	13	39	26
3:30 AM - 4:30 AM	15	42	15	12	51	26
3:45 AM - 4:45 AM	12	51	10	14	61	18
4:00 AM - 5:00 AM	11	63	7	15	74	13
4:15 AM - 5:15 AM	9	94	10	15	107	14
4:30 AM - 5:30 AM	9	133	18	20	146	18
4:45 AM - 5:45 AM	18	193	26	35	218	29
5:00 AM - 6:00 AM	24	239	37	42	265	41
5:15 AM - 6:15 AM	34	261	40	56	301	52
5:30 AM - 6:30 AM	43	264	34	62	310	57
5:45 AM - 6:45 AM	49	251	27	57	294	60
6:00 AM - 7:00 AM	63	249	26	69	303	72
6:15 AM - 7:15 AM	90	289	35	73	341	97
6:30 AM - 7:30 AM	165	329	66	122	399	164
6:45 AM - 7:45 AM	304	410	120	206	475	262
7:00 AM - 8:00 AM	408	517	199	273	561	374
7:15 AM - 8:15 AM	387	516	216	281	544	360
7:30 AM - 8:30 AM	313	449	191	236	464	299
7:45 AM - 8:45 AM	177	349	153	150	357	214
8:00 AM - 9:00 AM	58	214	74	77	241	91
8:15 AM - 9:15 AM	56	150	49	65	193	80
8:30 AM - 9:30 AM	56	161	48	60	194	77
8:45 AM - 9:45 AM	51	146	40	58	183	67
9:00 AM - 10:00 AM	59	137	42	53	172	75
9:15 AM - 10:15 AM	57	124	47	46	150	84
9:30 AM - 10:30 AM	64	113	54	56	150	96
9:45 AM - 10:45 AM	69	111	72	63	151	115
10:00 AM - 11:00 AM	68	104	67	59	140	110
10:15 AM - 11:15 AM	74	104	74	66	146	115
10:30 AM - 11:30 AM	67	94	73	58	129	108
10:45 AM - 11:45 AM	66	103	59	52	135	95
11:00 AM - 12:00 PM	63	104	69	57	136	103
11:15 AM - 12:15 PM	52	94	76	52	125	104
11:30 AM - 12:30 PM	54	92	77	51	125	109
11:45 AM - 12:45 PM	50	75	84	55	112	109

Kealanani Ave and Kamaaha Ave 24-Hour Traffic Volumes

Time	Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 PM - 1:00 PM	61	77	88	62	118	111
12:15 PM - 1:15 PM	67	91	77	71	132	102
12:30 PM - 1:30 PM	75	86	74	73	131	106
12:45 PM - 1:45 PM	95	99	86	95	156	128
1:00 PM - 2:00 PM	116	119	105	100	171	161
1:15 PM - 2:15 PM	155	147	131	116	206	202
1:30 PM - 2:30 PM	181	197	172	139	260	258
1:45 PM - 2:45 PM	192	242	179	137	300	283
2:00 PM - 3:00 PM	184	231	172	138	300	272
2:15 PM - 3:15 PM	165	214	157	123	270	256
2:30 PM - 3:30 PM	167	181	132	113	240	235
2:45 PM - 3:45 PM	162	152	129	104	203	220
3:00 PM - 4:00 PM	170	160	130	108	204	230
3:15 PM - 4:15 PM	194	182	151	118	231	259
3:30 PM - 4:30 PM	202	188	157	107	221	276
3:45 PM - 4:45 PM	235	174	154	107	214	307
4:00 PM - 5:00 PM	250	177	158	95	211	327
4:15 PM - 5:15 PM	248	160	152	85	193	336
4:30 PM - 5:30 PM	234	151	159	92	191	328
4:45 PM - 5:45 PM	212	165	165	90	206	316
5:00 PM - 6:00 PM	200	162	173	106	220	314
5:15 PM - 6:15 PM	190	163	181	111	228	309
5:30 PM - 6:30 PM	195	163	176	124	244	304
5:45 PM - 6:45 PM	169	145	174	118	228	285
6:00 PM - 7:00 PM	176	144	156	107	222	281
6:15 PM - 7:15 PM	169	128	150	103	197	274
6:30 PM - 7:30 PM	167	125	167	82	177	288
6:45 PM - 7:45 PM	187	120	164	76	163	300
7:00 PM - 8:00 PM	165	101	163	70	143	278
7:15 PM - 8:15 PM	155	96	160	59	136	269
7:30 PM - 8:30 PM	140	84	136	59	128	240
7:45 PM - 8:45 PM	124	74	123	58	118	218
8:00 PM - 9:00 PM	125	64	120	63	106	217
8:15 PM - 9:15 PM	118	66	110	66	113	199
8:30 PM - 9:30 PM	125	64	113	69	114	206
8:45 PM - 9:45 PM	118	68	103	65	111	190
9:00 PM - 10:00 PM	108	70	95	53	103	171
9:15 PM - 10:15 PM	101	56	78	42	84	155
9:30 PM - 10:30 PM	88	51	58	44	76	129
9:45 PM - 10:45 PM	82	44	54	47	76	121
10:00 PM - 11:00 PM	71	38	47	42	74	109
10:15 PM - 11:15 PM	63	39	43	45	76	97
10:30 PM - 11:30 PM	52	35	43	34	65	88
10:45 PM - 11:45 PM	49	29	42	32	57	85
11:00 PM - 12:00 AM	45	23	37	28	45	76

9828	12109	7989	6528	15416	13942
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Note: KKHD departure is calculated from all vehicles entering and exiting the intersection

Kamaaha LP/Kuloa Ave and Kamaaha Ave 24-Hour Approach Volumes

15-Minute Increments								
Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 12:15 AM	3	0	3		23	11	3	11
12:15 AM - 12:30 AM	1	1	2		7	14	1	10
12:30 AM - 12:45 AM	2	1	0		9	8	4	7
12:45 AM - 1:00 AM	1	1	1		5	3	6	2
1:00 AM - 1:15 AM	0	0	0		4	10	2	10
1:15 AM - 1:30 AM	0	1	0		8	9	2	8
1:30 AM - 1:45 AM	0	2	1		5	5	5	5
1:45 AM - 2:00 AM	1	0	2		4	4	1	5
2:00 AM - 2:15 AM	0	0	1		6	5	3	5
2:15 AM - 2:30 AM	0	0	1		5	1	0	1
2:30 AM - 2:45 AM	0	2	0		5	5	0	3
2:45 AM - 3:00 AM	1	1	0		3	5	4	5
3:00 AM - 3:15 AM	0	0	1		3	2	2	2
3:15 AM - 3:30 AM	2	0	1		3	3	5	2
3:30 AM - 3:45 AM	1	1	0		9	3	5	3
3:45 AM - 4:00 AM	2	0	0		9	0	3	0
4:00 AM - 4:15 AM	4	0	0		5	2	6	0
4:15 AM - 4:30 AM	3	0	1		3	2	12	2
4:30 AM - 4:45 AM	2	2	2		1	3	22	3
4:45 AM - 5:00 AM	2	0	2		4	4	19	4
5:00 AM - 5:15 AM	9	0	3		6	6	58	3
5:15 AM - 5:30 AM	11	3	3		7	10	60	12
5:30 AM - 5:45 AM	7	1	4		12	9	73	10
5:45 AM - 6:00 AM	4	4	1		16	15	72	11
6:00 AM - 6:15 AM	7	6	1		17	22	65	20
6:15 AM - 6:30 AM	8	3	4		12	19	65	15
6:30 AM - 6:45 AM	12	9	5		15	15	75	13
6:45 AM - 7:00 AM	19	11	8		28	28	82	29
7:00 AM - 7:15 AM	33	30	16		42	48	110	53
7:15 AM - 7:30 AM	53	61	20		79	90	140	97
7:30 AM - 7:45 AM	110	89	46		113	114	195	169
7:45 AM - 8:00 AM	68	29	20		140	102	171	127
8:00 AM - 8:15 AM	20	10	8		28	34	69	33
8:15 AM - 8:30 AM	14	5	3		18	29	35	27
8:30 AM - 8:45 AM	6	5	1		28	26	49	21
8:45 AM - 9:00 AM	10	3	5		17	17	40	18
9:00 AM - 9:15 AM	8	3	2		17	15	40	14
9:15 AM - 9:30 AM	4	6	5		15	22	48	20
9:30 AM - 9:45 AM	7	4	3		18	26	47	24
9:45 AM - 10:00 AM	9	5	2		25	29	32	28
10:00 AM - 10:15 AM	8	5	2		26	16	30	14
10:15 AM - 10:30 AM	9	4	3		27	24	37	25
10:30 AM - 10:45 AM	5	9	9		37	29	32	21
10:45 AM - 11:00 AM	6	0	1		20	26	29	25
11:00 AM - 11:15 AM	12	4	2		31	23	35	25
11:15 AM - 11:30 AM	7	3	2		20	23	29	20
11:30 AM - 11:45 AM	12	3	4		24	28	26	27
11:45 AM - 12:00 PM	10	8	8		28	29	30	28

Kamaaha LP/Kuloa Ave and Kamaaha Ave 24-Hour Approach Volumes

15-Minute Increments								
Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 PM - 12:15 PM	18	2	3		32	29	37	30
12:15 PM - 12:30 PM	6	5	1		25	23	32	26
12:30 PM - 12:45 PM	9	4	1		24	41	23	40
12:45 PM - 1:00 PM	6	5	3		30	28	31	28
1:00 PM - 1:15 PM	5	6	4		23	36	25	34
1:15 PM - 1:30 PM	11	8	8		29	39	36	35
1:30 PM - 1:45 PM	18	28	5		46	56	62	43
1:45 PM - 2:00 PM	20	41	16		63	71	71	45
2:00 PM - 2:15 PM	102	35	12		64	73	47	112
2:15 PM - 2:30 PM	47	29	17		85	85	99	95
2:30 PM - 2:45 PM	29	22	5		71	70	96	68
2:45 PM - 3:00 PM	15	13	3		52	48	50	42
3:00 PM - 3:15 PM	13	7	5		48	58	62	51
3:15 PM - 3:30 PM	16	7	7		64	46	36	46
3:30 PM - 3:45 PM	15	15	9		56	73	50	66
3:45 PM - 4:00 PM	14	12	1		62	48	42	44
4:00 PM - 4:15 PM	27	19	6		77	66	49	69
4:15 PM - 4:30 PM	20	16	7		81	75	59	76
4:30 PM - 4:45 PM	23	19	8		87	86	55	79
4:45 PM - 5:00 PM	21	16	9		82	81	50	77
5:00 PM - 5:15 PM	23	18	9		86	102	57	96
5:15 PM - 5:30 PM	24	20	9		73	91	54	84
5:30 PM - 5:45 PM	24	18	5		75	82	57	74
5:45 PM - 6:00 PM	19	8	4		80	75	49	77
6:00 PM - 6:15 PM	12	4	11		81	69	46	70
6:15 PM - 6:30 PM	12	5	8		68	61	38	66
6:30 PM - 6:45 PM	6	14	6		56	69	61	59
6:45 PM - 7:00 PM	10	9	9		76	65	47	56
7:00 PM - 7:15 PM	7	10	4		74	74	34	64
7:15 PM - 7:30 PM	5	5	11		82	70	23	65
7:30 PM - 7:45 PM	6	6	6		68	80	35	68
7:45 PM - 8:00 PM	8	9	12		54	63	21	57
8:00 PM - 8:15 PM	7	8	9		65	54	26	48
8:15 PM - 8:30 PM	2	7	8		53	52	25	49
8:30 PM - 8:45 PM	3	7	7		46	46	28	47
8:45 PM - 9:00 PM	5	4	2		53	50	19	44
9:00 PM - 9:15 PM	3	7	9		47	40	21	30
9:15 PM - 9:30 PM	3	7	9		60	54	18	48
9:30 PM - 9:45 PM	3	3	4		30	33	16	33
9:45 PM - 10:00 PM	2	7	6		34	45	15	38
10:00 PM - 10:15 PM	5	3	2		31	30	17	27
10:15 PM - 10:30 PM	3	1	3		34	34	23	29
10:30 PM - 10:45 PM	4	2	2		22	34	14	34
10:45 PM - 11:00 PM	2	2	1		22	20	9	18
11:00 PM - 11:15 PM	2	4	0		19	25	9	20
11:15 PM - 11:30 PM	2	3	1		25	18	8	15
11:30 PM - 11:45 PM	2	1	3		19	15	4	13
11:45 PM - 12:00 AM	1	2	2		13	15	8	11

1153	838	501	0	3534	3571	3673	3463
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Kamaaha Lp/Kuloa Ave and Kamaaha Ave 24-Hour Traffic Volumes

Time	Hour Increments							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 1:00 AM	7	3	6	0	44	36	14	30
12:15 AM - 1:15 AM	4	3	3	0	25	35	13	29
12:30 AM - 1:30 AM	3	3	1	0	26	30	14	27
12:45 AM - 1:45 AM	1	4	2	0	22	27	15	25
1:00 AM - 2:00 AM	1	3	3	0	21	28	10	28
1:15 AM - 2:15 AM	1	3	4	0	23	23	11	23
1:30 AM - 2:30 AM	1	2	5	0	20	15	9	16
1:45 AM - 2:45 AM	1	2	4	0	20	15	4	14
2:00 AM - 3:00 AM	1	3	2	0	19	16	7	14
2:15 AM - 3:15 AM	1	3	2	0	16	13	6	11
2:30 AM - 3:30 AM	3	3	2	0	14	15	11	12
2:45 AM - 3:45 AM	4	2	2	0	18	13	16	12
3:00 AM - 4:00 AM	5	1	2	0	24	8	15	7
3:15 AM - 4:15 AM	9	1	1	0	26	8	19	5
3:30 AM - 4:30 AM	10	1	1	0	26	7	26	5
3:45 AM - 4:45 AM	11	2	3	0	18	7	43	5
4:00 AM - 5:00 AM	11	2	5	0	13	11	59	9
4:15 AM - 5:15 AM	16	2	8	0	14	15	111	12
4:30 AM - 5:30 AM	24	5	10	0	18	23	159	22
4:45 AM - 5:45 AM	29	4	12	0	29	29	210	29
5:00 AM - 6:00 AM	31	8	11	0	41	40	263	36
5:15 AM - 6:15 AM	29	14	9	0	52	56	270	53
5:30 AM - 6:30 AM	26	14	10	0	57	65	275	56
5:45 AM - 6:45 AM	31	22	11	0	60	71	277	59
6:00 AM - 7:00 AM	46	29	18	0	72	84	287	77
6:15 AM - 7:15 AM	72	53	33	0	97	110	332	110
6:30 AM - 7:30 AM	117	111	49	0	164	181	407	192
6:45 AM - 7:45 AM	215	191	90	0	262	280	527	348
7:00 AM - 8:00 AM	264	209	102	0	374	354	616	446
7:15 AM - 8:15 AM	251	189	94	0	360	340	575	426
7:30 AM - 8:30 AM	212	133	77	0	299	279	470	356
7:45 AM - 8:45 AM	108	49	32	0	214	191	324	208
8:00 AM - 9:00 AM	50	23	17	0	91	106	193	99
8:15 AM - 9:15 AM	38	16	11	0	80	87	164	80
8:30 AM - 9:30 AM	28	17	13	0	77	80	177	73
8:45 AM - 9:45 AM	29	16	15	0	67	80	175	76
9:00 AM - 10:00 AM	28	18	12	0	75	92	167	86
9:15 AM - 10:15 AM	28	20	12	0	84	93	157	86
9:30 AM - 10:30 AM	33	18	10	0	96	95	146	91
9:45 AM - 10:45 AM	31	23	16	0	115	98	131	88
10:00 AM - 11:00 AM	28	18	15	0	110	95	128	85
10:15 AM - 11:15 AM	32	17	15	0	115	102	133	96
10:30 AM - 11:30 AM	30	16	14	0	108	101	125	91
10:45 AM - 11:45 AM	37	10	9	0	95	100	119	97
11:00 AM - 12:00 PM	41	18	16	0	103	103	120	100
11:15 AM - 12:15 PM	47	16	17	0	104	109	122	105
11:30 AM - 12:30 PM	46	18	16	0	109	109	125	111
11:45 AM - 12:45 PM	43	19	13	0	109	122	122	124

Kamaaha Lp/Kuloa Ave and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg								
	Approach	Departure	Approach	Departure*	Approach	Departure	Approach	Departure							
12:00 PM - 1:00 PM	39	16	8	0	111	121	123	124							
12:15 PM - 1:15 PM	26	20	9	0	102	128	111	128							
12:30 PM - 1:30 PM	31	23	16	0	106	144	115	137							
12:45 PM - 1:45 PM	40	47	20	0	128	159	154	140							
1:00 PM - 2:00 PM	54	83	33	0	161	202	194	157							
1:15 PM - 2:15 PM	151	112	41	0	202	239	216	235							
1:30 PM - 2:30 PM	187	133	50	0	258	285	279	295							
1:45 PM - 2:45 PM	198	127	50	0	283	299	313	320							
2:00 PM - 3:00 PM	193	99	37	0	272	276	292	317							
2:15 PM - 3:15 PM	104	71	30	0	256	261	307	256							
2:30 PM - 3:30 PM	73	49	20	0	235	222	244	207							
2:45 PM - 3:45 PM	59	42	24	0	220	225	198	205							
3:00 PM - 4:00 PM	58	41	22	0	230	225	190	207							
3:15 PM - 4:15 PM	72	53	23	0	259	233	177	225							
3:30 PM - 4:30 PM	76	62	23	0	276	262	200	255							
3:45 PM - 4:45 PM	84	66	22	0	307	275	205	268							
4:00 PM - 5:00 PM	91	70	30	0	327	308	213	301							
4:15 PM - 5:15 PM	87	69	33	0	336	344	221	328							
4:30 PM - 5:30 PM	91	73	35	0	328	360	216	336							
4:45 PM - 5:45 PM	92	72	32	0	316	356	218	331							
5:00 PM - 6:00 PM	90	64	27	0	314	350	217	331							
5:15 PM - 6:15 PM	79	50	29	0	309	317	206	305							
5:30 PM - 6:30 PM	67	35	28	0	304	287	190	287							
5:45 PM - 6:45 PM	49	31	29	0	285	274	194	272							
6:00 PM - 7:00 PM	40	32	34	0	281	264	192	251							
6:15 PM - 7:15 PM	35	38	27	0	274	269	180	245							
6:30 PM - 7:30 PM	28	38	30	0	288	278	165	244							
6:45 PM - 7:45 PM	28	30	30	0	300	289	139	253							
7:00 PM - 8:00 PM	26	30	33	0	278	287	113	254							
7:15 PM - 8:15 PM	26	28	38	0	269	267	105	238							
7:30 PM - 8:30 PM	23	30	35	0	240	249	107	222							
7:45 PM - 8:45 PM	20	31	36	0	218	215	100	201							
8:00 PM - 9:00 PM	17	26	26	0	217	202	98	188							
8:15 PM - 9:15 PM	13	25	26	0	199	188	93	170							
8:30 PM - 9:30 PM	14	25	27	0	206	190	86	169							
8:45 PM - 9:45 PM	14	21	24	0	190	177	74	155							
9:00 PM - 10:00 PM	11	24	28	0	171	172	70	149							
9:15 PM - 10:15 PM	13	20	21	0	155	162	66	146							
9:30 PM - 10:30 PM	13	14	15	0	129	142	71	127							
9:45 PM - 10:45 PM	14	13	13	0	121	143	69	128							
10:00 PM - 11:00 PM	14	8	8	0	109	118	63	108							
10:15 PM - 11:15 PM	11	9	6	0	97	113	55	101							
10:30 PM - 11:30 PM	10	11	4	0	88	97	40	87							
10:45 PM - 11:45 PM	8	10	5	0	85	78	30	66							
11:00 PM - 12:00 AM	7	10	6	0	76	73	29	59							
4590		3338		1978		0		13942		14122		14637		13718	

Note: Mauka departure is calculated from all vehicles entering and exiting the intersection

Kekuilani Lp (Mauka) and Kamaaha Ave 24-hour Approach Volumes

15-minute interval						
Time	Makai Leg		Mauka Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
0:00 - 0:15	5	5	10	7	2	6
0:15 - 0:30	2	5	10	2	0	6
0:30 - 0:45	2	3	8	4	1	5
0:45 - 1:00	1	4	9	3	2	5
1:00 - 1:15	2	5	8	3	2	7
1:15 - 1:30	1	3	5	6	4	2
1:30 - 1:45	2	3	7	3	0	7
1:45 - 2:00	0	0	1	0	0	0
2:00 - 2:15	1	3	7	2	5	3
2:15 - 2:30	3	1	3	4	0	3
2:30 - 2:45	1	1	2	2	2	2
2:45 - 3:00	1	0	2	5	3	4
3:00 - 3:15	3	3	4	3	1	2
3:15 - 3:30	2	1	3	3	2	2
3:30 - 3:45	2	0	5	4	3	3
3:45 - 4:00	2	2	5	5	4	4
4:00 - 4:15	2	0	0	6	3	1
4:15 - 4:30	13	0	2	14	1	3
4:30 - 4:45	9	2	3	21	12	4
4:45 - 5:00	14	1	2	19	4	2
5:00 - 5:15	18	4	6	31	9	9
5:15 - 5:30	24	3	7	44	21	9
5:30 - 5:45	38	4	7	73	27	19
5:45 - 6:00	36	3	4	63	34	10
6:00 - 6:15	50	10	20	79	37	17
6:15 - 6:30	47	8	20	83	33	23
6:30 - 6:45	42	11	18	72	26	13
6:45 - 7:00	50	18	26	80	31	17
7:00 - 7:15	66	29	39	100	36	17
7:15 - 7:30	95	86	88	127	46	11
7:30 - 7:45	126	140	154	174	75	35
7:45 - 8:00	162	128	158	197	40	57
8:00 - 8:15	63	28	42	93	21	24
8:15 - 8:30	33	14	23	48	14	14
8:30 - 8:45	28	8	20	46	11	18
8:45 - 9:00	27	13	22	52	22	20
9:00 - 9:15	20	16	24	34	17	17
9:15 - 9:30	21	8	19	37	1	20
9:30 - 9:45	18	7	22	37	22	17
9:45 - 10:00	16	6	10	28	18	12
10:00 - 10:15	9	16	26	26	20	13
10:15 - 10:30	19	7	12	40	24	8
10:30 - 10:45	23	15	27	38	20	11
10:45 - 11:00	27	6	17	41	11	15
11:00 - 11:15	21	29	32	33	14	20
11:15 - 11:30	17	14	32	29	11	26
11:30 - 11:45	11	15	33	24	7	24
11:45 - 12:00	17	18	29	32	22	12

Kekuilani Lp (Mauka) and Kamaaha Ave 24-hour Approach Volumes

15-minute interval						
Time	Makai Leg		Mauka Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 - 12:15	17	14	24	33	17	14
12:15 - 12:30	18	17	28	31	14	16
12:30 - 12:45	13	12	26	29	19	18
12:45 - 13:00	16	16	27	27	13	19
13:00 - 13:15	13	14	29	36	19	21
13:15 - 13:30	17	20	35	36	19	22
13:30 - 13:45	26	32	47	42	30	21
13:45 - 14:00	62	30	46	89	36	21
14:00 - 14:15	46	59	82	63	27	32
14:15 - 14:30	51	86	101	62	20	31
14:30 - 14:45	79	40	60	102	34	32
14:45 - 15:00	27	30	57	46	25	27
15:00 - 15:15	29	36	47	42	12	20
15:15 - 15:30	38	41	65	53	15	38
15:30 - 15:45	39	56	81	59	13	42
15:45 - 16:00	42	33	56	57	24	27
16:00 - 16:15	34	34	75	61	28	45
16:15 - 16:30	25	41	69	45	26	34
16:30 - 16:45	27	59	77	47	24	19
16:45 - 17:00	27	55	95	47	19	54
17:00 - 17:15	29	39	63	51	23	28
17:15 - 17:30	27	53	80	44	18	36
17:30 - 17:45	22	38	74	51	33	46
17:45 - 18:00	31	30	64	54	26	53
18:00 - 18:15	31	42	80	50	17	49
18:15 - 18:30	29	33	68	59	31	44
18:30 - 18:45	28	33	64	51	30	41
18:45 - 19:00	24	38	85	52	30	54
19:00 - 19:15	22	40	73	46	31	32
19:15 - 19:30	18	24	54	30	17	37
19:30 - 19:45	24	30	50	41	15	32
19:45 - 20:00	15	30	51	34	21	30
20:00 - 20:15	19	22	41	36	16	25
20:15 - 20:30	14	15	47	31	15	43
20:30 - 20:45	11	24	38	14	4	17
20:45 - 21:00	12	28	52	21	10	27
21:00 - 21:15	19	18	42	31	17	30
21:15 - 21:30	10	24	44	18	9	23
21:30 - 21:45	10	21	47	20	8	34
21:45 - 22:00	11	23	39	22	12	19
22:00 - 22:15	12	13	32	24	7	19
22:15 - 22:30	5	18	35	16	11	22
22:30 - 22:45	7	16	29	13	8	17
22:45 - 23:00	9	14	18	16	5	9
23:00 - 23:15	4	11	20	8	4	13
23:15 - 23:30	5	7	17	8	4	11
23:30 - 23:45	2	8	19	4	4	13
23:45 - 0:00	0	7	19	3	5	15

2288	2130	3505	3732	1586	1951
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Kekuilani Lp (Mauka) and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 1:00 AM	10	17	37	16	5	22
12:15 AM - 1:15 AM	7	17	35	12	5	23
12:30 AM - 1:30 AM	6	15	30	16	9	19
12:45 AM - 1:45 AM	6	15	29	15	8	21
1:00 AM - 2:00 AM	5	11	21	12	6	16
1:15 AM - 2:15 AM	4	9	20	11	9	12
1:30 AM - 2:30 AM	6	7	18	9	5	13
1:45 AM - 2:45 AM	5	5	13	8	7	8
2:00 AM - 3:00 AM	6	5	14	13	10	12
2:15 AM - 3:15 AM	8	5	11	14	6	11
2:30 AM - 3:30 AM	7	5	11	13	8	10
2:45 AM - 3:45 AM	8	4	14	15	9	11
3:00 AM - 4:00 AM	9	6	17	15	10	11
3:15 AM - 4:15 AM	8	3	13	18	12	10
3:30 AM - 4:30 AM	19	2	12	29	11	11
3:45 AM - 4:45 AM	26	4	10	46	20	12
4:00 AM - 5:00 AM	38	3	7	60	20	10
4:15 AM - 5:15 AM	54	7	13	85	26	18
4:30 AM - 5:30 AM	65	10	18	115	46	24
4:45 AM - 5:45 AM	94	12	22	167	61	39
5:00 AM - 6:00 AM	116	14	24	211	91	47
5:15 AM - 6:15 AM	148	20	38	259	119	55
5:30 AM - 6:30 AM	171	25	51	298	131	69
5:45 AM - 6:45 AM	175	32	62	297	130	63
6:00 AM - 7:00 AM	189	47	84	314	127	70
6:15 AM - 7:15 AM	205	66	103	335	126	70
6:30 AM - 7:30 AM	253	144	171	379	139	58
6:45 AM - 7:45 AM	337	273	307	481	188	80
7:00 AM - 8:00 AM	449	383	439	598	197	120
7:15 AM - 8:15 AM	446	382	442	591	182	127
7:30 AM - 8:30 AM	384	310	377	512	150	130
7:45 AM - 8:45 AM	286	178	243	384	86	113
8:00 AM - 9:00 AM	151	63	107	239	68	76
8:15 AM - 9:15 AM	108	51	89	180	64	69
8:30 AM - 9:30 AM	96	45	85	169	51	75
8:45 AM - 9:45 AM	86	44	87	160	62	74
9:00 AM - 10:00 AM	75	37	75	136	58	66
9:15 AM - 10:15 AM	64	37	77	128	61	62
9:30 AM - 10:30 AM	62	36	70	131	84	50
9:45 AM - 10:45 AM	67	44	75	132	82	44
10:00 AM - 11:00 AM	78	44	82	145	75	47
10:15 AM - 11:15 AM	90	57	88	152	69	54
10:30 AM - 11:30 AM	88	64	108	141	56	72
10:45 AM - 11:45 AM	76	64	114	127	43	85
11:00 AM - 12:00 PM	66	76	126	118	54	82
11:15 AM - 12:15 PM	62	61	118	118	57	76
11:30 AM - 12:30 PM	63	64	114	120	60	66
11:45 AM - 12:45 PM	65	61	107	125	72	60

Kekuilani Lp (Mauka) and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 PM - 1:00 PM	64	59	105	120	63	67
12:15 PM - 1:15 PM	60	59	110	123	65	74
12:30 PM - 1:30 PM	59	62	117	128	70	80
12:45 PM - 1:45 PM	72	82	138	141	81	83
1:00 PM - 2:00 PM	118	96	157	203	104	85
1:15 PM - 2:15 PM	151	141	210	230	112	96
1:30 PM - 2:30 PM	185	207	276	256	113	105
1:45 PM - 2:45 PM	238	215	289	316	117	116
2:00 PM - 3:00 PM	203	215	300	273	106	122
2:15 PM - 3:15 PM	186	192	265	252	91	110
2:30 PM - 3:30 PM	173	147	229	243	86	117
2:45 PM - 3:45 PM	133	163	250	200	65	127
3:00 PM - 4:00 PM	148	166	249	211	64	127
3:15 PM - 4:15 PM	153	164	277	230	80	152
3:30 PM - 4:30 PM	140	164	281	222	91	148
3:45 PM - 4:45 PM	128	167	277	210	102	125
4:00 PM - 5:00 PM	113	189	316	200	97	152
4:15 PM - 5:15 PM	108	194	304	190	92	135
4:30 PM - 5:30 PM	110	206	315	189	84	137
4:45 PM - 5:45 PM	105	185	312	193	93	164
5:00 PM - 6:00 PM	109	160	281	200	100	163
5:15 PM - 6:15 PM	111	163	298	199	94	184
5:30 PM - 6:30 PM	113	143	286	214	107	192
5:45 PM - 6:45 PM	119	138	276	214	104	187
6:00 PM - 7:00 PM	112	146	297	212	108	188
6:15 PM - 7:15 PM	103	144	290	208	122	171
6:30 PM - 7:30 PM	92	135	276	179	108	164
6:45 PM - 7:45 PM	88	132	262	169	93	155
7:00 PM - 8:00 PM	79	124	228	151	84	131
7:15 PM - 8:15 PM	76	106	196	141	69	124
7:30 PM - 8:30 PM	72	97	189	142	67	130
7:45 PM - 8:45 PM	59	91	177	115	56	115
8:00 PM - 9:00 PM	56	89	178	102	45	112
8:15 PM - 9:15 PM	56	85	179	97	46	117
8:30 PM - 9:30 PM	52	94	176	84	40	97
8:45 PM - 9:45 PM	51	91	185	90	44	114
9:00 PM - 10:00 PM	50	86	172	91	46	106
9:15 PM - 10:15 PM	43	81	162	84	36	95
9:30 PM - 10:30 PM	38	75	153	82	38	94
9:45 PM - 10:45 PM	35	70	135	75	38	77
10:00 PM - 11:00 PM	33	61	114	69	31	67
10:15 PM - 11:15 PM	25	59	102	53	28	61
10:30 PM - 11:30 PM	25	48	84	45	21	50
10:45 PM - 11:45 PM	20	40	74	36	17	46
11:00 PM - 12:00 AM	11	33	75	23	17	52

9122	8448	13850	14874	6310	7687
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Kekuilani Lp (Makai) and Kamaaha Ave 24-Hour Approach Volumes

Time	Movement							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
0:00 - 0:15	0	0	8	0	0		0	
0:15 - 0:30	1	1	7	2	1		1	
0:30 - 0:45	1	1	4	3	1		2	
0:45 - 1:00	0	1	1	4	3		2	
1:00 - 1:15	0	0	3	3	0		3	
1:15 - 1:30	0	1	6	0	0		0	
1:30 - 1:45	0	0	2	0	0		0	
1:45 - 2:00	1	0	1	1	0		0	
2:00 - 2:15	2	0	1	0	0		0	
2:15 - 2:30	1	0	1	1	0		0	
2:30 - 2:45	0	1	2	1	0		1	
2:45 - 3:00	1	0	0	1	0		0	
3:00 - 3:15	0	1	0	0	0		1	
3:15 - 3:30	0	0	1	1	0		3	
3:30 - 3:45	0	0	0	3	0		2	
3:45 - 4:00	3	0	1	3	2		0	
4:00 - 4:15	0	0	2	7	2		5	
4:15 - 4:30	1	0	0	10	4		4	
4:30 - 4:45	4	0	2	6	2		1	
4:45 - 5:00	4	0	2	18	6		8	
5:00 - 5:15	7	1	4	17	7		7	
5:15 - 5:30	11	1	5	36	14		14	
5:30 - 5:45	12	5	6	33	15		11	
5:45 - 6:00	13	4	7	45	21		19	
6:00 - 6:15	7	6	4	32	17		16	
6:15 - 6:30	12	2	6	41	12		19	
6:30 - 6:45	14	6	9	43	13		22	
6:45 - 7:00	33	34	27	72	27		28	
7:00 - 7:15	45	45	48	64	19		18	
7:15 - 7:30	80	97	93	92	28		25	
7:30 - 7:45	115	126	125	134	47		43	
7:45 - 8:00	113	122	107	125	46		32	
8:00 - 8:15	19	16	16	34	14		13	
8:15 - 8:30	8	12	13	37	20		19	
8:30 - 8:45	13	10	15	31	13		13	
8:45 - 9:00	15	6	11	22	6		8	
9:00 - 9:15	8	14	8	29	19		13	
9:15 - 9:30	11	2	11	27	7		13	
9:30 - 9:45	11	8	11	16	8		4	
9:45 - 10:00	12	6	14	27	9		8	
10:00 - 10:15	9	7	15	19	9		8	
10:15 - 10:30	9	2	6	12	1		6	
10:30 - 10:45	11	7	16	19	4		9	
10:45 - 11:00	6	6	15	18	6		9	
11:00 - 11:15	11	7	10	22	6		11	
11:15 - 11:30	9	7	10	20	8		7	
11:30 - 11:45	11	7	15	14	2		6	
11:45 - 12:00	6	7	16	13	8		2	

Kekuilani Lp (Makai) and Kamaaha Ave 24-Hour Approach Volumes

Time	Movement							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 - 12:15	7	7	19	15	4		6	
12:15 - 12:30	8	7	15	11	4		5	
12:30 - 12:45	6	10	16	19	8		10	
12:45 - 13:00	8	10	27	22	10		14	
13:00 - 13:15	14	33	45	24	10		16	
13:15 - 13:30	71	78	80	55	37		11	
13:30 - 13:45	86	44	51	93	10		10	
13:45 - 14:00	23	22	38	27	4		9	
14:00 - 14:15	21	14	22	29	8		15	
14:15 - 14:30	15	12	16	32	10		12	
14:30 - 14:45	14	16	23	23	9		8	
14:45 - 15:00	15	17	17	19	4		18	
15:00 - 15:15	75	14	27	61	9		14	
15:15 - 15:30	39	14	33	50	13		16	
15:30 - 15:45	29	15	30	27	13		7	
15:45 - 16:00	23	16	31	29	9		11	
16:00 - 16:15	18	17	26	27	10		15	
16:15 - 16:30	17	18	39	19	8		12	
16:30 - 16:45	16	19	37	29	11		14	
16:45 - 17:00	14	15	45	28	11		12	
17:00 - 17:15	15	19	41	26	17		16	
17:15 - 17:30	11	15	42	30	13		11	
17:30 - 17:45	21	23	45	30	11		17	
17:45 - 18:00	12	14	38	27	7		19	
18:00 - 18:15	16	11	47	32	16		11	
18:15 - 18:30	17	15	29	26	16		14	
18:30 - 18:45	14	14	36	29	13		17	
18:45 - 19:00	12	11	23	24	9		17	
19:00 - 19:15	12	10	21	21	6		12	
19:15 - 19:30	11	11	28	12	4		8	
19:30 - 19:45	10	8	30	15	5		11	
19:45 - 20:00	8	9	22	14	7		10	
20:00 - 20:15	10	9	24	12	7		14	
20:15 - 20:30	8	9	27	19	6		7	
20:30 - 20:45	7	5	22	8	5		6	
20:45 - 21:00	11	12	20	11	7		7	
21:00 - 21:15	9	7	18	14	5		7	
21:15 - 21:30	11	14	40	11	6		6	
21:30 - 21:45	5	3	20	10	3		5	
21:45 - 22:00	3	2	22	8	3		4	
22:00 - 22:15	5	9	16	8	4		6	
22:15 - 22:30	4	6	19	9	4		6	
22:30 - 22:45	0	3	16	2	2		1	
22:45 - 23:00	0	0	7	4	1		5	
23:00 - 23:15	0	0	5	4	3		1	
23:15 - 23:30	0	4	8	2	1		2	
23:30 - 23:45	0	2	4	4	5		0	
23:45 - 0:00	0	1	7	2	1		2	

14:1	1223	2001	2211	816	0	913	0
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Kekuilani Lp (Makai) and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 AM - 1:00 AM	2	3	20	9	5	0	5	0
12:15 AM - 1:15 AM	2	3	15	12	5	0	8	0
12:30 AM - 1:30 AM	1	3	14	10	4	0	7	0
12:45 AM - 1:45 AM	0	2	12	7	3	0	5	0
1:00 AM - 2:00 AM	1	1	12	4	0	0	3	0
1:15 AM - 2:15 AM	3	1	10	1	0	0	0	0
1:30 AM - 2:30 AM	4	0	5	2	0	0	0	0
1:45 AM - 2:45 AM	4	1	5	3	0	0	1	0
2:00 AM - 3:00 AM	4	1	4	3	0	0	1	0
2:15 AM - 3:15 AM	2	2	3	3	0	0	2	0
2:30 AM - 3:30 AM	1	2	3	3	0	0	5	0
2:45 AM - 3:45 AM	1	1	1	5	0	0	6	0
3:00 AM - 4:00 AM	3	1	2	7	2	0	6	0
3:15 AM - 4:15 AM	3	0	4	14	4	0	10	0
3:30 AM - 4:30 AM	4	0	3	23	8	0	11	0
3:45 AM - 4:45 AM	8	0	5	26	10	0	10	0
4:00 AM - 5:00 AM	9	0	6	41	14	0	18	0
4:15 AM - 5:15 AM	16	1	8	51	19	0	20	0
4:30 AM - 5:30 AM	26	2	13	77	29	0	30	0
4:45 AM - 5:45 AM	34	7	17	104	42	0	40	0
5:00 AM - 6:00 AM	43	11	22	131	57	0	51	0
5:15 AM - 6:15 AM	43	16	22	146	67	0	60	0
5:30 AM - 6:30 AM	44	17	23	151	65	0	65	0
5:45 AM - 6:45 AM	46	18	26	161	63	0	76	0
6:00 AM - 7:00 AM	71	48	46	188	69	0	85	0
6:15 AM - 7:15 AM	109	87	90	220	71	0	87	0
6:30 AM - 7:30 AM	177	182	177	271	87	0	93	0
6:45 AM - 7:45 AM	279	302	293	362	121	0	114	0
7:00 AM - 8:00 AM	359	390	373	415	140	0	118	0
7:15 AM - 8:15 AM	333	361	341	385	135	0	113	0
7:30 AM - 8:30 AM	261	276	261	330	127	0	107	0
7:45 AM - 8:45 AM	161	160	151	227	93	0	77	0
8:00 AM - 9:00 AM	59	44	55	124	53	0	53	0
8:15 AM - 9:15 AM	48	42	47	119	58	0	53	0
8:30 AM - 9:30 AM	51	32	45	109	45	0	47	0
8:45 AM - 9:45 AM	46	30	41	94	40	0	38	0
9:00 AM - 10:00 AM	42	30	44	99	43	0	38	0
9:15 AM - 10:15 AM	43	23	51	89	33	0	33	0
9:30 AM - 10:30 AM	41	23	46	74	27	0	26	0
9:45 AM - 10:45 AM	41	22	51	77	23	0	31	0
10:00 AM - 11:00 AM	35	22	52	68	20	0	32	0
10:15 AM - 11:15 AM	37	22	47	71	17	0	35	0
10:30 AM - 11:30 AM	37	27	51	79	24	0	36	0
10:45 AM - 11:45 AM	37	27	50	74	22	0	33	0
11:00 AM - 12:00 PM	37	28	51	69	24	0	26	0
11:15 AM - 12:15 PM	33	28	60	62	22	0	21	0
11:30 AM - 12:30 PM	32	28	65	53	18	0	19	0
11:45 AM - 12:45 PM	27	31	66	58	24	0	23	0

Kekuilani Lp (Makai) and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 PM - 1:00 PM	29	34	77	67	26	0	35	0
12:15 PM - 1:15 PM	36	60	103	76	32	0	45	0
12:30 PM - 1:30 PM	99	131	168	120	65	0	51	0
12:45 PM - 1:45 PM	179	165	203	194	67	0	51	0
1:00 PM - 2:00 PM	194	177	214	199	61	0	46	0
1:15 PM - 2:15 PM	201	158	191	204	59	0	45	0
1:30 PM - 2:30 PM	145	92	127	181	32	0	46	0
1:45 PM - 2:45 PM	73	64	99	111	31	0	44	0
2:00 PM - 3:00 PM	65	59	78	103	31	0	53	0
2:15 PM - 3:15 PM	119	59	83	135	32	0	52	0
2:30 PM - 3:30 PM	142	61	100	153	35	0	56	0
2:45 PM - 3:45 PM	157	60	107	157	39	0	55	0
3:00 PM - 4:00 PM	165	59	121	167	44	0	48	0
3:15 PM - 4:15 PM	108	62	120	133	45	0	49	0
3:30 PM - 4:30 PM	87	66	126	102	40	0	45	0
3:45 PM - 4:45 PM	74	70	133	104	38	0	52	0
4:00 PM - 5:00 PM	65	69	147	103	40	0	53	0
4:15 PM - 5:15 PM	62	71	162	102	47	0	54	0
4:30 PM - 5:30 PM	56	68	165	113	52	0	53	0
4:45 PM - 5:45 PM	61	72	173	114	52	0	56	0
5:00 PM - 6:00 PM	59	71	166	113	48	0	63	0
5:15 PM - 6:15 PM	60	63	172	119	47	0	58	0
5:30 PM - 6:30 PM	66	63	159	115	50	0	61	0
5:45 PM - 6:45 PM	59	54	150	114	52	0	61	0
6:00 PM - 7:00 PM	59	51	135	111	54	0	59	0
6:15 PM - 7:15 PM	55	50	109	100	44	0	60	0
6:30 PM - 7:30 PM	49	46	108	86	32	0	54	0
6:45 PM - 7:45 PM	48	40	102	72	24	0	48	0
7:00 PM - 8:00 PM	44	38	101	62	22	0	41	0
7:15 PM - 8:15 PM	42	37	104	53	23	0	43	0
7:30 PM - 8:30 PM	39	35	103	60	25	0	42	0
7:45 PM - 8:45 PM	33	32	95	53	25	0	37	0
8:00 PM - 9:00 PM	36	35	93	50	25	0	34	0
8:15 PM - 9:15 PM	35	33	87	52	23	0	27	0
8:30 PM - 9:30 PM	38	38	100	44	23	0	26	0
8:45 PM - 9:45 PM	37	36	98	46	21	0	25	0
9:00 PM - 10:00 PM	29	26	100	43	17	0	22	0
9:15 PM - 10:15 PM	25	28	98	37	16	0	21	0
9:30 PM - 10:30 PM	18	20	77	35	14	0	21	0
9:45 PM - 10:45 PM	12	20	73	27	13	0	17	0
10:00 PM - 11:00 PM	11	18	58	23	11	0	18	0
10:15 PM - 11:15 PM	6	9	47	19	10	0	13	0
10:30 PM - 11:30 PM	2	7	36	12	7	0	9	0
10:45 PM - 11:45 PM	2	6	24	14	10	0	8	0
11:00 PM - 12:00 AM	0	7	24	12	10	0	5	0

5631	4878	7925	8821	3247	0	3640	0
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Note: KKHD departure is calculated from all vehicles entering and exiting the intersection

Kapolei Pkwy and Kamaaha Ave 24-hour Approach Volumes

Time	15-minute intervals							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
0:00 - 0:15	2	4	1	1	3	0	1	
0:15 - 0:30	1	0	4	2	2	5	0	
0:30 - 0:45	1	3	1	0	2	0	0	
0:45 - 1:00	1	1	0	1	2	0	1	
1:00 - 1:15	1	1	0	0	1	0	0	
1:15 - 1:30	0	0	0	1	1	0	0	
1:30 - 1:45	1	1	1	1	2	2	0	
1:45 - 2:00	1	0	0	2	1	0	1	
2:00 - 2:15	1	1	0	2	3	0	0	
2:15 - 2:30	3	1	1	2	0	1	0	
2:30 - 2:45	1	1	1	0	1	1	0	
2:45 - 3:00	0	0	0	0	0	0	0	
3:00 - 3:15	1	1	1	0	1	1	0	
3:15 - 3:30	2	1	0	1	1	1	0	
3:30 - 3:45	0	0	0	0	0	0	0	
3:45 - 4:00	1	0	0	0	0	1	0	
4:00 - 4:15	2	1	0	2	3	1	0	
4:15 - 4:30	5	1	0	2	1	2	0	
4:30 - 4:45	7	0	0	4	1	4	0	
4:45 - 5:00	7	0	0	0	0	7	0	
5:00 - 5:15	12	1	1	5	3	10	0	
5:15 - 5:30	17	2	1	11	1	6	0	
5:30 - 5:45	20	2	9	15	3	14	0	
5:45 - 6:00	20	1	6	13	5	11	0	
6:00 - 6:15	12	2	5	11	7	10	0	
6:15 - 6:30	23	3	5	16	6	12	0	
6:30 - 6:45	24	5	8	17	11	18	3	
6:45 - 7:00	42	25	29	35	23	22	7	
7:00 - 7:15	60	35	35	38	45	48	11	
7:15 - 7:30	77	81	89	78	77	68	13	
7:30 - 7:45	101	92	159	118	77	79	49	
7:45 - 8:00	76	71	126	149	91	54	74	
8:00 - 8:15	15	11	17	17	10	20	26	
8:15 - 8:30	10	8	7	12	9	10	11	
8:30 - 8:45	5	8	9	5	6	5	2	
8:45 - 9:00	4	4	8	8	4	6	5	
9:00 - 9:15	7	4	8	9	8	12	12	
9:15 - 9:30	15	4	6	10	3	12	5	
9:30 - 9:45	8	4	7	6	6	9	4	
9:45 - 10:00	8	6	5	8	8	4	2	
10:00 - 10:15	9	6	7	12	9	9	6	
10:15 - 10:30	8	7	7	9	9	9	2	
10:30 - 10:45	7	9	11	9	6	10	5	
10:45 - 11:00	13	5	4	9	12	11	2	
11:00 - 11:15	9	8	8	11	10	12	2	
11:15 - 11:30	5	9	6	7	8	5	1	
11:30 - 11:45	10	8	6	7	18	12	4	
11:45 - 12:00	7	12	6	6	11	6	5	

