

Environmental Impact Statement

Ocean View Recycling Point and Convenience Center

**Ka'u District, Hawai'i Island, State of Hawai'i
TMK (3rd): 9-2-150:060**

County of Hawai'i Department of Environmental Management

Appendix 4

Traffic Impact Assessment Report

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July 13, 2007

Mr. Ron Terry
Geometrician Associates
P.O. Box 396
Hilo, HI 96721

Re: Traffic Impact Assessment Report
Proposed Ocean View Transfer Station and Recycling Center
Kau District, Island of Hawaii, State of Hawaii
TMK (3rd): 9-2-150:060

Dear Mr. Terry:

Phillip Rowell and Associates have prepared the following Traffic Impact Assessment Report for the proposed Ocean View Transfer Station and Recycling Center. The report is presented in the following format:

- A. Project Location and Description
- B. Purpose and Objective of Study
- C. Methodology
- D. Description of Existing Streets and Intersection Controls
- E. Existing Peak Hour Traffic Volumes
- F. Level-of-Service Concept
- G. Existing Levels-of-Service
- H. 2010 Background Traffic Projections
- I. Project Trip Generation
- J. 2010 Background Plus Project Traffic Projections
- K. Impact Analysis of 2010 Conditions
- L. Mitigation
- M. Other Issues
- N. Summary and Conclusions

A. Project Location and Description

The proposed project is located along the south side of SR 11 in the Ocean View area of the Island of Hawaii in the vicinity of milepost 79. The site is opposite the intersection of SR 11 with Iolani Lane.

A complete description of the project is provided in the Environmental Impact Statement Preparation Notice, a copy of which is provided as [Attachment A](#).

Access to and egress from the project will be via a new driveway along the south side of SR 11. All traffic will access and egress the site via this new driveway. There are two potential locations for this driveway. The first, Plan A, is opposite Iolani Lane. The second, Plan B, is approximately 500 feet east of Iolani Lane. See [Attachment B](#) for a diagram of Plan A and [Attachment C](#) for a diagram of Plan B.

B. Purpose and Objective of Study

1. Quantify and describe the traffic related characteristics of the proposed project.
2. Identify potential deficiencies adjacent to the project that will impact traffic operations in the vicinity of the proposed project.

C. Methodology

1. *Define the Study Area*

The intersections to be analyzed were determined based upon our experience with other projects in the vicinity. Accordingly, the study area is limited to the intersection of SR 11 at Iolani Lane and the project Driveway.

2. *Analyze Existing Traffic Conditions*

Existing traffic volumes at the study intersections were estimated from State of Hawaii Department of Transportation traffic data. The intersection configurations and right-of-way controls were determined from a field reconnaissance of the area. Existing traffic operating conditions of the study intersection were determined using the methodology described in the 2000 *Highway Capacity Manual* (HCM) ¹.

3. *Estimate Horizon Year Background Traffic Projections*

Background traffic conditions are defined as future traffic conditions without the proposed project. It was assumed that the life of the project will be approximately 20 years. Therefore, 2027 was used as the horizon year. Background traffic volumes were projected for 2027 by expanding existing traffic volumes by a growth factor estimated from historical traffic growth along SR 11.

4. *Estimate Project-Related Traffic Characteristics*

The number peak-hour traffic that the proposed project will generate was estimated using standard trip generation procedures outlined in the *Trip Generation Handbook*² and data provided in *Trip Generation*³. These trips were then distributed and assigned based on the available approach and departure routes and trip distribution data from other recently completed traffic studies in the area.

¹ *Highway Capacity Manual*, Institute of Transportation Engineers, Washington, D.C., 2000

² *Trip Generation Handbook*, Institute of Transportation Engineers, Washington, D.C., 1998

³ *Trip Generation*, Institute of Transportation Engineers, Washington, D.C., 2003

5. Analyze Project-Related Traffic Conditions

The project-related traffic was then superimposed on 2027 background traffic volumes at the study intersections and driveways. The HCM methodology was used again to conduct a level-of-service analysis for background plus project conditions. The purpose of this analysis was to identify potential operational deficiencies in the vicinity of the proposed project.

D. Description of Existing Streets and Intersection Controls

In the vicinity of the project, SR 11 is a two-lane, two-way State highway with an east-west orientation. There are not separate left turn lanes at the intersections in the area and there are no acceleration or deceleration lanes. The posted speed limit along the pertinent section of SR 11 is 55 miles per hour.

Iolani Lane is a two-lane, two-way local collector street intersecting the north side of SR 11. The intersection is unsignalized.

E. Existing Peak Hour Traffic Volumes

The east-west traffic along SR 11 was estimated from State of Hawaii Department of Transportation *Traffic Summaries*. The latest counts available indicated that the ADT along SR 11 in the vicinity of the project was 3012 vehicles per day in 2002. Between 1994 and 2002, traffic increased an average of 3.2% per year. The 2002 traffic volumes were increased by 3.2% per year for 5 years, or 17%, to account for traffic growth from 2002 to 2007. The result of this analysis is that the estimated 2007 average daily traffic volume along the subject section of SR 11 is 3,535 vehicles per day.

The State of Hawaii Department of Transportation *Traffic Summaries* also provided data with which to estimate the peak hourly traffic volumes. 8.0% of the daily traffic occurs during the morning peak hour and 9.0% of the daily traffic occurs during the afternoon peak hour. Using these factors, the morning peak hourly volume is 280 vehicles per hour and the afternoon peak hourly volume is 315 vehicles per hour. Existing peak hour volumes using the intersection of SR 11 at Iolani Lane are summarized in [Attachments B and C](#).

Based on the available data and field observations, traffic turning into and out of Iolani Lane is negligible. In order to perform a level-of-service analysis, five (5) vehicles per hour were assigned to the turning movements at the intersection of SR 11 at Iolani Lane.

F. Level-of-Service Concept

"Level-of-Service" is a term which denotes any of an infinite number of combinations of traffic operating conditions that may occur on a given lane or roadway when it is subjected to various traffic volumes. Level-of-service (LOS) is a qualitative measure of the effect of a number of factors which include space, speed, travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience.

There are six levels-of-service, A through F, which relate to the driving conditions from best to worst, respectively. The characteristics of traffic operations for each level-of-service are summarized in [Table 1](#). In general, LOS A represents free-flow conditions with no congestion. LOS F, on the other hand, represents severe congestion with stop-and-go conditions. Level-of-service D is typically considered acceptable for peak hour conditions in urban areas.

Corresponding to each level-of-service shown in the table is a volume/capacity ratio. This is the ratio of either existing or projected traffic volumes to the capacity of the intersection. Capacity is defined as the maximum number of vehicles that can be accommodated by the roadway during a specified period of time. The capacity of a particular roadway is dependent upon its physical characteristics such as the number of lanes, the operational characteristics of the roadway (one-way, two-way, turn prohibitions, bus stops, etc.), the type of traffic using the roadway (trucks, buses, etc.) and turning movements.

Table 1 Level-of-Service Definitions for Signalized Intersections⁽¹⁾

Level of Service	Interpretation	Volume-to-Capacity Ratio ⁽²⁾	Stopped Delay (Seconds)
A, B	Uncongested operations; all vehicles clear in a single cycle.	0.000-0.700	<20.0
C	Light congestion; occasional backups on critical approaches	0.701-0.800	20.1-35.0
D	Congestion on critical approaches but intersection functional. Vehicles must wait through more than one cycle during short periods. No long standing lines formed.	0.801-0.900	35.1-55.0
E	Severe congestion with some standing lines on critical approaches. Blockage of intersection may occur if signal does not provide protected turning movements.	0.901-1.000	55.1-80.0
F	Total breakdown with stop-and-go operation	>1.001	>80.0

Notes:
 (1) Source: *Highway Capacity Manual*, 2000.
 (2) This is the ratio of the calculated critical volume to Level-of-Service E Capacity.

Like signalized intersections, the operating conditions of intersections controlled by stop signs can be classified by a level-of-service from A to F. However, the method for determining level-of-service for unsignalized intersections is based on the use of gaps in traffic on the major street by vehicles crossing or turning through that stream. Specifically, the capacity of the controlled legs of an intersection is based on two factors: 1) the distribution of gaps in the major street traffic stream, and 2) driver judgement in selecting gaps through which to execute a desired maneuver. The criteria for level-of-service at an unsignalized intersection is therefore based on delay of each turning movement. [Table 2](#) summarizes the definitions for level-of-service and the corresponding delay. A subsequent calculation to determine an overall LOS was made, and these results are presented in tables to summarize traffic conditions using parameters similar to those used for signalized intersections.

Table 2 Level-of-Service Definitions for Unsignalized Intersections⁽¹⁾

Level-of-Service	Expected Delay to Minor Street Traffic	Delay (Seconds)
A	Little or no delay	<10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	See note (2) below	>50.1

Notes:
 (1) Source: *Highway Capacity Manual*, 2000.
 (2) When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement of the intersection.

G. Existing Levels-of-Service

The existing levels-of-service were estimated using the methodology described in the *Highway Capacity Manual*. The results of the level-of-service analysis of existing conditions are summarized in [Table 3](#).