Kapolei Pkwy and Kamaaha Ave 24-hour Approach Volumes

15-minute intervals								
Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 - 12:15	12	6	10	9	5	15	6	
12:15 - 12:30	11	13	8	7	13	9	4	
12:30 - 12:45	10	7	7	12	11	13	1	
12:45 - 13:00	6	4	7	5	11	14	6	
13:00 - 13:15	10	10	9	9	12	11	2	
13:15 - 13:30	9	6	13	13	6	13	4	
13:30 - 13:45	17	12	18	43	51	27	6	
13:45 - 14:00	15	15	22	31	24	15	10	
14:00 - 14:15	20	42	62	25	38	20	4	
14:15 - 14:30	107	60	71	93	51	79	44	
14:30 - 14:45	55	32	43	57	31	46	54	
14:45 - 15:00	18	12	23	22	26	21	15	
15:00 - 15:15	13	10	28	28	20	19	13	
15:15 - 15:30	14	25	23	31	27	18	14	
15:30 - 15:45	44	27	25	51	37	30	21	
15:45 - 16:00	13	21	18	24	22	20	17	
16:00 - 16:15	14	12	15	26	24	19	11	
16:15 - 16:30	13	20	18	24	20	9	3	
16:30 - 16:45	11	23	23	12	16	22	5	
16:45 - 17:00	13	24	19	18	23	20	2	
17:00 - 17:15	13	28	24	22	23	15	4	
17:15 - 17:30	14	23	16	11	15	16	6	
17:30 - 17:45	14	16	10	19	26	13	0	
17:45 - 18:00	19	16	13	17	23	18	3	
18:00 - 18:15	13	19	21	15	19	20	3	
18:15 - 18:30	14	15	17	15	18	16	3	
18:30 - 18:45	22	13	14	10	16	14	0	
18:45 - 19:00	12	12	4	15	15	3	0	
19:00 - 19:15	14	22	14	9	18	15	1	
19:15 - 19:30	12	22	15	10	23	12	1	
19:30 - 19:45	4	16	13	6	16	8	6	
19:45 - 20:00	5	14	8	8	13	7	2	
20:00 - 20:15	6	14	9	7	10	8	2	
20:15 - 20:30	4	14	7	5	10	4	5	
20:30 - 20:45	5	8	7	7	7	5	2	
20:45 - 21:00	4	11	7	6	15	6	4	
21:00 - 21:15	4	16	7	10	13	3	0	
21:15 - 21:30	6	6	4	1	4	6	1	
21:30 - 21:45	7	11	4	4	12	4	0	
21:45 - 22:00	5	12	5	6	10	1	0	
22:00 - 22:15	6	7	4	4	10	6	1	
22:15 - 22:30	7	6	4	2	5	7	1	
22:30 - 22:45	3	2	3	2	2	3	0	
22:45 - 23:00	3	9	3	1	5	1	0	
23:00 - 23:15	1	1	1	1	1	1	0	
23:15 - 23:30	1	2	2	3	4	2	0	
23:30 - 23:45	1	5	5	4	6	2	0	
23:45 - 0:00	0	0	3	1	1	2	0	

1306 1171 1311 1433 1319 1188 541 0

Kapolei Pkwy and Kamaaha Ave 24-Hour Traffic Volumes

Time	1-hour interval							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 AM - 1:00 AM	5	8	6	4	9	5	2	0
12:15 AM - 1:15 AM	4	5	5	3	7	5	1	0
12:30 AM - 1:30 AM	3	5	1	2	6	0	1	0
12:45 AM - 1:45 AM	3	3	1	3	6	2	1	0
1:00 AM - 2:00 AM	3	2	1	4	5	2	1	0
1:15 AM - 2:15 AM	3	2	1	6	7	2	1	0
1:30 AM - 2:30 AM	6	3	2	7	6	3	1	0
1:45 AM - 2:45 AM	6	3	2	6	5	2	1	0
2:00 AM - 3:00 AM	5	3	2	4	4	2	0	0
2:15 AM - 3:15 AM	5	3	3	2	2	3	0	0
2:30 AM - 3:30 AM	4	3	2	1	3	3	0	0
2:45 AM - 3:45 AM	3	2	1	1	2	2	0	0
3:00 AM - 4:00 AM	4	2	1	1	2	3	0	0
3:15 AM - 4:15 AM	5	2	0	3	4	3	0	0
3:30 AM - 4:30 AM	8	2	0	4	4	4	0	0
3:45 AM - 4:45 AM	15	2	0	8	5	8	0	0
4:00 AM - 5:00 AM	21	2	0	8	5	14	0	0
4:15 AM - 5:15 AM	31	2	1	11	5	23	0	0
4:30 AM - 5:30 AM	43	3	2	20	5	27	0	0
4:45 AM - 5:45 AM	56	5	11	31	7	37	0	0
5:00 AM - 6:00 AM	69	6	17	44	12	41	0	0
5:15 AM - 6:15 AM	69	7	21	50	16	41	0	0
5:30 AM - 6:30 AM	75	8	25	55	21	47	0	0
5:45 AM - 6:45 AM	79	11	24	57	29	51	3	0
6:00 AM - 7:00 AM	101	35	47	79	47	62	10	0
6:15 AM - 7:15 AM	149	68	77	106	85	100	21	0
6:30 AM - 7:30 AM	203	146	161	168	156	156	34	0
6:45 AM - 7:45 AM	280	233	312	269	222	217	80	0
7:00 AM - 8:00 AM	314	279	409	383	290	249	147	0
7:15 AM - 8:15 AM	269	255	391	362	255	221	162	0
7:30 AM - 8:30 AM	202	182	309	296	187	163	160	0
7:45 AM - 8:45 AM	106	98	159	183	116	89	113	0
8:00 AM - 9:00 AM	34	31	41	42	29	41	44	0
8:15 AM - 9:15 AM	26	24	32	34	27	33	30	0
8:30 AM - 9:30 AM	31	20	31	32	21	35	24	0
8:45 AM - 9:45 AM	34	16	29	33	21	39	26	0
9:00 AM - 10:00 AM	38	18	26	33	25	37	23	0
9:15 AM - 10:15 AM	40	20	25	36	26	34	17	0
9:30 AM - 10:30 AM	33	23	26	35	32	31	14	0
9:45 AM - 10:45 AM	32	28	30	38	32	32	15	0
10:00 AM - 11:00 AM	37	27	29	39	36	39	15	0
10:15 AM - 11:15 AM	37	29	30	38	37	42	11	0
10:30 AM - 11:30 AM	34	31	29	36	36	38	10	0
10:45 AM - 11:45 AM	37	30	24	34	48	40	9	0
11:00 AM - 12:00 PM	31	37	26	31	47	35	12	0
11:15 AM - 12:15 PM	34	35	28	29	42	38	16	0
11:30 AM - 12:30 PM	40	39	30	29	47	42	19	0
11:45 AM - 12:45 PM	40	38	31	34	40	43	16	0

Kapolei Pkwy and Kamaaha Ave 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure*
12:00 PM - 1:00 PM	39	30	32	33	40	51	17	0
12:15 PM - 1:15 PM	37	34	31	33	47	47	13	0
12:30 PM - 1:30 PM	35	27	36	39	40	51	13	0
12:45 PM - 1:45 PM	42	32	47	70	80	65	18	0
1:00 PM - 2:00 PM	51	43	62	96	93	66	22	0
1:15 PM - 2:15 PM	61	75	115	112	119	75	24	0
1:30 PM - 2:30 PM	159	129	173	192	164	141	64	0
1:45 PM - 2:45 PM	197	149	198	206	144	160	112	0
2:00 PM - 3:00 PM	200	146	199	197	146	166	117	0
2:15 PM - 3:15 PM	193	114	165	200	128	165	126	0
2:30 PM - 3:30 PM	100	79	117	138	104	104	96	0
2:45 PM - 3:45 PM	89	74	99	132	110	88	63	0
3:00 PM - 4:00 PM	84	83	94	134	106	87	65	0
3:15 PM - 4:15 PM	85	85	81	132	110	87	63	0
3:30 PM - 4:30 PM	84	80	76	125	103	78	52	0
3:45 PM - 4:45 PM	51	76	74	86	82	70	36	0
4:00 PM - 5:00 PM	51	79	75	80	83	70	21	0
4:15 PM - 5:15 PM	50	95	84	76	82	66	14	0
4:30 PM - 5:30 PM	51	98	82	63	77	73	17	0
4:45 PM - 5:45 PM	54	91	69	70	87	64	12	0
5:00 PM - 6:00 PM	60	83	63	69	87	62	13	0
5:15 PM - 6:15 PM	60	74	60	62	83	67	12	0
5:30 PM - 6:30 PM	60	66	61	66	86	67	9	0
5:45 PM - 6:45 PM	68	63	65	57	76	68	9	0
6:00 PM - 7:00 PM	61	59	56	55	68	53	6	0
6:15 PM - 7:15 PM	62	62	49	49	67	48	4	0
6:30 PM - 7:30 PM	60	69	47	44	72	44	2	0
6:45 PM - 7:45 PM	42	72	46	40	72	38	8	0
7:00 PM - 8:00 PM	35	74	50	33	70	42	10	0
7:15 PM - 8:15 PM	27	66	45	31	62	35	11	0
7:30 PM - 8:30 PM	19	58	37	26	49	27	15	0
7:45 PM - 8:45 PM	20	50	31	27	40	24	11	0
8:00 PM - 9:00 PM	19	47	30	25	42	23	13	0
8:15 PM - 9:15 PM	17	49	28	28	45	18	11	0
8:30 PM - 9:30 PM	19	41	25	24	39	20	7	0
8:45 PM - 9:45 PM	21	44	22	21	44	19	5	0
9:00 PM - 10:00 PM	22	45	20	21	39	14	1	0
9:15 PM - 10:15 PM	24	36	17	15	36	17	2	0
9:30 PM - 10:30 PM	25	36	17	16	37	18	2	0
9:45 PM - 10:45 PM	21	27	16	14	27	17	2	0
10:00 PM - 11:00 PM	19	24	14	9	22	17	2	0
10:15 PM - 11:15 PM	14	18	11	6	13	12	1	0
10:30 PM - 11:30 PM	8	14	9	7	12	7	0	0
10:45 PM - 11:45 PM	6	17	11	9	16	6	0	0
11:00 PM - 12:00 AM	3	8	11	9	12	7	0	0

5212	4657	5211	5711	5242	4730	2161	0
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Note: KKHD departure is calculated from all vehicles entering and exiting the intersection

Malu Ohai St and Kapolei Parkway 24-Hour Approach Volumes

Time	15-Min Interval							
	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 12:15 AM			0	0	1	4	4	1
12:15 AM - 12:30 AM			0	0	0	1	1	0
12:30 AM - 12:45 AM			0	0	1	0	0	1
12:45 AM - 1:00 AM			0	0	0	0	0	0
1:00 AM - 1:15 AM			1	1	2	0	0	1
1:15 AM - 1:30 AM			0	0	3	0	0	3
1:30 AM - 1:45 AM			0	0	0	0	0	0
1:45 AM - 2:00 AM			1	1	1	0	0	1
2:00 AM - 2:15 AM			1	1	5	1	1	4
2:15 AM - 2:30 AM			0	0	2	1	1	2
2:30 AM - 2:45 AM			0	0	0	1	0	0
2:45 AM - 3:00 AM			0	0	0	0	0	0
3:00 AM - 3:15 AM			0	0	0	1	1	0
3:15 AM - 3:30 AM			0	0	0	1	1	0
3:30 AM - 3:45 AM			0	0	0	0	0	0
3:45 AM - 4:00 AM			1	0	0	2	1	1
4:00 AM - 4:15 AM			0	0	0	0	0	0
4:15 AM - 4:30 AM			0	0	0	1	0	0
4:30 AM - 4:45 AM			3	0	0	7	2	0
4:45 AM - 5:00 AM			1	1	2	8	4	1
5:00 AM - 5:15 AM			2	1	3	12	9	2
5:15 AM - 5:30 AM			1	2	3	12	10	3
5:30 AM - 5:45 AM			1	2	5	12	10	3
5:45 AM - 6:00 AM			2	0	10	11	8	9
6:00 AM - 6:15 AM			7	1	10	12	6	5
6:15 AM - 6:30 AM			1	0	10	9	4	9
6:30 AM - 6:45 AM			7	0	19	21	14	12
6:45 AM - 7:00 AM			10	0	45	30	23	24
7:00 AM - 7:15 AM			22	11	84	77	50	47
7:15 AM - 7:30 AM			36	16	100	85	73	67
7:30 AM - 7:45 AM			78	36	102	110	78	67
7:45 AM - 8:00 AM			71	52	88	103	96	69
8:00 AM - 8:15 AM			12	12	39	32	13	14
8:15 AM - 8:30 AM			6	3	20	23	11	12
8:30 AM - 8:45 AM			8	3	19	16	8	9
8:45 AM - 9:00 AM			5	1	14	15	7	12
9:00 AM - 9:15 AM			7	4	26	15	10	13
9:15 AM - 9:30 AM			6	4	21	16	11	12
9:30 AM - 9:45 AM			5	5	16	20	14	8
9:45 AM - 10:00 AM			3	5	15	16	8	9
10:00 AM - 10:15 AM			5	5	16	18	13	13
10:15 AM - 10:30 AM			7	6	15	14	9	9
10:30 AM - 10:45 AM			7	8	18	18	6	8
10:45 AM - 11:00 AM			4	2	16	15	8	8
11:00 AM - 11:15 AM			6	4	14	20	9	7
11:15 AM - 11:30 AM			7	4	12	17	11	6
11:30 AM - 11:45 AM			5	8	20	13	5	10
11:45 AM - 12:00 PM			4	5	15	15	7	9

Malu Ohai St and Kapolei Parkway 24-Hour Approach Volumes

15-Min Interval								
Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 PM - 12:15 PM			2	4	15	21	12	8
12:15 PM - 12:30 PM			3	7	19	16	8	9
12:30 PM - 12:45 PM			5	6	21	12	4	15
12:45 PM - 1:00 PM			3	8	32	13	7	18
1:00 PM - 1:15 PM			7	9	50	21	9	41
1:15 PM - 1:30 PM			7	15	50	36	39	43
1:30 PM - 1:45 PM			14	19	48	85	77	43
1:45 PM - 2:00 PM			3	6	30	28	20	22
2:00 PM - 2:15 PM			6	3	25	36	14	20
2:15 PM - 2:30 PM			4	7	34	28	13	22
2:30 PM - 2:45 PM			5	4	18	21	13	14
2:45 PM - 3:00 PM			21	3	23	20	20	14
3:00 PM - 3:15 PM			35	62	57	87	31	95
3:15 PM - 3:30 PM			20	33	15	57	11	35
3:30 PM - 3:45 PM			12	10	13	47	20	28
3:45 PM - 4:00 PM			14	16	21	31	9	25
4:00 PM - 4:15 PM			6	15	18	40	13	19
4:15 PM - 4:30 PM			8	4	14	34	13	20
4:30 PM - 4:45 PM			7	9	10	29	14	15
4:45 PM - 5:00 PM			8	11	13	37	10	18
5:00 PM - 5:15 PM			12	19	28	27	15	38
5:15 PM - 5:30 PM			13	7	22	42	13	34
5:30 PM - 5:45 PM			13	3	16	33	15	31
5:45 PM - 6:00 PM			10	6	19	21	7	29
6:00 PM - 6:15 PM			7	14	23	20	12	24
6:15 PM - 6:30 PM			5	9	22	15	10	24
6:30 PM - 6:45 PM			3	6	22	15	9	26
6:45 PM - 7:00 PM			5	6	15	17	8	21
7:00 PM - 7:15 PM			3	6	14	16	12	20
7:15 PM - 7:30 PM			3	3	8	8	9	16
7:30 PM - 7:45 PM			1	4	9	9	7	12
7:45 PM - 8:00 PM			1	4	10	9	6	7
8:00 PM - 8:15 PM			2	4	9	12	9	8
8:15 PM - 8:30 PM			1	3	8	7	8	13
8:30 PM - 8:45 PM			0	5	11	8	8	16
8:45 PM - 9:00 PM			1	1	10	33	29	19
9:00 PM - 9:15 PM			4	3	10	15	10	11
9:15 PM - 9:30 PM			1	1	6	14	14	7
9:30 PM - 9:45 PM			2	4	10	3	4	11
9:45 PM - 10:00 PM			4	1	2	9	6	5
10:00 PM - 10:15 PM			2	1	2	11	11	5
10:15 PM - 10:30 PM			0	0	4	8	9	8
10:30 PM - 10:45 PM			0	0	1	6	3	4
10:45 PM - 11:00 PM			1	1	3	2	2	3
11:00 PM - 11:15 PM			2	2	3	1	0	1
11:15 PM - 11:30 PM			1	2	5	3	2	8
11:30 PM - 11:45 PM			1	1	2	1	1	2
11:45 PM - 12:00 AM			0	0	1	1	1	1

0	0	631	571	1613	1870	1144	1419
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Malu Ohai St and Kapolei Parkway 24-Hour Approach Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 1:00 AM			0	0	2	5	5	2
12:15 AM - 1:15 AM			1	1	3	1	1	2
12:30 AM - 1:30 AM			1	1	6	0	0	5
12:45 AM - 1:45 AM			1	1	5	0	0	4
1:00 AM - 2:00 AM			2	2	6	0	0	5
1:15 AM - 2:15 AM			2	2	9	1	1	8
1:30 AM - 2:30 AM			2	2	8	2	2	7
1:45 AM - 2:45 AM			2	2	8	3	2	7
2:00 AM - 3:00 AM			1	1	7	3	2	6
2:15 AM - 3:15 AM			0	0	2	3	2	2
2:30 AM - 3:30 AM			0	0	0	3	2	0
2:45 AM - 3:45 AM			0	0	0	2	2	0
3:00 AM - 4:00 AM			1	0	0	4	3	1
3:15 AM - 4:15 AM			1	0	0	3	2	1
3:30 AM - 4:30 AM			1	0	0	3	1	1
3:45 AM - 4:45 AM			4	0	0	10	3	1
4:00 AM - 5:00 AM			4	1	2	16	6	1
4:15 AM - 5:15 AM			6	2	5	28	15	3
4:30 AM - 5:30 AM			7	4	8	39	25	6
4:45 AM - 5:45 AM			5	6	13	44	33	9
5:00 AM - 6:00 AM			6	5	21	47	37	17
5:15 AM - 6:15 AM			11	5	28	47	34	20
5:30 AM - 6:30 AM			11	3	35	44	28	26
5:45 AM - 6:45 AM			17	1	49	53	32	35
6:00 AM - 7:00 AM			25	1	84	72	47	50
6:15 AM - 7:15 AM			40	11	158	137	91	92
6:30 AM - 7:30 AM			75	27	248	213	160	150
6:45 AM - 7:45 AM			146	63	331	302	224	205
7:00 AM - 8:00 AM			207	115	374	375	297	250
7:15 AM - 8:15 AM			197	116	329	330	260	217
7:30 AM - 8:30 AM			167	103	249	268	198	162
7:45 AM - 8:45 AM			97	70	166	174	128	104
8:00 AM - 9:00 AM			31	19	92	86	39	47
8:15 AM - 9:15 AM			26	11	79	69	36	46
8:30 AM - 9:30 AM			26	12	80	62	36	46
8:45 AM - 9:45 AM			23	14	77	66	42	45
9:00 AM - 10:00 AM			21	18	78	67	43	42
9:15 AM - 10:15 AM			19	19	68	70	46	42
9:30 AM - 10:30 AM			20	21	62	68	44	39
9:45 AM - 10:45 AM			22	24	64	66	36	39
10:00 AM - 11:00 AM			23	21	65	65	36	38
10:15 AM - 11:15 AM			24	20	63	67	32	32
10:30 AM - 11:30 AM			24	18	60	70	34	29
10:45 AM - 11:45 AM			22	18	62	65	33	31
11:00 AM - 12:00 PM			22	21	61	65	32	32
11:15 AM - 12:15 PM			18	21	62	66	35	33
11:30 AM - 12:30 PM			14	24	69	65	32	36
11:45 AM - 12:45 PM			14	22	70	64	31	41

Malu Ohai St and Kapolei Parkway 24-Hour Approach Volumes

Time	Makai Leg		Mauka Leg		Waianae Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure	Approach	Departure
12:00 PM - 1:00 PM			13	25	87	62	31	50
12:15 PM - 1:15 PM			18	30	122	62	28	83
12:30 PM - 1:30 PM			22	38	153	82	59	117
12:45 PM - 1:45 PM			31	51	180	155	132	145
1:00 PM - 2:00 PM			31	49	178	170	145	149
1:15 PM - 2:15 PM			30	43	153	185	150	128
1:30 PM - 2:30 PM			27	35	137	177	124	107
1:45 PM - 2:45 PM			18	20	107	113	60	78
2:00 PM - 3:00 PM			36	17	100	105	60	70
2:15 PM - 3:15 PM			65	76	132	156	77	145
2:30 PM - 3:30 PM			81	102	113	185	75	158
2:45 PM - 3:45 PM			88	108	108	211	82	172
3:00 PM - 4:00 PM			81	121	106	222	71	183
3:15 PM - 4:15 PM			52	74	67	175	53	107
3:30 PM - 4:30 PM			40	45	66	152	55	92
3:45 PM - 4:45 PM			35	44	63	134	49	79
4:00 PM - 5:00 PM			29	39	55	140	50	72
4:15 PM - 5:15 PM			35	43	65	127	52	91
4:30 PM - 5:30 PM			40	46	73	135	52	105
4:45 PM - 5:45 PM			46	40	79	139	53	121
5:00 PM - 6:00 PM			48	35	85	123	50	132
5:15 PM - 6:15 PM			43	30	80	116	47	118
5:30 PM - 6:30 PM			35	32	80	89	44	108
5:45 PM - 6:45 PM			25	35	86	71	38	103
6:00 PM - 7:00 PM			20	35	82	67	39	95
6:15 PM - 7:15 PM			16	27	73	63	39	91
6:30 PM - 7:30 PM			14	21	59	56	38	83
6:45 PM - 7:45 PM			12	19	46	50	36	69
7:00 PM - 8:00 PM			8	17	41	42	34	55
7:15 PM - 8:15 PM			7	15	36	38	31	43
7:30 PM - 8:30 PM			5	15	36	37	30	40
7:45 PM - 8:45 PM			4	16	38	36	31	44
8:00 PM - 9:00 PM			4	13	38	60	54	56
8:15 PM - 9:15 PM			6	12	39	63	55	59
8:30 PM - 9:30 PM			6	10	37	70	61	53
8:45 PM - 9:45 PM			8	9	36	65	57	48
9:00 PM - 10:00 PM			11	9	28	41	34	34
9:15 PM - 10:15 PM			9	7	20	37	35	28
9:30 PM - 10:30 PM			8	6	18	31	30	29
9:45 PM - 10:45 PM			6	2	9	34	29	22
10:00 PM - 11:00 PM			3	2	10	27	25	20
10:15 PM - 11:15 PM			3	3	11	17	14	16
10:30 PM - 11:30 PM			4	5	12	12	7	16
10:45 PM - 11:45 PM			5	6	13	7	5	14
11:00 PM - 12:00 AM			4	5	11	6	4	12

0	0	2521	2280	6436	7458	4555	5657
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Ft Barrette Rd and Kapolei Pkwy 24-Hour Approach Volumes

15 - Minute Intervals						
Time	Makai Leg		Mauka Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
0:00 - 0:15	9	17	18	9	0	0
0:15 - 0:30	9	18	19	12	3	1
0:30 - 0:45	12	9	10	11	1	2
0:45 - 1:00	13	10	13	12	0	3
1:00 - 1:15	13	9	9	13	1	2
1:15 - 1:30	3	7	8	5	0	1
1:30 - 1:45	9	6	4	7	1	0
1:45 - 2:00	7	8	9	7	0	2
2:00 - 2:15	5	6	6	6	2	1
2:15 - 2:30	3	10	10	3	0	0
2:30 - 2:45	5	6	6	6	2	0
2:45 - 3:00	10	5	4	8	0	1
3:00 - 3:15	6	2	5	6	1	2
3:15 - 3:30	12	7	7	12	0	0
3:30 - 3:45	12	7	7	11	0	0
3:45 - 4:00	8	11	9	8	0	0
4:00 - 4:15	12	15	16	14	2	0
4:15 - 4:30	9	11	8	11	1	0
4:30 - 4:45	21	22	25	26	4	3
4:45 - 5:00	34	13	15	31	1	1
5:00 - 5:15	54	30	29	68	17	5
5:15 - 5:30	109	32	33	117	10	3
5:30 - 5:45	129	37	39	133	9	2
5:45 - 6:00	166	73	75	163	5	6
6:00 - 6:15	191	89	89	194	11	13
6:15 - 6:30	168	117	129	174	15	17
6:30 - 6:45	205	148	166	208	24	24
6:45 - 7:00	211	173	207	217	28	62
7:00 - 7:15	228	207	257	236	52	81
7:15 - 7:30	254	203	283	283	85	121
7:30 - 7:45	224	244	348	228	124	134
7:45 - 8:00	219	207	229	250	89	100
8:00 - 8:15	184	101	116	193	15	34
8:15 - 8:30	113	112	120	121	23	23
8:30 - 8:45	120	116	127	122	18	23
8:45 - 9:00	111	97	104	135	34	17
9:00 - 9:15	106	130	128	107	23	20
9:15 - 9:30	96	86	98	99	14	12
9:30 - 9:45	116	133	136	105	11	18
9:45 - 10:00	101	122	127	97	12	19
10:00 - 10:15	118	105	100	118	15	12
10:15 - 10:30	110	104	111	105	20	18
10:30 - 10:45	111	119	117	118	26	20
10:45 - 11:00	106	119	132	110	10	17
11:00 - 11:15	111	106	128	110	16	15
11:15 - 11:30	121	105	113	122	7	17
11:30 - 11:45	132	121	123	133	18	18
11:45 - 12:00	138	100	116	149	16	12

Ft Barrette Rd and Kapolei Pkwy 24-Hour Approach Volumes

15 - Minute Intervals						
Time	Makai Leg		Mauka Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 - 12:15	117	135	143	113	8	14
12:15 - 12:30	129	134	155	126	7	34
12:30 - 12:45	121	149	151	118	14	16
12:45 - 13:00	149	189	194	128	15	29
13:00 - 13:15	172	120	127	165	13	29
13:15 - 13:30	134	161	191	137	12	31
13:30 - 13:45	183	150	189	180	47	71
13:45 - 14:00	161	157	169	124	40	48
14:00 - 14:15	175	155	173	129	26	34
14:15 - 14:30	149	198	219	125	16	28
14:30 - 14:45	174	184	197	137	21	35
14:45 - 15:00	164	149	153	151	12	46
15:00 - 15:15	240	152	200	246	71	95
15:15 - 15:30	171	169	205	194	59	62
15:30 - 15:45	168	211	201	182	63	47
15:45 - 16:00	215	219	235	219	51	48
16:00 - 16:15	192	205	207	197	46	33
16:15 - 16:30	176	231	238	175	43	35
16:30 - 16:45	186	263	241	192	34	31
16:45 - 17:00	147	217	213	148	25	30
17:00 - 17:15	161	187	195	159	30	19
17:15 - 17:30	146	218	232	140	30	42
17:30 - 17:45	142	213	219	151	40	32
17:45 - 18:00	142	180	192	155	43	44
18:00 - 18:15	170	163	184	157	27	47
18:15 - 18:30	153	190	196	153	41	45
18:30 - 18:45	127	177	168	115	13	28
18:45 - 19:00	114	121	121	103	19	29
19:00 - 19:15	98	109	111	84	10	25
19:15 - 19:30	77	102	100	75	20	25
19:30 - 19:45	89	73	78	88	15	21
19:45 - 20:00	58	74	76	63	14	16
20:00 - 20:15	81	73	70	78	9	8
20:15 - 20:30	72	70	74	64	8	22
20:30 - 20:45	77	66	65	69	9	16
20:45 - 21:00	71	55	61	65	13	22
21:00 - 21:15	56	65	68	54	6	11
21:15 - 21:30	78	74	79	70	7	20
21:30 - 21:45	72	56	53	75	11	9
21:45 - 22:00	49	44	44	50	9	7
22:00 - 22:15	40	43	43	33	3	7
22:15 - 22:30	35	36	33	37	5	8
22:30 - 22:45	32	51	50	30	3	4
22:45 - 23:00	19	34	35	16	1	5
23:00 - 23:15	25	26	29	23	2	4
23:15 - 23:30	11	26	28	9	2	5
23:30 - 23:45	23	25	29	22	1	5
23:45 - 0:00	14	9	11	12	0	7

9819	9643	10433	9769	1780	2211
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Ft. Barrette Rd and Kapolei Pkwy 24-Hour Traffic Volumes

1 - hour interval						
Time	Makai Leg		Mauka Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 AM - 1:00 AM	43	54	60	44	4	6
12:15 AM - 1:15 AM	47	46	51	48	5	8
12:30 AM - 1:30 AM	41	35	40	41	2	8
12:45 AM - 1:45 AM	38	32	34	37	2	6
1:00 AM - 2:00 AM	32	30	30	32	2	5
1:15 AM - 2:15 AM	24	27	27	25	3	4
1:30 AM - 2:30 AM	24	30	29	23	3	3
1:45 AM - 2:45 AM	20	30	31	22	4	3
2:00 AM - 3:00 AM	23	27	26	23	4	2
2:15 AM - 3:15 AM	24	23	25	23	3	3
2:30 AM - 3:30 AM	33	20	22	32	3	3
2:45 AM - 3:45 AM	40	21	23	37	1	3
3:00 AM - 4:00 AM	38	27	28	37	1	2
3:15 AM - 4:15 AM	44	40	39	45	2	0
3:30 AM - 4:30 AM	41	44	40	44	3	0
3:45 AM - 4:45 AM	50	59	58	59	7	3
4:00 AM - 5:00 AM	76	61	64	82	8	4
4:15 AM - 5:15 AM	118	76	77	136	23	9
4:30 AM - 5:30 AM	218	97	102	242	32	12
4:45 AM - 5:45 AM	326	112	116	349	37	11
5:00 AM - 6:00 AM	458	172	176	481	41	16
5:15 AM - 6:15 AM	595	231	236	607	35	24
5:30 AM - 6:30 AM	654	316	332	664	40	38
5:45 AM - 6:45 AM	730	427	459	739	55	60
6:00 AM - 7:00 AM	775	527	591	793	78	116
6:15 AM - 7:15 AM	812	645	759	835	119	184
6:30 AM - 7:30 AM	898	731	913	944	189	288
6:45 AM - 7:45 AM	917	827	1095	964	289	398
7:00 AM - 8:00 AM	925	861	1117	997	350	436
7:15 AM - 8:15 AM	881	755	976	954	313	389
7:30 AM - 8:30 AM	740	664	813	792	251	291
7:45 AM - 8:45 AM	636	536	592	686	145	180
8:00 AM - 9:00 AM	528	426	467	571	90	97
8:15 AM - 9:15 AM	450	455	479	485	98	83
8:30 AM - 9:30 AM	433	429	457	463	89	72
8:45 AM - 9:45 AM	429	446	466	446	82	67
9:00 AM - 10:00 AM	419	471	489	408	60	69
9:15 AM - 10:15 AM	431	446	461	419	52	61
9:30 AM - 10:30 AM	445	464	474	425	58	67
9:45 AM - 10:45 AM	440	450	455	438	73	69
10:00 AM - 11:00 AM	445	447	460	451	71	67
10:15 AM - 11:15 AM	438	448	488	443	72	70
10:30 AM - 11:30 AM	449	449	490	460	59	69
10:45 AM - 11:45 AM	470	451	496	475	51	67
11:00 AM - 12:00 PM	502	432	480	514	57	62
11:15 AM - 12:15 PM	508	461	495	517	49	61
11:30 AM - 12:30 PM	516	490	537	521	49	78
11:45 AM - 12:45 PM	505	518	565	506	45	76

Ft. Barrette Rd and Kapolei Pkwy 24-Hour Traffic Volumes

Time	Makai Leg		Mauka Leg		Kokohead Leg	
	Approach	Departure	Approach	Departure	Approach	Departure
12:00 PM - 1:00 PM	516	607	643	485	44	93
12:15 PM - 1:15 PM	571	592	627	537	49	108
12:30 PM - 1:30 PM	576	619	663	548	54	105
12:45 PM - 1:45 PM	638	620	701	610	87	160
1:00 PM - 2:00 PM	650	588	676	606	112	179
1:15 PM - 2:15 PM	653	623	722	570	125	184
1:30 PM - 2:30 PM	668	660	750	558	129	181
1:45 PM - 2:45 PM	659	694	758	515	103	145
2:00 PM - 3:00 PM	662	686	742	542	75	143
2:15 PM - 3:15 PM	727	683	769	659	120	204
2:30 PM - 3:30 PM	749	654	755	728	163	238
2:45 PM - 3:45 PM	743	681	759	773	205	250
3:00 PM - 4:00 PM	794	751	841	841	244	252
3:15 PM - 4:15 PM	746	804	848	792	219	190
3:30 PM - 4:30 PM	751	866	881	773	203	163
3:45 PM - 4:45 PM	769	918	921	783	174	147
4:00 PM - 5:00 PM	701	916	899	712	148	129
4:15 PM - 5:15 PM	670	898	887	674	132	115
4:30 PM - 5:30 PM	640	885	881	639	119	122
4:45 PM - 5:45 PM	596	835	859	598	125	123
5:00 PM - 6:00 PM	591	798	838	605	143	137
5:15 PM - 6:15 PM	600	774	827	603	140	165
5:30 PM - 6:30 PM	607	746	791	616	151	168
5:45 PM - 6:45 PM	592	710	740	580	124	164
6:00 PM - 7:00 PM	564	651	669	528	100	149
6:15 PM - 7:15 PM	492	597	596	455	83	127
6:30 PM - 7:30 PM	416	509	500	377	62	107
6:45 PM - 7:45 PM	378	405	410	350	64	100
7:00 PM - 8:00 PM	322	358	365	310	59	87
7:15 PM - 8:15 PM	305	322	324	304	58	70
7:30 PM - 8:30 PM	300	290	298	293	46	67
7:45 PM - 8:45 PM	288	283	285	274	40	62
8:00 PM - 9:00 PM	301	264	270	276	39	68
8:15 PM - 9:15 PM	276	256	268	252	36	71
8:30 PM - 9:30 PM	282	260	273	258	35	69
8:45 PM - 9:45 PM	277	250	261	264	37	62
9:00 PM - 10:00 PM	255	239	244	249	33	47
9:15 PM - 10:15 PM	239	217	219	228	30	43
9:30 PM - 10:30 PM	196	179	173	195	28	31
9:45 PM - 10:45 PM	156	174	170	150	20	26
10:00 PM - 11:00 PM	126	164	161	116	12	24
10:15 PM - 11:15 PM	111	147	147	106	11	21
10:30 PM - 11:30 PM	87	137	142	78	8	18
10:45 PM - 11:45 PM	78	111	121	70	6	19
11:00 PM - 12:00 AM	73	86	97	66	5	21

39120	38373	41511	38925	7109	8804
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Appendix B

Levels of Service Definitions

The *Highway Capacity Manual* defines six Levels of Service (LOS), labeled A through F, from best to worst conditions. Levels of Service for signalized and unsignalized intersections are defined in terms of average user delays. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time.

For unsignalized intersections, the *Highway Capacity Manual* evaluates gaps in the major street traffic flow and calculates available gaps for left-turns across oncoming traffic and for the left and right-turns onto the major roadway from the minor street.

LEVEL-OF-SERVICE A: Little or no delay.

LEVEL-OF-SERVICE B: Short traffic delays.

LEVEL-OF-SERVICE C: Average traffic delays.

LEVEL-OF-SERVICE D: Long traffic delays.

LEVEL-OF-SERVICE E: Very long traffic delays.

LEVEL-OF-SERVICE F: Demand volume exceeds capacity, resulting in extreme delays with queuing that may cause severe congestion and affect other movements at the intersection.

Intersection Capacity Analysis Worksheets

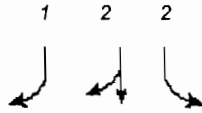
Appendix C

INPUT WORKSHEET

General Information		Site Information	
Analyst	JW	Intersection	Farrington Hwy/Ft Barrette Rd
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	7/15/03	Jurisdiction	Honolulu
Time Period	PM Peak Period Existing	Analysis Year	2003

Intersection Geometry

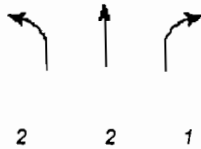
Grade = 0



Grade = 0



Grade = 0



Grade = 0

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	781	342	757	43	309	254	374	377	33	290	552	739
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	3	3	3	3	3	3	3	3	3	3	3	3
Ped volume	0			0			0			0		
Bicycle volume	0											
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	EB Only	Thru & RT	04	Excl. Left	Thru & RT	07	08				
Timing	G = 10.0	G = 50.0	G = 25.0	G =	G = 35.0	G = 30.0	G =	G =				
	Y = 3.0	Y = 3.0	Y = 3.0	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 170.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *North South Rd Existing PM Peak Farrington/Ft Barrette*

Capacity Analysis

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	TR	R
Lane group												
Adj. flow rate	868	380	841	48	343	282	416	419	37	322	613	821
Satflow rate	3502	3610	1615	1805	3610	1615	3502	3610	1615	3502	3610	1615
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.38	0.46	0.69	0.06	0.15	0.38	0.21	0.18	0.26	0.21	0.18	0.58
Lane group cap.	1318	1678	1121	106	531	608	721	637	418	721	637	931
v/c ratio	0.66	0.23	0.75	0.45	0.65	0.46	0.58	0.66	0.09	0.45	0.96	0.88
Flow ratio	0.25	0.11	0.52	0.03	0.10	0.17	0.12	0.12	0.02	0.09	0.17	0.51
Crit. lane group	N	N	N	N	Y	N	Y	N	N	N	N	Y
Sum flow ratios	0.72											
Lost time/cycle	12.00											
Critical v/c ratio	0.78											

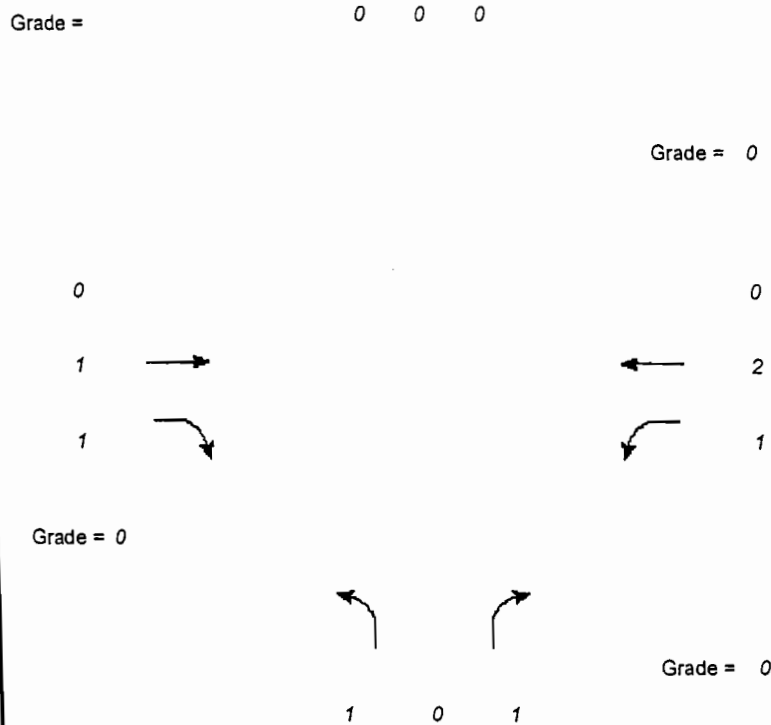
Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	TR	R
Lane group												
Adj. flow rate	868	380	841	48	343	282	416	419	37	322	613	821
Lane group cap.	1318	1678	1121	106	531	608	721	637	418	721	637	931
v/c ratio	0.66	0.23	0.75	0.45	0.65	0.46	0.58	0.66	0.09	0.45	0.96	0.88
Green ratio	0.38	0.46	0.69	0.06	0.15	0.38	0.21	0.18	0.26	0.21	0.18	0.58
Unif. delay d1	43.9	27.2	16.6	77.4	68.3	40.0	60.8	65.2	47.8	59.0	69.4	31.0
Delay factor k	0.23	0.11	0.31	0.11	0.22	0.11	0.17	0.23	0.11	0.11	0.47	0.41
Increm. delay d2	1.2	0.1	2.9	3.1	2.7	0.6	1.2	2.5	0.1	0.4	26.5	9.9
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	45.2	27.3	19.5	80.4	71.1	40.6	62.0	67.7	47.9	59.5	95.9	40.9
Lane group LOS	D	C	B	F	E	D	E	E	D	E	F	D
Apprch. delay	31.6			59.0			64.1			63.5		
Approach LOS	C			E			E			E		
Intersec. delay	50.7			Intersection LOS						D		

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani Ave/Farrington hwy
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	12/29/2003	Jurisdiction	Honolulu
Time Period	PM Peak Existing	Analysis Year	2003

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Volume (vph)		321	344	138	363		243		62				
% Heavy veh		0	0	0	0		0		0				
PHF		0.90	0.90	0.90	0.90		0.90		0.90				
Actuated (P/A)		A	A	A	A		A		A				
Startup lost time		2.0	2.0	2.0	2.0		2.0		2.0				
Ext. eff. green		2.0	2.0	2.0	2.0		2.0		2.0				
Arrival type		3	3	3	3		3		3				
Ped volume		2						0			6		
Bicycle volume								0					
Parking (Y or N)		N		N	N		N		N	N		N	
Parking/hr													
Bus stops/hr		0	0	0	0		0		0				
Ped timing		0.0			0.0			3.0			0.0		
	WB Only	Thru & RT	03	04	NB Only	06	07	08					
Timing	G = 10.0	G = 13.0	G =	G =	G = 25.0	G =	G =	G =					
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25							Cycle Length C = 60.0						

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei - TIAR Kealanani/Farrington PM Peak*

Capacity Analysis

	EB		WB		NB		SB	
	T	R	L	T	L	R		
Lane group								
Adj. flow rate	357	382	153	403	270	69		
Satflow rate	1900	1615	1805	3610	1805	1615		
Lost time	2.0	2.0	2.0	2.0	2.0	2.0		
Green ratio	0.22	0.70	0.17	0.45	0.42	0.65		
Lane group cap.	412	1130	301	1624	752	1050		
v/c ratio	0.87	0.34	0.51	0.25	0.36	0.07		
Flow ratio	0.19	0.24	0.08	0.11	0.15	0.04		
Crit. lane group	Y	N	Y	N	Y	N		
Sum flow ratios	0.42							
Lost time/cycle	12.00							
Critical v/c ratio	0.53							

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
	T	R	L	T	L	R		
Lane group								
Adj. flow rate	357	382	153	403	270	69		
Lane group cap.	412	1130	301	1624	752	1050		
v/c ratio	0.87	0.34	0.51	0.25	0.36	0.07		
Green ratio	0.22	0.70	0.17	0.45	0.42	0.65		
Unif. delay d1	22.7	3.5	22.8	10.2	12.0	3.8		
Delay factor k	0.40	0.11	0.12	0.11	0.11	0.11		
Increm. delay d2	17.4	0.2	1.4	0.1	0.3	0.0		
PF factor	1.000	1.000	1.000	1.000	1.000	1.000		
Control delay	40.1	3.7	24.2	10.3	12.3	3.9		
Lane group LOS	D	A	C	B	B	A		
Apprch. delay	21.3		14.1		10.6			
Approach LOS	C		B		B			
Intersec. delay	16.6		Intersection LOS				B	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/FBR
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/FBR PM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Fort Barrette Road</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	47	581	61	379	973	12
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	645	67	421	1081	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	48	192	203	15	266	43
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	53	0	225	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		421	53		225			
C (m) (vph)		894	15		471			
v/c		0.47	3.53		0.48			
95% queue length		2.64	22.53		2.69			
Control Delay		12.6			19.6			
LOS		B	F		C			
Approach Delay	--	--	991.6					
Approach LOS	--	--	F					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kapolei Pkwy/FBR
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - FBR/Kapolei PM Peak

East/West Street: <i>Kapolei Parkway</i>	North/South Street: <i>Fort Barrette Road</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	546	68	80	941	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	606	75	88	1045	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	53	0	96	0	0	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	58	0	106	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		88	58		106			
C (m) (vph)		921	77		501			
v/c		0.10	0.75		0.21			
95% queue length		0.32	5.72		0.80			
Control Delay		9.3	165.4		14.1			
LOS		A	F		B			
Approach Delay	--	--	67.6					
Approach LOS	--	--	F					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kaiau Ave
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kaiau/Kamaaha PM

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kaiau Avenue</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume	0	300	140	41	186	96	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	333	155	45	206	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	Raised curb						
RT Channelized			0			0	
Lanes	0	2	0	1	2	0	
Configuration		T	TR	L	T		
Upstream Signal		0			0		

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume	65	546	33	80	941	0	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	72	0	36	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	1	0	1	0	0	0	
Configuration	L		R				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
			7	8	9	10	11	12
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		45	72		36			
C (m) (vph)		1086	507		761			
v/c		0.04	0.14		0.05			
95% queue length		0.13	0.50		0.15			
Control Delay		8.5	13.3		10.0-			
LOS		A	B		A			
Approach Delay	--	--	12.2					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kuloa Ave
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kuloa PM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kuloa Ave/Kamaaha Lp E</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	15	266	43	17	192	12
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	16	295	47	18	213	13
Percent Heavy Vehicles	0	-	-	0	-	-
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	47	22	38	17	9	12
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	52	24	42	18	10	13
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	2	0
Configuration	L		TR	LT		TR

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR	LT		TR
v (vph)	16	18	52		66	23		18
C (m) (vph)	1314	1204	494		624	480		688
v/c	0.01	0.01	0.11		0.11	0.05		0.03
95% queue length	0.04	0.05	0.35		0.35	0.15		0.08
Control Delay	7.8	8.0	13.1		11.5	12.9		10.4
LOS	A	A	B		B	B		B
Approach Delay	-	-	12.2			11.8		
Approach LOS	-	-	B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/Kumuiki St
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing Kamaaha/Kumuiki PM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kumuiki St/Kamaaha Lp (East)</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	100	135	98	19	89	17
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	111	150	108	21	98	18
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	62	14	13	3	6	76
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	68	15	14	3	6	84
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (vph)	111	21	83		14		93	
C (m) (vph)	1471	1286	410		867		827	
v/c	0.08	0.02	0.20		0.02		0.11	
95% queue length	0.24	0.05	0.76		0.05		0.38	
Control Delay	7.6	7.8	16.0		9.2		9.9	
LOS	A	A	C		A		A	
Approach Delay	--	--	15.0+			9.9		
Approach LOS	--	--	C			A		

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kapolei Pkwy
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kapolei PM

East/West Street: *Kapolei Parkway* North/South Street: *Kamaaha Avenue*

Volume Adjustments and Site Characteristics						
Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	35	22	40	0	26	43
%Thrus Left Lane	50			50		
Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	32	37	2	18	64	33
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	<i>LTR</i>		<i>LTR</i>		<i>L</i>	<i>TR</i>	<i>L</i>	<i>TR</i>
PHF	0.90		0.90		0.90	0.90	0.90	0.90
Flow Rate	106		75		35	43	20	107
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	1.00							

Saturation Headway Adjustment Worksheet								
Prop. Left-Turns	0.4		0.0		1.0	0.0	1.0	0.0
Prop. Right-Turns	0.4		0.6		0.0	0.0	0.0	0.3
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	4.29		4.29		4.29	4.29	4.29	4.29

Departure Headway and Service Time								
hd, initial value	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.09		0.07		0.03	0.04	0.02	0.10
hd, final value	4.29		4.29		4.29	4.29	4.29	4.29
x, final value	0.13		0.09		0.05	0.06	0.03	0.14
Move-up time, m	2.0		2.0		2.3		2.3	
Service Time	2.3		2.3		2.3		2.3	

Capacity and Level of Service								
	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	356		325		285	293	270	357
Delay	7.92		7.52		8.21	8.02	8.04	8.28
LOS	A		A		A	A	A	A
Approach: Delay	7.92		7.52		8.10		8.24	
LOS	A		A		A		A	
Intersection Delay	7.98							
Intersection LOS	A							