Table 3 Existing Levels-of-Service - SR 11 at Iolani Lane

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	Delay ¹	LOS ²	Delay	LOS
SR 11 at Iolani Lane				
Eastbound Left & Thru	7.8	A	7.5	A
Southbound Left & Right	10.5	B	10.3	B

NOTES:

(1) Delay in seconds per vehicle.

(2) LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual. Level-of-Service is based on delay.

H. 2027 Background Traffic Projections

2027 background traffic projections are defined as future background traffic conditions without the proposed project. Background traffic projections were estimated by expanding the existing traffic volumes by the appropriate growth factor.

Based on historical traffic data contained in State of Hawaii Department of Transportation's *Traffic Summaries*, traffic along the subject section of SR has increased 3.2% per year since 1994. This growth rate was used to estimate the background growth between 2007 and 2027, which is the design year for this project. The growth factor was calculated to be 1.88 using the following formula:

$$F = (1 + i)^n$$

where F = Growth Factor

i = Average annual growth rate, or 0.032

n = Growth period, or 20 years

This growth factor was applied to all traffic movements at the study intersection. The 2027 background traffic projections are shown in [Attachments B and C](#).

I. Project Trip Generation

Future traffic volumes generated by the project were estimated using the procedures described in the *Trip Generation Handbook*⁴ and data provided in *Trip Generation*⁵. There is no trip generation data for refuse transfer and recycling centers in *Trip Generation*. In cases where the standard references have to data, the *Trip Generation Handbook* recommends that a trip generation study be performed for a comparable facility in a comparable community. Based on discussions with the Department of Environmental Management, it was determined that the existing waste transfer station in Waimea is comparable to the proposed Ocean View Transfer Station and Recycling Center. The populations of the two areas are comparable and the size of the transfer stations are comparable.

⁴ Institute of Transportation Engineers, *Trip Generation Handbook*, Washington, D.C., 1998, p. 7-12

⁵ *Trip Generation*, Institute of Transportation Engineers, Washington, D.C., 2003

Personnel of the Department of Waste Management conducted a count of the number of vehicles entering the Waimea Transfer Station between Friday, April 27, 2007 and Tuesday, May 1, 2007. The number of vehicles entering the station was recorded by 30-minute intervals. The data recorded is provided as [Attachment D](#).

The peak morning and afternoon traffic entering the Waimea Transfer Station was 72 vehicles per hour during the morning peak hour and 62 vehicles per hour during the afternoon peak hour. The peak hourly volume counted was used regardless of the day of the week in order to use the maximum number of vehicles for the traffic impact analysis.

It was assumed that all vehicles would enter and leave the transfer station within one hour. This means that the number of vehicles exiting the station during the peak hour will equal the number of vehicle entering the station during the peak hour.

It was estimated that the traffic entering and exiting the station will increase at the same rate as the adjacent population increases. 1990 and 2000 Census data for Ocean View indicated that the population of Ocean View decreased between 1990 and 2000. Therefore, instead of using data for Ocean View, a population growth rate was estimated from Census data for Naalehu, which is the nearest community for which Census data indicating a population increase was available. The data for Naalehu indicated a population increase of 2.14% per year between 1990 and 2000. Using this growth rate, it was estimated that the population, and therefore the traffic using the transfer station will increase 88% from 2007 to 2027. This growth factor was applied to the 2007 traffic estimates.

Lastly, it was assumed that 35% of the trips into and out of the transfer station would be pass-by trips. This means that 35% of the trips into and out of the project will be drivers that are traveling along SR 11 for another purpose in addition to traffic taking refuse to the transfer station.

J. 2027 Background Plus Project Projections

Background plus project traffic conditions are defined as 2027 background traffic conditions plus project generated traffic. The project generated traffic was distributed and assigned based on the existing approach and departure pattern of traffic along the adjacent section of SR 11. The project trip assignments are shown in [Attachments B and C](#).

2027 background plus project traffic projections were estimated by superimposing the peak hourly traffic generated by the proposed project on the 2027 background (without project) peak hour traffic projections. This assumes that the peak hourly trips generated by the project coincide with the peak hour of the adjacent street. This represents a worse-case condition. The resulting 2027 background plus project peak hour traffic projections are shown in [Attachments B and C](#).

K. Impact Analysis of 2027 Conditions

The impacts of the project were assessed by performing a level-of-service analysis of the project's entrance along SR 11.

Level-of-Service Analysis

The level-of-service analysis was performed using the following assumptions:

1. An assessment of the need for a westbound left turn lane for traffic turning left into the project was performed using the guidelines described in *Evaluating Intersection Improvements*⁶. This assessment

⁶ Transportation Research Board, *NCHRP Report 457, Evaluating Intersection Improvements*, 2001, p. 21 & 22.

determined that a separate left turn lane was needed for westbound to southbound left turns. Therefore, it was assumed that a westbound left turn lane will be provided.

2. An assessment of the need for a eastbound left turn lane for traffic turning left into lolani Lane was also performed using the guidelines described in *Evaluating Intersection Improvements*. This assessment determined that a separate left turn lane was not needed.
3. The intersection of SR 11 at the project's entrance will be unsignalized.

The results of the level-of-service analysis of 2027 conditions, Plan A, are summarized in [Table 4](#). Shown in the table are the delays and levels-of-service of each controlled movement. As shown all movements will operate at Level-of-Service C, or better.

Table 4 2027 Levels-of-Service - Plan A

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	With Project		With Project	
	Delay ¹	LOS ²	Delay	LOS
SR 11 at lolani Lane & Project Entrance				
Eastbound Left, Thru & Right	8.5	A	7.8	A
Westbound Left	7.9	A	8.9	A
Northbound Left, Thru & Right	19.1	C	24.4	C
Southbound Left, Thru & Right	19.7	C	21.4	C

NOTES:

(1) Delay in seconds per vehicle.

(2) LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual. Level-of-Service is based on delay.

The results of the level-of-service analysis of 2027 conditions, Plan B, are summarized in [Table 5](#). Shown in the table are the delays and levels-of-service of each controlled movement. As shown all movements will operate at Level-of-Service C, or better.

Table 5 2027 Levels-of-Service - Plan B

Intersection and Movement	AM Peak Hour		PM Peak Hour	
	With Project		With Project	
	Delay ¹	LOS ²	Delay	LOS
SR 11 at lolani Lane				
Eastbound Left & Thru	8.6	A	7.9	A
Southbound Left & Right	14.3	B	14.0	B
SR 11 at Project Entrance				
Westbound Left	7.9	A	8.9	A
Northbound Left & Right	16.0	C	20.6	C

NOTES:

(1) Delay in seconds per vehicle.

(2) LOS denotes Level-of-Service calculated using the operations method described in Highway Capacity Manual. Level-of-Service is based on delay.

L. Mitigation

Level-of-Service D is generally considered to be the minimum acceptable peak hour level-of-service for urban intersections.⁷ As all traffic movements and lane groups of the study intersections will operate at Level-of-Service C, or better, no mitigation is required or recommended.

M. Other Traffic Issues

Left Turn Lane Assessment

An assessment of the need for a separate left turn lane for traffic turning left from SR 11 into the project was performed using guidelines published by the Transportation Resource Board⁸. The assessment determined that a separate left turn lane is warranted for both morning and afternoon peak hour conditions. Accordingly, based on the findings of an accepted standard, a separate left turn lane is recommended.

The left turn storage length required to accommodate estimated traffic volumes were calculated using guidelines in *A Policy on Geometric Design of Highways and Streets* published by the American Association of State Highway and Transportation Officials, 1990 edition. There are separate policies for signalized and unsignalized intersections. Since the subject intersection is unsignalized, only the policy for unsignalized intersections is relevant. The policy for unsignalized intersection is as follows:

At unsignalized intersections the storage length, exclusive of taper, may be based on the number of turning vehicles likely to arrive in a average 2-minute period within the peak hour. As a minimum requirement, space for at least two passenger cars should be provided; with over 10 percent truck traffic, provisions should be made for at least one car and one truck.⁹

Using the above criteria, the left turn storage lane requirements were estimated to be two vehicles. Thus, the left turn lane should be designed to accommodate one passenger car (25 feet) plus one WB-40 truck (60 feet). Since the trucks using the proposed transfer station will be large trucks, it is recommended that the left turn lane be 85 feet long.

Acceleration Lane

It is understood that the transfer trucks will approach and depart the site from the east, which means that large trucks will have to turn right from the project and accelerate to 55 miles per hour, which is the speed along SR 11. These trucks will be loaded and will accelerate slowly. Because these trucks will require a significant distance to accelerate to the proper speed, it is recommended that an acceleration lane be provided for vehicles turning from the project onto eastbound SR 11. The length of the acceleration lane should be design to comply with AASHTO design standards.

Regional Traffic Impacts

Residents and businesses using the waste transfer station and recycling center will reside in the Ocean View area. Therefore, the users of the project will not have an impact of regional traffic. The traffic impacts will be limited to the Ocean View area.

⁷ Institute of Traffic Engineers *Transportation Impact Analyses for Site Development, A Recommended Practice*, Washington, D.C., 2006, p 60.