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/Kealanani
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/ Kealanani PM

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kealanani Avenue</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	25	126	41	16	98	153
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	27	140	0	0	108	170
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	44	21	37	198	9	27
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	0	0	220	0	30
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (vph)	27					220		30
C (m) (vph)	1254					649		832
v/c	0.02					0.34		0.04
95% queue length	0.07					1.53		0.11
Control Delay	7.9					13.4		9.5
LOS	A					B		A
Approach Delay	--	--				12.9		
Approach LOS	--	--				B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani/Kuloa/Kumuiki
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei-TIAR Exist Kealanani/ Kuloa/Kumuiki PM

East/West Street: Kumuiki St/Kuloa Ave	North/South Street: Kealanani Avenue
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	2	169	7	136	223	123
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	2	187	7	151	247	136
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	1	3	77	59	4	1
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	1	3	85	65	4	1
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration	LT		R	L		TR

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R	L		TR
v (vph)	2	151	4		85	65		5
C (m) (vph)	1175	1361	260		902	252		308
v/c	0.00	0.11	0.02		0.09	0.26		0.02
95% queue length	0.01	0.37	0.05		0.31	1.03		0.05
Control Delay	8.1	8.0	19.1		9.4	24.2		16.9
LOS	A	A	C		A	C		C
Approach Delay	--	--	9.8			23.7		
Approach LOS	--	--	A			C		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/Kekuilani Makai
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kekuilani PM

East/West Street: <i>Kekuilani Loop (makai)</i>	North/South Street: <i>Kamaaha Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	16	74	25	59	87	59
Peak-Hour Factor, PHF	0.90	0.90	0.89	0.90	0.90	0.90
Hourly Flow Rate, HFR	17	82	28	65	96	65
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	14	5	42	33	6	14
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	15	5	46	36	6	15
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LT		R
v (vph)	17	65		66		42		15
C (m) (vph)	1402	1444		795		558		923
v/c	0.01	0.05		0.08		0.08		0.02
95% queue length	0.04	0.14		0.27		0.24		0.05
Control Delay	7.6	7.6		9.9		12.0		9.0
LOS	A	A		A		B		A
Approach Delay	--	--	9.9			11.2		
Approach LOS	--	--	A			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/KekuilaniMauka
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kekuilani PM

East/West Street: <i>Kekuilani Loop (mauka)</i>	North/South Street: <i>Kamaaha Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	47	143	6	126	195	12
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	158	6	140	216	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	0	2	0	1	2	0
Configuration		T	TR	L	T	
Upstream Signal		0			0	
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	10	192	78	15	266	43
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	11	0	86	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
v (vph)		140		97				
C (m) (vph)		1364		801				
v/c		0.10		0.12				
95% queue length		0.34		0.41				
Control Delay		7.9		10.1				
LOS		A		B				
Approach Delay	--	--	10.1					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kapolei Pkwy/Malu Ohai
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	PM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kapolei/Malu Ohai PM

East/West Street: Kapolei Parkway	North/South Street: Malu Ohai
Intersection Orientation: East-West	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	29	84	35	6	83	2
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	32	93	38	6	92	2
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	1	1	2	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	45	11	6	7	10	21
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	50	12	6	7	11	23
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LT	R	
v (vph)	32	6	68			18	23	
C (m) (vph)	1513	1467	702			645	1020	
v/c	0.02	0.00	0.10			0.03	0.02	
95% queue length	0.06	0.01	0.32			0.09	0.07	
Control Delay	7.4	7.5	10.7			10.7	8.6	
LOS	A	A	B			B	A	
Approach Delay	--	--	10.7			9.5		
Approach LOS	--	--	B			A		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/FBR
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - FBR/Kamaaha Mid Day

East/West Street: Kamaaha Avenue	North/South Street: Fort Barrette Road
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	47	592	73	244	747	12
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	657	81	271	830	0
Percent Heavy Vehicles	0	-	-	0	-	-
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	37	192	220	15	266	43
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	41	0	244	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		271	41		244			
C (m) (vph)		875	44		463			
v/c		0.31	0.93		0.53			
95% queue length		1.34	7.13		3.25			
Control Delay		11.0	401.0		21.4			
LOS		B	F		C			
Approach Delay	--	--	76.0					
Approach LOS	--	--	F					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kapolei Pkwy/FBR
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - FBR/Kapolei

East/West Street: Kapolei Parkway	North/South Street: Fort Barrette Road
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	557	84	136	648	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	618	93	151	720	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	57	0	108	0	0	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	63	0	120	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		151	63		120			
C (m) (vph)		898	92		493			
v/c		0.17	0.68		0.24			
95% queue length		0.61	4.88		0.96			
Control Delay		9.8	119.2		14.6			
LOS		A	F		B			
Approach Delay	--	--	50.6					
Approach LOS	--	--	F					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kuloa Ave
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kuloa Mid Day

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kamaaha Loop (KKHD)</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume	26	205	46	52	245	26
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	28	227	51	57	272	28
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	66	20	86	20	19	9
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	73	22	95	22	21	10
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	2	0
Configuration	L		TR	LT		TR

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
			7	8	9	10	11	12
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR	LT		TR
v (vph)	28	57	73		117	32		20
C (m) (vph)	1218	1290	459		598	343		535
v/c	0.02	0.04	0.16		0.20	0.09		0.04
95% queue length	0.07	0.14	0.57		0.73	0.31		0.12
Control Delay	8.0	7.9	14.3		12.5	16.6		12.0
LOS	A	A	B		B	C		B
Approach Delay	--	--	13.2			14.8		
Approach LOS	--	--	B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/Kumuiki Ave
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kumuiki Mid

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kamaaha Loop (Ewa)</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	62	122	113	17	93	27
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	68	135	125	18	103	30
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	82	26	33	14	28	57
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	91	28	36	15	31	63
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (vph)	68	18	119		36		109	
C (m) (vph)	1445	1296	456		874		645	
v/c	0.05	0.01	0.26		0.04		0.17	
95% queue length	0.15	0.04	1.05		0.13		0.61	
Control Delay	7.6	7.8	15.7		9.3		11.7	
LOS	A	A	C		A		B	
Approach Delay	--	--	14.2			11.7		
Approach LOS	--	--	B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kaiiau Ave
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kaiiau Mid Day

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kaiiau Avenue</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	236	81	44	188	96
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	262	90	48	208	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	0	2	0	1	2	0
Configuration		T	TR	L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	69	546	61	80	941	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	76	0	67	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		48	76		67			
C (m) (vph)		1216	527		834			
v/c		0.04	0.14		0.08			
95% queue length		0.12	0.50		0.26			
Control Delay		8.1	13.0		9.7			
LOS		A	B		A			
Approach Delay	--	--	11.4					
Approach LOS	--	--	B					

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kapolei Pkwy
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kapolei
East/West Street: Kapolei Parkway		North/South Street: Kamaaha Avenue	

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
	L	T	R	L	T	R
Movement						
Volume	60	61	79	1	46	55
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
	L	T	R	L	T	R
Movement						
Volume	65	104	5	59	107	38
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		L	TR	L	TR
PHF	0.90		0.90		0.90	0.90	0.90	0.90
Flow Rate	220		113		72	120	65	160
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	1.00							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.3		0.0		1.0	0.0	1.0	0.0
Prop. Right-Turns	0.4		0.5		0.0	0.0	0.0	0.3
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	4.96		4.96		4.96	4.96	4.96	4.96

Departure Headway and Service Time

hd, initial value	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.20		0.10		0.06	0.11	0.06	0.14
hd, final value	4.96		4.96		4.96	4.96	4.96	4.96
x, final value	0.30		0.16		0.12	0.19	0.11	0.24
Move-up time, m	2.0		2.0		2.3		2.3	
Service Time	3.0		3.0		3.0		3.0	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	470		363		322	370	315	410
Delay	10.11		8.91		9.36	9.65	9.22	9.93
LOS	B		A		A	A	A	A
Approach: Delay	10.11		8.91		9.54		9.73	
LOS	B		A		A		A	
Intersection Delay	9.67							
Intersection LOS	A							

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/Kealanani
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/ Kealanani Mid

East/West Street: Kamaaha Avenue	North/South Street: Kealanani Avenue
Intersection Orientation: East-West	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	30	139	41	16	112	208
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	33	154	0	0	124	231
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	44	21	37	138	9	25
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	0	0	153	0	27
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

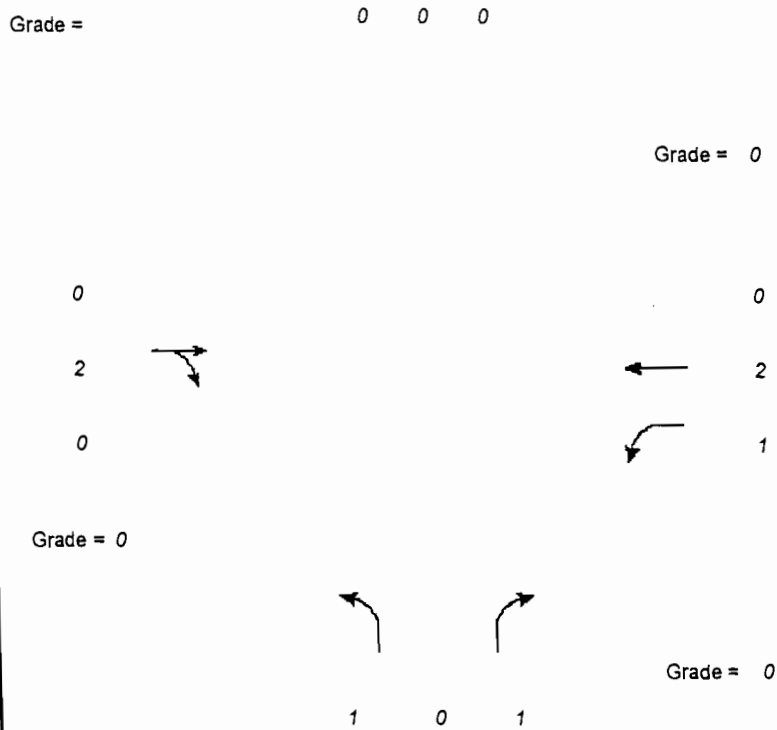
Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (vph)	33					153		27
C (m) (vph)	1136					577		766
v/c	0.03					0.27		0.04
95% queue length	0.09					1.08		0.11
Control Delay	8.3					13.5		9.9
LOS	A					B		A
Approach Delay	--	--					12.9	
Approach LOS	--	--					B	

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani Ave/Farrington
Agency or Co.	PBQ&D		hwy
Date Performed	12/29/2003	Area Type	All other areas
Time Period	Mid Day Peak Existing	Jurisdiction	Honolulu
		Analysis Year	2003

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Volume (vph)		336	182	83	314		270		58				
% Heavy veh		0	0	0	0		0		0				
PHF		0.90	0.90	0.90	0.90		0.90		0.90				
Actuated (P/A)		A	A	A	A		A		A				
Startup lost time		2.0		2.0	2.0		2.0		2.0				
Ext. eff. green		2.0		2.0	2.0		2.0		2.0				
Arrival type		3		3	3		3		3				
Ped volume		0						4			5		
Bicycle volume								0					
Parking (Y or N)		N		N	N		N		N	N		N	
Parking/hr													
Bus stops/hr		0		0	0		0		0				
Ped timing		0.0			0.0			3.0			0.0		
	WB Only	Thru & RT	03	04	NB Only	06	07	08					
Timing	G = 10.0	G = 13.0	G =	G =	G = 25.0	G =	G =	G =					
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25							Cycle Length C = 60.0						

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei - TIAR Kealanani/Farrington Mid Day Peak*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	TR	L	T	L	R			
Adj. flow rate	575	92	349	300	64			
Satflow rate	3420	1805	3610	1805	1611			
Lost time	2.0	2.0	2.0	2.0	2.0			
Green ratio	0.22	0.17	0.45	0.42	0.65			
Lane group cap.	741	301	1624	752	1047			
v/c ratio	0.78	0.31	0.21	0.40	0.06			
Flow ratio	0.17	0.05	0.10	0.17	0.04			
Crit. lane group	Y	Y	N	Y	N			
Sum flow ratios	0.39							
Lost time/cycle	12.00							
Critical v/c ratio	0.48							

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	TR	L	T	L	R			
Adj. flow rate	575	92	349	300	64			
Lane group cap.	741	301	1624	752	1047			
v/c ratio	0.78	0.31	0.21	0.40	0.06			
Green ratio	0.22	0.17	0.45	0.42	0.65			
Unif. delay d1	22.1	22.0	10.0	12.2	3.8			
Delay factor k	0.33	0.11	0.11	0.11	0.11			
Increm. delay d2	5.2	0.6	0.1	0.3	0.0			
PF factor	1.000	1.000	1.000	1.000	1.000			
Control delay	27.3	22.5	10.1	12.6	3.9			
Lane group LOS	C	C	B	B	A			
Apprch. delay	27.3		12.7		11.1			
Approach LOS	C		B		B			
Intersec. delay	18.4		Intersection LOS				B	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani/Kuloa/Kumuiki
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei-TIAR Exist-Kealanani/ Kuloa/Kumuiki Mid

East/West Street: <i>Kumuiki Street</i>	North/South Street: <i>Kealanani Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	5	229	4	61	153	51
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	5	254	4	67	170	56
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	3	3	49	50	0	7
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	3	3	54	55	0	7
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration	LT		R	L		TR

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R	L		TR
v (vph)	5	67	6		54	55		7
C (m) (vph)	1332	1312	400		891	413		894
v/c	0.00	0.05	0.01		0.06	0.13		0.01
95% queue length	0.01	0.16	0.05		0.19	0.46		0.02
Control Delay	7.7	7.9	14.1		9.3	15.1		9.1
LOS	A	A	B		A	C		A
Approach Delay	--	--	9.8			14.4		
Approach LOS	--	--	A			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/Kekuilani Makai
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kekuilani Mid

East/West Street: <i>Kekuilani Loop (makai)</i>	North/South Street: <i>Kamaaha Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	14	176	29	39	168	36
Peak-Hour Factor, PHF	0.90	0.90	0.89	0.90	0.90	0.90
Hourly Flow Rate, HFR	15	195	32	43	186	40
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	15	15	36	36	20	21
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	16	16	40	40	22	23
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LT	R	
v (vph)	15	43	72			62	23	
C (m) (vph)	1234	1284	563			438	618	
v/c	0.01	0.03	0.13			0.14	0.04	
95% queue length	0.04	0.10	0.44			0.49	0.12	
Control Delay	8.0	7.9	12.3			14.6	11.1	
LOS	A	A	B			B	B	
Approach Delay	--	--	12.3			13.6		
Approach LOS	--	--	B			B		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/KekuilaniMauka
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kamaaha/Kekuilani Mid

East/West Street: <i>Kekuilani Loop (mauka)</i>	North/South Street: <i>Kamaaha Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume		47	243	5	75	236	12
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		0	270	5	83	262	0
Percent Heavy Vehicles		0	--	--	0	--	--
Median Type	<i>Raised curb</i>						
RT Channelized				0			0
Lanes		0	2	0	1	2	0
Configuration			T	TR	L	T	
Upstream Signal			0			0	

Minor Street	Westbound			Eastbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume		7	192	80	15	266	43
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		7	0	88	0	0	0
Percent Heavy Vehicles		0	0	0	0	0	0
Percent Grade (%)			0			0	
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes		0	0	0	0	0	0
Configuration			LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
			7	8	9	10	11	12
Movement	1	4						
Lane Configuration		L		LR				
v (vph)		83		95				
C (m) (vph)		1178		708				
v/c		0.07		0.13				
95% queue length		0.23		0.46				
Control Delay		8.3		10.9				
LOS		A		B				
Approach Delay	--	--		10.9				
Approach LOS	--	--		B				

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kapolei Pkwy/Malu Ohai
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	Mid Day Peak Existing	Project ID	Villages of Kapolei - TIAR Existing - Kapolei/Malu Ohai

East/West Street: <i>Kapolei Parkway</i>	North/South Street: <i>Malu Ohai</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	11	174	35	11	133	5
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	12	193	38	12	147	5
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	1	1	2	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	24	1	23	3	5	8
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	26	1	25	3	5	8
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

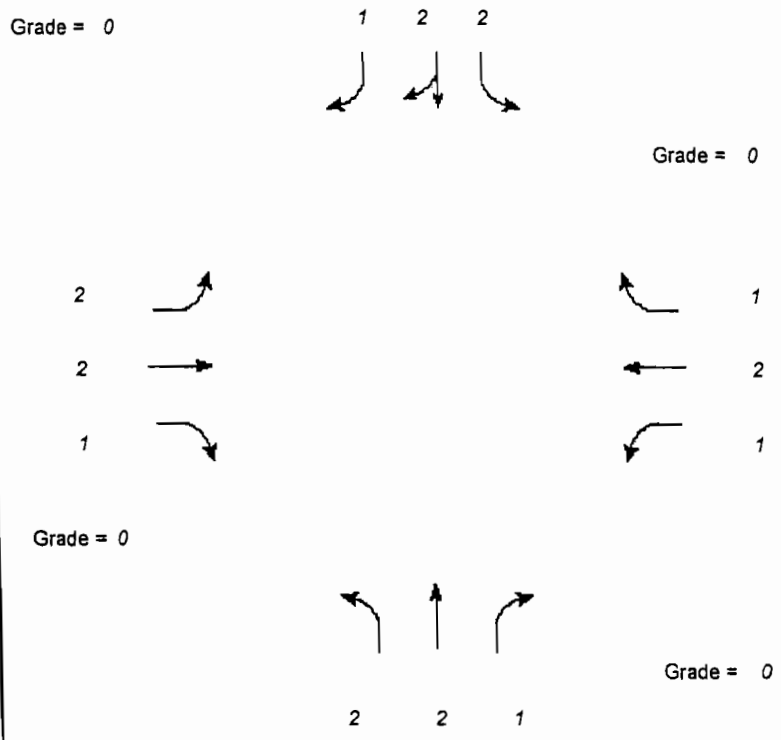
Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR		LT		R
v (vph)	12	12		52		8		8
C (m) (vph)	1441	1349		628		517		979
v/c	0.01	0.01		0.08		0.02		0.01
95% queue length	0.03	0.03		0.27		0.05		0.02
Control Delay	7.5	7.7		11.2		12.1		8.7
LOS	A	A		B		B		A
Approach Delay	--	--	11.2			10.4		
Approach LOS	--	--	B			B		

INPUT WORKSHEET

General Information		Site Information	
Analyst	JW	Intersection	Farrington Hwy/Ft Barrette Rd
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	7/15/03	Jurisdiction	Honolulu
Time Period	AM Peak Period Existing	Analysis Year	2003

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	398	171	479	82	366	514	660	534	44	230	787	887
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	3	3	3	3	3	3	3	3	3	3	3	3
Ped volume	0			0			0			0		
Bicycle volume	0											
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	EB Only	Thru & RT	04	Excl. Left	Thru & RT	07	08				
Timing	G = 25.0	G = 25.0	G = 20.0	G =	G = 40.0	G = 40.0	G =	G =				
	Y = 3.0	Y = 3.0	Y = 3.0	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 170.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *North South Rd Existing AM Peak Farrington/Ft Barrette*

Capacity Analysis

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	TR	R
Lane group												
Adj. flow rate	442	190	532	91	407	571	733	593	49	256	874	986
Satflow rate	3502	3610	1615	1805	3610	1615	3502	3610	1615	3502	3610	1615
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.32	0.29	0.55	0.15	0.12	0.38	0.24	0.24	0.41	0.24	0.24	0.58
Lane group cap.	1112	1041	883	265	425	608	824	849	656	824	849	931
v/c ratio	0.40	0.18	0.60	0.34	0.96	0.94	0.89	0.70	0.07	0.31	1.03	1.06
Flow ratio	0.13	0.05	0.33	0.05	0.11	0.35	0.21	0.16	0.03	0.07	0.24	0.61
Crit. lane group	N	N	N	N	N	Y	N	N	N	N	N	Y
Sum flow ratios	0.96											
Lost time/cycle	8.00											
Critical v/c ratio	1.01											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	TR	R
Lane group												
Adj. flow rate	442	190	532	91	407	571	733	593	49	256	874	986
Lane group cap.	1112	1041	883	265	425	608	824	849	656	824	849	931
v/c ratio	0.40	0.18	0.60	0.34	0.96	0.94	0.89	0.70	0.07	0.31	1.03	1.06
Green ratio	0.32	0.29	0.55	0.15	0.12	0.38	0.24	0.24	0.41	0.24	0.24	0.58
Unif. delay d1	45.3	45.5	26.0	65.1	74.6	51.1	62.9	59.5	30.9	53.6	65.0	36.0
Delay factor k	0.11	0.11	0.19	0.11	0.47	0.45	0.41	0.26	0.11	0.11	0.50	0.50
Increm. delay d2	0.2	0.1	1.2	0.8	32.8	22.6	11.8	2.6	0.0	0.2	38.7	46.4
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	45.5	45.5	27.2	65.9	107.4	73.8	74.6	62.0	31.0	53.8	103.7	82.4
Lane group LOS	D	D	C	E	F	E	E	E	C	D	F	F
Apprch. delay	37.1			85.9			67.6			87.7		
Approach LOS	D			F			E			F		
Intersec. delay	72.3			Intersection LOS						E		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kamaaha Ave/FBR
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei TIAR - Existing FBR/Kamaaha AM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Fort Barrette Road</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	922	65	171	1177	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	1024	72	190	1307	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	33	0	316	0	0	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	36	0	351	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		190	36		351			
C (m) (vph)		641	16		285			
v/c		0.30	2.25		1.23			
95% queue length		1.26	13.89		44.76			
Control Delay		13.0			493.3			
LOS		B	F		F			
Approach Delay	--	--	710.7					
Approach LOS	--	--	F					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kapolei Pkwy/FBR
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing FBR/Kapolei Pkwy AM Peak

East/West Street: <i>Kapolei Parkway</i>	North/South Street: <i>Fort Barrette Road</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	686	178	330	880	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	762	197	366	977	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	79	0	301	0	0	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	87	0	334	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		366	87		334			
C (m) (vph)		725	17		408			
v/c		0.50	5.12		0.82			
95% queue length		2.87	11.57		7.48			
Control Delay		14.9			43.1			
LOS		B	F		E			
Approach Delay	--	--	510.2					
Approach LOS	--	--	F					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kamaaha Ave/Kaiou Ave
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing Kamaaha/Kaiou AM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kaiou Avenue</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	186	50	164	189	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	206	55	182	210	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	0	2	0	1	2	0
Configuration		T	TR	L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	160	0	155	0	0	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	177	0	172	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		182	177		172			
C (m) (vph)		1315	421		902			
v/c		0.14	0.42		0.19			
95% queue length		0.48	2.14		0.71			
Control Delay		8.2	19.7		9.9			
LOS		A	C		A			
Approach Delay	--	--	14.9					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kamaaha/Kealanani
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei-TIAR Existing Kamaaha/ Kealanani AM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kealanani Avenue</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	112	96	125	461	125	461
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	124	106	0	0	138	512
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	0	250	0	86
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	0	0	277	0	95
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (vph)	124					277		95
C (m) (vph)	916					424		646
v/c	0.14					0.65		0.15
95% queue length	0.47					5.27		0.52
Control Delay	9.5					29.1		11.5
LOS	A					D		B
Approach Delay	--	--				24.6		
Approach LOS	--	--				C		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kamaaha Ave/Kuloa Ave
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing Kamaaha/Kuloa AM Peak

East/West Street: Kamaaha Avenue	North/South Street: Kuloa Ave/Kamaaha Lp (East)
Intersection Orientation: East-West	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	11	264	71	110	457	38
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	12	293	78	122	507	42
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	109	16	132	27	33	20
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	121	17	146	30	36	22
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	1	0	0	2	0
Configuration	L		TR	LT		TR

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	L		TR	LT		TR
v (vph)	12	122	121		163	48		40
C (m) (vph)	976	1189	293		588	221		384
v/c	0.01	0.10	0.41		0.28	0.22		0.10
95% queue length	0.04	0.34	2.06		1.14	0.82		0.35
Control Delay	8.7	8.4	25.9		13.5	25.8		15.5
LOS	A	A	D		B	D		C
Approach Delay	--	--	18.7			21.1		
Approach LOS	--	--	C			C		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kamaaha/Kumuiki Ave
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing Kamaaha/Kumuiki AM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kumuiki St/Kamaaha Lp (West)</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	50	143	148	51	137	23
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	55	158	164	56	152	25
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	93	18	43	22	44	123
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	103	20	47	24	48	136
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	0	1	0
Configuration	LT		R		LTR	

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R		LTR	
v (vph)	55	56	123		47		208	
C (m) (vph)	1387	1235	393		832		651	
v/c	0.04	0.05	0.31		0.06		0.32	
95% queue length	0.12	0.14	1.35		0.18		1.40	
Control Delay	7.7	8.1	18.3		9.6		13.1	
LOS	A	A	C		A		B	
Approach Delay	--	--	15.9			13.1		
Approach LOS	--	--	C			B		

ALL-WAY STOP CONTROL ANALYSIS

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kapolei Pkwy/Kamaaha Ave
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei - TIAR Existing Kapolei/Kamaaha AM Peak

East/West Street: Kapolei Parkway

North/South Street: Kamaaha Avenue

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
	L	T	R	L	T	R
Movement						
Volume	49	104	98	1	40	108
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
	L	T	R	L	T	R
Movement						
Volume	137	176	2	141	162	73
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		L	TR	L	TR
PHF	0.90		0.90		0.90	0.90	0.90	1.00
Flow Rate	277		165		152	197	156	235
% Heavy Vehicles	0		0		0	0	0	0
No. Lanes	1		1		2		2	
Geometry Group	2		2		5		5	
Duration, T	1.00							

Saturation Headway Adjustment Worksheet

Prop. Left-Turns	0.2		0.0		1.0	0.0	1.0	0.0
Prop. Right-Turns	0.4		0.7		0.0	0.0	0.0	0.3
Prop. Heavy Vehicle	0.0		0.0		0.0	0.0	0.0	0.0
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	6.03		6.03		6.03	6.03	6.03	6.03

Departure Headway and Service Time

hd, initial value	3.20		3.20		3.20	3.20	3.20	3.20
x, initial	0.25		0.15		0.14	0.18	0.14	0.21
hd, final value	6.03		6.03		6.03	6.03	6.03	6.03
x, final value	0.46		0.28		0.29	0.36	0.29	0.41
Move-up time, m	2.0		2.0		2.3		2.3	
Service Time	4.0		4.0		4.0		4.0	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	527		415		402	447	406	485
Delay	14.21		11.43		12.21	12.96	12.20	13.49
LOS	B		B		B	B	B	B
Approach: Delay	14.21		11.43		12.64		12.98	
LOS	B		B		B		B	
Intersection Delay	12.95							
Intersection LOS	B							

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kamaaha/Kekuilani Makai
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei-TIAR Existing Kamaaha/ Kekuilani AM Peak

East/West Street: <i>Kekuilani Loop (Makai)</i>	North/South Street: <i>Kamaaha Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	21	292	20	35	303	28
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	23	324	22	38	336	31
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	34	44	77	71	16	39
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	37	48	85	78	17	43
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		5			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LTR			LT		R
v (vph)	23	38	170			95		43
C (m) (vph)	1109	1102	463			335		669
v/c	0.02	0.03	0.37			0.28		0.06
95% queue length	0.06	0.11	1.72			1.18		0.21
Control Delay	8.3	8.4	17.3			20.0		10.8
LOS	A	A	C			C		B
Approach Delay	--	--	17.3			17.1		
Approach LOS	--	--	C			C		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>C. Maruoka</i>	Intersection	<i>Kamaaha/KekuilaniMauka</i>
Agency/Co.	<i>PBQ&D</i>	Jurisdiction	<i>Honolulu</i>
Date Performed	<i>12/8/2003</i>	Analysis Year	<i>2003</i>
Analysis Time Period	<i>AM Peak Existing</i>	Project ID	<i>Villages of Kapolei-TIAR Existing Kamaaha/ Kekuilani AM Peak</i>

East/West Street: <i>Kekuilani Loop (Mauka)</i>	North/South Street: <i>Kamaaha Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume		0	430	10	72	351	0
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		0	477	11	80	390	0
Percent Heavy Vehicles		0	--	--	0	--	--
Median Type	<i>Undivided</i>						
RT Channelized				0			0
Lanes		0	2	0	1	2	0
Configuration			T	TR	L	T	
Upstream Signal			0			0	

Minor Street	Westbound			Eastbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume		15	0	175	0	0	0
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		16	0	194	0	0	0
Percent Heavy Vehicles		0	0	0	0	0	0
Percent Grade (%)		0			0		
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes		0	0	0	0	0	0
Configuration			LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
			7	8	9	10	11	12
Movement	1	4						
Lane Configuration		L		LR				
v (vph)		80		210				
C (m) (vph)		998		619				
v/c		0.08		0.34				
95% queue length		0.26		1.53				
Control Delay		8.9		13.8				
LOS		A		B				
Approach Delay	--	--	13.8					
Approach LOS	--	--	B					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kapolei Pkwy/Malu Ohai
Agency/Co.	PBQD	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei -TIAR Existing Kapolei/Malu Ohai AM Peak

East/West Street: <i>Kapolei Parkway</i>	North/South Street: <i>Malu Ohai Street</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	41	224	243	69	169	12
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	45	248	270	76	187	13
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Raised curb</i>					
RT Channelized			0			0
Lanes	1	2	1	1	2	1
Configuration	L	T	R	L	T	R
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	133	77	14	13	131	78
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	147	85	15	14	145	86
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	0	0	1	1
Configuration		LTR		LT		R

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L		LTR		LT		R
v (vph)	45	76		247		159		86
C (m) (vph)	1384	1058		329		269		951
v/c	0.03	0.07		0.75		0.59		0.09
95% queue length	0.10	0.23		7.62		4.04		0.30
Control Delay	7.7	8.7		46.8		37.2		9.2
LOS	A	A		E		E		A
Approach Delay	--	--	46.8			27.4		
Approach LOS	--	--	E			D		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kealanani/Kuloa/Kumuiki
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	12/8/2003	Analysis Year	2003
Analysis Time Period	AM Peak Existing	Project ID	Villages of Kapolei - TIAR Exist Kealanani/ Kuloa/Kumuiki AM

East/West Street: Kumuiki St/Kuloa Ave	North/South Street: Kealanani Avenue
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	15	548	10	27	318	3
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	16	608	11	30	353	3
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	8	7	132	125	3	10
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	8	7	146	138	3	11
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration	LT		R	L		TR

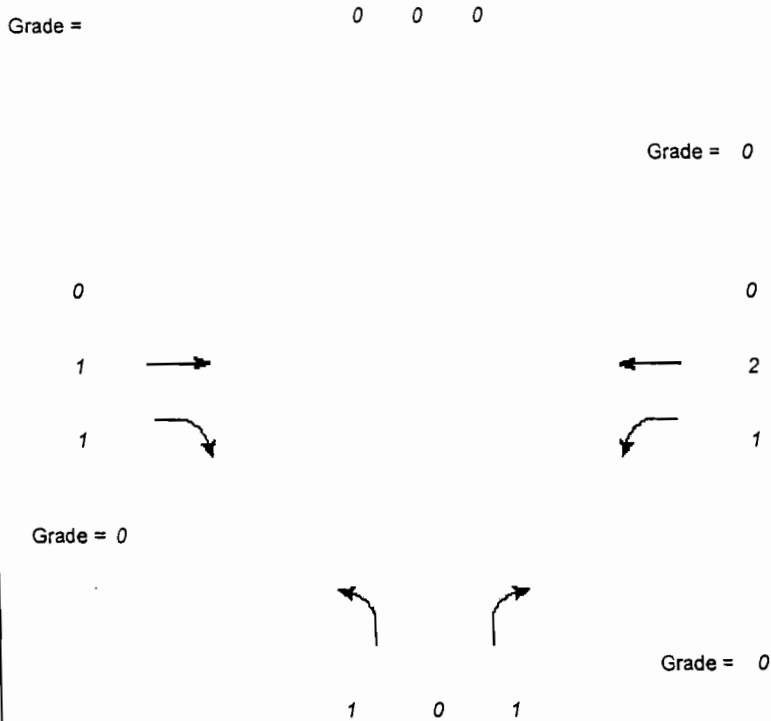
Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R	L		TR
v (vph)	16	30	15		146	138		14
C (m) (vph)	1182	957	323		658	319		598
v/c	0.01	0.03	0.05		0.22	0.43		0.02
95% queue length	0.04	0.10	0.15		0.85	2.23		0.07
Control Delay	8.1	8.9	16.7		12.0	24.8		11.2
LOS	A	A	C		B	C		B
Approach Delay	--	--	12.5			23.6		
Approach LOS	--	--	B			C		

INPUT WORKSHEET

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kealanani Ave/Farrington Hwy
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	12/8/2003	Jurisdiction	Honolulu
Time Period	AM Peak Existing	Analysis Year	2003

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Volume (vph)		246	199	149	359		603		202				
% Heavy veh		0	0	0	0		0		0				
PHF		0.90	0.90	0.90	0.90		0.90		0.90				
Actuated (P/A)		A	A	A	A		A		A				
Startup lost time		2.0	2.0	2.0	2.0		2.0		2.0				
Ext. eff. green		2.0	2.0	2.0	2.0		2.0		2.0				
Arrival type		3	3	3	3		3		3				
Ped volume		0			0			0			0		
Bicycle volume		0			0			0			0		
Parking (Y or N)		N		N	N		N		N	N		N	
Parking/hr													
Bus stops/hr		0	0	0	0		0		0				
Ped timing		0.0			0.0			3.0			0.0		
	WB Only	Thru & RT	03	04	NB Only	06	07	08					
Timing	G = 10.0	G = 13.0	G =	G =	G = 25.0	G =	G =	G =					
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25							Cycle Length C = 60.0						

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei - TIAR Kealanani/Farrington AM Peak*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	T	R	L	T	L	R		
Adj. flow rate	273	221	166	399	670	224		
Satflow rate	1900	1615	1805	3610	1805	1615		
Lost time	2.0	2.0	2.0	2.0	2.0	2.0		
Green ratio	0.22	0.70	0.17	0.45	0.42	0.65		
Lane group cap.	412	1130	301	1624	752	1050		
v/c ratio	0.66	0.20	0.55	0.25	0.89	0.21		
Flow ratio	0.14	0.14	0.09	0.11	0.37	0.14		
Crit. lane group	Y	N	Y	N	Y	N		
Sum flow ratios	0.61							
Lost time/cycle	12.00							
Critical v/c ratio	0.76							

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	T	R	L	T	L	R		
Adj. flow rate	273	221	166	399	670	224		
Lane group cap.	412	1130	301	1624	752	1050		
v/c ratio	0.66	0.20	0.55	0.25	0.89	0.21		
Green ratio	0.22	0.70	0.17	0.45	0.42	0.65		
Unif. delay d1	21.5	3.1	22.9	10.2	16.2	4.3		
Delay factor k	0.24	0.11	0.15	0.11	0.41	0.11		
Increm. delay d2	4.0	0.1	2.2	0.1	12.9	0.1		
PF factor	1.000	1.000	1.000	1.000	1.000	1.000		
Control delay	25.5	3.2	25.1	10.3	29.1	4.4		
Lane group LOS	C	A	C	B	C	A		
Apprch. delay	15.5		14.6		22.9			
Approach LOS	B		B		C			
Intersec. delay	18.6		Intersection LOS				B	

Build Out 2025 LOS Summary

Build Out 2025 LOS				
Intersection	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Farrington Highway-Ft Barrette Rd	C	34.5	C	33.3
KKHD Bound Approach	D	45.9	C	34.9
Waianae Bound Approach	D	39.1	D	45.1
Mauka Bound Approach	D	36.3	C	30.4
Makai Bound Approach	C	28.9	C	29.9
Farrington Highway-Kealanani Ave	C	25.4	C	25.0
KKHD Bound Approach	C	33.1	C	23.6
Waianae Bound Approach	B	17.7	C	28.6
Makai Bound Approach	C	22.4	C	23.2
Ft Barrette Rd-Kama'aha Ave	D	39.5	D	42.1
KKHD Bound Approach	C	32.6	D	48.3
Waianae Bound Approach	C	30.6	C	29.4
Mauka Bound Approach	D	52.2	D	47.9
Makai Bound Approach	D	37.1	D	38.6
Kama'aha Ave-Kumuiki St (West Lp)	B	19.7	B	15.9
KKHD Bound Approach	B	16.1	B	15.4
Waianae Bound Approach	B	19.5	B	18.2
Mauka Bound Approach	B	16.7	B	13.1
Makai Bound Approach	C	27.6	B	15.7
Kama'aha Ave-Kuloa Ave (East Lp)	B	17.1	B	16.1
KKHD Bound Approach	B	18.4	B	18.1
Waianae Bound Approach	B	18.7	B	16.5
Mauka Bound Approach	B	18.5	B	14.9
Makai Bound Approach	B	10.5	A	8.2
Kama'aha Ave-Kekuilani Lp (Makai)	C	28.2	C	22.2
KKHD Bound Approach	C	29.0	C	22.6
Waianae Bound Approach	C	28.9	C	20.3
Mauka Bound Approach	C	25.8	C	23.0
Makai Bound Approach	C	29.3	C	21.5
Kama'aha Ave-Kapolei Pkwy	D	43.9	D	37.4
KKHD Bound Approach	D	39.5	D	39.4
Waianae Bound Approach	D	51.4	D	36.9
Mauka Bound Approach	D	51.4	D	37.4
Makai Bound Approach	C	34.8	D	31.6
Ft Barrette Rd-Kapolei Pkwy	D	42.7	C	34.1
KKHD Bound Approach	D	38.8	C	30.8
Waianae Bound Approach	D	46.7	D	38.8
Mauka Bound Approach	D	41.4	D	35.1
Makai Bound Approach	D	40.5	D	35.1
Kapolei Pkwy-Malu Ohai St	C	28.6	C	23.5
KKHD Bound Approach	C	27.0	C	23.8
Waianae Bound Approach	C	26.1	C	22.0
Mauka Bound Approach	D	48.0	C	34.6
Makai Bound Approach	C	33.2	C	22.8
Kapolei Pkwy-Street A	B	16.5	B	17.2
KKHD Bound Approach	C	24.7	C	22.0
Waianae Bound Approach	B	10.4	A	6.3
Mauka Bound Approach	C	24.1	C	29.5

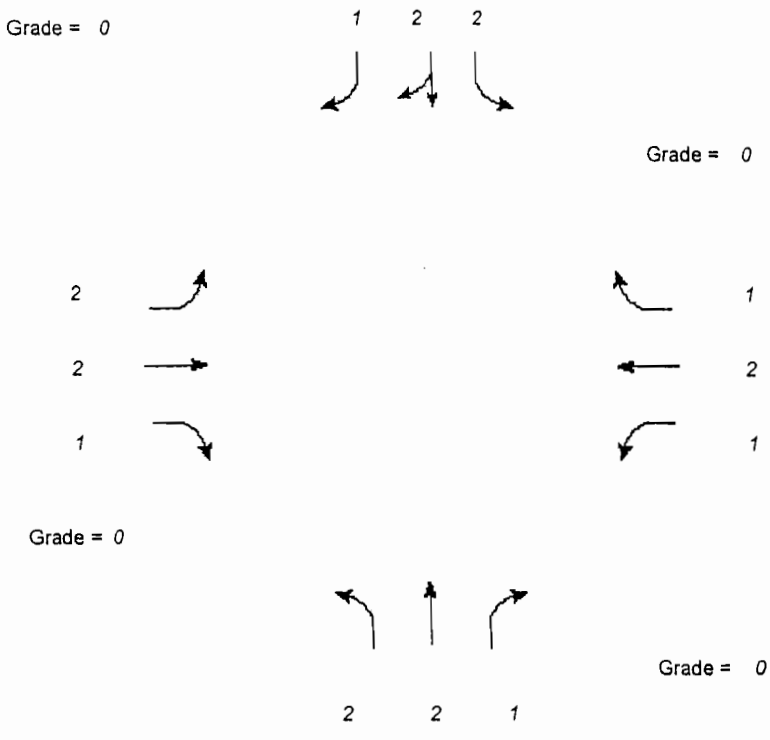
Unsignalized Intersection Summary

Future Unsignalized Intersection Level-Of-Service				
Intersection	AM Peak		PM Peak	
	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)
Kama'aha Ave-Kai'au Ave				
Unsignalized				
Waianae Bound Left-Turn	A	8.7	A	9.3
Mauka Bound Left-Turn	C	22.3	C	17.4
Mauka Bound Right-Turn	B	12.4	B	10.9
Kama'aha Ave-Kealanani ave				
Unsignalized				
KKHD Bound Left-Turn	A	9.5	A	8.3
Makai Bound Left-Turn	D	29.5	C	17.1
Makai Bound Right-Turn	B	11.4	B	10.4
Kama'aha Ave-Keku'ilani Lp (Mauka)				
Unsignalized				
Makai Bound Left-Turn	A	8.8	A	8.1
Waianae Bound Left/Right-Turn	C	19.1	B	10.7
Kealanani Ave-Kuloa Ave/Kumuiki St				
Unsignalized				
Mauka Bound Left-Turn	A	7.9	A	8.3
Makai Bound Left-Turn	A	7.9	A	8.1
Waianae Bound Left-Turn	B	14.0	C	17.5
Waianae Bound Right-Turn	B	10.4	A	9.7
KKHD Bound Left-Turn	D	28.5	C	24.3
KKHD Bound Right-Turn	B	10.1	B	14.3
Kealanani Ave-Entrance B				
Unsignalized				
Mauka Bound Left-Turn	A	8.1	A	8.5
KKHD Bound Left-Turn	B	12.7	B	13.9
KKHD Bound Right-Turn	A	9.8	B	11.3

INPUT WORKSHEET

General Information		Site Information	
Analyst	Ryan Yoshimura	Intersection	Farrington Hwy/Ft Barrette Rd
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	7/23/03	Jurisdiction	Honolulu
Time Period	AM Peak Period	Analysis Year	2025

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	300	100	20	145	160	190	100	1250	65	425	610	700
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	3	3	3	3	3	3	3	3	3	3	3	3
Ped volume	0			0			0			0		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08				
Timing	G = 15.0	G = 15.0	G =	G =	G = 19.0	G = 45.0	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *North South Rd 2025 AM Peak Farrington/Ft Barrette*

Capacity Analysis

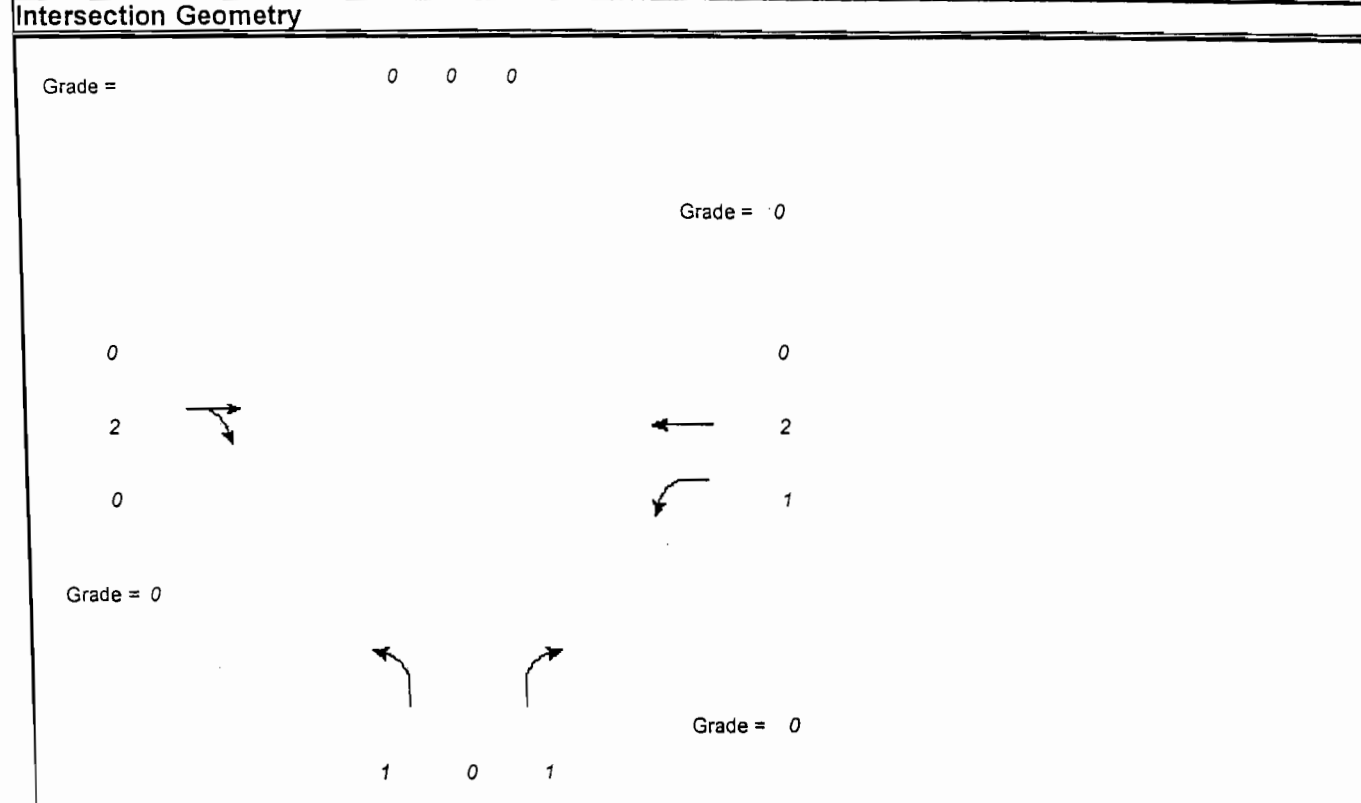
	EB			WB			NB			SB		
Lane group	L	T	R	L	T	R	L	T	R	L	TR	R
Adj. flow rate	316	105	21	153	168	200	105	1316	68	447	642	737
Satflow rate	3502	3610	1615	1805	3610	1615	3502	3610	1615	3502	3610	1615
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.14	0.14	0.35	0.14	0.14	0.35	0.17	0.41	0.58	0.17	0.41	0.58
Lane group cap.	478	492	558	246	492	558	605	1477	940	605	1477	940
v/c ratio	0.66	0.21	0.04	0.62	0.34	0.36	0.17	0.89	0.07	0.74	0.43	0.78
Flow ratio	0.09	0.03	0.01	0.08	0.05	0.12	0.03	0.36	0.04	0.13	0.18	0.46
Crit. lane group	N	N	N	N	Y	N	N	N	N	Y	N	Y
Sum flow ratios	0.63											
Lost time/cycle	12.00											
Critical v/c ratio	0.71											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Lane group	L	T	R	L	T	R	L	T	R	L	TR	R
Adj. flow rate	316	105	21	153	168	200	105	1316	68	447	642	737
Lane group cap.	478	492	558	246	492	558	605	1477	940	605	1477	940
v/c ratio	0.66	0.21	0.04	0.62	0.34	0.36	0.17	0.89	0.07	0.74	0.43	0.78
Green ratio	0.14	0.14	0.35	0.14	0.14	0.35	0.17	0.41	0.58	0.17	0.41	0.58
Unif. delay d1	45.1	42.3	23.9	44.8	43.0	26.9	38.8	30.2	10.0	43.1	23.4	17.7
Delay factor k	0.24	0.11	0.11	0.21	0.11	0.11	0.11	0.41	0.11	0.30	0.11	0.33
Increm. delay d2	3.4	0.2	0.0	4.8	0.4	0.4	0.1	7.2	0.0	4.8	0.2	4.4
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	48.5	42.5	23.9	49.6	43.4	27.3	38.9	37.4	10.1	47.9	23.6	22.1
Lane group LOS	D	D	C	D	D	C	D	D	B	D	C	C
Apprch. delay	45.9			39.1			36.3			28.9		
Approach LOS	D			D			D			C		
Intersec. delay	34.5			Intersection LOS						C		