⁸ Transportation Resource Board, NCHRP Report 457, *Evaluating Intersection Improvements: An Engineering Study Guide*, 2001, Washington, D.C. p21-22

⁹ American Association of State Highway and Transportation Officials, *A Policy on Geometric Design of Highway and Streets*, Washington, D.C., 1990, p 829

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The transfer trucks will travel between the transfer station and Hilo. These trucks will therefore have an impact of the regional transportation system. However, this impact will be minimal as project generated traffic will have an impact beyond the immediate vicinity of the project. The further away one is from the project, the less the impact since traffic will dissipate over distance. Since the impact in the immediate vicinity of the project is insignificant, it is reasonable to assume that the traffic impacts of the project will also be insignificant at locations more distant from the project.

N. Summary and Conclusions

The conclusions of the traffic impact assessment are:

1. The proposed project will generate 75 inbound and outbound trips during the morning peak hour and 130 inbound and outbound trips during the afternoon peak hour.
2. A level-of-service analysis determined that all approaches to the study intersection will operate at Level-of-Service C, or better, during both peak periods.
3. A separate left turn lane should be provided along SR 11 for vehicles turning left into the project from westbound SR 11. This left turn storage lane, excluding taper, should be a minimum of 85 feet long in order to accommodate one passenger car and one WB-40 truck.
4. An acceleration lane should be provided for traffic turning right from the project onto eastbound SR 11.

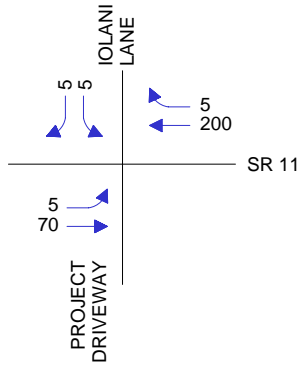
Respectfully submitted,
PHILLIP ROWELL AND ASSOCIATES



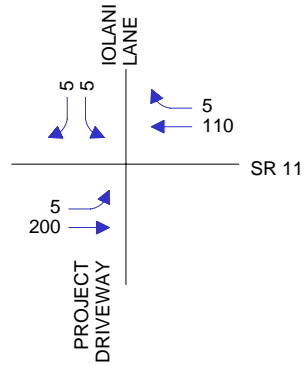
Phillip J. Rowell, P.E.
Principal

List of Attachments

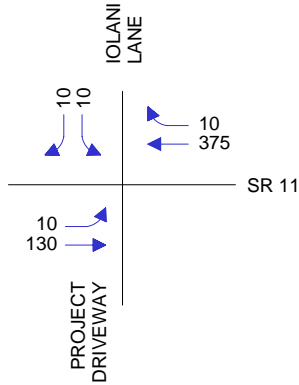
- A. Environmental Impact Statement Preparation Notice (not included in EIS copy)
- B. Existing and 2027 Traffic Projections for Plan A
- C. Existing and 2027 Traffic Projections for Plan B
- D. Project Peak Hour Trip Assignments



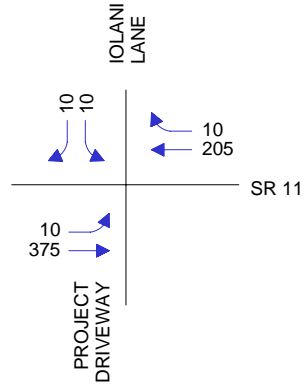
2007 AM PEAK HOUR TRAFFIC VOLUMES



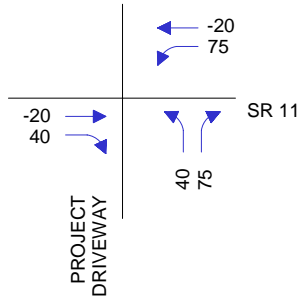
2007 PM PEAK HOUR TRAFFIC VOLUMES



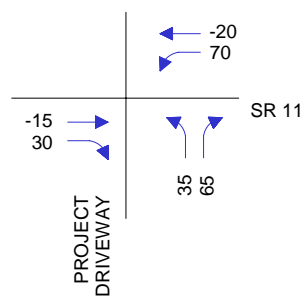
2027 BACKGROUND AM PEAK HOUR TRAFFIC PROJECTIONS



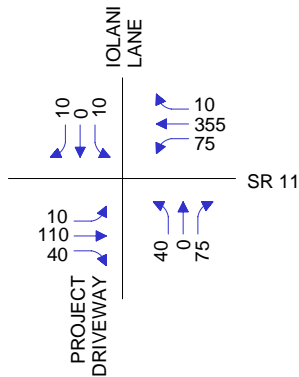
2027 BACKGROUND PM PEAK HOUR TRAFFIC PROJECTIONS



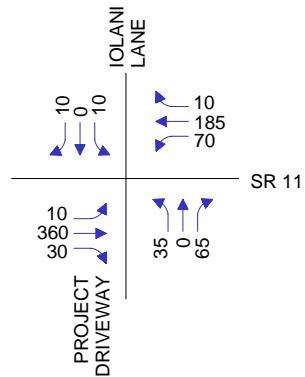
AM PEAK HOUR PROJECT TRIP ASSIGNMENTS



PM PEAK HOUR PROJECT TRIP ASSIGNMENTS

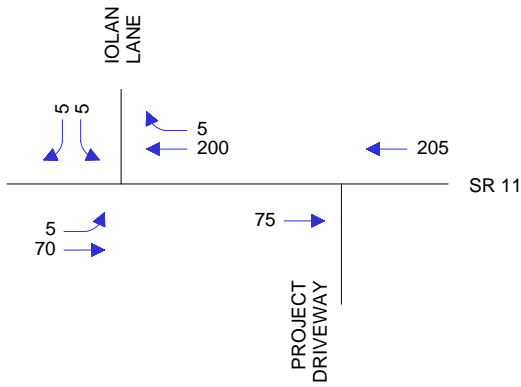


2027 BACKGROUND PLUS PROJECT AM PEAK HOUR TRAFFIC PROJECTIONS

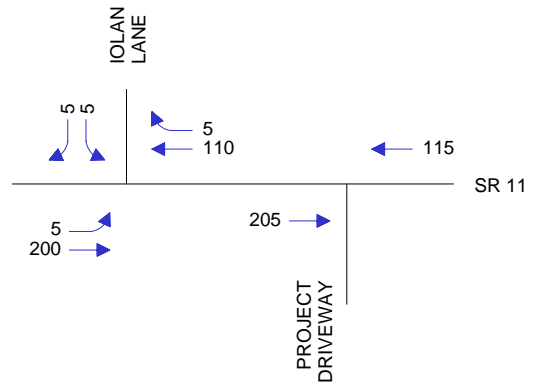


2027 BACKGROUND PLUS PROJECT PM PEAK HOUR TRAFFIC PROJECTIONS

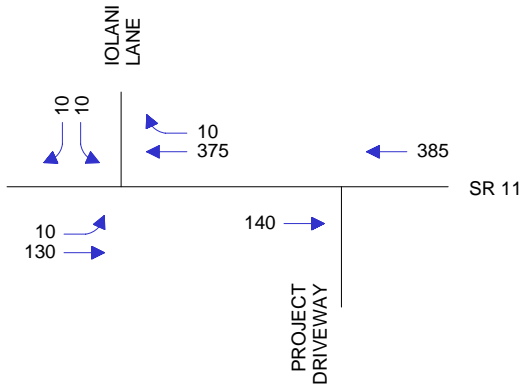
**ATTACHMENT B
EXISTING AND 2027 TRAFFIC PROJECTIONS - PLAN A**



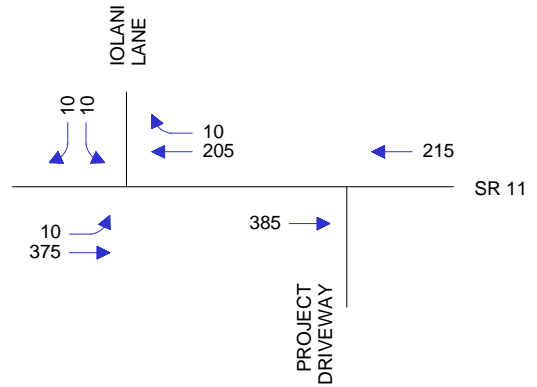
2007 AM PEAK HOUR TRAFFIC VOLUMES



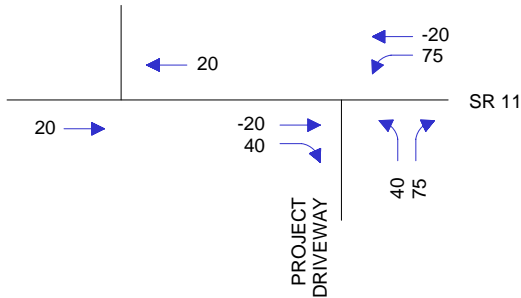
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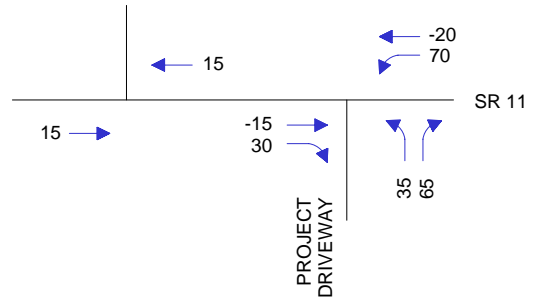
2027 BACKGROUND AM PEAK HOUR TRAFFIC PROJECTIONS