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani Ave/Farrington
Agency or Co.	PBQ&D		hwy
Date Performed	2/3/2004	Area Type	All other areas
Time Period	AM Peak Buildout 2025	Jurisdiction	Honolulu
		Analysis Year	2004



	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Volume (vph)		367	201	150	220		275		252				
% Heavy veh		0	0	0	0		0		0				
PHF		0.90	0.90	0.90	0.90		0.90		0.90				
Actuated (P/A)		A	A	A	A		A		A				
Startup lost time		2.0		2.0	2.0		2.0		2.0				
Ext. eff. green		2.0		2.0	2.0		2.0		2.0				
Arrival type		3		3	3		3		3				
Ped volume		2						0			0		
Bicycle volume		0						0					
Parking (Y or N)		N		N	N		N		N	N		N	
Parking/hr													
Bus stops/hr		0		0	0		0		0				
Ped timing		0.0			0.0			3.0			0.0		
	WB Only	Thru & RT	03	04	NB Only	06	07	08					
Timing	G = 31.0	G = 34.0	G =	G =	G = 33.0	G =	G =	G =					
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0						

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei - TIAR Build Kealanani/Farrington AMPeak*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	TR	L	T	L	R			
Adj. flow rate	631	167	244	306	280			
Satflow rate	3415	1805	3610	1805	1615			
Lost time	2.0	2.0	2.0	2.0	2.0			
Green ratio	0.31	0.28	0.63	0.30	0.62			
Lane group cap.	1056	509	2264	542	998			
v/c ratio	0.60	0.33	0.11	0.56	0.28			
Flow ratio	0.18	0.09	0.07	0.17	0.17			
Crit. lane group	Y	Y	N	Y	N			
Sum flow ratios	0.45							
Lost time/cycle	12.00							
Critical v/c ratio	0.50							

Lane Group Capacity, Control Delay, and LOS Determination

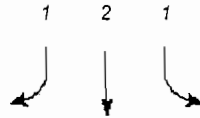
	EB		WB		NB		SB	
Lane group	TR	L	T	L	R			
Adj. flow rate	631	167	244	306	280			
Lane group cap.	1056	509	2264	542	998			
v/c ratio	0.60	0.33	0.11	0.56	0.28			
Green ratio	0.31	0.28	0.63	0.30	0.62			
Unif. delay d1	32.2	31.3	8.2	32.4	9.7			
Delay factor k	0.19	0.11	0.11	0.16	0.11			
Increm. delay d2	0.9	0.4	0.0	1.4	0.2			
PF factor	1.000	1.000	1.000	1.000	1.000			
Control delay	33.1	31.6	8.2	33.8	9.9			
Lane group LOS	C	C	A	C	A			
Apprch. delay	33.1		17.7		22.4			
Approach LOS	C		B		C			
Intersec. delay	25.4		Intersection LOS				C	

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha/FBR
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	AM Peak Period Buildout 2025	Analysis Year	2004

Intersection Geometry

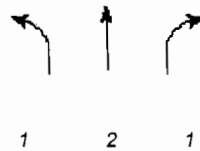
Grade = 0



Grade = 0



Grade = 0



Grade = 0

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	138	187	97	96	325	404	40	863	54	210	503	62
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	3	3	3	3	3	3	3	3	3	3	3	3
Ped volume	0			3			0			3		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08				
Timing	G = 12.0	G = 31.0	G =	G =	G = 20.0	G = 31.0	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 AM Peak Kamaaha/FBR*

Capacity Analysis

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Lane group												
Adj. flow rate	153	208	116	107	361	449	44	959	60	233	559	69
Satflow rate	3502	1900	1615	1805	1900	1610	1805	3610	1615	1805	3610	1608
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.11	0.28	0.50	0.11	0.28	0.50	0.18	0.28	0.43	0.18	0.28	0.43
Lane group cap.	382	535	808	197	535	805	328	1017	690	328	1017	687
v/c ratio	0.40	0.39	0.14	0.54	0.67	0.56	0.13	0.94	0.09	0.71	0.55	0.10
Flow ratio	0.04	0.11	0.07	0.06	0.19	0.28	0.02	0.27	0.04	0.13	0.15	0.04
Crit. lane group	N	N	N	Y	Y	N	N	Y	N	Y	N	N
Sum flow ratios	0.64											
Lost time/cycle	16.00											
Critical v/c ratio	0.75											

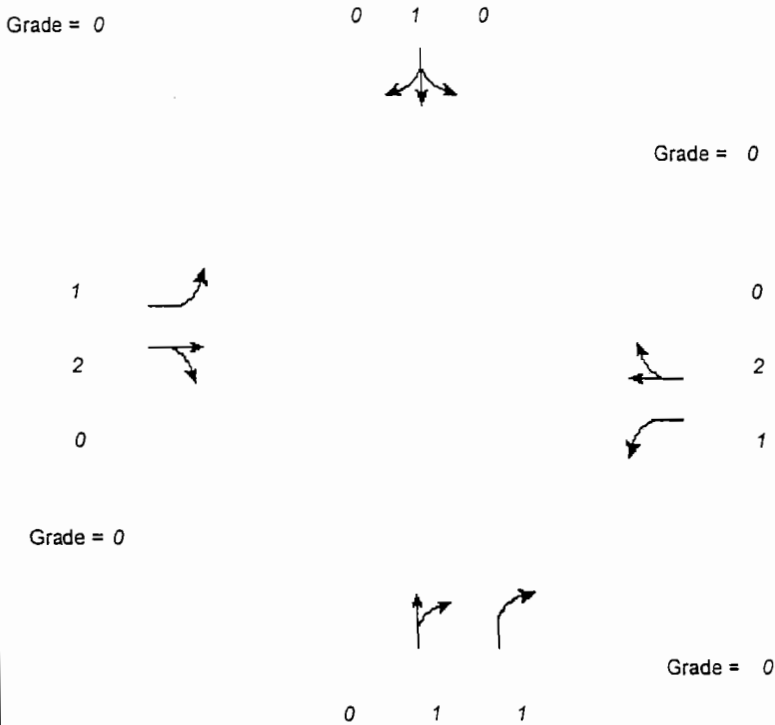
Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Lane group												
Adj. flow rate	153	208	116	107	361	449	44	959	60	233	559	69
Lane group cap.	382	535	808	197	535	805	328	1017	690	328	1017	687
v/c ratio	0.40	0.39	0.14	0.54	0.67	0.56	0.13	0.94	0.09	0.71	0.55	0.10
Green ratio	0.11	0.28	0.50	0.11	0.28	0.50	0.18	0.28	0.43	0.18	0.28	0.43
Unif. delay d1	45.6	31.9	14.8	46.4	35.0	19.1	37.7	38.6	18.7	42.3	33.6	18.8
Delay factor k	0.11	0.11	0.11	0.14	0.25	0.16	0.11	0.46	0.11	0.27	0.15	0.11
Increm. delay d2	0.7	0.5	0.1	3.1	3.4	0.9	0.2	16.3	0.1	7.0	0.6	0.1
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	46.3	32.3	14.9	49.5	38.4	19.9	37.9	54.9	18.8	49.3	34.2	18.9
Lane group LOS	D	C	B	D	D	B	D	D	B	D	C	B
Apprch. delay	32.6			30.6			52.2			37.1		
Approach LOS	C			C			D			D		
Intersec. delay	39.5			Intersection LOS						D		

INPUT WORKSHEET

General Information		Site Information	
Analyst	<i>P. Matsunaga</i>	Intersection	<i>Kamaaha Ave/Kumuiki St (WestLp)</i>
Agency or Co.	<i>PBQ&D</i>	Area Type	<i>All other areas</i>
Date Performed	<i>2/3/2004</i>	Jurisdiction	<i>Honolulu</i>
Time Period	<i>AM Peak Period Buildout 2025</i>	Analysis Year	<i>2004</i>

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	164	261	200	76	438	43	95	22	60	30	50	293
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0			2.0	2.0		2.0	
Ext. eff. green	2.0	2.0		2.0	2.0			2.0	2.0		2.0	
Arrival type	3	3		3	3			3	3		3	
Ped volume	7			8			7			10		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0			0	0		0	
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	EB Only	Thru & RT	04	NS Perm	06	07	08				
Timing	G = 8.0	G = 4.0	G = 17.0	G =	G = 19.0	G =	G =	G =				
	Y = 3.0	Y = 0.0	Y = 3.0	Y =	Y = 3.0	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 60.0						

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 AM Peak Kamaaha/Kumuiki(WestLp)*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	LT	R	LTR	
Adj. flow rate	182	530	84	535	130	67	415	
Satflow rate	1805	3350	1805	3557	869	1604	1637	
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Green ratio	0.27	0.35	0.13	0.28	0.32	0.32	0.32	
Lane group cap.	481	1172	241	1008	275	508	518	
v/c ratio	0.38	0.45	0.35	0.53	0.47	0.13	0.80	
Flow ratio	0.10	0.16	0.05	0.15	0.15	0.04	0.25	
Crit. lane group	Y	N	N	Y	N	N	Y	
Sum flow ratios	0.50							
Lost time/cycle	8.00							
Critical v/c ratio	0.58							

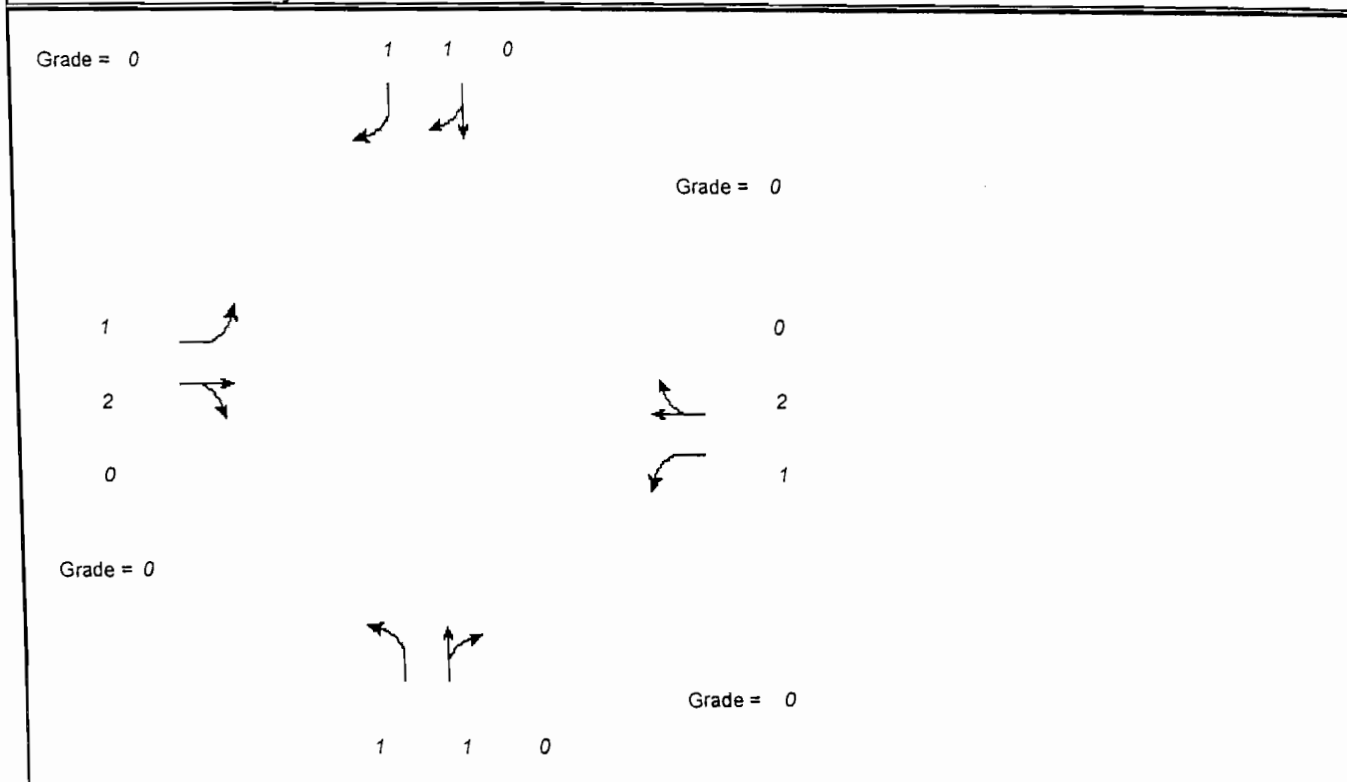
Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	LT	R	LTR	
Adj. flow rate	182	530	84	535	130	67	415	
Lane group cap.	481	1172	241	1008	275	508	518	
v/c ratio	0.38	0.45	0.35	0.53	0.47	0.13	0.80	
Green ratio	0.27	0.35	0.13	0.28	0.32	0.32	0.32	
Unif. delay d1	17.9	15.1	23.6	18.1	16.5	14.6	18.8	
Delay factor k	0.11	0.11	0.11	0.13	0.11	0.11	0.34	
Increm. delay d2	0.5	0.3	0.9	0.5	1.3	0.1	8.8	
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Control delay	18.4	15.3	24.5	18.7	17.8	14.7	27.6	
Lane group LOS	B	B	C	B	B	B	C	
Apprch. delay	16.1		19.5		16.7		27.6	
Approach LOS	B		B		B		C	
Intersec. delay	19.7		Intersection LOS				B	

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kuloa Ave (East Lp)
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	AM Peak Period Buildout 2025	Analysis Year	2004

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	106	300	89	138	332	65	161	16	169	87	38	183
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0			2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0			2.0	2.0
Arrival type	3	3		3	3		3	3			3	3
Ped volume	8			75			5			32		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0			0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08				
Timing	G = 13.0	G = 17.0	G =	G =	G = 18.0	G =	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 60.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 AM Peak Kamaaha/Kuloa (East)*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	L	TR	LT	R
Adj. flow rate	118	440	153	441	179	206	139	203
Satflow rate	1805	3466	1805	3446	1072	1633	1292	1573
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.22	0.28	0.22	0.28	0.30	0.30	0.30	0.58
Lane group cap.	391	982	391	976	322	490	388	918
v/c ratio	0.30	0.45	0.39	0.45	0.56	0.42	0.36	0.22
Flow ratio	0.07	0.13	0.08	0.13	0.17	0.13	0.11	0.13
Crit. lane group	N	N	Y	Y	Y	N	N	N
Sum flow ratios	0.38							
Lost time/cycle	12.00							
Critical v/c ratio	0.47							

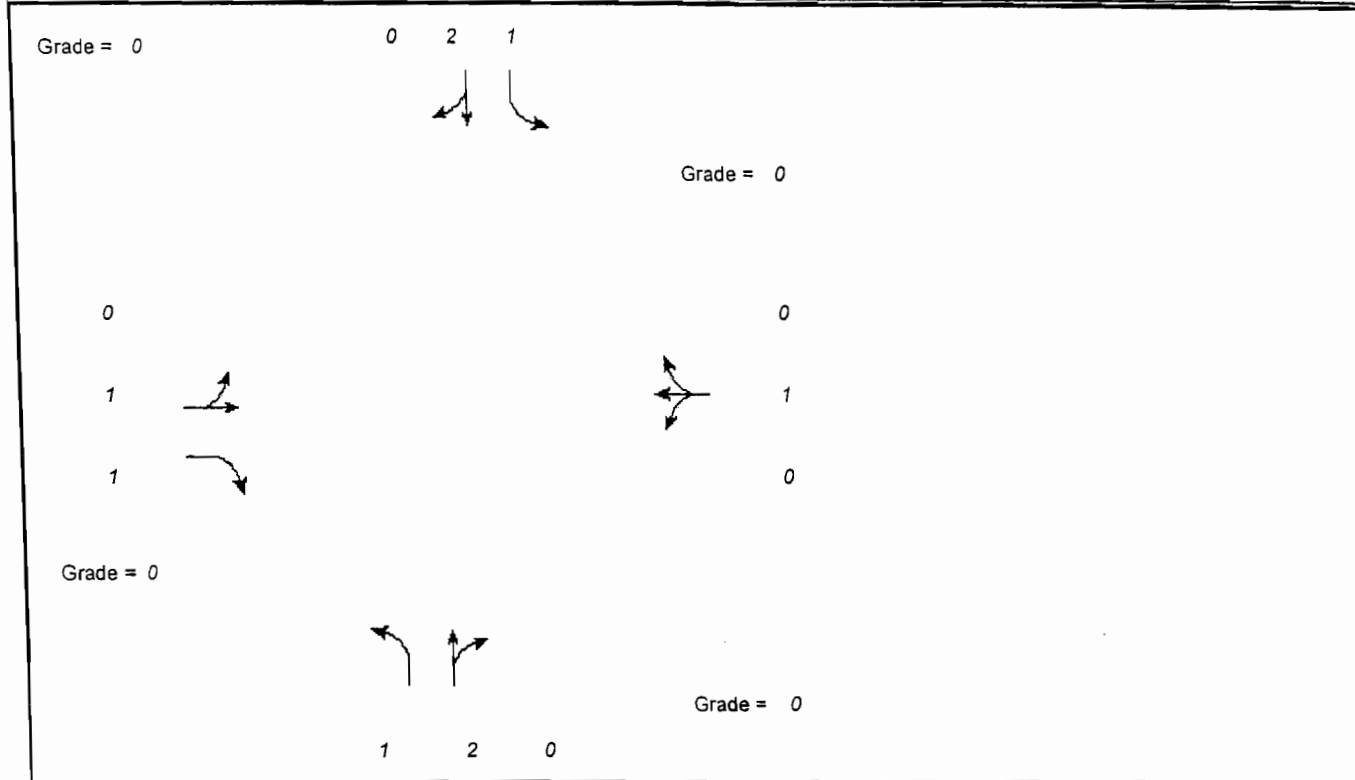
Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	L	TR	LT	R
Adj. flow rate	118	440	153	441	179	206	139	203
Lane group cap.	391	982	391	976	322	490	388	918
v/c ratio	0.30	0.45	0.39	0.45	0.56	0.42	0.36	0.22
Green ratio	0.22	0.28	0.22	0.28	0.30	0.30	0.30	0.58
Unif. delay d1	19.7	17.6	20.1	17.7	17.6	16.8	16.5	6.0
Delay factor k	0.11	0.11	0.11	0.11	0.15	0.11	0.11	0.11
Increm. delay d2	0.4	0.3	0.6	0.3	2.1	0.6	0.6	0.1
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	20.1	18.0	20.8	18.0	19.8	17.4	17.0	6.1
Lane group LOS	C	B	C	B	B	B	B	A
Aprpch. delay	18.4		18.7		18.5		10.5	
Approach LOS	B		B		B		B	
Intersec. delay	17.1		Intersection LOS				B	

INPUT WORKSHEET

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kamaaha Ave/Kumuiki Lp (Makai)
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/4/2004	Jurisdiction	Honolulu
Time Period	AM Peak Yr 2025 Build out vol	Analysis Year	2025

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	103	16	232	264	44	79	133	163	150	24	437	25
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time		2.0	2.0		2.0		2.0	2.0		2.0	2.0	
Ext. eff. green		2.0	2.0		2.0		2.0	2.0		2.0	2.0	
Arrival type		3	3		3		3	3		3	3	
Ped volume		48			62			49			13	
Bicycle volume		0			0			0			0	
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr		0	0		0		0	0		0	0	
Ped timing		0.0			0.0			3.0			0.0	
	EB Only	WB Only	03	04	Excl. Left	Thru & RT	07	08				
Timing	G = 7.0	G = 18.0	G =	G =	G = 8.0	G = 11.0	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 60.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei-AM Peak Yr 2025 Kamaaha/Kekuilani(Makai)*

Capacity Analysis

	EB		WB		NB		SB		
	LT	R	LTR	L	TR	L	TR		
Lane group									
Adj. flow rate	132	258	430	148	348	27	514		
Satflow rate	1821	1416	1764	1805	3136	1805	3574		
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0		
Green ratio	0.12	0.25	0.30	0.13	0.18	0.13	0.18		
Lane group cap.	212	354	529	241	575	241	655		
v/c ratio	0.62	0.73	0.81	0.61	0.61	0.11	0.78		
Flow ratio	0.07	0.18	0.24	0.08	0.11	0.01	0.14		
Crit. lane group	N	Y	Y	N	N	N	Y		
Sum flow ratios	0.57								
Lost time/cycle	16.00								
Critical v/c ratio	0.78								

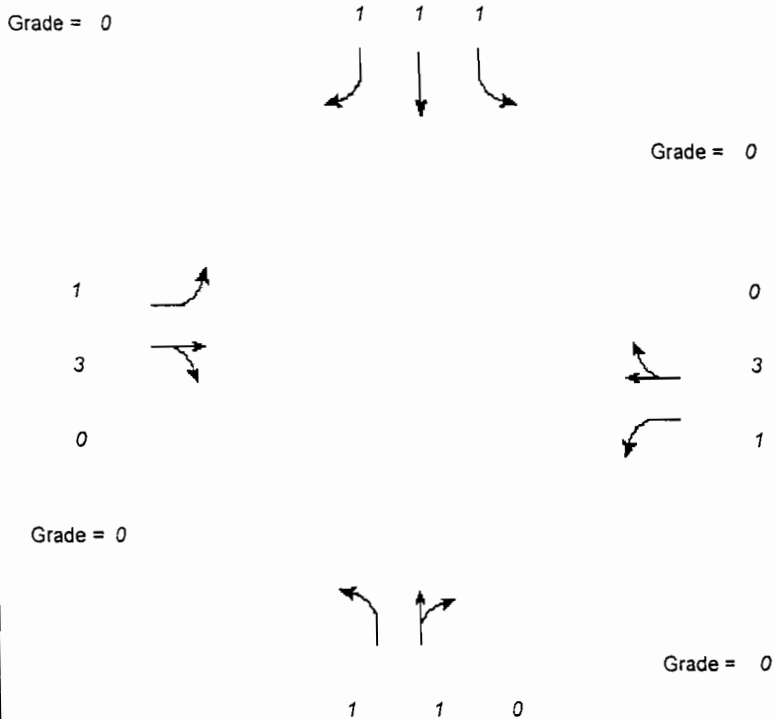
Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
	LT	R	LTR	L	TR	L	TR	
Lane group								
Adj. flow rate	132	258	430	148	348	27	514	
Lane group cap.	212	354	529	241	575	241	655	
v/c ratio	0.62	0.73	0.81	0.61	0.61	0.11	0.78	
Green ratio	0.12	0.25	0.30	0.13	0.18	0.13	0.18	
Unif. delay d1	25.2	20.6	19.4	24.5	22.5	22.9	23.4	
Delay factor k	0.21	0.29	0.35	0.20	0.19	0.11	0.33	
Increm. delay d2	5.6	7.4	9.4	4.6	1.8	0.2	6.3	
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Control delay	30.8	28.1	28.9	29.2	24.3	23.1	29.6	
Lane group LOS	C	C	C	C	C	C	C	
Apprch. delay	29.0		28.9	25.8		29.3		
Approach LOS	C		C	C		C		
Intersec. delay	28.2		Intersection LOS				C	

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kapolei/Kamaaha
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	AM Peak Period Buildout 2025	Analysis Year	2004

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	247	679	132	159	1069	162	169	37	142	276	239	418
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival type	3	3		3	3		3	3		3	3	3
Ped volume	107			139			86			12		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0		0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	Excl. Left	SB Only	Thru & RT	08				
Timing	G = 21.0	G = 32.0	G =	G =	G = 17.0	G = 6.0	G = 18.0	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 0.0	Y = 3.0	Y = 3.0	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 AM Peak Kapolei/Kamaaha*

Capacity Analysis

	EB			WB			NB			SB		
	L	TR		L	TR		L	TR		L	T	R
Lane group												
Adj. flow rate	274	912		177	1368		188	199		307	266	464
Satflow rate	1805	4892		1805	4925		1805	1485		1805	1900	1588
Lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Green ratio	0.19	0.29		0.19	0.29		0.15	0.18		0.21	0.26	0.49
Lane group cap.	345	1423		345	1433		279	270		377	501	780
v/c ratio	0.79	0.64		0.51	0.95		0.67	0.74		0.81	0.53	0.59
Flow ratio	0.15	0.19		0.10	0.28		0.10	0.13		0.17	0.14	0.29
Crit. lane group	Y	N		N	Y		N	Y		Y	N	N
Sum flow ratios	0.73											
Lost time/cycle	14.00											
Critical v/c ratio	0.84											

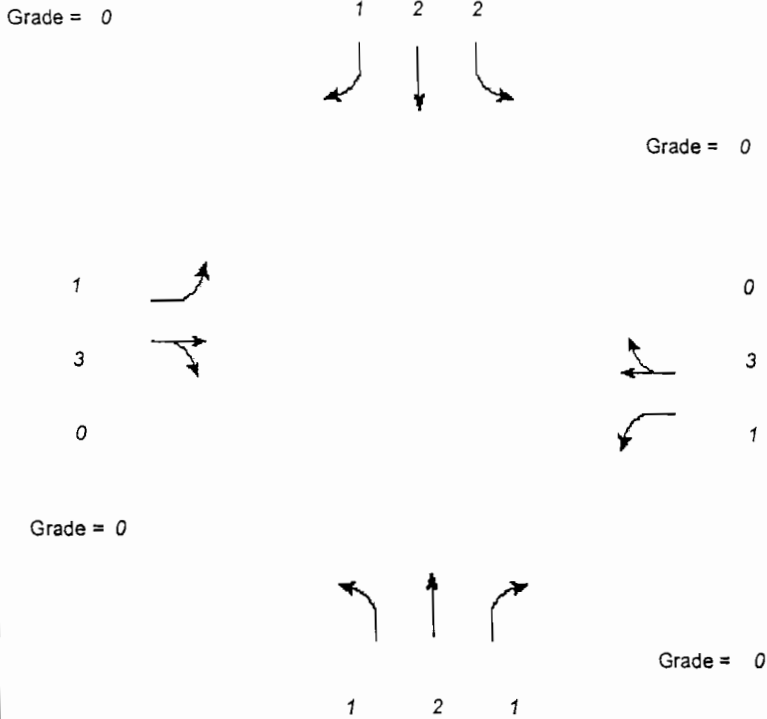
Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	L	TR		L	TR		L	TR		L	T	R
Lane group												
Adj. flow rate	274	912		177	1368		188	199		307	266	464
Lane group cap.	345	1423		345	1433		279	270		377	501	780
v/c ratio	0.79	0.64		0.51	0.95		0.67	0.74		0.81	0.53	0.59
Green ratio	0.19	0.29		0.19	0.29		0.15	0.18		0.21	0.26	0.49
Unif. delay d1	42.4	34.0		39.9	38.3		43.9	42.5		41.5	34.7	20.1
Delay factor k	0.34	0.22		0.12	0.46		0.25	0.29		0.36	0.13	0.18
Increm. delay d2	12.1	1.0		1.3	14.4		6.3	10.1		12.9	1.1	1.2
PF factor	1.000	1.000		1.000	1.000		1.000	1.000		1.000	1.000	1.000
Control delay	54.5	35.0-		41.2	52.7		50.2	52.7		54.4	35.8	21.4
Lane group LOS	D	C		D	D		D	D		D	D	C
Apprch. delay	39.5			51.4			51.4			34.8		
Approach LOS	D			D			D			C		
Intersec. delay	43.9			Intersection LOS						D		

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kapolei/FBR
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	AM Peak Period Buildout 2025	Analysis Year	2004

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	374	460	115	109	1072	401	50	182	63	427	144	125
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	3	3		3	3		3	3	3	3	3	3
Ped volume	0			0			0			0		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	Excl. Left	SB Only	Thru & RT	08				
Timing	G = 30.0	G = 33.0	G =	G =	G = 11.0	G = 8.0	G = 12.0	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 0.0	Y = 3.0	Y = 3.0	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 AM Peak Kapolei/FBR*

Capacity Analysis

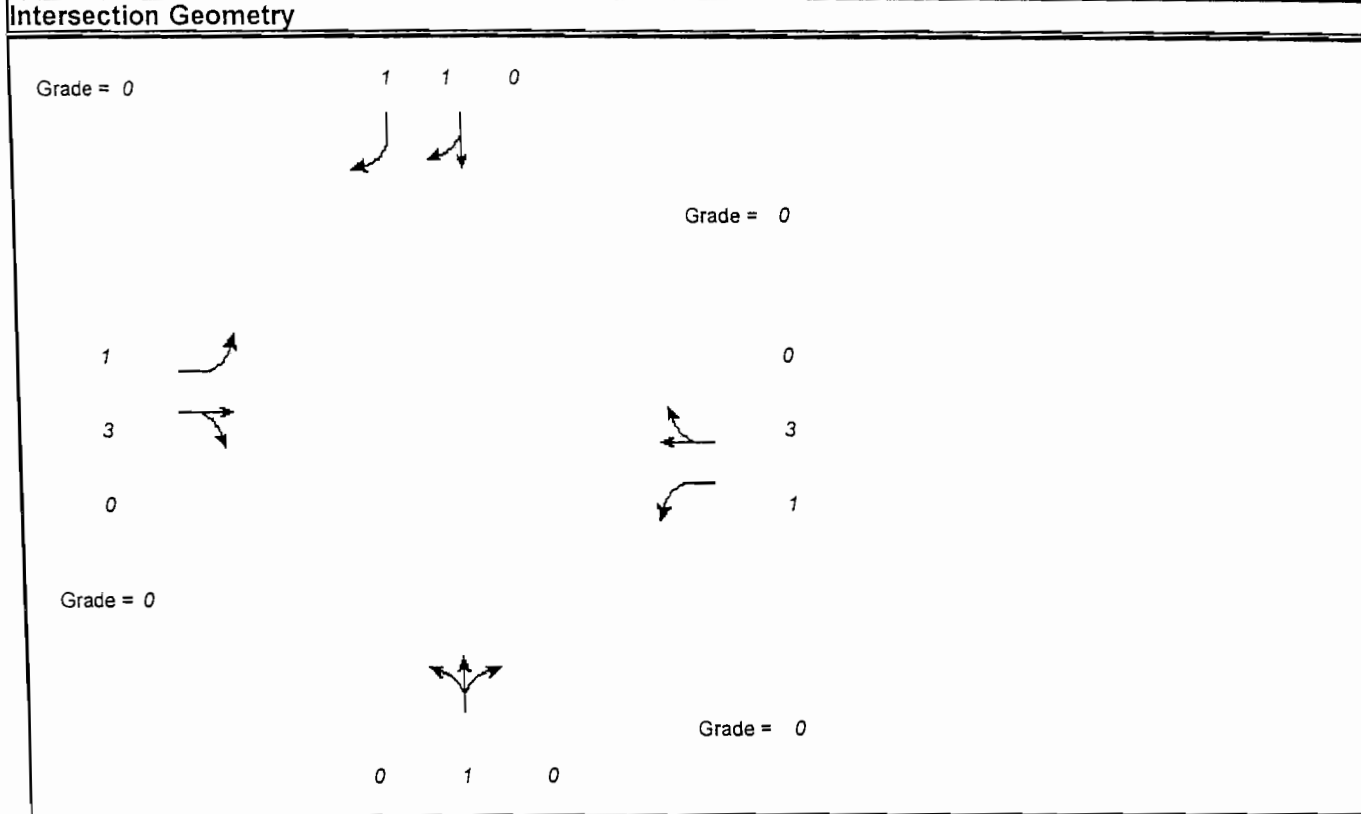
	EB			WB			NB			SB		
	L	TR		L	TR		L	T	R	L	T	R
Lane group												
Adj. flow rate	416	649		121	1414		56	202	70	474	160	139
Satflow rate	1805	5022		1805	5064		1805	3610	1615	3502	3610	1615
Lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.27	0.30		0.27	0.30		0.10	0.11	0.42	0.17	0.22	0.53
Lane group cap.	492	1507		492	1519		181	394	675	605	788	852
v/c ratio	0.85	0.43		0.25	0.93		0.31	0.51	0.10	0.78	0.20	0.16
Flow ratio	0.23	0.13		0.07	0.28		0.03	0.06	0.04	0.14	0.04	0.09
Crit. lane group	Y	N		N	Y		N	Y	N	Y	N	N
Sum flow ratios	0.70											
Lost time/cycle	16.00											
Critical v/c ratio	0.82											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	L	TR		L	TR		L	T	R	L	T	R
Lane group												
Adj. flow rate	416	649		121	1414		56	202	70	474	160	139
Lane group cap.	492	1507		492	1519		181	394	675	605	788	852
v/c ratio	0.85	0.43		0.25	0.93		0.31	0.51	0.10	0.78	0.20	0.16
Green ratio	0.27	0.30		0.27	0.30		0.10	0.11	0.42	0.17	0.22	0.53
Unif. delay d1	37.8	30.9		31.2	37.4		46.0	46.2	19.5	43.5	35.2	13.4
Delay factor k	0.38	0.11		0.11	0.45		0.11	0.12	0.11	0.33	0.11	0.11
Increm. delay d2	12.8	0.2		0.3	10.6		1.0	1.1	0.1	6.7	0.1	0.1
PF factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Control delay	50.6	31.1		31.4	48.0		46.9	47.4	19.5	50.2	35.3	13.5
Lane group LOS	D	C		C	D		D	D	B	D	D	B
Approch. delay	38.8			46.7			41.4			40.5		
Approach LOS	D			D			D			D		
Intersec. delay	42.7			Intersection LOS						D		

INPUT WORKSHEET

General Information		Site Information	
Analyst		Intersection	Kapolei/Malu Ohai
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	AM Peak Period Buildout 2025	Analysis Year	2004



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	14	795	141	263	1507	26	33	68	155	46	135	42
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0			2.0			2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0	2.0
Arrival type	3	3		3	3			3			3	3
Ped volume	0			459								
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0			0			0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	WB Only	Thru & RT	04		NS Perm	06		07		08	
Timing	G = 18.0	G = 6.0	G = 42.0	G =		G = 28.0	G =		G =		G =	
	Y = 3.0	Y = 3.0	Y = 3.0	Y =		Y = 3.0	Y =		Y =		Y =	
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 AM Peak Kapolei/Malu Ohai*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	LTR	LT	R	
Adj. flow rate	16	1052	292	1703	285	201	47	
Satflow rate	1805	5062	1805	5131	1444	1462	1615	
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Green ratio	0.16	0.38	0.25	0.47	0.25	0.25	0.45	
Lane group cap.	295	1933	459	2426	368	372	734	
v/c ratio	0.05	0.54	0.64	0.70	0.77	0.54	0.06	
Flow ratio	0.01	0.21	0.16	0.33	0.20	0.14	0.03	
Crit. lane group	N	Y	Y	N	Y	N	N	
Sum flow ratios	0.57							
Lost time/cycle	12.00							
Critical v/c ratio	0.64							

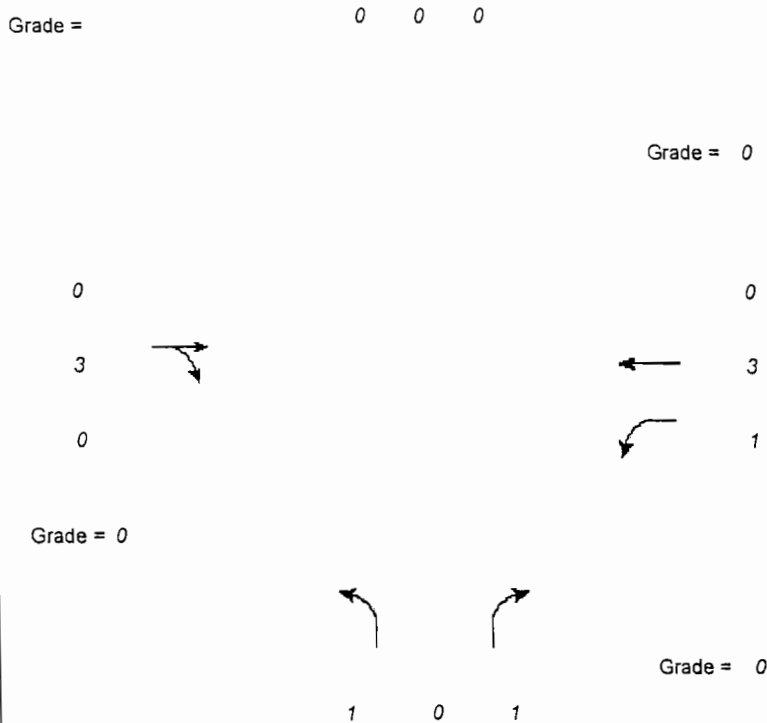
Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	LTR	LT	R	
Adj. flow rate	16	1052	292	1703	285	201	47	
Lane group cap.	295	1933	459	2426	368	372	734	
v/c ratio	0.05	0.54	0.64	0.70	0.77	0.54	0.06	
Green ratio	0.16	0.38	0.25	0.47	0.25	0.25	0.45	
Unif. delay d1	38.8	26.5	36.5	22.9	38.1	35.4	16.9	
Delay factor k	0.11	0.14	0.22	0.27	0.32	0.14	0.11	
Increm. delay d2	0.1	0.3	2.9	0.9	9.9	1.6	0.0	
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Control delay	38.9	26.9	39.4	23.8	48.0	37.0	16.9	
Lane group LOS	D	C	D	C	D	D	B	
Apprch. delay	27.0		26.1		48.0	33.2		
Approach LOS	C		C		D	C		
Intersec. delay	28.6		Intersection LOS				C	

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kapolei/Street A
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/5/2004	Jurisdiction	Honolulu
Time Period	AM Peak Period Buildout 2025	Analysis Year	2004

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB						
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT				
Volume (vph)		944	52	7	1654		142		114							
% Heavy veh		0	0	0	0		0		0							
PHF		0.90	0.83	0.90	0.90		0.90		0.90							
Actuated (P/A)		A	A	A	A		A		A							
Startup lost time		2.0		2.0	2.0		2.0		2.0							
Ext. eff. green		2.0		2.0	2.0		2.0		2.0							
Arrival type		3		3	3		3		3							
Ped volume		0				0				0						
Bicycle volume		0				0				0						
Parking (Y or N)		N		N	N		N		N	N		N				
Parking/hr																
Bus stops/hr		0		0	0		0		0							
Ped timing		0.0				0.0				3.0				0.0		
	WB Only	Thru & RT	03	04	NB Only	06	07	08								
Timing	G = 23.0	G = 45.0	G =	G =	G = 30.0	G =	G =	G =								
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =								
Duration of Analysis (hrs) = 0.25						Cycle Length C = 110.0										

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 AM Peak Kapolei/Street A*

Capacity Analysis

	EB		WB		NB		SB	
	TR		L	T	L	R		
Lane group								
Adj. flow rate	1111		8	1838	158	127		
Satflow rate	5144		1805	5187	1805	1615		
Lost time	2.0		2.0	2.0	2.0	2.0		
Green ratio	0.41		0.21	0.65	0.27	0.52		
Lane group cap.	2104		377	3395	492	837		
v/c ratio	0.53		0.02	0.54	0.32	0.15		
Flow ratio	0.22		0.00	0.35	0.09	0.08		
Crit. lane group	N		N	Y	Y	N		
Sum flow ratios	0.44							
Lost time/cycle	8.00							
Critical v/c ratio	0.48							

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
	TR		L	T	L	R		
Lane group								
Adj. flow rate	1111		8	1838	158	127		
Lane group cap.	2104		377	3395	492	837		
v/c ratio	0.53		0.02	0.54	0.32	0.15		
Green ratio	0.41		0.21	0.65	0.27	0.52		
Unif. delay d1	24.5		34.6	10.2	31.9	13.9		
Delay factor k	0.13		0.11	0.14	0.11	0.11		
Increm. delay d2	0.3		0.0	0.2	0.4	0.1		
PF factor	1.000		1.000	1.000	1.000	1.000		
Control delay	24.7		34.6	10.3	32.3	13.9		
Lane group LOS	C		C	B	C	B		
Apprch. delay	24.7		10.4		24.1			
Approach LOS	C		B		C			
Intersec. delay	16.5		Intersection LOS					B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kaiiau Ave
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	AM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR Buildout Kamaaha/Kaiiau AM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kaiiau Avenue</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume	0	400	50	99	727	0	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	444	55	110	807	0	
Percent Heavy Vehicles	0	--	--	0	--	--	
Median Type	<i>Raised curb</i>						
RT Channelized			0			0	
Lanes	0	2	0	1	2	0	
Configuration		T	TR	L	T		
Upstream Signal		0			0		

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume	98	0	224	0	0	0	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	108	0	248	0	0	0	
Percent Heavy Vehicles	0	0	0	0	0	0	
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	1	0	1	0	0	0	
Configuration	L		R				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
			7	8	9	10	11	12
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		110	108		248			
C (m) (vph)		1074	316		732			
v/c		0.10	0.34		0.34			
95% queue length		0.34	1.54		1.53			
Control Delay		8.7	22.3		12.4			
LOS		A	C		B			
Approach Delay	--	--	15.4					
Approach LOS	--	--	C					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kealanani Ave
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	AM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR Buildout Kamaaha/Kealanani AM Peak

East/West Street: Kamaaha Avenue	North/South Street: Kealanani Avenue
Intersection Orientation: East-West	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street Movement	Eastbound			Westbound		
	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	44	307	125	461	525	151
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	48	341	0	0	583	167
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street Movement	Northbound			Southbound		
	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	0	188	0	32
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	0	0	208	0	35
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

Approach Movement	EB	WB	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (vph)	48					208		35
C (m) (vph)	840					353		600
v/c	0.06					0.59		0.06
95% queue length	0.18					4.07		0.19
Control Delay	9.5					29.5		11.4
LOS	A					D		B

Approach Delay	--	--		26.9
Approach LOS	--	--		<i>D</i>

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kekuilani Lp Mauka
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	AM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR Buildout Kamaaha/Kekuilani AM Peak

East/West Street: <i>Kekuilani Loop (Mauka)</i>	North/South Street: <i>Kamaaha Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street Movement	Northbound			Southbound		
	1 L	2 T	3 R	4 L	5 T	6 R
Volume	31	311	34	134	422	4
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	345	37	148	468	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	2	0	1	2	0
Configuration		T	TR	L	T	
Upstream Signal		0			0	

Minor Street Movement	Westbound			Eastbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume	64	0	224	6	0	68
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	71	0	248	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
			7	8	9	10	11	12
Movement	1	4						
Lane Configuration		L		LR				
v (vph)		148		319				
C (m) (vph)		1092		573				
v/c		0.14		0.56				
95% queue length		0.47		3.66				
Control Delay		8.8		19.1				
LOS		A		C				

Approach Delay	--	--	19.1	
Approach LOS	--	--	C	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani Ave/Kuloa/Kumuiki
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	AM Peak Buildout 2025	Project ID	Villages of Kapolei -TIAR BuildoutKealanani/Kuloa/Kumuiki AM

East/West Street: Kumuiki St/Kuloa Ave	North/South Street: Kealanani Avenue
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume		5	180	10	112	145	109
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		5	200	11	124	161	121
Percent Heavy Vehicles		0	--	--	0	--	--
Median Type	Undivided						
RT Channelized				0			0
Lanes		1	2	0	1	2	0
Configuration		L	T	TR	L	T	TR
Upstream Signal			0			0	

Minor Street	Westbound			Eastbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume		8	7	202	170	3	18
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		8	7	224	188	3	20
Percent Heavy Vehicles		0	0	0	0	0	0
Percent Grade (%)		0			0		
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes		0	1	1	1	1	0
Configuration		LT		R	L		TR

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
			7	8	9	10	11	12
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R	L		TR
v (vph)	5	124	15		224	188		23
C (m) (vph)	1258	1351	416		888	340		734
v/c	0.00	0.09	0.04		0.25	0.55		0.03
95% queue length	0.01	0.30	0.11		1.01	3.55		0.10
Control Delay	7.9	7.9	14.0		10.4	28.5		10.1
LOS	A	A	B		B	D		B
Approach Delay	--	--	10.6			26.5		
Approach LOS	--	--	B			D		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani Ave/Entrance B
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	AM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR 2025 Kealanani/Entrance B AM Peak

East/West Street: Entrance B	North/South Street: Kealanani Avenue
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	31	521	10	4	347	4
Peak-Hour Factor, PHF	0.90	1.00	0.90		0.90	1.00
Hourly Flow Rate, HFR	34	521	0	0	385	4
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume		7		6	0	68
Peak-Hour Factor, PHF		0.90		0.90	0.25	0.90
Hourly Flow Rate, HFR	0	0	0	6	0	75
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service

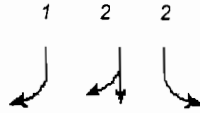
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (vph)	34					6		75
C (m) (vph)	1181					472		821
v/c	0.03					0.01		0.09
95% queue length	0.09					0.04		0.30
Control Delay	8.1					12.7		9.8
LOS	A					B		A
Approach Delay	--	--				10.0+		
Approach LOS	--	--				B		

INPUT WORKSHEET

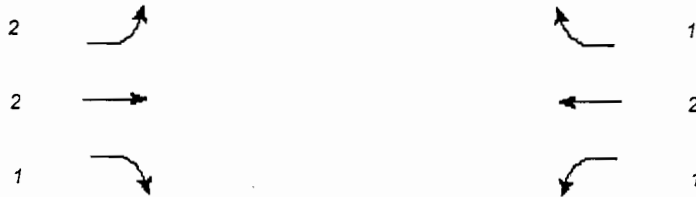
General Information		Site Information	
Analyst	Ryan Yoshimura	Intersection	Farrington Hwy/Ft Barrette Rd
Agency or Co.	PBQD	Area Type	All other areas
Date Performed	7/23/03	Jurisdiction	Honolulu
Time Period	PM Peak Period 2025	Analysis Year	2003

Intersection Geometry

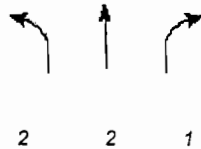
Grade = 0



Grade = 0



Grade = 0



Grade = 0

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	310	455	95	165	235	160	245	790	350	210	740	180
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	3	3	3	3	3	3	3	3	3	3	3	3
Ped volume	0			0			0			0		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	EB Only	Thru & RT	04	Excl. Left	Thru & RT	07	08				
Timing	G = 16.0	G = 9.0	G = 12.0	G =	G = 15.0	G = 38.0	G =	G =				
	Y = 3.0	Y = 3.0	Y = 3.0	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *North South Rd - 2025 PM Peak Farrington/Ft Barrette*

Capacity Analysis

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	TR	R
Lane group												
Adj. flow rate	326	479	100	174	247	168	258	832	368	221	779	189
Satflow rate	3502	3610	1615	1805	3610	1615	3502	3610	1615	3502	3610	1615
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.26	0.23	0.40	0.15	0.11	0.28	0.14	0.35	0.53	0.14	0.35	0.65
Lane group cap.	923	820	646	263	394	455	478	1247	852	478	1247	1042
v/c ratio	0.35	0.58	0.15	0.66	0.63	0.37	0.54	0.67	0.43	0.46	0.62	0.18
Flow ratio	0.09	0.13	0.06	0.10	0.07	0.10	0.07	0.23	0.23	0.06	0.22	0.12
Crit. lane group	N	Y	N	Y	N	N	Y	Y	N	N	N	N
Sum flow ratios	0.53											
Lost time/cycle	16.00											
Critical v/c ratio	0.62											

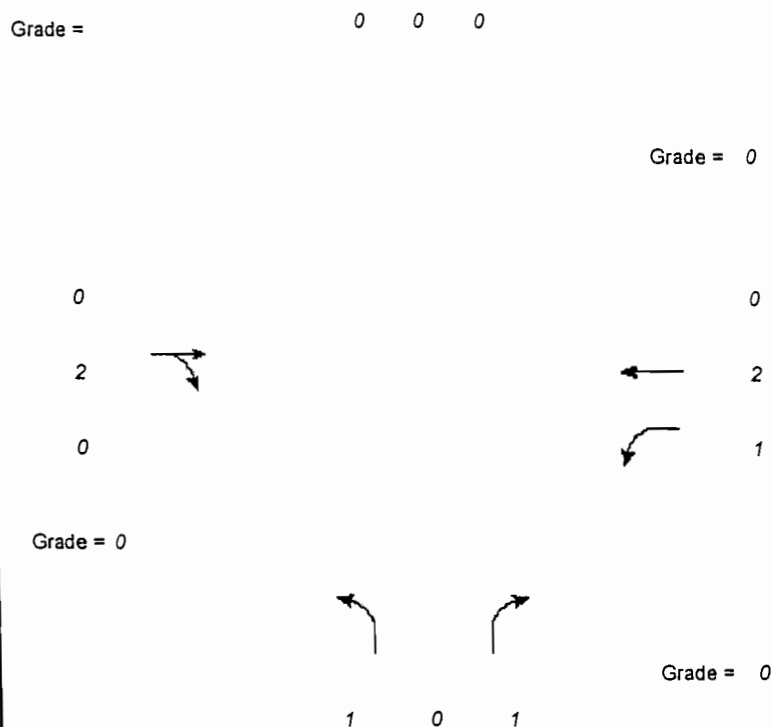
Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	TR	R
Lane group												
Adj. flow rate	326	479	100	174	247	168	258	832	368	221	779	189
Lane group cap.	923	820	646	263	394	455	478	1247	852	478	1247	1042
v/c ratio	0.35	0.58	0.15	0.66	0.63	0.37	0.54	0.67	0.43	0.46	0.62	0.18
Green ratio	0.26	0.23	0.40	0.15	0.11	0.28	0.14	0.35	0.53	0.14	0.35	0.65
Unif. delay d1	32.9	37.9	21.1	44.4	46.9	31.7	44.3	30.6	15.9	43.8	30.0	7.8
Delay factor k	0.11	0.18	0.11	0.24	0.21	0.11	0.14	0.24	0.11	0.11	0.21	0.11
Increm. delay d2	0.2	1.1	0.1	6.1	3.1	0.5	1.2	1.4	0.4	0.7	1.0	0.1
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	33.1	38.9	21.2	50.5	50.0	32.2	45.5	32.0	16.3	44.5	31.0	7.9
Lane group LOS	C	D	C	D	D	C	D	C	B	D	C	A
Apprch. delay	34.9			45.1			30.4			29.9		
Approach LOS	C			D			C			C		
Intersec. delay	33.3			Intersection LOS						C		

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani Ave/Farrington hwy
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	PM Peak Buildout 2025	Analysis Year	2004

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Volume (vph)		26	199	182	38		124		123				
% Heavy veh		0	0	0	0		0		0				
PHF		0.90	0.90	0.90	0.90		0.90		0.90				
Actuated (P/A)		A	A	A	A		A		A				
Startup lost time		2.0		2.0	2.0		2.0		2.0				
Ext. eff. green		2.0		2.0	2.0		2.0		2.0				
Arrival type		3		3	3		3		3				
Ped volume		2						0			0		
Bicycle volume								0					
Parking (Y or N)		N		N	N		N		N	N		N	
Parking/hr													
Bus stops/hr		0		0	0		0		0				
Ped timing		0.0			0.0			3.0			0.0		
	WB Only	Thru & RT	03	04	NB Only	06	07	08					
Timing	G = 30.0	G = 41.0	G =	G =	G = 27.0	G =	G =	G =					
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0						

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei - TIAR Build Kealanani/Farrington PMPeak*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	TR	L	T	L	R			
Adj. flow rate	250	202	42	138	137			
Satflow rate	3131	1805	3610	1805	1615			
Lost time	2.0	2.0	2.0	2.0	2.0			
Green ratio	0.37	0.27	0.68	0.25	0.55			
Lane group cap.	1167	492	2461	443	896			
v/c ratio	0.21	0.41	0.02	0.31	0.15			
Flow ratio	0.08	0.11	0.01	0.08	0.08			
Crit. lane group	Y	Y	N	Y	N			
Sum flow ratios	0.27							
Lost time/cycle	12.00							
Critical v/c ratio	0.30							

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	TR	L	T	L	R			
Adj. flow rate	250	202	42	138	137			
Lane group cap.	1167	492	2461	443	896			
v/c ratio	0.21	0.41	0.02	0.31	0.15			
Green ratio	0.37	0.27	0.68	0.25	0.55			
Unif. delay d1	23.5	32.8	5.6	33.9	11.9			
Delay factor k	0.11	0.11	0.11	0.11	0.11			
Increm. delay d2	0.1	0.6	0.0	0.4	0.1			
PF factor	1.000	1.000	1.000	1.000	1.000			
Control delay	23.6	33.3	5.6	34.3	12.0			
Lane group LOS	C	C	A	C	B			
Approch. delay	23.6	28.6		23.2				
Approach LOS	C	C		C				
Intersec. delay	25.0	Intersection LOS						C

INPUT WORKSHEET

General Information

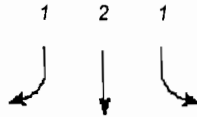
Analyst *P. Matsunaga*
 Agency or Co. *PBQ&D*
 Date Performed *2/3/2004*
 Time Period *PM Peak Period Buildout 2025*

Site Information

Intersection *Kamaaha/FBR*
 Area Type *All other areas*
 Jurisdiction *Honolulu*
 Analysis Year *2004*

Intersection Geometry

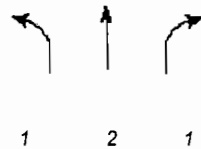
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Grade = 0



Grade = 0



Grade = 0

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	332	265	47	45	190	224	43	810	72	311	556	132
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	3	3	3	3	3	3	3	3	3	3	3	3
Ped volume	0			2			0			3		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0	0	0	0	0	0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08				
Timing	G = 15.0	G = 23.0	G =	G =	G = 26.0	G = 30.0	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 PM Peak Kamaaha/FBR*

Capacity Analysis

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Lane group												
Adj. flow rate	369	294	56	50	211	249	48	900	80	346	618	147
Satflow rate	3502	1900	1615	1805	1900	1611	1805	3610	1615	1805	3610	1608
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.14	0.21	0.48	0.14	0.21	0.48	0.24	0.27	0.45	0.24	0.27	0.45
Lane group cap.	478	397	778	246	397	776	427	985	719	427	985	716
v/c ratio	0.77	0.74	0.07	0.20	0.53	0.32	0.11	0.91	0.11	0.81	0.63	0.21
Flow ratio	0.11	0.15	0.03	0.03	0.11	0.15	0.03	0.25	0.05	0.19	0.17	0.09
Crit. lane group	Y	Y	N	N	N	N	N	Y	N	Y	N	N
Sum flow ratios	0.70											
Lost time/cycle	16.00											
Critical v/c ratio	0.82											

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Lane group												
Adj. flow rate	369	294	56	50	211	249	48	900	80	346	618	147
Lane group cap.	478	397	778	246	397	776	427	985	719	427	985	716
v/c ratio	0.77	0.74	0.07	0.20	0.53	0.32	0.11	0.91	0.11	0.81	0.63	0.21
Green ratio	0.14	0.21	0.48	0.14	0.21	0.48	0.24	0.27	0.45	0.24	0.27	0.45
Unif. delay d1	45.8	40.7	15.3	42.2	38.7	17.5	32.9	38.7	17.8	39.7	35.1	18.6
Delay factor k	0.32	0.30	0.11	0.11	0.13	0.11	0.11	0.43	0.11	0.35	0.21	0.11
Increm. delay d2	7.6	7.3	0.0	0.4	1.4	0.2	0.1	12.6	0.1	11.2	1.3	0.1
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	53.5	48.0	15.3	42.6	40.1	17.7	33.1	51.4	17.9	50.9	36.4	18.8
Lane group LOS	D	D	B	D	D	B	C	D	B	D	D	B
Apprch. delay	48.3			29.4			47.9			38.6		
Approach LOS	D			C			D			D		
Intersec. delay	42.1			Intersection LOS						D		

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kumuiki St (WestLp)
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	PM Peak Period Buildout 2025	Analysis Year	2004

Intersection Geometry

Grade = 0

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Grade = 0

1



0

2



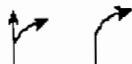
2

0



1

Grade = 0



Grade = 0

0 1 1

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	165	278	129	51	259	6	81	19	47	3	9	121
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0			2.0	2.0		2.0	
Ext. eff. green	2.0	2.0		2.0	2.0			2.0	2.0		2.0	
Arrival type	3	3		3	3			3	3		3	
Ped volume	33			3			15			6		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0			0	0		0	
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	EB Only	Thru & RT	04	NS Perm	06	07	08				
Timing	G = 7.0	G = 5.0	G = 17.0	G =	G = 19.0	G =	G =	G =				
	Y = 3.0	Y = 0.0	Y = 3.0	Y =	Y = 3.0	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 60.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 PM Peak Kamaaha/Kumuiki (West Lp)*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	LT	R	LTR	
Adj. flow rate	183	464	57	295	111	52	147	
Satflow rate	1805	3378	1805	3597	1352	1596	1651	
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Green ratio	0.27	0.37	0.12	0.28	0.32	0.50	0.32	
Lane group cap.	481	1239	211	1019	428	798	523	
v/c ratio	0.38	0.37	0.27	0.29	0.26	0.07	0.28	
Flow ratio	0.10	0.14	0.03	0.08	0.08	0.03	0.09	
Crit. lane group	Y	N	N	Y	N	N	Y	
Sum flow ratios	0.27							
Lost time/cycle	8.00							
Critical v/c ratio	0.31							

Lane Group Capacity, Control Delay, and LOS Determination

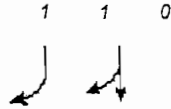
	EB		WB		NB		SB	
Lane group	L	TR	L	TR	LT	R	LTR	
Adj. flow rate	183	464	57	295	111	52	147	
Lane group cap.	481	1239	211	1019	428	798	523	
v/c ratio	0.38	0.37	0.27	0.29	0.26	0.07	0.28	
Green ratio	0.27	0.37	0.12	0.28	0.32	0.50	0.32	
Unif. delay d1	18.0	13.9	24.2	16.8	15.3	7.8	15.4	
Delay factor k	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
Increm. delay d2	0.5	0.2	0.7	0.2	0.3	0.0	0.3	
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Control delay	18.5	14.1	24.9	16.9	15.6	7.8	15.7	
Lane group LOS	B	B	C	B	B	A	B	
Apprch. delay	15.4		18.2		13.1		15.7	
Approach LOS	B		B		B		B	
Intersec. delay	15.9		Intersection LOS				B	

INPUT WORKSHEET

General Information				Site Information			
Analyst	P. Matsunaga			Intersection	Kamaaha/Kuloa		
Agency or Co.	PBQ&D			Area Type	All other areas		
Date Performed	2/3/2004			Jurisdiction	Honolulu		
Time Period	PM Peak Period Buildout 2025			Analysis Year	2004		

Intersection Geometry

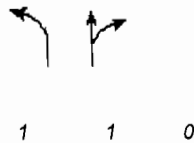
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Grade = 0



Grade = 0



Grade = 0

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	118	300	20	24	202	43	67	22	55	17	11	78
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0			2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0			2.0	2.0
Arrival type	3	3		3	3		3	3			3	3
Ped volume	11			22			12			18		
Bicycle volume							0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0			0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08				
Timing	G = 11.0	G = 18.0	G =	G =	G = 19.0	G =	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 60.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 PM Peak Kamaaha/Kuloa (East Lp)*

Capacity Analysis

	EB		WB		NB		SB	
	L	TR	L	TR	L	TR	LT	R
Lane group								
Adj. flow rate	131	357	27	272	74	85	31	87
Satflow rate	1731	3574	1772	3514	1378	1682	1651	1593
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.18	0.30	0.18	0.30	0.32	0.32	0.32	0.57
Lane group cap.	317	1072	325	1054	436	533	523	903
v/c ratio	0.41	0.33	0.08	0.26	0.17	0.16	0.06	0.10
Flow ratio	0.08	0.10	0.02	0.08	0.05	0.05	0.02	0.05
Crit. lane group	Y	Y	N	N	Y	N	N	N
Sum flow ratios	0.23							
Lost time/cycle	12.00							
Critical v/c ratio	0.29							

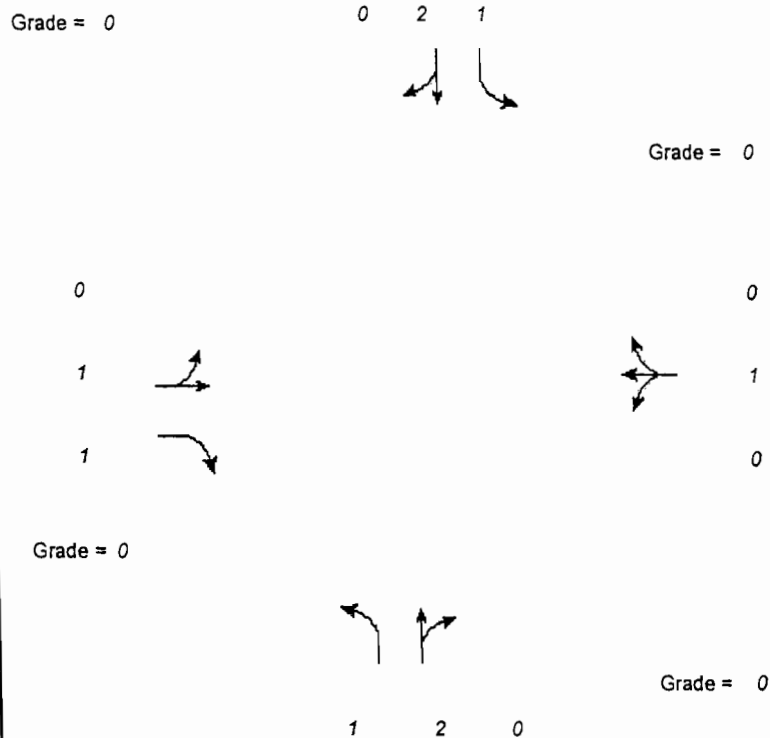
Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
	L	TR	L	TR	L	TR	LT	R
Lane group								
Adj. flow rate	131	357	27	272	74	85	31	87
Lane group cap.	317	1072	325	1054	436	533	523	903
v/c ratio	0.41	0.33	0.08	0.26	0.17	0.16	0.06	0.10
Green ratio	0.18	0.30	0.18	0.30	0.32	0.32	0.32	0.57
Unif. delay d1	21.6	16.3	20.3	15.9	14.8	14.8	14.3	6.0
Delay factor k	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
Increm. delay d2	0.9	0.2	0.1	0.1	0.2	0.1	0.0	0.0
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	22.5	16.5	20.4	16.1	15.0	14.9	14.3	6.0
Lane group LOS	C	B	C	B	B	B	B	A
Apprch. delay	18.1		16.5		14.9		8.2	
Approach LOS	B		B		B		A	
Intersec. delay	16.1		Intersection LOS				B	

INPUT WORKSHEET

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kamaaha Ave/KekuilaniLp (Makai)
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/4/2004	Jurisdiction	Honolulu
Time Period	PM Peak Yr 2025 Build out vol	Analysis Year	2025

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	41	0	82	93	0	17	122	108	142	25	137	45
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time		2.0	2.0		2.0		2.0	2.0		2.0	2.0	
Ext. eff. green		2.0	2.0		2.0		2.0	2.0		2.0	2.0	
Arrival type		3	3		3		3	3		3	3	
Ped volume		48			62			49			13	
Bicycle volume		0			0			0			0	
Parking (Y or N)		N		N		N	N		N	N		N
Parking/hr												
Bus stops/hr		0	0		0		0	0		0	0	
Ped timing		0.0			0.0			3.0			0.0	
	EB Only	WB Only	03	04	Excl. Left	Thru & RT	07	08				
Timing	G = 10.0	G = 13.0	G =	G =	G = 10.0	G = 11.0	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 60.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei-PM Peak Yr 2025 Kamaaha/Kekuilani(Makai)*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	LT	R	LTR	L	TR	L	TR	
Adj. flow rate	46	91	122	136	278	28	202	
Satflow rate	1810	1475	1761	1805	3052	1805	3446	
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Green ratio	0.17	0.17	0.22	0.17	0.18	0.17	0.18	
Lane group cap.	302	246	382	301	560	301	632	
v/c ratio	0.15	0.37	0.32	0.45	0.50	0.09	0.32	
Flow ratio	0.03	0.06	0.07	0.08	0.09	0.02	0.06	
Crit. lane group	N	Y	Y	Y	Y	N	N	
Sum flow ratios	0.30							
Lost time/cycle	16.00							
Critical v/c ratio	0.41							

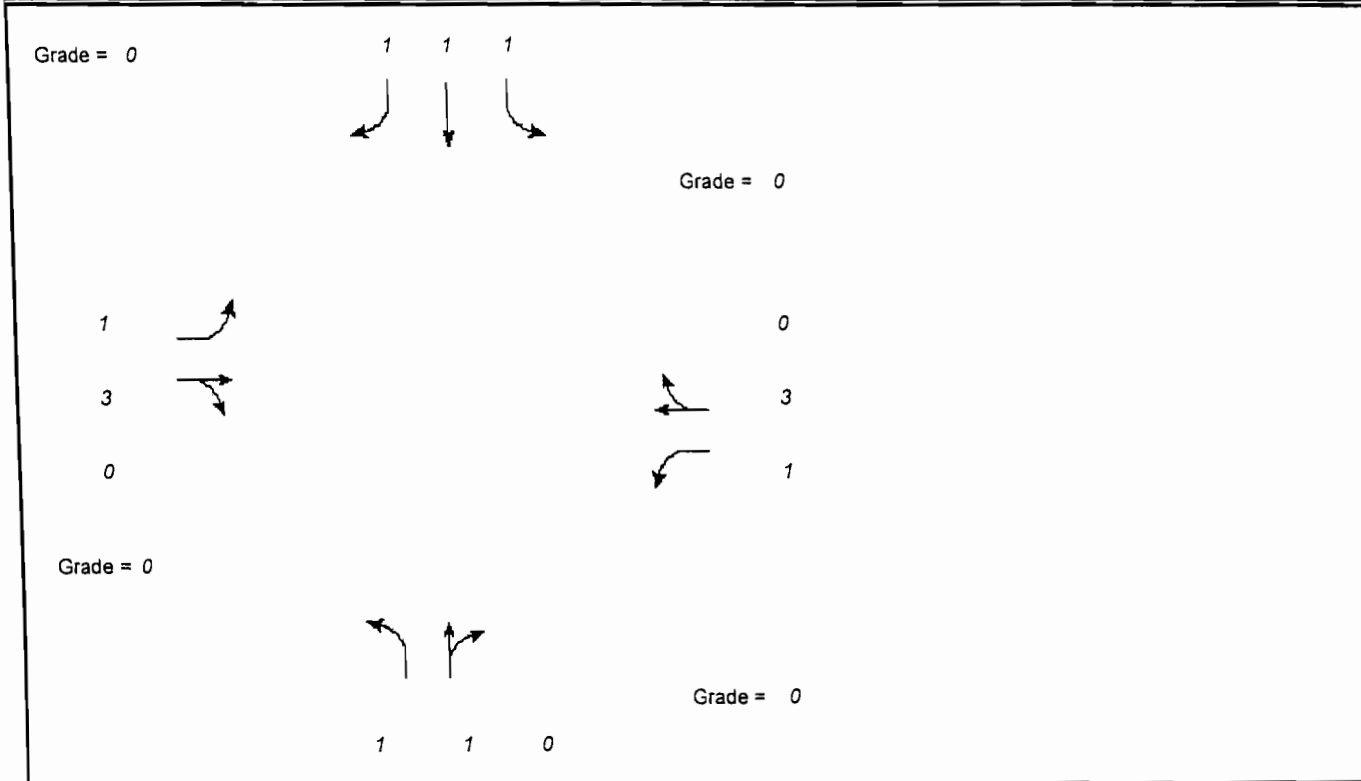
Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	LT	R	LTR	L	TR	L	TR	
Adj. flow rate	46	91	122	136	278	28	202	
Lane group cap.	302	246	382	301	560	301	632	
v/c ratio	0.15	0.37	0.32	0.45	0.50	0.09	0.32	
Green ratio	0.17	0.17	0.22	0.17	0.18	0.17	0.18	
Unif. delay d1	21.4	22.2	19.8	22.5	22.0	21.2	21.3	
Delay factor k	0.11	0.11	0.11	0.11	0.11	0.11	0.11	
Increm. delay d2	0.2	0.9	0.5	1.1	0.7	0.1	0.3	
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Control delay	21.6	23.1	20.3	23.6	22.7	21.3	21.5	
Lane group LOS	C	C	C	C	C	C	C	
Apprch. delay	22.6		20.3	23.0		21.5		
Approach LOS	C		C	C		C		
Intersec. delay	22.2		Intersection LOS				C	

INPUT WORKSHEET

General Information				Site Information			
Analyst	P. Matsunaga			Intersection	Kapolei/Kamaaha		
Agency or Co.	PBQ&D			Area Type	All other areas		
Date Performed	2/3/2004			Jurisdiction	Honolulu		
Time Period	PM Peak Period Buildout 2025			Analysis Year	2004		

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	181	908	49	165	607	181	35	10	32	114	78	119
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Arrival type	3	3		3	3		3	3		3	3	3
Ped volume	20			26			11			16		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0		0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	Excl. Left	Thru & RT	07	08				
Timing	G = 23.0	G = 30.0	G =	G =	G = 19.0	G = 22.0	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 PM Peak Kapolei/Kamaaha*

Capacity Analysis

	EB		WB		NB		SB			
	L	TR	L	TR	L	TR	L	T	R	
Lane group										
Adj. flow rate	201	1068	183	875	39	47	127	87	132	
Satflow rate	1805	5134	1805	4954	1805	1660	1805	1900	1583	
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Green ratio	0.21	0.27	0.21	0.27	0.17	0.20	0.17	0.20	0.45	
Lane group cap.	377	1400	377	1351	312	332	312	380	705	
v/c ratio	0.53	0.76	0.49	0.65	0.13	0.14	0.41	0.23	0.19	
Flow ratio	0.11	0.21	0.10	0.18	0.02	0.03	0.07	0.05	0.08	
Crit. lane group	Y	Y	N	N	N	N	Y	Y	N	
Sum flow ratios	0.44									
Lost time/cycle	16.00									
Critical v/c ratio	0.51									

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB		
	L	TR	L	TR	L	TR	L	T	R
Lane group									
Adj. flow rate	201	1068	183	875	39	47	127	87	132
Lane group cap.	377	1400	377	1351	312	332	312	380	705
v/c ratio	0.53	0.76	0.49	0.65	0.13	0.14	0.41	0.23	0.19
Green ratio	0.21	0.27	0.21	0.27	0.17	0.20	0.17	0.20	0.45
Unif. delay d1	38.7	36.7	38.3	35.3	38.5	36.2	40.5	36.9	18.5
Delay factor k	0.14	0.32	0.11	0.23	0.11	0.11	0.11	0.11	0.11
Increm. delay d2	1.5	2.5	1.0	1.1	0.2	0.2	0.9	0.3	0.1
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Control delay	40.2	39.3	39.3	36.4	38.7	36.4	41.4	37.2	18.6
Lane group LOS	D	D	D	D	D	D	D	D	B
Apprch. delay	39.4		36.9		37.4		31.6		
Approach LOS	D		D		D		C		
Intersec. delay	37.4		Intersection LOS				D		

INPUT WORKSHEET

General Information		Site Information	
Analyst	C. Maruoka	Intersection	Kapolei/FBR
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	PM Peak Period Buildout 2025	Analysis Year	2004

Intersection Geometry

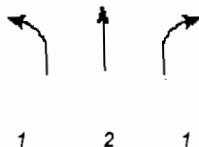
Grade = 0



Grade = 0



Grade = 0



Grade = 0

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	384	966	95	48	439	376	86	165	72	137	311	153
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Arrival type	3	3		3	3		3	3	3	3	3	3
Ped volume	0			0			0			0		
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0	0	0	0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	EB Only	Thru & RT	04	Excl. Left	Thru & RT	07	08				
Timing	G = 16.0	G = 12.0	G = 29.0	G =	G = 12.0	G = 25.0	G =	G =				
	Y = 3.0	Y = 3.0	Y = 3.0	Y =	Y = 0.0	Y = 3.0	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0					

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 PM Peak Kapolei/FBR*

Capacity Analysis

	EB			WB			NB			SB		
Lane group	L	TR		L	TR		L	T	R	L	T	R
Adj. flow rate	427	1187		53	906		96	183	80	152	346	170
Satflow rate	1805	5112		1805	4828		1805	3610	1615	3502	3610	1615
Lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Green ratio	0.29	0.41		0.15	0.26		0.11	0.23	0.41	0.11	0.23	0.41
Lane group cap.	525	2091		263	1273		197	820	661	382	820	661
v/c ratio	0.81	0.57		0.20	0.71		0.49	0.22	0.12	0.40	0.42	0.26
Flow ratio	0.24	0.23		0.03	0.19		0.05	0.05	0.05	0.04	0.10	0.11
Crit. lane group	Y	N		N	Y		Y	N	N	N	Y	N
Sum flow ratios	0.57											
Lost time/cycle	12.00											
Critical v/c ratio	0.64											

Lane Group Capacity, Control Delay, and LOS Determination

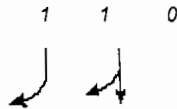
	EB			WB			NB			SB		
Lane group	L	TR		L	TR		L	T	R	L	T	R
Adj. flow rate	427	1187		53	906		96	183	80	152	346	170
Lane group cap.	525	2091		263	1273		197	820	661	382	820	661
v/c ratio	0.81	0.57		0.20	0.71		0.49	0.22	0.12	0.40	0.42	0.26
Green ratio	0.29	0.41		0.15	0.26		0.11	0.23	0.41	0.11	0.23	0.41
Unif. delay d1	36.2	25.0		41.4	36.7		46.1	34.6	20.2	45.6	36.3	21.5
Delay factor k	0.35	0.16		0.11	0.28		0.11	0.11	0.11	0.11	0.11	0.11
Increm. delay d2	9.5	0.4		0.4	1.9		1.9	0.1	0.1	0.7	0.4	0.2
PF factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	1.000
Control delay	45.7	25.4		41.8	38.6		48.0	34.7	20.3	46.3	36.7	21.7
Lane group LOS	D	C		D	D		D	C	C	D	D	C
Apprch. delay	30.8			38.8			35.1			35.1		
Approach LOS	C			D			D			D		
Intersec. delay	34.1			Intersection LOS						C		

INPUT WORKSHEET

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kapolei/Malu Ohai
Agency or Co.	PBQ&D	Area Type	All other areas
Date Performed	2/3/2004	Jurisdiction	Honolulu
Time Period	PM Peak Period Buildout 2025	Analysis Year	2004

Intersection Geometry

Grade = 0



Grade = 0



Grade = 0



Grade = 0

0 1 0

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Volume (vph)	36	1129	10	39	804	27	13	19	65	19	17	46
% Heavy veh	0	0	0	0	0	0	0	0	0	0	0	0
PHF	0.90	0.90	0.83	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0			2.0			2.0	2.0
Ext. eff. green	2.0	2.0		2.0	2.0			2.0			2.0	2.0
Arrival type	3	3		3	3			3			3	3
Ped volume	0			16								
Bicycle volume	0			0			0			0		
Parking (Y or N)	N		N	N		N	N		N	N		N
Parking/hr												
Bus stops/hr	0	0		0	0			0			0	0
Ped timing	0.0			0.0			3.0			0.0		
	Excl. Left	Thru & RT	03	04	NS Perm	06	07	08				
Timing	G = 24.0	G = 48.0	G =	G =	G = 26.0	G =	G =	G =				
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 110.0						

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 PM Peak Kapolei/Malu Ohai*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	LTR	LT	R	
Adj. flow rate	40	1266	43	923	107	40	51	
Satflow rate	1805	5180	1805	5159	1676	1634	1615	
Lost time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Green ratio	0.22	0.44	0.22	0.44	0.24	0.24	0.49	
Lane group cap.	394	2260	394	2251	396	386	793	
v/c ratio	0.10	0.56	0.11	0.41	0.27	0.10	0.06	
Flow ratio	0.02	0.24	0.02	0.18	0.06	0.02	0.03	
Crit. lane group	N	Y	Y	N	Y	N	N	
Sum flow ratios	0.33							
Lost time/cycle	12.00							
Critical v/c ratio	0.37							

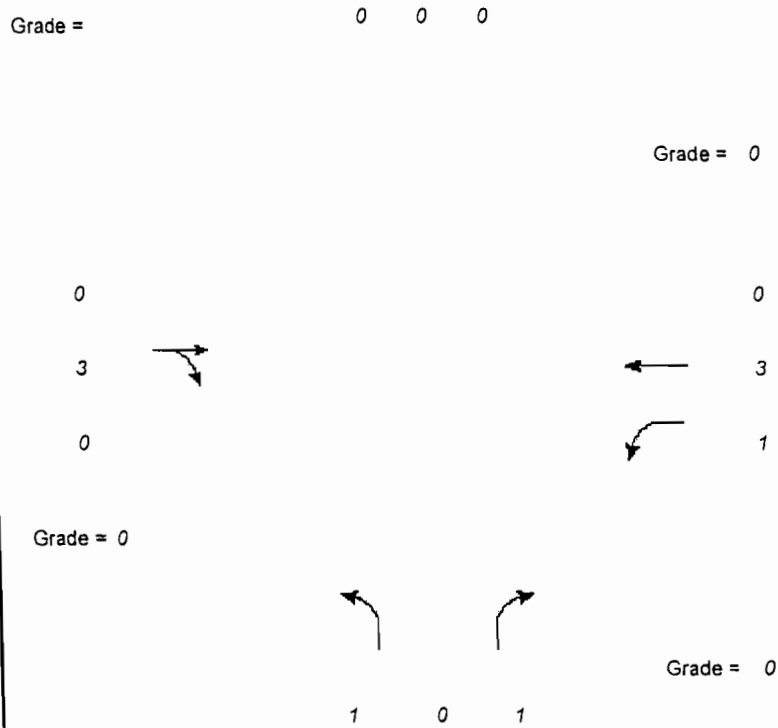
Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	L	TR	L	TR	LTR	LT	R	
Adj. flow rate	40	1266	43	923	107	40	51	
Lane group cap.	394	2260	394	2251	396	386	793	
v/c ratio	0.10	0.56	0.11	0.41	0.27	0.10	0.06	
Green ratio	0.22	0.44	0.22	0.44	0.24	0.24	0.49	
Unif. delay d1	34.4	23.1	34.4	21.3	34.3	32.9	14.7	
Delay factor k	0.11	0.16	0.11	0.11	0.11	0.11	0.11	
Increm. delay d2	0.1	0.3	0.1	0.1	0.4	0.1	0.0	
PF factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Control delay	34.5	23.4	34.6	21.4	34.6	33.0	14.8	
Lane group LOS	C	C	C	C	C	C	B	
Approch. delay	23.8		22.0		34.6	22.8		
Approach LOS	C		C		C	C		
Intersec. delay	23.5		Intersection LOS				C	

INPUT WORKSHEET

General Information			Site Information	
Analyst			Intersection	Kapolei/Street A
Agency or Co.	PBQ&D		Area Type	All other areas
Date Performed	2/5/2004		Jurisdiction	Honolulu
Time Period	PM Peak Period Buildout 2025		Analysis Year	2004

Intersection Geometry



Volume and Timing Input

	EB			WB			NB			SB			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
Volume (vph)		1064	149	20	743		126		74				
% Heavy veh		0	0	0	0		0		0				
PHF		0.90	0.83	0.90	0.90		0.90		0.90				
Actuated (P/A)		A	A	A	A		A		A				
Startup lost time		2.0		2.0	2.0		2.0		2.0				
Ext. eff. green		2.0		2.0	2.0		2.0		2.0				
Arrival type		3		3	3		3		3				
Ped volume		0			0			0			0		
Bicycle volume		0			0			0			0		
Parking (Y or N)		N		N	N		N		N	N		N	
Parking/hr													
Bus stops/hr		0		0	0		0		0				
Ped timing		0.0			0.0			3.0			0.0		
	WB Only	Thru & RT	03	04	NB Only	06	07	08					
Timing	G = 23.0	G = 51.0	G =	G =	G = 24.0	G =	G =	G =					
	Y = 3.0	Y = 3.0	Y =	Y =	Y = 3.0	Y =	Y =	Y =					
Duration of Analysis (hrs) = 0.25							Cycle Length C = 110.0						

CAPACITY AND LOS WORKSHEET

General Information

Project Description *Villages of Kapolei 2025 PM Peak Kapolei/Street A*

Capacity Analysis

	EB		WB		NB		SB	
Lane group	TR		L	T	L		R	
Adj. flow rate	1361		22	826	140		82	
Satflow rate	5085		1805	5187	1805		1615	
Lost time	2.0		2.0	2.0	2.0		2.0	
Green ratio	0.46		0.21	0.71	0.22		0.46	
Lane group cap.	2358		377	3678	394		749	
v/c ratio	0.58		0.06	0.22	0.36		0.11	
Flow ratio	0.27		0.01	0.16	0.08		0.05	
Crit. lane group	Y		Y	N	Y		N	
Sum flow ratios	0.36							
Lost time/cycle	12.00							
Critical v/c ratio	0.40							

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Lane group	TR		L	T	L		R	
Adj. flow rate	1361		22	826	140		82	
Lane group cap.	2358		377	3678	394		749	
v/c ratio	0.58		0.06	0.22	0.36		0.11	
Green ratio	0.46		0.21	0.71	0.22		0.46	
Unif. delay d1	21.6		34.8	5.5	36.4		16.7	
Delay factor k	0.17		0.11	0.11	0.11		0.11	
Increm. delay d2	0.4		0.1	0.0	0.6		0.1	
PF factor	1.000		1.000	1.000	1.000		1.000	
Control delay	22.0		34.9	5.6	37.0		16.7	
Lane group LOS	C		C	A	D		B	
Apprch. delay	22.0		6.3		29.5			
Approach LOS	C		A		C			
Intersec. delay	17.2		Intersection LOS				B	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kaiau Ave
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	PM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR Buildout Kamaaha/Kaiau PM Peak

East/West Street: Kamaaha Avenue	North/South Street: Kaiau Avenue
Intersection Orientation: East-West	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	544	104	54	407	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	604	115	60	452	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Raised curb					
RT Channelized			0			0
Lanes	0	2	0	1	2	0
Configuration		T	TR	L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	52	0	27	0	0	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	57	0	30	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	1	0	1	0	0	0
Configuration	L		R			

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L	L		R			
v (vph)		60	57		30			
C (m) (vph)		892	348		641			
v/c		0.07	0.16		0.05			
95% queue length		0.22	0.59		0.15			
Control Delay		9.3	17.4		10.9			
LOS		A	C		B			
Approach Delay	--	--	15.1					
Approach LOS	--	--	C					

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kealanani Ave
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	PM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR Buildout Kamaaha/Kealanani PM Peak

East/West Street: <i>Kamaaha Avenue</i>	North/South Street: <i>Kealanani Avenue</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume		62	266	125	461	226	120
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		68	295	0	0	251	133
Percent Heavy Vehicles		0	--	--	0	--	--
Median Type	<i>Raised curb</i>						
RT Channelized				0			0
Lanes		1	2	0	0	2	0
Configuration		L	T			T	TR
Upstream Signal			0			0	

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume		0	0	0	172	0	90
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		0	0	0	191	0	100
Percent Heavy Vehicles		0	0	0	0	0	0
Percent Grade (%)		0			0		
Flared Approach		N			N		
Storage		0			0		
RT Channelized				0			0
Lanes		0	0	0	1	0	1
Configuration					L		R

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
			7	8	9	10	11	12
Movement	1	4						
Lane Configuration	L					L		R
v (vph)	68					191		100
C (m) (vph)	1147					489		770
v/c	0.06					0.39		0.13
95% queue length	0.19					1.90		0.45
Control Delay	8.3					17.1		10.4
LOS	A					C		B

Approach Delay	--	--		14.8
Approach LOS	--	--		B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kamaaha Ave/Kekuilani Lp Mauka
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	PM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR Buildout Kamaaha/Kekuilani PM Peak

East/West Street: <i>Kekuilani Loop (Mauka)</i>	North/South Street: <i>Kamaaha Avenue</i>
Intersection Orientation: <i>North-South</i>	Study Period (hrs): <i>1.00</i>

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	0	147	18	177	194	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	163	20	196	215	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	2	0	1	2	0
Configuration		T	TR	L	T	
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	13	0	121	0	0	0
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	14	0	134	0	0	0
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
v (vph)		196		148				
C (m) (vph)		1342		781				
v/c		0.15		0.19				
95% queue length		0.51		0.70				
Control Delay		8.1		10.7				
LOS		A		B				

Approach Delay	--	--	10.7	
Approach LOS	--	--	B	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani Ave/Kuloa/Kumuiki
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	PM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR Buildout Kealanani/Kuloa/Kumuiki PM

East/West Street: Kumuiki St/Kuloa Ave	North/South Street: Kealanani Avenue
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	6	169	7	166	258	150
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	6	187	7	184	286	166
Percent Heavy Vehicles	0	-	-	0	-	-
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	0	1	2	0
Configuration	L	T	TR	L	T	TR
Upstream Signal		0			0	
Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	1	3	124	69	4	3
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	1	3	137	76	4	3
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	1	1	1	1	0
Configuration	LT		R	L		TR

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L	L	LT		R	L		TR
v (vph)	6	184	4		137	76		7
C (m) (vph)	1108	1361	292		902	262		396
v/c	0.01	0.14	0.01		0.15	0.29		0.02
95% queue length	0.02	0.47	0.04		0.54	1.21		0.05
Control Delay	8.3	8.1	17.5		9.7	24.3		14.3
LOS	A	A	C		A	C		B
Approach Delay	-	-	9.9			23.5		
Approach LOS	-	-	A			C		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	P. Matsunaga	Intersection	Kealanani Ave/Entrance B
Agency/Co.	PBQ&D	Jurisdiction	Honolulu
Date Performed	2/3/2004	Analysis Year	2004
Analysis Time Period	AM Peak Buildout 2025	Project ID	Villages of Kapolei - TIAR 2025 Kealanani/Entrance B AM Peak

East/West Street: Entrance B	North/South Street: Kealanani Avenue
Intersection Orientation: North-South	Study Period (hrs): 1.00

Vehicle Volumes and Adjustments						
Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	134	113	10	0	361	4
Peak-Hour Factor, PHF	0.90	1.00	0.90	0.25	0.90	1.00
Hourly Flow Rate, HFR	148	113	0	0	401	4
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	1	2	0	0	2	0
Configuration	L	T			T	TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume		7		19	0	213
Peak-Hour Factor, PHF		0.90		0.90	0.25	0.90
Hourly Flow Rate, HFR	0	0	0	21	0	236
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	1	0	1
Configuration				L		R

Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
v (vph)	148					21		236
C (m) (vph)	1165					424		811
v/c	0.13					0.05		0.29
95% queue length	0.44					0.16		1.23
Control Delay	8.5					13.9		11.3
LOS	A					B		B
Approach Delay	--	--					11.5	
Approach LOS	--	--					B	

Appendix D

Traffic Signal Warrants

Location	Peak Hour Warrant			4-Hour Warrant
	AM Peak	Afternoon	PM Peak	AM Peak
Farrington Hwy/Kealanani Ave	Signalized			Signalized
Kealanani Ave/Kumuiki St/Kuloa Ave	No	No		No
Ft Barrette Rd/Kamaaha Ave	Yes		Yes	Yes
Kamaaha Ave/Kaiiau Ave	No	No	No	
Kamaaha Ave/Kamaaha Lp (West)	No	No		No
Kamaaha Ave/Kealanani Ave	No	No		No
Kamaaha Ave/Kamaaha Lp (East)	No	No		No
Kamaaha Ave/Kekuilani Lp(mauka)	No	No		No
Kamaaha Ave/Kekuilani Lp(makai)	No	No		No
Kamaaha Ave/Kapolei Pkwy	No	No		No
Kapolei Pkwy/Malu Ohai St	No	No		No
Kapolei Pkwy/Ft Barrette Rd	Yes		Yes	Yes
Kaiiau Ave (Between Malu Ohai and Hokeo)				

AM peak 10/22/03
 7:00AM-8:00AM
 December, 2000

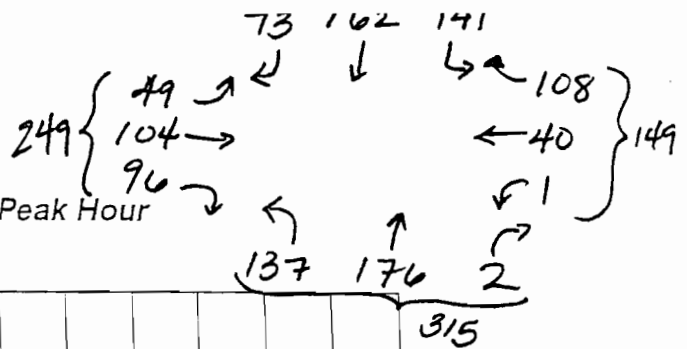
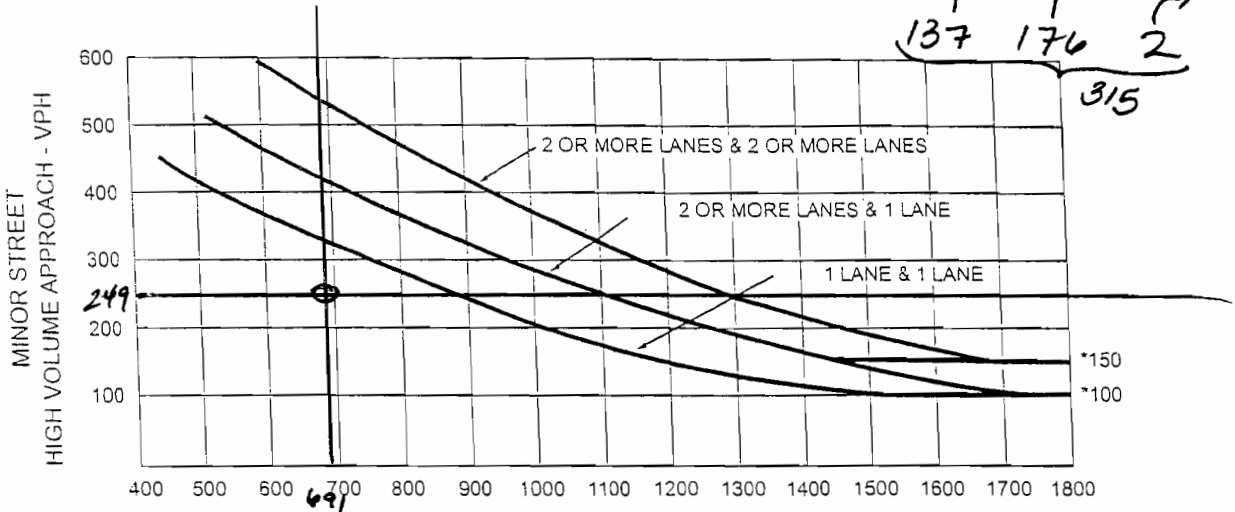


Figure 4C-3. Warrant 3 - Peak Hour



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

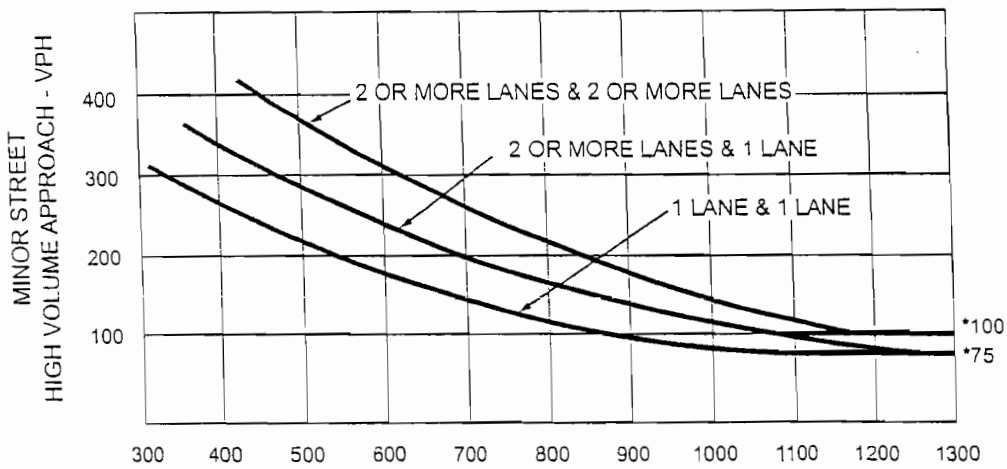
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

major	minor
691	249

does not warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Maunaloa Ave and Kapolei Pkwy
 Afternoon
 10/21/03
 145-245

December, 2000

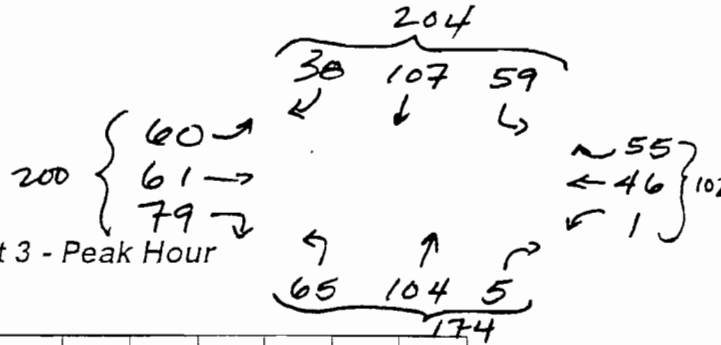
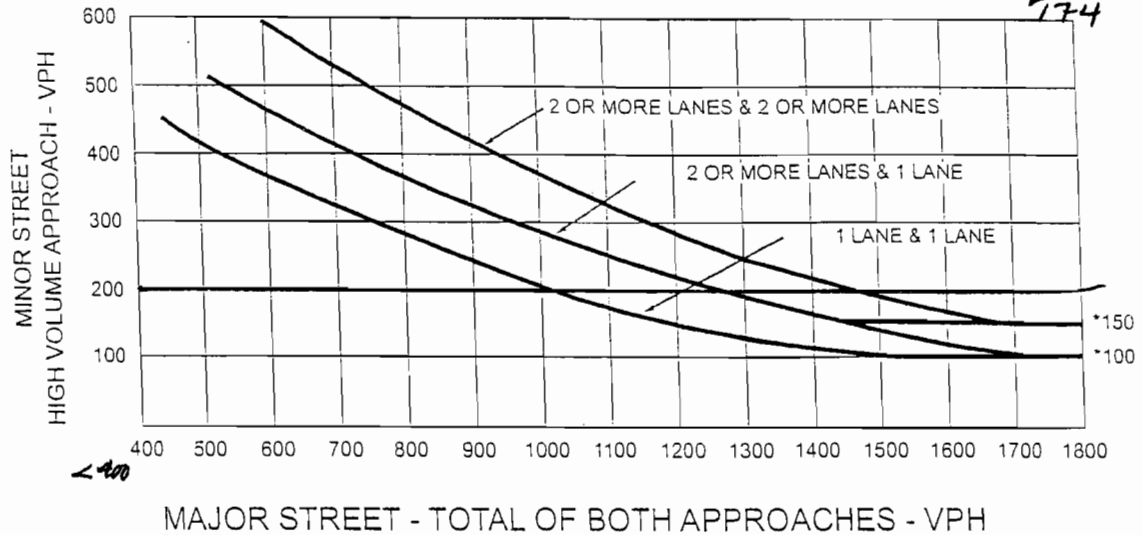