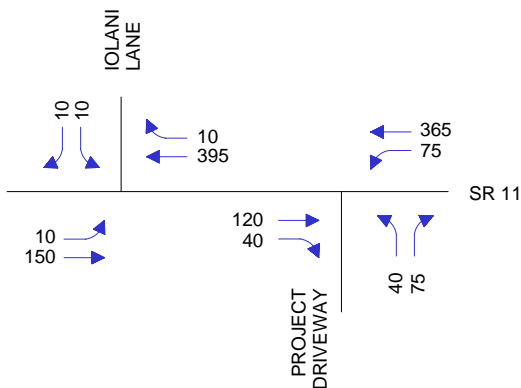
2027 BACKGROUND PM PEAK HOUR TRAFFIC PROJECTIONS



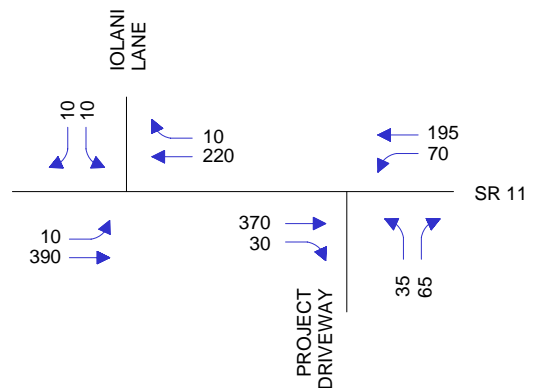
AM PEAK HOUR PROJECT TRIP ASSIGNMENTS



PM PEAK HOUR PROJECT TRIP ASSIGNMENTS



2027 BACKGROUND PLUS PROJECT AM PEAK HOUR TRAFFIC PROJECTIONS



2027 BACKGROUND PLUS PROJECT PM PEAK HOUR TRAFFIC PROJECTIONS

**ATTACHMENT C
EXISTING AND 2027 TRAFFIC PROJECTIONS - PLAN B**

Attachment D

WAIMEA TRANSFER STATION TRAFFIC DATA

WAIMEA TRANSFER STATION VEHICLE COUNT

April 27 2007

TYPE OF LOAD

Time	GREEN WASTE	SCRAP METAL	C+D MATERIAL	RESIDENTIAL	MIXED	OTHER	
630-700 AM	N/A	N/A	N/A	N/A	N/A	N/A	
701-730 AM	N/A	N/A	N/A	N/A	N/A	N/A	
731-800 AM	2	1	0	0	0	0	3
801-830 AM	1	1	0	17	0	1	20
831-900 AM	3	0	1	20	0	2	26
901-930 AM	2	0	1	12	0	0	15
931-1000 AM	5	0	2	14	0	0	21
1001-1030 AM	3	0	2	11	0	0	16
1031-1100 AM	2	0	2	16	0	0	20
1101-1130 AM	5	0	0	22	0	0	27
1131-1200 AM	3	0	1	15	0	0	19
1201-1230 PM	4	0	0	23	0	1	28
1231-100 PM	0	1	2	19	0	1	23
101-130 PM	1	0	0	8	0	1	10
131-200 PM	3	1	0	21	0	0	25
201-230 PM	1	0	1	15	0	0	17
231-300 PM	6	2	2	8	0	0	18
301-330 PM	0	1	0	11	1	0	13
331-400 PM	1	0	0	15	3	0	19
401-430 PM	7	0	0	1	0	0	8
431-500 PM	6	0	1	2	1	0	10
501530 PM	5	2	2	4	0	0	13
531-600 PM	3	1	1	4	0	0	9
Totals	63	10	18	258	5	6	360

360

WAIMEA TRANSFER STATION VEHICLE COUNT

April 28 2007

TYPE OF LOAD

Time	GREEN WASTE	SCRAP METAL	C+D MATERIAL	RESIDENTIAL	MIXED	OTHER	
630-700 AM	1	1	0	5	0	0	7
701-730 AM	0	0	0	3	0	0	3
731-800 AM	0	0	0	1		0	1
801-830 AM	3	0	0	4	0	0	7
831-900 AM	2	0	1	17	1	0	21
901-930 AM	1	1	0	13	0	0	15
931-1000 AM	2	1	0	24	0	0	27
1001-1030 AM	1	0	1	10	1	0	13
1031-1100 AM	0	0	0	0	1	0	1
1101-1130 AM	2	0	0	6	0	0	8
1131-1200 AM	0	0	0	2	0	0	2
1201-1230 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
1231-100 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
101-130 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
131-200 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
201-230 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
231-300 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
301-330 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
331-400 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
401-430 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
431-500 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
501530 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
531-600 PM	N/A	N/A	N/A	N/A	N/A	N/A	0
Totals	12	3	2	85	3	0	105