Figure 4C-3. Warrant 3 - Peak Hour



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

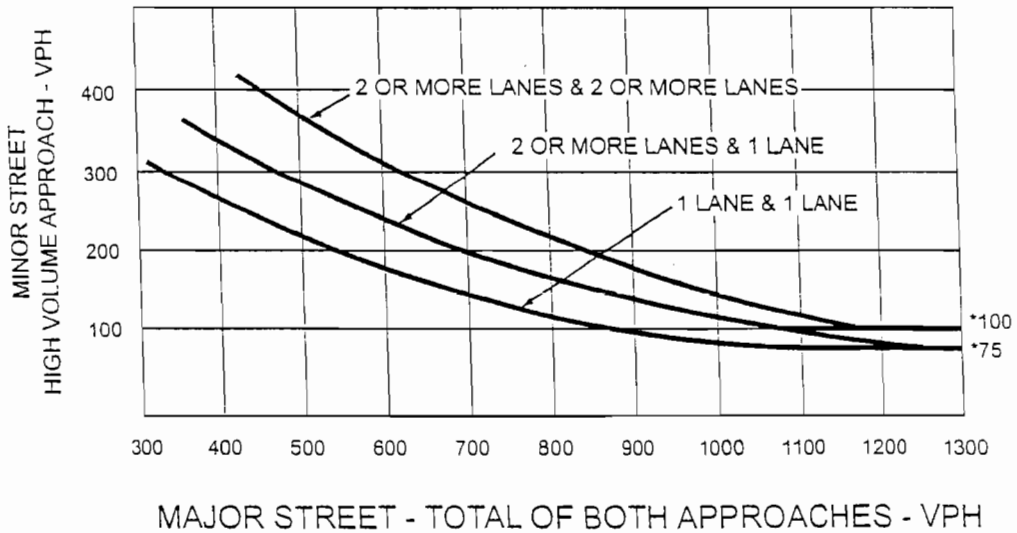
MAJOR
378

MINOR
200

does not warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



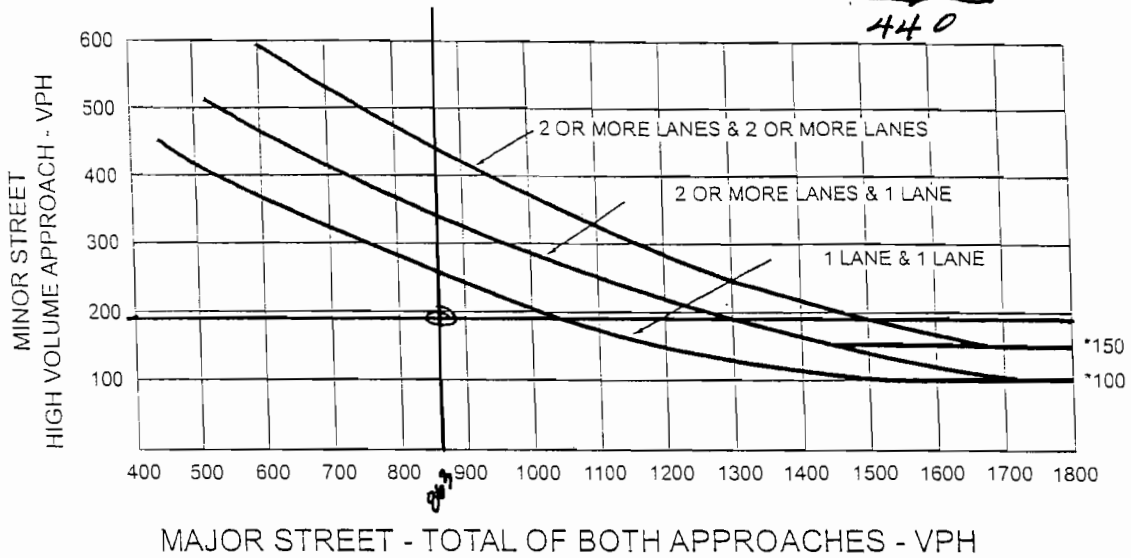
*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

10/22/03 AM PCAK
7:00AM-8:00AM

December, 2000

351 72'
↓ 62 175 } 190
↑ 430 10
440

Figure 4C-3. Warrant 3 - Peak Hour



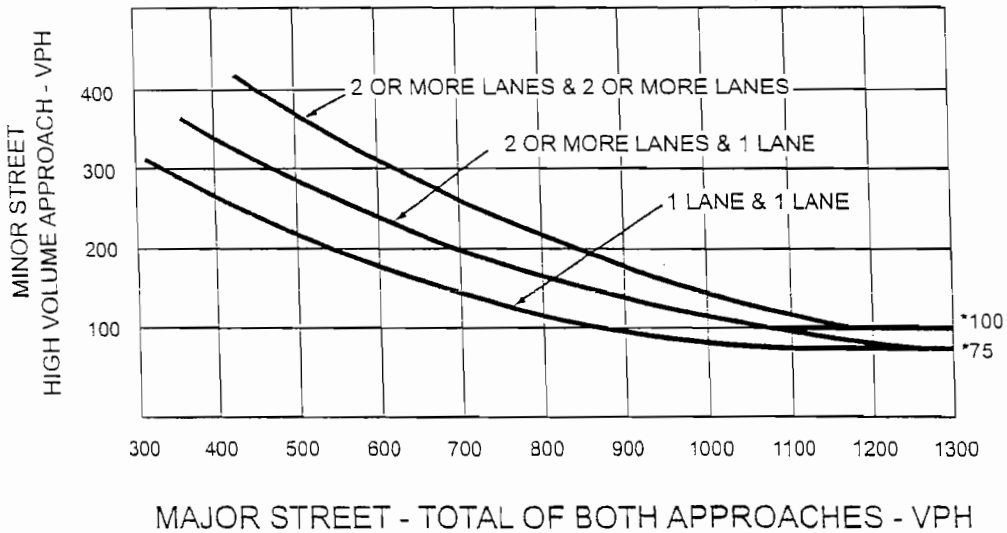
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

MAJOR 863 MINOR 190

does not warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Kamaama Ave and Kekuilani Lp (Mauka)

afternoon

10/22/03

1:45PM - 2:45PM

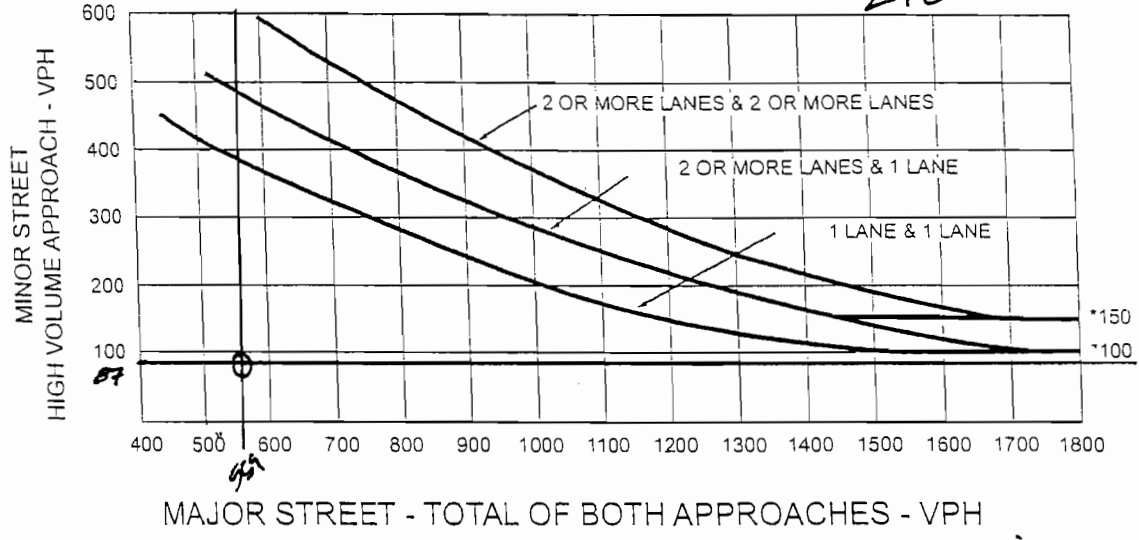
December, 2000

311
236 75

80 } 87
7

243 S
248

Figure 4C-3. Warrant 3 - Peak Hour



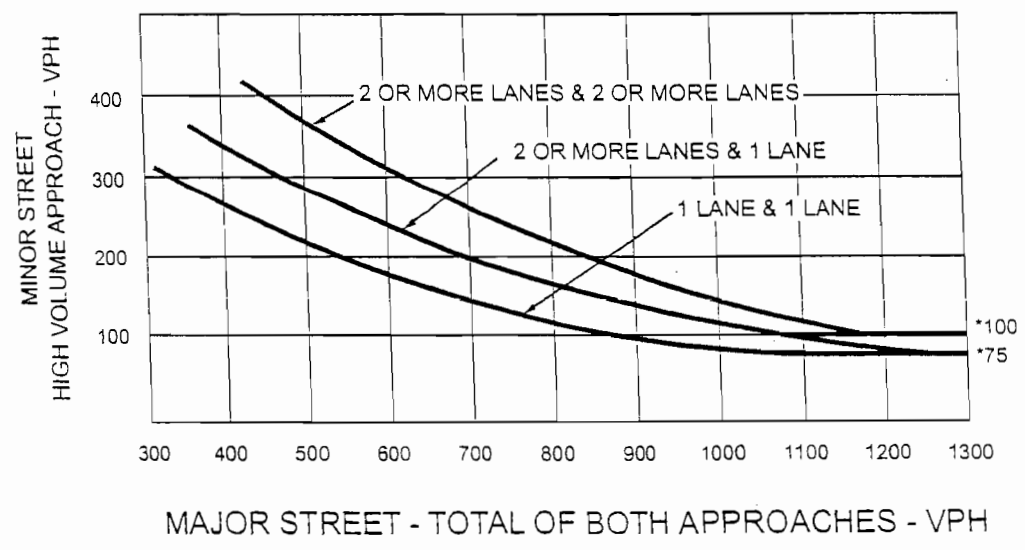
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Major 559
Minor 87

does not warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

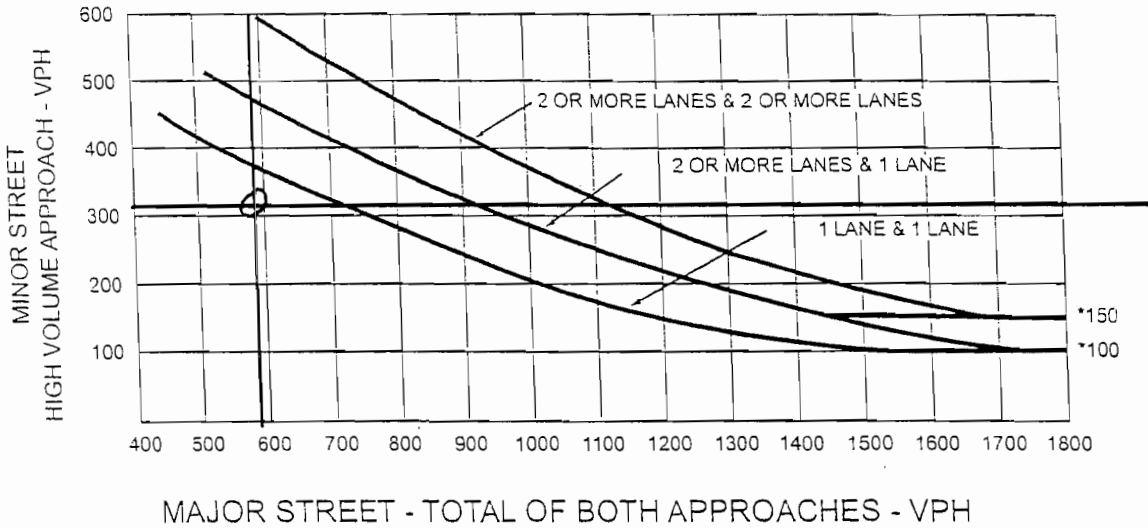


*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

AM peak 10/22/03
 7:00-8:00AM December, 2000

236 { 186 →
 50 ↓ }
 ← 189 }
 164 } 353
 160 }
 155 }
 315 }

Figure 4C-3. Warrant 3 - Peak Hour



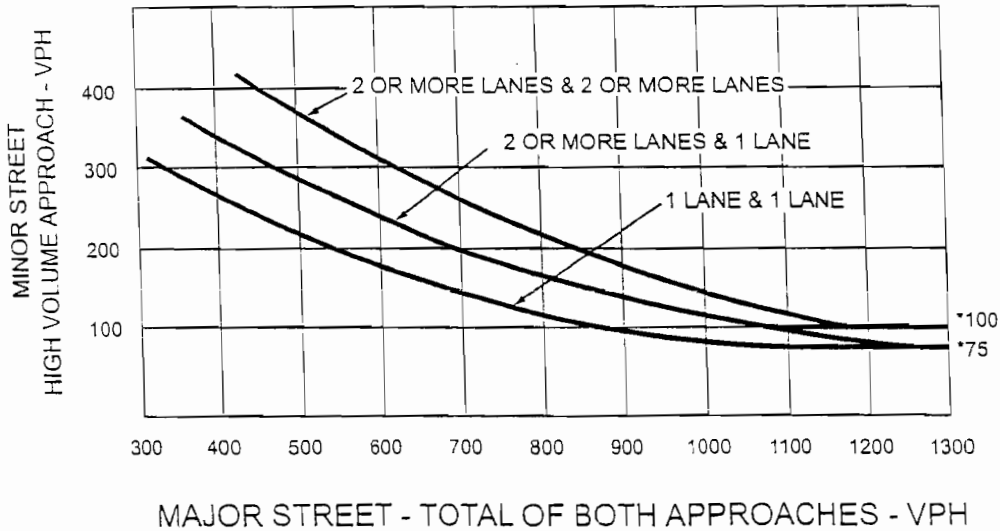
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

major 589 Minor 315

does not warrant.

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

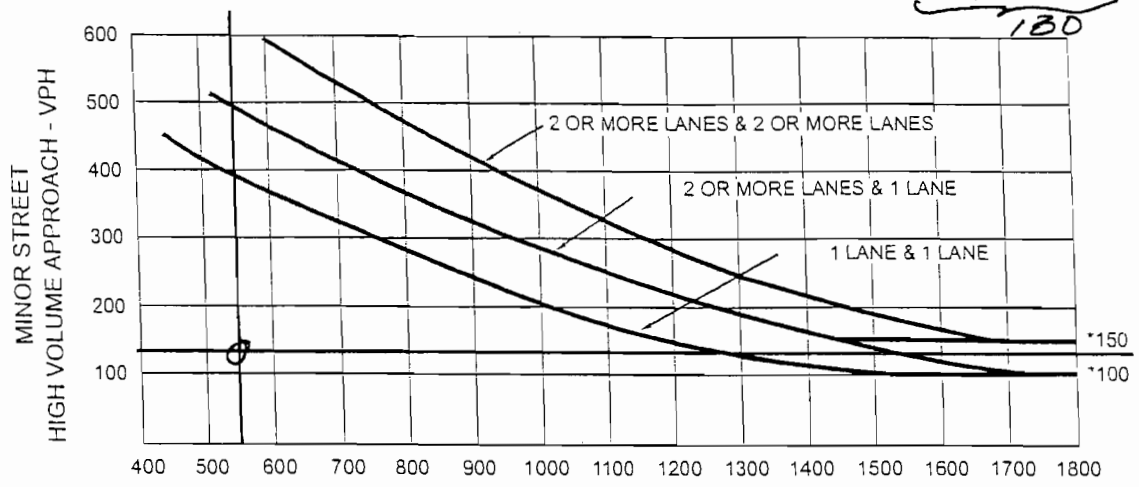


*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Kamaaha Ave and Karou Ave
 F. Fernon peak 10/21/03
 1:45PM - 2:45PM
 December, 2000

37 { 236 → ← 188 }
 { 81 → ← 44 } 232
 69 61
 130

Figure 4C-3. Warrant 3 - Peak Hour



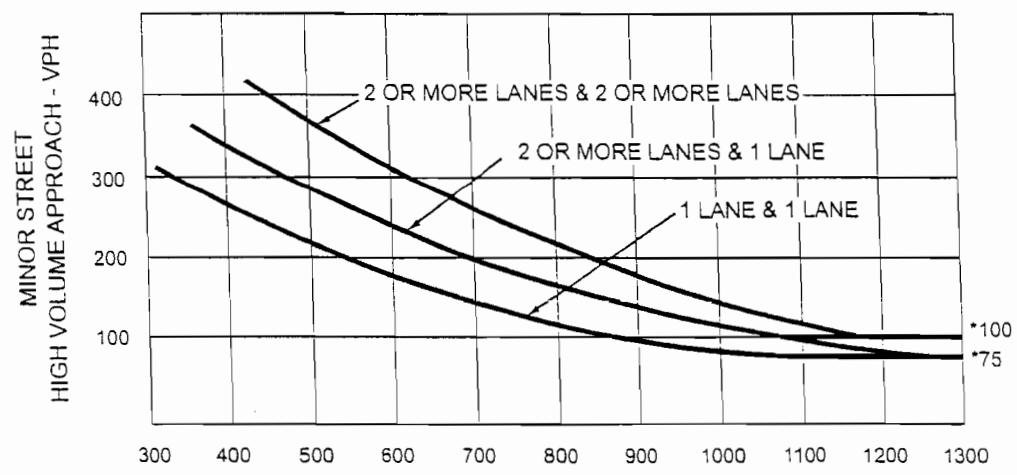
MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

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

does not warrant major minor
 549 130

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



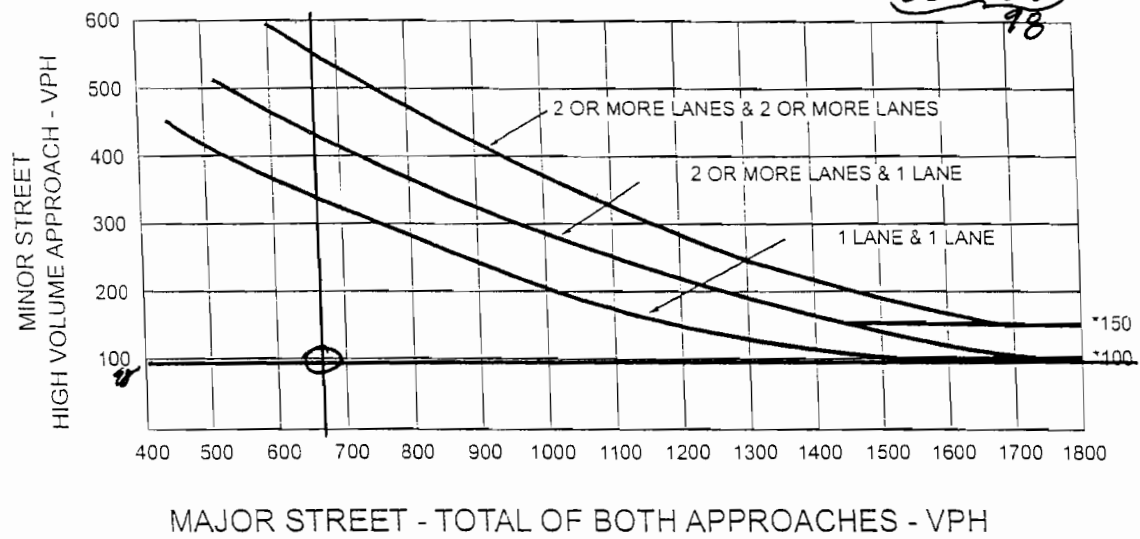
MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM peak 10/21/03
 4:30 - 5:30 PM
 December, 2000

440 { 300 →
 140 → }
 ← 186 } 227
 41 }
 65 33
 98

Figure 4C-3. Warrant 3 - Peak Hour

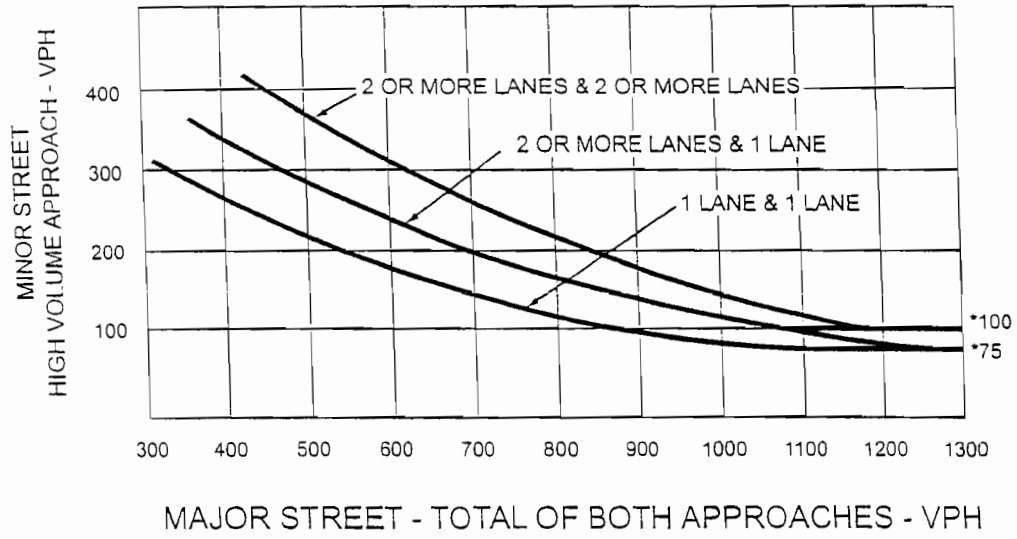


*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

does not warrant

major 667
 minor 98

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

FT Barrette Rd and Kamaaha Ave

PM peak 10/22/03

7:00AM - 8:00AM

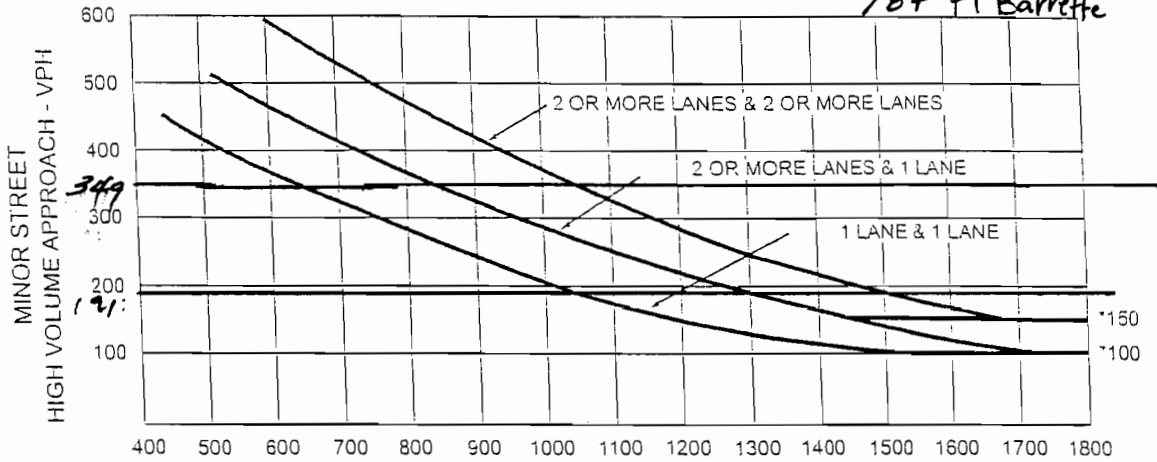
December, 2000

1348
1177 171
↓ ↘

316 }
33 } 349
Kamaaha

Figure 4C-3. Warrant 3 - Peak Hour

922 65
987 FT Barrette



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

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

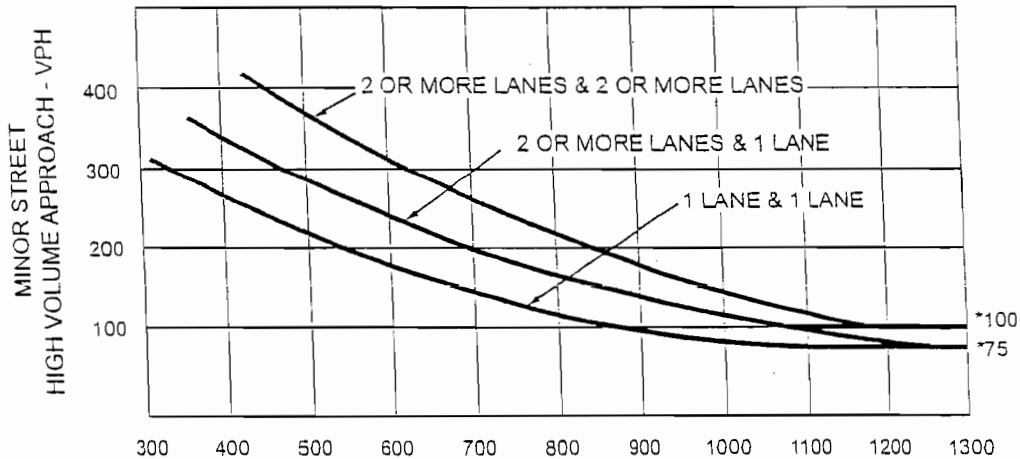
MAJOR
2335

Signal Warranted

MINOR
349
1/2 RT Vol = 191

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

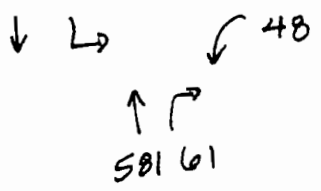


MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM peak Hour 10/10/03
 4:30 PM - 5:30 PM

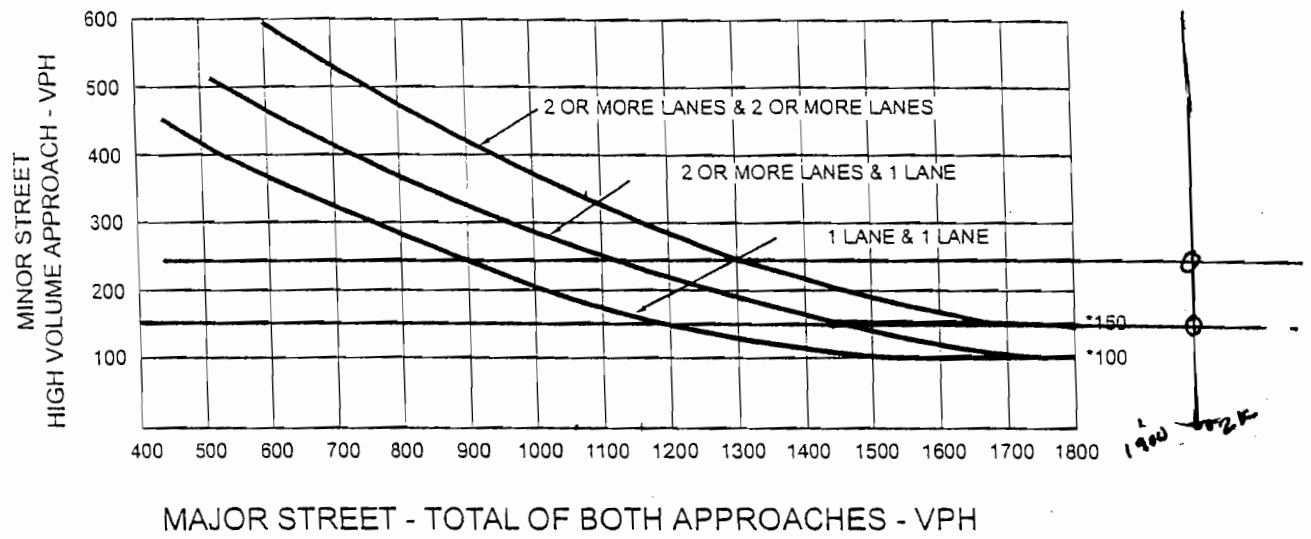
December, 2000



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Figure 4C-3. Warrant 3 - Peak Hour

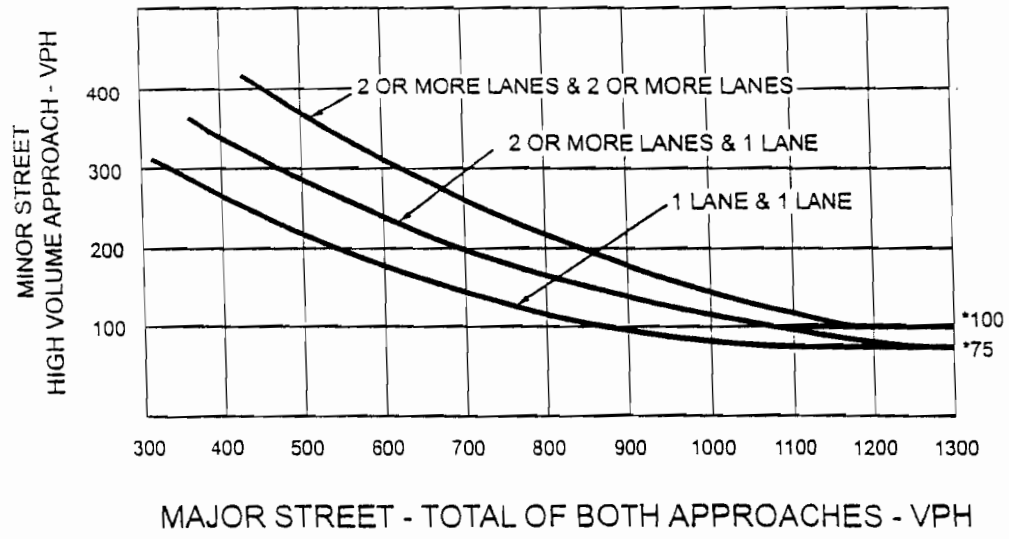
Major App
 1994
 Minor App
 261
 (150 VPH)



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

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

T1 Darvette Rd / Kapdel Pkwy
 UPEAK 10/21/03
 7:00 AM - 8:00 AM

December, 2000

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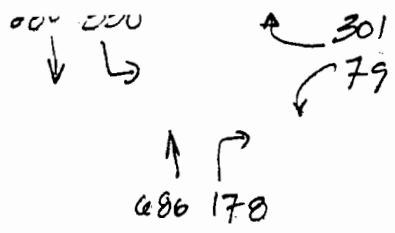
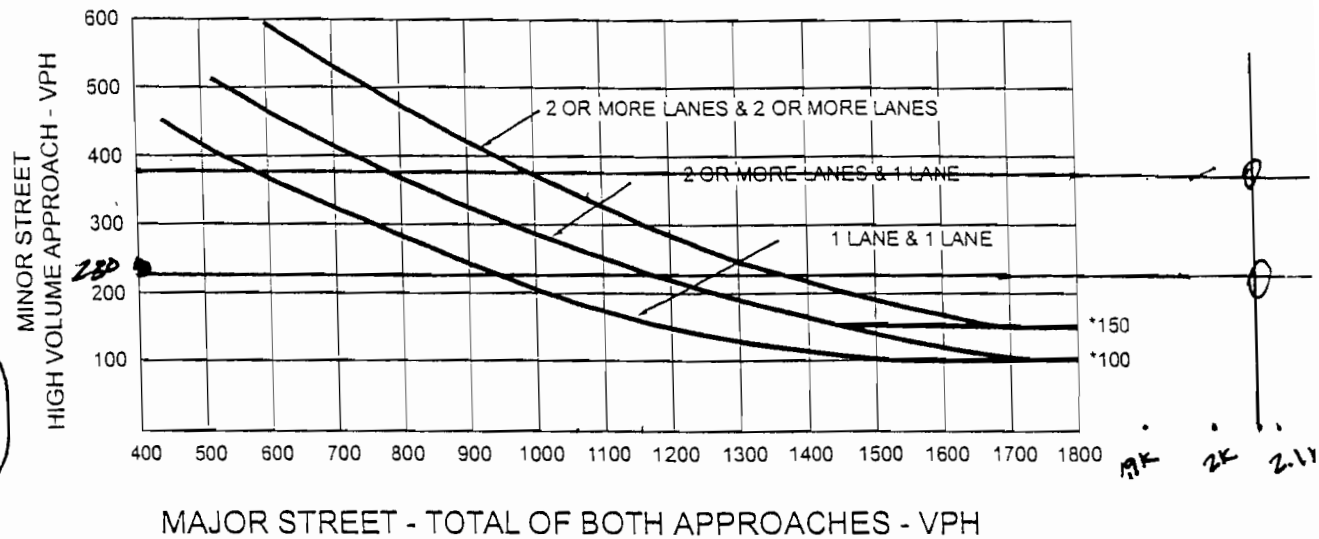


Figure 4C-3. Warrant 3 - Peak Hour

Major Approach
 2074
 Minor Approach
 380
 RT-Turn Vol
 430 VPH

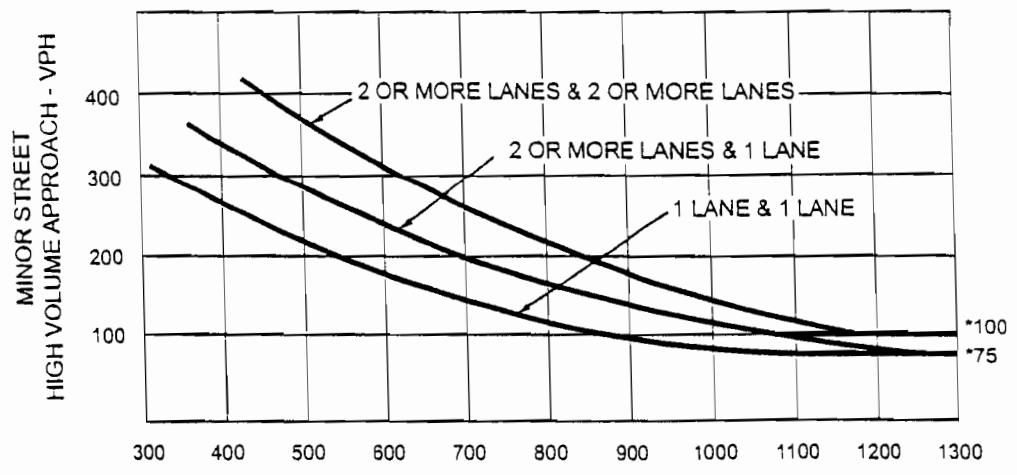


MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

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

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

PM peak 10/22/03
 4:30 PM - 6:30 PM

December, 2000

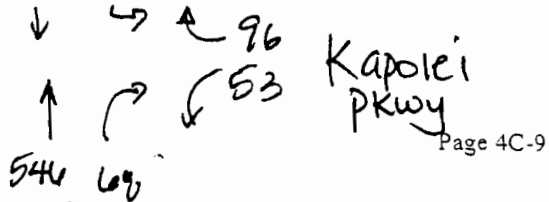
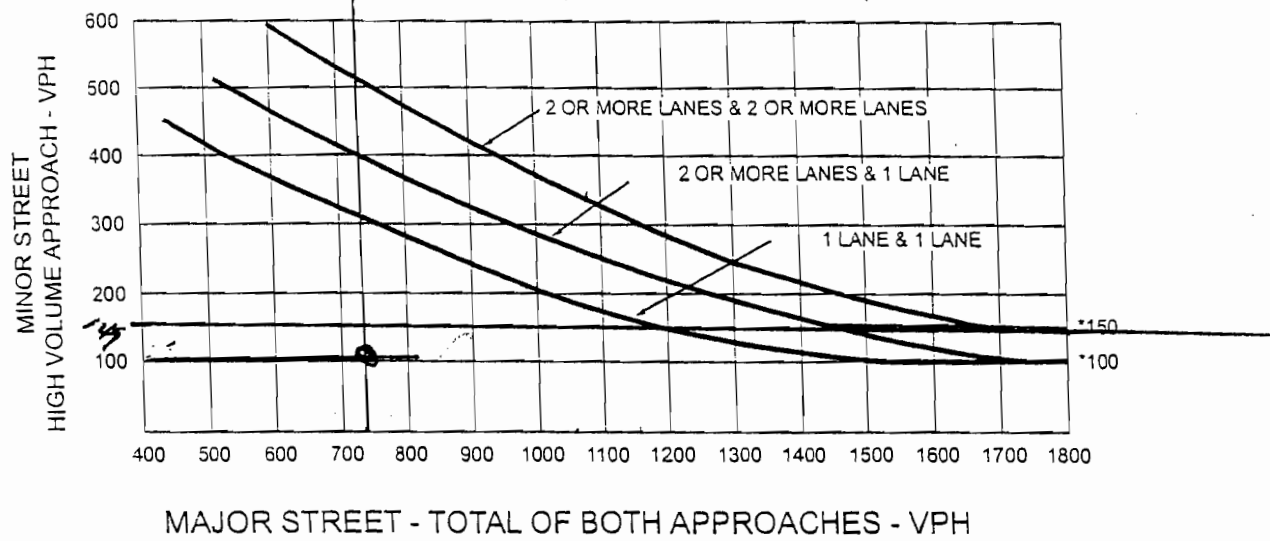


Figure 4C-3. Warrant 3 - Peak Hour
 FT Barrette Rd

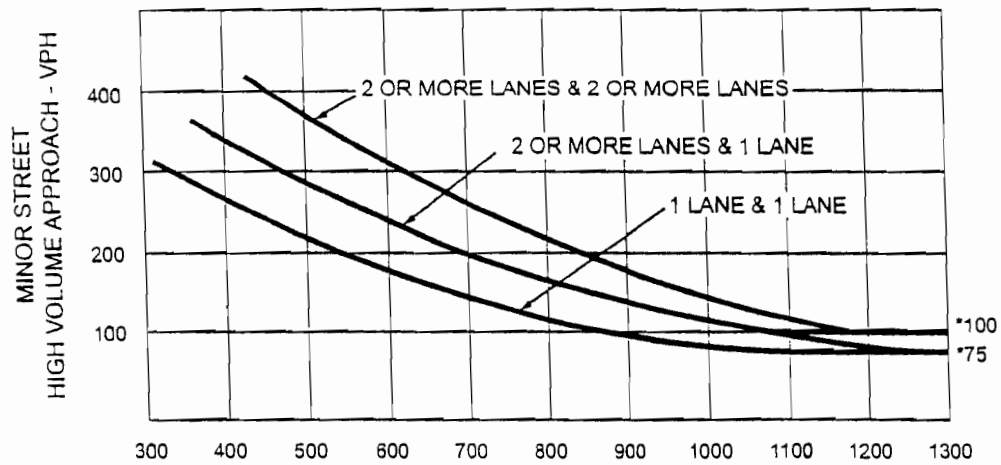
Major approach
 735
 Minor APP
 149
 (No RT turn
 101)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

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

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Kamaaha Ave and Kamaaha Lp (West) / Kumuiki St.

AM peak

10/21/03

7:00AM - 8:00PM

December, 2000

Kamaaha Ave

50
143

148

149 44 22

↙ ↓ ↘

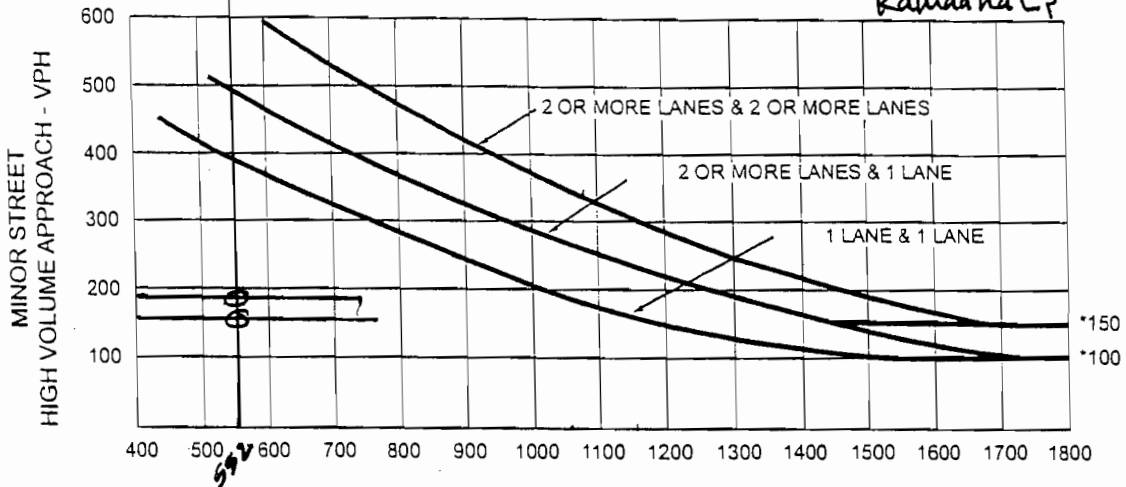
23

137

51

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Figure 4C-3. Warrant 3 - Peak Hour



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

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

no does not warrant
AM peak hour

Major approach

552

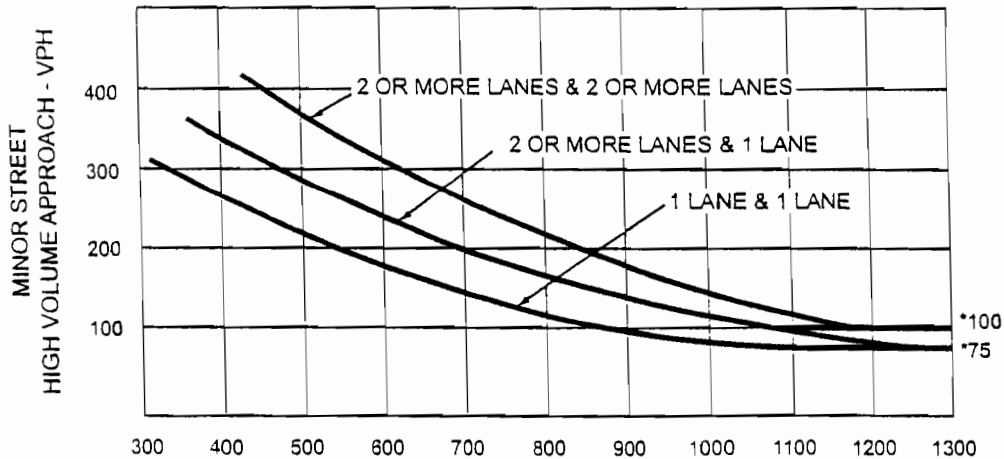
Minor approach

mauka 189

makai 154

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Afternoon Peak 1:45-2:45 PM

1:45-2:45 PM

December, 2000

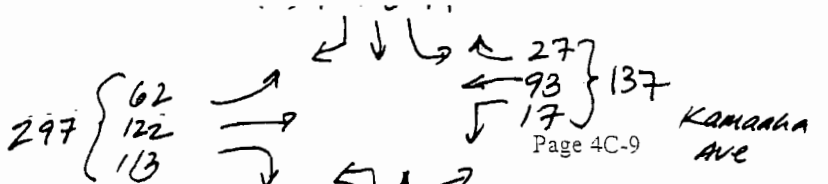
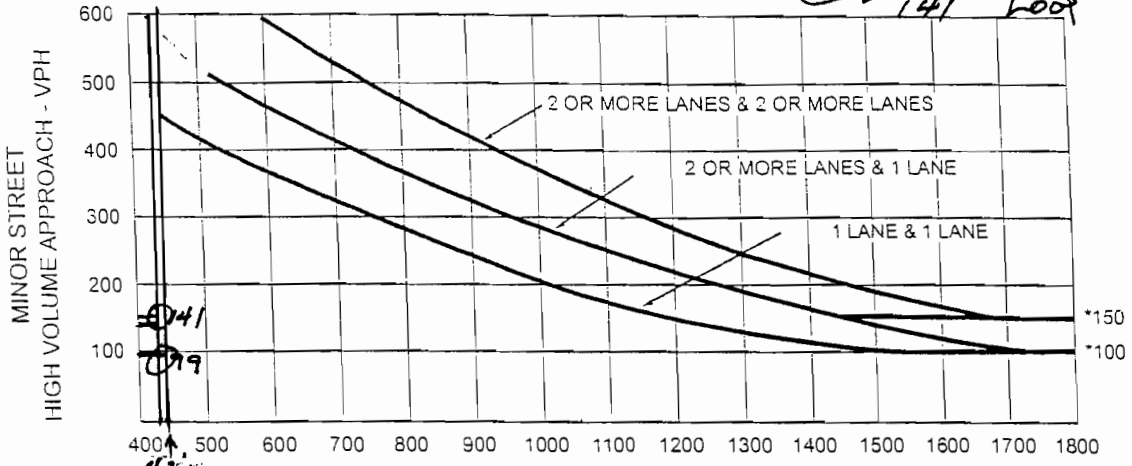


Figure 4C-3. Warrant 3 - Peak Hour

82 26 33 Kamaaha Loop
141



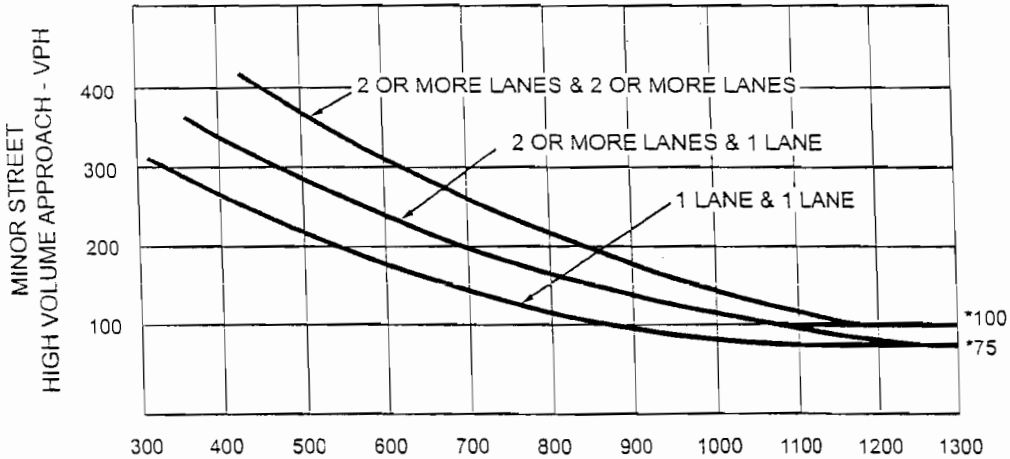
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

does not warrant

Major
434
minor
major 99
major 141

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Kamaaha Ave and Kamaaha Lp (East) / Kuloa Ave
 AM Peak 10/22/03
 December, 2000
 7:00AM-8:00AM

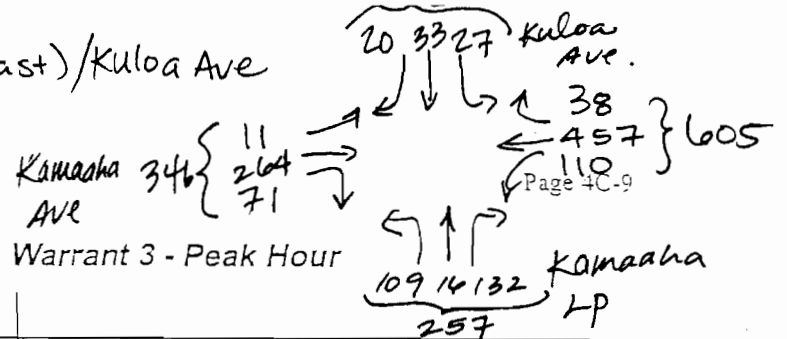
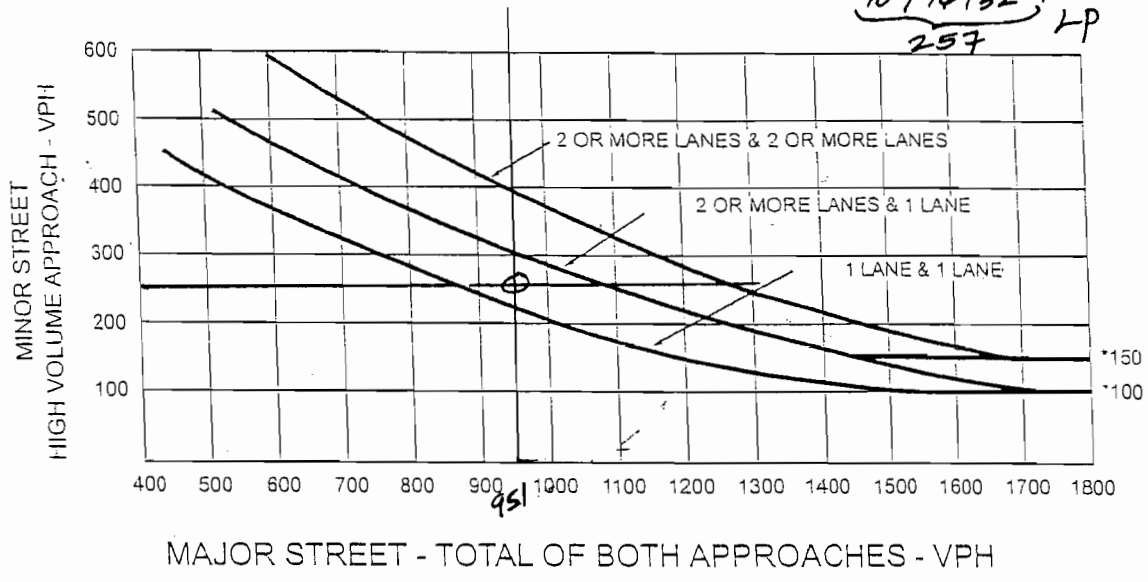


Figure 4C-3. Warrant 3 - Peak Hour



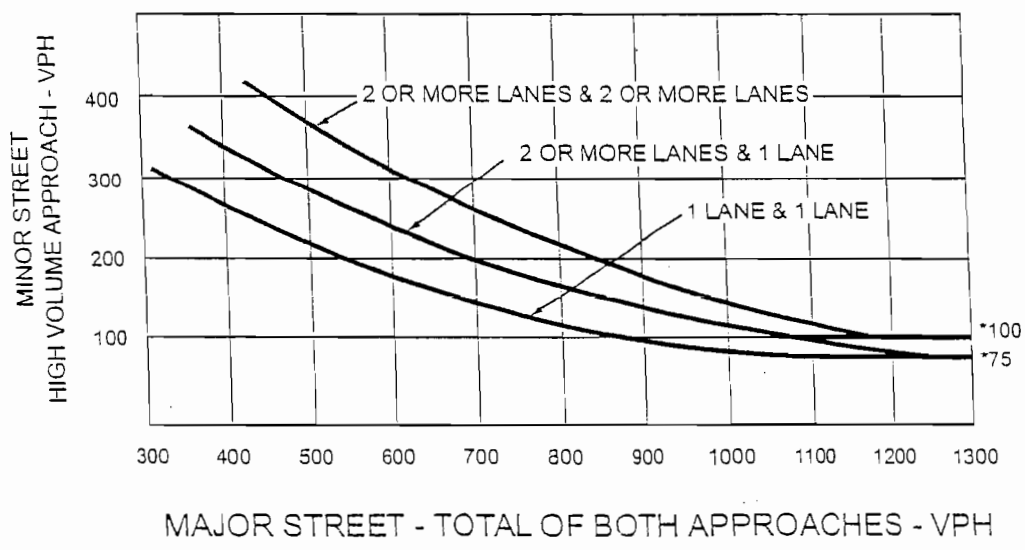
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

does not warrant.

MAJOR
 951
 MINOR
 80
 257

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Afternoon 10/21/03
145-245

December, 2000

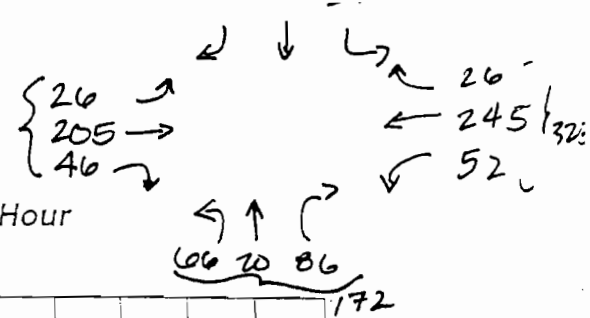
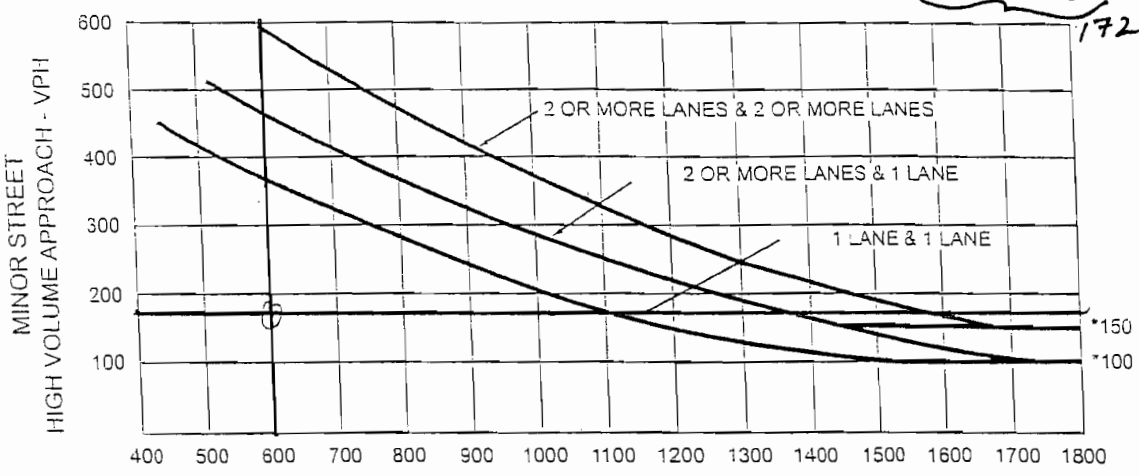


Figure 4C-3. Warrant 3 - Peak Hour



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

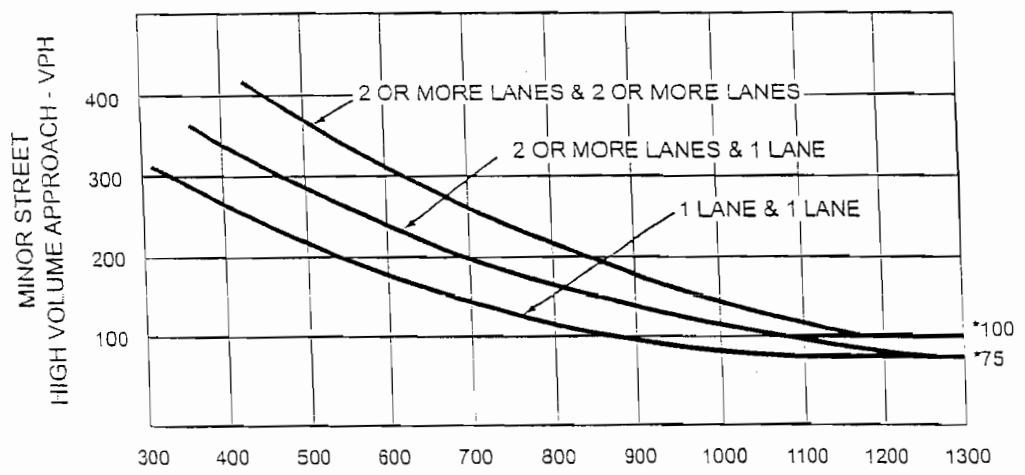
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

MAJOR
600
MINOR
172

does not warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Kalanani Ave and Kuloa Ave/Kumuikist.

M Peak 10/22/03

7:00-8:00AM

December, 2000

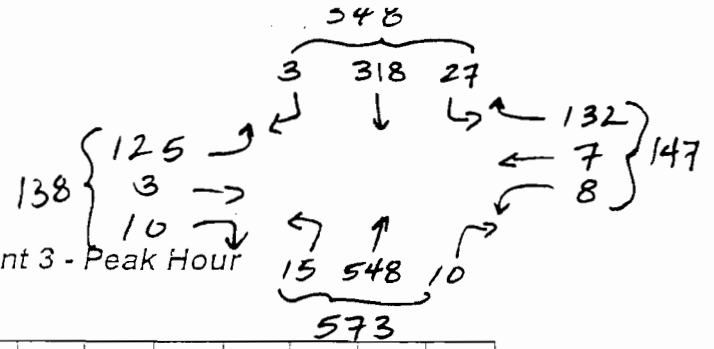
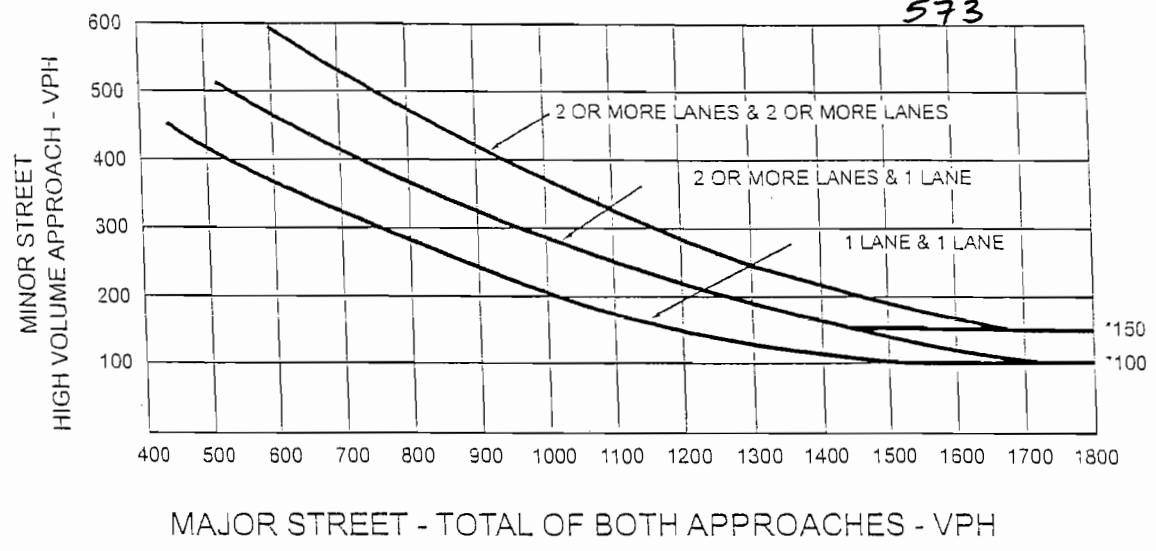


Figure 4C-3. Warrant 3 - Peak Hour



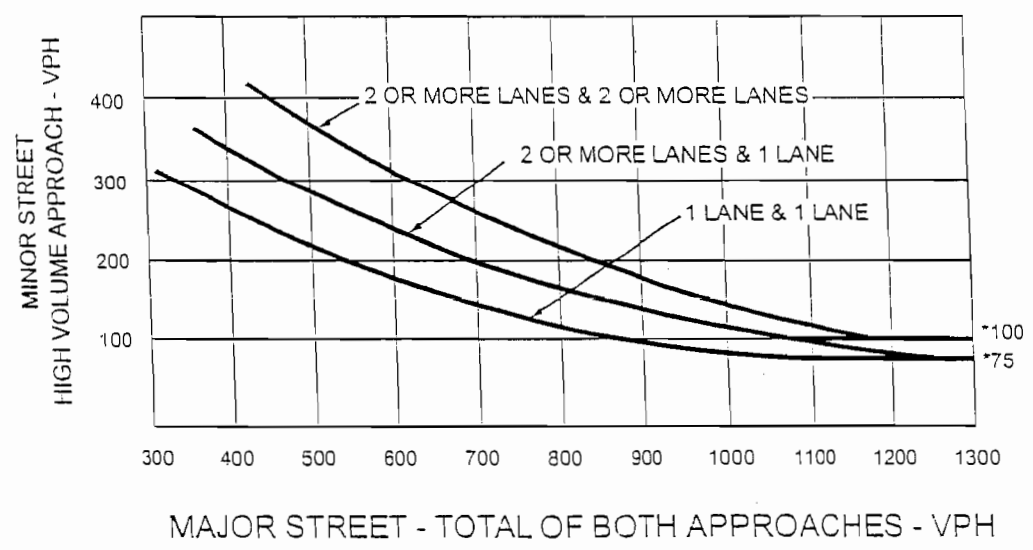
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

does not warrant

major
921
minor
147

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Afternoon: 10/21/03
14

December, 2000

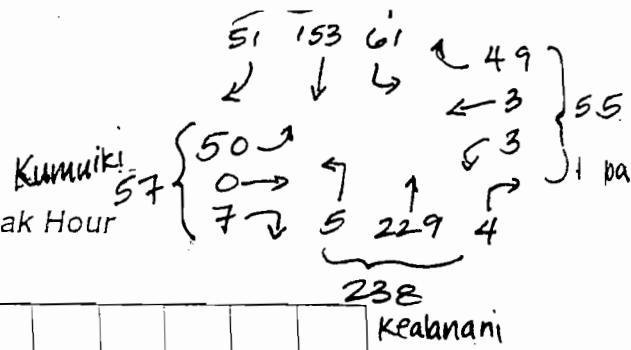
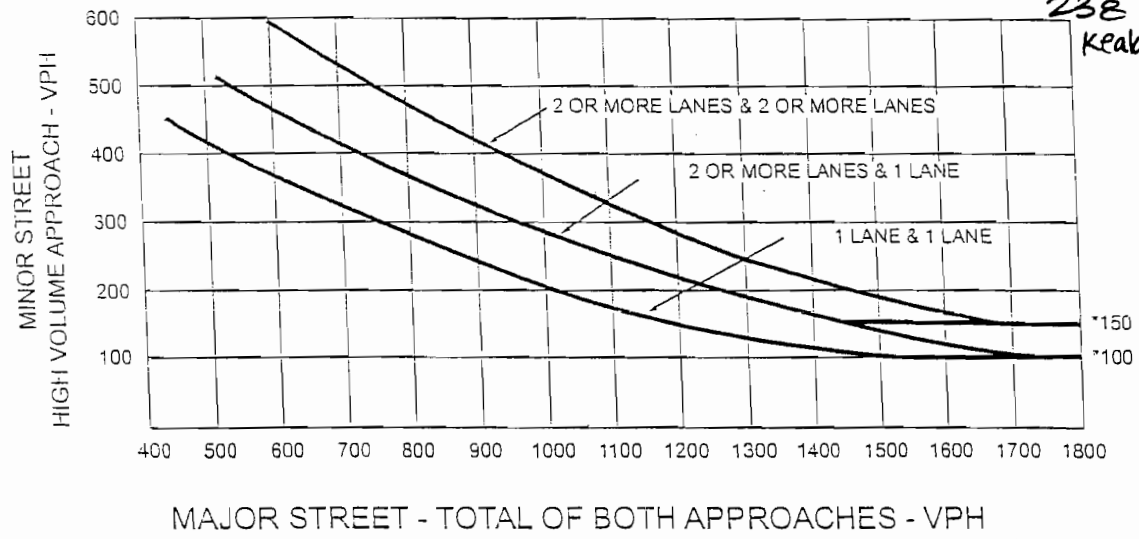


Figure 4C-3. Warrant 3 - Peak Hour



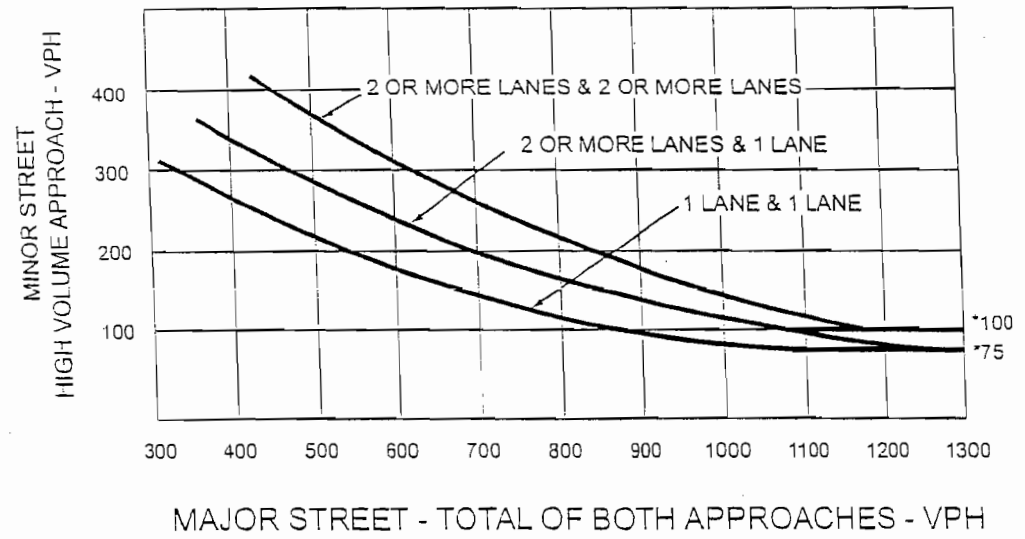
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

MAJOR
503
MINOR
57

does not warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Kealanani Ave and Kamaaha Ave

M peak 10/22/03

7:00AM-8:00AM

December, 2000

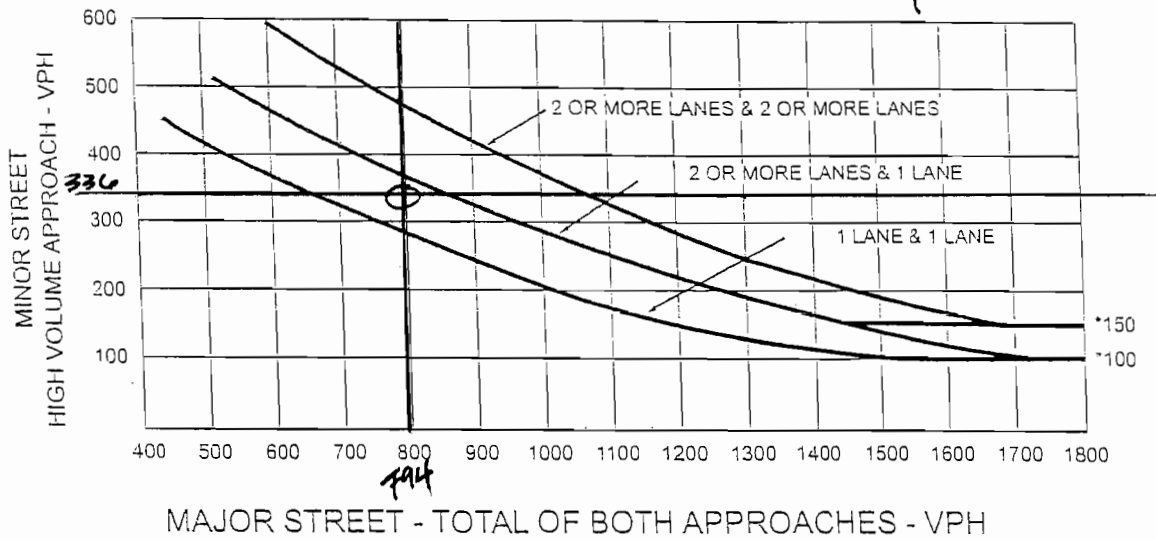
Kealanani

336

86 250

461
125

Figure 4C-3. Warrant 3 - Peak Hour
Kamaaha
112 ↗
208 }
96 →



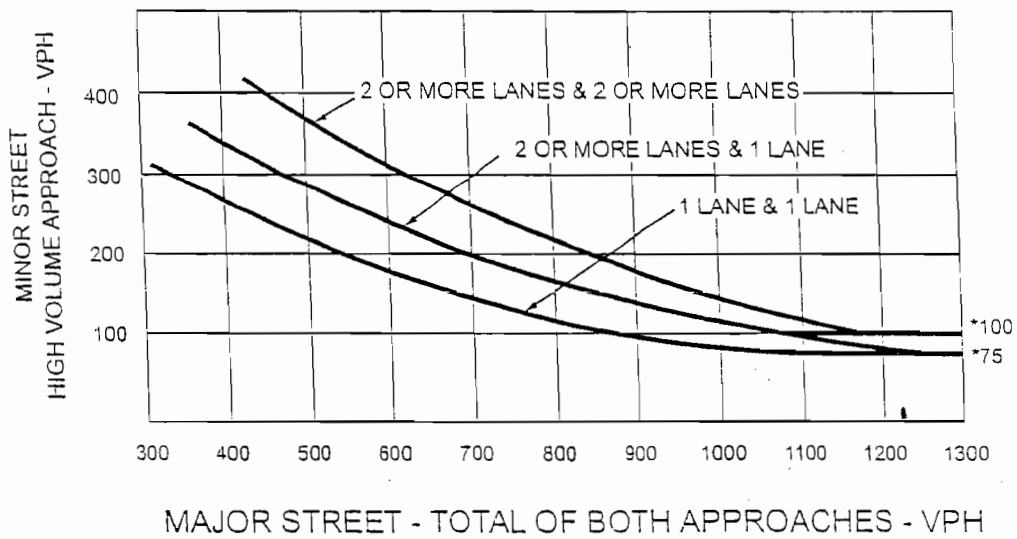
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

major
794
minor
336

does not warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

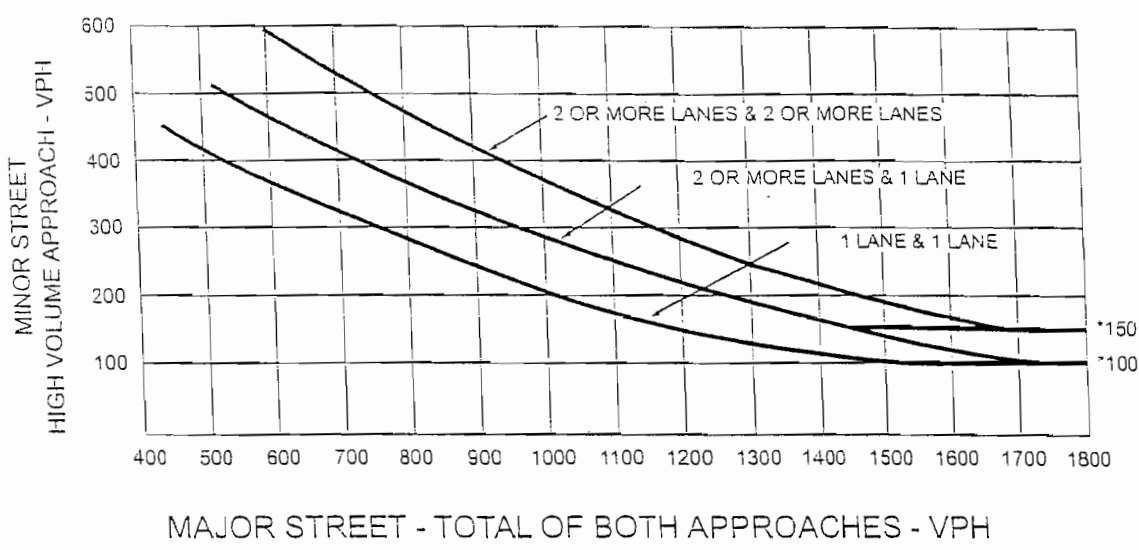


*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Afternoon 10/21/03
 145-245 PM
 December, 2000

103
 86 250
 Kamaaha 169 } 30
 139 → }
 208 } 320
 112 }

Figure 4C-3. Warrant 3 - Peak Hour



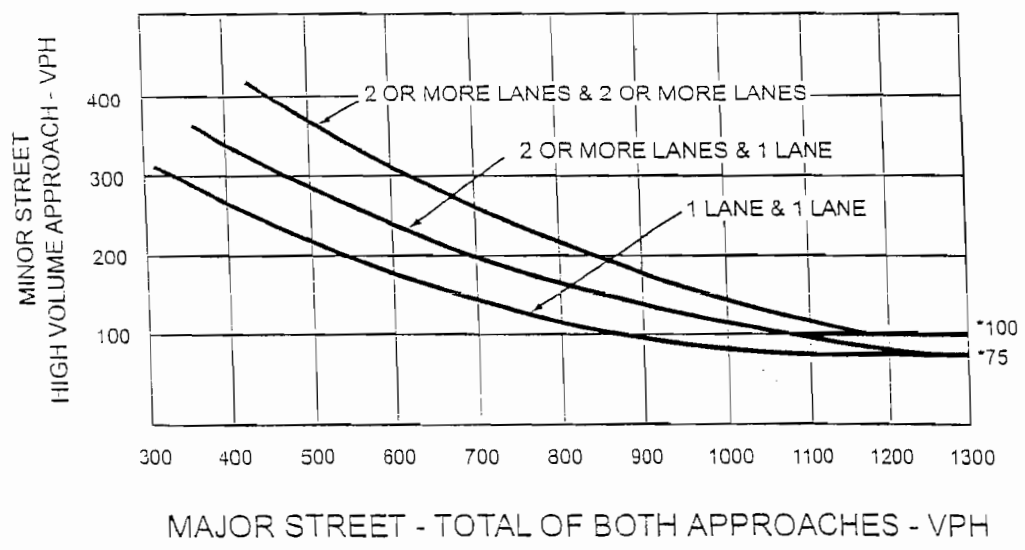
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

does not warrant

Major
 489
 minor
 163

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

1:00 PM peak 10/23/03
 7:00-8:00 AM
 December, 2000

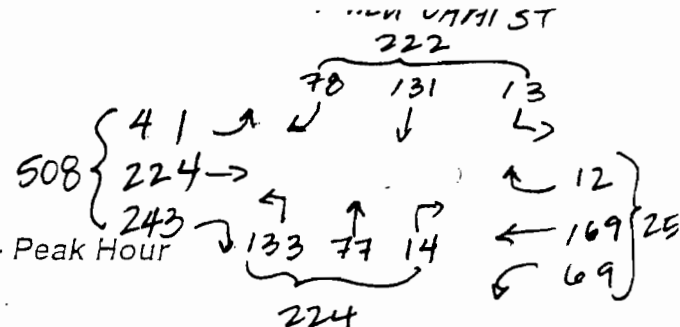
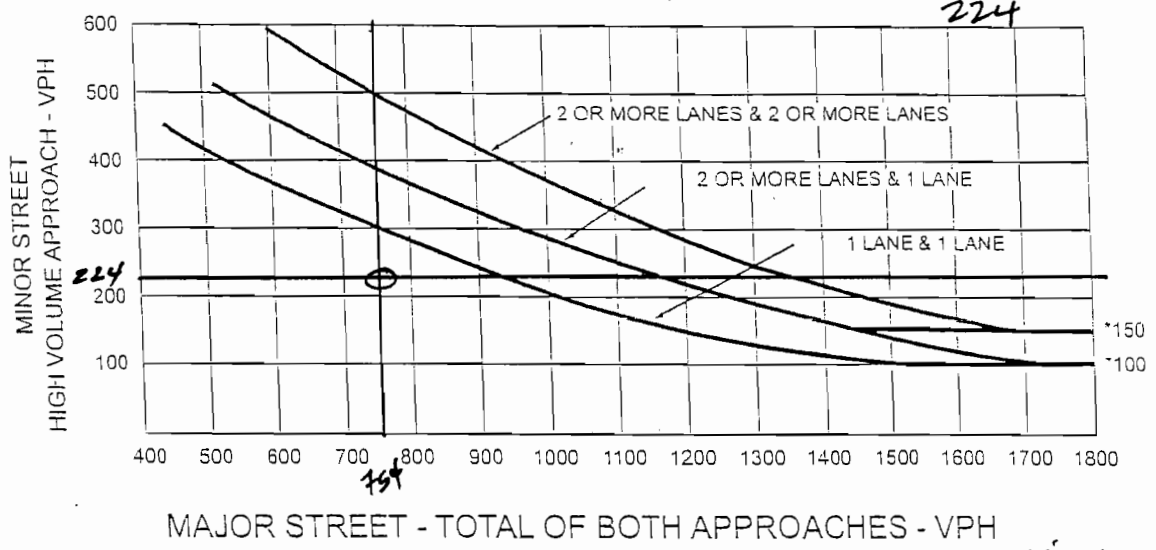


Figure 4C-3. Warrant 3 - Peak Hour

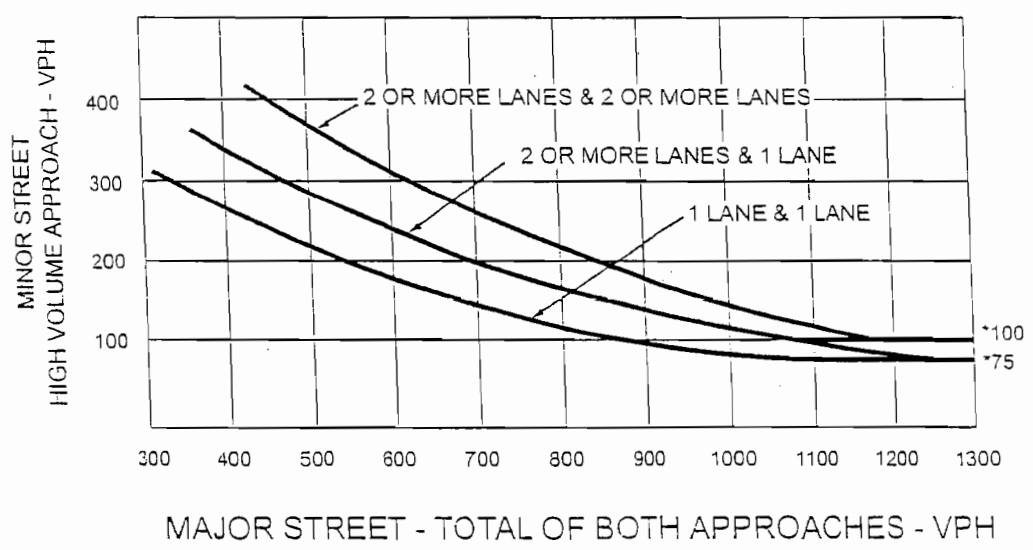


*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

MAJOR
 758
 MINOR
 224

does not warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Afternoon
145-246PM

10/22/03

December, 2000

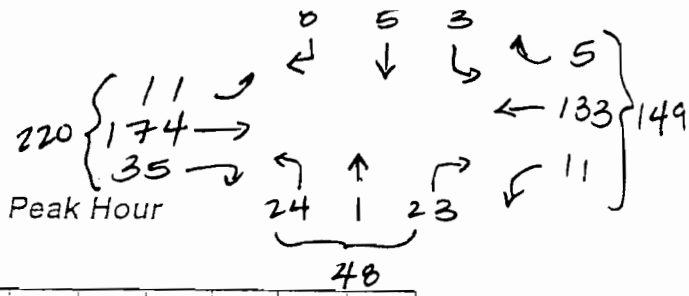
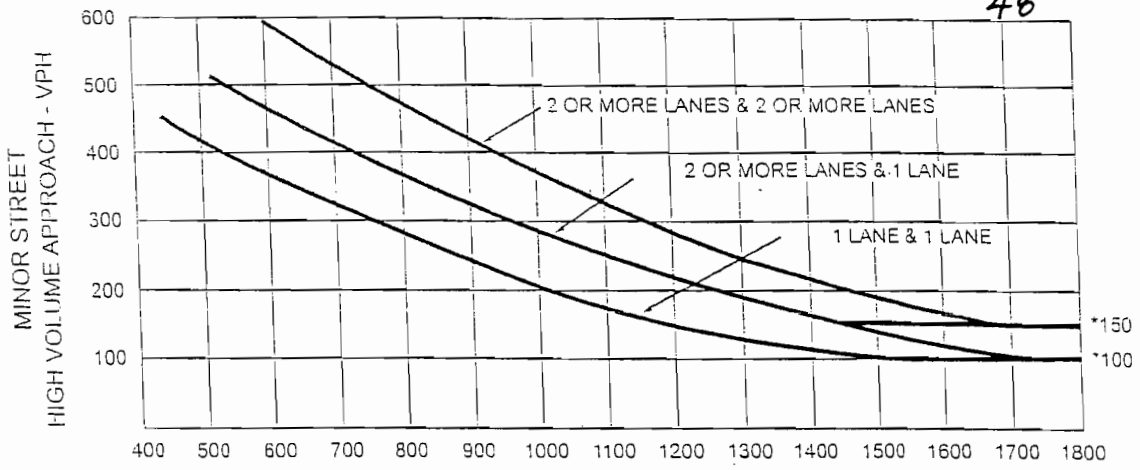


Figure 4C-3. Warrant 3 - Peak Hour



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

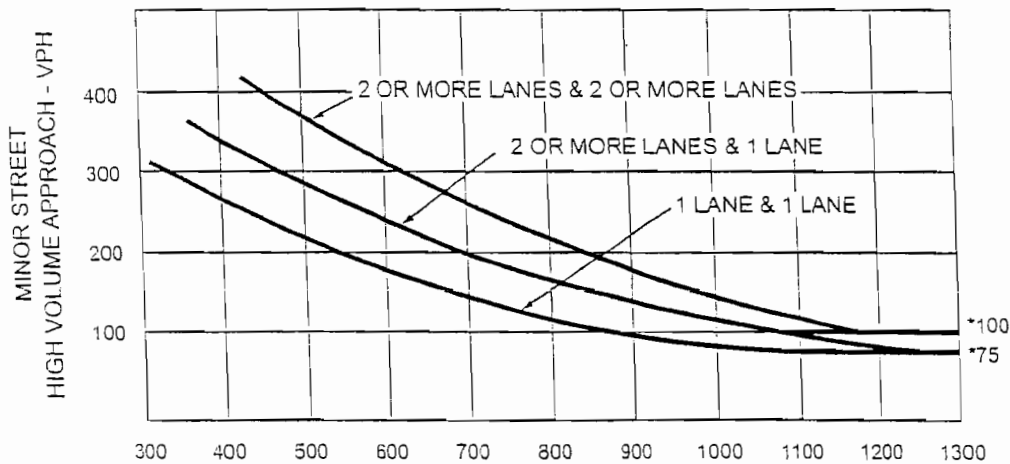
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

major
369
minor
48

does not
Warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Warrant 3 AVE and Kamaaha LP.

7 1 peak 10/22/03

7:00-8:00AM December, 2000

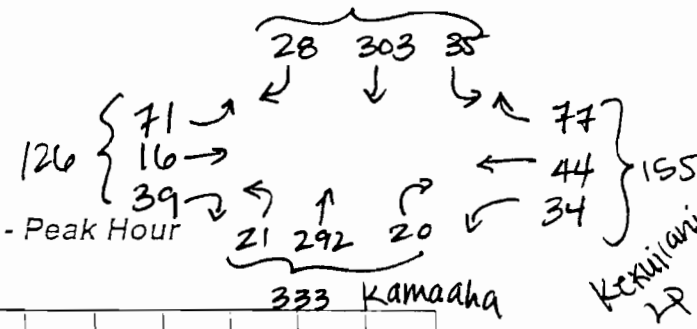
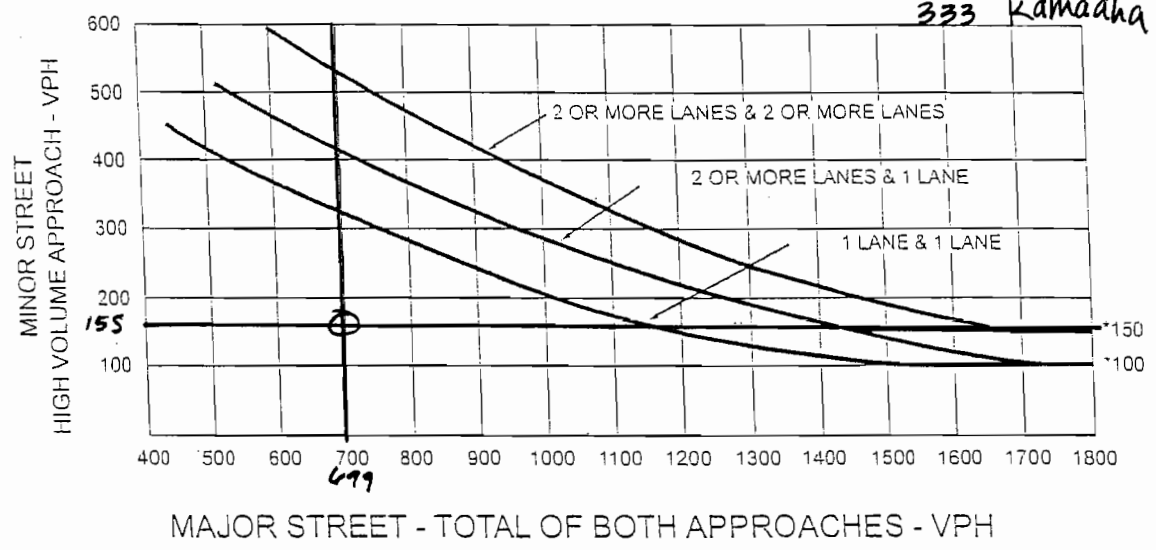


Figure 4C-3. Warrant 3 - Peak Hour

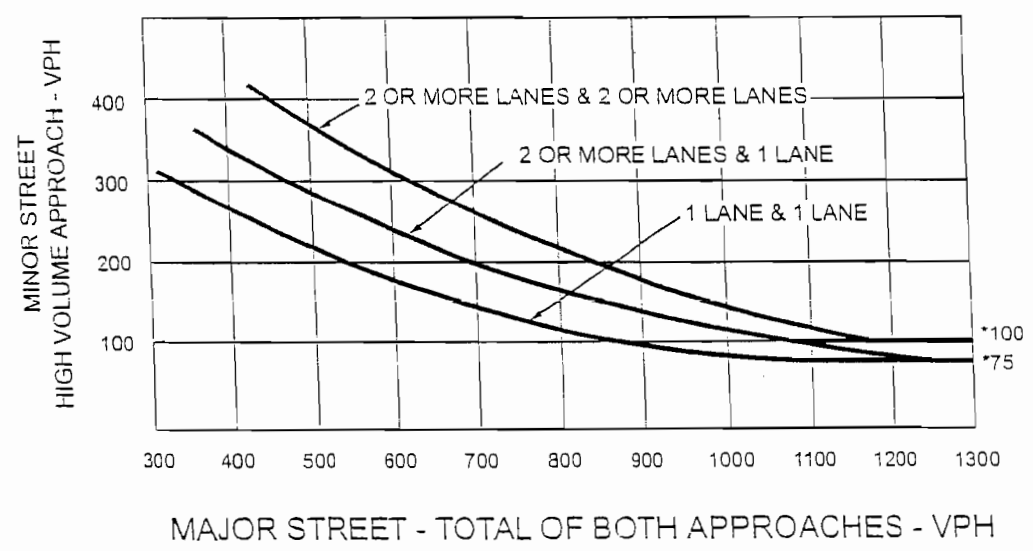


*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

does not Warrant.

MAJOR
699
MINOR
155

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Afternoon
145-245

10/22/03

December, 2000

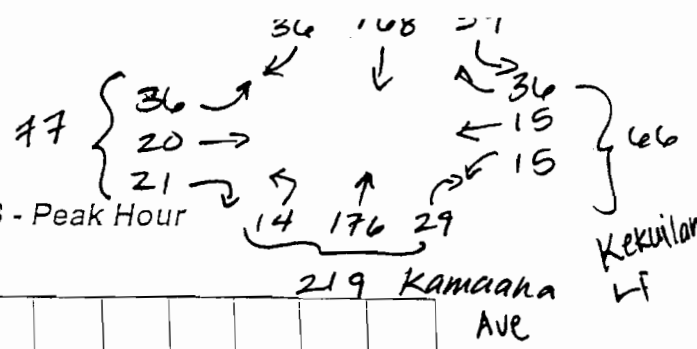
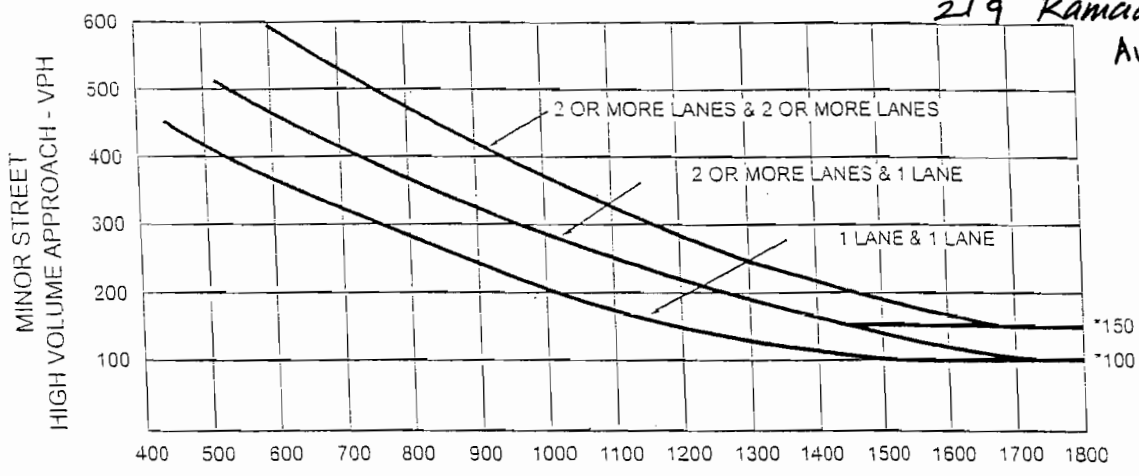


Figure 4C-3. Warrant 3 - Peak Hour



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

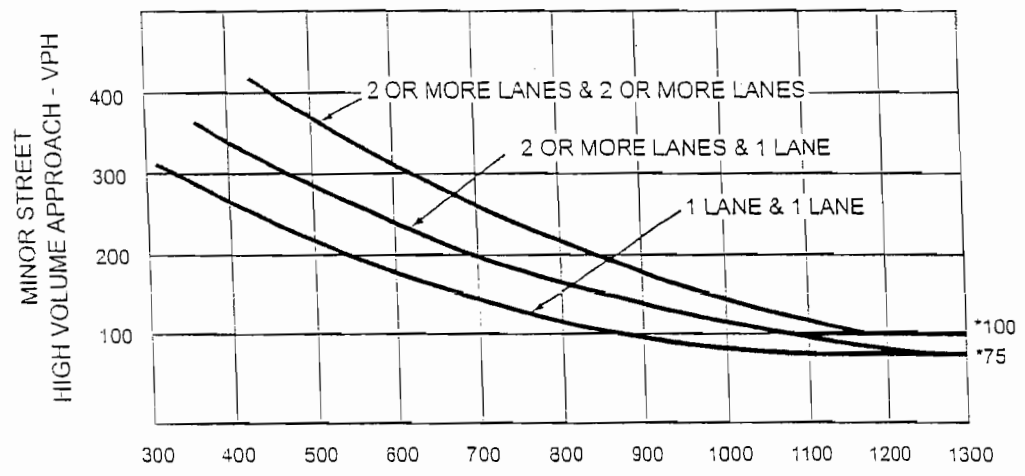
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor street approach with one lane.