WAIMEA TRANSFER STATION VEHICLE COUNT

April 29 2007

TYPE OF LOAD

Time	GREEN WASTE	SCRAP METAL	C+D MATERIAL	RESIDENTIAL	MIXED	OTHER	
630-700 AM	0	0	0	4	0	1	5
701-730 AM	0	0	0	13	1	0	14
731-800 AM	0	0	1	17	1	0	19
801-830 AM	1	0	1	10	0	0	12
831-900 AM	3	1	0	19	0	0	23
901-930 AM	5	1	0	24	1	0	31
931-1000 AM	0	0	1	27	3	0	31
1001-1030 AM	1	0	2	24	2	0	29
1031-1100 AM	2	2	0	29	3	0	36
1101-1130 AM	4	0	1	18	2	1	26
1131-1200 AM	1	0	0	18	6	1	26
1201-1230 PM	2	0	2	14	7	0	25
1231-100 PM	3	0	0	16	5	0	24
101-130 PM	2	1	0	20	8	0	31
131-200 PM	4	0	0	21	6	0	31
201-230 PM	0	0	2	13	4	0	19
231-300 PM	3	0	2	17	1	0	23
301-330 PM	4	0	0	28	4	1	37
331-400 PM	0	0	0	7	2	0	9
401-430 PM	3	0	0	17	3	1	24
431-500 PM	3	0	0	7	3	0	13
501530 PM	5	1	1	18	6	0	31
531-600 PM	0	0	1	14	3	0	18
601-630	0	0	0	12	7	0	19
Totals	46	6	14	407	78	5	556

556

WAIMEA TRANSFER STATION VEHICLE COUNT

April 30 2007

TYPE OF LOAD

Time	GREEN WASTE	SCRAP METAL	C+D MATERIAL	RESIDENTIAL	MIXED	OTHER	
630-700 AM	0	0	0	12	0	0	12
701-730 AM	1	0	0	20	0	0	21
731-800 AM	0	0	0	13	0	0	13
801-830 AM	0	0	0	23	1	1	25
831-900 AM	0	0	0	18	0	0	18
901-930 AM	0	0	0	5	0	0	5
931-1000 AM	2	0	1	44	0	0	47
1001-1030 AM	2	0	0	23	0	0	25
1031-1100 AM	0	0	0	22	0	1	23
1101-1130 AM	2	0	0	20	1	0	23
1131-1200 AM	3	0	0	20	1	0	24
1201-1230 PM	0	0	0	23	1	0	24
1231-100 PM	3	0	0	16	0	2	21
101-130 PM	0	0	0	13	0	0	13
131-200 PM	4	0	0	30	2	1	37
201-230 PM	4	1	0	17	1	0	23
231-300 PM	2	0	0	13	0	0	15
301-330 PM	0	0	0	8	0	1	9
331-400 PM	1	0	1	9	0	0	11
401-430 PM	0	0	0	12	1	0	13
431-500 PM	1	1	0	11	1	0	14
501530 PM	0	0	0	10	0	1	11
531-600 PM	0	0	0	5	1	0	6
Totals	25	2	2	387	10	7	433

433

WAIMEA TRANSFER STATION VEHICLE COUNT

May 1 2007

TYPE OF LOAD

Time	GREEN WASTE	SCRAP METAL	C+D MATERIAL	RESIDENTIAL	MIXED	OTHER	
630-700 AM	0	0	1	12	0	0	13
701-730 AM	1	0	0	7	1	0	9
731-800 AM	1	0	0	12	0	0	13
801-830 AM	0	0	0	10	0	1	11
831-900 AM	0	0	0	10	0	0	10
901-930 AM	1	0	0	12	0	0	13
931-1000 AM	1	0	0	15	0	0	16
1001-1030 AM	0	0	0	7	0	0	7
1031-1100 AM	2	0	0	21	0	0	23
1101-1130 AM	3	0	1	17	0	1	22
1131-1200 AM	4	0	0	12	0	0	16
1201-1230 PM	0	0	0	4	0	0	4
1231-100 PM	2	0	1	10	0	1	14
101-130 PM	3	0	0	7	0	0	10
131-200 PM	2	0	0	9	0	0	11
201-230 PM	2	0	0	12	0	0	14
231-300 PM	2	0	1	13	0	1	17
301-330 PM	0	0	1	8	0	0	9
331-400 PM	1	0	0	11	0	0	12
401-430 PM	0	0	0	8	0	0	8
431-500 PM	0	0	1	13	0	2	16
501530 PM	0	0	0	9	0	0	9
531-600 PM	2	0	1	17	1	1	22
601-630	0	0	0	2	1	0	3
Totals	27	0	7	258	3	7	302

302