Major
462
minor
77

does not Warrant

Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

Keelani Ave and Kumuiki St / Kulua Ave
 AM Peak 10/22/03
 7:00 AM - 8:00 AM
 December, 2000

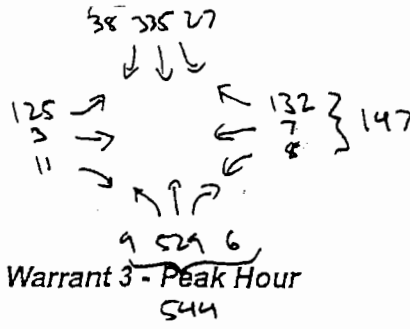
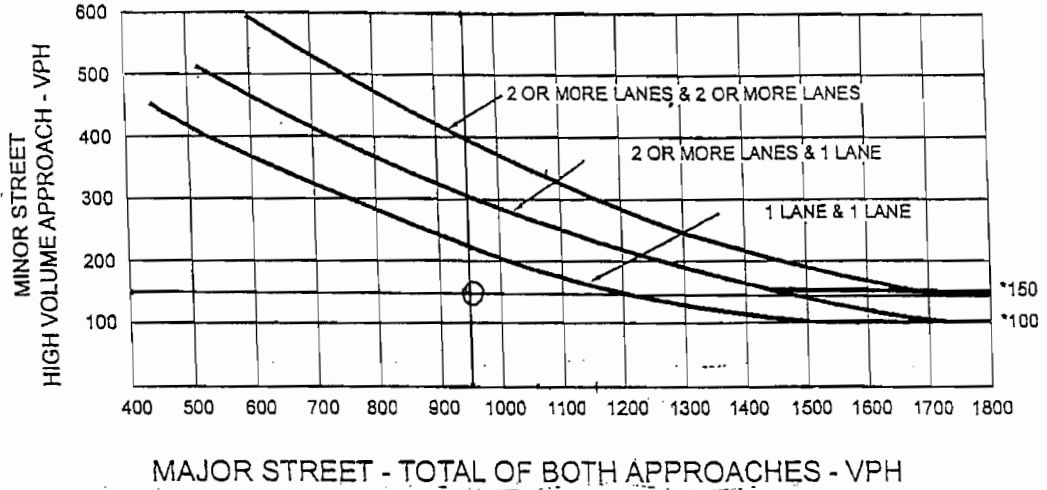


Figure 4C-3. Warrant 3 - Peak Hour
 544

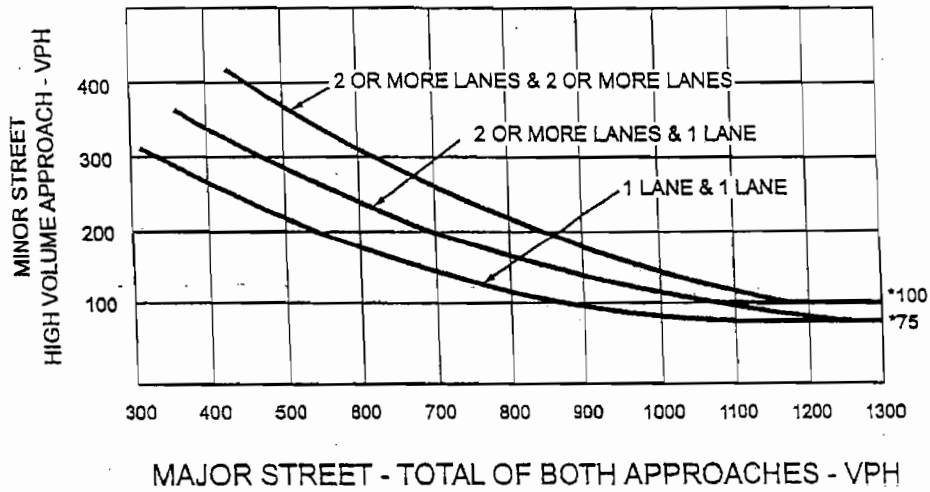


Minor 147 Major 944

Does not warrant

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

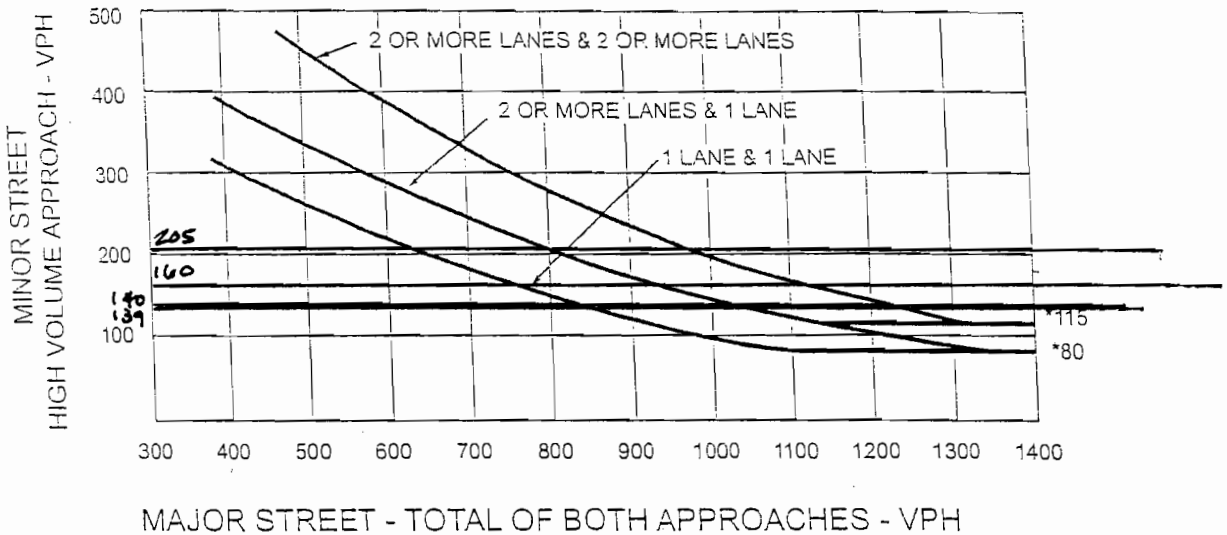
Figure 4C-4. Warrant 3 - Peak Hour (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

10/21-22/03

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



MAJOR APP

*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

MINOR APP

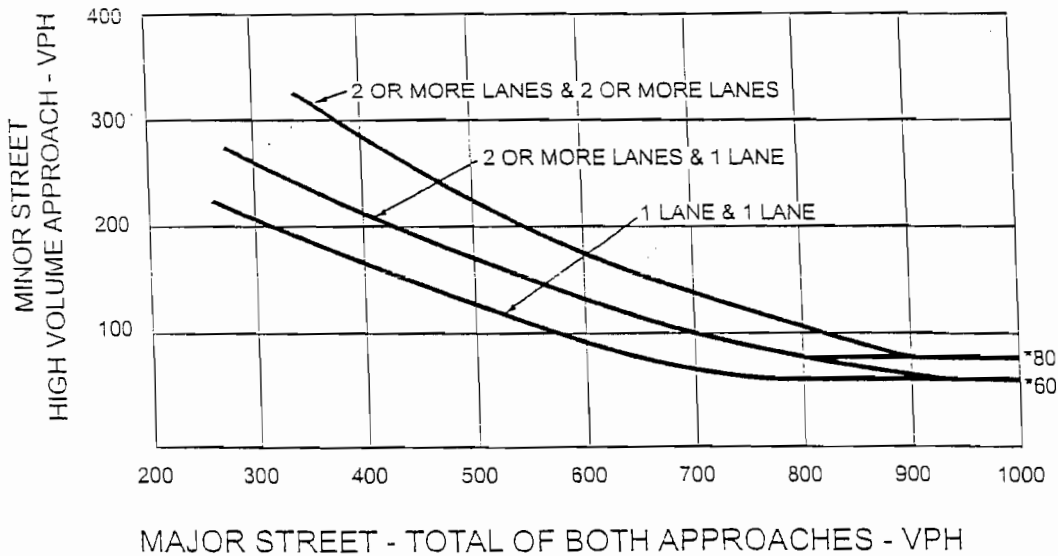
7-8AM	831+1148 = 1979
215-315PM	666+767 = 1433
345-445PM	932+728 = 1660
15-615	986+605 = 1591

SIGNAL Warranted

139
205
160
140

Warrant 2 - Four-Hour Vehicular Volume (70% Factor)

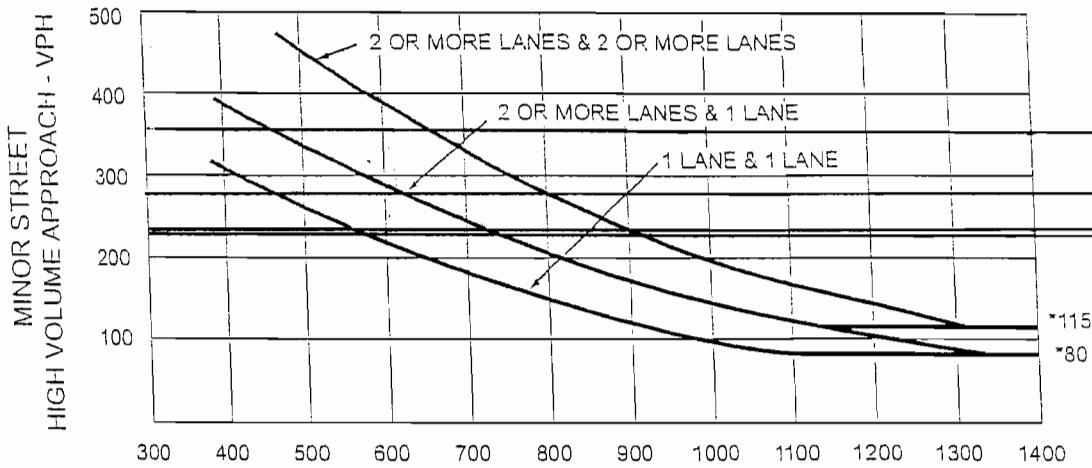
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

10/21-22/03

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

MINOR

355

7-8AM 1131 + 881 = 2012

1.5-2.45PM 981 + 659 = 1640

4.15-5.15 1349 + 670 = 2019

5.5-6.15 1336 + 600 = 1936

SIGNAL WARRANTED

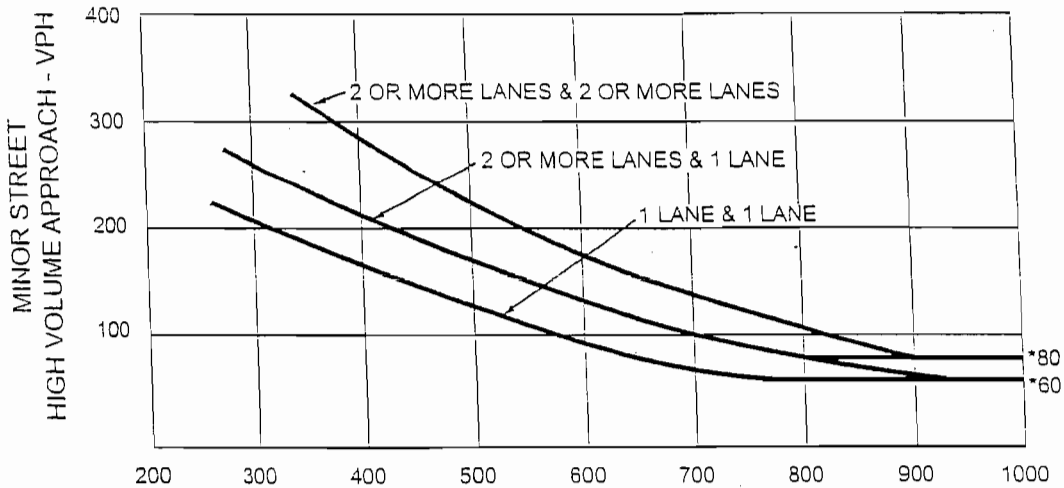
282

234

Warrant 2 - Four-Hour Vehicular Volume (70% Factor)

231

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

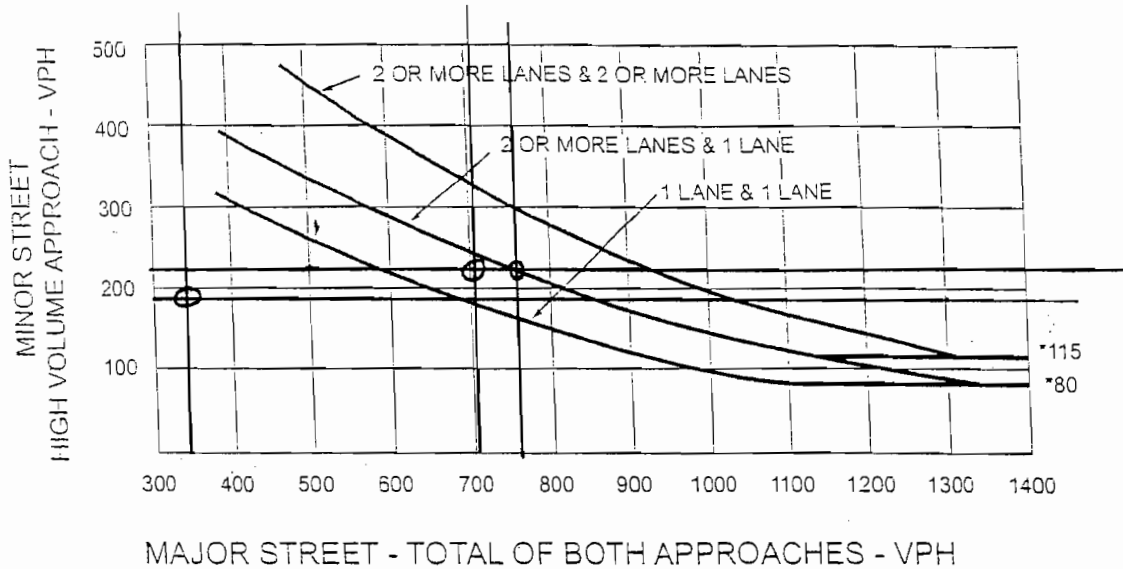


MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

10/22-28/03

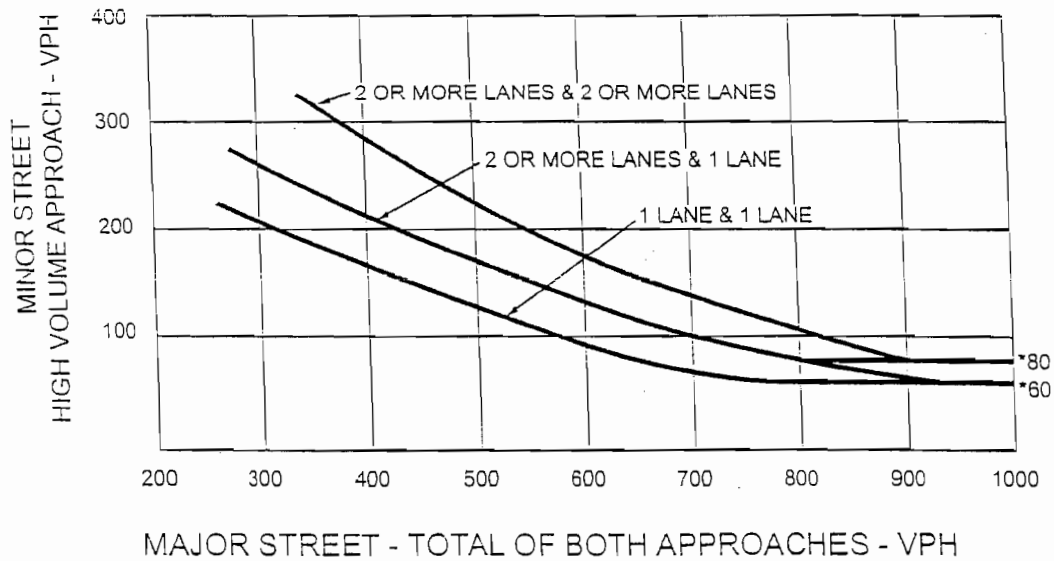
Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

	MAJOR		MINOR
7-8AM	508 + 250 = 758	does not warrant	221
3-4PM	252 + 89 = 341		187

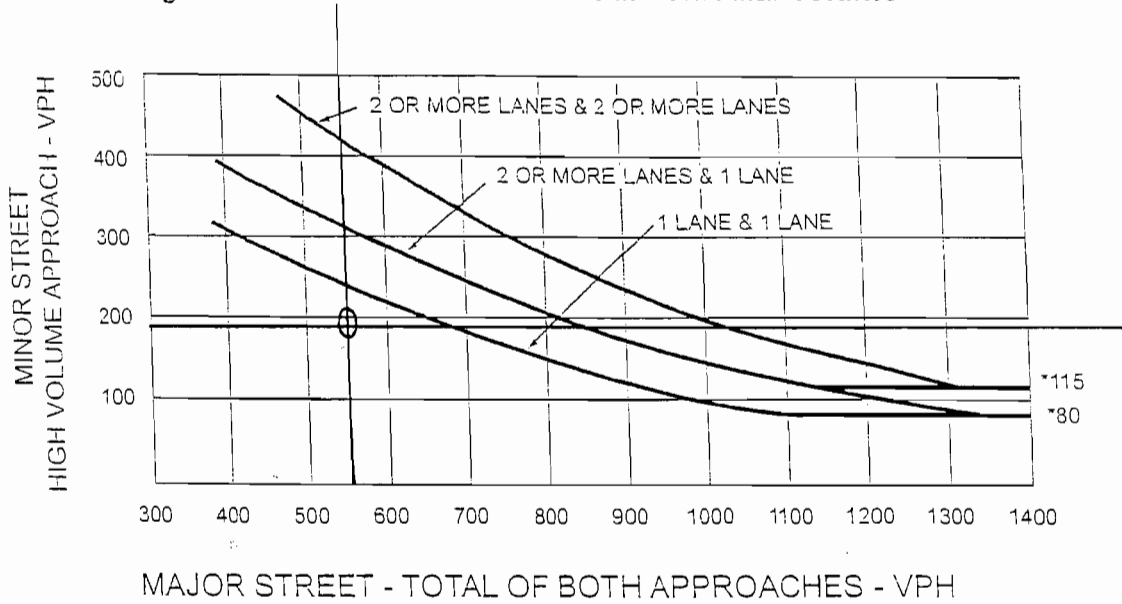
Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

10/21-22

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



major

*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

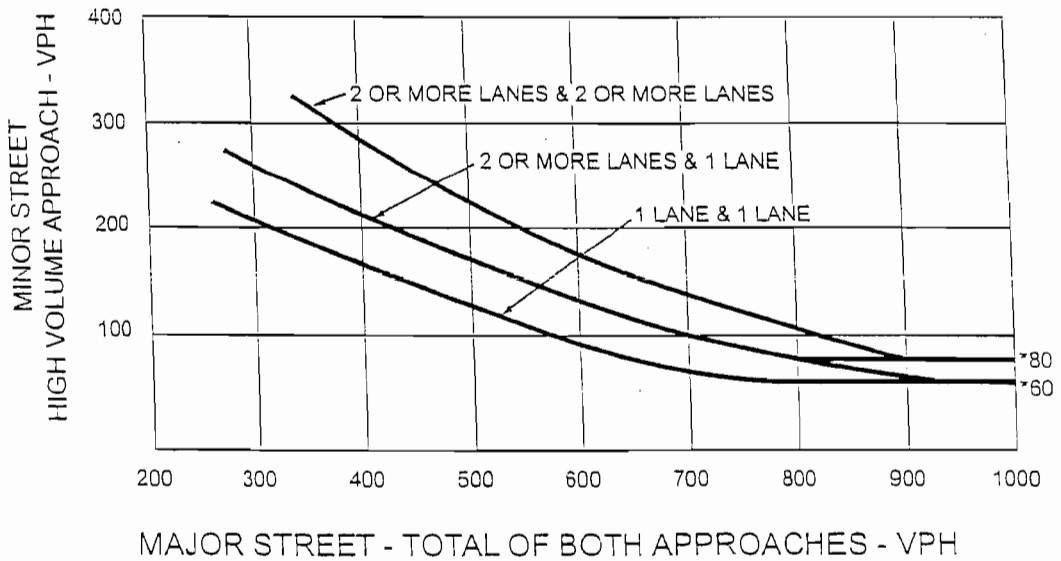
MINOR

7:8AM 341+211 = 552

189 (KUMUUKIST)

does not warrant

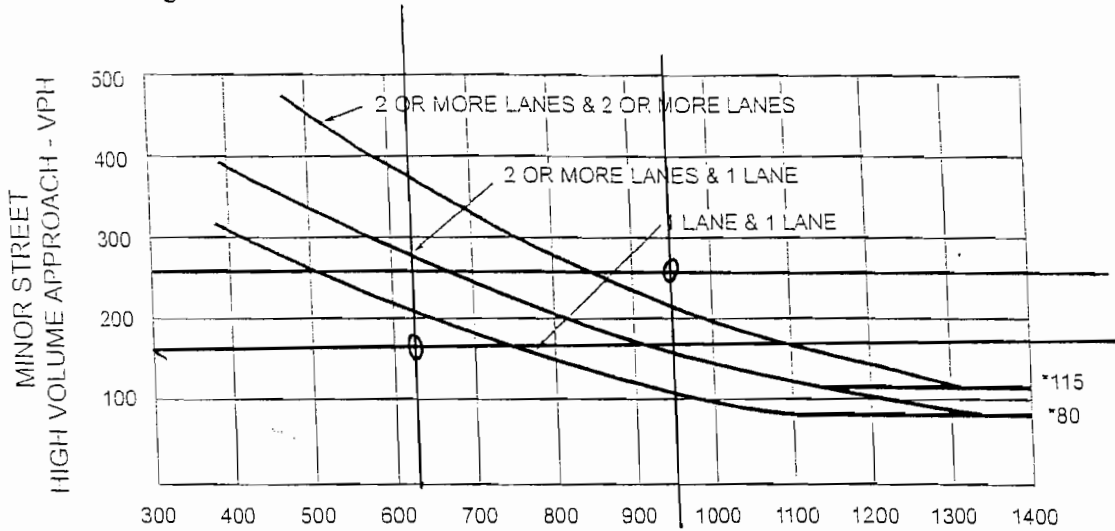
Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

10/21-22/03

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



MAJOR

MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

MINOR

*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

7-8AM 346+605=951

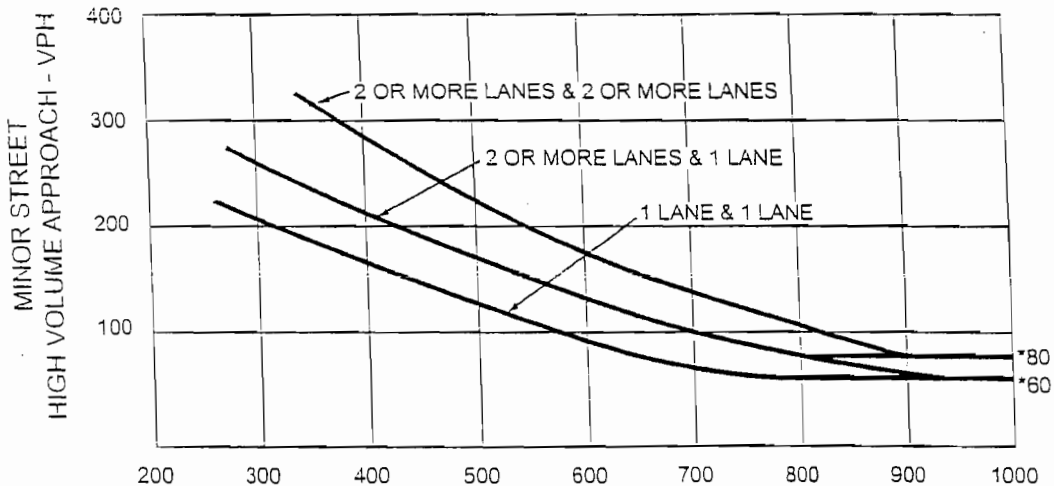
145-245PM 349+279=628

257

172

does not warrant

Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor) (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

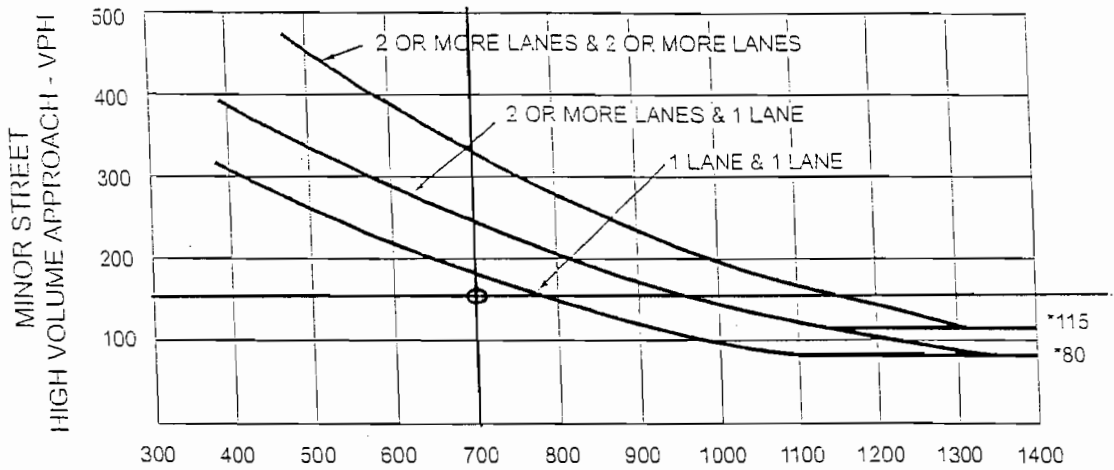


MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

10/21-22/03

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



MAJOR

MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

MINOR

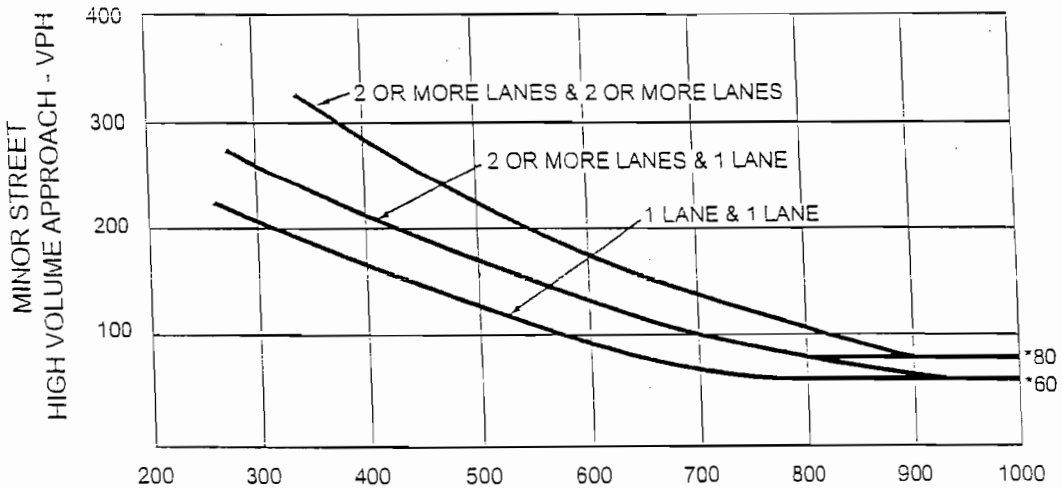
*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

7:8AM · 333+346 = 699

155

does not warrant

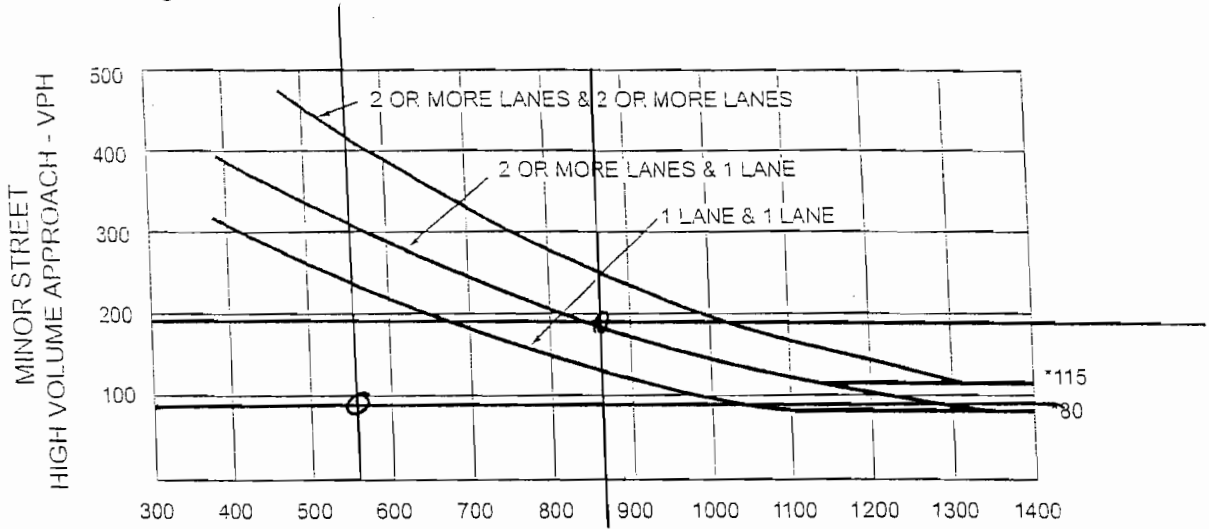
Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



MAJOR

MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

MINOR

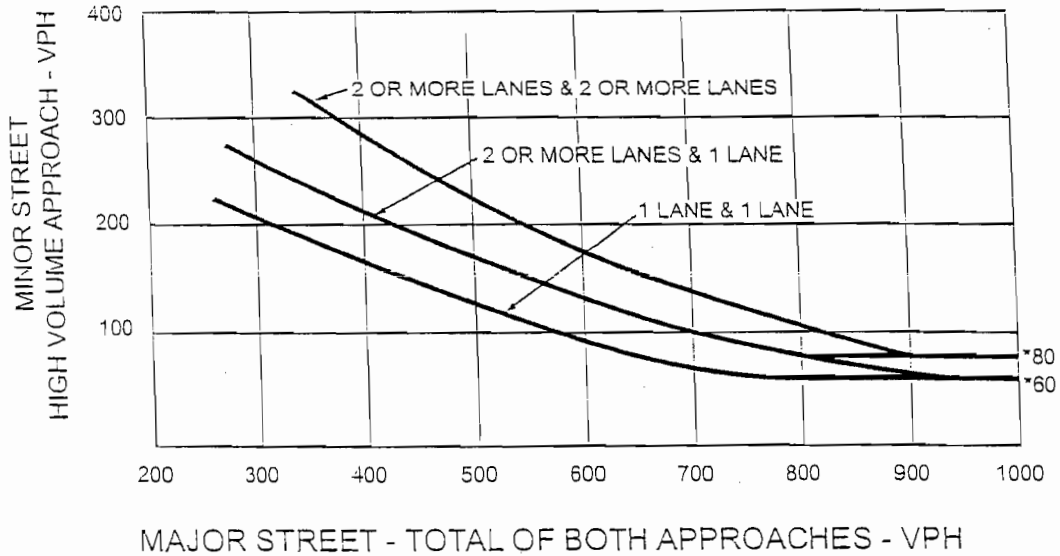
*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

7-8 AM 440 + 423 = 863
 145-245 311 + 248 = 559

190
 87

does not warrant

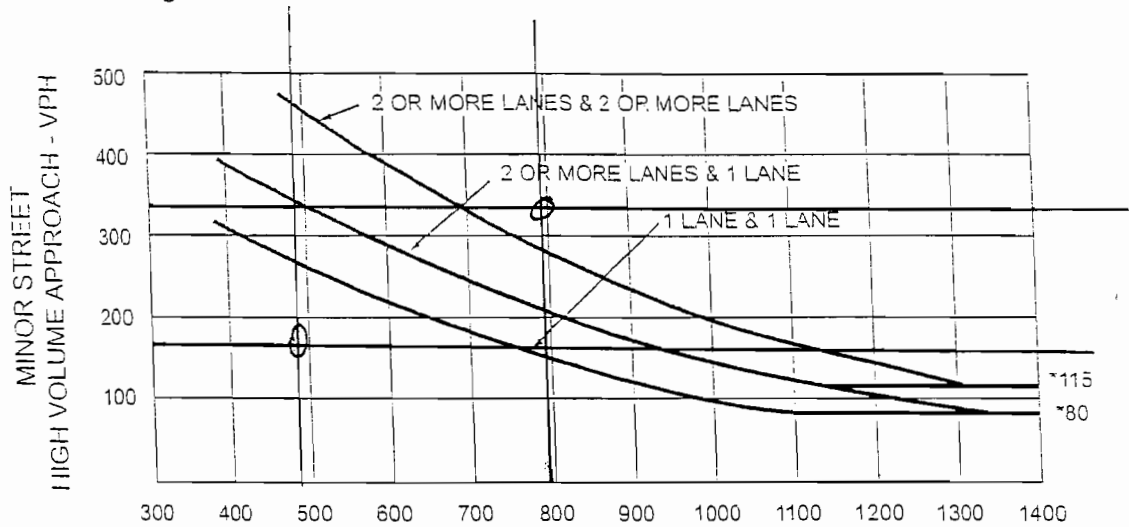
Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
 (COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

10/21-22/03

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



MAJOR

MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

MINOR

*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

7-8 AM 586 + 208 = 794

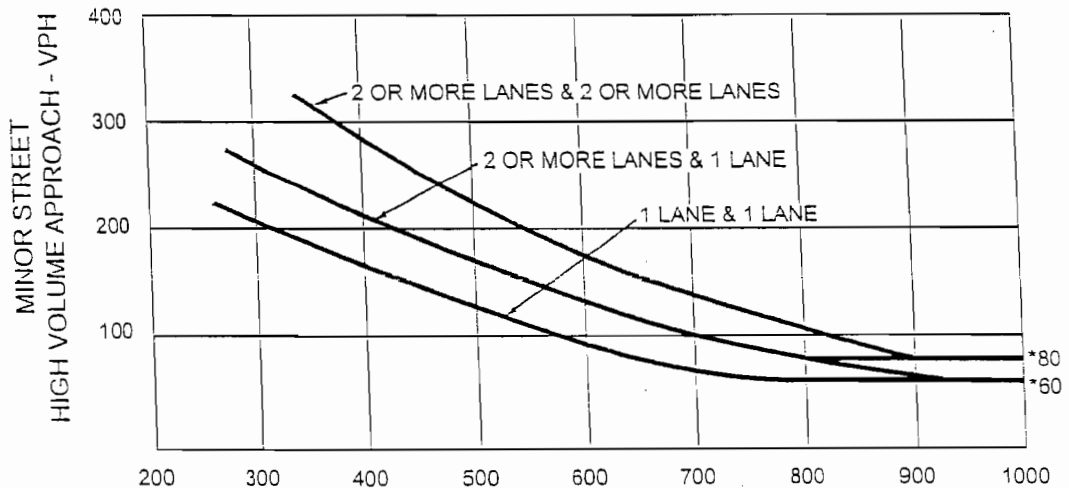
145-245 169 + 320 = 489

336

143

does not warrant

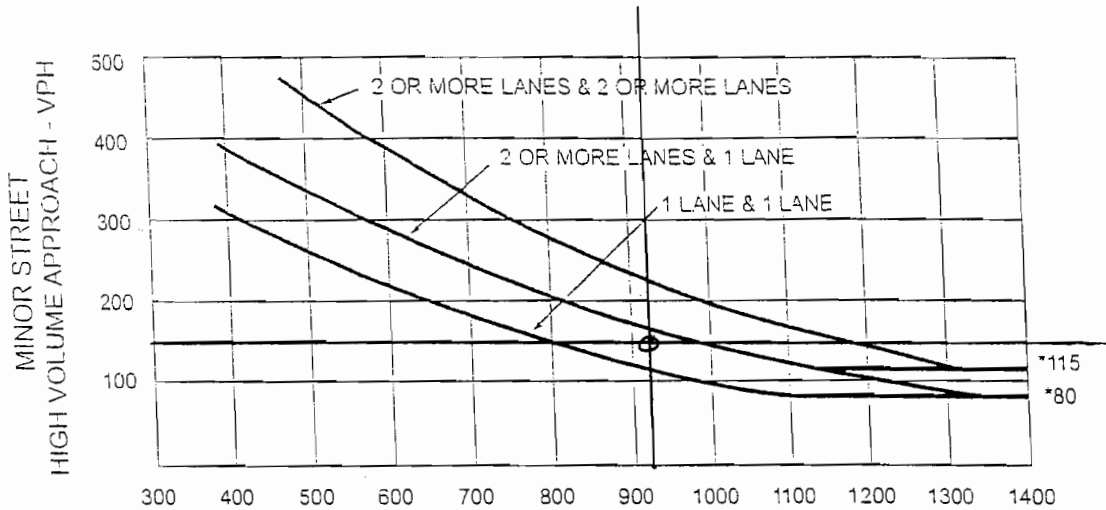
Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



MAJOR

MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

MINOR

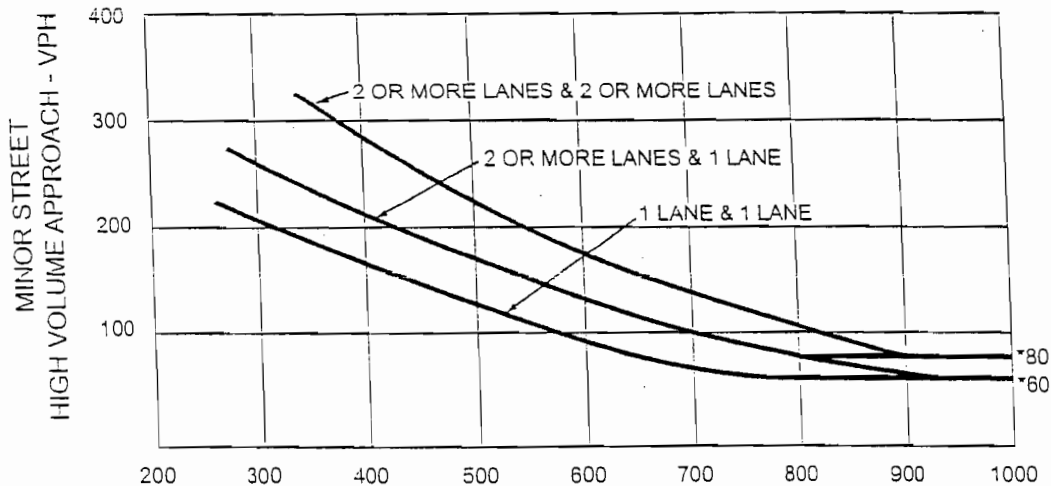
*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

7-8AM 573+348=921

147

not warranted

Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



MAJOR STREET - TOTAL OF BOTH APPROACHES - VPH

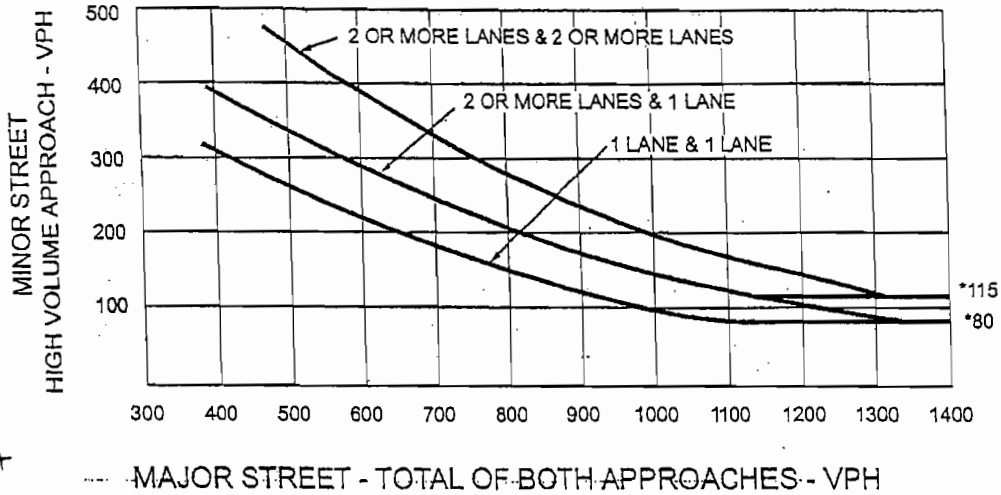
*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

Kamahe Ave & Keiau Ave

December, 2000

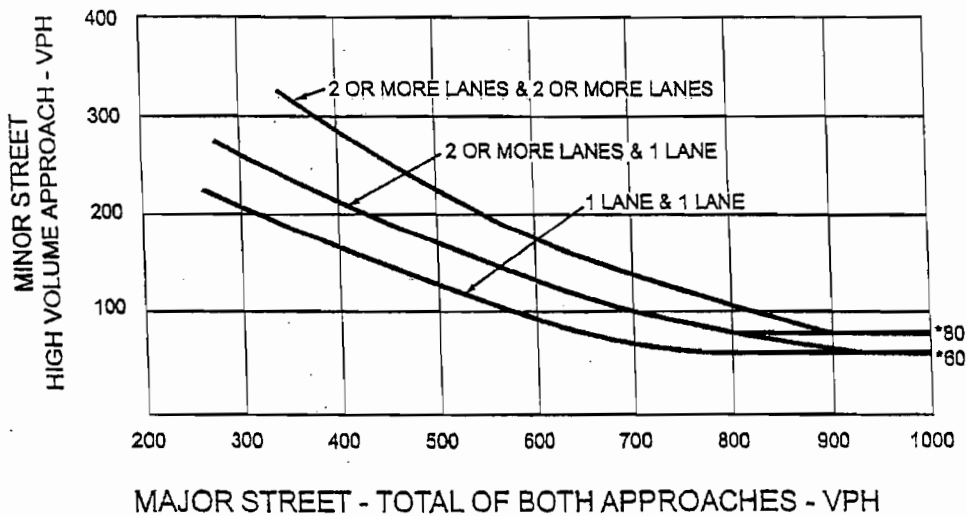
Page 4C-7

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

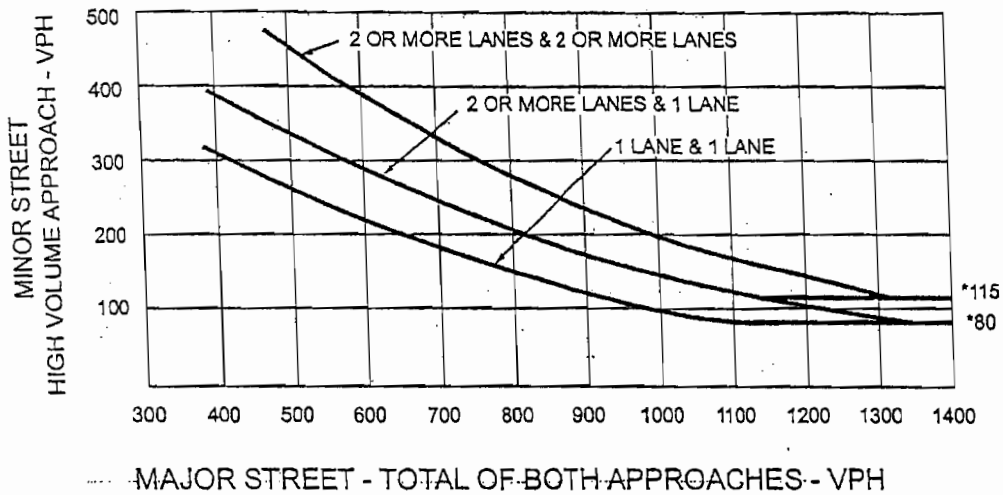
Major minor
616 310 7-8

No other time...

Only satisfies for
1 hour, 45min

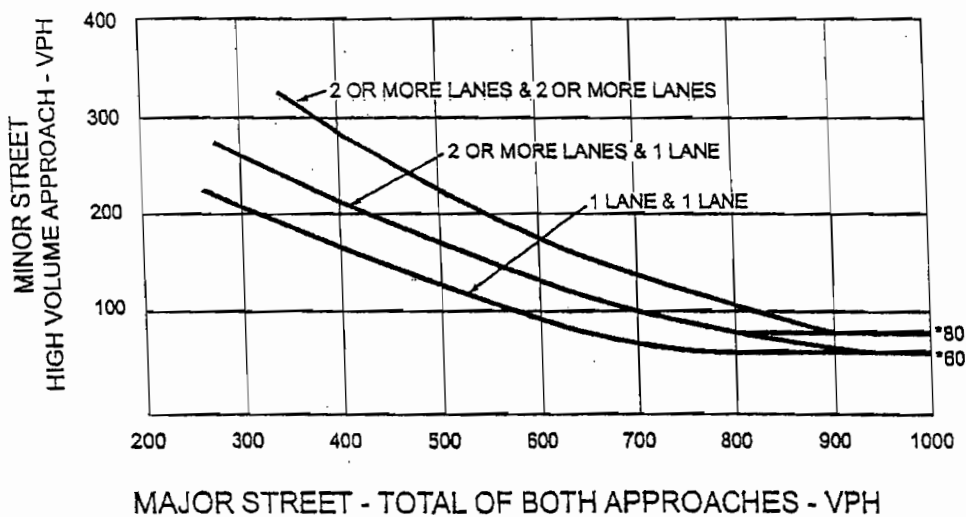
=> Does not
Warrant

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.

Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

Major 994
Minor 147

Only warrants
during 1 hour
of the day. (Am peak)

Does not
warrant

8-Hour Vehicular Volume Warrant Summary

	# Hours	8-Hour Warrant Satisfied?
Kealanani Ave/Kumuiki St/Kuloa Ave	0	No
Ft Barrette Rd/Kamaaha Ave	8+	Yes
Kamaaha Ave/Kaiiau Ave	1	No
Kamaaha Ave/Kamaaha Lp (West)	-	No
Kamaaha Ave/Kealanani Ave	1	No
Kamaaha Ave/Kamaaha Lp (East)	1	No
Kamaaha Ave/Kekuilani Lp (mauka)	1	No
Kamaaha Ave/Kekuilani Lp (makai)	0	No
Kamaaha Ave/Kapolei Pkwy	1	No
Kapolei Pkwy/Malu Ohai St	0	No
Kapolei Pkwy/Ft Barrette Rd	8+	Yes
Kaiiau Ave (Between Malu Ohai and Hokeo)	-	-

Appendix E

Trip Generation of Future Villages of Kapolei

Trip Generation Summary

Parcel	Land Use	ITE Code	Intensity	Units	AM Peak		PM Peak	
					Enter	Exit	Enter	Exit
Village 1 - Northwest Corner (BMX-3)	Shopping Center	820	26.612	Acre	101	65	319	346
Village 2 - Aeloa	Multi Family	231	140	Units	23	70	64	49
Village 4 - Kekuilani	Single Family	210	36	Units	6	19	21	12
Village 5 - Iwalani	Single Family	210	31	Units	6	17	18	10
Village 5 - Iwalani	Multi Family	231	144	Units	24	72	66	50
Village 6 - Maluohai	Single Family	210	45	Units	8	24	26	15
Village 8 - Future Single Family Residential	Single Family	210	446	Units	80	240	259	145
Elderly Mid-Rise Apartments	Elderly Housing - Attached	253	500	Units	22	13	30	21
Village Ceneter (Residential)	Low-Rise Apartment	221	204	Units	20	79	82	42
Village Ceneter (Commercial)	Shopping Center	820	3.4	Acre	13	8	41	44

Single Family Detached Housing (210)			
<p>Average Vehicle Trip Ends vs: Dwelling Units On a: Weekday, 24-hour Traffic Volumes On a weekday</p>			
<p>Fitted Curve Equation: $\ln(T)=0.920*\ln(x)+2.707$ X= No. of Dwelling Units X= 558 Dwelling units T= 5105 Trips</p>			
Directional Distribution:	Entering	Exiting	Entering
	50%	50%	2553
			2553

From NCHRP 187 6% of total daily traffic during afternoon peak

total
 306

Directional Distribution: 54% 46%

Entering	Exiting
165	141

Single Family Detached Housing (210)

Average Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 A.M.

Fitted Curve Equation: $T=0.7000*(X)+9.477$
 X= No. of Dwelling Units
 X= 558 Dwelling units
 T= 400 Trips

Directional Distribution:

Entering	Exiting	Entering	Exiting
25%	75%	100	300

Average Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 P.M.

Fitted Curve Equation: $\ln(T)=0.901*\ln(X)+0.527$
 X= No. of Dwelling Units
 X= 558 Dwelling units
 T= 505 Trips

Directional Distribution:

Entering	Exiting	Entering	Exiting
64%	36%	323	182

Low-Rise Residential Condominum/Townhouse (231)

Average Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 7 and 9 A.M.

Fitted Curve Equation: $\ln(T)=1.834*\ln(X) - 5.118$
 X= No. of Dwelling Units
 X= 284 Dwelling units
 T= 189 Trips

Directional Distribution:

Entering	Exiting	Entering	Exiting
25%	75%	47	142

Average Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 P.M.

Fitted Curve Equation: $\ln(T)=2.013*\ln(X) - 5.938$
 X= No. of Dwelling Units
 X= 284 Dwelling units
 T= 229 Trips

Directional Distribution:

Entering	Exiting	Entering	Exiting
57%	43%	130	98

Elderly Housing - Attached (253)

Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 A.M.

Fitted Curve Equation: $T=0.07*X$
X= No. of Dwelling Units
X= 500 Dwelling units
T= 35 Trips

Directional Distribution:

Entering	Exiting	Entering	Exiting
63%	37%	22	13

Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 P.M.

Fitted Curve Equation: $T=0.1*X$
X= No. of Dwelling Units
X= 500 Dwelling units
T= 50 Trips

Directional Distribution:

Entering	Exiting	Entering	Exiting
59%	41%	30	21

Low-Rise Apartments (221)											
<p>Average Vehicle Trip Ends vs: Dwelling Units On a: Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 A.M.</p> <p>Fitted Curve Equation: $\ln(T)=0.829*\ln(X) + 0.187$ X= No. of Dwelling Units X= 204 Dwelling units T= 99 Trips</p> <p>Directional Distribution:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>Entering</th> <th>Exiting</th> <th>Entering</th> <th>Exiting</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">20%</td> <td style="text-align: center;">80%</td> <td style="text-align: center;">20</td> <td style="text-align: center;">79</td> </tr> </tbody> </table>				Entering	Exiting	Entering	Exiting	20%	80%	20	79
Entering	Exiting	Entering	Exiting								
20%	80%	20	79								
<p>Average Vehicle Trip Ends vs: Dwelling Units On a: Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 P.M.</p> <p>Fitted Curve Equation: $\ln(T)=0.876*\ln(X)+0.165$ X= No. of Dwelling Units X= 204 Dwelling units T= 124 Trips</p> <p>Directional Distribution:</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>Entering</th> <th>Exiting</th> <th>Entering</th> <th>Exiting</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">66%</td> <td style="text-align: center;">34%</td> <td style="text-align: center;">82</td> <td style="text-align: center;">42</td> </tr> </tbody> </table>				Entering	Exiting	Entering	Exiting	66%	34%	82	42
Entering	Exiting	Entering	Exiting								
66%	34%	82	42								

Shopping Center (820)

Average Vehicle Trip Ends vs: 1000 sq ft Gross Leasable Area

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 A.M.

Fitted Curve Equation: $\ln(T)=0.596*\ln(X) + 2.329$

X= 1000 Sq Ft Gross Leasable Area

X= 30.012 Acres FAR = 0.1

X= 130.7323 1000 SF

T= 187 Trips

Directional Distribution:

Entering	Exiting	Entering	Exiting
61%	39%	114	73

Average Vehicle Trip Ends vs: 1000 sq ft Gross Leasable Area

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 P.M.

Fitted Curve Equation: $\ln(T)=0.660*\ln(X)+3.403$

X= No. of Dwelling Units

X= 30.012 Acres FAR= 0.1

X= 130.7323

T= 749 Trips

Directional Distribution:

Entering	Exiting	Entering	Exiting
48%	52%	360	390